# Amendment 35 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region

**January 5, 2015**

**Environmental Assessment  Regulatory Impact Review  Regulatory Flexibility Analysis  Fishery Impact Statement**

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# Abbreviations and Acronyms Used in the FMP

| | |
|---|---|
| **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 |
| **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 |
| **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 35 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region

| | |
|---|---|
| **Proposed action:** | The purpose for the actions is to:<br>remove four species from the FMP, and clarify regulations implementing the golden tilefish longline endorsement. |
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# Table of Contents

Table of Contents ..... III
List of Appendices ..... V
List of Tables ..... VI
List of Figures ..... VIII
Summary ..... S-1
Chapter 1. Introduction ..... 1
1.1 What Actions Are Being Proposed in this Amendment? ..... 1
1.2 Who is Proposing the Amendment? ..... 2
1.3 Purpose and Need Statement ..... 2
Chapter 2. Proposed Actions and Alternatives ..... 3
Action 1. Remove species from the Snapper Grouper Fishery FMP ..... 3
Action 2. Clarify regulations for the golden tilefish longline endorsement to reflect the South Atlantic Council's intent regarding which gear-specific quota endorsement holders may fish under. ..... 6
Chapter 3. Affected Environment ..... 8
3.1 Habitat Environment ..... 8
3.2 Biological and Ecological Environment ..... 11
3.2.1 Fish Populations Affected by this Amendment ..... 11
3.2.4 Protected Species ..... 13
3.3 Economic and Social Environment ..... 18
3.3.1 Economic Environment ..... 18
3.3.1.1 Economic Description of the Commercial Sector ..... 18
3.3.1.2 Economic Description of the Recreational Sector ..... 26
3.3.2 Social Environment ..... 36
3.3.3 Environmental Justice Considerations ..... 43
3.4 Administrative Environment ..... 46
3.4.1 The Fishery Management Process and Applicable Laws ..... 46
Chapter 4. Environmental Effects and Comparison of Alternatives ..... 49
Action 1. Remove species from the Snapper Grouper Fishery Management Plan (FMP) 49
4.1.1 Biological Effects ..... 49
4.1.2 Economic Effects ..... 59
4.1.3 Social Effects ..... 60
4.1.4 Administrative Effects ..... 61
Action 2. Clarify regulations for the golden tilefish longline endorsement to reflect the South Atlantic Council's intent regarding which gear-specific quota endorsement holders may fish under. ..... 62
4.2.1 Biological Effects ..... 62
4.2.2 Economic Effects ..... 64
4.2.3 Social Effects ..... 64
4.2.4 Administrative Effects ..... 65
Chapter 5. Council's Choice for the Preferred Alternatives ..... 66

5.1 Remove species from the Snapper Grouper Fishery Management Unit (FMU) 66
5.1.1 Snapper Grouper Advisory Panel Comments and Recommendations ..... 66
5.1.3 Law Enforcement Advisory Panel Comments and Recommendations ..... 66
5.1.4 Scientific and Statistical Committee Comments and Recommendations .... 66
5.1.5 Public Comments and Recommendations ..... 66
5.1.6 South Atlantic Council Choice for Preferred Alternative ..... 66
5.2 Clarify regulations for the golden tilefish longline endorsement to reflect the South Atlantic Council's intent regarding which gear-specific quota endorsement holders may fish under. ..... 67
5.2.1 Snapper Grouper AP Comments and Recommendations ..... 67
5.2.2 Law Enforcement AP Comments and Recommendations ..... 67
5.2.3 Scientific and Statistical Committee Comments and Recommendations .... 67
5.2.4 Public Comments and Recommendations ..... 67
5.2.5 South Atlantic Council Choice for Preferred Alternative ..... 67
Chapter 6. Cumulative Effects ..... 68
Chapter 7. List of Interdisciplinary Plan Team (IPT) Members ..... 73
Chapter 8. Agencies and Persons Consulted ..... 75
Chapter 9. References ..... 76
Appendix A. Considered But Rejected Alternatives ..... A-1
Appendix B. Glossary ..... B-1
Appendix C. History of Management ..... C-1
Appendix D. Bycatch Practicability Analysis ..... D-1
Appendix E. Regulatory Impact Review ..... E-1
Appendix F. Regulatory Flexibility Analysis ..... F-1
Appendix G. Other Applicable Law ..... G-1
Appendix H. Essential Fish Habitat and Ecosystem-based Management ..... H-1
Appendix I. Fishery Impact Statement ..... I-1

# List of Appendices

**Appendix A.** Considered But Rejected Alternatives

**Appendix B.** Glossary

**Appendix C**. History of Management

**Appendix D.** Bycatch Practicability Analysis

**Appendix E.** Regulatory Impact Review

**Appendix F.** Regulatory Flexibility Analysis

**Appendix G.** Other Applicable Law

**Appendix H.** Essential Fish Habitat and Ecosystem-based Management

**Appendix I.** Fishery Impact Statement

# List of Tables

**Table S-1.** Regulations for the four subject species in Florida state waters, Gulf of Mexico federal waters, and South Atlantic federal waters. .....S-1
**Table S-2.** Total recreational and commercial landings (lbs ww) of dog snapper, schoolmaster, mahogany snapper, and black snapper from 2004-2013. .....S-6
**Table S-3.** ACLs and recreational ACT for the Deepwater Complex. .....S-6
**Table S-4.** ACLs and recreational ACT for the Snappers Complex with and without dog and mahogany snapper.....S-7
**Table 3.3.1.1**. Valid and transferrable/renewable South Atlantic commercial snapper grouper permits as of November 3, 2014..... 19
**Table 3.3.1.2**. Number of South Atlantic commercial snapper grouper permits (2009 through 2013)..... 19
**Table 3.3.1.3.** Total South Atlantic commercial landings and revenue from 2004 through 2013 for dog snapper, schoolmaster, mahogany snapper, and black snapper by jurisdiction (Federal and State Waters)..... 20
**Table 3.3.1.4.** Total South Atlantic commercial landings and revenue from 2004 through 2013 for dog snapper, schoolmaster, mahogany snapper, and black snapper by state. ..... 20
**Table 3.3.1.5.** Vessels and trips with golden tilefish landings by weight (lb gw) and dockside revenue (2013 $), 2009–2013. ..... 23
**Table 3.3.1.6.** Dockside revenues (2013 $) from all sources for vessels that landed golden tilefish, 2009–2013..... 24
**Table 3.3.1.7.** Average annual business activity (2009 through 2013) associated with the commercial harvest of golden tilefish and the harvest of all species by vessels that landed golden tilefish. All monetary estimates are in 2013 dollars. ..... 26
**Table 3.3.1.8**. Number of South Atlantic for-hire snapper grouper permits, by homeport state, 2009-2013. ..... 27
**Table 3.3.1.9.** Total South Atlantic recreational landings of dog snapper, schoolmaster, mahogany snapper, and black snapper from 2004 through 2013 by jurisdiction (Federal and State waters)..... 28
**Table 3.3.1.10.** Total South Atlantic recreational landings of dog snapper, schoolmaster, mahogany snapper, and black snapper from 2004 through 2013 by state. ..... 28
**Table 3.3.1.11.** Total South Atlantic recreational landings of dog snapper, schoolmaster, mahogany snapper, and black snapper from 2004 through 2013 by mode. ..... 29
**Table 3.3.1.12.** Golden tilefish recreational landings (pounds ww) by mode, 2009-2013. ..... 30
**Table 3.3.1.13.** Golden tilefish target and catch trips by state, 2009-2013..... 31
**Table 3.3.1.14.** Dog snapper, mahogany snapper and schoolmaster catch trips by state, 2009-2013. ..... 31
**Table 3.3.1.15.** Headboat angler days, 2009-2013..... 32
**Table 3.3.1.16**. Summary of golden tilefish target trips (2009-2013 average) and associated business activity (2013 dollars). Output and value added impacts are not additive..... 35

**Table 4.1.1.1** Regulations for the four subject species in Florida state waters, Gulf of Mexico federal waters, and South Atlantic federal waters. ..... 51
**Table 4.1.1.2** Total recreational and commercial landings of dog snapper, schoolmaster, mahogany snapper, and black snapper from 2004-2013. ..... 52
**Table 4.1.1.3.** ACLs and recreational ACT for the Deepwater Complex. Values reflect those proposed in Amendments 29 and 32 to the FMP.* ..... 54
**Table 4.1.1.4.** ACLs and recreational ACT for the Snappers Complex with and without dog and mahogany snapper. Values reflect those proposed in Amendment 29 to the FMP. ..... 56

# List of Figures

**Figure 3.3.1.1.** Annual commercial landings of golden tilefish by weight (lbs ww) and dockside revenue (2013 $). ..... 21
**Figure 3.3.1.2.** Landings of golden tilefish (lbs ww) by state, 2009–2013. ..... 22
**Figure 3.3.1.3.** Golden tilefish dockside revenues (2013 $) by state, 2009–2013. ..... 22
**Figure 3.3.1.4**. Average monthly golden tilefish landings (lbs ww) and revenues (2013 $), 2009–2013. ..... 23
**Figure 3.3.1.5.** Average golden tilefish landings (lbs ww) by wave, 2009-2013. 30
**Figure 3.3.2.1.** Snapper grouper Unlimited and 225-pound trip limit permits 2003-2012. ..... 36
**Figure 3.3.2.2.** Snapper grouper unlimited 2012 permit frequency by homeport. ..... 37
**Figure 3.3.2.3.** Snapper grouper 225-pound trip limit 2012 permits frequency by homeport..... 37
**Figure 3.3.2.4.** South Atlantic fishing communities ranked by total 2011 snapper grouper value RQ. Source: SERO Community ALS 2011 ..... 39
**Figure 3.3.2.5.** Commercial and recreational fishing engagement and reliance indices for top Florida snapper grouper communities in the South Atlantic region. ..... 40
**Figure 3.3.2.6**. Commercial and recreational fishing engagement and reliance indices for top South and North Carolina snapper grouper communities in the South Atlantic region. ..... 41
**Figure 3.3.2.7**. Proportion (RQ) of golden tilefish commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of golden tilefish. ..... 43
**Figure 3.3.3.1.** Social Vulnerability indices for top Florida communities in terms of pounds and value regional quotient for snapper grouper in the South Atlantic. ..... 44
**Figure 3.3.3.2.** Social Vulnerability indices for top communities in in North and South Carolina in terms of pounds and value regional quotient for snapper grouper in the South Atlantic. ..... 45

# Summary

## WHY IS THE COUNCIL CONSIDERING ACTION?

### Action 1 – Removing Species

The South Atlantic Council is considering removing black snapper, dog snapper, mahogany snapper, and schoolmaster from the Fishery Management Plan (FMP) because they have extremely low commercial landings in state and federal waters, almost all harvest (recreational and commercial) occurs in South Florida, and the Florida Fish and Wildlife Conservation Commission (FWC) has agreed that, if the four species are removed from the FMP, they would extend state regulations for those species into federal waters. Additionally, the South Atlantic Council desires consistent regulations for snapper grouper species caught primarily in South Florida. Some regulations for snapper grouper species caught in South Florida are subject to inconsistent regulations across the jurisdictional boundaries of Florida state waters, Gulf of Mexico federal waters, and South Atlantic federal waters (**Table S-1**). Inconsistent regulations make enforcement difficult and may negatively affect overall sustainability of species harvested primarily in that area. More information on the regulatory consistency aspect of this action may be found in **Section 4.1.4** Administrative Effects.

**Table S-1.** Regulations for the four subject species in Florida state waters, Gulf of Mexico federal waters, and South Atlantic federal waters.

| Species | FL State Regulations* | Gulf of Mexico Federal Regulations | South Atlantic Federal Regulations** |
|---|---|---|---|
| **Black Snapper** | **Commercial:** None<br><br>**Rec:** No size limit, 10 per person | **Commercial:** None<br><br>**Rec:** None | **Commercial:** Managed as part of the Deepwater Complex. Current ACL = 60,371 lbs ww. ACL = 131,634 lbs ww if Amendment 32 is implemented.***<br><br>**Rec:** Deepwater Complex ACL = 19,313 lbs ww. ACL = 38,644 lbs ww if Amendment 32 is implemented. 10 snapper per person aggregate. |
| **Dog Snapper** | **Commercial:** 12-inch (TL) size limit.<br><br>**Rec:** 12-inch (TL) size limit, 10 per person. | **Commercial:** None<br><br>**Rec:** None | **Commercial:** Managed as part of the Snappers Complex. Current ACL = 215,662 lbs ww. ACL = 344,884 lbs ww if Amendment 29 is implemented. 12-inch (TL) size limit.<br><br>**Rec:** ACL = ACL of 728,577 lbs ww. ACL = 1,172,832 lbs ww if Amendment 29 is implemented. 12-inch (TL) size limit. 10 |

| | | | |
|---|---|---|---|
| | | | snapper per person aggregate. |
| **Mahogany Snapper** | **Commercial:** 12-inch (TL) size limit.<br><br>**Rec:** 12-inch (TL) size limit, 10 per person. | **Commercial:** None<br><br>**Rec:** None | **Commercial:** Managed as part of the Snappers Complex. ACL = 215,662 lbs ww. ACL = 344,884 lbs ww if Amendment 29 is implemented. 12-inch (TL) size limit.<br><br>**Rec:** ACL = ACL of 728,577 lbs ww. ACL = 1,172,832 lbs ww if Amendment 29 is implemented. ACL = 344,884 lbs ww if Amendment 29 is implemented. 12-inch (TL) minimum size limit. 10 snapper per person aggregate. |
| **Schoolmaster** | **Commercial:** 10-inch (TL) size limit.<br><br>**Rec:** 10-inch (TL) size limit, 10 fish per person. | **Commercial:** None<br><br>**Rec:** None | EC Species, no regulations or ACLs. |

*Florida regulations state a federal permit (Gulf Reef Fish Permit or Snapper Grouper Unlimited or 225 lb Permit) is required to harvest in commercial quantities and sell "Reef Fish" species in Florida.

** Commercial harvest of black snapper, dog snapper, and mahogany snapper is prohibited when their respective Complex commercial ACLs are met or projected to be met. If the combined recreational landings for the Snappers Complex exceed the recreational ACL, then recreational landings will be monitored for a persistence in increased landings and, if necessary, the length of following recreational fishing season would be reduced by the amount necessary to ensure recreational landings do not exceed the recreational ACL.

*** An emergency rule has temporarily removed blueline tilefish from the Deepwater Complex and specified ACLs of 60,371 lbs ww for the commercial sector and 19,313 lbs ww for the recreational sector. Amendment 32 would permanently remove blueline tilefish from the Deepwater Complex and incorporate new ABCs from Amendment 29 for silk snapper and yellowedge grouper, which are contained in the Complex. For the Deepwater Complex, Amendment 32 proposes a commercial ACL of 131,634 lbs ww and a recreational ACL of 38,644 lbs ww.

## Action 2 – Clarification of Commercial Golden Tilefish Regulations

Amendment 18B to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (SAFMC 2012) established a longline endorsement program for the commercial golden tilefish component of the snapper grouper fishery and modified the golden tilefish commercial trip limits. Currently, there are separate quotas and trip limits for the longline and hook-and-line sectors. An endorsement is required to fish with longline gear. Furthermore, one of the regulations regarding golden tilefish trip limits implemented by the final rule for Amendment 18B states, "Vessels with a golden tilefish longline endorsement are not eligible to fish for golden tilefish using hook-and-

line gear under this 500-lb (227-kg) trip limit." The golden tilefish endorsement, along with sector quotas and trip limits was put in place because the commercial annual catch limit was being caught very rapidly with longline gear, and fishermen who had historically used hook-and-line gear to target golden tilefish were not able to participate in the golden tilefish portion of the snapper grouper fishery.

Some endorsement holders believe they can transfer their golden tilefish longline endorsement to another vessel and then fish for golden tilefish using hook-and-line gear, or that they can renew their Federal commercial snapper grouper vessel permit at one time but wait to renew their golden tilefish longline endorsement and then fish for golden tilefish using hook-and-line gear while their endorsement is not valid. Based on comments during the June 2012 Council meeting, neither scenario appeared to be the intent of the South Atlantic Council at that time. This amendment would clarify the regulations in accordance with the South Atlantic Council's intent.

## Purpose for Actions

The purpose of Amendment 35 is to ensure that only snapper grouper species that require federal management are included in the Snapper Grouper FMP, that regulations for snapper grouper species in south Florida are as consistent as possible across state and federal jurisdictional boundaries, and that regulations implemented to govern the use of golden tilefish longline endorsements are aligned with the South Atlantic Council's intent for establishing the endorsement program.

## Need for Actions

In accordance with national standards set forth in the Magnuson-Stevens Fishery Conservation and Management Act, the need for Amendment 35 is to simplify federal management of the snapper grouper fishery without reducing protection for species rarely caught in states other than Florida, make regulations consistent across jurisdictional boundaries, and ensure that regulations for commercially harvested golden tilefish are clear as to what quota golden tilefish longline endorsement holders may fish under; while minimizing, to the extent practicable, adverse socioeconomic impacts.

### Action 1. Remove species from the Snapper Grouper Fishery Management Unit (FMU)

**Alternative 1. No Action.** Retain the four species in the Snapper Grouper FMU.

**Preferred Alternative 2.** Remove black snapper (*Apsilus dentatus*) from the Snapper Grouper FMU.

**Preferred Alternative 3.** Remove dog snapper (*Lutjanus jocu*) from the Snapper Grouper FMU.

**Preferred Alternative 4.** Remove mahogany snapper (*Lutjanus mahogoni*) from the Snapper Grouper FMU.

**Preferred Alternative 5.** Remove schoolmaster (*Lutjanus apodus*) from the Snapper Grouper FMU.
*Note this species is currently an ecosystem component species.

# Summary of Effects

## Biological Effects

Because **Alternative 1 (No Action)** would maintain current recreational and commercial accountability measures (AMs) for dog snapper, mahogany snapper, and black snapper; but would allow confusion due to an inconsistent regulatory environment, the overall biological impacts of this alternative are expected to be neutral.

**Preferred Alternative 2** would remove black snapper from the snapper grouper FMP. Total annual landings (recreational and commercial), in state and federal waters, of black snapper were 0 pounds whole weight (lbs ww) from 1986 through 1990; less than 500 lbs ww in 1991 and 1992; less than 5,000 lbs ww in 1993 and 1994; less than 600 lbs ww with some years of 0 lbs ww from 1995 through 2013. There were no landings of black snapper in Georgia through North Carolina from 1986 through 2013. **Table S-2** shows that 90% of commercial landings from 2004 through 2013 were from federal waters and 0% of recreational landings were from federal waters. Despite a high percentage of black snapper harvest being from federal waters, the total pounds landed commercially from federal waters from 2004 through 2013 is just over 900 lbs ww (average 90 lbs ww/year).

**Table S-2.** Total recreational and commercial landings (lbs ww) of dog snapper, schoolmaster, mahogany snapper, and black snapper from 2004-2013.

| | Dog Snapper | | | Schoolmaster | | | Mahogony Snapper | | | Black Snapper | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Federal | State | Not Defined | Federal | State | Not Defined | Federal | State | Not Defined | Federal | State | Not Defined |
| | Commercial | | | | | | | | | | | |
| Pounds (ww) | 3,019 | 302 | 659 | 1,052 | 6 | 50 | 213 | 212 | 0 | 929 | 32 | 76 |
| Percentage | 75.9 | 7.6 | 16.6 | 94.9 | 0.5 | 4.5 | 50.1 | 49.9 | 0.0 | 89.6 | 3.1 | 7.3 |
| | Recreational | | | | | | | | | | | |
| Pounds (ww) | 6,087 | 27,877 | 2,178 | 9,855 | 39,811 | 4,434 | 1,154 | 133 | 266 | 0 | 0 | 2 |
| Percentage | 16.8 | 77.1 | 6.0 | 18.2 | 73.6 | 8.2 | 74.3 | 8.5 | 17.1 | 0 | 0 | 100 |

Black snapper, dog snapper, and mahogany snapper are each managed as part of species complexes in federal waters with sector ACLs and AMs to ensure overfishing does not occur. The Snappers Complex, including mahogany snapper and dog snapper, has a proposed recreational ACL of 1,172,832 lbs ww, a commercial ACL of 344,884 lbs ww, and a recreational annual catch target (ACT) of 984,898 lbs ww, which are updated values proposed in Amendment 29 to the Snapper Grouper FMP, currently in the rulemaking process. ACLs and AMs are at the Complex level; there are not individual ACLs and AMs for species that comprise species complexes.

Removal of black snapper from the snapper grouper FMP would remove current federal regulations for the Deepwater Complex that apply to black snapper. Without black snapper, the Deepwater Complex ACL proposed for implementation in Amendment 32 to the Snapper Grouper FMP (under review) would be reduced from 170,279 lb ww to 169,896 lb ww, a difference of 382 lbs ww. **Table S-3** illustrates how the ACL for the Deepwater Complex is determined as well as the how the Complex ACL would change in the absence of black snapper.

**Table S-3.** ACLs and recreational ACT for the Deepwater Complex. Values reflect those proposed in Amendments 29 and 32 to the FMP.*

| Species | Total ACL (lbs ww) | Commercial ACL (lbs ww) | Recreational ACL (lbs ww) | Recreational ACT (lbs ww) |
|---|---|---|---|---|
| **Yellowedge grouper** | 55,596 | 50,464 | 5,132 | 736 |
| **Silk snapper** | 90,323 | 66,794 | 23,529 | 7,407 |
| **Misty grouper** | 2,863 | 2,388 | 475 | 237 |
| **Sand tilefish** | 7,983 | 1,770 | 6,213 | 3,107 |
| **Queen snapper** | 9,466 | 8,756 | 710 | 355 |
| **Black snapper** | 382 | 366 | 16 | 8 |
| **Blackfin snapper** | 3,665 | 1,096 | 2,569 | 1,284 |
| **Deepwater Complex ACL** | 170,278 | 131,634 | 38,644 | 13,134 |
| **Deepwater Complex ACL without black snapper** | 169,896 | 131,266 | 38,628 | 13,126 |

*ACLs and the recreational ACT are only for the Deepwater Complex. There are not individual ACLs or recreational ACTs for species contained within the Deepwater Complex.

**Preferred Alternative 3** and **Preferred Alternative 4** would remove dog snapper and mahogany snapper from the FMP, respectively. Removing them from the FMP would also remove them from the Snappers Complex. Similar to the Deepwater

Complex, each species in the Snappers Complex contributes to the Complex ACL. Therefore, removing dog snapper and mahogany snapper from the Snappers Complex would remove their species-specific ACLs from the Complex ACL. **Table S-4** illustrates how the ACL for the Snappers Complex is determined as well as the how the Complex ACL would change in the absence of dog snapper and mahogany snapper.

**Table S-4.** ACLs and recreational ACT for the Snappers Complex with and without dog and mahogany snapper.
Values reflect those proposed in Amendment 29 to the FMP.

| Species | Total ACL (lbs ww) | Commercial ACL (lbs ww) | Recreational ACL (lbs ww) | Recreational ACT (lbs ww) |
|---|---|---|---|---|
| **Gray snapper** | 1,247,132 | 302,180 | 944,952 | 837,605 |
| **Lane snapper** | 203,486 | 30,014 | 173,472 | 132,428 |
| **Cubera snapper** | 63,266 | 12,381 | 50,885 | 13,103 |
| **Dog snapper** | 3,285 | 273 | 3,012 | 1,506 |
| **Mahogany snapper** | 548 | 36 | 512 | 256 |
| **Total** | 1,517,716 | 344,884 | 1,172,832 | 984,898 |
| **Snappers Complex ACL without Dog Snapper (Alt 3)** | 1,514,431 | 344,611 | 1,169,820 | 983,392 |
| **Snappers Complex ACL without Mahogany Snapper (Alt 4)** | 1,517,168 | 344,575 | 1,172,320 | 984,642 |
| **Snappers Complex ACL without Dog and Mahogany Snapper** | 1,513,883 | 344,575 | 1,169,308 | 983,136 |

*ACLs and the recreational ACT are only for the Snappers Complex. There are not individual ACLs or recreational ACTs for species contained within the Snappers Complex.

Total annual landings (recreational and commercial) of dog snapper, in state and federal waters combined, were less than 8,000 lbs ww from 1986 through 2013 except in 2007 when landings increased to about 25,000 lbs ww. Total landings in Georgia through North Carolina from 1986 through 2005 were 0 lbs ww except in 2000 when total landings were less than 6,000 lbs ww; from 2006 through 2013, total landings were less than 400 lbs ww. Total annual landings (recreational and commercial) of mahogany snapper, in state and federal waters combined, were less than 600 lbs ww from 1986 through 2013 except in 1999 and 2007 when landings increased to about 4,000 lbs ww. There were no landings of mahogany snapper in Georgia through North Carolina from 1986 through 2013 except in 2010 when total landings for these states were less than 500 lbs ww.

**Preferred Alternative 5** would remove schoolmaster from the FMP. Schoolmaster was designated an Ecosystem Component (EC) species in 2012 through the Comprehensive ACL Amendment (SAFMC 2011c). Total annual landings (recreational and commercial) of schoolmaster, in federal and state waters combined, were less than 15,000 lbs ww from 1986 through 2013. There were no landings of schoolmaster in Georgia through North Carolina from 1986 through 2013 except in 1995 when less than 500 lbs ww were landed. Although there are currently no federal regulations for schoolmaster in the South Atlantic or Gulf of Mexico, the FWC does manage them in state waters with a 10-inch size limit and a 10-fish per person bag limit. If schoolmaster were removed from the Snapper Grouper FMP and Florida state regulations for the

species were extended into federal waters off Florida in the South Atlantic and Gulf of Mexico, schoolmaster would be subject to Florida harvest restrictions. Therefore, removing schoolmaster from the FMP may have biological benefits for schoolmaster if the state of Florida were to manage it through consistent regulations in state and federal waters of the South Atlantic and Gulf of Mexico. However, because schoolmaster are not heavily targeted by commercial or recreational fishermen, the potential biological benefit may be limited.

Designating schoolmaster as an EC species allowed the species to stay in the FMP without assigning management measures or ACLs to it. One of the advantages of EC designation rather than removal from a FMP is that the fishery management council maintains the ability to implement management measures and establish ACLs, AMs, and ACTs for those species without having to add them back into the FMP. If schoolmaster is removed from the Snapper Grouper FMP, and the South Atlantic Council were to decide in the future that the species was in need of some form of management, schoolmaster would need to be added back to the roster of species included in the Snapper Grouper FMP through a plan amendment before harvest controls could be implemented. The same would be true for black snapper, mahogany snapper, and dog snapper.

In the long term, the biological effects of removing these species from the FMP could be negative if they are in need of federal management and the South Atlantic Council is unable to establish harvest controls in a timely manner. However, any negative biological impacts that could arise in this situation are likely to be minimal because the South Atlantic Council would have the ability to add those species back into the FMP if such an action were warranted. Alternatively, removal of these species could have positive biological effects if the state of Florida establishes consistent regulations in state and federal waters of the South Atlantic and Gulf of Mexico. However, because harvest of these species is so minor, any biological effect would also be expected to be minor.

## Economic Effects

This action proposes to remove 4 species from the Snapper Grouper FMU managed by the SAFMC. Choosing **Preferred Alternatives 2**, **3**, **4** and **5** would result in administrative changes and are not likely to affect the catchability of black snapper, dog snapper, mahogany snapper, or schoolmaster by fishery participants.

Further, removing these species, which would be managed by the state of Florida, is expected to result in more efficient management of all snapper grouper species. Specifically, Florida would obtain management authority over the four species, which occur largely in southern Florida. Complicating matters is the fact that both the South Atlantic and Gulf of Mexico Fishery Management Councils manage South Florida waters. A stated goal by both of these councils is to have consistency in regulations in southern Florida. Allowing Florida to manage these species would assist in achieving that goal. Turning over management of these species to Florida would allow federal

resources (labor and capital) to be used more effectively in the management of the remaining snapper grouper species.

If the species are not removed from federal management, as would be the case under **Alternative 1 (No Action)**, ACLs, AMs, and ACTs would need to be enforced for three of the four species. No management measures are in place for schoolmaster as it is considered an ecosystem component species. By removing 4 of the current 59 (approximately 7%) species currently in the FMU, the administrative costs of federally managing the snapper grouper fishery could be reduced under **Preferred Alternatives 2-5**, and potentially in a proportional manner (e.g., federal administrative costs might be reduced by 7%).

Therefore, in general, the net economic effects of removing species from the Snapper Grouper FMU are expected to result in net benefits rather than losses. More specifically, the more species removed, net economic benefits are expected to be maximized. Because the removal of species from the Snapper Grouper FMU is an administrative action, and thus does not directly affect participants in the snapper grouper fishery, these net economic benefits are the result of indirect rather than direct economic effects.

## Social Effects

Maintaining status quo under **Alternative 1 (No Action)** would not be expected to have negative effects on fishermen or communities, although this alternative would likely not result in any benefits expected from removing species under **Preferred Alternatives 2-5**. As noted above, black snapper is included in the Deepwater Complex and removal from the FMU (**Preferred Alternative 2**) would result in a lower Deepwater Complex ACL. Changing a multi-species ACL may have some negative effects on commercial fishermen and recreational fishing opportunities if access to other species in the complex becomes limited due to a lower ACL. However the difference in the ACL under **Preferred Alternative 2** would be minimal (**Table S-3**) and would not be expected to affect fishermen targeting other species in the Deepwater Complex. This would be similar to expected effects on fishermen under **Preferred Alternative 3** and **Preferred Alternative 4** in that removal of dog snapper and mahogany snapper, both included in the Snappers Complex, would result in a small change in the Snappers Complex ACL (**Table S-4**) and likely have minimal effects on fishermen targeting other species in the Snappers Complex.

Because schoolmaster was designated as an ecosystem component species in the Comprehensive ACL Amendment (SAFMC 2011c) and landings are low, **Preferred Alternative 5** is not expected to have negative or positive effects on fishermen and communities.

### Action 2. Clarify regulations for the golden tilefish longline endorsement to reflect the South Atlantic Council's intent regarding to which gear-specific quota endorsement holders may fish under

**Alternative 1 (No Action).** Vessels with golden tilefish longline endorsements *are not* eligible to fish for golden tilefish using hook-and-line gear under the 500-pound gutted weight golden tilefish hook-and-line trip limit (50 CFR 622.191(2)(ii)).

**Alternative 2.** Revise the golden tilefish longline endorsement regulations to indicate that vessels that have valid or renewable golden tilefish longline endorsements *are not* eligible to fish for golden tilefish using hook-and-line gear under the 500-pound gutted weight golden tilefish hook-and-line trip limit.

**Preferred Alternative 3.** Revise the golden tilefish longline endorsement regulation to indicate that vessels that have valid or renewable golden tilefish longline endorsements anytime during the golden tilefish fishing year *are not* eligible to fish for golden tilefish using hook-and-line gear under the 500-pound gutted weight golden tilefish hook-and-line trip limit.

# Summary of Effects

## Biological Effects

The golden tilefish hook-and-line quota is 135,324 lbs gutted weight (gw), and the longline quota is 405,971 lbs gw. Together these quotas equal the commercial sector ACL of 541,295 lbs gw. Each quota is managed with its own AM. If commercial hook-and-line landings reach or are projected to reach the hook-and-line quota, the hook-and-line component of the commercial sector will be closed for the remainder of the fishing year. If commercial longline landings reach or are projected to reach the longline quota, the longline component of the commercial sector will be closed for the remainder of the fishing year. After the commercial ACL for the longline component is met or is projected to be met, golden tilefish may not be fished for or possessed by a vessel with a golden tilefish longline endorsement. Regardless of which alternative the South Atlantic Council chooses under this action, including **Alternative 1 (No Action)**, no biological impacts are expected because overall harvest in the commercial sector is limited to the commercial ACL by the commercial hook-and-line and longline AMs.

**Alternative 2** would revise the current golden tilefish longline endorsement regulations to include the phrase "valid or renewable" to indicate that longline endorsement holders may not fish on the hook-and-line quota if their endorsement is valid or renewable. Though inclusion of this verbiage clarifies, to some extent, the South Atlantic Council's intent to not allow longline endorsement holders to fish on the hook-and-line quota, it does not address the issue of endorsement holders transferring their endorsement to another vessel with a valid or renewable Unlimited or 225 Snapper

Grouper Permit once the longline quota is reached in order to be able to legally fish on the hook-and-line quota.

**Preferred Alternative 3** is the only alternative that addresses both the endorsement transfer issue as well as clarifying that holders of valid or renewable golden tilefish longline endorsements may not fish on the hook-and-line quota at any point during the fishing year. By explicitly stating that fishermen who have a valid or renewable golden tilefish longline endorsement anytime during the golden tilefish fishing year are not eligible to fish for golden tilefish using hook-and-line gear under the 500-lbs gw hook-and-line trip limit, transferring an endorsement to another vessel in order to be able to fish on the hook-and-line quota after the longline quota has been reached would be prohibited.

## Economic Effects

The intent of this action is to close an unintended loophole created thorugh implementation of Amendment 18B (SAFMC 2012). As explained previously, anecdotal information indicates that one or more golden tilefish longline endorsement holders have exploited the loophole in the regulatory text that implemented the endorsement program.

It is not clear how many participants in the fishery have been fishing with hook-and-line gear and have a renewable golden tilefish endorsement since data for 2014 are not complete. However, fishermen who participated in both the longline and hook-and-line components of the fishery would potentially experience direct negative economic effects based on foregone losses from no longer being able to do so. Presumably, because **Preferred Alternative 3** has more stringent criteria than **Alternative 2** in terms of keeping golden tilefish endorsement holders from participating in the hook-and-line component of the fishery, **Preferred Alternative 3** would affect more golden tilefish longline endorsement participants. Nonetheless, golden tilefish longline endorsement holders who also participated in the hook-and-line fishery would cause the hook-and-line portion of the commercial ACL for golden tilefish to be caught earlier.

As both the longline portion of the commercial ACL and the hook-and-line portion of the ACL are caught each year prior to the end of the fishing year, there is not expected to be any overall economic loss, just a shifting of who is eligible to participate in the fishery. However, **Preferred Alternative 3** and **Alternative 2** would result in the largest direct, negative economic effects to individual fishermen. From the perspective of the hook-and-line participants, **Alternative 1 (No Action)** would have the largest direct, negative economic effects whereas **Preferred Alternative 3** and **Alternative 2** would result in the largest direct, positive economic effects. But because the number of longline endorsement holders who have participated in the hook-and-line portion of the fishery is considered very low, the magnitude of the economic effects, positive or negative, is also small.

## Social Effects

Golden tilefish is an increasingly important species for the commercial sector, especially in certain areas on the central east coast of Florida (see **Section 3.3.2**), and the growing popularity may have contributed to increased competition among resource users, and the race to fish. Regulations in Amendment 18B (SAFMC 2012) were intended to reduce the potential for user conflict, but fishermen have reported a loophole allowing longline endorsement holders to access both longline and hook-and-line quota. **Alternative 1 (No Action)** would allow longline endorsement holders to continue to have access to the hook-and-line quota, which could result in increased user conflict between the gear types. **Alternative 1 (No Action)** would be the most beneficial to the longline endorsement holders by maintaining access to the hook-and-line quota, relative to the restrictions for longline endorsement holders under **Alternatives 2** and **Preferred Alternative 3.**

For hook-and-line fishermen, **Alternative 1 (No Action)** would be the least beneficial because the longline fishermen could continue to access the hook-and-line quota after the longline quota was caught. This could result in fairness concerns for the hook-and-line fishermen because the longline component was allocated 75% of the commercial ACL, and participation in the longline component is limited through the endorsement program. **Alternative 2** and **Preferred Alternative 3** would be more beneficial to the participants in the hook-and-line component by reducing the number of snapper grouper permit holders who can access the hook-and-line quota.

# Chapter 1. Introduction

## 1.1 What Actions Are Being Proposed in this Amendment?

Amendment 35 includes two actions. The first action evaluates whether or not black snapper, mahogany snapper, dog snapper, and schoolmaster are in need of federal management, and considers removing these species from the Snapper Grouper Fishery Management Plan (FMP). The South Atlantic Fishery Management Council (South Atlantic Council) has indicated that these species might not be in need of federal management because landings are extremely small, and the majority of the landings occur in state waters.

The second action considered in this amendment addresses regulations for the commercial harvest of golden tilefish. The final rule for Amendment 18B to the Snapper Grouper FMP (SAFMC 2012) established a longline endorsement program for the commercial golden tilefish component of the snapper grouper fishery. Currently, there are separate quotas and trip limits for the longline and hook-and-line sectors. An endorsement is required to fish with longline gear. Some fishermen believe they can transfer their golden tilefish longline endorsement to another vessel and then fish for golden tilefish using hook-and-line gear, or that they can renew their Federal commercial snapper grouper vessel permit at one time but wait to renew their golden tilefish longline endorsement and then fish for golden tilefish using hook-and-line gear while their endorsement is not valid. When Amendment 18B was developed, however, the South Atlantic Council did not intend for fishermen who qualified and obtained a golden tilefish longline endorsement to also be able to fish for golden tilefish using hook-and-line gear during the same fishing year. Amendment 35 provides alternatives that could modify the ability of fishermen with a golden tilefish longline endorsement to fish on the commercial hook-and-line quota.

### *South Atlantic Fishery Management Council*

- Responsible for conservation and management of fish stocks in the South Atlantic Region
- Consists of 13 voting members who are 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; recommends actions to NMFS for implementation
- Management area is from 3 to 200 nautical miles off the coasts of North Carolina, South Carolina, Georgia, and east Florida through Key West. For CMP species, the South Atlantic Council manages through the Mid-Atlantic Region

## 1.2 Who is Proposing the Amendment?

The South Atlantic Council develops the amendment and submits it to the National Marine Fisheries Service (NMFS) who, on behalf of the Secretary of Commerce, ultimately approves, disapproves, or partially approves, and implements the actions in the amendment through the development of regulations. NMFS is a line office of the National Oceanic and Atmospheric Administration. The South Atlantic Council and NMFS are also responsible for making this document available for public comment. The draft environmental assessment (EA) was made available to the public during the scoping process, public hearings, and in South Atlantic Council meeting briefing books. The final EA/amendment will be published for public comment during the notice of availability and proposed rule stages of the rulemaking process. The public hearing draft and final EA/amendment may be found online at: http://sero.nmfs.noaa.gov/sustainable_fisheries/s_atl/sg/2014/am35/index.html and on the South Atlantic Council website at www.safmc.net.

## 1.3 Purpose and Need Statement

### Purpose for Actions

The purpose of Amendment 35 is to ensure that only snapper grouper species that require federal management are included in the Snapper Grouper FMP, that regulations for snapper grouper species in south Florida are as consistent as possible across state and federal jurisdictional boundaries, and that regulations implemented to govern the use of golden tilefish longline endorsements are aligned with the South Atlantic Council's intent for establishing the endorsement program.

### Need for Actions

In accordance with national standards set forth in the Magnuson-Stevens Fishery Conservation and Management Act, the need for Amendment 35 is to simplify federal management of the snapper grouper fishery without reducing protection for species rarely caught in states other than Florida, make regulations consistent across jurisdictional boundaries, and ensure that regulations for commercially harvested golden tilefish are clear as to what quota golden tilefish longline endorsement holders may fish under; while minimizing, to the extent practicable, adverse socioeconomic impacts.

# Chapter 2. Proposed Actions and Alternatives

## Action 1. Remove species from the Snapper Grouper Fishery FMP

**Alternative 1. No Action.** Retain the current species in the Snapper Grouper FMP.

**Preferred Alternative 2.** Remove black snapper (*Apsilus dentatus*) from the Snapper Grouper FMP.

**Preferred Alternative 3.** Remove dog snapper (*Lutjanus jocu*) from the Snapper Grouper FMP.

**Preferred Alternative 4.** Remove mahogany snapper (*Lutjanus mahogoni*) from the Snapper Grouper FMP.

**Preferred Alternative 5.** Remove schoolmaster* (*Lutjanus apodus*) from the Snapper Grouper FMP.
*Note this species is currently an ecosystem component species.

*Discussion*

Harvest of the four species addressed under this action from federal waters and in state waters other than Florida is extremely low. Below is a summary of landings for each species to illustrate this point.

**Black Snapper**

Total annual landings (recreational and commercial) of black snapper were 0 pounds whole weight (lbs ww) from 1986 through 1990; less than 500 lbs ww in 1991 and 1992; less than 5,000 lbs ww in 1993 and 1994; less than 600 lbs ww with some years of 0 lbs ww from 1995 through 2013. There were no landings of black snapper in Georgia through North Carolina from 1986 through 2013.

**Dog Snapper**

Total annual landings (recreational and commercial) of dog snapper were less than 8,000 lbs ww from 1986 through 2012 except in 2007 when landings increased to approximately 25,000 lbs ww. Total landings in Georgia through North Carolina from 1986 through 2005 were 0 lbs ww except in 2000 when total landings were approximately 6,000 lbs ww; from 2006 through 2013, total landings were approximately 400 lbs ww.

**Mahogany Snapper**

Total annual landings (recreational and commercial) of mahogany snapper were approximately 600 lbs ww from 1986 through 2013 except 1999 and 2007 when landings increased to approximately 4,000 lbs ww. There were no landings of mahogany snapper in Georgia through North Carolina from 1986 through 2013 except in 2010 when total landings for these states were approximately 500 lbs ww.

**Schoolmaster**

Total annual landings (recreational and commercial) of schoolmaster were less than 15,000 lbs ww from 1986 through 2013. There were no landings of schoolmaster in Georgia through North Carolina from 1986 through 2013 except in 1995 when less than 500 lbs ww were landed.

The South Atlantic Council removed 13 species (black margate, bluestriped grunt, crevalle jack, French grunt, grass porgy, porkfish, puddingwife, queen triggerfish, sheepshead, smallmouth grunt, Spanish grunt, tiger grouper, and yellow jack) from the Snapper Grouper FMP through the Comprehensive Annual Catch Limit (ACL) Amendment (SAFMC 2011c) because they were not in need of federal management. The fishery management unit (FMU) defined by each Council fishery management plan (FMP) identifies the specific fishery (or that portion thereof) that is relevant to the FMP's management objectives. Decisions about the composition of FMUs are an integral part of the plan development process, as FMUs define the specific species that are to be the target of federal conservation and management. The National Marine Fishery Service (NMFS) guidelines for determining whether to include species in a FMP for purposes of federal conservation and management direct the Councils to consider the following seven factors (50 CFR §600.340(b)(2)):

1. The importance of the fishery to the Nation and the regional economy;
2. whether an FMP can improve the condition of the stock;
3. the extent to which the fishery could be or already is adequately managed by states;
4. whether an FMP can further the resolution of competing interests and conflicts;
5. whether an FMP can produce more efficient utilization of the fishery;
6. whether an FMP can foster orderly growth of a developing fishery; and
7. costs of the FMP balanced against benefits.

The South Atlantic Council removed 13 species from the Snapper Grouper FMP because they determined the species were not in need of federal management. Very low landings and the high percentage of landings in Florida state waters indicated these species were not of extreme importance to the Nation and regional economy. Furthermore, the species could be or already were adequately managed by the state of Florida. Similarly, the South Atlantic Council also determined blue runner was not in need of federal management and removed it from the Snapper Grouper FMP through Amendment 27 (SAFMC 2013d). State management was determined to be more appropriate for this species since a large percentage of landings occur in state waters (76% from 2005 through 2011). Furthermore, 99% are caught in waters off Florida, and the

State of Florida was willing to extend existing regulations into federal waters and put in place any other management measures the state deems appropriate for the sustainable management of the species.

The Gulf of Mexico Fishery Management Council determined dog snapper, mahogany snapper, and schoolmaster were not in need of federal management and removed them from the Reef Fish Fishery Management Plan in the Final Generic ACL/Accountability Measures Amendment dated September 2011 (GMFMC 2011). The amendment indicated that these species have low landings in federal waters, and inclusion of these species in the fishery management plan is unlikely to improve the condition of the stock, produce more efficient utilization of the resources, or foster orderly growth of a developing fishery because catches of these species have been largely constrained by their availability to the fishery rather than by fishery regulations.

Representatives from the State of Florida have requested the South Atlantic Council remove black snapper, dog snapper, mahogany snapper, and schoolmaster from the Snapper Grouper FMP. If these four species were removed from the FMP Florida has indicated they would extend Florida state regulations into federal waters off Florida. FWC's intent is outlined in a letter to the South Atlantic Council dated November 26, 2014. The South Atlantic Council may decide on removal of the subject species from the FMP on a species-by-species basis (**Preferred Alternatives 2-5**).

The South Atlantic Council is not considering making dog snapper, mahogany snapper, and black snapper ecosystem component species in this amendment because the objective is establish a consistent regulatory environment across the jurisdictional boundaries of the South Atlantic, Gulf of Mexico, and Florida state waters. Because these species are not managed by the Gulf Council, retaining them in the Snapper Grouper FMP as ecosystem component species would not create consistent regulations across all three jurisdictional boundaries and would not meet the purpose and need of this amendment. Additionally, if they are made ecosystem component species, and if schoolmaster is retained as an ecosystem component species in the FMP, the state of Florida would not be able to extend their management authority for those species into federal waters because states may not manage species included in federal fishery management plans in federal waters.

## Action 2. Clarify regulations for the golden tilefish longline endorsement to reflect the South Atlantic Council's intent regarding which gear-specific quota endorsement holders may fish under.

**Alternative 1 (No Action).** Vessels with golden tilefish longline endorsements *are not* eligible to fish for golden tilefish using hook-and-line gear under the 500-pound gutted weight golden tilefish hook-and-line trip limit (50 CFR 622.191(2)(ii)).

**Alternative 2.** Revise the golden tilefish longline endorsement regulations to indicate that vessels that have valid or renewable golden tilefish longline endorsements *are not* eligible to fish for golden tilefish using hook-and-line gear under the 500-pound gutted weight golden tilefish hook-and-line trip limit.

**Alternative 3.** Revise the golden tilefish longline endorsement regulation to indicate that vessels that have valid or renewable golden tilefish longline endorsements anytime during the golden tilefish fishing year *are not* eligible to fish for golden tilefish using hook-and-line gear under the 500-pound gutted weight golden tilefish hook-and-line trip limit.

*Discussion*

The final rule for Amendment 18B to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (78 FR 23858, April 23, 2013; SAFMC 2012) established a longline endorsement program for the commercial golden tilefish component of the snapper grouper fishery and modified the golden tilefish commercial trip limits. Currently, there are separate quotas and trip limits for the longline and hook-and-line sectors. An endorsement is required to fish with longline gear. Furthermore, one of the regulations regarding golden tilefish trip limits implemented by the final rule for Amendment 18B states, "Vessels with a golden tilefish longline endorsement are not eligible to fish for golden tilefish using hook-and-line gear under this 500-lb (227-kg) trip limit." The golden tilefish endorsement, along with sector quotas and trip limits was put in place because the commercial annual catch limit was being caught very rapidly with longline gear, and fishermen who had historically used hook-and-line gear to target golden tilefish were not able to participate in the golden tilefish portion of the snapper grouper fishery.

However, it was recently brought to the South Atlantic Council's attention that some endorsement holders believe they can transfer their golden tilefish longline endorsement to another vessel and then fish for golden tilefish using hook-and-line gear, or that they can renew their Federal commercial snapper grouper vessel permit at one time but wait to renew their golden tilefish longline endorsement and then fish for golden tilefish using hook-and-line gear while their endorsement is not valid. Additionally, some fishery participants may obtain two commercial federal snapper grouper permits, one with an endorsement and one without, in order to transfer the different permits on an off the same vessel within a single fishing season to be able to fish under both the longline and the hook-and-line quotas. Based on comments during the June 2012 Council meeting, none of these scenarios appeared to be the intent of the South

Atlantic Council at that time. For example, during the June 2012 South Atlantic Council meeting, one South Atlantic Council member stated, "Well, certainly that was the intent was not to have the longliners fish [on the hook-and-line trip limit]. If you had landings under the longline endorsement in any year, you would be precluded from participating in the hook-and-line 500-lb [227-kg] quota." Another South Atlantic Council member stated, "I think the way it is going to go is if the vessel has got the endorsement on it, then he can't fish [using hook-and-line gear]..." Therefore, the South Atlantic Council did not intend for fishermen who qualified and obtained a golden tilefish longline endorsement to also be able to fish for golden tilefish using hook-and-line gear during the same fishing year.

Under **Alternative 1 (No Action)**, the regulations do not prohibit fishermen from transferring their golden tilefish longline endorsement to another vessel and then using hook-and-line gear to fish for golden tilefish. Further, under **Alternative 1 (No Action)** fishermen could choose to renew their Federal commercial snapper grouper vessel permit but wait to renew their golden tilefish longline endorsement, and then fish for golden tilefish using hook-and-line gear while their endorsement is not valid.

Under **Alternative 2**, vessels that have *valid or renewable* golden tilefish longline endorsements ("valid" means the endorsements are in a status where the vessels may fish for golden tilefish using longline gear; "renewable" means the endorsements are expired, but still able to be renewed, and the endorsements are in a status where the vessels may not fish for golden tilefish using longline gear) would not be eligible to fish for golden tilefish using hook-and-line gear under the 500-pound gutted weight golden tilefish hook-and-line trip limit. This would prevent fishermen from renewing only their snapper grouper permit and not their endorsement, so that they could fish on the hook-and-line quota when their golden tilefish longline endorsement is in renewable status (i.e., expired but still able to be renewed). However, under this scenario fishermen would still be able to transfer their endorsement to another vessel, or transfer a permits with and without an endorsement on and off of the same vessel, to enable them to fish on the hook-and-line quota.

Under **Preferred Alternative 3,** if a vessel has had a golden tilefish endorsement issued to it, and that endorsement is in a valid or renewable status anytime during the fishing year, that vessel may not fish for golden tilefish using hook-and-line gear any time during that fishing year. This alternative would prevent people who have obtained two commercial federal snapper grouper permits, one with an endorsement and one without, to transfer those on and off the same vessel within a single fishing season in order to fish under the longline and hook-and-line quotas. Based on the minutes from the June 2012 Council meeting, **Preferred Alternative 3** was the intent of the Council at that time.

# Chapter 3. Affected Environment

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

- **Habitat environment** (Section 3.1)
- **Biological and Ecological environment** (Section 3.2)
- **Economic and Social environment** (Sections 3.3)
- **Administrative environment** (Section 3.4)

## 3.1 Habitat Environment

### 3.1.1 Inshore/Estuarine Habitat

Many snapper grouper species utilize both pelagic and benthic habitats during several stages of their life histories; larval stages of these species live in the water column and feed on plankton. Most juveniles and adults are demersal (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 daytime feeding migrations or seasonal shifts in cross-shelf distributions. Additional information on the habitat utilized by species in the Snapper Grouper Complex is included in Volume II of the Fishery Ecosystem Plan (FEP; SAFMC 2009b) and incorporated here by reference. The FEP can be found at: http://www.safmc.net/ecosystem-management/fishery-ecosystem-plan-1.

### 3.1.2 Offshore Habitat

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

The exact extent and distribution of productive snapper grouper habitat on the continental shelf north of Cape Canaveral, Florida is unknown. Current data suggest from 3 to 30% of the shelf is suitable habitat for these species. These live-bottom habitats may include low relief areas, supporting sparse to moderate growth of sessile (permanently attached) invertebrates, moderate relief reefs from 0.5 to 2 meters (1.6 to 6.6 ft), or high relief ridges at or near the shelf break consisting of outcrops of rock that are heavily encrusted with sessile invertebrates such as sponges and sea fan species. Live-bottom habitat is scattered irregularly over most of the shelf north of Cape Canaveral but is most abundant offshore from northeastern Florida. South of Cape Canaveral the continental shelf narrows from 56 to 16 kilometers (35 to 10 mi) wide off the southeast coast of Florida and the Florida Keys. The lack of a large shelf area, presence of extensive, rugged living fossil coral reefs, and dominance of a tropical Caribbean fauna are distinctive benthic characteristics of this area.

Rock outcroppings occur throughout the continental shelf from Cape Hatteras, North Carolina to Key West, Florida (MacIntyre and Milliman 1970; Miller and Richards 1979; Parker et al. 1983), which are principally composed of limestone and carbonate sandstone (Newton et al. 1971), and exhibit vertical relief ranging from less than 0.5 to over 10 meters (33 ft). Ledge systems formed by rock outcrops and piles of irregularly sized boulders are also common. Parker et al. (1983) estimated that 24% (9,443 $km^2$) of the area between the 27 and 101 meter (89 and 331 ft) depth contours from Cape Hatteras, North Carolina to Cape Canaveral, Florida is reef habitat. Although the bottom communities found in water depths between 100 and 300 meters (328 and 984 ft) from Cape Hatteras, North Carolina to Key West, Florida is relatively small compared to the whole shelf, this area, based upon landing information of fishers, constitutes prime reef fish habitat and probably significantly contributes to the total amount of reef habitat in this region.

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 un-vegetated areas of little or no relief. There are several notable shipwrecks along the southeast coast in state and federal waters including Lofthus (eastern Florida), SS Copenhagen (southeast Florida), Half Moon (southeast Florida), Hebe (Myrtle Beach, South Carolina), Georgiana (Charleston, South Carolina), U.S.S. Monitor (Cape Hatteras, North Carolina), Huron (Nags Head, North Carolina), and Metropolis (Corolla, North Carolina).

The distribution of coral and live hard bottom habitat as presented in the Southeast Marine Assessment and Prediction Program (SEAMAP) bottom mapping project is a proxy for the distribution of the species within the snapper grouper complex. The method used to determine hard bottom habitat relied on the identification of reef obligate species including members of the snapper grouper complex. The Florida Fish and Wildlife Research Institute (FWRI), using the best available information on the distribution of hard bottom habitat in the South Atlantic region, prepared ArcView maps for the four-state project. These maps, which consolidate known distribution of coral, hard/live bottom, and artificial reefs as hard bottom, are available on the South Atlantic Council's online map services provided by the newly developed SAFMC Habitat and Ecosystem Atlas: http://ocean.floridamarine.org/safmc_atlas/. An introduction to the system is found at: http://www.safmc.net/ecosystem-management/mapping-and-gis-data.

Plots of the spatial distribution of offshore species were generated from the Marine Resources Monitoring, Assessment, and Prediction Program (MARMAP) data. The plots serve as point confirmation of the presence of each species within the scope of the sampling program. These plots, in combination with the hard bottom habitat distributions previously mentioned, can be employed as proxies for offshore snapper grouper complex distributions in the south Atlantic region. Maps of the distribution of snapper grouper species by gear type based on MARMAP data can also be generated through the South Atlantic Council's Internet Mapping System at the above address.

Additional information on the habitat utilized by snapper grouper species is included in Volume II of the Fishery Ecosystem Plan (SAFMC 2009b). The FEP can be found at: http://www.safmc.net/ecosystem-management/fishery-ecosystem-plan-1.

### 3.1.3 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. Specifically, estuarine/inshore EFH includes: Estuarine emergent and mangrove wetlands, submerged aquatic vegetation, oyster reefs and shell banks, intertidal flats, palustrine emergent and forested systems, aquatic beds, and estuarine water column. Additionally, marine/offshore EFH includes: live/hard bottom habitats, coral and coral reefs, artificial and manmade reefs, *Sargassum* species, and marine water column.

EFH utilized by snapper grouper species in this 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 ft (but to at least 2,000 ft 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 meter (100-ft) contour, such as attached macroalgae; 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.

### 3.1.4 Habitat Areas of Particular Concern

Areas which meet the criteria for Essential Fish Habitat-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; South Atlantic Council-designated Artificial Reef Special Management Zones (SMZs); and deepwater MPAs. Areas that meet the criteria for EFH-HAPCs include habitats required during each life stage (including egg, larval, postlarval, juvenile, and adult stages).

In addition to protecting habitat from fishing related degradation though fishery management plan regulations, the South Atlantic Council, in cooperation with NMFS, actively comments on non-fishing projects or policies that may impact essential fish habitat. With guidance from the Habitat Advisory Panel, the South Atlantic Council has developed and approved policies on: energy exploration, development, transportation and hydropower re-licensing; beach dredging and filling and large-scale coastal engineering; protection and enhancement of submerged aquatic vegetation; alterations to riverine, estuarine and near shore flows; offshore aquaculture; and marine invasive species and estuarine invasive species.

The potential impacts the actions in this amendment may have on EFH, and EFH-HAPCs are discussed in **Chapter 4** of this document.

## 3.2 Biological and Ecological Environment

### 3.2.1 Fish Populations Affected by this Amendment

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 dictates the nature of the fishery (multi-species) and further forms the type of management regulations proposed in this document.

Life history, biological characteristics, and stock status information for golden tilefish may be found the Southeast Data, Assessment, and Review (SEDAR) report, SEDAR 25 (2011),

which is available on the SEDAR web site http://www.sefsc.noaa.gov/sedar/ and is hereby incorporated by reference (see **Section 3.2.3** of this document for more information on the SEDAR process). Black snapper, dog snapper, and mahogany snapper are considered data poor species and have not been assessed through the SEDAR stock assessment process. Black snapper are not commonly caught but are likely to be retained by commercial and recreational fishermen because, like mahogany snapper, they would be desired above many other species as a food fish (SAFMC 2011c). Black snapper were placed in the Deepwater Complex through the Comprehensive ACL Amendment (SAFMC 2011c), because they are closely associated with other deepwater snapper grouper species.

Adult dog snapper are found offshore over coral and rocky reef, and juveniles are associated with estuaries. Dog snapper spawn from spring through fall, and are known as a night feeders, eating mostly fishes, mollusks, and crustaceans (SAFMC 2014 http://safmc.net/FishIDandRegs/FishGallery/DogSnapper/).

Mahogany snapper occur from North Carolina to Venezuela, including the Gulf of Mexico and Caribbean Sea. This species is common in the Caribbean but is rare in US waters. The mahogany snapper occurs in nearshore water as deep as 100 m (328 ft). It is usually found in clear, shallow water over rocky bottoms near coral reefs but occurs less frequently in sandy areas or seagrass. It often forms large aggregations during the day and has been observed to school with white grunt at Grand Cayman. The Spanish name, ojanco, refers to its large eyes; a night feeder, with diet of smaller fishes (SAFMC 2014 http://safmc.net/fish-id-and-regs/mahogany-snapper).

According to the Florida Fish and Wildlife Conservation Commission (FWC) (http://myfwc.com/wildlifehabitats/profiles/saltwater/snapper/schoolmaster/), schoolmaster are similar in appearance to the dog snapper, *L. jocu*. Juvenile schoolmaster are found in grassy flats, while adults frequent nearshore areas, especially around elkhorn coral reefs. Large adults are sometimes found on the continental shelf. Schoolmaster spawn in July and August, and they may attain sizes up to 8 lb and 24 inches. They feed on crustaceans, small fishes, and gastropods.

An expanded discussion of life history traits, population characteristics, and stock status of snapper grouper species affected by this amendment can be found in **Sections 3.2.1** and **3.3** of the Comprehensive Annual Catch Limit Amendment (SAFMC 2011c), which are hereby incorporated by reference and may be found at https://www.dropbox.com/s/mp3xwedsrarfpjn/Comp%20ACL%20Am%20101411%20FINAL.pdf.

### 3.2.2 Other Species Affected

For details on the life histories and ecology of co-occurring species, the reader is referred to Volume II of the Fishery Ecosystem Plan (SAFMC 2009b) available at: http://www.safmc.net/ecosystem-management/fishery-ecosystem-plan-1.

### 3.2.3 The Stock Assessment Process

SEDAR is a cooperative Fishery Management Council process initiated to improve the quality and reliability of fishery stock assessments in the South Atlantic, Gulf of Mexico, and U.S. Caribbean. The Caribbean, Gulf of Mexico, and South Atlantic Fishery Management Councils manage SEDAR in coordination with the National Marine Fisheries Service (NMFS) and the Atlantic and Gulf States Marine Fisheries Commissions. SEDAR seeks improvements in the scientific quality of stock assessments, constituent and stakeholder participation in assessment development, transparency in the assessment process, and a rigorous and independent scientific review of completed stock assessments.

SEDAR is organized around three workshops. First is the Data Workshop, during which fisheries monitoring and life history data are reviewed and compiled. Second is the Assessment Workshop, which may be conducted via a workshop and several webinars, during which assessment models are developed and population parameters are estimated using the information provided from the Data Workshop. Third and final is the Review Workshop, during which independent experts review the input data, assessment methods, and assessment products. The completed assessment, including the reports of all three workshops and all supporting documentation, are then forwarded to the South Atlantic Council's Scientific and Statistical Committee (SSC). The SSC considers whether the assessment represents the best available science and develops fishing level recommendations for South Atlantic Council consideration.

SEDAR workshops are public meetings organized by SEDAR. Workshop participants appointed by the lead Council are drawn from state and federal agencies, non-government organizations, Council members, Council advisors, and the fishing industry with a goal of including a broad range of disciplines and perspectives. All participants are expected to contribute to this scientific process by preparing working papers, contributing data, providing assessment analyses, evaluating and discussing information presented, and completing the workshop report.

### 3.2.4 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. Information on these, as well as sea turtles and smalltooth sawfish and how they are adversely affected by the snapper grouper fishery are discussed below.

Subsequent to the June 7, 2006, biological opinion, elkhorn and staghorn coral (*Acropora cervicornis* and *Acropora palmata*) were listed as threatened. In a consultation memorandum dated July 9, 2007, NMFS concluded the continued authorization of the South Atlantic snapper grouper fishery is not likely to adversely affect these *Acropora* species. On November 26, 2008, an *Acropora* critical habitat was designated. In a consultation memorandum dated December 2, 2008, NMFS concluded the continued authorization of the snapper grouper fishery is not likely to adversely affect *Acropora* critical habitat. On September 10, 2014, NMFS listed 20 new coral species under the ESA, five of those species occur in the Caribbean (including Florida) and all of these are listed as threatened. The 2 previously listed *Acropora* coral species remain protected as threatened. In a memorandum dated September 11, 2014, NMFS indicated that the previous determination remains valid and the South Atlantic snapper grouper fishery is still not likely to adversely affect *Acropora* corals.

The September 10, 2014, final listing rule provided some new information on the threats facing *Acropora*; however, none of the information suggested that previous determinations were no longer valid. For this reason, a memo dated September 11, 2014, indicates that previous determination remains valid and the South Atlantic snapper grouper fishery is still not likely to adversely affect *Acropora* corals. For the remaining 5 species of coral (*Mycetophyllia ferox, Dendrogyra cylindrus, Orbicella annularis, O.faveolata, and O.franksi*), the threats to corals from fishing identified in the status review for these species (SSR) include (1) trophic effects, (2) human-induced physical damage, and (3) destructive fishing practices. The September 11, 2014, memo indicates South Atlantic snapper grouper fishery will not cause trophic effects because it does not capture herbivorous fish.

#### 3.2.4.1 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, 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 1987, 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 1986). 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).

Sea turtles are vulnerable to capture by bottom longline and vertical hook-and-line gear. The magnitude of the interactions between sea turtles and the South Atlantic snapper grouper fishery was evaluated in NMFS (2006) using data from the Supplementary Discard Data Program (SDDP). Three loggerheads and three unidentified sea turtles were caught on vertical lines; one leatherback and one loggerhead were caught on bottom longlines, all were released alive. The effort reported in the program represented between approximately 5% and 14% of all South Atlantic snapper grouper fishing effort. These data were extrapolated in NMFS (2006) to better estimate the number of interactions between the entire snapper-grouper fishery and ESA-listed sea turtles. The extrapolated estimate was used to project future interactions (**Table 3.2.4.1**).

**Table 3.2.4.1.** Three-year South Atlantic anticipated takes sea turtles in the snapper grouper fishery.

| Species | Amount of Take | Total |
|---|---|---|
| Green | Total Take | 39 |
| | Lethal Take | 14 |
| Hawksbill | Total Take | 4 |
| | Lethal Take | 3 |
| Kemp's Ridley | Total Take | 19 |
| | Lethal Take | 8 |
| Leatherback | Total Take | 25 |
| | Lethal Take | 15 |
| Loggerhead | Total Take | 202 |
| | Lethal Take | 67 |

Source: NMFS 2006. NMFS (National Marine Fisheries Service). 2006. Endangered Species Act Section 7 consultation on the continued authorization of snapper grouper fishing under the Snapper Grouper FMP and Proposed Amendment 13C. Biological Opinion. June 7.

The SDDP does not provide data on recreational fishing interactions with ESA-listed sea turtle species. However, anecdotal information indicates that recreational fishermen occasionally take sea turtles with hook-and-line gear. The biological opinion also used the extrapolated data from the SDDP to estimate the magnitude of recreational fishing on sea turtles (**Table 3.2.4.1**).

Regulations implemented through Amendment 15B to the Snapper Grouper FMP (74 FR 31225; June 30, 2009; SAFMC 2008b) required all commercial or charter/headboat vessels with a South Atlantic snapper grouper permit, carrying hook-and-line gear on board, to possess required literature and release gear to aid in the safe release of incidentally caught sea turtles and smalltooth sawfish. Comprehensive Ecosystem-Based Amendment 2 modified these requirements (76 FR 82183; December 30, 2011; SAFMC 2011e) by requiring different gear for vessels with different freeboard heights, mirroring the requirements in the Gulf of Mexico. These regulations are thought to decrease the mortality associated with accidental interactions with sea turtles and smalltooth sawfish.

On July 10, 2014, NMFS published a final rule designating critical habitat for the Northwest Atlantic Ocean (NWA) Loggerhead Sea Turtle DPS in the *Federal Register* (79 FR 39856). The final rule, effective August 11, 2014, designates 38 marine areas within the Atlantic Ocean and Gulf of Mexico, which contain the physical or biological features essential for the conservation of the loggerhead sea turtle. A memorandum dated September 16, 2014, evaluated the effects of continued authorization of federal fisheries, including snapper grouper, on the newly-designated critical habitat. The memo concluded that activities associated with the snapper grouper fishery would not adversely affect any of the NWA loggerhead DPS critical habitat units.

### 3.2.4.2 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).

On September 22, 2011, NMFS and the U.S. Fish and Wildlife Service determined the loggerhead sea turtle population consists of nine distinct population segments (DPSs) (76 FR 58868). Previously, loggerhead sea turtles were listed as threatened species throughout their global range. The snapper grouper fishery interacts with loggerhead sea turtles from what is now considered the Northwest Atlantic (NWA) DPS, which remains listed as threatened. Five DPSs of Atlantic sturgeon were also listed since the completion of the 2006 biological opinion. In a consultation memorandum dated February 15, 2012, NMFS concluded the continued authorization of the South Atlantic snapper grouper fishery is not likely to adversely affect the Atlantic sturgeon. The February 15, 2012, memorandum also stated that because the 2006 biological opinion had evaluated the impacts of the fishery on the loggerhead subpopulations now wholly contained within the NWA DPS, the opinion's conclusion that the fishery is not likely to jeopardize the continued existence of loggerhead sea turtles remains valid.

## 3.3 Economic and Social Environment

### 3.3.1 Economic Environment

A description of the black snapper, dog snapper, mahogany snapper, schoolmaster and golden tilefish stocks are provided in **Section 3.2**. Additional details on the South Atlantic Snapper Grouper Fishery can be found in previous Snapper Grouper amendments [Amendment 13C (SAFMC 2006), Amendment 15A (SAFMC 2008a), Amendment 15B (SAFMC 2008b), Amendment 17A (SAFMC 2010a), Amendment 17B (SAFMC 2010b), Amendment 16 (SAFMC 2009a), Regulatory Amendment 9 (SAFMC 2011a), Regulatory Amendment 10 (SAFMC 2011b), Comprehensive ACL Amendment for the South Atlantic Region (SAFMC 2011c) and Amendment 24 (SAFMC 2011d)] and are incorporated herein by reference.

#### 3.3.1.1 Economic Description of the Commercial Sector

The major sources of data summarized in this description are the NMFS SERO Permits Information Management System (PIMS), SEFSC Commercial ACL Dataset and the Federal Logbook System (FLS), supplemented by average prices calculated from the Accumulated Landings System (ALS) and price indices taken from the Bureau of Labor Statistics. Landings from the FLS do not include all landings shown from the ACL dataset due to landings by

fishermen who do not have the federal snapper grouper permit and are not required to complete the logbook; non-reporting in the logbook program is also an issue.

### Permits

Any fishing vessel that harvests and sells any of the snapper grouper species from the South Atlantic EEZ must have a valid South Atlantic commercial snapper grouper permit, which is a limited access permit. There are currently 535 valid South Atlantic Snapper Grouper Unlimited Permits and 110 valid 225-lb Trip Limited Permits (**Table 3.3.1.1**). After a permit expires, it can be renewed and transferred up to one year after the date of expiration. The number of valid and/or renewable/transferable permits has declined since 2009 (**Table 3.3.1.2**).

**Table 3.3.1.1**. Valid and transferrable/renewable South Atlantic commercial snapper grouper permits as of November 3, 2014.

| South Atlantic SG Permits | Unlimited lbs | 225-lb |
|---|---|---|
| **Valid** | 535 | 110 |
| **Renewable/Transferable** | 29 | 10 |
| **Total** | 564 | 120 |

Source: NMFS SERO PIMS, 2014.

**Table 3.3.1.2**. Number of South Atlantic commercial snapper grouper permits (2009 through 2013).

| | Unlimited | Limited 225-lb |
|---|---|---|
| **2009** | 639 | 144 |
| **2010** | 624 | 139 |
| **2011** | 615 | 138 |
| **2012** | 604 | 132 |
| **2013** | 593 | 130 |
| **Average** | 615 | 137 |

Source: Southeast Permits Database, NOAA Fisheries, SERO.

In order to fish for golden tilefish using longline gear, commercial vessels must have a snapper grouper permit with a valid golden tilefish longline endorsement. There were 22 valid and/or transferrable/renewable longline endorsements for golden tilefish as of November 12, 2014. Golden tilefish may otherwise be harvested under a 500-lb trip limit using hook-and-line gear. Currently, there are separate quotas and trip limits for the longline and hook-and-line sectors.

### Landings, Value, and Effort

**Black Snapper, Dog Snapper, Mahogany Snapper and Schoolmaster**

Aggregate landings and revenue (2004 through 2013)[1] for the four snapper species under consideration for removal from federal management are provided in **Table 3.3.1.3** along with the percentage of them harvested under federal and state jurisdictions. Overall, dog snapper, schoolmaster, mahogany snapper and black snapper were primarily harvested in federal waters and landed in Florida (**Table 3.3.1.4**).

**Table 3.3.1.3.** Total South Atlantic commercial landings and revenue from 2004 through 2013 for dog snapper, schoolmaster, mahogany snapper, and black snapper by jurisdiction (Federal and State Waters).

| | Federal | State | Not Defined* |
|---|---|---|---|
| | **Dog Snapper** | | |
| **Pounds (ww)** | 3,019 | 302 | 659 |
| **Percentage** | 75.9% | 7.6% | 16.6% |
| **Revenue (2013 $)** | $3,800 | $762 | $1,455 |
| | **Schoolmaster** | | |
| **Pounds (ww)** | 1,052 | 6 | 50 |
| **Percentage** | 94.9% | 0.5% | 4.5% |
| **Revenue (2013 $)** | $1,293 | $13 | $172 |
| | **Mahogany Snapper** | | |
| **Pounds (ww)** | 213 | 0 | 212 |
| **Percentage** | 50.1 | 0.0 | 49.9 |
| **Revenue (2013 $)** | $524 | $0 | $515 |
| | **Black Snapper** | | |
| **Pounds (ww)** | 929 | 32 | 76 |
| **Percentage** | 89.6% | 3.1% | 7.3% |
| **Revenue (2013 $)** | $1,935 | $140 | $177 |

Source: SEFSC Commercial ACL Dataset (July 2014).
* "Not Defined" refers to landings records with omitted jurisdiction information.

**Table 3.3.1.4.** Total South Atlantic commercial landings and revenue from 2004 through 2013 for dog snapper, schoolmaster, mahogany snapper, and black snapper by state.

| | Black Snapper | Dog Snapper | | Mahogany Snapper | Schoolmaster Snapper |
|---|---|---|---|---|---|
| | **FL** | **FL** | **SC** | **FL** | **FL** |
| **Pounds (ww)** | 1,037 | 3,797 | 183 | 416 | 1,108 |
| **Revenue** | $2,252 | $5,457 | $560 | $1,013 | $1,478 |
| **Percent** | 100% | 91% | 9% | 100% | 100% |

[1] A ten-year time range was used for dog snapper, schoolmaster, mahogany snapper, and black snapper analysis to protect dealer confidentiality.

Source: SEFSC Commercial ACL Dataset, excluding confidential data (July 2014).

On average there were less than 5 federally-permitted vessels from 2004 through 2013 that landed black snapper, dog snapper, mahogany snapper, and/or schoolmaster each year. Average revenues from these species accounted for well less than one percent of average total revenues received by these vessels.

**Golden Tilefish**

Golden tilefish is within the tilefishes group of the snapper grouper fishery. From 2009 through 2013, golden tilefish's 5-year commercial landings ranked 5th by weight and 4th by revenue among the 59 species within the snapper grouper complex. Annual commercial landings of golden tilefish in the South Atlantic ranged from about 367,000 lb ww to 602,000 lb ww from 2009 through 2013 (**Figure 3.3.1.1**). Dockside revenues from those landings ranged from about $0.9 million to $1.7 million (2013 $) (**Figure 3.3.1.1**). The average annual ex-vessel price for golden tilefish during those five years was $2.71 per pound ww (2013$). Commercial landings and revenues for golden tilefish peaked in 2013, with 2009 recording the lowest landings and revenues.

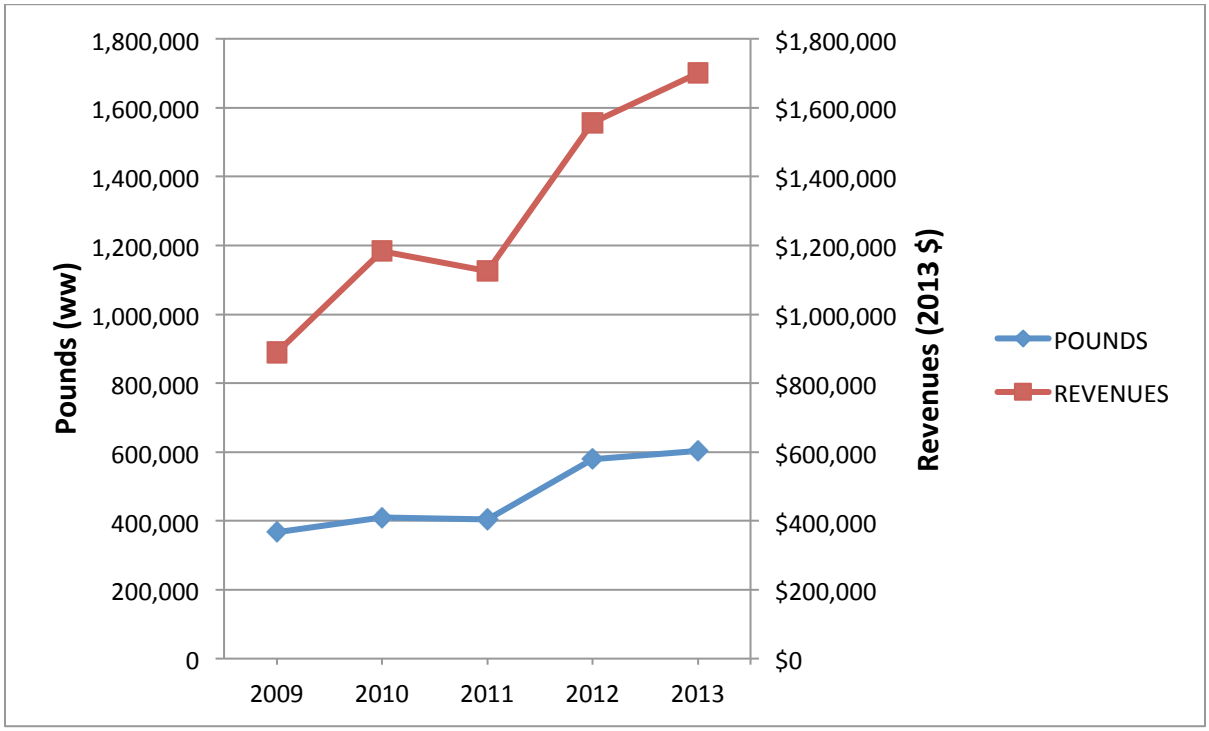


**Figure 3.3.1.1.** Annual commercial landings of golden tilefish by weight (lbs ww) and dockside revenue (2013 $).
Source: SEFSC Commercial ACL Dataset, excluding confidential data (July 2014).

Among the South Atlantic states, Florida and Georgia accounted for the majority of golden tilefish landings and revenue (**Figure 3.3.1.2** and **Figure 3.3.1.3**). There was however a substantial increase in the relative share of landings and revenue coming from North Carolina and South Carolina in 2013.

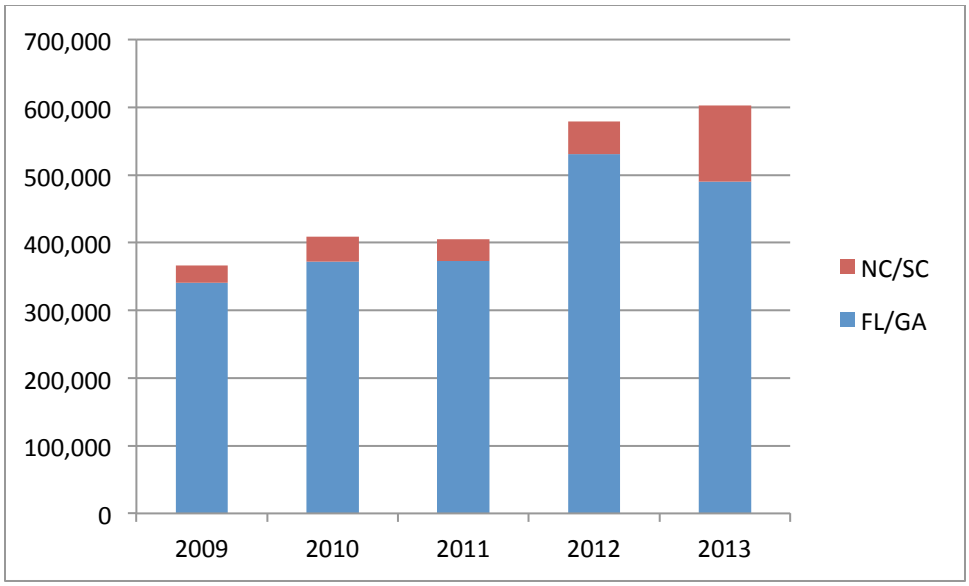


**Figure 3.3.1.2.** Landings of golden tilefish (lbs ww) by state, 2009–2013.
Source: SEFSC Commercial ACL Dataset, excluding confidential data (July 2014).

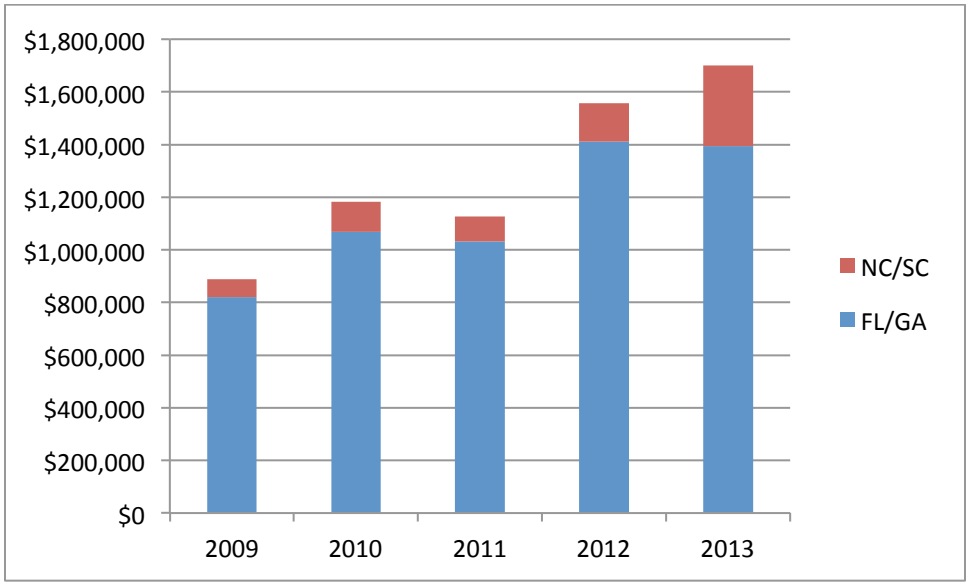


**Figure 3.3.1.3.** Golden tilefish dockside revenues (2013 $) by state, 2009–2013.
Source: SEFSC Commercial ACL Dataset, excluding confidential data (July 2014).

The average monthly distribution of landings and dockside revenues for the years 2009 through 2013 is shown in **Figure 3.3.1.4**. Average landings and revenues peaked in January and declined thereafter, with a slight uptick in October through December.

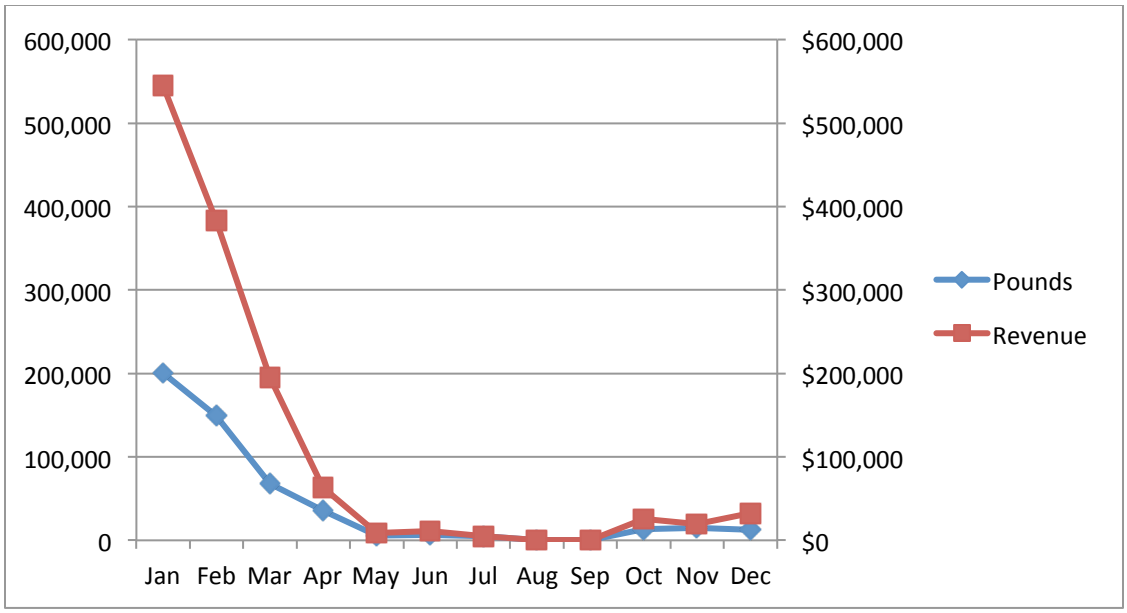


**Figure 3.3.1.4**. Average monthly golden tilefish landings (lbs ww) and revenues (2013 $), 2009–2013. Source: SEFSC Commercial ACL Dataset, excluding confidential data (July 2014).

From 2009 through 2013, an annual average of 59 vessels took 444 commercial golden tilefish trips. These vessels combined landed an average of 411,193 lbs (gw) of golden tilefish yearly, with a dockside value (2013 dollars) of $1,256,645 (**Table 3.3.1.5**). Average annual dockside revenue from golden tilefish landings represented approximately 88% of total dockside revenue from trips that landed golden tilefish from 2009 through 2013.

**Table 3.3.1.5.** Vessels and trips with golden tilefish landings by weight (lb gw) and dockside revenue (2013 $), 2009–2013.

| Year | Number of vessels that landed golden tilefish | Number of trips that landed golden tilefish | Golden tilefish landings (lbs gw) | Dockside revenue from golden tilefish (2013$) | Other species' landings caught jointly with golden tilefish (lbs ww) | Dockside revenue from 'other species' landed jointly with golden tilefish (2013 $) | Total dockside revenue (2013 $) from trips with golden tilefish landings |
|---|---|---|---|---|---|---|---|
| **2009** | 49 | 384 | 313,311 | $834,183 | 77,153 | $164,659 | $998,842 |
| **2010** | 51 | 358 | 370,463 | $1,161,830 | 58,327 | $125,381 | $1,287,211 |
| **2011** | 40 | 265 | 365,716 | $1,139,579 | 27,267 | $55,556 | $1,195,136 |
| **2012** | 74 | 687 | 491,268 | $1,515,017 | 65,774 | $141,453 | $1,656,470 |
| **2013** | 79 | 526 | 515,209 | $1,632,617 | 155,240 | $397,786 | $2,030,403 |
| **Average** | 59 | 444 | 411,193 | $1,256,645 | 76,752 | $176,967 | $1,433,612 |

Source: SEFSC Coastal Fisheries Logbook for weight and NMFS ALS for revenues.

On average, the vessels that harvested golden tilefish also took 2,272 trips per year without golden tilefish landings. Combining all sources of revenues, the average annual dockside revenues of vessels that landed golden tilefish was about $78,914 (2013 $) (**Table 3.3.1.6**). In

comparison, average annual golden tilefish dockside revenue per vessel was $21,444 (2013 $). Annual dockside revenue from golden tilefish landings represented, on average, approximately 27% of the total dockside revenue earned by these vessels from 2009 through 2013.

**Table 3.3.1.6.** Dockside revenues (2013 $) from all sources for vessels that landed golden tilefish, 2009–2013.

| Year | Number of vessels that landed golden tilefish | Dockside revenue from golden tilefish (2013 $) | Dockside revenue from 'other species' landed jointly with golden tilefish (2013 $) | Number of trips taken by these vessels that did not land golden tilefish | Dockside revenue from 'other species' landed on trips without golden tilefish (2013 $) | Total dockside revenue (2013 $) | Average total dockside revenue per vessel (2013 $) |
|---|---|---|---|---|---|---|---|
| **2009** | 49 | $834,183 | $164,659 | 2,137 | $2,579,391 | $3,578,233 | $73,025 |
| **2010** | 51 | $1,161,830 | $125,381 | 2,207 | $3,169,897 | $4,457,108 | $87,394 |
| **2011** | 40 | $1,139,579 | $55,556 | 1,638 | $1,827,744 | $3,022,880 | $75,572 |
| **2012** | 74 | $1,515,017 | $141,453 | 2,673 | $3,995,753 | $5,652,223 | $76,381 |
| **2013** | 79 | $1,632,617 | $397,786 | 2,703 | $4,463,091 | $6,493,494 | $82,196 |
| **Average** | 59 | $1,256,645 | $176,967 | 2,272 | $3,207,175 | $4,640,788 | $78,914 |

Source: SEFSC Coastal Fisheries Logbook for weight and NMFS ALS for revenues.

## Imports

Imports of seafood products compete in the domestic seafood market and have in fact been dominant in many segments of the seafood market. They help determine the price for domestic seafood products and tend to set the price in market segments where they dominate. Seafood imports have downstream effects on the local fish harvest market. At the harvest level for snapper grouper species in general, imports affect the returns to fishermen through the ex-vessel prices they receive for their landings. As substitutes to domestic production of snapper grouper species, including the aforementioned species, imports tend to cushion the adverse economic effects on consumers resulting from a reduction in domestic landings. The following describes the imports of fish products which directly compete with domestic harvest of snapper grouper species, including black snapper, dog snapper, mahogany snapper, and schoolmaster. Imports data for tilefishes are unavailable.

Imports[2] of fresh snapper ranged from 21.5 million pounds product weight (pw) in 2009 to 23.2 million pounds pw in 2013 with minor fluctuations in between. Total revenue from fresh snapper imports increased steadily from $53.6 million (2013 dollars[3]) in 2009 to a five-year high of $67.9 million in 2013. Imports of fresh snappers primarily originated in Mexico, Central

[2] NOAA Fisheries Service purchases fisheries trade data from the Foreign Trade Division of the U.S. Census Bureau. Data are available for download at http://www.st.nmfs.noaa.gov/st1/trade/index.html.
[3] Converted to 2013 dollars using the 2013 annual Consumer Price Index (CPI) for all US urban consumers provided by the Bureau of Labor and Statistics (BLS).

America, or South America, and entered the U.S. through the port of Miami. Imports of fresh snapper were highest on average (2009 through 2013) during March through May.

Imports of frozen snapper were substantially less than imports of fresh snapper from 2009 through 2013. The annual value of frozen snapper imports ranged from $17.2 million (2013 dollars) to $26.7 million during the time period, with a peak in 2011. Imports of frozen snapper primarily originated in South America (especially Brazil), Indonesia, and Mexico. The majority of frozen snapper imports entered the U.S. through the ports of Miami and New York. Imports of frozen snappers tended to be lowest during March, April, and May when fresh snapper imports were the highest.

Imports of fresh grouper ranged from 8.3 million pounds pw worth $23.7 million (2013 dollars) in 2009 to 10 million pounds pw worth $36.2 million in 2013 with minor fluctuations in between. The bulk of fresh grouper imports originated in Mexico and entered the U.S. through Miami. From 2009 through 2013 fresh grouper imports were lowest on average during the month of March and higher the rest of the year, with a peak in July.

Imports of frozen grouper were minimal and stable from 2009 through 2013, ranging from 1 million pounds pw worth $2.1 million (2013 dollars) to 2 million pounds pw worth $3.5 million. Frozen grouper imports generally originated in Mexico and to a lesser extent, Asia and entered the U.S. through Miami and Tampa. There was an inverse relationship in monthly landings between frozen and fresh groupers, with average imports being the highest in March for frozen grouper and lower during other months.

### Business Activity

The commercial harvest and subsequent sales and consumption of fish generates business activity as fishermen expend funds to harvest the fish and consumers spend money on goods and services, such as snapper and/or tilefish purchased at a local fish market and served during restaurant visits. These expenditures spur additional business activity in the region(s) where the harvest and purchases are made, such as jobs in local fish markets, grocers, restaurants, and fishing supply establishments. In the absence of the availability of a given species for purchase, consumers would spend their money on substitute goods and services. As a result, the analysis presented below represents a distributional analysis only; that is, it only shows how economic effects may be distributed through regional markets and should not be interpreted to represent the impacts if these species are not available for harvest or purchase.

Estimates of the average annual business activity associated with the commercial harvest of golden tilefish, and all species harvested by the vessels that harvested these golden tilefish, were derived using the model developed for and applied in NMFS (2011b) and are provided in **Table 3.3.1.7**. This business activity is characterized as full-time equivalent jobs, income impacts (wages, salaries, and self-employed income), and output (sales) impacts (gross business sales). Income impacts should not be added to output (sales) impacts because this would result in double counting. It should be noted that the results provided should be interpreted with caution and demonstrate the limitations of these types of assessments. These results are based on average relationships developed through the analysis of many fishing operations that harvest

many different species. Separate models to address individual species are not available. For example, the results provided here apply to a general reef fish category rather than just golden tilefish and a harvester job is "generated" for approximately every $44,000 in ex-vessel revenue. These results contrast with the information provided in **Section 3.3.1.2** which shows an average of 59 harvesters (vessels) with recorded landings of golden tilefish. As for black snapper, dog snapper, mahogany snapper, and schoolmaster, average annual income and output impacts (2004 through 2013) were $7,000 or less and there were no estimated job impacts.

**Table 3.3.1.7.** Average annual business activity (2009 through 2013) associated with the commercial harvest of golden tilefish and the harvest of all species by vessels that landed golden tilefish. All monetary estimates are in 2013 dollars.

| Species | Average Ex-vessel Value ($ thousands) | Total Jobs | Harvester Jobs | Output (Sales) Impacts ($ thousands) | Income Impacts ($ thousands) |
|---|---|---|---|---|---|
| Golden Tilefish | $1,257 | 219 | 29 | $16,546 | $7,052 |
| All species on all trips made by vessels that landed greater than one pound of golden tilefish in a year. | $4,641 | 808 | 105 | $61,103 | $26,041 |

Source: Calculated by NMFS SERO using the model developed for NMFS (2011b).

### 3.3.1.2 Economic Description of the Recreational Sector

The recreational sector of the snapper grouper fishery is comprised of the private sector and the for-hire sector. The private sector includes anglers fishing from shore (all land-based structures) and private/rental boats. The for-hire sector is composed of the charter boat and headboat (also called partyboat) sectors. Charter boats generally carry fewer passengers and charge a fee on an entire vessel basis, whereas headboats carry more passengers and payment is per person.

#### Permits

For-hire vessels are required to have a for-hire snapper grouper permit to fish for or possess snapper grouper species in the South Atlantic EEZ. The number of vessels with for-hire snapper grouper permits for the period 2009-2013 is provided in **Table 3.3.1.8**. This sector operates as an open access fishery and not all permitted vessels are necessarily active in the fishery. Some vessel owners may have obtained open access permits as insurance for uncertainties in the fisheries in which they currently operate. The number of for-hire vessel permits issued for the South Atlantic snapper grouper fishery decreased from 1,852 permits in 2009 to 1,799 permits in 2013. It may be noted, though, that the number of for-hire vessel permits increased slightly in the last two years from its lowest in 2011. The majority of snapper grouper for-hire permitted vessels were home-ported in Florida; a relatively high proportion of these permitted vessels were also home-ported in North Carolina and South Carolina. Many vessels with South Atlantic for-hire snapper grouper permits were home-ported in states outside of the SAFMC's area of

jurisdiction, particularly in the Gulf states of Alabama through Texas. The number of vessels with South Atlantic for-hire snapper grouper permits home-ported in states outside of the South Atlantic Council's area of jurisdiction has accounted for about the same proportion (10-11%) of the total number of permits.

**Table 3.3.1.8**. Number of South Atlantic for-hire snapper grouper permits, by homeport state, 2009-2013.

| Home Port | 2009 | 2010 | 2011 | 2012 | 2013 | Average |
|---|---|---|---|---|---|---|
| **North Carolina** | 349 | 331 | 330 | 312 | 307 | 326 |
| **South Carolina** | 146 | 145 | 132 | 138 | 150 | 142 |
| **Georgia** | 30 | 27 | 26 | 26 | 30 | 28 |
| **Florida** | 1,131 | 1,109 | 1,099 | 1,122 | 1,121 | 1,116 |
| **Gulf (AL-TX)** | 83 | 86 | 91 | 93 | 91 | 89 |
| **Others** | 113 | 114 | 103 | 106 | 100 | 107 |
| **Total** | 1,852 | 1,812 | 1,781 | 1,797 | 1,799 | 1,808 |

Source: NMFS SERO Permits Dataset, 2014.

For-hire permits do not distinguish charter boats 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 2014, the estimated number of headboats supplying for-hire services in all South Atlantic fisheries had fallen to 77, indicating a decrease in fleet size of approximately 20% between 1997 and 2014 (K. Brennan, Beaufort Laboratory, SEFSC, personal communication, 2014).

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 November 6, 2014. There are no specific permitting requirements for recreational anglers to harvest snapper grouper. Instead, anglers are required to possess either a state recreational fishing permit that authorizes saltwater fishing in general, or be registered in the federal National Saltwater Angler Registry system, subject to appropriate exemptions.

## Landings

### Black Snapper, Dog Snapper, Mahogany Snapper and Schoolmaster

Recreational landings of dog snapper and schoolmaster occurred primarily in state waters from 2004 through 2013, whereas the majority of mahogany snapper landings occurred in federal waters (**Table 3.3.1.9**). There were practically no landings estimated for black snapper during this time period. The majority of dog snapper, mahogany snapper, and schoolmaster landings (2004 through 2013) were recorded in Florida by private vessels (**Table 3.3.1.10** and **Table 3.3.1.11**).

**Table 3.3.1.9.** Total South Atlantic recreational landings of dog snapper, schoolmaster, mahogany snapper, and black snapper from 2004 through 2013 by jurisdiction (Federal and State waters).

| | Federal | State | Not Defined* |
|---|---|---|---|
| | **Dog Snapper** | | |
| **Pounds (ww)** | 6,087 | 27,877 | 2,178 |
| **Percentage** | 16.8% | 77.1% | 6.0% |
| | **Schoolmaster** | | |
| **Pounds (ww)** | 9,979 | 40,313 | 4,434 |
| **Percentage** | 18.2% | 73.7% | 8.1% |
| | **Mahogany Snapper** | | |
| **Pounds (ww)** | 1,154 | 133 | 266 |
| **Percentage** | 74.3% | 8.5% | 17.1% |
| | **Black Snapper** | | |
| **Pounds (ww)** | 0 | 0 | 2 |
| **Percentage** | 0.0% | 0.0% | 100.0% |

Source: SEFSC MRIP Recreational ACL datasets (October 2014).
* "Not Defined" refers to landings records with omitted jurisdiction information.

**Table 3.3.1.10.** Total South Atlantic recreational landings of dog snapper, schoolmaster, mahogany snapper, and black snapper from 2004 through 2013 by state.

| | Black Snapper | Dog Snapper | | | Mahogany Snapper | | Schoolmaster Snapper | |
|---|---|---|---|---|---|---|---|---|
| | FL/GA* | FL | FL/GA* | GA | FL | FL/GA* | FL | FL/GA* |
| **Pounds (ww)** | 2 | 33,603 | 2,178 | 362 | 1,287 | 266 | 50,293 | 4,434 |
| **Percent** | 100% | 93% | 6% | 1% | 83% | 17% | 92% | 8% |

Source: SEFSC MRIP Recreational ACL datasets (October 2014).
* NMFS Southeast Region Headboat Survey (SRHS) estimates are combined for East Florida and Georgia.

**Table 3.3.1.11.** Total South Atlantic recreational landings of dog snapper, schoolmaster, mahogany snapper, and black snapper from 2004 through 2013 by mode.

| | Charter | Headboat | Private | Shore |
|---|---|---|---|---|
| | **Dog Snapper** | | | |
| **Pounds (ww)** | 606 | 2,178 | 27,516 | 5,843 |
| **Percentage** | 1.7% | 6.0% | 76.1% | 16.2% |
| | **Schoolmaster** | | | |
| **Pounds (ww)** | 118 | 4,434 | 50,175 | 0 |
| **Percentage** | 0.2% | 8.1% | 91.7% | 0.0% |
| | **Mahogany Snapper** | | | |
| **Pounds (ww)** | 0 | 266 | 1,154 | 133 |
| **Percentage** | 0.0% | 17.1% | 74.3% | 8.5% |
| | **Black Snapper** | | | |
| **Pounds (ww)** | 0 | 2 | 0 | 0 |
| **Percentage** | 0.0% | 100.0% | 0.0% | 0.0% |

Source: SEFSC MRIP Recreational ACL datasets (October 2014).

**Golden Tilefish**

Golden tilefish are mostly harvested by the private and charter modes, with almost no estimated landings coming from the other modes (**Table 3.3.1.12**). The private mode was the dominant mode in each year from 2009 through 2013, with the exception of 2013, where charter landings were estimated to be almost three times as high as private landings.

**Table 3.3.1.12.** Golden tilefish recreational landings (pounds ww) by mode, 2009-2013.

| | Charter | Headboat | Private | Shore | Total |
|---|---|---|---|---|---|
| **2009** | 4,750 | 0 | 28,539 | 0 | 33,289 |
| **2010** | 2,131 | 0 | 8,565 | 0 | 10,696 |
| **2011** | 389 | 0 | 20,578 | 0 | 20,967 |
| **2012** | 3,321 | 0 | 9,459 | 0 | 12,781 |
| **2013** | 11,172 | 634 | 3,785 | 0 | 15,591 |
| **Average** | 4,353 | 127 | 14,185 | 0 | 18,665 |

Source: SEFSC MRIP Recreational ACL Dataset (October 2014).

Golden tilefish are mainly landed in Florida, with relatively low landings in other states. On average, golden tilefish landings from 2009 through 2013 were highest in wave 6 (November through December) and lowest in wave 5 (September through October) (**Figure 3.3.1.5**).

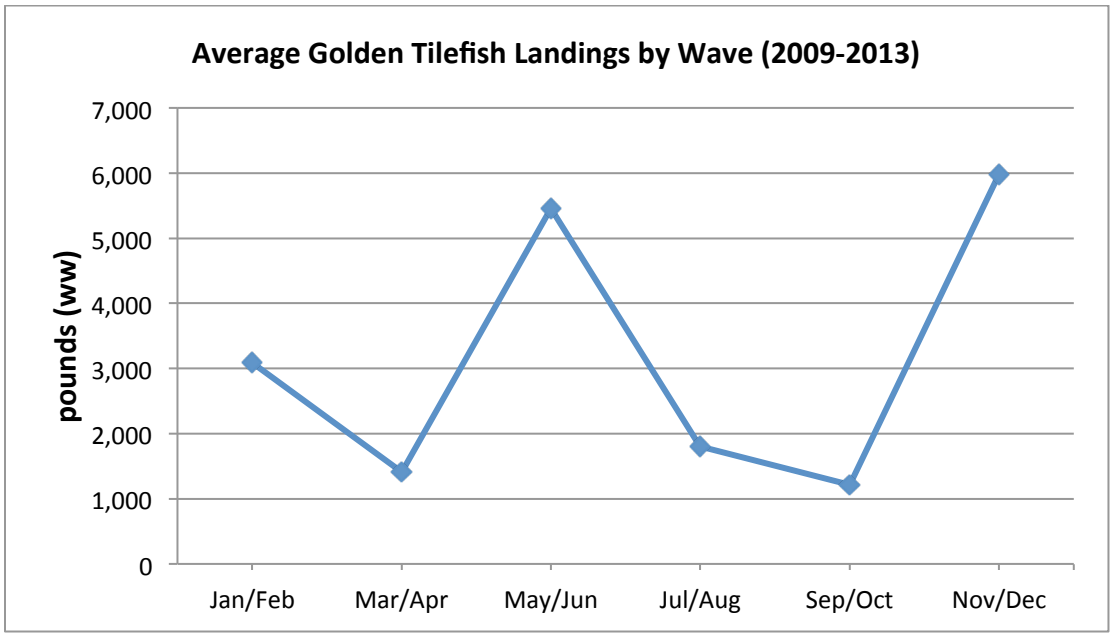


**Figure 3.3.1.5.** Average golden tilefish landings (lbs ww) by wave, 2009-2013.
Source: SEFSC MRIP Recreational ACL Dataset (October 2014).

## Angler Effort

Recreational effort derived from the 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 trip duration, where the intercepted angler indicated that the species 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 trip duration and target intent, where the individual species was caught. The fish caught did not have to be kept.

3. All recreational trips - The total estimated number of recreational trips taken, regardless of target intent or catch success.

Given the subject nature of this amendment, the following discussion focuses on catch trips for dog snapper, mahogany snapper, and schoolmaster and target and catch trips for golden tilefish stocks[4]. In general, there was limited recreational effort for the stocks under consideration in this amendment (**Table 3.3.1.13** and **Table 3.3.1.14**).

**Table 3.3.1.13.** Golden tilefish target and catch trips by state, 2009-2013.

| | Florida | Georgia | North Carolina | South Carolina |
|---|---|---|---|---|
| **Year** | **Target Trips** | | | |
| **2009** | 5,622 | 0 | 0 | 0 |
| **2010** | 3,292 | 0 | 104 | 0 |
| **2011** | 0 | 0 | 0 | 0 |
| **2012** | 939 | 0 | 0 | 0 |
| **2013** | 0 | 0 | 344 | 0 |
| **Average** | 1,971 | 0 | 90 | 0 |
| | **Catch Trips** | | | |
| **2009** | 7,857 | 0 | 0 | 0 |
| **2010** | 2,528 | 0 | 419 | 0 |
| **2011** | 4,124 | 0 | 0 | 0 |
| **2012** | 2,590 | 0 | 116 | 0 |
| **2013** | 4,886 | 0 | 172 | 0 |
| **Average** | 4,397 | 0 | 141 | 0 |

Source: MRIP database, NOAA Fisheries, NMFS, SERO.

**Table 3.3.1.14.** Dog snapper, mahogany snapper and schoolmaster catch trips by state, 2009-2013.

| | Florida | Georgia | North Carolina | South Carolina |
|---|---|---|---|---|
| **Year** | **Dog snapper catch trips** | | | |
| **2009** | 5,129 | 0 | 0 | 0 |
| **2010** | 1,172 | 234 | 0 | 0 |
| **2011** | 650 | 0 | 0 | 0 |
| **2012** | 972 | 0 | 0 | 0 |
| **2013** | 0 | 0 | 0 | 0 |
| **Average** | 1,585 | 47 | 0 | 0 |
| | **Mahogany snapper catch trips** | | | |
| **2009** | 638 | 0 | 0 | 0 |
| **2010** | 0 | 0 | 0 | 0 |
| **2011** | 0 | 0 | 0 | 0 |

[4] There was no target or catch effort recorded for black snapper and no target effort recorded for dog snapper, mahogany snapper and schoolmaster for the past 5 complete fishing seasons.

| | | | | |
|---|---|---|---|---|
| **2012** | 0 | 0 | 0 | 0 |
| **2013** | 0 | 0 | 0 | 0 |
| **Average** | 128 | 0 | 0 | 0 |
| | **Schoolmaster catch trips** | | | |
| **2009** | 15,739 | 0 | 0 | 0 |
| **2010** | 38 | 0 | 0 | 0 |
| **2011** | 2,597 | 0 | 0 | 0 |
| **2012** | 458 | 0 | 0 | 0 |
| **2013** | 6,510 | 0 | 0 | 0 |
| **Average** | 5,068 | 0 | 0 | 0 |

Source: MRIP database, NOAA Fisheries, NMFS, SERO.

Headboat data do not support the estimation of target effort because target intent is not collected, nor is catch effort. **Table 3.3.1.15** contains estimates of the number of headboat angler days for all South Atlantic states for 2009 through 2013.

**Table 3.3.1.15.** Headboat angler days, 2009-2013.

| Year | Florida/Georgia | North Carolina | South Carolina | Total |
|---|---|---|---|---|
| **2009** | 136,420 | 19,468 | 40,919 | 196,807 |
| **2010** | 123,662 | 21,071 | 44,951 | 189,684 |
| **2011** | 124,041 | 18,457 | 44,645 | 187,143 |
| **2012** | 139,623 | 20,766 | 41,003 | 201,392 |
| **2013** | 165,679 | 20,547 | 40,963 | 227,189 |
| **Average** | 137,885 | 20,062 | 42,496 | 200,443 |

Source: Southeast Region Headboat Survey (SRHS).

## Economic Value

Participation, effort, and harvest 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 (CS). 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.

Direct estimates of the CS for golden tilefish and the four snapper species included in this amendment are not currently available. There are however estimates for other snapper grouper species. Haab et al. (2012) estimated the CS (willingness to pay (WTP) per fish) for snappers and groupers in the Southeastern U.S. using four separate econometric modeling techniques. The finite mixture model, which takes into account variation in the preferences of fishermen, had the best prediction rates of the four models and as such was selected for presentation here. The WTP per snapper estimated by this model was $12.18 (2013 dollars) and the WTP per grouper was

$133.73 (2013 dollars)[5]. For comparison purposes, another study estimated the value of the consumer surplus for catching and keeping a second grouper on an angler trip at approximately $102 (values updated to 2013 dollars) and lower thereafter (approximately $68 for a third grouper, $50 for a fourth grouper, and $39 for a fifth grouper) (Carter and Liese 2012). These estimates are not available for individual snapper or grouper species.

The foregoing estimates of economic value should not be confused with economic impacts associated with recreational fishing expenditures. Although 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.

While anglers receive economic value as measured by the CS associated with fishing, for-hire businesses receive value from the services they provide. Producer surplus (PS) is the measure of the economic value these operations receive. The PS 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 PS associated with for-hire trips are not available. However, proxy values in the form of net operating revenues (NOR)[6] were generated for the charter and headboat operations. These estimates were culled from several studies – Liese et al. (2009), Dumas et al. (2009), Holland et al. (1999), and Sutton et al. (1999). Estimates of net operating revenue per angler trip (2013 dollars) on representative charter trips (average charter trip regardless of area fished) are $158 for Louisiana through east Florida, $146 for east Florida, $169 for northeast Florida, and $139 for North Carolina. For charter trips into the EEZ only, net operating revenues are $153 in east Florida and $160 in northeast Florida. For full-day and overnight trips only, net operating revenues are estimated to be $168-$173 in North Carolina. Comparable estimates are not available for Georgia or South Carolina.

Net operating revenues per angler trip are lower for headboats than for charter boats. Net operating revenue estimates (2013 dollars) for a representative headboat trip are $52 in the Gulf of Mexico (all states and all of Florida), and $68-$74 in North Carolina. For full-day and overnight headboat trips, net operating revenues are estimated to be $80-$83 in North Carolina. Comparable estimates are not available for Georgia or South Carolina.

A study of the North Carolina for-hire fishery provides some information on the financial status of the for-hire fishery in the state (Dumas et al. 2009). Depending on vessel length, regional location, and season, charter fees per passenger per trip ranged from $182.58 to $273.20 for a full-day trip and from $101.70 to $134.63 for a half-day trip; headboat fees ranged from $78.71 to $88.75 for a full-day trip and from $41.32 to $43.70 for a half-day trip. Charter boats generated a total of $60.48 million in passenger fees, $3.5 million in other vessel income (e.g., food and beverages), and $5.2 million in tips. The corresponding figures for headboats were

[5] Estimates converted to 2013 dollars using the 2013 annual Consumer Price Index (CPI) for all US urban consumers provided by the Bureau of Labor and Statistics (BLS).
[6] Net operating revenues are trip revenues minus trip-based variable costs and do not include fixed costs. These represent the total returns used to pay all labor wages, returns to capital, and owner profits.

$10.67 million in passenger fees, $0.22 million in other vessel income, and $0.97 million in tips. Non-labor expenditures (e.g., boat insurance, dockage fees, bait, ice, fuel) amounted to $46.6 million for charter boats and $5.8 million for headboats. Summing across vessel lengths and regions, charter vessels had an aggregate value (depreciated) of $130.70 million and headboats had an aggregate value (depreciated) of $11.08 million. All these values are in 2013 dollars.

A more recent study of the for-hire sector provides estimates on gross revenues generated by the charter boats and headboats in the South Atlantic (Holland et al. 2012). Average annual revenues (2013 dollars) for charter boats are estimated to be $130,524 for Florida vessels, $55,348 for Georgia vessels, $104,417 for South Carolina vessels, and $105,593 for North Carolina vessels. For headboats, the corresponding estimates are $216,975 for Florida vessels and $159,332 for vessels in the other states. Due to limited sample size, revenue information for headboats in states other than Florida is aggregated to avoid disclosure of sensitive information.

### Business Activity

The desire for recreational fishing generates economic activity as consumers spend their income on various goods and services needed for recreational fishing. This spurs economic activity in the region where recreational fishing occurs. It should be clearly noted that, in the absence of the opportunity to fish, the income would presumably be spent on other goods and services and these expenditures would similarly generate economic activity in the region where the expenditure occurs. As such, the analysis below represents a distributional analysis only.

Estimates of the business activity (economic impacts) associated with recreational angling for golden tilefish were derived using average impact coefficients for recreational angling for all species, as derived from an add-on survey to the MRFSS to collect economic expenditure information, as described and utilized in NMFS (2011b). Estimates of the average expenditures by recreational anglers are also provided in NMFS (2011b) and are incorporated herein by reference. Estimates are not provided for black snapper, dog snapper, mahogany snapper, and schoolmaster stocks since there is little or no target effort occurring. It is assumed any expenditure used to catch these species was generated by demand for other species and should be associated with those other species.

Recreational fishing generates business activity (economic impacts). Business activity for the recreational sector is characterized in the form of full-time equivalent jobs, output (sales) impacts (gross business sales), and value-added impacts (difference between the value of goods and the cost of materials or supplies). Estimates of the average golden tilefish target effort (2009-2013) and associated business activity (2013 dollars) are provided in **Table 3.3.1.16**. The average impact coefficients, or multipliers, used in the model are invariant to the "type" of effort and can therefore be directly used to measure the impact of other effort measures such as catch trips if desired. To calculate the multipliers from **Table 3.3.1.16**, simply divide the desired impact measure (output impact, value-added impact, or jobs) associated with a given state and mode by the number of target trips for that state and mode.

The estimates provided in **Table 3.3.1.16** only apply at the state-level. These numbers should not be added across the region. Addition of the state-level estimates to produce a regional

(or national) total could either under- or over-estimate the actual amount of total business activity because of the complex relationship between different jurisdictions and the expenditure/impact multipliers. Neither regional nor national estimates are available at this time.

Estimates of the business activity associated with headboat effort are not available. Headboat vessels are not covered in the MRFSS/MRIP, so, in addition to the absence of estimates of target effort, estimation of the appropriate business activity coefficients for headboat effort has not been conducted.

**Table 3.3.1.16**. Summary of golden tilefish target trips (2009-2013 average) and associated business activity (2013 dollars). Output and value added impacts are not additive.

| | East Florida | Georgia | North Carolina | South Carolina |
|---|---|---|---|---|
| | **Shore Mode** | | | |
| Target Trips | 0 | 0 | 0 | 0 |
| Output Impact | $0 | $0 | $0 | $0 |
| Value Added Impact | $0 | $0 | $0 | $0 |
| Jobs | 0 | 0 | 0 | 0 |
| | **Private/Rental Mode** | | | |
| Target Trips | 1,971 | 0 | 69 | 0 |
| Output Impact | $100,840 | $0 | $5,715 | $0 |
| Value Added Impact | $56,771 | $0 | $3,240 | $0 |
| Jobs | 1 | 0 | 0 | 0 |
| | **Charter Mode** | | | |
| Target Trips | 0 | 0 | 21 | 0 |
| Output Impact | $0 | $0 | $10,907 | $0 |
| Value Added Impact | $0 | $0 | $7,470 | $0 |
| Jobs | 0 | 0 | 0 | 0 |
| | **All Modes** | | | |
| Target Trips | 1,971 | 0 | 90 | 0 |
| Output Impact | $100,840 | $0 | $16,621 | $0 |
| Value Added Impact | $56,771 | $0 | $10,710 | $0 |
| Jobs | 1 | 0 | 0 | 0 |

Source: effort data from MRIP; economic impact results calculated by NMFS SERO using the model developed for NMFS (2011b).

## 3.3.2 Social Environment

The social environment includes a description of the commercial and recreational components of the snapper grouper fishery. The description is based on the geographical distribution of landings and the relative importance of the species for commercial and recreational fishing communities. A spatial approach enables the consideration of the importance of fishery resources to those communities, as required by National Standard 8.

### 3.3.2.1 The Snapper Grouper Fishery

The snapper grouper fishery is considered to be of substantial social and cultural importance in the South Atlantic region. The description of the snapper grouper fishery focuses on available geographic and demographic data to identify communities with strong relationships with snapper grouper harvest (i.e., significant landings and revenue), because positive or negative impacts from regulatory change may occur in places with greater landings of snapper grouper species.

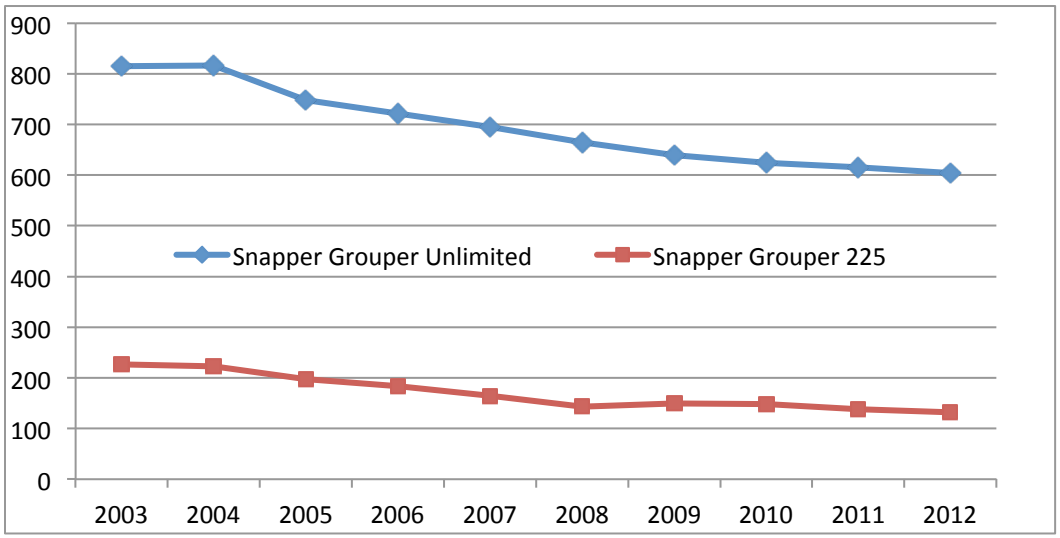


**Figure 3.3.2.1.** Snapper grouper Unlimited and 225-pound trip limit permits 2003-2012. Source: NMFS SERO (2013).

Since 2003, South Atlantic Snapper Grouper Unlimited Permits ("Class 1" permits) and Snapper Grouper 225-pound Trip Limit Permits ("Class 2" permits) have shown a downward trend (**Figure 3.3.2.1**). With a limited entry program in place since 1998 and a "2 for 1" requirement, a reduction in permits would be expected over time and will likely continue as long as the criteria are a continued part of management.

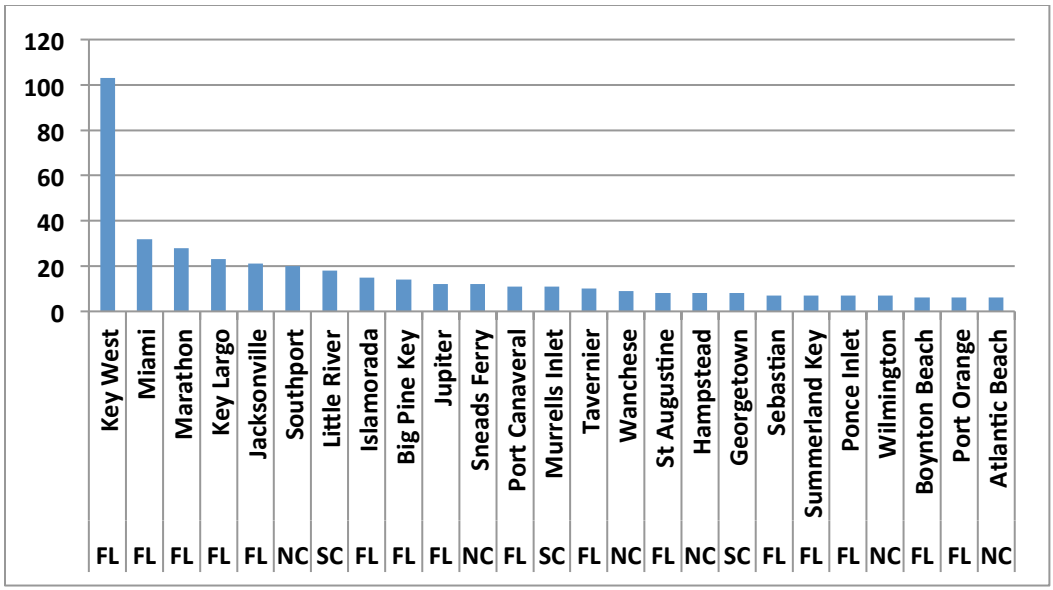


**Figure 3.3.2.2.** Snapper grouper unlimited 2012 permit frequency by homeport.
Source: NMFS SERO Permits 2014.

Florida communities have the majority of snapper grouper unlimited permits. Communities in North Carolina within the top 25 are Southport, Sneads Ferry, Hampstead, Wilmington, Atlantic Beach, and Wanchese; and in South Carolina Little River, Murrell's Inlet, and Georgetown (**Figure 3.3.2.2**). Florida also dominates class 2 permits with Hatteras, NC the only community outside of the Florida listed in the top twenty communities with class 2 permits (**Figure 3.3.2.3**).

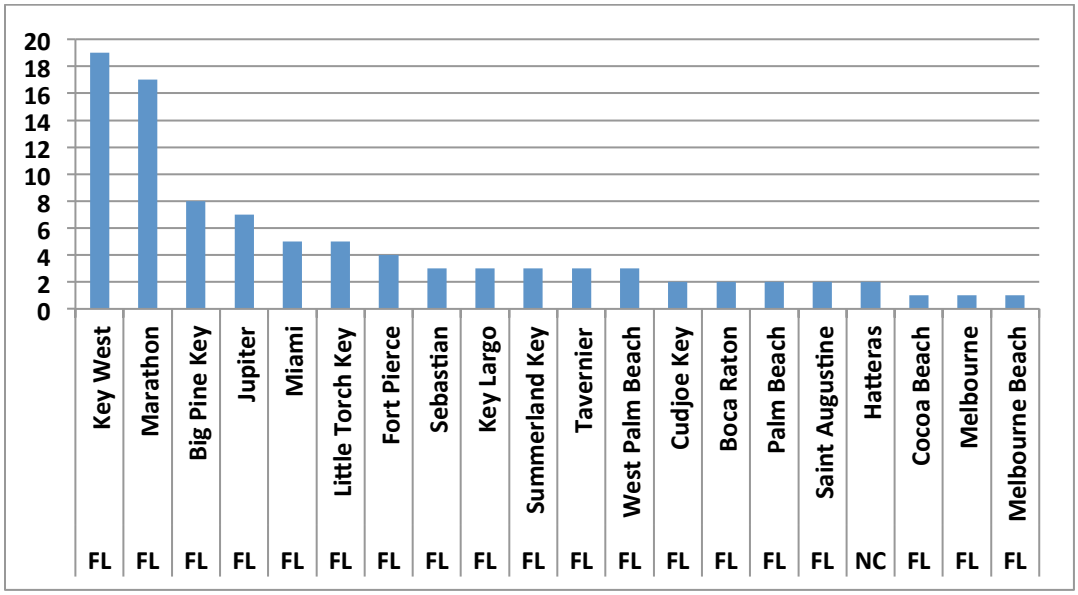


**Figure 3.3.2.3.** Snapper grouper 225-pound trip limit 2012 permits frequency by homeport
Source: NMFS SERO Permits 2014.

While the limited entry program has contributed to the reduced capacity, other factors have also contributed to this downward trend. Economic factors like increased imports, decreasing

prices for domestic product and rising prices for diesel fuel and the recent recession have had a widespread effect on commercial fishing throughout many regions of the U.S. In addition, the loss of working waterfronts has contributed to a growing loss of fishing infrastructure that may play a role in the decline in many fishing communities (Garrity-Blake and Nash 2012; Griffith 2011). For North Carolina, the losses have been substantial as over a decade there has been a 36 percent decline in the number of fish houses (Garrity-Blake and Nash 2012).

The factors that affect the loss of working waterfronts in fishing communities are coastal development, rising property taxes, decreasing access to waterfront due to increasing privatization of public resources, rising cost of dockage and fuel, lack of maintenance of waterways and ocean passages, competition with imported fish, and other less tangible (often political) factors. These along with increasingly strict regulations have combined to place a great deal of stress on many communities and their associated fishing sectors including commercial, charter/headboat and private recreational.

While some of the same social factors above have affected the for-hire fishery in terms of loss of working waterfronts, other issues such as a downturn in the economy and competition have affected the growth of that sector. The recreational fishery is also subjected to permit requirements as vessels in the South Atlantic for-hire snapper grouper fishery are required to have a permit to fish for or possess species in the EEZ.

The number of for-hire permits issued in the South Atlantic snapper grouper fishery increased over the period 2003-2007, from 1,477 permits in 2003 to 1,754 permits in 2007. Increases occurred for those vessels that were strictly for-hire businesses, since permits issued for vessels operating as for-hire and commercial entities were flat from 2005 to 2006 and fell in 2007. Today there are approximately 1,390 snapper grouper charter permits in effect (SERO Permits 2014). Most of these for-hire permitted vessels were home-ported in Florida; with vessels also home-ported in North Carolina and South Carolina; some in the Gulf, Mid-Atlantic, and Northeast.

***Commercial Snapper Grouper Communities in the South Atlantic***

To identify commercial fishing communities where fishing has importance to the local economy, a measure called the regional quotient (RQ) is used to identify those communities which land a substantial amount of a particular species. The RQ measures the proportional distribution of commercial landings and value of a particular species. 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. The actual percentage of RQ is not provided in the following tables to prevent any disclosure of confidential information.

Communities where snapper grouper are an important target species are depicted in **Figure 3.3.2.4** which uses a regional quotient of all snapper grouper species and includes the top 25 communities ranked by their regional quotient value of snapper grouper. Communities in North Carolina where snapper grouper make up a substantial portion of their regional quotient include Winnabow, Wanchese, Morehead City, Beaufort, Sneads Ferry, Shallotte, Wilmington, and Hampstead. The South Carolina communities of Murrells Inlet, Little River, Wadmalaw Island, and McClellanville also contribute substantially to the regional quotient of snapper grouper

overall. In Florida, the communities of Key West, Miami, Mayport, Marathon, Cocoa, Port Orange, Key Largo, Hialeah, Fort Lauderdale, St Augustine, Fort Pierce, Palm Beach Gardens, and Islamorada are all included in the top twenty-five communities. No Georgia communities are included in the top 25, but communities such as Savannah and Townsend have vessels that depend on snapper grouper species.

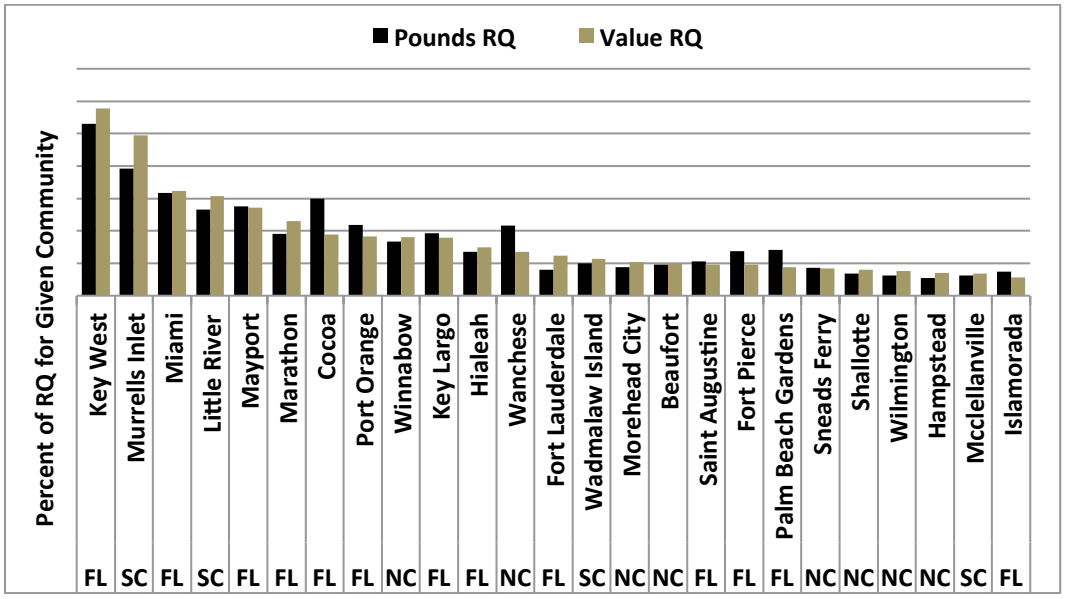


**Figure 3.3.2.4.** South Atlantic fishing communities ranked by total 2011 snapper grouper value RQ. Source: SERO Community ALS 2011

***Commercial and Recreational Engagement and Reliance***

While we can characterize the fleet landings with regard to those communities that have high regional quotients for landings and value, it is more difficult to characterize the fleet and its labor force regarding demographics and places of residence for captains and crew of vessels. There is little to no information on captains and crew, including demographic makeup of crew, so we are left with descriptions regarding the engagement and reliance of fishing communities and their social vulnerability. To further delineate which communities are more dependent upon fishing, another measure has been developed which uses the top communities identified in the RQ graphics, and applies indices of fishing engagement and reliance.

To better understand how South Atlantic fishing communities are engaged and reliant on fishing overall, several indices composed of existing permit and landings data were created to provide a more empirical measure of fishing dependence (Colburn and Jepson 2013; Jacob et al. 2012; Jepson and Colburn 2013). Fishing engagement uses the absolute numbers of permits, landings and value, while fishing reliance includes many of the same variables as engagement, but divides by population to give an indication of the per capita impact 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. Factor scores are represented by colored bars and are standardized, therefore the mean is zero. Two thresholds of 1 and ½ standard deviation above the mean are plotted onto the graphs to help determine thresholds for

significance. Because the factor scores are standardized, a score above 1 is also above one standard deviation.

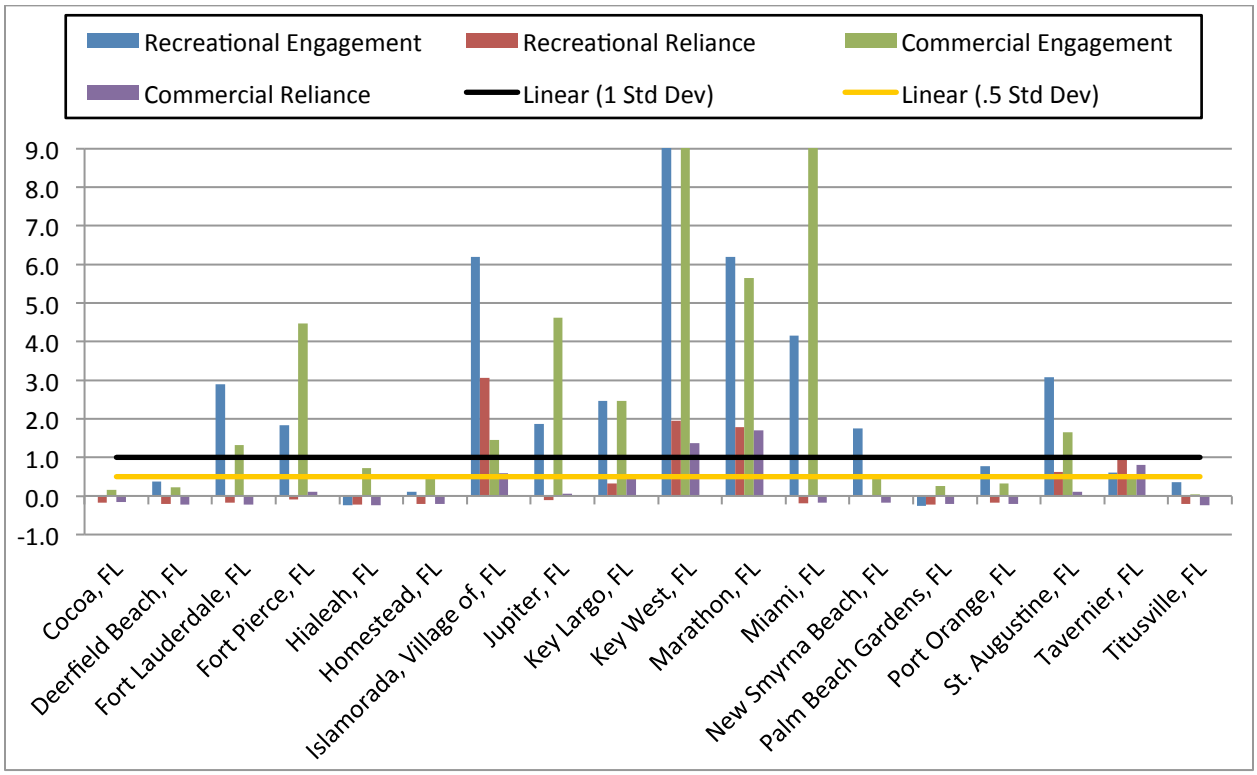


**Figure 3.3.2.5.** Commercial and recreational fishing engagement and reliance indices for top Florida snapper grouper communities in the South Atlantic region.
Source: SERO Social Indicator Database

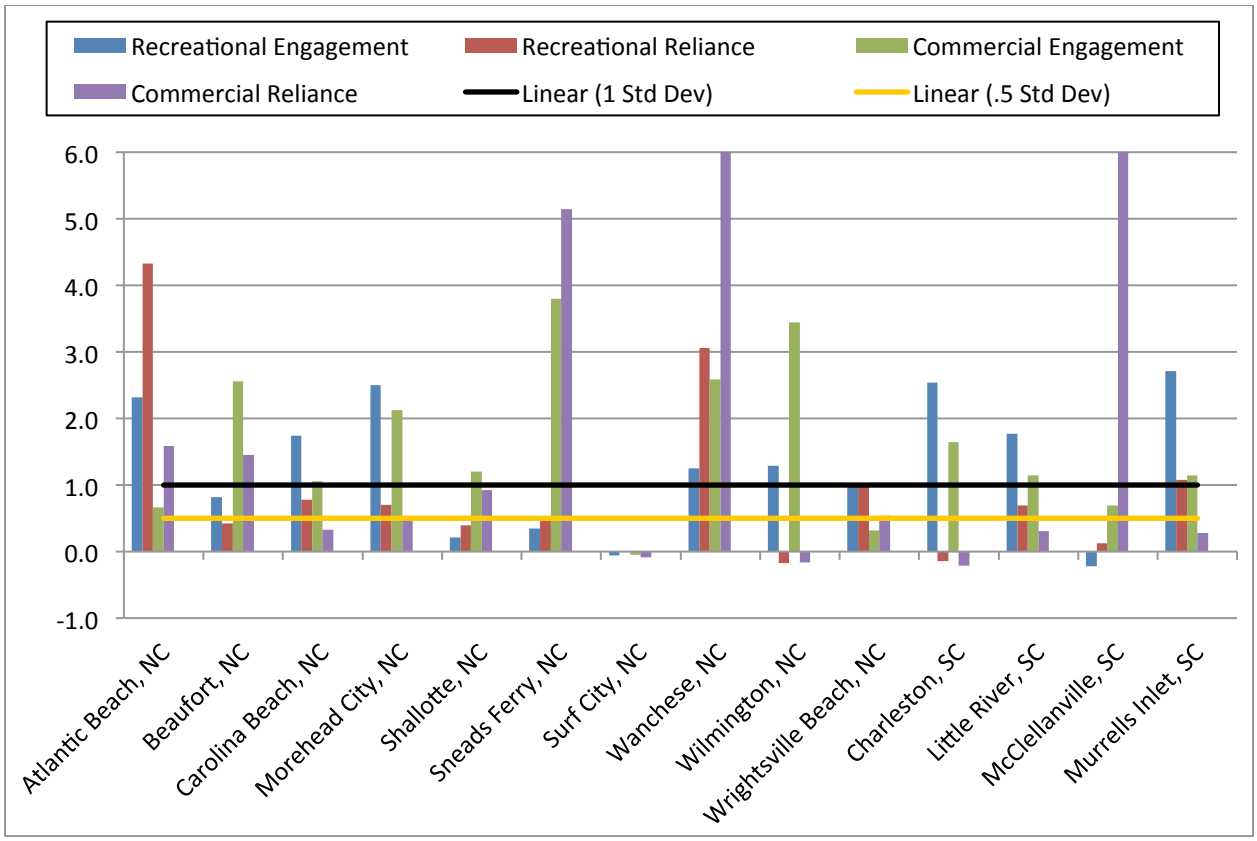


**Figure 3.3.2.6**. Commercial and recreational fishing engagement and reliance indices for top South and North Carolina snapper grouper communities in the South Atlantic region.
Source: SERO Social Indicator Database

The communities included in **Figures 3.3.2.5** and **3.3.2.6** have varying combinations of reliance and engagement. The communities of Key West, Islamorada, and Marathon, FL; and Atlantic Beach and Wanchese, NC are considered likely dependent upon fishing overall as they exceed both thresholds for the four fishing reliance and engagement measures. Other communities might be considered recreationally and commercially engaged as they exceed the highest threshold for both recreational and commercial engagement. Those communities are: Fort Lauderdale, Fort Pierce, Jupiter, Key Largo, Miami, and St. Augustine, FL; Carolina Beach, Morehead City, and Wilmington, NC; Charleston, Little River and Murrell's Inlet, SC. Finally, communities like Beaufort, Shallotte, Sneads Ferry, NC and McClellanville, SC are commercially dependent. The community of Wrightsville Beach, NC was the only community that was recreationally dependent alone.

***Snapper Grouper Species in this Amendment***

The proposed actions in this amendment could affect fishermen, businesses, and communities with relatively higher association with the specific species in the amendment. Following are detailed descriptions of areas with higher levels of landings, engagement, and reliance on the individual species. Expected effects at the community level of the proposed actions in this amendment are discussed in **Chapter 4**.

***Black Snapper, Dog Snapper, Mahogany Snapper, and Schoolmaster***

The four snapper species under consideration for removal from the FMU in this amendment are generally minor species with low landings. **Section 3.3.1** describes effort and landings associated with these species. Overall, while some individuals may target these species or include these species in catch combinations on fishing trips, they are not considered economically or socially important species. Additionally, there are no communities with specific ties or reliance to these four species in particular.

***Golden Tilefish***

Golden tilefish is an increasingly important commercial species in the snapper grouper fishery, primarily in south Florida and the Florida Keys. Amendment 18B (SAFMC 2012) established an endorsement system for the longline portion of the commercial sector in addition to separate quotas for longline (75%) and hook-and-line (25%) harvest (effective May 2013). The purpose of the endorsement system for longline harvest was to cap participation in the longline component, which had grown substantially and created derby conditions, with commercial harvest being closed in only three to four months. However, the endorsement program has not slowed the rate of harvest. In 2014 (the first year of the endorsements), 75% of the longline quota was met by February 18, and longline harvest was closed on March 5.

As of November 13, 2014, there were 21 valid longline endorsements (source: SERO vessel permits webpage), which may not include all renewable endorsements. Almost all endorsements are registered to Florida vessels, primarily located around commutes in Brevard County, St Lucie County, Martin County, and Palm Beach County. Amendment 18B (SAFMC 2012) contains a detailed description of communities associated with golden tilefish, and is incorporated herein by reference. The primary communities that would be most likely affected by changes to golden tilefish management for the commercial sector are shown in **Figure 3.3.2.7**.

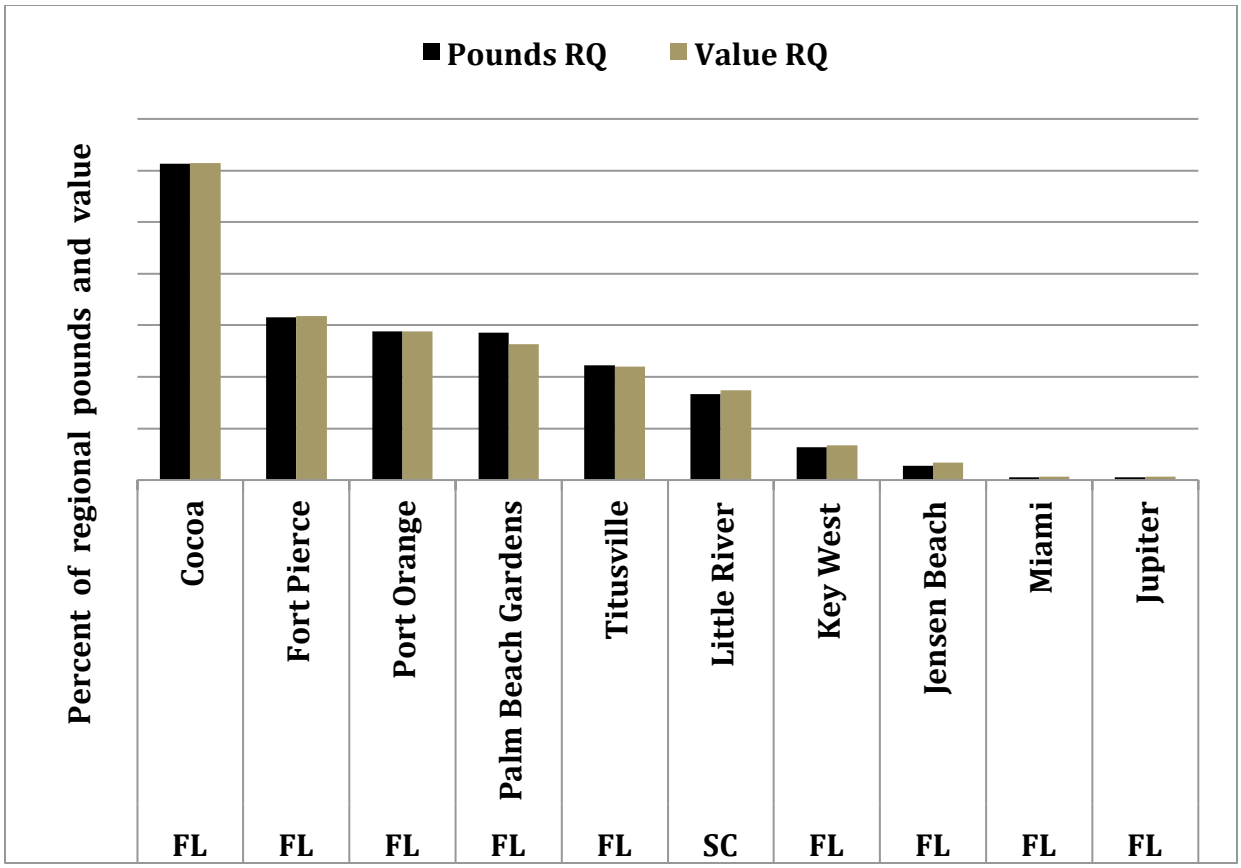


**Figure 3.3.2.7**. Proportion (RQ) of golden tilefish commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of golden tilefish.
Source: SERO Community ALS 2011.

The recreational component of the golden tilefish fishery is described in detail in Amendment 18B (SAFMC 2012) and incorporated herein by reference. Recreational fishing for golden tilefish is growing in popularity as the special type of fishing known as deep-dropping, which targets deepwater fish such as tilefish and snowy grouper, increases. Golden tilefish are not often caught by private anglers and recreational fishermen on charter trips due to the specific gear and knowledge required to deep-drop. Most recreational landings of golden tilefish are in Florida, with some landings in North Carolina.

## 3.3.3 Environmental Justice Considerations

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 could be impacted by the proposed actions 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.

In order to assess whether a community may be experiencing EJ issues, a suite of indices created to examine the social vulnerability of coastal communities (Colburn and Jepson 2012; Jacob et al. 2012) is presented in **Figure 3.3.3.1**. The three indices are poverty, population composition, and personal disruptions. The variables included in each of these indices have been identified through the literature as being important components that contribute to a community's vulnerability. Indicators such as increased poverty rates for different groups, more single female-headed households and children under the age of 5, disruptions such as higher separation rates, higher crime rates, and unemployment all are signs of vulnerable populations. These indicators are closely aligned to previously used measures of EJ which used thresholds for the number of minorities and those in poverty, but are more comprehensive in their assessment. Again, for those communities that exceed the threshold it would be expected that they would exhibit vulnerabilities to sudden changes or social disruption that might accrue from regulatory change.

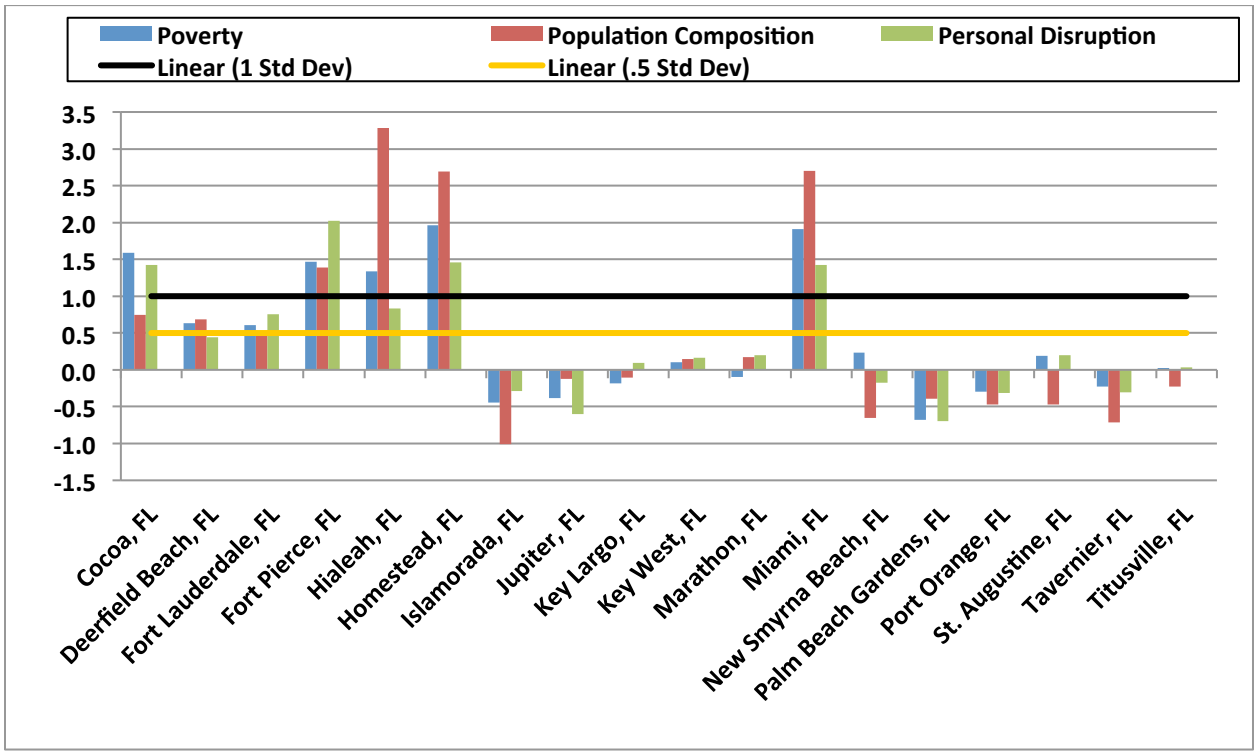


**Figure 3.3.3.1.** Social Vulnerability indices for top Florida communities in terms of pounds and value regional quotient for snapper grouper in the South Atlantic.
Source: SERO Social Indicator Database 2014.

Of the Florida communities depicted in **Figure 3.3.3.1**, five exceed the thresholds for at least three of the indicators, including: Cocoa, Fort Pierce, Hialeah, Homestead, and Miami. Of those communities Fort Pierce and Miami are both commercially and recreationally engaged, while the others do not exhibit either engagement or reliance on fishing.

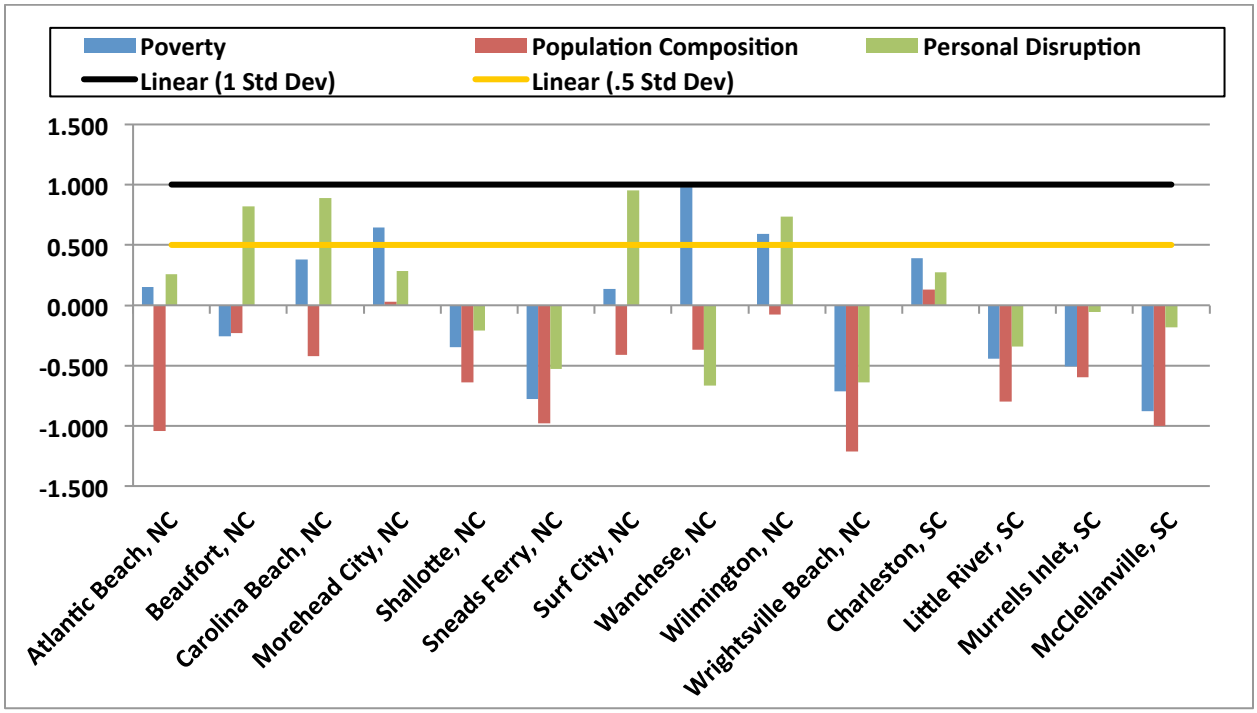


**Figure 3.3.3.2.** Social Vulnerability indices for top communities in in North and South Carolina in terms of pounds and value regional quotient for snapper grouper in the South Atlantic.
Source: SERO Social Indicator Database 2014

While several Florida communities exceed the thresholds for several social vulnerability indices, there are no communities in **Figure 3.3.3.2** that exceed both thresholds for any index. Wilmington, NC exceeds the lower threshold for poverty and personal disruption, with a few other communities exceeding the lower threshold for one or the other. While the communities in **Figure 3.3.3.2** are not experiencing much social vulnerability, there could still be some negative social effects that are exacerbated by other vulnerabilities that occur but are not represented by these indicators. However, these measures of social vulnerability are representative of many common social vulnerability factors.

While some communities 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.

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 Fishery Conservation and Management Act (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 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 mi 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. The South Atlantic Council also established two voting seats for the Mid-Atlantic Council on the South Atlantic Mackerel Committee. 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 and legal 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 Atlantic States Marine Fisheries Commission (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's 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 NMFS 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.

The NOAA Office of General Counsel Penalty Policy and Penalty Schedule is available online at http://www.gc.noaa.gov/enforce-office3.html.

# Chapter 4. Environmental Effects and Comparison of Alternatives

## Action 1. Remove species from the Snapper Grouper Fishery Management Plan (FMP)

**Alternatives**

**1. No Action.** Retain the current species in the Snapper Grouper FMP.

**2 (Preferred).** Remove black snapper (*Apsilus dentatus*) from the Snapper Grouper FMP.

**3 (Preferred).** Remove dog snapper (*Lutjanus jocu*) from the Snapper Grouper FMP.

**4 (Preferred).** Remove mahogany snapper (*Lutjanus mahogoni*) from the Snapper Grouper FMP.

**5 (Preferred).** Remove schoolmaster (*Lutjanus apodus*) from the Snapper Grouper FMP.

### 4.1.1 Biological Effects

The Fishery Management Unit (FMU) defined by each Council Fishery Management Plan (FMP) identifies the specific fishery (or that portion thereof) that is relevant to the FMP's management objectives. Decisions about the composition of FMUs are an integral part of the plan development process, as FMUs define the specific species that are to be the target of federal conservation and management. The National Marine Fisheries Service (NMFS) guidelines to define FMUs specify that FMUs may be organized around biological, geographic, economic, technical, social, or ecological goals (50 CFR §600.320(d)(1)). NMFS guidelines for determining whether to include species in a FMU for purposes of federal conservation and management direct the Councils to consider the following seven factors (50 CFR §600.340(b)(2)):

1. The importance of the fishery to the Nation and the regional economy;
2. whether an FMP can improve the condition of the stock;
3. the extent to which the fishery could be or already is adequately managed by states;
4. whether an FMP can further the resolution of competing interests and conflicts;
5. whether an FMP can produce more efficient utilization of the fishery;
6. whether an FMP can foster orderly growth of a developing fishery; and
7. costs of the FMP balanced against benefits.

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) National Standard 1 (NS1) guidelines established criteria for designating Ecosystem Component (EC) species (species that remain in the FMP but have no regulations assigned to them including

no annual catch limits (ACLs)). The NS1 guidelines pertaining to EC species (74 FR 3178; Section 50 CFR 600.310 (d) (5) (i)) indicate a species should meet four criteria to be considered for classification as an EC species:

1. Be a non-target species or non-target stock;
2. Not be determined to be subject to overfishing, approaching overfished, or overfished;
3. Not be likely to become subject to overfishing or overfished, according to the best available information, in the absence of conservation and management measures; and
4. Not generally be retained for sale or personal use.

In the Comprehensive ACL Amendment (SAFMC 2011c), schoolmaster, along with five other snapper grouper species, were designated as EC species based on meeting at least three out the four criteria. Through the same amendment, 13 snapper grouper species were removed from the FMP after consideration of the seven factors specified at 50 CFR §600.340(b)(2) and listed above. The Gulf of Mexico Fishery Management Council (Gulf Council) previously removed dog snapper, mahogany snapper, and schoolmaster from the Fishery Management Plan for Reef Fish Resources of the Gulf of Mexico (Reef Fish FMP) because it was determined that they were not in need of federal management based on the seven factors specified at 50 CFR §600.340(b)(2); (GMFMC 2011). Black snapper has never been managed by the Gulf Council. There is currently no management for black snapper, dog snapper, mahogany snapper, and schoolmaster in federal waters of the Gulf of Mexico.

The South Atlantic Council is considering removing black snapper, dog snapper, mahogany snapper, and schoolmaster from the FMP because they have extremely low commercial landings in state and federal waters, almost all harvest (recreational and commercial) occurs in South Florida, and the Florida Fish and Wildlife Conservation Commission (FWC) has agreed that, if the four species are removed from the FMP, they will extend state regulations for those species into federal waters. Additionally, the South Atlantic Council desires consistent regulations for snapper grouper species caught primarily in South Florida. Some regulations for snapper grouper species caught in South Florida are subject inconsistent regulations across the jurisdictional boundaries of Florida state waters, Gulf of Mexico federal waters, and South Atlantic federal waters (**Table 4.1.1.1**). Inconsistent regulations make enforcement difficult and may negatively affect overall sustainability of species harvested primarily in that area. More information on the regulatory consistency aspect of this action may be found in **Section 4.1.4** Administrative Effects.

The South Atlantic Council is not considering making dog snapper, mahogany snapper, and black snapper ecosystem component species in this amendment because the objective is to establish a consistent regulatory environment across the jurisdictional boundaries of the South Atlantic, Gulf of Mexico, and Florida state waters. Because these species are not managed by the Gulf Council, retaining them in the Snapper Grouper FMP as ecosystem component species would not create consistent regulations across all three jurisdictional boundaries and would not meet the purpose and need of this amendment. Additionally, if they are made ecosystem component species, and if schoolmaster is retained as an ecosystem component species in the FMP, the state of Florida would not be able to extend their management authority for those

species into federal waters because states may not manage species included in federal fishery management plans in federal waters.

**Table 4.1.1.1** Regulations for the four subject species in Florida state waters, Gulf of Mexico federal waters, and South Atlantic federal waters.

| Species | FL State Regulations* | Gulf of Mexico Federal Regulations | South Atlantic Federal Regulations** |
|---|---|---|---|
| **Black Snapper** | **Commercial:** None<br><br>**Rec:** No size limit, 10 per person | **Commercial:** None<br><br>**Rec:** None | **Commercial:** Managed as part of the Deepwater Complex. Current ACL = 60,371 lbs ww. ACL = 131,634 lbs ww if Amendment 32 is implemented.***<br><br>**Rec:** Deepwater Complex ACL = 19,313 lbs ww. ACL = 38,644 lbs ww if Amendment 32 is implemented. 10 snapper per person aggregate. |
| **Dog Snapper** | **Commercial:** 12-inch (TL) size limit.<br><br>**Rec:** 12-inch (TL) size limit, 10 per person. | **Commercial:** None<br><br>**Rec:** None | **Commercial:** Managed as part of the Snappers Complex. Current ACL = 215,662 lbs ww. ACL = 344,884 lbs ww if Amendment 29 is implemented. 12-inch (TL) size limit.<br><br>**Rec:** ACL = 728,577 lbs ww. ACL = 1,172,832 lbs ww if Amendment 29 is implemented. 12-inch (TL) size limit. 10 snapper per person aggregate. |
| **Mahogany Snapper** | **Commercial:** 12-inch (TL) size limit.<br><br>**Rec:** 12-inch (TL) size limit, 10 per person. | **Commercial:** None<br><br>**Rec:** None | **Commercial:** Managed as part of the Snappers Complex. ACL = 215,662 lbs ww. ACL = 344,884 lbs ww if Amendment 29 is implemented. 12-inch (TL) size limit.<br><br>**Rec:** ACL = 728,577 lbs ww. ACL = 1,172,832 lbs ww if Amendment 29 is implemented. 12-inch (TL) minimum size limit. 10 snapper per person aggregate. |
| **Schoolmaster** | **Commercial:** 10-inch (TL) size limit.<br><br>**Rec:** 10-inch (TL) size limit, 10 fish per person. | **Commercial:** None<br><br>**Rec:** None | EC Species, no Regulations or ACLs. |

*Florida regulations state a federal permit (Gulf Reef Fish Permit or Snapper Grouper Unlimited or 225 lb Permit) is required to harvest in commercial quantities and sell "Reef Fish" species in Florida.
** Commercial harvest of black snapper, dog snapper, and mahogany snapper is prohibited when their respective species group complex commercial ACLs are met or projected to be met. If the combined recreational landings for the Snappers Complex exceeds the recreational ACL, then recreational landings will be monitored for a persistence

in increased landings and, if necessary, the length of following recreational fishing season would be reduced by the amount necessary to ensure recreational landings do not exceed the recreational ACL.
*** An emergency rule has temporarily removed blueline tilefish from the Deepwater Complex and specified ACLs of 60,371 lbs ww for the commercial sector and 19,313 lbs ww for the recreational sector. Amendment 32 would permanently remove blueline tilefish from the Deepwater Complex and incorporate new ABCs from Amendment 29 for silk snapper and yellowedge grouper, which are contained in the Complex. For the Deepwater Complex, Amendment 32 proposes a commercial ACL of 131,634 lbs ww and a recreational ACL of 38,644 lbs ww.

**Alternative 1 (No Action)** would not change the species composition of the current snapper grouper FMU or the FMP. Harvest management provisions currently in place for black snapper, dog snapper, and mahogany snapper would remain in place, and the South Atlantic Council would retain the ability to implement management measures for schoolmaster, which is an EC species, if the species should require management measures in the future. Landings of all four of these species are very low (see **Table 4.1.1.2**).

**Table 4.1.1.2** Total recreational and commercial landings of dog snapper, schoolmaster, mahogany snapper, and black snapper from 2004-2013.

| | Dog Snapper | | | Schoolmaster | | | Mahogony Snapper | | | Black Snapper | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Federal | State | Not Defined | Federal | State | Not Defined | Federal | State | Not Defined | Federal | State | Not Defined |
| | Commercial | | | | | | | | | | | |
| Pounds (ww) | 3,019 | 302 | 659 | 1,052 | 6 | 50 | 213 | 212 | 0 | 929 | 32 | 76 |
| Percentage | 75.9 | 7.6 | 16.6 | 94.9 | 0.5 | 4.5 | 50.1 | 49.9 | 0.0 | 89.6 | 3.1 | 7.3 |
| | Recreational | | | | | | | | | | | |
| Pounds (ww) | 6,087 | 27,877 | 2,178 | 9,855 | 39,811 | 4,434 | 1,154 | 133 | 266 | 0 | 0 | 2 |
| Percentage | 16.8 | 77.1 | 6.0 | 18.2 | 73.6 | 8.2 | 74.3 | 8.5 | 17.1 | 0 | 0 | 100 |

Black snapper, dog snapper, and mahogany snapper are each managed as part of species complexes in federal waters with sector ACLs and accountability measures (AMs) to ensure overfishing does not occur. The Snappers Complex, including mahogany snapper and dog snapper, has a proposed recreational ACL of 1,172,832 lbs ww, a commercial ACL of 344,884 lbs ww, and a recreational annual catch target (ACT) of 984,898 lbs ww, which are updated values proposed in Amendment 29 to the Snapper Grouper FMP, currently in the rulemaking process. ACLs and AMs are at the Complex level, there are not individual ACLs and AMs for species that comprise species complexes.

Black snapper is included in the Deepwater Complex. An emergency rule has temporarily removed blueline tilefish from the Deepwater Complex and specified ACLs of 60,371 lbs ww for the commercial sector and 19,313 lbs ww for the recreational sector. Amendment 32 to the Snapper Grouper FMP, which is also in the rulemaking process, would permanently remove blueline tilefish from the Deepwater Complex and incorporate new ABCs from Amendment 29 to the Snapper Grouper FMP for silk snapper and yellowedge grouper, which are contained in the Complex. The proposed values for the Deepwater Complex are a commercial ACL of 131,634 lbs ww, recreational ACL equal to 38,644 lbs ww, and recreational ACT equal to 3,134 lbs ww.

When the commercial ACL for the Snappers Complex or the Deepwater Complex is met or projected to be met, harvest and sale of species in the Complexes is prohibited. If commercial landings exceed the ACL, and at least one of the species in a Complex is overfished, the

commercial ACL will be reduced the following year by the amount of the overage. For the recreational sector, if the combined recreational landings for a Complex exceed the recreational ACL, then recreational landings will be monitored for a persistence in increased landings and, if necessary, the length of following recreational fishing season would be reduced by the amount necessary to ensure recreational landings do not exceed the recreational ACL. However, the length of the recreational season might not be reduced during the following fishing year if the Regional Administrator determines, using the best scientific information available, that a reduction in the length of the following fishing season is unnecessary. For black snapper, dog snapper, and mahogany snapper, 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.

This system of ACLs and AMs for black snapper, mahogany snapper, and dog snapper represent the status quo situation and what would no longer exist if each of the species were removed from the FMP in **Preferred Alternatives 2-4**. ACLs and AMs are not in place for schoolmaster (**Preferred Alternative 5**) since this is an EC species; although, it is still included in the FMP for data collection purposes. However, as seen in **Table 4.1.1.2**, landings of these species over the past nine years are so low that any protections afforded to them through the federal ACLs and AMs are likely to have a negligible beneficial effect on the overall sustainability of those stocks. Dog snapper, mahogany snapper, and black snapper are not typically targeted by commercial or recreational fishermen; therefore, bycatch associated with harvest of these species is extremely low. If the state of FL does extend regulations for these species into federal waters, impacts on bycatch would be negligible since harvesters would simply abide by FL state bag and size limits.

**Table 4.1.1.1** illustrates regulatory inconsistencies that currently exist for the four species addressed in this action. When regulations are not consistent for species harvested within close proximity to several jurisdictional boundaries, enforcement is very difficult and it is difficult for fishery participants to determine which set of regulations they should abide by at any given time. Confusion presented by a complex regulatory environment may lead to adverse biological impacts for these species; however, those impacts are likely to be small given the low magnitude of landings from state and federal waters. Nonetheless, regulatory consistency could improve species management and harvest tracking, which in turn, is likely to benefit the species addressed in this action. Preserving AMs to limit harvest when needed may benefit the species in question; however, allowing regulatory inconsistencies across jurisdictional boundaries to remain could negate biological benefits associated with the AMs. Because **Alternative 1 (No Action)** would maintain current recreational and commercial AMs for dog snapper, mahogany snapper, and black snapper; but would allow confusion due to an inconsistent regulatory environment, the overall biological impacts of this alternative are expected to be neutral.

**Preferred Alternative 2** would remove black snapper from the snapper grouper FMP. Total annual landings (recreational and commercial), in state and federal waters, of black snapper were 0 pounds whole weight (lbs ww) from 1986 through 1990; less than 500 lbs ww in 1991 and 1992; less than 5,000 lbs ww in 1993 and 1994; less than 600 lbs ww with some years of 0 lbs

ww from 1995 through 2013. There were no landings of black snapper in Georgia through North Carolina from 1986 through 2013. **Table 4.1.1.2** shows that 90% of commercial landings from 2004 through 2013 were from federal waters and zero percent of recreational landings were from federal waters. Despite a high percentage of black snapper harvest being from federal waters, the total pounds landed commercially from federal waters from 2004 through 2013 is just over 900 lbs ww (average 90 lbs ww/year), a decidedly infinitesimal amount when compared to other commercially important snapper species within the snapper grouper FMU.

Removal of black snapper from the snapper grouper FMP would remove current federal regulations for the Deepwater Complex that apply to black snapper. Without black snapper, the Deepwater Complex ACL proposed for implementation in Amendment 32 to the Snapper Grouper FMP would be reduced from 170,279 lbs ww to 169,896 lbs ww, a difference of 382 lbs ww. **Table 4.1.1.3** illustrates how the ACL for the Deepwater Complex is determined as well as how the Complex ACL would change in the absence of black snapper.

**Table 4.1.1.3.** ACLs and recreational ACT for the Deepwater Complex. Values reflect those proposed in Amendments 29 and 32 to the FMP.*

| Species | Total ACL (lbs ww) | Commercial ACL (lbs ww) | Recreational ACL (lbs ww) | Recreational ACT (lbs ww) |
|---|---|---|---|---|
| **Yellowedge grouper** | 55,596 | 50,464 | 5,132 | 736 |
| **Silk snapper** | 90,323 | 66,794 | 23,529 | 7,407 |
| **Misty grouper** | 2,863 | 2,388 | 475 | 237 |
| **Sand tilefish** | 7,983 | 1,770 | 6,213 | 3,107 |
| **Queen snapper** | 9,466 | 8,756 | 710 | 355 |
| **Black snapper** | 382 | 366 | 16 | 8 |
| **Blackfin snapper** | 3,665 | 1,096 | 2,569 | 1,284 |
| **Deepwater Complex ACL** | 170,278 | 131,634 | 38,644 | 13,134 |
| **Deepwater Complex ACL without black snapper** | 169,896 | 131,266 | 38,628 | 13,126 |

*ACLs and the recreational ACT are only for the Deepwater Complex. There are not individual ACLs or recreational ACTs for species contained within the Deepwater Complex.

Whether or not to include black snapper in the Snapper Grouper FMP (**Preferred Alternative 2**) for purposes of federal conservation and management is assessed in terms of the 7 factors in the NMFS Guidelines at 50 CFR §600.340(b)(2). Because landings of black snapper are exceptionally small in state and federal waters, the species may not be considered highly important to the snapper grouper fishery, the Nation, or the regional economy (details on the socioeconomic significance of this species are included in the next two sections and in **Chapter 3** of this document) (Factor 1). Black snapper is not targeted to a large degree; therefore, including it in the FMP to regulate harvest is not likely to improve the condition of the stock (Factor 2). The FWC has agreed that if NOAA Fisheries removes black snapper from the FMP, they would extend regulations (see **Table 4.1.1.1**) for the species into federal waters of the South Atlantic and Gulf of Mexico (Factor 3). Landings in areas north of Florida are negligible;

therefore, federal management north of the Florida/Georgia boundary is not necessary. As stated previously, black snapper are not heavily targeted by recreational or commercial fishermen in state or federal waters; thus, including black snapper in the FMP is not likely to further any resolution of competing interests and conflicts, as there are currently no competing interests harvesting the species (Factor 4). Keeping black snapper in the FMP would perpetuate the issue of inconsistencies in regulations across jurisdictional boundaries because the Gulf of Mexico has no regulations for this species; therefore, doing so would not produce a more efficient utilization of the fishery (Factor 5). Keeping black snapper in the FMP is not likely to foster orderly growth of a developing fishery (Factor 6). Historical harvest data indicates black snapper landings from state and federal have always been very small and a developing fishery for the species has not emerged since implementation of the FMP. **Section 4.1.2** discusses costs and benefits of removing black snapper from the FMP (Factor 7). Additionally, black snapper was never included in the Gulf Council's Reef Fish FMP because they were not determined to be in need of federal management when the FMP was formed.

For the reasons listed above, removing black snapper from the FMP is not likely to adversely affect target species, or non-target species that may co-occur with black snapper. Biological effects are expected to be neutral under **Preferred Alternative 2** because historical harvest of black snapper in federal waters has been extremely low, and Florida state regulations are expected to be extended into federal waters to manage the small amount of harvest that does occur for black snapper. However, small positive biological effects could be expected with **Preferred Alternative 2** if the state of Florida establishes consistent regulations for black snapper and state and federal waters of the South Atlantic and Gulf of Mexico.

**Preferred Alternatives 3** and **4** would remove dog snapper and mahogany snapper from the FMP, respectively. Removing them from the FMP would also remove them from the Snappers Complex. Similar to the Deepwater Complex, each species in the Snappers Complex contributes to the Complex ACL. Therefore, removing dog snapper and mahogany snapper from the Snappers Complex would remove their species-specific ACLs from the Complex ACL. **Table 4.1.1.4** illustrates how the ACL for the Snappers Complex is determined as well as how the Complex ACL would change in the absence of dog snapper and mahogany snapper.

**Table 4.1.1.4.** ACLs and recreational ACT for the Snappers Complex with and without dog and mahogany snapper. Values reflect those proposed in Amendment 29 to the FMP.

| Species | Total ACL (lb ww) | Commercial ACL (lb ww) | Recreational ACL (lb ww) | Recreational ACT (lb ww) |
|---|---|---|---|---|
| **Gray snapper** | 1,247,132 | 302,180 | 944,952 | 837,605 |
| **Lane snapper** | 203,486 | 30,014 | 173,472 | 132,428 |
| **Cubera snapper** | 63,266 | 12,381 | 50,885 | 13,103 |
| **Dog snapper** | 3,285 | 273 | 3,012 | 1,506 |
| **Mahogany snapper** | 548 | 36 | 512 | 256 |
| **Total** | 1,517,716 | 344,884 | 1,172,832 | 984,898 |
| **Snapper Complex ACL without Dog Snapper (Alt 3)** | 1,514,431 | 344,611 | 1,169,820 | 983,392 |
| **Snapper Complex ACL without Mahogany Snapper (Alt 4)** | 1,517,168 | 344,575 | 1,172,320 | 984,642 |
| **Snapper Complex ACL without Dog and Mahogany Snapper** | 1,513,883 | 344,575 | 1,169,308 | 983,136 |

*ACLs and the recreational ACT are only for the Snappers Complex. There are not individual ACLs or recreational ACTs for species contained within the Snappers Complex.

Total annual landings (recreational and commercial) of dog snapper, in state and federal waters combined, were less than 8,000 lbs ww from 1986 through 2013 except in 2007 when landings increased to about 25,000 lbs ww. Total landings in Georgia through North Carolina from 1986 through 2005 were 0 lbs ww except in 2000 when total landings were less than 6,000 lbs ww; from 2006 through 2013, total landings were less than 400 lbs ww. Total annual landings (recreational and commercial) of mahogany snapper, in state and federal waters combined, were less than 600 lbs ww from 1986 through 2013 except 1999 and 2007 when landings increased to about 4,000 lbs ww. There were no landings of mahogany snapper in Georgia through North Carolina from 1986 through 2013 except in 2010 when total landings for these states were less than 500 lbs ww.

Whether or not to include dog snapper (**Preferred Alternative 3**) or mahogany snapper (**Preferred Alternative 4**) in the Snapper Grouper FMP for purposes of federal conservation and management is assessed in terms of the 7 factors in the NMFS Guidelines at 50 CFR §600.340(b)(2). Because landings of dog snapper and mahogany snapper are exceptionally low in state and federal waters, both species may not be considered highly important to the snapper grouper fishery, the Nation, or the regional economy (details on the socioeconomic significance of these species are included in the next two sections and in Chapter 3 of this document) (Factor 1). Neither species is targeted to a large degree (see previous landings discussion); therefore, including them in the FMP to regulate harvest is not likely to improve the condition of the stock (Factor 2). The FWC has agreed that, if NMFS removes these species from the FMP, they would extend regulations (see **Table 4.1.1.1**) for the species into federal waters (Factor 3). Landings in areas north of Florida are negligible; therefore, federal management north of the Florida/Georgia

boundary is not necessary. As stated previously, dog snapper and mahogany snapper are not heavily targeted by recreational or commercial fishermen in state or federal waters; thus, including these species in the FMP is not likely to further any resolution of competing interests and conflicts, as there are currently no competing interests harvesting the species (Factor 4). Keeping dog snapper and mahogany snapper in the FMP would perpetuate the issue of inconsistencies in regulations across jurisdictional boundaries because federal waters in the Gulf of Mexico have no regulations for these species; therefore, doing so would not produce a more efficient utilization of the fishery (Factor 5). Keeping dog snapper and mahogany snapper in the FMP is not likely to foster orderly growth of a developing fishery (Factor 6). Historical harvest data indicate landings of those species from state and federal have always been very small and a developing fishery for dog snapper and/or mahogany snapper has not emerged since implementation of the FMP. **Section 4.1.2** discusses the costs and benefits associated with removing dog and mahogany snapper from the FMP (Factor 7). The Gulf Council considered the same seven factors in the NMFS Guidelines and determined dog snapper and mahogany snapper were not in need of federal management (GMFMC 2011).

The biological impacts of **Preferred Alternatives 3** and **4** are expected to be neutral. Historically, harvest of dog snapper and mahogany snapper in federal waters has been extremely low, and Florida state regulations are expected to be extended into federal waters off Florida to manage the small amount of harvest that does occur for dog snapper and mahogany snapper. There are currently no regulations for these species in federal waters of the Gulf of Mexico. Small positive biological effects could be expected from **Preferred Alternatives 3** and **4** if the state of Florida were to establish consistent regulations for dog snapper and mahogany snapper and state and federal waters of the South Atlantic and Gulf of Mexico.

**Preferred Alternative 5** would remove schoolmaster from the FMP. Schoolmaster was designated an EC species in 2012 through the Comprehensive ACL Amendment (SAFMC 2011c). Total annual landings (recreational and commercial) of schoolmaster, in federal and state waters combined, were less than 15,000 lbs ww from 1986 through 2013. There were no landings of schoolmaster in Georgia through North Carolina from 1986 through 2013 except in 1995 when less than 500 lbs ww were landed. Although there are currently no federal regulations for schoolmaster in the South Atlantic or Gulf of Mexico, the FWC does manage them in state waters with a 10-inch size limit and a 10 fish per person bag limit. If schoolmaster were removed from the Snapper Grouper FMP and Florida state regulations for the species were extended into federal waters off Florida in the South Atlantic and Gulf of Mexico, schoolmaster would be subject to Florida harvest restrictions. Therefore, removing schoolmaster from the FMP may have positive biological benefits for schoolmaster if the state of Florida were to apply their regulations to the species, where no harvest restrictions currently exist. In essence, schoolmaster would be subject to greater protection if it were removed from the FMP and if the State of Florida were to extend their management measures for the species into federal waters than if it were to remain in the FMP without any harvest restrictions. However, because schoolmaster are not heavily targeted by commercial or recreational fishermen, the potential biological benefit may be limited.

Designating schoolmaster as an EC species allowed the species to stay in the FMP without assigning management measures or ACLs to it. One of the advantages of EC designation rather than removal from a FMP is that the fishery management council maintains the ability to implement management measures and establish ACLs, AMs, and ACTs for those species without having to add them back into the FMP. If schoolmaster is removed from the Snapper Grouper FMP, and the South Atlantic Council were to decide in the future that the species was in need of some form of management, schoolmaster would need to be added back to the roster of species included in the Snapper Grouper FMP through a plan amendment before harvest controls could be implemented. The same would be true for black snapper, mahogany snapper, and dog snapper.

As noted previously, black snapper, mahogany snapper, dog snapper, and schoolmaster are not managed in federal waters of the Gulf of Mexico. The state of Florida has expressed their intent to extend state management measures for those species into Florida state waters, including waters on the Gulf of Mexico and South Atlantic sides of the state. Therefore, if these four species are removed from the FMP, and the State of Florida extends regulations governing harvest of the four species into federal waters in the Gulf of Mexico, black snapper, mahogany snapper, dog snapper, and schoolmaster would be subject to Florida state regulations in the Gulf of Mexico where they previously were not subject to harvest restrictions. Therefore, if the species are removed from the FMP, and the state of Florida does extend Florida regulations into federal waters off Florida in the Gulf of Mexico, these species would gain harvest protections and the associated biological benefits that do not exist under the no action alternative.

In the long term, biological effects of removing these species from the FMP could be negative if they are in need of federal management and the South Atlantic Council is unable to establish harvest controls in a timely manner. However, any negative biological impacts that could arise in this situation are likely to be minimal because the South Atlantic Council would have the ability to add those species back into the FMP if they feel such an action is warranted. Alternatively, removal of these species could have positive biological effects if the state of Florida establishes consistent regulations in state and federal waters of the South Atlantic and Gulf of Mexico. However, because harvest of these species is so minor, any biological effect would also be expected to be minor.

None of the alternatives under consideration are expected to adversely impact species or critical habitat listed under the Endangered Species Act (ESA). Removing the four snapper grouper species addressed in this action would not alter the way in which the snapper grouper fishery is prosecuted in terms of gear types used or areas fished; nor would any of the alternatives substantially increase or decrease fishing effort. Therefore, no impacts on ESA-listed species or designated critical habitat thereof are anticipated as a result of this action (see **Section 3.2.4** for a detailed description of ESA-listed species and critical habitat in the action area).

The essential fish habitat (EFH) provisions of the Magnuson-Stevens Act require NOAA Fisheries, regional fishery management councils, and other federal agencies to identify and

protect important marine and anadromous fish habitat. In the regulatory context, one of the most important provisions for conserving fish habitat is the consultation required by federal agencies involved in permitting, funding, or undertaking actions, which may adversely impact EFH. At its most basic, an EFH consultation consists of a federal agency providing NOAA Fisheries with an EFH assessment, NOAA Fisheries responding with EFH conservation recommendations followed by the federal agency's written response to the recommendations. In accordance with the regulations, EFH is identified and described for each major life-stage of every species managed under the Magnuson-Stevens Act. The effectiveness of EFH conservation recommendations can be strengthened when a habitat type (or parcel) is identified and described as EFH for multiple species as well as multiple life-stages of multiple species. As species are removed from management under the Magnuson-Stevens Act individual habitat types (or parcels) also lose the associated EFH identification and description for those species and life-stages. **Preferred Alternatives 2-5** would preclude NOAA Fisheries from identifying habitats as "essential fish habitat" for the four snapper grouper species for future EFH consultations. While the ecological importance of a habitat type (or parcel) remains the same, the effectiveness of future EFH consultations for those habitat types (and parcels) may be diminished because of the reduced relative value and importance of that habitat to federally managed species. In other words, the same species and species life-stages still rely on the same habitat type (or parcel) for "spawning, breeding, feeding, and growth to maturity" but fewer of them would be managed under the Magnuson-Stevens Act. Therefore, **Preferred Alternatives 2-5** of this action may result in some low level of indirect adverse impact on the biological environment, specifically related to EFH and the EFH consultation process.

Neither NOAA Fisheries nor SAFMC typically specify all managed species and life-stages in comment letters transmitting recommendations to protect and conserve EFH during the consultation process. Rather, a subset of the species from each FMP is provided based on the level of information available in the scientific literature supporting the EFH designation (see 50 CFR 600.815(a)(iii) for a description of EFH information levels) and conservation recommendations are based on how the proposed action that is the subject of the EFH consultation would affect the species ability to use the habitat for the functions germane to the EFH information level. For example, impacts to EFH designated based on level one information (presence/absence) receive less scrutiny during consultation than impacts to EFH designated based on level three information (relative rates of growth, reproduction or survival). It is not possible at this time to quantify the direct impact of **Preferred Alternatives 2-5** on future EFH consultations, however, the impact of **Preferred Alternative 5** is expected to be higher than the impact of **Preferred Alternatives 2-4** because the EC designation for schoolmaster is based the relatively large body of scientific literature available for this species. NOAA Fisheries' initial determination is that **Preferred Alternatives 2-5** would not adversely impact EFH.

### 4.1.2 Economic Effects

This action proposes to remove 4 species from the Snapper Grouper FMU managed by the South Atlantic Council. **Preferred Alternatives 2**, **3**, **4** and **5** would result in administrative

changes and none are likely to affect the catchability of black snapper, dog snapper, mahogany snapper, or schoolmaster by fishery participants.

Further, removing these species from Federal management and delegating management to the state of Florida is expected to result in more efficient management. Specifically, Florida would obtain management authority over the four species that occur largely in southern Florida. Complicating matters is the fact that both the South Atlantic and Gulf of Mexico Councils manage south Florida waters. A stated goal by both Councils is to have consistency in regulations in southern Florida. Allowing Florida to manage these species would assist in achieving that goal. Turning over management of these species to Florida would allow federal resources (labor and capital) to be used more effectively in the management of the remaining snapper grouper species.

If the species are not removed from federal management, as would be the case under **Alternative 1 (No Action)**, annual catch limits (ACLs), accountability measures (AMs), and annual catch targets (ACTs) would need to be enforced for three of the four species. No management measures are in place for schoolmaster as it was designated an EC species. By removing 4 of the current 59 (approximately 7%) species currently in the FMU, the administrative costs of federally managing the snapper grouper fishery could be reduced under **Preferred Alternatives 2-5**, and potentially in a proportional manner (e.g., federal administrative costs might be reduced by 7%).

Therefore, in general, removing species from the Snapper Grouper FMU is expected to result in net economic benefits rather than losses. More specifically, the more species removed, net economic benefits are expected to be maximized. Because the removal of species from the Snapper Grouper FMU is an administrative action, and thus does not directly affect participants in the snapper grouper fishery, these net economic benefits are the result of indirect rather than direct economic effects.

### 4.1.3 Social Effects

The expected social effects resulting from removal of species from the snapper grouper FMP (**Preferred Alternatives 2-5**) may be beneficial as it may make management decisions timelier and streamlined if fewer species are included in the management unit and do not require monitoring and assessment. This may become crucial with the present economic climate as state and federal budgets are reduced and management needs become more focused on species that are both more economically and socially important. Any negative effects on the stock by removing federal management can be mitigated through extension of state management into federal waters, and this would likely minimize any effects on fishing opportunities.

Maintaining status quo under **Alternative 1 (No Action)** would not be expected to have negative effects on fishermen or communities, although this alternative would likely not result in any benefits expected from removing species under **Preferred Alternatives 2-5**. As noted in **Section 4.1.1**, black snapper is included in the Deepwater Complex and removal from the FMU (**Preferred Alternative 2**) would result in a lower Deepwater Complex ACL. Change to a multi-species ACL may have some negative effects on commercial fishermen and recreational

fishing opportunities if access to other species in the complex becomes limited due to a lower ACL. However the difference in the ACL under **Preferred Alternative 2** would be minimal (**Table 4.1.1.3**) and would not be expected to affect fishermen targeting other species in the Deepwater Complex. This would be similar to expected effects on fishermen under **Preferred Alternatives 3** and **4** in that removal of dog snapper and mahogany snapper, both included in the Snappers Complex, would result in a small change in the Snappers Complex ACL (**Table 4.1.1.4**) and likely have minimal effects on fishermen targeting other species in the snapper complex.

Because schoolmaster was designated as an ecosystem component species in the Comprehensive ACL Amendment (SAFMC 2011c) and landings are low, **Preferred Alternative 5** is not expected to have negative or positive effects on fishermen and communities.

### 4.1.4 Administrative Effects

**Alternative 1 (No Action)** would not remove black snapper, dog snapper, mahogany snapper, or schoolmaster from the FMP. Regulations that are currently in place for black snapper, dog snapper, and mahogany snapper would remain in place, and schoolmaster would continue to have no federal regulations associated with it. Under **Alternative 1 (No Action)**, regulatory inconsistencies would still exist across jurisdictional boundaries of the South Atlantic, Gulf of Mexico, and Florida state waters. Confusion about what regulations for what species are applicable in specific areas would persist, making law enforcement more complicated.

**Preferred Alternative 2** would remove black snapper from the FMP. Because black snapper is managed as part of the Deepwater Complex, which includes several other snapper grouper species, removing it from Deepwater Complex would not result in a reduced administrative burden associated with regulating harvest of the species. The Deepwater Complex would continue to be managed as it is now, but in the absence of black snapper. The same is true for **Preferred Alternatives 3** and **4**, which would remove dog snapper and mahogany snapper from the Snappers Complex, respectively. Therefore, removing them from the FMP and from the Snappers Complex would not result in any change in staff time associated with ACL-monitoring efforts. The administrative burden associated with monitoring the remaining species in the Snappers Complex would still exist regardless of whether or not dog snapper and mahogany snapper are removed from the FMP. Schoolmaster is currently an ecosystem component species with no federal regulations.

If the state of Florida extends fishing regulations governing harvest of the four species addressed in this action into federal waters, the regulatory environment would be made more consistent across the jurisdictional boundary of state and federal waters. This will aid law enforcement efforts and simplify the regulatory environment for fishery participants. Therefore, the resulting regulatory consistency that would result from **Preferred Alternatives 2-5** would have a positive effect on the administrative environment.

## Action 2. Clarify regulations for the golden tilefish longline endorsement to reflect the South Atlantic Council's intent regarding which gear-specific quota endorsement holders may fish under.

### *Alternatives*

**1 (No Action).** Vessels with golden tilefish longline endorsements *are not* eligible to fish for golden tilefish using hook-and-line gear under the 500-pound gutted weight golden tilefish hook-and-line trip limit (50 CFR 622.191(2)(ii)).

**2.** Revise the golden tilefish longline endorsement regulations to state vessels that have valid or renewable golden tilefish longline endorsements *are not* eligible to fish for golden tilefish using hook-and-line gear under the 500-pound gutted weight golden tilefish hook-and-line trip limit.

**3 (Preferred).** Revise the golden tilefish longline endorsement regulation to state vessels that have valid or renewable golden tilefish longline endorsements anytime during the golden tilefish fishing year *are not* eligible to fish for golden tilefish using hook-and-line gear under the 500-pound gutted weight golden tilefish hook-and-line trip limit.

### 4.2.1 Biological Effects

Amendment 18B to the Snapper Grouper FMP (SAFMC 2013a) established a golden tilefish longline endorsement, which authorizes holders of the endorsement to harvest golden tilefish from the longline quota, also established through Amendment 18B. Amendment 18B also established a hook-and-line quota, intended only for fishery participants with valid Unlimited or 225-lb snapper grouper permits who do not hold a golden tilefish longline endorsement. Establishing gear specific commercial quotas was intended to help ensure that fishermen fishing with each gear type have a fair and equitable allocation of the commercial quota. At the time the golden tilefish endorsement and gear-specific quotas were established, the South Atlantic Council did not intend for endorsement holders to be able to fish on the hook-and-line quota, or for non-endorsement holders to fish on the longline quota.

Anecdotal information indicates that one or more golden tilefish longline endorsement holders have exploited a loophole in the regulatory text implementing the endorsement program, which allowed them to transfer their longline endorsement to another vessel or let the endorsement expire after the longline quota had been met so they could then fish from the hook-and-line quota. As the regulations are currently written, fishermen are not prohibited from transferring the golden tilefish longline endorsement to another vessel in order to circumvent the restriction on longline endorsement holders fishing on the hook-and-line quota. Under **Alternative 1 (No Action)**, exploitation of this regulatory loophole could persist. At this time, longline endorsement holders fishing on the hook-and-line quota is not a frequent occurrence; however, allowing such activity was not the South Atlantic Council's original intent when creating the golden tilefish longline endorsement program or the gear-specific quotas.

The golden tilefish hook-and-line quota is 135,324 lbs gutted weight (gw), and the longline quota is 405,971 lbs gw. Together these quotas equal the commercial sector ACL of 541,295 lbs gw. Each quota is managed with its own AM. If commercial hook-and-line landings reach or are projected to reach the hook-and-line quota, the hook-and-line component of the commercial sector will be closed for the remainder of the fishing year. If commercial longline landings reach or are projected to reach the longline quota, the longline component of the commercial sector will be closed for the remainder of the fishing year. After the commercial ACL for the longline component is met or is projected to be met, golden tilefish may not be fished for or possessed by a vessel with a golden tilefish longline endorsement. Regardless of which alternative the South Atlantic Council chooses under this action, including **Alternative 1 (No Action)**, no biological impacts are expected because overall harvest in the commercial sector is limited to the commercial ACL by the commercial hook-and-line and longline AMs.

**Alternative 2** would revise the current golden tilefish longline endorsement regulations to include the phrase "valid or renewable" to indicate that longline endorsement holders may not fish on the hook-and-line quota if their endorsement is valid or renewable. Though inclusion of this verbiage clarifies, to some extent, the South Atlantic Council's intent to not allow longline endorsement holders to fish on the hook-and-line quota, it does not address the issue of endorsement holders transferring their endorsement to another vessel with a valid or renewable Unlimited or 225 Snapper Grouper Permit once the longline quota is reached in order to be able to legally fish on the hook-and-line quota. Under this alternative, fishery participants who own a commercial snapper grouper permit with a longline endorsement and a permit without a longline endorsement could continue to transfer those permits on and off the same vessel within a single fishing year to facilitate fishing on the longline quota, and also fishing on the hook-and-line quota once the longline quota has been met. Though the same vessel could fish for golden tilefish under both quotas, overall harvest is still restricted to the commercial ACL and overfishing is prevented by the system of AMs in place for the species. Therefore, the biological impacts of this alternative are likely to be neutral.

**Preferred Alternative 3** is the only alternative that addresses both the endorsement transfer issue as well as clarifying that holders of valid or renewable golden tilefish longline endorsements may not fish on the hook-and-line quota at any point during the fishing year. By explicitly stating that fishermen who have a valid or renewable golden tilefish longline endorsement anytime during the golden tilefish fishing year are not eligible to fish for golden tilefish using hook-and-line gear under the 500-lbs gw hook-and-line trip limit, transferring an endorsement to another vessel in order to be able to fish on the hook-and-line quota after the longline quota has been reached would be prohibited. Therefore, individuals owning a commercial snapper grouper with a golden tilefish longline endorsement and a snapper grouper permit without the endorsement may still transfer the permits on and off a single vessel, but they would not be able to fish on the hook-and-line quota within the same fishing year.

No biological impacts, beneficial or adverse, are expected as a result of any of the alternatives under consideration for this action. This action would not significantly modify the way in which the snapper grouper fishery is prosecuted in terms of gear types used or area

fished. Therefore, there no impacts on ESA-listed species or designated critical habitats thereof are anticipated as a result of this action (see **Section 3.2.4** for a detailed description of ESA-listed species and critical habitat in the action area). Furthermore, no impacts on EFH or EFH-habitat areas of particular concern are expected under any of the alternatives considered for this action (see **Section 3.1** for a detailed description of EFH in the South Atlantic Region).

### 4.2.2 Economic Effects

The intent of **Alternative 2** and **Preferred Alternative 3** of this action are to close an unintended loophole created through implementation of Amendment 18B (SAFMC 2012). As explained in **Section 4.2.1**, anecdotal information indicates that one or more golden tilefish longline endorsement holders have exploited the loophole in the regulatory text that implemented the endorsement program. It is not clear how many participants in the fishery have been fishing with hook-and-line gear and have a renewable golden tilefish as the data for 2014 are not complete. However, participants who participated in both the longline and hook-and-line fishery would potentially have direct negative economic effects based on foregone losses from not being able to participate in the hook-and-line fishery. Presumably, because **Preferred Alternative 3** has more stringent criteria than **Alternative 2** in terms of keeping golden tilefish endorsement holders from participating in the hook-and-line fishery, **Preferred Alternative 3** would affect more golden tilefish longline endorsement participants. Nonetheless, golden tilefish longline endorsement holders who also participated in the hook-and-line fishery would cause the hook-and-line portion of the commercial ACL for golden tilefish to be caught earlier.

As both the longline portion of the commercial ACL and the hook-and-line portion of the ACL are caught each year prior to the end of the fishing year, there is not expected to be any overall economic loss, just a shifting of who is eligible to participate in the fishery.

From the perspective of longline endorsement holders, **Alternative 1 (No Action)** would have the largest direct, positive economic effects. **Preferred Alternative 3** and **Alternative 2** would result in the largest direct, negative economic effects. From the perspective of the hook-and-line participants in the fishery, **Alternative 1 (No Action)** would have the largest direct, negative economic effect. **Preferred Alternative 3** and **Alternative 2** would result in the largest direct, positive economic effects. But because the number of longline endorsement holders who have participated in the hook-and-line portion of the fishery is considered very low, the size of the economic effects, positive or negative, is also small.

### 4.2.3 Social Effects

Golden tilefish is an increasingly important species for the commercial sector, especially in certain areas on the central east coast of Florida (**Section 3.3.2**), and the growing popularity may have contributed to increased competition among resource users, and the race to fish. Regulations in Amendment 18B (SAFMC 2012) were intended to reduce the potential for user conflict, but fishermen have reported a loophole allowing longline endorsement holders to access

both longline and hook-and-line quota (see **Section 4.2.1**). **Alternative 1 (No Action)** would allow longline endorsement holders to continue to have access to the hook-and-line quota, which could result in increased user conflicts between the gear types. **Alternative 1 (No Action)** would be the most beneficial to the longline endorsement holders by maintaining access to the hook-and-line quota, relative to the restrictions for longline endorsement holders under **Alternative 2** and **Preferred Alternative 3**. However, there could be some issues of fairness for longline endorsement holders under **Alternative 2** and **Preferred Alternative 3** since black sea bass pot endorsement holders can fish hook and line during the seasonal closure for pots.
For hook-and-line fishermen, **Alternative 1 (No Action)** would be the least beneficial because the longline fishermen could continue to access the hook-and-line quota after the longline quota was caught. This could result in fairness concerns for the hook-and-line fishermen because the longline component was allocated 75% of the commercial ACL, and participation in the longline component is limited through the endorsement program. **Alternative 2** and **Preferred Alternative 3** would be more beneficial to the participants in the hook-and-line component by reducing the number of snapper grouper permit holders who can access the hook-and-line quota.

### 4.2.4 Administrative Effects

**Alternative 1 (No Action)** may result in golden tilefish longline endorsement holders to transfer their endorsements to another vessel or let the endorsement expire in order to fish on the golden tilefish hook-and-line quota. Though this was not the South Atlantic Council's intent when first implementing the endorsement program, anecdotal information indicates some endorsement holders have engaged in this activity to circumvent the prohibition on endorsement holders fishing on the hook-and-line quota once the longline quota has been met.

Administratively, it is difficult to track what portion of the ACL endorsement holders are harvesting, and the system may need to be modified to be able to track what quota endorsement holders are fishing under more accurately. **Alternative 2** would revise the regulatory text to include the "valid and renewable" provision, making it clear that fishermen with valid or renewable endorsements are not allowed to fish under the hook-and-line quota. However, this clarification does not address the issue of fishermen transferring their endorsements to other vessels to fish on the hook-and-line quota. Transferring endorsements is associated with a small administrative burden; therefore, **Alternative 2** may result in minimal negative administrative impacts.

**Preferred Alternative 3** would clarify the regulations to indicate that no one holding a valid or renewable golden tilefish longline endorsement at any time during the fishing year is eligible to fish under the hook-and-line quota. This alternative addresses the endorsement transfer issue with little to no room for inaccurate interpretation of the regulations. **Preferred Alternative 3** is the option most closely aligned with the South Atlantic Council's intent for the endorsement program, and it is likely to result in minimal, yet beneficial administrative impacts.

# Chapter 5. Council's Choice for the Preferred Alternatives

## 5.1 Remove species from the Snapper Grouper Fishery Management Unit (FMU)

### 5.1.1 Snapper Grouper Advisory Panel (AP) Comments and Recommendations

The Snapper Grouper AP discussed Amendment 35 at their October 2014 meeting. The AP approved the following motions:

MOTION: RECOMMEND ALTERNATIVES 2-5 AS PREFERREDS
APPROVED BY AP (1 OPPOSED)

MOTION: RECOMMEND THAT THE STATE OF FLORIDA REQUIRE A VALID SG PERMIT FOR THE SALE OF THESE SPECIES
APPROVED BY AP (1 OPPOSED)

At the December 2014 Council meeting, the Florida state representative addressed the motion above by stating that the Florida Fish and Wildlife Commission would not be able to require a federal permit for the sale of these species.

### 5.1.3 Law Enforcement Advisory Panel Comments and Recommendations

### 5.1.4 Scientific and Statistical Committee Comments and Recommendations

### 5.1.5 Public Comments and Recommendations

to be completed after public hearings in Jan 2015

### 5.1.6 South Atlantic Council Choice for Preferred Alternative

## 5.2 Clarify regulations for the golden tilefish longline endorsement to reflect the South Atlantic Council's intent regarding which gear-specific quota endorsement holders may fish under.

### 5.2.1 Snapper Grouper AP Comments and Recommendations

The Snapper Grouper AP discussed Amendment 35 at their October 2014 meeting. The AP approved the following motions:

MOTION: RECOMMEND ALTERNATIVE 3 UNDER ACTION 2 AS PREFERRED
APPROVED BY AP (0 OPPOSED)

MOTION: RECOMMEND THAT THE COUNCIL CONSIDER CHANGING THE START DATE OF THE FISHING YEAR FOR THE COMMERCIAL HOOK-AND LINE GOLDEN TILEFISH FISHERY TO MARCH 15.
APPROVED BY AP

### 5.2.2 Law Enforcement AP Comments and Recommendations

### 5.2.3 Scientific and Statistical Committee Comments and Recommendations

### 5.2.4 Public Comments and Recommendations

to be completed after public hearings in Jan 2015

### 5.2.5 South Atlantic Council Choice for Preferred Alternative

# Chapter 6. Cumulative Effects

## 6.1 Affected Area

The immediate impact area would be the federal 200-mile limit of the Atlantic off the coasts of North Carolina, South Carolina, Georgia, and east Florida to Key West, which is also the South Atlantic Fishery Management Council's (South Atlantic Council) area of jurisdiction. In light of the available information, the extent of the boundaries would depend upon the degree of fish immigration/emigration and larval transport, whichever has the greatest geographical range. The ranges of affected species are described in **Section 3.2**. The most measurable effects would be limited to the area off southern Florida within South Atlantic region. For this action, the cumulative effects analysis (CEA) includes an analysis of data dating back to 2004 and through what is expected to take place approximately before or within 2015-2017.

## 6.2 Past, Present, and Reasonably Foreseeable Actions Impacting the Affected Area

***Past Actions***

The reader is referred to **Appendix C** for a list of all past regulatory activity for species in the FMP.

***Present Actions***

Currently, there are several actions under development affecting the snapper grouper fishery. Amendment 29 to the Snapper Grouper FMP would update the South Atlantic Council's acceptable biological catch (ABC) control rule to incorporate methodology for determining the ABC of "Only Reliable Catch Species"; (2) adjust ABCs for the affected unassessed species; and (3) establish management measures for gray triggerfish in federal waters of the South Atlantic region.

Regulatory Amendment 14 would (1) modify the commercial and recreational fishing years for greater amberjack; (2) modify the recreational fishing year for black sea bass; (3) modify the recreational accountability measure (AM) for black sea bass; (4) modify the commercial fishing year for black sea bass; (5) change the commercial fishing seasons for vermilion snapper; (6) modify the trip limit for gag; and (7) modify the recreational AM for vermilion snapper.

The Generic Dealer Reporting Amendment, which became effective on August 7, 2014, established one dealer permit for the Gulf and South Atlantic Regions and increased the reporting frequency requirements for species managed by the Gulf of Mexico and South Atlantic Councils. This amendment is expected to improve fisheries data collection through more timely and accurate dealer reporting and streamlines the dealer permit system.

***Reasonably Foreseeable Future Actions***

Regulatory Amendment 20 would update the current ABC and sector ACLs for snowy grouper based on the outcome of a recent stock assessment.

Regulatory Amendment 22 to the Snapper Grouper FMP would update harvest limits for gag and wreckfish based on the outcome a recent Southeast Data, Assessment, and Review (SEDAR) stock assessment.

The Generic Accountability Measure (AM) and Dolphin Allocation Amendment would modify AMs for snapper-grouper species and golden crab to make them more consistent with AMs already implemented for other species and other FMPs. In the same amendment, South Atlantic Council is also considering alternatives to modify existing commercial and recreational sector allocations for dolphin.

Amendment 36 would establish new special management zones to protect spawning areas for speckled hind and warsaw grouper.

The proposed System Management Plan (SMP) would establish a management regime for the eight Snapper Grouper FMP Amendment 14 MPAs and would provide a foundation for potential future South Atlantic MPA management plans in the southeast U.S. The final SMP would contain proposed management action items and background details for the eight MPAs established by Amendment 14 in January of 2009.

Comprehensive Ecosystem-Based Amendment 3 contains an action to improve bycatch reporting for the snapper grouper fishery.

The Joint Commercial Logbook Reporting Amendment would require electronic reporting of landings information by federally-permitted vessels, which would increase the timeliness and accuracy of landings data.

The Joint Charter Boat Reporting Amendment would require charter vessels to regularly report their landings information electronically. Including charter boats in the recreational harvest reporting system would further improve the agency's ability to monitor recreational catch rates in-season.

***Expected Impacts from Past, Present, and Future Actions***

The above listed past, present and future actions are expected to result in cumulative impacts on the human environment. The Comprehensive ACL Amendment (SAFMC 2011c) removed 13 snapper grouper species from the FMP. This amendment would remove four more species, bringing the total removed over the past four years to 17. Removal of species from an FMP also removes them from essential fish habitat consultation consideration. Reducing the number of

federally-managed species utilizing a habitat type (or parcel) identified and described as EFH may reduce the strength of the EFH consultation for that EFH. Therefore, the action to remove four snapper grouper species from the FMP combined with the previous action to remove 13 snapper grouper species from the FMP may result in an adverse cumulative impacts on EFH. However, as noted above, it is not possible to quantify the direct impact of **Preferred Alternatives 2-5** on future EFH consultations. Therefore, those impacts, in combination with the intended effects of the other action in this amendment, and other actions affecting the resource and human environment, are not expected to result in significant adverse biological, social, or economic impacts.

## 6.3 Consideration of Climate Change and Other Non-Fishery Related Issues

***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 Fifth Assessment Report (November 2, 2014). 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 negatively affect biological factors such as migration, range, larval and juvenile survival, prey availability, and susceptibility to predators.

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. 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 contribute to climate change through the increase of carbon emissions associated with fishing activities.

***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.

***Deepwater-Horizon Oil Spill***

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. 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 at this time. Direct and indirect impacts on the food web from phytoplankton, to zooplankton, to mollusks, to top predators in the South Atlantic have not been significant and are not likely to be significant in the future.

## 6.4 Overall Impacts Expected from Past, Present, and Future Actions

The proposed management actions are summarized in **Section 2** of this document. Detailed discussions of the magnitude and significance of the impacts of the preferred alternatives on the human environment appear in **Section 4** of this document. None of the impacts of the actions in this amendment, in combination with past, present, and future actions have been determined to be significant. Though several other management actions, in addition to this amendment, are expected to affect snapper grouper, the additive effects, beneficial and adverse, are not expected to result in a significant level of cumulative impacts.

The proposed action 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 Exclusive Economic Zone (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. Additionally, the proposed action is not likely to change the way in which the snapper grouper, dolphin and wahoo, or golden crab fisheries are prosecuted; therefore, the actions are not expected to result in adverse impacts on health or human safety beyond the status quo.

## 6.5 Monitoring and Mitigation

The effects of the proposed action are, and will continue to be, monitored through collection of landings data by the Florida Fish and Wildlife Conservation Commission for black snapper,

dog snapper, mahogany snapper, and schoolmaster. NOAA Fisheries will continue to monitor and collect information on golden tilefish for stock assessments and stock assessment updates, life history studies, economic and social analyses, and other scientific observations. The proposed actions relate to the harvest of indigenous species in the Atlantic, and the activities/regulations being altered do not introduce non-indigenous species, and are not reasonably expected to facilitate the spread of such species through depressing the populations of native species. Additionally, this amendment does 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.

# Chapter 7. List of Interdisciplinary Plan Team (IPT) Members

| Name | Agency/Division | Title |
|---|---|---|
| Myra Brouwer | SAFMC | Interdisciplinary plan team (IPT) Lead/Fishery Biologist |
| Kate Michie | SERO/SF | IPT Lead/Fishery Biologist |
| Jennifer Lee | SERO/PR | Fishery Biologist |
| Brian Cheuvront | SAFMC | Economist |
| Mike Errigo | SAFMC | Data analyst |
| Chip Collier | SAFMC | Biologist |
| Kate Siegfried | SEFSC | Research Fish Biologist |
| David Dale/Pace Wilber | SERO/HC | EFH Specialist |
| Anik Clemens | SERO | Technical Writer and Editor |
| Mike Larkin | SERO | Biologist |
| David Records | SERO/SF | Economist |
| Mike Jepson | SERO/SF | Social Scientist |
| David Keys/Noah Silverman | NMFS/SER | Regional NEPA Coordinator |
| Monica Smit-Brunello | NOAA GC | General Counsel |
| Larry Perruso | SEFSC | Economist |
| Jack McGovern | SERO/SF | Fishery Scientist |
| Kari McLauchlin | SAFMC | Social Scientist |
| Gregg Waugh | SAFMC | Deputy Director |

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

# Chapter 8. Agencies and Persons Consulted

Responsible Agency

**South Atlantic**
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NMFS, Southeast Region
263 13th Avenue South
St. Petersburg, Florida 33701
(727) 824-5301 (TEL)
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**Environmental Assessment:**

List of Agencies, Organizations, and Persons Consulted

SAFMC Law Enforcement Advisory Panel
SAFMC Snapper Grouper Advisory Panel
SAFMC Scientific and Statistical Committee
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

# Chapter 9. References

Adams, W.F., and C. Wilson. 1995. The status of the smalltooth sawfish, *Pristis pectinata* Latham 1794 (Pristiformes: Pristidae) in the United States. Chondros 6(4):1-5.

Anderes Alvarez, B.A., and I. Uchida. 1994. Study of the Hawksbill turtle (*Eretmochelys imbricata)* stomach content in Cuban waters. *In*: Study of the Hawksbill turtle in Cuba (I), Ministry of Fishing Industry, Cuba.

Bigelow, H.B., and W.C. Schroeder. 1953. Sawfishes, guitarfishes, skates and rays, pp. 1-514. *In:* Tee-Van, J., C.M Breder, A.E. Parr, W.C. Schroeder and L.P. Schultz (eds). Fishes of the Western North Atlantic, Part Two. Mem. Sears Found. Mar. Res. I.

Bjorndal, K.A. 1980. Nutrition and grazing behavior of the green sea turtle, *Chelonia mydas*. Marine Biology 56:147.

Bjorndal, K.A. 1997. Foraging ecology and nutrition of sea turtles. *In*: Lutz, P.L. and J.A. Musick (eds.), The Biology of Sea Turtles. CRC Press, Boca Raton, Florida.

Bolten, A.B., and G.H., Balazs. 1995. Biology of the early pelagic stage – the "lost year." *In*: Bjorndal, K.A. (ed.), Biology and Conservation of Sea Turtles, Revised edition. Smithsonian Institute Press, Washington, D.C., 579.

Brongersma, L.D. 1972. European Atlantic Turtles. Zool. Verhand. Leiden, 121:318

Burke, V.J., E.A. Standora, and S.J. Morreale. 1993. Diet of juvenile Kemp's ridley and loggerhead sea turtles from Long Island, New York. Copeia, 1993, 1176.

Byles, R.A. 1988. Behavior and Ecology of Sea Turtles from Chesapeake Bay, Virginia. Ph.D. dissertation, College of William and Mary, Williamsburg, VA.

Carr, A. 1986. Rips, FADS, and little loggerheads. BioScience 36:92.

Carr, A. 1987. New perspectives of the pelagic stage of sea turtle development. Conservation Biology 1(2):103.

Carter, D.W. and C. Liese. 2012. The Economic Value of Catching and Keeping or Releasing Saltwater Sport Fish in the Southeast USA. North American Journal of Fisheries Management, 32:4, 613-625. http://dx.doi.org/10.1080/02755947.2012.675943

Colburn, L.L. and M. Jepson. 2012 Social Indicators of Gentrification Pressure in Fishing Communities: A Context for Social Impact Assessment. Coastal Management 40(3): 289-300.

Colburn and Jepson 2013.

Dumas, C.F., J.C. Whitehead, C.E. Landry, and J.H. Herstine. 2009. Economic Impacts and Recreation Value of the North Carolina For-Hire Fishing Fleet. North Carolina Sea Grant FRG Grant Report 07-FEG-05.

Eckert, S.A., D.W. Nellis, K.L. Eckert, and G.L. Kooyman. 1986. Diving patterns of two leatherback sea turtles (*Dermochelys coriacea*) during interesting intervals at Sandy Point, St. Croix, U.S. Virgin Islands. Herpetologica 42:381.

Eckert, S.A., K.L. Eckert, P. Ponganis, and G.L. Kooyman. 1989. Diving patterns of two leatherback sea turtles (*Dermochelys coriacea*). Canadian Journal of Zoology 67:2834.

Florida Marine Species Rule. FWCC Rule No. 68-42.001, accessed at: https://www.flrules.org/gateway/chapterhome.asp?chapter=68B-42

Frick, J. 1976. Orientation and behavior of hatchling green turtles (*Chelonia mydas*) in the sea. Animal Behavior 24:849.

Garrity-Blake, B. & B. Nash. 2012. An Inventory of North Carolina Fish Houses: Five-Year Update. A North Carolina Sea Grant Report. UNC-SG-12-06. 42 pp.

GMFMC 2011

Griffith, D. 2011. Lowcountry Livelihoods: An Ethnographic Analysis of Fishing in Mt. Pleasant and Little River, South Carolina. Final Report for the project: Comparative Ethnography in the Development of Impact Assessment Methodologies: Profiling Two South Carolina Fishing Communities. Funded by the Gulf and South Atlantic Fisheries Foundation, Tampa FL. 98 pp.

Haab, T., Hicks, R. L., Schnier, K., Whitehead, J. C. 2012. Angler heterogeneity and the species-specific demand for marine recreational fishing. Working Paper No. 10-02. Appalachian State University, Department of Economics. Available: http://econ.appstate.edu/marfin/. (September 2014).

Holland, S. M., A. J. Fedler, and J. W. Milon. 1999. The Operation and Economics of the Charter and Headboat Fleets of the Eastern Gulf of Mexico and South Atlantic Coasts. University of Florida Office of research, Technology, and Graduate Education. Report prepared for the National Marine Fisheries Service. Grant Number NA77FF0553.

Holland, S. G., Oh, C., Larkin, S. L., and Hodges, A. W. 2012. The Operation and Economics of the For-Hire Fishing Fleets of the and South Atlantic States and the Atlantic Coast of Florida. University of Florida Office of Research, Technology, and Graduate Education. Report prepared for the National Marine Fisheries Service. Grant Number NA09NMF4330151.

Hughes, G.R. 1974. The sea turtles of southeast Africa. II. The biology of the Tongaland loggerhead turtle *Caretta caretta* L. with comments on the leatherback turtle *Dermochelys coriacea* L. and green turtle *Chelonia mydas* L. in the study region. Oceanographic Research Institute (Durban) Investigative Report. No. 36.

Jacob, S., P. Weeks, B. Blount, and M. Jepson. 2012 Development and Evaluation of Social Indicators of Vulnerability and Resiliency for Fishing Communities in the Gulf of Mexico. Marine Policy 26(10): 16-22.

Jepson, M. and L.L. Colburn. 2013. Development of Social Indicators of Fishing Community Vulnerability and Resilience in the U.S. Southeast and Northeast Regions. U.S. Dept. of Commerce., NOAA Technical Memorandum NMFS-F/SPO-129, 64 p.

Keinath, J.A., and J.A., Musick. 1993. Movements and diving behavior of a leatherback sea turtle, *Dermochelys coriacea*. Copeia 1993:1010.

Kennedy, V. S., R. R. Twilley, J. A. Kleypas, J. H. Cowan, Jr., S. R. Hare. 2002. Coastal and Marine Ecosystems & Global Climate Change: Potential Effects on U.S. Resources. Pew Center on Global Climate Change. 52 p.

Lanyan, J.M., C.J. Limpus, and H., Marsh. 1989. Dugongs and turtles: grazers in the seagrass system. *In:* Larkum, A.W.D, A.J., McComb and S.A., Shepard (eds.) Biology of Seagrasses. Elsevier, Amsterdam, 610.

Liese, C., D.W. Carter, and R. Curtis. 2009. Surveying the For-Hire Sector: Economic Heterogeneity in the Southeast Charter Boat Industry. Submitted to the Proceedings of the 5th World Recreational Fishing Conference.

Limpus, C.J., and N., Nichols. 1988. The southern oscillation regulates the annual numbers of green turtles (*Chelonia mydas*) breeding around northern Australia. Australian Journal of Wildlife Research 15:157.

Limpus, C.J., and N., Nichols. 1994. Progress report on the study of the interaction of El Niño Southern Oscillation on annual *Chelonia mydas* numbers at the southern Great Barrier Reef rookeries. *In:* Proceedings of the Australian Marine Turtle Conservation Workshop, Queensland Australia.

Lutz, P.L., and J.A., Musick (eds.). 1997. The Biology of Sea Turtles. CRC Press, Boca Raton, Florida.

Lutz, P.L., J.A., Musick, and J. Wyneken. 2002. The Biology of Sea Turtles, Volume II. CRC Press, Boca Raton, Florida.

MacIntyre, I.G. and J.D. Milliman. 1970. Physiographic features on the outer shelf and upper slope, Atlantic Continental Margin, southeastern United States. Geological Society of America Bulletin 81:2577-2598.

Mendonca, M.T., and P.C.H., Pritchard. 1986. Offshore movements of post-nesting Kemp's ridley sea turtles (*Lepidochelys kempi*). Herpetologica 42:373.

Meylan, A. 1984. Feeding Ecology of the Hawksbill turtle (*Eretmochelys imbricata)*: Spongivory as a Feeding Niche in the Coral Reef Community. Dissertation, University of Florida, Gainesville, FL.

Meylan, A. 1988. Spongivory in hawksbill turtles: a diet of glass. *Science* 239:393-395.

Meylan, A.B., and M. Donnelly. 1999. Status justification for listing the hawksbill turtle (*Eretmochelys imbricata)* as critically endangered on the 1996 IUCN Red List of Threatened Animals. Chelonian Conservation and Biology 3(2): 200-204.

Miller, G.C. and W.J. Richards. 1979. Reef fish habitat, faunal assemblages and factors determining distributions in the South Atlantic Bight. Proceedings of the Gulf and Caribbean Fisheries Institute 32:114-130.

Mortimer, J.A. 1981. The feeding ecology of the West Caribbean green turtle (*Chelonia mydas*) in Nicaragua. Biotropica 13:49.

Mortimer, J.A. 1982. Feeding ecology of sea turtles. *In*: Bjorndal, K.A. (ed.), Biology and Conservation of Sea Turtles. Smithsonian Institute Press, Washington, D.C.

Needham, H., D. Brown, and L. Carter. 2012. Impacts and adaptation options in the Gulf coast. Report prepared for the Center for Climate and Energy Solutions. 38 pp. http://www.c2es.org/docUploads/gulf-coast-impacts-adaptation.pdf

Newton J.G., O.H. Pilkey, and J.O. Blanton. 1971. An Oceanographic Atlas of the Carolina and continental margin. North Carolina Dept. of Conservation and Development. 57 p.

NMFS (National Marine Fisheries Service). 2006. Endangered Species Act section 7 consultation on the Continued Authorization of Snapper-Grouper Fishing under the South Atlantic Snapper-Grouper Fishery Management Plan (RFFMP) and Proposed Amendment 13C. Biological Opinion. June 7.

NMFS (National Marine Fisheries Service). 2011b. Fisheries Economics of the United States, 2009. U.S. Department of Commerce, NOAA Technical Memorandum. National Marine Fisheries Service-F/SPO-118. http://www.st.nmfs.noaa.gov/st5/publication/fisheries_economics_2009.html

Norman, J. R., and F. C.. Fraser. 1938. Giant Fishes, Whales and Dolphins. W. W. Norton and Company, Inc, New York, NY. 361 pp.

Ogren, L.H. 1989. Distribution of juvenile and subadult Kemp's ridley turtles: Preliminary results from the 1984-1987 surveys. *In*: C.W. Caillouet Jr. and A.M. Landry Jr. (eds.)

Proceedings from the 1st Symposium on Kemp's ridley Sea Turtle Biology, Conservation, and Management. Sea Grant College Program, Galveston, TX. 116.

Paredes, R.P. 1969. Introduccion al Estudio Biologico de *Chelonia mydas agassizi* en el Perfil de Pisco, Master's thesis, Universidad Nacional Federico Villareal, Lima, Peru.

Parker, R.O., D.R. Colby, and T.D. Willis. 1983. Estimated amount of reef habitat on a portion of the U.S. South Atlantic and Gulf of Mexico Continental Shelf. Bulletin of Marine Science 33:935-940.

SAFMC (South Atlantic Fishery Management Council). 2006. Amendment 13C, Final Environmental Assessment, Initial Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Ste 306, Charleston, S.C. 29407-4699. 631 pp.

SAFMC (South Atlantic Fishery Management Council). 2008a. Amendment 15A, Final Environmental Impact Statement, Initial Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2008b. Amendment 15B, Final Environmental Impact Statement, Initial Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2009a. Amendment 16, Final Environmental Impact Statement, Initial Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2009b. Fishery Ecosystem Plan for the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2010a. Amendment 17A, Final Environmental Impact Statement, Initial Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2010b. Amendment 17B, Final Environmental Impact Statement, Initial Regulatory Flexibility Analysis/Regulatory Impact

Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2010c. Comprehensive Ecosystem Based Amendment 2 (Amendment 19 to the Snapper Grouper FMP). South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2011a. Regulatory Amendment 9, Final Environmental Assessment, Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2011b. Regulatory Amendment 10, Final Environmental Assessment, Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2011c. Comprehensive Annual Catch Limit Amendment for the South Atlantic Region with Final Environmental Impact Statement, Regulatory Flexibility Analysis, Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2011d. Amendment 24 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2011e. Comprehensive Ecosystem Based Amendment 2, Final Environmental Assessment, Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. (Amendment 23 to the Snapper Grouper FMP). South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2012. Amendment 18B to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Assessment, Initial Regulatory Flexibility Analysis, Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2013. Amendment 27 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final

Environmental Assessment, Initial Regulatory Flexibility Analysis, Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

Shaver. D.J. 1991. Feeding ecology of wild and head-started Kemp's ridley sea turtles in south Texas waters. Journal of Herpetology 25:327.

Simpfendorfer, C.A. 2001. Essential habitat of the smalltooth sawfish, *Pristis pectinata*. Report to the National Fisheries Service's Protected Resources Division. Mote Marine Laboratory, Technical Report (786) 21pp.

Simpfendorfer, C.A. and T.R. Wiley. 2004. Determination of the distribution of Florida's remnant sawfish population, and identification of areas critical to their conservation. Mote Marine Laboratory, Technical Report July 2, 2004, 37 pp.

Soma, M. 1985. Radio biotelemetry system applied to migratory study of turtle. Journal of the Faculty of Marine Science and Technology, Tokai University, Japan, 21:47.

Standora, E.A., J.R., Spotila, J.A., Keinath, and C.R. Shoop. 1984. Body temperatures, diving cycles, and movements of a subadult leatherback turtle, *Dermochelys coriacea*. Herpetologica 40:169.

Sutton, S. G., R. B. Ditton, J. R. Stoll, and J. W. Milon. 1999. A cross-sectional study and longitudinal perspective on the social and economic characteristics of the charter and party boat fishing industry of Alabama, Mississippi, Louisiana, and Texas. Report by the Human Dimensions of Recreational Fisheries Research Laboratory, Texas A&M University, MARFIN program grant number NA77FF0551.

Thayer, G.W., K.A., Bjorndal, J.C., Ogden, S.L., Williams, and J.C., Zieman. 1984. Role of large herbivores in seagrass communities. Estuaries 7:351.

Van Dam, R., and C. Diéz. 1998. Home range of immature hawksbill turtles (*Eretmochelys imbricata*) at two Caribbean islands. Journal of Experimental Marine Biology and Ecology 220(1):15-24.

Walker, T.A. 1994. Post-hatchling dispersal of sea turtles. p. 79. *In*: Proceedings of the Australian Marine Turtle Conservation Workshop, Queensland Australia.

Waring, G.T., E. Josephson, K. Maze-Foley, and P.E. Rosel, (eds). 2013. U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – 2012. U.S. Department of Commerce, Woods Hole, MA.

Witzell, W.N. 2002. Immature Atlantic loggerhead turtles (*Caretta caretta*): suggested changes to the life history model. Herpetological Review 33(4):266-269.

Wynne, K. and M. Schwartz. 1999. Guide to marine mammals and turtles of the U.S. Atlantic and Gulf of Mexico. Rhode Island Sea Grant, Narragansett. 115pp.

# Appendix A. Considered But Rejected Alternatives

**Alternative 4.** Revise the golden tilefish longline endorsement regulations to sate vessels with golden tilefish endorsements are eligible to fish for golden tilefish using hook-and-line gear under the 500-pound gutted weight golden tilefish hook-and-line trip limit.

Discussion: **Alternative 4** does not meet the purpose and need for the amendment. Allowing endorsement holders to fish under the hook-and-line quota was not the original intent of the South Atlantic Council when the endorsement program was first implemented.

# Appendix B. Glossary

**Allowable Biological Catch (ABC):** Maximum amount of fish stock than can be harvested without adversely affecting recruitment of other components of the stock. The ABC level is typically higher than the total allowable catch, leaving a buffer between the two.

**ALS:** Accumulative Landings System. NMFS database which contains commercial landings reported by dealers.

**Biomass:** Amount or mass of some organism, such as fish.

**$B_{MSY}$:** Biomass of population achieved in long-term by fishing at $F_{MSY}$.

**Bycatch:** Fish harvested in a fishery, but not sold or kept for personal use. Bycatch includes economic discards and regulatory discards, but not fish released alive under a recreational catch and release fishery management program.

**Caribbean Fishery Management Council (CFMC):** One of eight regional councils mandated in the Magnuson-Stevens Fishery Conservation and Management Act to develop management plans for fisheries in federal waters. The CFMC develops fishery management plans for fisheries off the coast of the U.S. Virgin Islands and the Commonwealth of Puerto Rico.

**Catch Per Unit Effort (CPUE):** The amount of fish captured with an amount of effort. CPUE can be expressed as weight of fish captured per fishing trip, per hour spent at sea, or through other standardized measures.

**Charter Boat:** A fishing boat available for hire by recreational anglers, normally by a group of anglers for a short time period.

**Cohort:** Fish born in a given year. (See year class.)

**Control Date:** Date established for defining the pool of potential participants in a given management program. Control dates can establish a range of years during which a potential participant must have been active in a fishery to qualify for a quota share.

**Constant Catch Rebuilding Strategy:** A rebuilding strategy where the allowable biological catch of an overfished species is held constant until stock biomass reaches $B_{MSY}$ at the end of the rebuilding period.

**Constant F Rebuilding Strategy:** A rebuilding strategy where the fishing mortality of an overfished species is held constant until stock biomass reached BMSY at the end of the rebuilding period.

**Directed Fishery:** Fishing directed at a certain species or species group.

**Discards:** Fish captured, but released at sea.

**Discard Mortality Rate:** The % of total fish discarded that do not survive being captured and released at sea.

**Derby:** Fishery in which the TAC is fixed and participants in the fishery do not have individual quotas. The fishery is closed once the TAC is reached, and participants attempt to maximize their harvests as quickly as possible. Derby fisheries can result in capital stuffing and a race for fish.

**Effort:** The amount of time and fishing power (i.e., gear size, boat size, horsepower) used to harvest fish.

**Exclusive Economic Zone (EEZ):** Zone extending from the shoreline out to 200 nautical miles in which the country owning the shoreline has the exclusive right to conduct certain activities such as fishing. In the United States, the EEZ is split into state waters (typically from the shoreline out to 3 nautical miles) and federal waters (typically from 3 to 200 nautical miles).

**Exploitation Rate:** Amount of fish harvested from a stock relative to the size of the stock, often expressed as a percentage.

**F:** Fishing mortality.

**Fecundity:** A measurement of the egg-producing ability of fish at certain sizes and ages.

**Fishery Dependent Data:** Fishery data collected and reported by fishermen and dealers.

**Fishery Independent Data:** Fishery data collected and reported by scientists who catch the fish themselves.

**Fishery Management Plan:** Management plan for fisheries operating in the federal produced by regional fishery management councils and submitted to the Secretary of Commerce for approval.

**Fishing Effort:** Usually refers to the amount of fishing. May refer to the number of fishing vessels, amount of fishing gear (nets, traps, hooks), or total amount of time vessels and gear are actively engaged in fishing.

**Fishing Mortality:** A measurement of the rate at which fish are removed from a population by fishing. Fishing mortality can be reported as either annual or instantaneous. Annual mortality is the percentage of fish dying in one year. Instantaneous is that percentage of fish dying at any one time.

**Fishing Power:** Measure of the relative ability of a fishing vessel, its gear, and its crew to catch fishes, in reference to some standard vessel, given both vessels are under identical conditions.

**$F_{30\%SPR}$:** Fishing mortality that will produce a static SPR = 30%.

**$F_{45\%SPR}$:** Fishing mortality that will produce a static SPR = 45%.

**$F_{OY}$:** Fishing mortality that will produce OY under equilibrium conditions and a corresponding biomass of $B_{OY}$. Usually expressed as the yield at 85% of $F_{MSY}$, yield at 75% of $F_{MSY}$, or yield at 65% of $F_{MSY}$.

**$F_{MSY}$:** Fishing mortality that if applied constantly, would achieve MSY under equilibrium conditions and a corresponding biomass of $B_{MSY}$.

**Fork Length (FL):** The length of a fish as measured from the tip of its snout to the fork in its tail.

**Framework:** An established procedure within a fishery management plan that has been approved and implemented by NMFS, which allows specific management measures to be modified via regulatory amendment.

**Gear restrictions:** Limits placed on the type, amount, number, or techniques allowed for a given type of fishing gear.

**Growth Overfishing:** When fishing pressure on small fish prevents the fishery from producing the maximum poundage. Condition in which the total weight of the harvest from a fishery is improved when fishing effort is reduced, due to an increase in the average weight of fishes.

**Gulf of Mexico Fishery Management Council (GFMC):** One of eight regional councils mandated in the Magnuson-Stevens Fishery Conservation and Management Act to develop management plans for fisheries in federal waters. The GFMC develops fishery management plans for fisheries off the coast of Texas, Louisiana, Mississippi, Alabama, and the west coast of Florida.

**Head Boat:** A fishing boat that charges individual fees per recreational angler onboard.

**Highgrading:** Form of selective sorting of fishes in which higher value, more marketable fishes are retained, and less marketable fishes, which could legally be retained are discarded.

**Individual Fishing Quota (IFQ):** Fishery management tool that allocates a certain portion of the TAC to individual vessels, fishermen, or other eligible recipients.

**Longline:** Fishing method using a horizontal mainline to which weights and baited hooks are attached at regular intervals. Gear is either fished on the bottom or in the water column.

**Magnuson-Stevens Fishery Conservation and Management Act:** Federal legislation responsible for establishing the fishery management councils and the mandatory and discretionary guidelines for federal fishery management plans.

**Marine Recreational Fisheries Statistics Survey (MRFSS):** Survey operated by NMFS in cooperation with states that collects marine recreational data.

**Maximum Fishing Mortality Threshold (MFMT):** The rate of fishing mortality above which a stock's capacity to produce MSY would be jeopardized.

**Maximum Sustainable Yield (MSY):** The largest long-term average catch that can be taken continuously (sustained) from a stock or stock complex under average environmental conditions.

**Minimum Stock Size Threshold (MSST):** The biomass level below which a stock would be considered overfished.

**Modified F Rebuilding Strategy:** A rebuilding strategy where fishing mortality is changed as stock biomass increases during the rebuilding period.

**Multispecies fishery:** Fishery in which more than one species is caught at the same time and location with a particular gear type.

**National Marine Fisheries Service (NMFS):** Federal agency within NOAA responsible for overseeing fisheries science and regulation.

**National Oceanic and Atmospheric Administration:** Agency within the Department of Commerce responsible for ocean and coastal management.

**Natural Mortality (M):** A measurement of the rate at which fish are removed from a population by natural causes. Natural mortality can be reported as either annual or instantaneous. Annual mortality is the percentage of fish dying in one year. Instantaneous is that percentage of fish dying at any one time.

**Optimum Yield (OY):** The amount of catch that will provide the greatest overall benefit to the nation, particularly with respect to food production and recreational opportunities and taking into account the protection of marine ecosystems.

**Overfished:** A stock or stock complex is considered overfished when stock biomass falls below the minimum stock size threshold (MSST) (e.g., current biomass < MSST = overfished).

**Overfishing:** Overfishing occurs when a stock or stock complex is subjected to a rate of fishing mortality that exceeds the maximum fishing mortality threshold (e.g., current fishing mortality rate > MFMT = overfishing).
**Quota:** % or annual amount of fish that can be harvested.

**Recruitment (R):** Number or percentage of fish that survives from hatching to a specific size or age.

**Recruitment Overfishing:** The rate of fishing above which the recruitment to the exploitable stock becomes significantly reduced. This is characterized by a greatly reduced spawning stock, a decreasing proportion of older fish in the catch, and generally very low recruitment year after year.

**Scientific and Statistical Committee (SSC):** Fishery management advisory body composed of federal, state, and academic scientists, which provides scientific advice to a fishery management council.

**Selectivity:** The ability of a type of gear to catch a certain size or species of fish.

**South Atlantic Fisheries Management Council (SAFMC):** One of eight regional councils mandated in the Magnuson-Stevens Fishery Conservation and Management Act to develop management plans for fisheries in federal waters. The SAFMC develops fishery management plans for fisheries off North Carolina, South Carolina, Georgia, and the east coast of Florida.

**Spawning Potential Ratio (Transitional SPR):** Formerly used in overfished definition. The number of eggs that could be produced by an average recruit in a fished stock divided by the number of eggs that could be produced by an average recruit in an unfished stock. SPR can also be expressed as the spawning stock biomass per recruit (SSBR) of a fished stock divided by the SSBR of the stock before it was fished.

**% Spawning Per Recruit (Static SPR):** Formerly used in overfishing determination. The maximum spawning per recruit produced in a fished stock divided by the maximum spawning per recruit, which occurs under the conditions of no fishing. Commonly abbreviated as %SPR.

**Spawning Stock Biomass (SSB):** The total weight of those fish in a stock which are old enough to spawn.

**Spawning Stock Biomass Per Recruit (SSBR):** The spawning stock biomass divided by the number of recruits to the stock or how much spawning biomass an average recruit would be expected to produce.

**Total Allowable Catch (TAC):** The total amount of fish to be taken annually from a stock or stock complex. This may be a portion of the Allowable Biological Catch (ABC) that takes into consideration factors such as bycatch.

**Total Length (TL):** The length of a fish as measured from the tip of the snout to the tip of the tail.

# Appendix C. History of Management

**Table B-1.** Snapper Grouper History of Management

| Document | All Actions Effective By: | Proposed Rule Final Rule | Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents. |
|---|---|---|---|
| FMP (1983) | 08/31/83 | PR: 48 FR 26843<br>FR: 48 FR 39463 | -12" total length (TL) limit – red snapper, yellowtail snapper, red grouper, Nassau grouper<br>-8" limit – black sea bass<br>-4" trawl mesh size<br>-Gear limitations – poisons, explosives, fish traps, trawls<br>-Designated modified habitats or artificial reefs as Special Management Zones (SMZs) |
| Regulatory Amendment #1 (1987) | 03/27/87 | PR: 51 FR 43937<br>FR: 52 FR 9864 | -Prohibited fishing in SMZs except with hand-held hook-and-line and spearfishing gear.<br>-Prohibited harvest of goliath grouper in SMZs. |
| Amendment #1 (1988a) | 01/12/89 | PR: 53 FR 42985<br>FR: 54 FR 1720 | -Prohibited trawl gear to harvest fish south of Cape Hatteras, NC and north of Cape Canaveral, FL.<br>-Directed fishery defined as vessel with trawl gear and ≥200 lb s-g on board.<br>-Established rebuttable assumption that vessel with s-g on board had harvested such fish in the exclusive economic zone (EEZ). |
| Regulatory Amendment #2 (1988b) | 03/30/89 | PR: 53 FR 32412<br>FR: 54 FR 8342 | -Established 2 artificial reefs off Ft. Pierce, FL as SMZs. |
| Notice of Control Date | 09/24/90 | 55 FR 39039 | -Anyone entering federal wreckfish fishery in the EEZ off S. Atlantic states after 09/24/90 was not assured of future access if limited entry program developed. |
| Regulatory Amendment #3 (1989) | 11/02/90 | PR: 55 FR 28066<br>FR: 55 FR 40394 | -Established artificial reef at Key Biscayne, FL as SMZ. Fish trapping, bottom longlining, spear fishing, and harvesting of Goliath grouper prohibited in SMZ. |
| Amendment #2 (1990a) | 10/30/90 | PR: 55 FR 31406<br>FR: 55 FR 46213 | -Prohibited harvest/possession of goliath grouper in or from the EEZ<br>-Defined overfishing for goliath grouper and other species |
| Emergency Rule | 8/3/90 | 55 FR 32257 | -Added wreckfish to the fishery management unit (FMU)<br>-Fishing year beginning 4/16/90<br>-Commercial quota of 2 million pounds<br>-Commercial trip limit of 10,000 pounds per trip |
| Fishery Closure Notice | 8/8/90 | 55 FR 32635 | - Fishery closed because the commercial quota of 2 million pounds was reached |
| Emergency Rule Extension | 11/1/90 | 55 FR 40181 | -extended the measures implemented via emergency rule on 8/3/90 |
| Amendment #3 (1990b) | 01/31/91 | PR: 55 FR 39023<br>FR: 56 FR 2443 | -Added wreckfish to the FMU<br>-Defined optimum yield and overfishing<br>-Required permit to fish for, land or sell wreckfish<br>-Required catch and effort reports from selected, permitted vessel;<br>-Established control date of 03/28/90<br>-Established a fishing year for wreckfish starting April 16<br>-Established a process to set annual quota, with initial |

| Document | All Actions Effective By: | Proposed Rule Final Rule | Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents. |
|---|---|---|---|
| | | | quota of 2 million pounds; provisions for closure<br>-Established 10,000 pound trip limit<br>-Established a spawning season closure for wreckfish from January 15 to April 15<br>-Provided for annual adjustments of wreckfish management measures |
| Notice of Control Date | 07/30/91 | 56 FR 36052 | -Anyone entering federal snapper grouper fishery (other than for wreckfish) in the EEZ off S. Atlantic states after 07/30/91 was not assured of future access if limited entry program developed. |

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| Amendment #4 (1991) | 01/01/92 | PR: 56 FR 29922<br>FR: 56 FR 56016 | -Prohibited gear: fish traps except black sea bass traps north of Cape Canaveral, FL; entanglement nets; longline gear inside 50 fathoms; bottom longlines to harvest wreckfish; powerheads and bangsticks in designated SMZs off S. Carolina<br>-defined overfishing/overfished and established rebuilding timeframe: red snapper and groupers ≤ 15 years (year 1 = 1991); other snappers, greater amberjack, black sea bass, red porgy ≤ 10 years (year 1 = 1991)<br>-Required permits (commercial & for-hire) and specified data collection regulations<br>-Established an assessment group and annual adjustment procedure (framework)<br>-Permit, gear, and vessel id requirements specified for black sea bass traps<br>-No retention of snapper grouper spp. caught in other fisheries with gear prohibited in snapper grouper fishery if captured snapper grouper had no bag limit or harvest was prohibited. If had a bag limit, could retain only the bag limit<br>-8" TL limit – lane snapper<br>-10" TL limit – vermilion snapper (recreational only)<br>-12" TL limit – red porgy, vermilion snapper (commercial only), gray, yellowtail, mutton, schoolmaster, queen, blackfin, cubera, dog, mahogany, and silk snappers<br>-20" TL limit – red snapper, gag, and red, black, scamp, yellowfin, and yellowmouth groupers.<br>-28" fork length (FL) limit – greater amberjack (recreational only)<br>-36" FL or 28" core length – greater amberjack (commercial only)<br>-bag limits – 10 vermilion snapper, 3 greater amberjack<br>-aggregate snapper bag limit – 10/person/day, excluding vermilion snapper and allowing no more than 2 red snappers<br>-aggregate grouper bag limit – 5/person/day, excluding Nassau and goliath grouper, for which no retention (recreational & commercial) is allowed<br>-spawning season closure – commercial harvest greater amberjack > 3 fish bag prohibited in April south of Cape Canaveral, FL<br>-spawning season closure – commercial harvest mutton snapper >snapper aggregate prohibited during May and June<br>-charter/headboats and excursion boat possession limits extended |

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| Amendment #5 (1992a) | 04/06/92 | PR: 56 FR 57302<br>FR: 57 FR 7886 | -Wreckfish: established limited entry system with individual transferable quotas (ITQs); required dealer to have permit; rescinded 10,000 lb. trip limit; required off-loading between 8 am and 5 pm; reduced occasions when 24-hour advance notice of offloading required for off-loading; established procedure for initial distribution of percentage shares of total allowable catch (TAC) |
| Emergency Rule | 8/31/92 | 57 FR 39365 | -Black Sea Bass (bsb): modified definition of bsb pot; allowed multi-gear trips for bsb; allowed retention of incidentally-caught fish on bsb trips |
| Emergency Rule Extension | 11/30/92 | 57 FR 56522 | -Black Sea Bass: modified definition of bsb pot; allowed multi-gear trips for bsb; allowed retention of incidentally-caught fish on bsb trips |
| Regulatory Amendment #4 (1992b) | 07/06/93 | FR: 58 FR 36155 | -Black Sea Bass: modified definition of bsb pot; allowed multi-gear trips for bsb; allowed retention of incidentally-caught fish on bsb trips |
| Regulatory Amendment #5 (1992c) | 07/31/93 | PR: 58 FR 13732<br>FR: 58 FR 35895 | -Established 8 SMZs off S. Carolina, where only hand-held, hook-and-line gear and spearfishing (excluding powerheads) was allowed |
| Amendment #6 (1993) | 07/27/94 | PR: 59 FR 9721<br>FR: 59 FR 27242 | -Set up separate commercial TAC levels for golden tilefish and snowy grouper<br>-Established commercial trip limits for snowy grouper, golden tilefish, speckled hind, and warsaw grouper<br>-Included golden tilefish in grouper recreational aggregate bag limits<br>-Prohibited sale of warsaw grouper and speckled hind<br>-100% logbook coverage upon renewal of permit<br>-Creation of the *Oculina* Experimental Closed Area<br>-Data collection needs specified for evaluation of possible future individual fishing quota system |
| Amendment #7 (1994a) | 01/23/95 | PR: 59 FR 47833<br>FR: 59 FR 66270 | -12" FL – hogfish<br>-16" TL – mutton snapper<br>-Required dealer, charter and headboat federal permits<br>-Allowed sale under specified conditions<br>-Specified allowable gear and made allowance for experimental gear<br>-Allowed multi-gear trips in NC<br>-Added localized overfishing to list of problems and objectives<br>-Adjusted bag limit and crew specs. for charter and head boats<br>-Modified management unit for scup to apply south of Cape Hatteras, NC<br>-Modified framework procedure |
| Regulatory Amendment #6 (1994b) | 05/22/95 | PR: 60 FR 8620<br>FR: 60 FR 19683 | -Established actions which applied only to EEZ off Atlantic coast of FL: Bag limits – 5 hogfish/person/day (recreational only), 2 cubera snapper/person/day > 30" TL; 12" TL – gray triggerfish |
| Notice of Control Date | 04/23/97 | 62 FR 22995 | -Anyone entering federal bsb pot fishery off S. Atlantic states after 04/23/97 was not assured of future access if limited entry program developed |

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| Amendment #8 (1997) | 12/14/98 | PR: 63 FR 1813<br>FR: 63 FR 38298 | -Established program to limit initial eligibility for snapper grouper fishery: Must demonstrate landings of any species in the snapper grouper (SG) FMU in 1993, 1994, 1995 or 1996; and have held valid SG permit between 02/11/96 and 02/11/97<br>-Granted transferable permit with unlimited landings if vessel landed ≥ 1,000 pounds (lb) of snapper grouper species in any of the years<br>-Granted non-transferable permit with 225 lb trip limit to all other vessels<br>-Modified problems, objectives, optimum yield (OY), and overfishing definitions<br>-Expanded Council's habitat responsibility<br>-Allowed retention of snapper grouper species in excess of bag limit on permitted vessel with a single bait net or cast nets on board<br>-Allowed permitted vessels to possess filleted fish harvested in the Bahamas under certain conditions. |
| Regulatory Amendment #7 (1998a) | 01/29/99 | PR: 63 FR 43656<br>FR: 63 FR 71793 | -Established 10 SMZs at artificial reefs off South Carolina. |
| Interim Rule Request | 1/16/98 | | -Council requested all Amendment 9 measures except black sea bass pot construction changes be implemented as an interim request under the Magnuson-Stevens Act |
| Action Suspended | 5/14/98 | | -NMFS informed the Council that action on the interim rule request was suspended |
| Emergency Rule Request | 9/24/98 | | -Council requested Amendment 9 be implemented via emergency rule |
| Request not Implemented | 1/22/99 | | -NMFS informed the Council that the final rule for Amendment 9 would be effective 2/24/99; therefore they did not implement the emergency rule |

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| Amendment #9 (1998b) | 2/24/99 | PR: 63 FR 63276<br>FR: 64 FR 3624 | -Red porgy: 14" TL (recreational and commercial); 5 fish rec. bag limit; no harvest or possession > bag limit, and no purchase or sale, in March and April<br>-Black sea bass: 10" TL (recreational and commercial); 20 fish rec. bag limit; required escape vents and escape panels with degradable fasteners in bsb pots<br>-Greater amberjack: 1 fish rec. bag limit; no harvest or possession > bag limit, and no purchase or sale, during April; quota = 1,169,931 lb; began fishing year May 1; prohibited coring<br>-Specified size limits for several snapper grouper species (indicated in parentheses in inches TL): including yellowtail snapper (12), mutton snapper (16), red snapper (20); red grouper, yellowfin grouper, yellowmouth grouper, and scamp (20)<br>-Vermilion snapper: 11" TL (recreational), 12" TL commercial<br>-Gag: 24" TL (recreational); no commercial harvest or possession > bag limit, and no purchase or sale, during March and April<br>-Black grouper: 24" TL (recreational and commercial); no harvest or possession > bag limit, and no purchase or sale, during March and April<br>-Gag and Black grouper: within 5 fish aggregate grouper bag limit, no more than 2 fish may be gag or black grouper (individually or in combination)<br>-All snapper grouper without a bag limit: aggregate recreational bag limit 20 fish/person/day, excluding tomtate and blue runner<br>-Vessels with longline gear aboard may only possess snowy, warsaw, yellowedge, and misty grouper, and golden, blueline and sand tilefish |
| Amendment #9 (1998b) resubmitted | 10/13/00 | PR: 63 FR 63276<br>FR: 65 FR 55203 | -Commercial trip limit for greater amberjack |
| Emergency Interim Rule | 09/08/99, expired 08/28/00 | 64 FR 48324 and 65 FR 10040 | -Prohibited harvest or possession of red porgy |
| Emergency Action | 9/3/99 | 64 FR 48326 | -Reopened the Amendment 8 permit application process |
| Amendment #10 (1998c) | 07/14/00 | PR: 64 FR 37082 and 64 FR 59152<br>FR: 65 FR 37292 | -Identified essential fish habitat (EFH) and established habitat areas of particular concern (HAPC) for species in the snapper grouper FMU |

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| Amendment #11 (1998d) | 12/02/99 | PR: 64 FR 27952<br>FR: 64 FR 59126 | -Maximum sustainable yield (MSY) proxy: goliath and Nassau grouper = 40% static spawning potential ratio (SPR); all other species = 30% static SPR<br>-OY: hermaphroditic groupers = 45% static SPR;<br>goliath and Nassau grouper = 50% static SPR;<br>all other species = 40% static SPR<br>-Overfished/overfishing evaluations:<br>BSB: overfished (minimum stock size threshold (MSST)=3.72 mp, 1995 biomass=1.33 mp); undergoing overfishing (maximum fishing mortality threshold (MFMT)=0.72, F1991-1995=0.95)<br>Vermilion snapper: overfished (static SPR = 21-27%).<br>Red porgy: overfished (static SPR = 14-19%).<br>Red snapper: overfished (static SPR = 24-32%)<br>Gag: overfished (static SPR = 27%)<br>Scamp: no longer overfished (static SPR = 35%)<br>Speckled hind: overfished (static SPR = 8-13%)<br>Warsaw grouper: overfished (static SPR = 6-14%)<br>Snowy grouper: overfished (static SPR = 5-15%)<br>White grunt: no longer overfished (static SPR = 29-39%)<br>Golden tilefish: overfished (couldn't estimate static SPR)<br>Nassau grouper: overfished (couldn't estimate static SPR)<br>Goliath grouper: overfished (couldn't estimate static SPR)<br>-overfishing level: goliath and Nassau grouper = F>F40% static SPR; all other species: = F>F30% static SPR<br>Approved definitions for overfished and overfishing.<br>MSST = [(1-M) or 0.5 whichever is greater]*$B_{MSY}$.<br>MFMT = $F_{MSY}$ |
| Regulatory Amendment #8 (2000a) | 11/15/00 | PR: 65 FR 41041<br>FR: 65 FR 61114 | -Established 12 SMZs at artificial reefs off Georgia; revised boundaries of 7 existing SMZs off Georgia to meet CG permit specs; restricted fishing in new and revised SMZs |
| Amendment #12 (2000b) | 09/22/00 | PR: 65 FR 35877<br>FR: 65 FR 51248 | -Red porgy: MSY=4.38 mp; OY=45% static SPR; MFMT=0.43; MSST=7.34 mp; rebuilding timeframe=18 years (1999=year 1); no sale of red porgy during Jan-April; 1 fish bag limit; 50 lb. bycatch comm. trip limit May-December; modified management options and list of possible framework actions |
| Amendment #13A (2003) | 04/26/04 | PR: 68 FR 66069<br>FR: 69 FR 15731 | -Extended for an indefinite period the regulation prohibiting fishing for and possessing snapper grouper spp. within the *Oculina* Experimental Closed Area |
| Notice of Control Date | 10/14/05 | 70 FR 60058 | -The Council is considering management measures to further limit participation or effort in the commercial fishery for snapper grouper species (excluding wreckfish) |
| Amendment #13C (2006) | 10/23/06 | PR: 71 FR 28841<br>FR: 71 FR 55096 | - End overfishing of snowy grouper, vermilion snapper, black sea bass, and golden tilefish. Increase allowable catch of red porgy. Year 1 = 2006 |

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| | | | 1. Snowy Grouper Commercial: Quota = 151,000 lb gutted weight (gw) in year 1, 118,000 lb gw in year 2, and 84,000 lb gw in year 3 onwards. Trip limit = 275 lb gw in year 1, 175 lb gw in year 2, and 100 lb gw in year 3 onwards<br>Recreational: Limit possession to one snowy grouper in 5 grouper per person/day aggregate bag limit.<br>2. Golden Tilefish Commercial: Quota of 295,000 lb gw, 4,000 lb gw trip limit until 75% of the quota is taken when the trip limit is reduced to 300 lb gw. Do not adjust the trip limit downwards unless 75% is captured on or before September 1.<br>Recreational: Limit possession to 1 golden tilefish in 5 grouper per person/day aggregate bag limit.<br>3. Vermilion Snapper Commercial: Quota of 1,100,000 lb gw.<br>Recreational: 12" TL size limit.<br>4. Black Sea Bass Commercial: Commercial quota of 477,000 lb gw in year 1, 423,000 lb gw in year 2, and 309,000 lb gw in year 3 onwards. Require use of at least 2" mesh for the entire back panel of black sea bass pots effective 6 months after publication of the final rule. Require black sea bass pots be removed from the water when the quota is met. Change fishing year from calendar year to June 1 – May 31.<br>Recreational: Recreational allocation of 633,000 lb gw in year 1, 560,000 lb gw in year 2, and 409,000 lb gw in year 3 onwards. Increase minimum size limit from 10" to 11" in year 1 and to 12" in year 2. Reduce recreational bag limit from 20 to 15 per person per day. Change fishing year from the calendar year to June 1 through May 31.<br>5. Red Porgy Commercial and recreational:<br>1. Retain 14" TL size limit and seasonal closure (retention limited to the bag limit);<br>2. Specify a commercial quota of 127,000 lb gw and prohibit sale/purchase and prohibit harvest and/or possession beyond the bag limit when quota is taken and/or during January through April;<br>3. Increase commercial trip limit from 50 lb ww to 120 red porgy (210 lb gw) during May through December;<br>4. Increase recreational bag limit from one to three red porgy per person per day. |
| Notice of Control Date | 3/8/07 | 72 FR 60794 | -The Council may consider measures to limit participation in the snapper grouper for-hire sector |
| Amendment #14 (2007) | 2/12/09 | PR: 73 FR 32281<br>FR: 74 FR 1621 | -Establish eight deepwater Type II marine protected areas (MPAs) to protect a portion of the population and habitat of long-lived deepwater snapper grouper species |
| Amendment #15A (2008a) | 3/14/08 | 73 FR 14942 | - Establish rebuilding plans and status determination criteria for snowy grouper, black sea bass, and red porgy |
| Amendment #15B (2008b) | 2/15/10 | PR: 74 FR 30569<br>FR: 74 FR 58902 | -Prohibit the sale of bag-limit caught snapper grouper species<br>-Reduce the effects of incidental hooking on sea turtles |

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| | | | and smalltooth sawfish<br>-Adjust commercial renewal periods and transferability requirements<br>-Implement plan to monitor and assess bycatch<br>-Establish reference points for golden tilefish<br>-Establish allocations for snowy grouper (95% com & 5% rec) and red porgy (50% com & 50% rec) |
| Amendment #16 (SAFMC 2009a) | 7/29/09 | PR: 74 FR 6297<br>FR: 74 FR 30964 | -Specify status determination criteria for gag and vermilion snapper<br>-For gag: Specify interim allocations 51% com & 49% rec; rec & com shallow water grouper spawning closure January through April; directed com quota= 352,940 lb gw; -reduce 5-fish aggregate grouper bag limit, including tilefish species, to a 3-fish aggregate<br>-Captain and crew on for-hire trips cannot retain the bag limit of vermilion snapper and species within the 3-fish grouper aggregate<br>-For vermilion snapper: Specify interim allocations 68% com & 32% rec; directed com quota split Jan-June=315,523 lb gw and 302,523 lb gw July-Dec; reduce bag limit from 10 to 5 and a rec closed season November through March<br>-Require dehooking tools |
| Amendment #19 (Comprehensive Ecosystem-Based Amendment 1; SAFMC 2009b) | 7/22/10 | PR: 75 FR 14548<br>FR: 75 FR 35330 | -Provide presentation of spatial information for EFH and EFH-HAPC designations under the Snapper Grouper FMP<br>- Designation of deepwater coral HAPCs |
| Amendment #17A (SAFMC 2010a) | 12/3/10 red snapper closure; circle hooks March 3, 2011 | PR: 75 FR 49447<br>FR: 75 FR 76874 | -Required use of non-stainless steel circle hooks when fishing for snapper grouper species with hook-and-line gear north of 28 deg. N latitude in the South Atlantic EEZ<br>-Specify an ACL and an AM for red snapper with management measures to reduce the probability that catches will exceed the stocks' ACL<br>-Specify a rebuilding plan for red snapper<br>-Specify status determination criteria for red snapper<br>-Specify a monitoring program for red snapper |
| Emergency Rule | 12/3/10 | 75 FR 76890 | - Delay the effective date of the area closure for snapper grouper species implemented through Amendment 17A |
| Amendment #17B (SAFMC 2010b) | January 31, 2011 | PR: 75 FR 62488<br>FR: 75 FR 82280 | -Specify ACLs, ACTs, and AMs, where necessary, for 9 species undergoing overfishing<br>-Modify management measures as needed to limit harvest to the ACL or ACT<br>-Update the framework procedure for specification of total allowable catch<br>-Prohibited harvest of 6 deepwater species seaward of 240 feet to curb bycatch of speckled hind and warsaw grouper |

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| Notice of Control Date | 12/4/08 | 74 FR 7849 | -Establishes a control date for the golden tilefish portion of the snapper grouper fishery in the South Atlantic |
| Notice of Control Date | 12/4/08 | 74 FR 7849 | -Establishes control date for black sea bass pot sector in the South Atlantic |
| Regulatory Amendment #10 (SAFMC 2010c) | 5/31/11 | PR: 76 FR 9530<br>FR: 76 FR 23728 | -Eliminate closed area for snapper grouper species approved in Amendment 17A |
| Regulatory Amendment #9 (SAFMC 2011a) | Bag limit: 6/22/11<br>Trip limits: 7/15/11 | PR: 76 FR 23930<br>FR: 76 FR 34892 | - Establish trip limits for vermilion snapper and gag, increase trip limit for greater amberjack, and reduce bag limit for black sea bass |
| Regulatory Amendment #11 (2011b) | 5/10/12 | PR: 76 FR 78879<br>FR: 77 FR 27374 | - Eliminate 240 ft harvest prohibition for six deepwater species |
| Amendment # 25 (Comprehensive ACL Amendment) (SAFMC 2011c) | 4/16/12 | PR: 76 FR 74757<br>Amended PR: 76 FR 82264<br>FR: 77 FR 15916 | -Establish acceptable biological catch (ABC) control rules, establish ABCs, annual catch limits (ACLs), and accountability measures (AMs) for species not undergoing overfishing<br>-Remove some species from South Atlantic FMU and designate others as ecosystem component species<br>-Specify allocations between the commercial and, recreational sectors for species not undergoing overfishing<br>-Limit the total mortality for federally managed species in the South Atlantic to the ACLs |
| Amendment #24 (SAFMC 2011d) | 7/11/12 | PR: 77 FR 19169<br>FR: 77 FR 34254 | -Specify MSY, rebuilding plan (including ACLs, AMs, and OY), and allocations for red grouper |
| Amendment #23 (Comprehensive Ecosystem-based Amendment 2; SAFMC 2011e) | 1/30/12 | PR: 76 FR 69230<br>FR: 76 FR 82183 | - Designate the Deepwater MPAs as EFH-HAPCs<br>- Limit harvest of snapper grouper species in SC SMZs to the bag limit<br>- Modify sea turtle release gear |
| Amendment #20B | TBD | TBD | -Update wreckfish ITQ according to reauthorized Magnuson-Stevens Act |
| Amendment #18A (SAFMC 2012a) | 7/1/12 | PR: 77 FR 16991<br>FR: 77FR3 2408 | - Limit participation and effort in the black sea bass sector<br>- Modifications to management of the black sea bass pot sector<br>- Improve the accuracy, timing, and quantity of fisheries statistics |
| Amendment #20A (SAFMC 2012b) | 10/26/12 | PR: 77 FR 19165<br>FR: 77 FR 59129 | -Redistribute latent shares for the wreckfish ITQ program. |

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| Regulatory Amendment #12 (SAFMC 2012c) | 10/9/12 | FR: 77 FR 61295 | -Adjust the ACL and OY for golden tilefish<br>-Consider specifying a commercial Annual Catch Target (ACT)<br>-Revise recreational AMs for golden tilefish |
| Amendment #18B (SAFMC 2013a) | 5/23/13 | PR: 77 FR 75093<br>FR: 77 FR 23858 | -Limit participation and effort in the golden tilefish commercial sector through establishment of a longline endorsement<br>-Modify trip limits<br>-Specify allocations for gear groups (longline and hook and line) |
| Amendment # 26 (Comprehensive Ecosystem-Based Amendment 3) | TBD | TBD | -Modify bycatch and discard reporting for commercial and for-hire vessels |
| Regulatory Amendment #13 (SAFMC 2013b) | 7/17/13 | PR: 78 FR 17336<br>FR: 78 FR 36113 | -Revise the ABCs, ACLs (including sector ACLs), and ACTs implemented by the Comprehensive ACL Amendment (SAFMC 2011c). The revisions may prevent a disjunction between the established ACLs and the landings used to determine if AMs are triggered. |
| Regulatory Amendment #14 | TBD | TBD | -Modify the fishing year for greater amberjack<br>-Modify the fishing year for black sea bass<br>-Revise the AMs for vermilion snapper and black sea bass<br>-Modify the trip limit for gag |
| Regulatory Amendment #15 (SAFMC 2013c) | 9/12/13 | PR: 78 FR 31511<br>FR: 78 FR 49183 | -Modify the existing specification of OY and ACL for yellowtail snapper in the South Atlantic<br>-Modify the existing gag commercial ACL and AM for gag that requires a closure of all other shallow water groupers (black grouper, red grouper, scamp, red hind, rock hind, graysby, coney, yellowmouth grouper, and yellowfin grouper) in the South Atlantic when the gag commercial ACL is met or projected to be met |
| Regulatory Amendment #16 | TBD | TBD | -Consider removal of the November-April prohibition on the use of black sea bass pots |
| Amendment #27 | 1/27/14 | PR: 78 FR 78770<br>FR: 78 FR 57337 | -Establish the South Atlantic Council as the responsible entity for managing Nassau grouper throughout its range including federal waters of the Gulf of Mexico<br>-Modify the crew member limit on dual-permitted snapper grouper vessels<br>-Modify the restriction on retention of bag limit quantities of some snapper grouper species by captain and crew of for-hire vessels<br>-Minimize regulatory delay when adjustments to snapper |

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| | | | grouper species' ABC, ACLs, and ACTs are needed as a result of new stock assessments<br>-Address harvest of blue runner by commercial fishermen who do not possess a South Atlantic Snapper Grouper Permit |
| Amendment #28 (SAFMC 2013d) | 8/23/13 | PR: 78 FR 25047<br>FR: 78 FR 44461 | -Establish regulations to allow harvest of red snapper in the South Atlantic |
| Regulatory Amendment #18 (SAFMC 2013e) | 9/5/13 | PR: 78 FR 26740<br>FR: 78 FR 47574 | -Adjust ACLs for vermilion snapper and red porgy, and remove the 4-month recreational closure for vermilion snapper |
| Regulatory Amendment #19 (SAFMC 2013f) | ACL: 9/23/13<br>Pot closure: 10/23/13 | PR: 78 FR 39700<br>FR: 78 FR 58249 | -Adjust the ACL for black sea bass and implement an annual closure on the use of black sea bass pots from November 1 to April 30 |
| Regulatory Amendment #17 | TBD | TBD | -Adjust or establish new MPAs to enhance protection of speckled hind and warsaw grouper |
| Amendment #22 | TBD | TBD | -Establish a recreational tagging program for snapper grouper species with small ACLs |

**References:**

SAFMC (South Atlantic Fishery Management Council). 1983. Fishery Management Plan, Regulatory Impact Review and Final Environmental Impact Statement for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Circle, Suite 306, Charleston, South Carolina, 29407-4699.

SAFMC (South Atlantic Fishery Management Council). 1987. Regulatory Amendment 1 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699.

SAFMC (South Atlantic Fishery Management Council). 1988a. Amendment Number 1 and Environmental Assessment and Regulatory Impact Review to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699. 63 pp.

SAFMC (South Atlantic Fishery Management Council). 1988b. Regulatory Amendment 2 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699.

SAFMC (South Atlantic Fishery Management Council). 1989. Regulatory Amendment 3 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699.

SAFMC (South Atlantic Fishery Management Council). 1990a. Amendment Number 2, to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699.

SAFMC (South Atlantic Fishery Management Council). 1990b. Amendment Number 3, Regulatory Impact Review, Initial Regulatory Flexibility Analysis and Environmental Assessment for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699.

SAFMC (South Atlantic Fishery Management Council). 1991. Amendment Number 4, Regulatory Impact Review, Initial Regulatory Flexibility Analysis and Environmental Assessment for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699. 200 pp.

SAFMC (South Atlantic Fishery Management Council). 1992a. Amendment 5 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699.

SAFMC (South Atlantic Fishery Management Council). 1992b. Regulatory Amendment 4 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699.

SAFMC (South Atlantic Fishery Management Council). 1992c. Regulatory Amendment 5 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699.

SAFMC (South Atlantic Fishery Management Council). 1993. Amendment Number 6, Regulatory Impact Review, Initial Regulatory Flexibility Analysis and Environmental Assessment for the Fishery Management Plan for the Snapper Grouper Fishery of the South

Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699. 155 pp.

SAFMC (South Atlantic Fishery Management Council). 1994a. Amendment Number 7, Regulatory Impact Review, Social Impact Assessment, Initial Regulatory Flexibility Analysis and Supplemental Environmental Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Ste 306, Charleston, S.C. 29407-4699. 110 pp.

SAFMC (South Atlantic Fishery Management Council). 1994b. Regulatory Amendment 6 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699.

SAFMC (South Atlantic Fishery Management Council). 1997. Amendment Number 8, Regulatory Impact Review, Social Impact Assessment, Initial Regulatory Flexibility Analysis and Supplemental Environmental Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Ste 306, Charleston, S.C. 29407-4699. 124 pp.

SAFMC (South Atlantic Fishery Management Council). 1998a. Regulatory Amendment 7 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699.

SAFMC (South Atlantic Fishery Management Council). 1998b. Amendment 9, Final Supplemental Environmental Impact Statement, Initial Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699. 246 pp.

SAFMC (South Atlantic Fishery Management Council). 1998c. Comprehensive Amendment Addressing Essential Fish Habitat in Fishery Management Plans of the South Atlantic Region (Amendment 10 to the Snapper Grouper Fishery Management Plan). South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699.

SAFMC (South Atlantic Fishery Management Council). 1998d. Comprehensive Amendment Addressing Sustainable Fishery Act Definitions and Other Required Provisions in Fishery Management Plans of the South Atlantic Region (Amendment 11 to the Snapper Grouper Fishery Management Plan). South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699. 151 pp.

SAFMC (South Atlantic Fishery Management Council). 2000a. Regulatory Amendment 8 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region.

South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699.

SAFMC (South Atlantic Fishery Management Council). 2000b. Amendment Number 12, Regulatory Impact Review, Social Impact Assessment, Initial Regulatory Flexibility Analysis and Supplemental Environmental Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Ste 306, Charleston, S.C. 29407-4699.

SAFMC (South Atlantic Fishery Management Council). 2003. Amendment Number 13A, Regulatory Impact Review, Initial Regulatory Flexibility Analysis and Environmental Assessment for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699.

SAFMC (South Atlantic Fishery Management Council). 2006. Amendment 13C, Final Environmental Assessment, Initial Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Ste 306, Charleston, S.C. 29407-4699. 631 pp.

SAFMC (South Atlantic Fishery Management Council). 2007. Amendment 14, Final Environmental Impact Statement, Initial Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2008a. Amendment 15A, Final Environmental Impact Statement, Initial Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2008b. Amendment 15B, Final Environmental Impact Statement, Initial Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2009a. Amendment 16, Final Environmental Impact Statement, Initial Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2009b. Comprehensive Ecosystem Based Amendment 1, Final Environmental Impact Statement, Initial Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for South Atlantic Region (Amendment 19 to the Snapper Grouper FMP). South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405. 286 pp.

SAFMC (South Atlantic Fishery Management Council). 2010a. Amendment 17A, Final Environmental Impact Statement, Initial Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2010b. Amendment 17B, Final Environmental Impact Statement, Initial Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2010c. Regulatory Amendment 10, Final Environmental Assessment, Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2011a. Regulatory Amendment 9, Final Environmental Assessment, Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2011c. Regulatory Amendment 11, Final Environmental Assessment, Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2011c. Comprehensive Annual Catch Limit (ACL) Amendment (Amendment 25 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region). South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2011d. Amendment 24 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2011e. Comprehensive Ecosystem Based Amendment 2, Final Environmental Assessment, Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. (Amendment 23 to the Snapper Grouper FMP). South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2012a. Amendment 18A to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2012b. Amendment 20A to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2012c. Regulatory Amendment 12, Final Environmental Assessment, Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2013a. Amendment 18B to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Impact Statement, Initial Regulatory Flexibility Analysis, Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2013b. Regulatory Amendment 13 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region . South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2013c. Regulatory Amendment 15 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region . South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2013d. Amendment 28 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region . South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2013e. Regulatory Amendment 18 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region . South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2013f. Regulatory Amendment 19 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2013g. Amendment 27 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2014a. Regulatory Amendment 14 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2014b. Regulatory Amendment 21 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2014c. Amendment 29 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2014d. Regulatory Amendment 20 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

# Appendix D. Bycatch Practicability Analysis

## 1 Population Effects for the Bycatch Species

### 1.1 Background

This amendment evaluates whether or not black snapper, mahogany snapper, dog snapper, and schoolmaster are in need of federal management, and will consider alternatives removing from the Snapper Grouper FMP. The South Atlantic Council has indicated that these species might not be in need of federal management because landings are extremely small, and the majority of the landings occur in Florida state waters.

The final rule for Amendment 18B to the Snapper Grouper FMP established a longline endorsement program for the commercial golden tilefish component of the snapper grouper fishery. Currently, there are separate quotas and trip limits for the longline and hook-and-line sectors. An endorsement is required to fish with longline gear. Some fishermen believe they can transfer their golden tilefish longline endorsement to another vessel and then fish for golden tilefish using hook-and-line gear, or that they can renew their Federal commercial snapper grouper vessel permit at one time but wait to renew their golden tilefish longline endorsement and then fish for golden tilefish using hook-and-line gear while their endorsement is not valid. When Amendment 18B was developed, the South Atlantic Council did not intend for fishermen who qualified and obtained a golden tilefish longline endorsement to also be able to fish for golden tilefish using hook-and-line gear during the same fishing year. Amendment 35 would clarify regulations governing the use of Golden Tilefish Longline Endorsements to more closely reflect the South Atlantic Council's intent when the endorsement program was first implemented.

### 1.2 Finfish Bycatch Mortality

Release mortality rates are unknown for most managed species. Recent Southeast Data, Assessment, and Review (SEDAR) assessments include estimates of release mortality rates based on published studies. Stock assessment reports can be found at http://www.sefsc.noaa.gov/sedar/.

*Snapper Grouper*

The recent stock assessment for yellowtail snapper chose a rate of 10% release mortality as an approximation for the lower bound on release mortality for yellowtail snapper (FWRI 2012). SEDAR 10 (2006) estimated release mortality rates of 40% and 25% for gag taken by commercial and recreational fishermen, respectively. SEDAR 24 (2010) used release mortality rates of 48% commercial; 41% for-hire, and 39% private recreational for red snapper. Commercial and recreational release mortality rates were estimated as 20% for black grouper and red grouper in SEDAR 19 (2010). SEDAR 15 (2008) estimated a 20% release mortality rate

for greater amberjack. Snowy grouper are primarily caught in water deeper than 300 feet and golden tilefish are taken at depths greater than 540 feet; therefore, release mortality of the species are probably near 100% (SEDAR 4 2004, SEDAR 25 2011). Commercial sector discard mortality for red porgy is 35%, and 8% for the recreational sector (2012 SEDAR 1 Update).

According to SEDAR 23 (2011), several data workshop participants observed that goliath grouper in the southeastern U.S. (i.e., South Atlantic and Gulf of Mexico waters) are subject to unknown but significant levels of release mortality, especially adult specimens brought up from depth. Fishing mortality due to release mortality also occurs when goliath grouper are caught as incidental catch (i.e., when other species are targeted) and when fishers target (some repeatedly) goliath grouper for catch-and release fishing. Amendment 20A to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (SAFMC 2012b) states that there is very little information on bycatch in the wreckfish portion of the snapper grouper fishery; however, the mortality rate of any released wreckfish is likely to be 100%, because the fish are typically harvested in waters deeper than 300 m (Machias et al. 2003; SAFMC 1991).

## 1.3 Practicability of Management Measures in Directed Fisheries Relative to their Impact on Bycatch and Bycatch Mortality

### Expected Impacts on Bycatch for the Subject Amendment Actions

None of the alternatives under either action in Amendment are likely to change the current level of bycatch of target or non-target species in the Atlantic. Removing black snapper, dog snapper, mahogany snapper, and schoolmaster from the FMP to create a consistent regulatory environment across jurisdictional boundaries is not likely to alter fishing effort or the amount or type of bycatch associated with directed harvest of those species. Clarifying the regulations governing the use of Golden Tilefish Longline Endorsements is largely an administrative action and is not likely to lead to increased or decreased fishing effort directed at harvest of golden tilefish. Therefore, no changes in the level of incidental capture of species commonly associated with golden tilefish are expected as a result of that action. Additionally, no increased risks to species listed under the Endangered Species Act (ESA) or highly migratory species beyond the status quo are anticipated as a result of the actions in Amendment 35.

## 1.4 Past, Current, and Future Actions to Prevent Bycatch and Improve Monitoring of Harvest, Discards, and Discard Mortality.

Revised sea turtle release gear requirements for the snapper grouper fishery that were established in Amendment 15B to the Snapper Grouper FMP (SAFMC 2008); and designated new essential fish habitat (EFH) and EFH-Habitat Areas of Particular Concern in the South Atlantic. Comprehensive Ecosystem-Based Amendment 2 (SAFMC 2012) included an action that limited harvest and possession of snapper grouper and coastal migratory pelagics (CMP) species to the bag limit in SMZs off South Carolina. This action could reduce bycatch of regulatory discards around SMZs by restricting commercial harvest in the area, but it would probably have very little effect on the magnitude of overall bycatch of snapper grouper species in the South Atlantic.

Other actions have been taken in recently implemented amendments that could reduce bycatch of and bycatch mortality of federally managed species in the South Atlantic. Amendment 13C to the FMP for Snapper Grouper in the South Atlantic Region (Snapper Grouper FMP; SAFMC 2006) required the use of 2-inch mesh in the back panel of black sea bass pots, which has likely reduced the magnitude of regulatory discards. Amendment 16 to the Snapper Grouper FMP (SAFMC 2009) required the use of dehooking devices, which could help reduce bycatch mortality of vermilion snapper, black sea bass, gag, red grouper, black grouper, and red snapper. Dehooking devices can allow fishermen to remove hooks with greater ease and more quickly from snapper grouper species without removing the fish from the water. If a fish does need to be removed from the water, dehookers could still reduce handling time in removing hooks, thus increasing survival (Cooke et al. 2001). Furthermore, Amendment 17A to the Snapper Grouper FMP (SAFMC 2010a) required circle hooks for snapper grouper species north of 28 degrees latitude, which is expected to reduce bycatch mortality of snapper grouper species. Amendment 17B to the Snapper Grouper FMP (SAFMC 2010b) established ACLs and AMs and addressed overfishing for the following species in the snapper grouper management complex that were listed as undergoing overfishing: golden tilefish, snowy grouper, speckled hind, warsaw grouper, black sea bass, gag, red grouper, black grouper, and vermilion snapper. Golden tilefish, black sea bass, red grouper, black grouper, and vermilion snapper are no longer experiencing overfishing.

The Comprehensive ACL Amendment (SAFMC 2011a) implemented ACLs and AMs for species not undergoing overfishing in the FMPs for snapper grouper, dolphin and wahoo, golden crab, and Sargassum, in addition to other actions such as allocations and establishing annual catch targets for the recreational sector. The Comprehensive ACL Amendment (SAFMC 2011a) also established additional measures to reduce bycatch in the snapper grouper fishery with the establishment of species complexes based on biological, geographic, economic, taxonomic, technical, social, and ecological factors. ACLs were assigned to these species complexes, and when the ACL for the complex is met or projected to be met, fishing for species included in the entire species complex is prohibited for the fishing year. ACLs and AMs likely has reduced bycatch of target species and species complexes as well as incidentally caught species.

Amendment 18A to the Snapper grouper FMP (SAFMC 2012a), included actions that could reduce bycatch of black sea bass and the potential for interactions with protected species. Actions in Amendment 18A limits the number of participants in the black sea bass pot sector, requires fishermen bring pots back to port at the completion of a trip, and limits the number of pots a fishermen can deploy. Amendment 24 to the Snapper Grouper FMP (SAFMC 2011b) established a rebuilding plan for red grouper, which was overfished and undergoing overfishing. Red grouper is no longer overfished or undergoing overfishing. Amendment 24 (SAFMC 2011b) also established ACLs and AMs for red grouper, which could help to reduce bycatch of red grouper and co-occurring species.

The final rule (78 FR 23858; April 23, 2013) for Amendment 18B to the Snapper Grouper FMP (SAFMC 2013a), established an endorsement program for the commercial golden tilefish longline sector, which could have positive effects for habitat and protected species. Regulatory Amendment 14 to the Snapper Grouper FMP (SAFMC 2014) includes actions that could adjust management measures for a number of snapper grouper species, some of which could reduce the

magnitude of discards. The final rule (78 FR 49183; September 12, 2013) for Regulatory Amendment 15 to the Snapper Grouper FMP (SAFMC 2013b) included actions for yellowtail snapper and gag that are expected to reduce bycatch of snapper grouper species. Regulatory Amendment 17 to the Snapper Grouper FMP includes actions that affect marine protected areas, and could reduce bycatch of many snapper grouper species, especially speckled hind and warsaw grouper.

The South Atlantic Council's For-Hire Reporting Amendment has changed the reporting frequency by headboats from monthly to weekly, and requires that reports be submitted electronically. The action is expected to provide more timely information on landings and discards. Improved information on landings would help ensure ACLs are not exceeded. Furthermore, more timely and accurate information would be expected to provide a better understanding of the composition and magnitude of catch and bycatch, enhance the quality of data provided for stock assessments, increase the quality of assessment output, and lead to better decisions regarding additional measures to reduce bycatch. Management measures that affect gear and effort for a target species can influence fishing mortality in other species. Therefore, enhanced catch and bycatch monitoring would provide better data that could be used in multi-species assessments.

The South Atlantic Council will develop a joint amendment with the Gulf of Mexico Fishery Management Council (Gulf of Mexico Council) to require that all federally permitted charter vessels report landings information weekly to the Southeast Fisheries Science Center (SEFSC) electronically. Additionally, the Gulf of Mexico and South Atlantic Councils will also begin development of a joint amendment to require that all federally permitted commercial fishing vessels in the southeast also report their logbook landings information electronically. These future actions will help to improve estimates on the composition and magnitude of catch and bycatch of species affected by this amendment, as well as all other federally managed species in the southeast region.

Additional information on fishery related actions from the past, present, and future considerations can be found in Chapter 6 (Cumulative effects) of this Amendment.

## 1.5 Ecological Effects Due to Changes in the Bycatch

The ecological effects of bycatch mortality are the same as fishing mortality from directed fishing efforts. If not properly managed and accounted for, either form of mortality could potentially reduce stock biomass to an unsustainable level. As mentioned in the above section, the South Atlantic For-Hire Reporting Amendment includes an action to enhance landings data reporting in the headboat sector, and CE-BA 3 includes an action improve bycatch reporting. Better bycatch and discard data would provide a better understanding of the composition and magnitude of catch and bycatch, enhance the quality of data provided for stock assessments, increase the quality of assessment output, and lead to better decisions regarding additional measures to reduce bycatch. Management measures that affect gear and effort for a target species can influence fishing mortality in other species. Therefore, enhanced catch and bycatch monitoring would provide better data that could be used in multi-species assessments. These

improvements in harvest monitoring efforts in the headboat sector, will also be extended to the charter and commercial sectors of all fisheries in the southeast region.

Removing black snapper, dog snapper, mahogany snapper, and schoolmaster from the FMP is unlikely to result in significant ecological effects, positive or negative, due to changes in bycatch. Clarifying Golden Tilefish Longline Endorsement regulations is also not expected to result in adverse impacts on the ecological environment due to changes in bycatch. Amendment 35 would not modify the gear types or fishing techniques in the snapper grouper fishery. Therefore, ecological effects due to changes in bycatch in this fishery are likely to be negligible if actions in this amendment are implemented. For more details on ecological effects, see **Chapters 3** and **4** of the Comprehensive AM and Dolphin Allocation Amendment.

## 1.6 Changes in the Bycatch of Other Fish Species and Resulting Population and Ecosystem Effects

Amendment 35 is not expected to result in major changes in bycatch of other fish species. The discard mortality rates of the assessed snapper grouper species addressed in this amendment are discussed in **Section 1.2** of this bycatch practicability analysis. Removing four rarely caught species from the FMP and modifying Golden Tilefish Longline Endorsement Regulations to align them with the South Atlantic Council's intent when the endorsement program was implemented are not expected to change bycatch of co-occurring species. Nor would these actions result in adverse population or ecosystem effects. If the four snapper grouper species are removed from the FMP is it expected that the state of Florida would extend their regulations for managing those species into federal waters. Therefore, no changes in bycatch are anticipated while fishermen continue to fish for or incidentally capture black snapper, dog snapper, mahogany snapper, or schoolmaster. Likewise, the regulatory clarification for golden tilefish is largely an administrative action to prevent fishermen holding a longline endorsement from fishing under the hook-and-line quota. Therefore, no change in bycatch of species co-occurring with golden tilefish is anticipated.

**Effects on Marine Mammals and Birds**

Under Section 118 of the Marine Mammal Protection Act (MMPA), the National Marine Fisheries Service (NMFS) must publish, at least annually, a List of Fisheries (LOF) that places all U.S. commercial fisheries into one of three categories based on the level of incidental serious injury and mortality of marine mammals that occurs in each fishery. Of the gear utilized within the snapper grouper, dolphin and wahoo, and golden crab fisheries, only the black sea bass pot is considered to pose an entanglement risk to marine mammals. The southeast U.S. Atlantic black sea bass pot sector is included in the grouping of the Atlantic mixed species trap/pot fisheries, which the 2015 Proposed LOF classifies as a Category II (79 FR 50589, August 25, 2014). Gear types used in these fisheries are determined to have occasional incidental mortality and serious injury of marine mammals. For the South Atlantic snapper grouper fishery, the best available data on protected species interactions are from the Southeast Fisheries Science Center (SEFSC) Supplementary Discard Data Program (SDDP) initiated in July of 2000. The SDDP sub-samples 20% of the vessels with an active permit. Since August 2001, only three interactions with marine mammals have been documented; each was taken by handline gear and each released

alive (McCarthy SEFSC database). The longline and hook-and-line gear components of the snapper grouper fishery in the South Atlantic are classified in the 2015 Proposed LOF as Category III fisheries.

Although the black sea bass pot sector can pose an entanglement risk to large whales due to their distribution and occurrence, sperm, fin, sei, and blue whales are unlikely to overlap with the black sea bass pot sector operated within the snapper grouper fishery since it is executed primarily off North Carolina and South Carolina in waters ranging from 70-120 feet deep (21.3-36.6 meters). There are no known interactions between the black sea bass pot sector and large whales. NOAA Fisheries' biological opinion on the continued operation of the South Atlantic snapper grouper fishery determined the possible adverse effects resulting from the fishery are extremely unlikely. Thus, the continued operation of the snapper grouper fishery in the southeast U.S. Atlantic exclusive economic zone is not likely to adversely affect sperm, fin, sei, and blue whales (NMFS 2006).

North Atlantic right and humpback whales may overlap both spatially and temporally with the black sea bass pot sector. The 2007 revisions to the Atlantic Large Whale Take Reduction Plan folded the Atlantic mixed species trap/pot fisheries into the plan (72 FR 193; October 5, 2007). The new requirements (78 FR 58249; September 23, 2013) to prohibit the use of black sea bass pots during November through April each year will help further reduce the likelihood of North Atlantic right and humpback whale entanglement in black sea bass pot gear.

The Bermuda petrel and roseate tern occur within the action area. Bermuda petrels are occasionally seen in the waters of the Gulf Stream off the coasts of North Carolina and South Carolina during the summer. Sightings are considered rare and only occurring in low numbers (Alsop 2001). Roseate terns occur widely along the Atlantic coast during the summer but in the southeast region, they are found mainly off the Florida Keys (unpublished US Fish and Wildlife Service data). Interaction with fisheries has not been reported as a concern for either of these species.

Fishing effort reductions have the potential to reduce the amount of interactions between the fishery and marine mammals and birds. Although, the Bermuda petrel and roseate tern occur within the action area, these species are not commonly found and neither has been described as associating with vessels or having had interactions with the snapper grouper fishery. Thus, it is believed that the snapper grouper fisher is not likely to negatively affect the Bermuda petrel and the roseate tern.

## 1.7 Changes in Fishing, Processing, Disposal, and Marketing Costs

Removing four rarely caught snapper grouper species from the FMP and clarifying Golden Tilefish Longline Endorsement regulation are not expected to significantly alter fishing practices, processing, disposal, or marketing costs in the near or short term. In the long term, it is more likely that current fishing, processing, disposal, and marketing costs would be maintained at or near their status quo levels. Consistent regulations for south Florida snapper grouper species would benefit the socioeconomic environment by making it easier for fishery participants to abide by a single set of regulations. Clarifying Golden Tilefish Endorsement Regulations to

prevent endorsement holders from fishing under the golden tilefish hook-and-line quota will benefit the social environment by reinforcing the fair and equitable gear-specific quotas established through Amendment 18B to the FMP. This action, in the long term, could protect hook-and-line fishermen from early sector closures due to endorsement holders harvesting portions of the hook-and-line quota.

**Changes in Fishing Practices and Behavior of Fishermen**

The actions proposed in Amendment 35 are not expected to change fishing practices or fishing behavior, and are likely to have little effect on the overall magnitude of discards. As stated previously, any changes to fishing behavior and subsequent changes in the level of discards or discard mortality that may result from the actions in the amendment are expected to be small, and would not jeopardize the sustainability of any target or non-target species.

## 1.8 Social effects of the action proposed in Regulatory Amendment 21 are addressed in Chapter 4 of the amendment.

Social effects of the actions proposed in Amendment 35 are addressed in **Chapter 4** of the amendment.

## 1.9 Changes in Research, Administration, and Enforcement Costs and Management Effectiveness

The actions in Amendment 35 are not likely to change the current level of bycatch of target or non-target species in the Atlantic. Research and monitoring is ongoing to understand the effectiveness of implemented management measures from other snapper grouper amendments and their effect on bycatch. In 1990, the SEFSC initiated a logbook program for vessels with federal permits in the snapper grouper fishery from the Gulf of Mexico and South Atlantic Approximately 20% of commercial fishermen from snapper grouper, dolphin wahoo, and Coastal Migratory Pelagics (CMP) fisheries are asked to fill out discard information in logbooks; however, a greater percentage of fishermen could be selected with emphasis on individuals that dominate landings. Recreational discards are obtained from the Marine Recreational Information Program and logbooks from the NMFS headboat program. The actions in Amendment 35 would not change any ongoing or require any new research, administrative, or enforcement costs.

Additional data collection activities for the recreational sector of the snapper grouper fishery is being considered by the South Atlantic Council that could allow for a better monitoring of bycatch in the future. The South Atlantic Council is also developing an amendment to improve commercial logbook reporting for these fisheries. Some observer information for the snapper grouper fishery has been provided by the SEFSC, Marine Fisheries Initiative, and Cooperative Research Programs (CRP), but more is desired for the snapper grouper, dolphin wahoo, and CMP fisheries. Currently, for the snapper grouper fishery, headboats are required to carry observers, if selected.

Cooperative research projects between science and industry are being used to a limited extent to collect bycatch information on the snapper grouper fishery in the South Atlantic. For example,

Harris and Stephen (2005) characterized the entire (retained and discarded) catch of reef fishes from a selected commercial fisherman in the South Atlantic including total catch composition and disposition of fishes that were released. The Gulf and South Atlantic Fisheries Foundation, Inc. (Foundation) conducted a fishery observer program within the snapper grouper vertical hook-and-line (bandit rig) fishery of the South Atlantic United States. Through contractors they randomly placed observers on cooperating vessels to collect a variety of data quantifying the participation, gear, effort, catch, and discards within the fishery.

In the spring 2010, Archipelago Marine Research Ltd. worked with North Carolina Sea Grant and several South Atlantic Unlimited Snapper grouper Permit holders to test the effectiveness of electronic video monitoring to measure catch and bycatch. A total of 93 trips were monitored with video monitoring, 34 by self-reported fishing logbooks, and 5 by observers. Comparisons between electronic video monitoring data and observer data showed that video monitoring was a reliable source of catch and bycatch data.

Research funds for observer programs, as well as gear testing and testing of electronic devices are also available each year in the form of grants from the Foundation, Marine Fisheries Initiative, Saltonstall-Kennedy program, and the CRP. Efforts are made to emphasize the need for observer and logbook data in requests for proposals issued by granting agencies. A condition of funding for these projects is that data are made available to the Councils and NMFS upon completion of a study.

Stranding networks have been established in the Southeast Region. The NMFS SEFSC is the base for the Southeast United States Marine Mammal Stranding Program (http://sero.nmfs.noaa.gov/pr/strandings.htm). NMFS authorizes organizations and volunteers under the MMPA to respond to marine mammal strandings throughout the United States. These organizations form the stranding network whose participants are trained to respond to, and collect samples from live and dead marine mammals that strand along southeastern United State beaches. The SEFSC is responsible for: coordinating stranding events; monitoring stranding rates; monitoring human caused mortalities; maintaining a stranding database for the southeast region; and conducting investigations to determine the cause of unusual stranding events including mass strandings and mass mortalities (http://www.sefsc.noaa.gov/species/mammals/strandings.htm).

The Southeast Regional Office and the SEFSC participate in a wide range of training and outreach activities to communicate bycatch related issues. The NOAA Fisheries Southeast Regional Office issues public announcements, Southeast Fishery Bulletins, or News Releases on different topics, including use of turtle exclusion devices, bycatch reduction devices, use of methods and devices to minimize harm to turtles and sawfish, information intended to reduce harm and interactions with marine mammals, and other methods to reduce bycatch for the convenience of constituents in the southern United States. These are mailed out to various organizations, government entities, commercial interests, and recreational groups. This information is also included in newsletters and publications that are produced by NOAA Fisheries and the various regional fishery management councils. Announcements and news releases are also available on the internet and broadcasted over NOAA weather radio.

NOAA Fisheries established the South East Fishery-Independent Survey in 2010 to strengthen fishery-independent sampling efforts in southeast U.S. waters, addressing both immediate and long-term fishery-independent data needs, with an overarching goal of improving fishery-independent data utility for stock assessments. Meeting these data needs is critical to improving scientific advice to the management process, ensuring overfishing does not occur, and successfully rebuilding overfished stocks on schedule.

## 1.10 Changes in the Economic, Social, or Cultural Value of Fishing Activities and Non-Consumptive Uses of Fishery Resources

Any changes in economic, social, or cultural values are discussed in **Chapter 4** of Amendment 35.

*Changes in the Distribution of Benefits and Costs*

The distribution of benefits and costs expected from actions in Amendment 35 are discussed in **Chapter 3**. Economic and social effects of the action proposed in the are addressed in **Chapter 4** of this document, and these effects are discussed in relation to the baseline conditions of the fishery and fishing communities outlined in **Chapter 3** of the document.

## 1.11 Social Effects

The baseline social environment and social effects of the proposed actions are described in **Chapter 4** of Amendment 35.

## 1.12 Conclusion

This section evaluates the practicability of taking additional action to minimize bycatch and bycatch mortality using the ten factors provided at 50 CFR section 600.350(d)(3)(i). In summary, the actions in Amendment 35 are not likely to significantly contribute or detract from the current level of bycatch in the snapper grouper fishery. The South Atlantic Council, NOAA Fisheres, and the SEFSC have implemented and plan to implement numerous management measures and reporting requirements that have improved, or are likely to improve monitoring efforts of discards and discard mortality.

## 1.13 References

Alsop, III, F. J. 2001. Smithsonian Handbooks: Birds of North America eastern region. DK Publishing, Inc. New York, NY.

Collins, M.R., J.C. McGovern, G. R. Sedberry, H.S. Meister, and R. Pardieck. 1999. Swim bladder deflation in black sea bass and vermilion snapper: potential for increasing post-release survival. North American Journal of Fisheries Management. 19:828-832.

Cooke, S.J., D.P. Philipp, K.M. Dunmall, and J.F. Schreer. 2001. The influence of terminal tackle on injury, handling time, and cardiac disturbance of rock bass. North American Journal of Fisheries Management. Vol. 21, no. 2, pp. 333-342.

FWRI (Fish and Wildlife Conservation Commission Fish and Wildlife Research Institute). 2012. J. O'Hop, M. Murphy, and D. Chargaris. The 2012 stock assessment report for yellowtail snapper in the South Atlantic and Gulf of Mexico. 100 Eight Avenue Southeast, St. Petersburg, Florida 33701-5020.

Harris, P. J. and J. Stephen. 2005. Characterization of commercial reef fish catch and bycatch off the southeast coast of the United States. Final Report. Cooperative Research Program Grant No. NA03NMF4540416. SEDAR 15-RD07. July 2005.

Machias, A., S. Somarkis, N. Papadroulakis, M.T. Spedicato, M. Suquet, G. Lembo, and P. Divanach. 2003. Settlement of the wreckfish (*Polyprion americanus*). Marine Biology 142:45-52.

NMFS (NOAA Fisheries Service). 2006. Endangered Species Act Section 7 Consultation on the Continued Authorization of Snapper-Grouper Fishing under the South Atlantic Snapper-Grouper Fishery Management Plan (RFFMP) and Proposed Amendment 13C. Biological Opinion. June 7.

SAFMC (South Atlantic Fishery Management Council). 1991. Amendment Number 4, Regulatory Impact Review, Initial Regulatory Flexibility Analysis and Environmental Assessment for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699. 200 pp.

SAFMC (South Atlantic Fishery Management Council). 2006. Amendment 13C to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Impact Statement, Biological Assessment, Initial Regulatory Flexibility Analysis, Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405. 631 pp. with appendices.

SAFMC (South Atlantic Fishery Management Council). 2008. Amendment 15B to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Impact Statement, Biological Assessment, Initial Regulatory Flexibility Analysis, Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405. 324 pp. plus appendices.

SAFMC (South Atlantic Fishery Management Council). 2009. Amendment 16 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Impact Statement, Initial Regulatory Flexibility Analysis, Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery

Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405. 608 pp. plus appendices.

SAFMC (South Atlantic Fishery Management Council). 2010a. Amendment 17A to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Assessment, Initial Regulatory Flexibility Analysis, Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405. 385 pp. with appendices.

SAFMC (South Atlantic Fishery Management Council). 2010b. Amendment 17B to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Assessment, Initial Regulatory Flexibility Analysis, Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405. 406 pp. plus appendices.

SAFMC (South Atlantic Fishery Management Council). 2011a. Comprehensive Annual Catch Limit Amendment for the South Atlantic Region with Final Environmental Impact Statement, Regulatory Flexibility Analysis, Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405. 755 pp. plus appendices.

SAFMC (South Atlantic Fishery Management Council). 2011b. Amendment 24 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Assessment, Initial Regulatory Flexibility Analysis, Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405. 256 pp. plus appendices.

SAFMC (South Atlantic Fishery Management Council). 2011c. Comprehensive Ecosystem Based Amendment 2, Final Environmental Assessment, Regulatory Flexibility Analysis/Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement for the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. (Amendment 23 to the Snapper Grouper FMP). South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2012a. Amendment 18A to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2012b. Amendment 20A to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2013a. Amendment 18B to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Impact Statement, Initial Regulatory Flexibility Analysis, Regulatory Impact

Review, and Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2013b. Regulatory Amendment 15 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2014. Regulatory Amendment 14 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SEDAR (Southeast Data, Assessment and Review). 2004. SEDAR 4: Deepwater Snapper Grouper Complex. Available at: http://www.sefsc.noaa.gov/sedar

SEDAR (Southeast Data, Assessment, and Review) 10. 2006. South Atlantic and Gulf of Mexico Gag Grouper. Southeast Data, Assessment and Review, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405. Available at: http://www.sefsc.noaa.gov/sedar/

SEDAR 15. 2008. Stock Assessment Report 2. South Atlantic Greater Amberjack. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

SEDAR 17. 2008. Stock Assessment Report. South Atlantic Vermilion Snapper. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

SEDAR (Southeast Data, Assessment, and Review) 24. 2010. Stock Assessment Report: South Atlantic Red Snapper. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

SEDAR (Southeast Data, Assessment, and Review) 19. 2010. Stock Assessment Report: South Atlantic and Gulf of Mexico Black Grouper and South Atlantic Red Grouper. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

SEDAR (Southeast Data, Assessment and Review). 2011. SEDAR 23: Goliath Grouper. Available at: http://www.sefsc.noaa.gov/sedar/Sedar

SEDAR (Southeast Data, Assessment and Review). 2011. SEDAR 25: Blueline tilefish. Available at: http://www.sefsc.noaa.gov/sedar

SEDAR (Southeast Data, Assessment, and Review) 1 Update. 2012. Stock Assessment Update: South Atlantic Red Porgy. Southeast Data, Assessment and Review, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405. Available at: http://www.sefsc.noaa.gov/sedar/

SEDAR (Southeast Data, Assessment and Review). 2012. SEDAR 17: Vermilion Snapper Update. Available at: http://www.sefsc.noaa.gov/sedar

SEDAR (Southeast Data, Assessment, and Review) 17 Update. 2012. Stock Assessment Update: South Atlantic Vermilion Snapper. Southeast Data, Assessment and Review, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405. Available at: http://www.sefsc.noaa.gov/sedar/

SEDAR 32. Under Development. Data Workshop Report. South Atlantic Gray Triggerfish. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

Wilde, G. R. 2009. Does venting promote survival of released fish? Fisheries 34(1):20-28.

# Appendix E. Regulatory Impact Review

# Appendix F. Regulatory Flexibility Analysis

# Appendix G. Other Applicable Law

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) (16 U.S.C. 1801 et seq.) provides the authority for fishery management in federal waters of the Exclusive Economic Zone. However, fishery management decision-making is also affected by a number of other federal statutes designed to protect the biological and human components of U.S. fisheries, as well as the ecosystems that support those fisheries. Major laws affecting federal fishery management decision-making are summarized below.

**Administrative Procedures Act**

All federal rulemaking is governed under the provisions of the Administrative Procedure Act (APA) (5 U.S.C. Subchapter II), which establishes a "notice and comment" procedure to enable public participation in the rulemaking process. Under the APA, NOAA Fisheries is required to publish notification of proposed rules in the *Federal Register* and to solicit, consider, and respond to public comment on those rules before they are finalized. The APA also establishes a 30-day waiting period from the time a final rule is published until it takes effect. This amendment is subject to all regulations under the APA and will undergo and requisite notice and comment periods before being implemented.

**Coastal Zone Management Act**

Section 307(c)(1) of the Federal Coastal Zone Management Act of 1972 (CZMA), as amended, requires federal activities that affect any land or water use or natural resource of a state's coastal zone be conducted in a manner consistent, to the maximum extent practicable, with approved state coastal management programs. The requirements for such a consistency determination are set forth in NOAA regulations at 15 C.F.R. part 930, subpart C. According to these regulations and CZMA Section 307(c)(1), when taking an action that affects any land or water use or natural resource of a state's coastal zone, NMFS is required to provide a consistency determination to the relevant state agency at least 90 days before taking final action.

Upon submission to the Secretary, NOAA Fisheries will determine if this plan amendment is consistent with the Coastal Zone Management programs of the Atlantic states from Florida to Maine, to the maximum extent possible. Their determination will then be submitted to the responsible state agencies under Section 307 of the CZMA administering approved Coastal Zone Management programs for these states.

**Data Quality Act**

The Data Quality Act (DQA) (Public Law 106-443) effective October 1, 2002, requires the government to set standards for the quality of scientific information and statistics used and disseminated by federal agencies. Information includes any communication or representation of knowledge such as facts or data, in any medium or form, including textual, numerical, cartographic, narrative, or audiovisual forms (includes web dissemination, but not hyperlinks to information that others disseminate; does not include clearly stated opinions).

Specifically, the DQA directs the Office of Management and Budget (OMB) to issue government wide guidelines that "provide policy and procedural guidance to federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information disseminated by federal agencies." Such guidelines have been issued, directing all federal agencies to create and disseminate agency-specific standards to: 1) ensure information quality and develop a pre-dissemination review process; 2) establish administrative mechanisms allowing affected persons to seek and obtain correction of information; and 3) report periodically to OMB on the number and nature of complaints received.

Scientific information and data are key components of fishery management plans (FMPs) and amendments and the use of best available information is the second national standard under the Magnuson-Stevens Act. To be consistent with the DQA, FMPs and amendments must be based on the best information available. They should also properly reference all supporting materials and data, and be reviewed by technically competent individuals. With respect to original data generated for FMPs and amendments, it is important to ensure that the data are collected according to documented procedures or in a manner that reflects standard practices accepted by the relevant scientific and technical communities. Data will also undergo quality control prior to being used by the agency and a pre-dissemination review.

**Endangered Species Act**

The Endangered Species Act (ESA) of 1973, as amended, (16 U.S.C. Section 1531 et seq.) requires that federal agencies use their authorities to conserve endangered and threatened species. The ESA requires NMFS, when proposing a fishery action that "may affect" critical habitat or endangered or threatened species, to consult with the appropriate administrative agency (itself for most marine species, the U.S. Fish and Wildlife Service for all remaining species) to determine the potential impacts of the proposed action. Consultations are concluded informally when proposed actions may affect but are "not likely to adversely affect" endangered or threatened species or designated critical habitat. Formal consultations, including a biological opinion, are required when proposed actions may affect and are "likely to adversely affect" endangered or threatened species or adversely modify designated critical habitat. If jeopardy or adverse modification is found, the consulting agency is required to suggest reasonable and prudent alternatives. NOAA Fisheries, as part of the Secretarial review process, will make a determination regarding the potential impacts of the proposed actions.

**Marine Mammal Protection Act**

The Marine Mammal Protection Act (MMPA) established a moratorium, with certain exceptions, on the taking of marine mammals in U.S. waters and by U.S. citizens on the high seas. It also prohibits the importing of marine mammals and marine mammal products into the United States. Under the MMPA, the Secretary of Commerce (authority delegated to NMFS) is responsible for the conservation and management of cetaceans and pinnipeds (other than walruses). The Secretary of the Interior is responsible for walruses, sea otters, polar bears, manatees, and dugongs.

Part of the responsibility that NMFS has under the MMPA involves monitoring populations of marine mammals to make sure that they stay at optimum levels. If a population falls below its

optimum level, it is designated as "depleted." A conservation plan is then developed to guide research and management actions to restore the population to healthy levels.

In 1994, Congress amended the MMPA, to govern the taking of marine mammals incidental to commercial fishing operations. This amendment required the preparation of stock assessments for all marine mammal stocks in waters under U.S. jurisdiction; development and implementation of take-reduction plans for stocks that may be reduced or are being maintained below their optimum sustainable population levels due to interactions with commercial fisheries; and studies of pinniped-fishery interactions. The MMPA requires a commercial fishery to be placed in one of three categories, based on the relative frequency of incidental serious injuries and mortalities of marine mammals. Category I designates fisheries with frequent serious injuries and mortalities incidental to commercial fishing; Category II designates fisheries with occasional serious injuries and mortalities; Category III designates fisheries with a remote likelihood or no known serious injuries or mortalities.

Under the MMPA, to legally fish in a Category I and/or II fishery, a fisherman must take certain steps. For example, owners of vessels or gear engaging in a Category I or II fishery, are required to obtain a marine mammal authorization by registering with the Marine Mammal Authorization Program (50 CFR 229.4). They are also required to accommodate an observer if requested (50 CFR 229.7(c)) and they must comply with any applicable take reduction plans. The 2015 proposed List of Fisheries (79 FR 50589, August 25, 2014) classifies the snapper-grouper, dolphin wahoo, and golden crab fisheries as Category III fisheries. Category III designates fisheries with a remote likelihood or no known serious injuries or mortalities.

**Essential Fish Habitat**

The amended Magnuson-Stevens Act included a new habitat conservation provision known as Essential Fish Habitat (EFH) that requires each existing and any new FMPs to describe and identify EFH for each federally managed species, minimize to the extent practicable impacts from fishing activities on EFH that are more than minimal and not temporary in nature, and identify other actions to encourage the conservation and enhancement of that EFH. To address these requirements the South Atlantic Fishery Management Council has, under separate action, approved an environmental impact statement (SAFMC 1998) to address the new EFH requirements contained within the Magnuson-Stevens Act. Section 305(b)(2) requires federal agencies to obtain a consultation for any action that may adversely affect EFH. An EFH consultation will be conducted for this action.

**Executive Orders**

**E.O. 12630: Takings**

The Executive Order on Government Actions and Interference with Constitutionally Protected Property Rights that became effective March 18, 1988, requires each federal agency prepare a Takings Implication Assessment for any of its administrative, regulatory, and legislative policies and actions that affect, or may affect, the use of any real or personal property. Clearance of a regulatory action must include a takings statement and, if appropriate, a Takings Implication Assessment. The NOAA Office of General Counsel will determine whether a Taking Implication Assessment is necessary for this amendment.

**E.O. 12866: Regulatory Planning and Review**

Executive Order 12866: Regulatory Planning and Review, signed in 1993, requires federal agencies to assess the costs and benefits of their proposed regulations, including distributional impacts, and to select alternatives that maximize net benefits to society. To comply with E.O. 12866, NOAA Fisheries prepares a Regulatory Impact Review (RIR) for all fishery regulatory actions that either implement a new fishery management plan or significantly amend an existing plan. RIRs provide a comprehensive analysis of the costs and benefits to society of proposed regulatory actions, the problems and policy objectives prompting the regulatory proposals, and the major alternatives that could be used to solve the problems. The reviews also serve as the basis for the agency's determinations as to whether proposed regulations are a "significant regulatory action" under the criteria provided in E.O. 12866 and whether proposed regulations would have a significant economic impact on a substantial number of small entities in compliance with the Regulatory Flexibility Act.

On June 20, 2013, the Small Business Administration issued a final rule revising the small business size standards for several industries effective July 22, 2013 (78 FR 37398). The rule increased the size standard for Finfish Fishing from $4.0 to $19.0 million, Shellfish Fishing from $4.0 to $5.0 million, and Other Marine Fishing from $4.0 to $7.0 million. In light of these new standards, NOAA Fisheries has preliminarily determined that the proposed action would not have a significant economic impact on a substantial number of small entities.

**E.O. 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations**

This Executive Order mandates that each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, 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 and possessions. Federal agency responsibilities under this Executive Order include conducting their programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons from participation in, denying persons the benefit of, or subjecting persons to discrimination under, such, programs policies, and activities, because of their race, color, or national origin. Furthermore, each federal agency responsibility set forth under this Executive Order shall apply equally to Native American programs. Environmental justice considerations are discussed in detail in **Section 3.3.3**.

**E.O. 12962: Recreational Fisheries**

This Executive Order requires federal agencies, in cooperation with states and tribes, to improve the quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities through a variety of methods including, but not limited to, developing joint partnerships; promoting the restoration of recreational fishing areas that are limited by water quality and habitat degradation; fostering sound aquatic conservation and restoration endeavors; and evaluating the effects of federally-funded, permitted, or authorized actions on aquatic systems and recreational fisheries, and documenting those effects. Additionally, it establishes a seven-member National Recreational Fisheries

Coordination Council (Council) responsible for, among other things, ensuring that social and economic values of healthy aquatic systems that support recreational fisheries are considered by federal agencies in the course of their actions, sharing the latest resource information and management technologies, and reducing duplicative and cost-inefficient programs among federal agencies involved in conserving or managing recreational fisheries. The Council also is responsible for developing, in cooperation with federal agencies, states and tribes, a Recreational Fishery Resource Conservation Plan - to include a five-year agenda. Finally, the Order requires NMFS and the U.S. Fish and Wildlife Service to develop a joint agency policy for administering the ESA.

**E.O. 13132: Federalism**

The Executive Order on Federalism requires agencies in formulating and implementing policies, to be guided by the fundamental federalism principles. The Order serves to guarantee the division of governmental responsibilities between the national government and the states that was intended by the framers of the Constitution. Federalism is rooted in the belief that issues not national in scope or significance are most appropriately addressed by the level of government closest to the people. This Order is relevant to FMPs and amendments given the overlapping authorities of NMFS, the states, and local authorities in managing coastal resources, including fisheries, and the need for a clear definition of responsibilities. It is important to recognize those components of the ecosystem over which fishery managers have no direct control and to develop strategies to address them in conjunction with appropriate state, tribes and local entities (international too).

No federalism issues have been identified relative to the actions proposed in this amendment. Therefore, consultation with state officials under Executive Order 12612 is not necessary.

# Appendix H. Essential Fish Habitat and Ecosystem-based Management

**South Atlantic Fishery Management Council Habitat Conservation, Ecosystem Coordination and Collaboration**

The Council, using the Essential Fish Habitat Plan as the cornerstone, adopted a strategy to facilitate the move to an ecosystem-based approach to fisheries management in the region. This approach required a greater understanding of the South Atlantic ecosystem and the complex relationships among humans, marine life, and the environment including essential fish habitat. To accomplish this, a process was undertaken to facilitate the evolution of the Habitat Plan into a Fishery Ecosystem Plan (FEP), thereby providing a more comprehensive understanding of the biological, social, and economic impacts of management necessary to initiate the transition from single species management to ecosystem-based management in the region.

***Moving to Ecosystem-Based Management***

The Council adopted broad goals for Ecosystem-Based Management to include maintaining or improving ecosystem structure and function; maintaining or improving economic, social, and cultural benefits from resources; and maintaining or improving biological, economic, and cultural diversity. Development of a regional FEP (SAFMC 2009a) provided an opportunity to expand the scope of the original Council Habitat Plan and compile and review available habitat, biological, social, and economic fishery and resource information for fisheries in the South Atlantic ecosystem. The South Atlantic Council views habitat conservation as the core of the move to EBM in the region. Therefore, development of the FEP was a natural next step in the evolution and expands and significantly updates the SAFMC Habitat Plan (SAFMC 1998a) incorporating comprehensive details of all managed species (SAFMC, South Atlantic States, ASMFC, and NOAA Fisheries Highly Migratory Species and Protected Species) including their biology, food web dynamics, and economic and social characteristics of the fisheries and habitats essential to their survival. The FEP therefore serves as a source document and presents more complete and detailed information describing the South Atlantic ecosystem and the impact of fisheries on the environment. This FEP updated information on designated Essential Fish Habitat (EFH) and EFH-Habitat Areas of Particular Concern; expanded descriptions of biology and status of managed species; presented information that will support ecosystem considerations for managed species; and described the social and economic characteristics of the fisheries in the region. In addition, it expanded the discussion and description of existing research programs and needs to identify biological, social, and economic research needed to fully address ecosystem-based management in the region. It is anticipated that the FEP will provide a greater degree of guidance by fishery, habitat, or major ecosystem consideration of bycatch reduction, prey-predator interactions, maintaining biodiversity, and spatial management needs. This FEP serves as a living source document of biological, economic, and social information for all Fishery Management Plans (FMP). Future Environmental Assessments and Environmental Impact

Statements associated with subsequent amendments to Council FMPs will draw from or cite by reference the FEP.

The Fishery Ecosystem Plan for the South Atlantic Region encompasses the following volume structure:
FEP Volume I - Introduction and Overview of FEP for the South Atlantic Region
FEP Volume II - South Atlantic Habitats and Species
FEP Volume III - South Atlantic Human and Institutional Environment
FEP Volume IV - Threats to South Atlantic Ecosystem and Recommendations
FEP Volume V - South Atlantic Research Programs and Data Needs
FEP Volume VI - References and Appendices

Comprehensive Ecosystem-Based Amendment (CE-BA) 1 (SAFMC 2009b) is supported by this FEP and updated EFH and EFH-HAPC information and addressed the Final EFH Rule (e.g., GIS presented for all EFH and EFH-HAPCs). Management actions implemented in CE-BA 1 established deepwater Coral HAPCs to protect what is thought to be the largest continuous distribution (>23,000 square miles) of pristine, deepwater coral ecosystems in the world.

The Fishery Ecosystem Plan, slated to be revised every 5 years, will again be the vehicle to update and refine information supporting designation and future review of EFH and EFH-HAPCs for managed species. Planning for the update is being conducted in cooperation with the Habitat Advisory Panel during the fall and winter of 2013 with initiation during 2014.

***Ecosystem Approach to Deepwater Ecosystem Management***
The South Atlantic Council manages coral, coral reefs and live/hard bottom habitat, including deepwater corals, through the Fishery Management Plan for Coral, Coral Reefs and Live/Hard Bottom Habitat of the South Atlantic Region (Coral FMP). Mechanisms exist in the FMP, as amended, to further protect deepwater coral and live/hard bottom habitats. The SAFMC's Habitat and Environmental Protection Advisory Panel and Coral Advisory Panel have supported proactive efforts to identify and protect deepwater coral ecosystems in the South Atlantic region. Management actions in Comprehensive Ecosystem-Based Amendment (CE-BA 1) (SAFMC 2009b) established deepwater coral HAPCs (C- HAPCs) to protect what is thought to be the largest continuous distribution (>23,000 square miles) of pristine deepwater coral ecosystems in the world. In addition, CE-BA 1 established areas within the CHAPC, which provide for traditional fishing in limited areas, which do not impact deepwater coral habitat. CE-BA 1, supported by the FEP, also addressed non-regulatory updates for existing EFH and EFH- HAPC information and addressed the spatial requirements of the Final EFH Rule (i.e., GIS presented for all EFH and EFH-HAPCs). Actions in this amendment included modifications in the management of the following: octocorals; special management zones (SMZs) off the coast of South Carolina; and sea turtle release gear requirements for snapper grouper fishermen. The amendment also designated essential fish habitat (EFH) and EFH-Habitat Areas of Particular Concern (EFH-HAPCs).

CE-BA 2 established annual catch limits (ACL) for octocorals in the South Atlantic as well as modifying the Fishery Management Unit (FMU) for octocorals to remove octocorals off the coast of Florida from the FMU (SAFMC 2011). The amendment also limited the possession of

managed species in the SMZs off South Carolina to the recreational bag limit for snapper grouper and coastal migratory pelagic species; modified sea turtle release gear requirements for the snapper grouper fishery based upon freeboard height of vessels; amends Council fishery management plans (FMPs) to designate or modify EFH and EFH-HAPCs, including the FMP for Pelagic Sargassum Habitat; amended the Coral FMP to designate EFH for deepwater Coral HAPCs designated under CE-BA 1; and amended the Snapper Grouper FMP to designate EFH-HAPCs for golden and blueline tilefish and the deepwater Marine Protected Areas. The final rule was published in the federal register on December 30, 2011, and regulations became effective on January 30, 2012.

***Building from a Habitat to an Ecosystem Network to Support the Evolution***

Starting with our Habitat and Environmental Protection Advisory Panel, the Council expanded and fostered a comprehensive Habitat network in our region to develop the Habitat Plan of the South Atlantic Region completed in 1998 to support the EFH rule. Building on the core regional collaborations, the Council facilitated an expansion to a Habitat and Ecosystem network to support development of the FEP and CE-BA as well as coordinate with partners on other regional efforts.

*Integrated Ocean Observing System (IOOS) and Southeast Coastal and Ocean Observing Regional Association (SECOORA)*

The Integrated Ocean Observing System (IOOS®) is a partnership among federal, regional, academic, and private sector parties that works to provide new tools and forecasts to improve safety, enhance the economy, and protect our environment. IOOS supplies critical information about our Nation's oceans, coasts, and Great Lakes. Scientists working to understand climate change, governments adapting to changes in the Arctic, municipalities monitoring local water quality, and industries affected by coastal and marine spatial planning all have the same need: reliable, timely, and sustained access to data and information that inform decision making. Improving access to key marine data and information supports several purposes. IOOS data sustain national defense, marine commerce, and navigation safety. Scientists use these data to issue weather, climate, and marine forecasts. IOOS data are also used to make decisions for energy siting and production, economic development, and ecosystem-based resource management. Emergency managers and health officials need IOOS information to make decisions about public safety. Teachers and government officials rely on IOOS data for public outreach, training, and education.

SECOORA is one of 11 Regional Associations established nationwide through the US IOOS whose primary source of funding is through a 5-year cooperative agreement titled "Coordinated Monitoring, Prediction, and Assessment to Support Decision-Makers Needs for Coastal and Ocean Data and Tools". However, SECOORA was recently awarded funding via a NOAA Regional Ocean Partnership grant through the Governors' South Atlantic Alliance. SECOORA is the regional solution to integrating coastal and ocean observing data in the Southeast United States to inform decision makers and the general public. The SECOORA region encompasses 4 states, over 42 million people, and spans the coastal ocean from North Carolina to the west Coast of Florida and is creating customized products to address these thematic areas: Marine Operations; Coastal Hazards; Ecosystems, Water Quality, Living Marine Resources; and Climate Change. The Council is a voting member and Council staff was recently re-elected to serve on the

Board of Directors for the Southeast Coastal Regional Ocean Observing Association (SECOORA) to guide and direct priority needs for observation and modeling to support fisheries oceanography and integration into stock assessments through SEDAR. Cooperation through SECOORA is envisioned to facilitate the following:

- Refining current or water column designations of EFH and EFH-HAPCs (e.g., Gulf Stream and Florida Current).
- Providing oceanographic models linking benthic, pelagic habitats, and food webs.
- Providing oceanographic input parameters for ecosystem models.
- Integration of OOS information into Fish Stock Assessment process in the SA region.
- Facilitating OOS system collection of fish and fishery data and other research necessary to support the Council's use of area-based management tools in the SA Region including but not limited to EFH, EFH-HAPCs, Marine Protected Areas, Deepwater Coral Habitat Areas of Particular Concern, Special Management Zones, and Allowable Gear Areas.
- Integration of OOS program capabilities and research Needs into the South Atlantic Fishery Ecosystem Plan.
- Collaboration with SECOORA to integrate OOS products with information included in the Council's Habitat and Ecosystem Web Services and Atlas to facilitate model and tool development.
- Expanding Map Services and the Regional Habitat and Ecosystem Atlas in cooperation with SECOORAs Web Services that will provide researchers access to data or products including those collected/developed by SA OOS partners.

SECOORA researchers are developing a comprehensive data portal to provide discovery of, access to, and metadata about coastal ocean observations in the southeast US. Below are various ways to access the currently available data.

One project recently funded by SECOORA initiated development of species specific habitat models that integrate remotely sensed and in situ data to enhance stock assessments for species managed by the Council. The project during 2013/2014 was initiated to address red porgy, gray triggerfish, black seabass, and vermilion snapper. Gray triggerfish and red porgy are slated for assessment through SEDAR in 2014/15 and 2015/16 respectively.

*National Fish Habitat Plan and Southeast Aquatic Resource Partnership (SARP)*

In addition, the Council serves on the National Habitat Board and, as a member of the Southeast Aquatic Resource Partnership (SARP), has highlighted this collaboration by including the Southeast Aquatic Habitat Plan (SAHP) and associated watershed conservation restoration targets into the FEP. Many of the habitat, water quality, and water quantity conservation needs identified in the threats and recommendations Volume of the FEP are directly addressed by on-the-ground projects supported by SARP. This cooperation results in funding fish habitat restoration and conservation intended to increase the viability of fish populations and fishing opportunity, which also meets the needs to conserve and manage
Essential Fish Habitat for Council managed species or habitat important to their prey. To date, SARP has funded 53 projects in the region through this program. This work supports conservation objectives identified in the SAHP to improve, establish, or maintain riparian zones, water quality, watershed connectivity, sediment flows, bottoms and shorelines, and fish passage, and addresses other key factors associated with the loss and degradation of fish habitats. SARP

also developed the Southern Instream Flow Network (SIFN) to address the impacts of flow alterations in the Southeastern US aquatic ecosystems which leverages policy, technical experience, and scientific resources among partners based in 15 states. Maintaining appropriate flow into South Atlantic estuarine systems to support healthy inshore habitats essential to Council managed species is a major regional concern and efforts of SARP through SIFN are envisioned to enhance state and local partners ability to maintain appropriate flow rates.

*Governor's South Atlantic Alliance (GSAA)*

Initially discussed as a South Atlantic Eco-regional Compact, the Council has also cooperated with South Atlantic States in the formation of a Governor's South Atlantic Alliance (GSAA). This will also provide regional guidance and resources that will address State and Council broader habitat and ecosystem conservation goals. The GSAA was initiated in 2006. An Executive Planning Team (EPT), by the end of 2007, had created a framework for the Governors South Atlantic Alliance. The formal agreement between the four states (NC, SC, GA, and FL) was executed in May 2009. The Agreement specifies that the Alliance will prepare a "Governors South Atlantic Alliance Action Plan" which will be reviewed annually for progress and updated every five years for relevance of content. The Alliance's mission and purpose is to promote collaboration among the four states, and with the support and interaction of federal agencies, academe, regional organizations, non-governmental organizations, and the private sector, to sustain and enhance the region's coastal and marine resources. The Alliance proposes to regionally implement science-based actions and policies that balance coastal and marine ecosystems capacities to support both human and natural systems. The GSAA Action Plan was released in December 2010 and describes the four Priority Issue Areas that were identified by the Governors to be of mutual importance to the sustainability of the region's resources: Healthy Ecosystems; Working Waterfronts; Clean Coastal and Ocean Waters; and Disaster-Resilient Communities. The goals, objectives, actions, and implementation steps for each of these priorities were further described in the GSAA Implementation Plan released in July 2011. The final Action Plan was released on December 1, 2010 and marked the beginning of intensive work by the Alliance Issue Area Technical Teams (IATTs) to develop implementation steps for the actions and objectives. The GSAA Implementation Plan was published July 6, 2011, and the Alliance has been working to implement the Plan through the IATTs and two NOAA-funded Projects. The Alliance also partners with other federal agencies, academia, non-profits, private industry, regional organizations, and others. The Alliance supports both national and state-level ocean and coastal policy by coordinating federal, state, and local entities to ensure the sustainability of the region's economic, cultural, and natural resources. The Alliance has organized itself around the founding principles outlined in the GSAA Terms of Reference and detailed in the GSAA Business Plan. A team of natural resource managers, scientists, and information management system experts have partnered to develop a Regional Information Management System (RIMS) and recommend decision support tools that will support regional collaboration and decision-making. In addition to regional-level stakeholders, state and local coastal managers and decision makers will also be served by this project, which will enable ready access to new and existing data and information. The collection and synthesis of spatial data into a suite of visualization tools is a critical step for long-term collaborative planning in the South Atlantic region for a wide range of coastal uses. The Council's Atlas presents the spatial representations of Essential Fish Habitat, managed areas, regional fish and fish habitat

distribution, and fishery operation information and it can be linked to or drawn on as a critical part of the collaboration with the RIMS.

*South Atlantic Landscape Conservation Cooperative*
One of the more recent collaborations is the Council's participation as Steering Committee member for the newly establish South Atlantic Landscape Conservation Cooperative (SALCC). Landscape Conservation Cooperatives (LCCs) are applied conservation science partnerships focused on a defined geographic area that informs on-the-ground strategic conservation efforts at landscape scales. LCC partners include DOI agencies, other federal agencies, states, tribes, non-governmental organizations, universities, and others. The newly formed Department of Interior Southeast Climate Services Center (CSC) has the LCCs in the region as their primary clients. One of the initial charges of the CSCs is to downscale climate models for use at finer scales.

The SALCC developed a Strategic Plan through an iterative process that began in December 2011. The plan provides a simple strategy for moving forward over the next few years. An operations plan was developed under direction from the SALCC Steering Committee to redouble efforts to develop version 1.0 of a shared conservation blueprint by spring-summer of 2014. The SALCC is developing the regional blueprint to address the rapid changes in the South Atlantic including but not limited to climate change, urban growth, and increasing human demands on resources which are reshaping the landscape. While these forces cut across political and jurisdictional boundaries, the conservation community does not have a consistent cross-boundary, cross-organization plan for how to respond. The South Atlantic Conservation Blueprint will be that plan. The blueprint is envisioned to be a spatially-explicit map depicting the places and actions need to sustain South Atlantic LCC objectives in the face of future change. The steps to creating the blueprint include development of: indicators and targets (shared metrics of success); the State of the South Atlantic (past, present, and future condition of indicators); and a Conservation Blueprint. Potential ways the blueprint could be used include: finding the best places for people and organizations to work together; raising new money to implement conservation actions; guiding infrastructure development (highways, wind, urban growth, etc.); creating incentives as an alternative to regulation; bringing a landscape perspective to local adaptation efforts; and locating places and actions to build resilience after major disasters (hurricanes, oil spills, etc.). Integration of connectivity, function, and threats to river, estuarine and marine systems supporting Council managed species is supported by the SALCC and enhanced by the Council being a voting member of its Steering Committee. In addition, the Council's Regional Atlas presents spatial representations of Essential Fish Habitat, managed areas, regional fish and fish habitat distribution, and fishery operation information and it be linked to or drawn on as a critical part of the collaboration with the recently developed SALCC Conservation Planning Atlas.

***Building Tools to support EBM in the South Atlantic Region***
The Council has developed a Habitat and Ecosystem Section of the website http://www.safmc.net/ecosystem/Home/EcosystemHome/tabid/435/Default.aspx and, in cooperation with the Florida Wildlife Research Institute (FWRI), developed a Habitat and Ecosystem Internet Map Server (IMS). The IMS was developed to support Council and regional partners' efforts in the transition to EBM. Other regional partners include NMFS Habitat Conservation, South Atlantic States, local management authorities, other Federal partners,

universities, conservation organizations, and recreational and commercial fishermen. As technology and spatial information needs evolved, the distribution and use of GIS demands greater capabilities. The Council has continued its collaboration with FWRI in the now evolution to Web Services provided through the regional SAFMC Habitat and Ecosystem Atlas (http://ocean.floridamarine.org/safmc_atlas/) and the SAFMC Digital Dashboard (http://ocean.floridamarine.org/safmc_dashboard/). The Atlas integrates services for the following:

Species distribution and spatial presentation of regional fishery independent data from the SEAMAP-SA, MARMAP, and NOAA SEFIS systems; SAFMC Fisheries: (http://ocean.floridamarine.org/SA_Fisheries/)

Essential Fish Habitat and Essential Fish Habitat Areas of Particular Concern; SAFMC EFH: (http://ocean.floridamarine.org/sa_efh/)

Spatial presentation of managed areas in the region; SAFMC Managed Areas: (http://ocean.floridamarine.org/safmc_managedareas/)

An online life history and habitat information system supporting Council managed, State managed, and other regional species was developed in cooperation with FWRI. The Ecospecies system is considered dynamic and presents, as developed, detailed individual species life history reports and provides an interactive online query capability for all species included in the system: http://atoll.floridamarine.org/EcoSpecies

Web Services System Updates:
Essential Fish Habitat (EFH) – displays EFH and EFH-HAPCS for SAFMC managed species and NOAA Fisheries Highly Migratory Species.
Fisheries - displays Marine Resources Monitoring, Assessment, and Prediction (MARMAP) and Southeast Area Monitoring and Assessment Program South Atlantic (SEAMAP-SA) data.
Managed Areas - displays a variety of regulatory boundaries (SAFMC and Federal) or management boundaries within the SAFMC's jurisdiction.
Habitat – displays habitat data collected by SEADESC, Harbor Branch Oceanographic Institute (HBOI), and Ocean Exploration dives, as well as the SEAMAP shallow and ESDIM deepwater bottom mapping projects, multibeam imagery, and scientific cruise data.
Multibeam Bathymetry - displays a variety of multibeam data sources and scanned bathymetry charts.
Nautical Charts – displays coastal, general, and overview nautical charts for the SAFMC's jurisdictional area.

***Ecosystem Based Action, Future Challenges and Needs***
The Council has implemented ecosystem-based principles through several existing fishery management actions including establishment of deepwater Marine Protected Areas for the Snapper Grouper fishery, proactive harvest control rules on species (e.g., dolphin and wahoo) which are not overfished, implementing extensive gear area closures which in most cases eliminate the impact of fishing gear on Essential Fish Habitat, and use of other spatial management tools including Special Management Zones. Pursuant to development of the

Comprehensive Ecosystem-Based Amendment, the Council has taken an ecosystem approach to protect deepwater ecosystems while providing for traditional fisheries for the Golden Crab and Royal Red shrimp in areas where they do not impact deepwater coral habitat. The stakeholder based process taps in on an extensive regional Habitat and Ecosystem network. Support tools facilitate Council deliberations and with the help of regional partners, are being refined to address long-term ecosystem management needs.

One of the greatest challenges to the long-term move to EBM in the region is funding high priority research, including but not limited to, comprehensive benthic mapping and ecosystem model and management tool development. In addition, collecting detailed information on fishing fleet dynamics including defining fishing operation areas by species, species complex, and season, as well as catch relative to habitat is critical for assessment of fishery, community, and habitat impacts and for Council use in place based management measures. Additional resources need to be dedicated to expand regional coordination of modeling, mapping, characterization of species use of habitats, and full funding of regional fishery independent surveys (e.g., MARMAP, SEAMAP, and SEFIS) which are linking directly to addressing high priority management needs. Development of ecosystem information systems to support Council management should build on existing tools (e.g., Regional Habitat and Ecosystem GIS and Arc Services) and provide resources to regional cooperating partners for expansion to address long-term Council needs.

The FEP and CE-BA 1 complement, but do not replace, existing FMPs. In addition, the FEP serves as a source document to the CE-BAs. NOAA should support and build on the regional coordination efforts of the Council as it transitions to a broader management approach. Resources need to be provided to collect information necessary to update and refine our FEP and support future fishery actions including but not limited to completing one of the highest priority needs to support EBM, the completion of mapping of near-shore, mid-shelf, shelf edge, and deepwater habitats in the South Atlantic region. In developing future FEPs, the Council will draw on SAFEs (Stock Assessment and Fishery Evaluation reports) which NMFS is required to provide the Council for all FMPs implemented under the Magnuson-Stevens Act. The FEP, which has served as the source document for CE-BAs, could also meet some of the NMFS SAFE requirements if information is provided to the Council to update necessary sections.

***EFH and EFH-HAPC Designations Translated to Cooperative Habitat Policy Development and Protection***

The Council actively comments on non-fishing projects or policies that may impact fish habitat. Appendix A of the Comprehensive Amendment Addressing Essential Fish Habitat in Fishery Management Plans of the South Atlantic Region (SAFMC 1998b) outlines the Council's comment and policy development process and the establishment of a four-state Habitat Advisory Panel. Members of the Habitat Advisory Panel serve as the Council's habitat contacts and professionals in the field. AP members bring projects to the Council's attention, draft comment letters, and attend public meetings. With guidance from the Advisory Panel, the Council has developed and approved policies on:

1. Energy exploration, development, transportation, and hydropower re-licensing;
2. Beach dredging and filling and large-scale coastal engineering;
3. Protection and enhancement of submerged aquatic vegetation;

4. Alterations to riverine, estuarine, and nearshore flows;
5. Marine aquaculture;
6. Marine Ecosystems and Non-Native and Invasive Species: and
7. Estuarine Ecosystems and Non-Native and Invasive Species.

NOAA Fisheries, State and other Federal agencies apply EFH and EFH-HAPC designations and protection policies in the day-to-day permit review process. The revision and updating of existing habitat policies and the development of new policies is being coordinated with core agency representatives on the Habitat and Coral Advisory Panels. Existing policies are included at the end of this Appendix.

The Habitat and Environmental Protection Advisory Panel, as part of their role in providing continued policy guidance to the Council, is during 2013/14, reviewing and proposing revisions and updates to the existing policy statements and developing new ones for Council consideration. The effort is intended to enhance the value of the statements and support cooperation and collaboration with NOAA Fisheries Habitat Conservation Division and State and Federal partners in better addressing the Congressional mandates to the Council associated with designation and conservation of EFH in the region.

***South Atlantic Bight Ecopath Model***
The Council worked cooperatively with the University of British Columbia and the Sea Around Us project to develop a straw-man and preliminary food web models (Ecopath with Ecosim) to characterize the ecological relationships of South Atlantic species, including those managed by the Council. This effort was envisioned to help the Council and cooperators in identifying available information and data gaps while providing insight into ecosystem function. More importantly, the model development process provides a vehicle to identify research necessary to better define populations, fisheries, and their interrelationships. While individual efforts are still underway in the South Atlantic, only with significant investment of new resources through other programs will a comprehensive regional model be further developed.

The latest collaboration builds on the previous Ecopath model developed through the Sea Around Us project for the South Atlantic Bight with a focus on beginning a dialogue on the implications of potential changes in forage fish populations in the region that could be associated with environmental or climate change or changes in direct exploitation of those populations.

***Essential Fish Habitat and Essential Fish Habitat Areas of Particular Concern***
Following is a summary of the current South Atlantic Council's EFH and EFH-HAPCs. Information supporting their designation was updated (pursuant to the EFH Final Rule) in the Council's Fishery Ecosystem Plan and Comprehensive Ecosystem Amendment:

**Snapper Grouper FMP**
Essential fish habitat for snapper grouper species 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 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 complex. EFH includes the spawning area in the

water column above the adult habitat and the additional pelagic environment, including *Sargassum*, required for larval survival and growth up to and including settlement. In addition the Gulf Stream is an essential fish habitat because it provides a mechanism to disperse snapper grouper larvae.

For specific life stages of estuarine dependent and nearshore snapper grouper species, essential fish habitat includes areas inshore of the 100-foot contour, such as attached macroalgae; 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.

Areas which meet the criteria for 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; nearshore 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). In addition, the Council through CEBA 2 (SAFMC 2011) designated the deepwater snapper grouper MPAs and golden tilefish and blueline tilefish habitat as EFH-HAPCs under the Snapper Grouper FMP as follows:

EFH-HAPCs for golden tilefish to include irregular bottom comprised of troughs and terraces inter-mingled with sand, mud, or shell hash bottom. Mud-clay bottoms in depths of 150-300 meters are HAPC. Golden tilefish are generally found in 80-540 meters, but most commonly found in 200-meter depths.

EFH-HAPC for blueline tilefish to include irregular bottom habitats along the shelf edge in 45-65 meters depth; shelf break or upper slope along the 100-fathom contour (150-225 meters); hardbottom habitats characterized as rock overhangs, rock outcrops, manganese-phosphorite rock slab formations, or rocky reefs in the South Atlantic Bight; and the Georgetown Hole (Charleston Lumps) off Georgetown, SC.

EFH-HAPCs for the snapper grouper complex to include the following deepwater Marine Protected Areas (MPAs) as designated in Snapper Grouper Amendment 14: Snowy Grouper Wreck MPA, Northern South Carolina MPA, Edisto MPA, Charleston Deep Artificial Reef MPA, Georgia MPA, North Florida MPA, St. Lucie Hump MPA, and East Hump MPA.

Deepwater Coral HAPCs designated in Comprehensive Ecosystem-Based Amendment 1 are designated as Snapper Grouper EFH-HAPCs: Cape Lookout Coral HAPC, Cape Fear Coral HAPC, Blake Ridge Diapir Coral HAPC, Stetson-Miami Terrace Coral HAPC, and Pourtalés Terrace Coral HAPC.

**Shrimp FMP**
For penaeid shrimp, Essential Fish Habitat includes inshore estuarine nursery areas, offshore marine habitats used for spawning and growth to maturity, and all interconnecting water bodies as described in the Habitat Plan. Inshore nursery areas include tidal freshwater (palustrine), estuarine, and marine emergent wetlands (e.g., intertidal marshes); tidal palustrine forested areas; mangroves; tidal freshwater, estuarine, and marine submerged aquatic vegetation (e.g., seagrass); and subtidal and intertidal non- vegetated flats. This applies from North Carolina through the Florida Keys.

For rock shrimp, essential fish habitat consists of offshore terrigenous and biogenic sand bottom habitats from 18 to 182 meters in depth with highest concentrations occurring between 34 and 55 meters. This applies for all areas from North Carolina through the Florida Keys. Essential fish habitat includes the shelf current systems near Cape Canaveral, Florida, which provide major transport mechanisms affecting planktonic larval rock shrimp. These currents keep larvae on the Florida Shelf and may transport them inshore in spring. In addition, the Gulf Stream is an essential fish habitat because it provides a mechanism to disperse rock shrimp larvae.

Essential fish habitat for royal red shrimp include the upper regions of the continental slope from 180 meters (590 feet) to about 730 meters (2,395 feet), with concentrations found at depths of between 250 meters (820 feet) and 475 meters (1,558 feet) over blue/black mud, sand, muddy sand, or white calcareous mud. In addition, the Gulf Stream is an essential fish habitat because it provides a mechanism to disperse royal red shrimp larvae.

Areas which meet the criteria for EFH-HAPCs for penaeid shrimp include all coastal inlets, all state-designated nursery habitats of particular importance to shrimp (for example, in North Carolina this would include all Primary Nursery Areas and all Secondary Nursery Areas), and state-identified overwintering areas.

**Coastal Migratory Pelagics FMP**
Essential fish habitat for coastal migratory pelagic species includes sandy shoals of capes and offshore bars, high profile rocky bottom, and barrier island ocean-side waters, from the surf to the shelf break zone, but from the Gulf Stream shoreward, including *Sargassum*. In addition, all coastal inlets and all state-designated nursery habitats of particular importance to coastal migratory pelagics (for example, in North Carolina this would include all Primary Nursery Areas and all Secondary Nursery Areas).

For Cobia essential fish habitat also includes high salinity bays, estuaries, and seagrass habitat. In addition, the Gulf Stream is an essential fish habitat because it provides a mechanism to disperse coastal migratory pelagic larvae.

For king and Spanish mackerel and cobia essential fish habitat occurs in the South Atlantic and Mid-Atlantic Bights.

Areas which meet the criteria for EFH-HAPCs include sandy shoals of Capes Lookout, Cape Fear, and Cape Hatteras from shore to the ends of the respective shoals, but shoreward of the

Gulf stream; The Point, The Ten-Fathom Ledge, and Big Rock (North Carolina); The Charleston Bump and Hurl Rocks (South Carolina); The Point off Jupiter Inlet (Florida); *Phragmatopoma* (worm reefs) reefs off the central east coast of Florida; nearshore hard bottom south of Cape Canaveral; The Hump off Islamorada, Florida; The Marathon Hump off Marathon, Florida; The "Wall" off of the Florida Keys; Pelagic *Sargassum*; and Atlantic coast estuaries with high numbers of Spanish mackerel and cobia based on abundance data from the ELMR Program. Estuaries meeting this criteria for Spanish mackerel include Bogue Sound and New River, North Carolina; Bogue Sound, North Carolina (Adults May-September salinity >30 ppt); and New River, North Carolina (Adults May-October salinity >30 ppt). For Cobia they include Broad River, South Carolina; and Broad River, South Carolina (Adults & juveniles May-July salinity >25ppt).

**Golden Crab FMP**

Essential fish habitat for golden crab includes the U.S. Continental Shelf from Chesapeake Bay south through the Florida Straits (and into the Gulf of Mexico). In addition, the Gulf Stream is an essential fish habitat because it provides a mechanism to disperse golden crab larvae. The detailed description of seven essential fish habitat types (a flat foraminferan ooze habitat; distinct mounds, primarily of dead coral; ripple habitat; dunes; black pebble habitat; low outcrop; and soft-bioturbated habitat) for golden crab is provided in Wenner et al. (1987). There is insufficient knowledge of the biology of golden crabs to identify spawning and nursery areas and to identify HAPCs at this time. As information becomes available, the Council will evaluate such data and identify HAPCs as appropriate through the framework.

**Spiny Lobster FMP**

Essential fish habitat for spiny lobster includes nearshore shelf/oceanic waters; shallow subtidal bottom; seagrass habitat; unconsolidated bottom (soft sediments); coral and live/hard bottom habitat; sponges; algal communities (*Laurencia*); and mangrove habitat (prop roots). In addition the Gulf Stream is an essential fish habitat because it provides a mechanism to disperse spiny lobster larvae.

Areas which meet the criteria for EFH-HAPCs for spiny lobster include Florida Bay, Biscayne Bay, Card Sound, and coral/hard bottom habitat from Jupiter Inlet, Florida through the Dry Tortugas, Florida.

**Coral, Coral Reefs, and Live/Hard Bottom Habitats FMP**

Essential fish habitat for corals (stony corals, octocorals, and black corals) incorporate habitat for over 200 species. EFH for corals include the following:

A. Essential fish habitat for hermatypic stony corals includes rough, hard, exposed, stable substrate from Palm Beach County south through the Florida reef tract in subtidal waters to 30 m depth; subtropical (15°-35° C), oligotrophic waters with high (30-35$^{o}/_{oo}$) salinity and turbidity levels sufficiently low enough to provide algal symbionts adequate sunlight penetration for photosynthesis. Ahermatypic stony corals are not light restricted and their essential fish habitat includes defined hard substrate in subtidal to outer shelf depths throughout the management area.

B. Essential fish habitat for *Antipatharia* (black corals) includes rough, hard, exposed, stable substrate, offshore in high (30-35$^{o}/_{oo}$) salinity waters in depths exceeding 18 meters (54 feet), not restricted by light penetration on the outer shelf throughout the management area.

C. Essential fish habitat for octocorals excepting the order Pennatulacea (sea pens and sea pansies) includes rough, hard, exposed, stable substrate in subtidal to outer shelf depths within a wide range of salinity and light penetration throughout the management area.

D. Essential fish habitat for Pennatulacea (sea pens and sea pansies) includes muddy, silty bottoms in subtidal to outer shelf depths within a wide range of salinity and light penetration.

Areas which meet the criteria for EFH-HAPCs for coral, coral reefs, and live/hard bottom include: The 10-Fathom Ledge, Big Rock, and The Point (North Carolina); Hurl Rocks and The Charleston Bump (South Carolina); Gray's Reef National Marine Sanctuary (Georgia); The *Phragmatopoma* (worm reefs) reefs off the central east coast of Florida; Oculina Banks off the east coast of Florida from Ft. Pierce to Cape Canaveral; nearshore (0-4 meters; 0-12 feet) hard bottom off the east coast of Florida from Cape Canaveral to Broward County); offshore (5-30 meter; 15-90 feet) hard bottom off the east coast of Florida from Palm Beach County to Fowey Rocks; Biscayne Bay, Florida; Biscayne National Park, Florida; and the Florida Keys National Marine Sanctuary. In addition, the Council through CEBA 2 (SAFMC 2011) designated the Deepwater Coral HAPCs as EFH-HAPCs under the Coral FMP as follows:

Deepwater Coral HAPCs designated in Comprehensive Ecosystem-Based Amendment 1 as Snapper Grouper EFH-HAPCs: Cape Lookout Coral HAPC, Cape Fear Coral HAPC, Blake Ridge Diapir Coral HAPC, Stetson-Miami Terrace Coral HAPC, and Pourtalés Terrace Coral HAPC.

**Dolphin and Wahoo FMP**

EFH for dolphin and wahoo is the Gulf Stream, Charleston Gyre, Florida Current, and pelagic *Sargassum*. This EFH definition for dolphin was approved by the Secretary of Commerce on June 3, 1999 as a part of the South Atlantic Council's Comprehensive Habitat Amendment (SAFMC 1998b) (dolphin was included within the Coastal Migratory Pelagics FMP at that time).

Areas which meet the criteria for EFH-HAPCs for dolphin and wahoo in the Atlantic include The Point, The Ten-Fathom Ledge, and Big Rock (North Carolina); The Charleston Bump and The Georgetown Hole (South Carolina); The Point off Jupiter Inlet (Florida); The Hump off Islamorada, Florida; The Marathon Hump off Marathon, Florida; The "Wall" off of the Florida Keys; and Pelagic *Sargassum*. This EFH-HAPC definition for dolphin was approved by the Secretary of Commerce on June 3, 1999 as a part of the South Atlantic Council's Comprehensive Habitat Amendment (dolphin was included within the Coastal Migratory Pelagics FMP at that time).

**Pelagic *Sargassum* Habitat FMP**

The Council through CEBA 2 (SAFMC 2011) designated the top 10 meters of the water column in the South Atlantic EEZ bounded by the Gulfstream, as EFH for pelagic Sargassum.

*Actions Implemented That Protect EFH and EFH-HAPCs*

**Snapper Grouper FMP**

- Prohibited the use of the following gears to protect habitat: bottom longlines in the EEZ inside of 50 fathoms or anywhere south of St. Lucie Inlet, Florida; bottom longlines in the wreckfish fishery; fish traps; bottom tending (roller- rig) trawls on live bottom habitat; and entanglement gear.
- Established the *Oculina* Experimental Closed Area where the harvest or possession of all species in the snapper grouper complex is prohibited.

Established deepwater Marine Protected Areas (MPAs) as designated in Snapper Grouper Amendment 14: Snowy Grouper Wreck MPA, Northern South Carolina MPA, Edisto MPA, Charleston Deep Artificial Reef MPA, Georgia MPA, North Florida MPA, St. Lucie Hump MPA, and East Hump MPA.

**Shrimp FMP**

- Prohibition of rock shrimp trawling in a designated area around the *Oculina* Bank,
- Mandatory use of bycatch reduction devices in the penaeid shrimp fishery,
- Mandatory Vessel Monitoring System (VMS) in the Rock Shrimp Fishery.
- A mechanism that provides for the concurrent closure of the EEZ to penaeid shrimping if environmental conditions in state waters are such that the overwintering spawning stock is severely depleted.

***Pelagic Sargassum* Habitat FMP**

- Prohibited all harvest and possession of *Sargassum* from the South Atlantic EEZ south of the latitude line representing the North Carolina/South Carolina border (34° North Latitude).
- Prohibited all harvest of *Sargassum* from the South Atlantic EEZ within 100 miles of shore between the 34° North Latitude line and the Latitude line representing the North Carolina/Virginia border.
- Harvest of *Sargassum* from the South Atlantic EEZ is limited to the months of November through June.
- Established an annual Total Allowable Catch (TAC) of 5,000 pounds landed wet weight.
- Required that an official observer be present on each *Sargassum* harvesting trip. Require that nets used to harvest *Sargassum* be constructed of four inch stretch mesh or larger fitted to a frame no larger than 4 feet by 6 feet.

**Coastal Migratory Pelagics FMP**

- Prohibited of the use of drift gillnets in the coastal migratory pelagic fishery.

**Golden Crab FMP**

- In the northern zone, golden crab traps can only be deployed in waters deeper than 900 feet; in the middle and southern zones traps can only be deployed in waters deeper than 700 feet.

Northern zone - north of the 28°N. latitude to the North Carolina/Virginia border;
Middle zone - 28°N. latitude to 25° N. latitude; and
Southern zone - south of 25°N. latitude to the border between the South Atlantic and Gulf of Mexico Fishery Management Councils.

**Coral, Coral Reefs and Live/Hard Bottom FMP**

- Established an optimum yield of zero and prohibiting all harvest or possession of these resources which serve as essential fish habitat to many managed species.
- Designated the *Oculina* Bank Habitat Area of Particular Concern.
- Expanded the *Oculina* Bank Habitat Area of Particular Concern (HAPC) to an area bounded to the west by 80°W. longitude, to the north by 28°30' N. latitude, to the south by 27°30' N. latitude, and to the east by the 100 fathom (600 feet) depth contour.
- Established the following two Satellite *Oculina* HAPCs: (1) Satellite *Oculina* HAPC #1 is bounded on the north by 28°30'N. latitude, on the south by 28°29'N. latitude, on the east by 80°W. longitude, and on the west by 80°3'W. longitude; and (2) Satellite *Oculina* HAPC #2 is bounded on the north by 28°17'N. latitude, on the south by 28°16'N. latitude, on the east by 80°W. longitude, and on the west by 80°3'W. longitude.
- Prohibited the use of all bottom tending fishing gear and fishing vessels from anchoring or using grapples in the *Oculina* Bank HAPC.
- Established a framework procedure to modify or establish Coral HAPCs.
- Established the following five deepwater CHAPCs:

Cape Lookout Lophelia Banks CHAPC;
Cape Fear Lophelia Banks CHAPC;
Stetson Reefs, Savannah and East Florida Lithoherms, and Miami Terrace (Stetson- Miami Terrace) CHAPC;
Pourtales Terrace CHAPC; and
Blake Ridge Diapir Methane Seep CHAPC.

- Within the deepwater CHAPCs, the possession of coral species and the use of all bottom damaging gear are prohibited including bottom longline, trawl (bottom and mid-water), dredge, pot or trap, or the use of an anchor, anchor and chain, or grapple and chain by all fishing vessels.

***South Atlantic Council Policies for Protection and Restoration of Essential Fish Habitat***
***SAFMC Habitat and Environmental Protection Policy***
In recognizing that species are dependent on the quantity and quality of their essential habitats, it is the policy of the SAFMC to protect, restore, and develop habitats upon which fisheries species depend; to increase the extent of their distribution and abundance; and to improve their productive capacity for the benefit of present and future generations. For purposes of this policy, "habitat" is defined as the physical, chemical, and biological parameters that are necessary for continued productivity of the species that is being managed. The objectives of the SAFMC policy will be accomplished through the recommendation of no net loss or significant environmental degradation of existing habitat. A long-term objective is to support and promote a net-gain of fisheries habitat through the restoration and rehabilitation of the productive capacity of habitats that have been degraded, and the creation and development of productive habitats where increased fishery production is probable. The SAFMC will pursue these goals at state, Federal, and local levels. The Council shall assume an aggressive role in the protection and enhancement of habitats important to fishery species, and shall actively enter Federal, decision making processes where proposed actions may otherwise compromise the productivity of fishery resources of concern to the Council.

***SAFMC EFH Policy Statements***
In addition to implementing regulations to protect habitat from fishing related degradation, the Council in cooperation with NOAA Fisheries, actively comments on non-fishing projects or policies that may impact fish habitat. The Council adopted a habitat policy and procedure document that established a four-state Habitat Advisory Panel and adopted a comment and policy development process. Members of the Habitat Advisory Panel serve as the Council's habitat contacts and professionals in the field. With guidance from the Advisory Panel, the Council has developed and approved a number of habitat policy statements which are available on the Habitat and Ecosystem section of the Council website (http://www.safmc.net/ecosystem/Home/EcosystemHome/tabid/435/Default.aspx ).

## References:

SAFMC (South Atlantic Fishery Management Council). 1998a. Habitat Plan for the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Ste 306, Charleston, S.C. 29407-4699.

SAFMC (South Atlantic Fishery Management Council). 1998b. Comprehensive Amendment Addressing Essential Fish Habitat in Fishery Management Plans of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699.

SAFMC (South Atlantic Fishery Management Council). 2009a. Fishery Ecosystem Plan for the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2009b. Comprehensive Ecosystem-

Based Amendment 1 for the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Suite 201; North Charleston, SC 29405.

SAFMC (South Atlantic Fishery Management Council). 2011. Comprehensive Ecosystem-Based Amendment 2 for the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Suite 201; North Charleston, SC 29405.

Wenner, E. L., G. F. Ulrich, and J. B. Wise. 1987. Exploration for golden crab, Geryon fenneri, in the south Atlantic Bight: distribution, population structure, and gear assessment. Fishery Bulletin 85:547-560.

# Appendix I. Fishery Impact Statement