Specification of Annual Catch Limits and Accountability Measures for Blueline Tilefish (*Caulolatilus microps*) in the South Atlantic Region

Temporary Measures through Emergency Action

Environmental Assessment Regulatory Impact Review Fishery Impact Statement

February 2014

Definitions, Abbreviations, and Acronyms Used in the Document

ABC	acceptable biological catch
ACL	annual catch limits
AM	accountability measures
ACT	annual catch target
B	a measure of stock biomass in either weight or other appropriate unit
$\mathbf{B_{MSY}}$	the stock biomass expected to exist under equilibrium conditions when fishing at F_{MSY}
$\mathbf{B_{OY}}$	the stock biomass expected to exist under equilibrium conditions when fishing at F_{OY}
$\mathbf{B_{CURR}}$	the current stock biomass
CPUE	catch per unit effort
DEIS	draft environmental impact statement
EA	environmental assessment
EEZ	exclusive economic zone
EFH	essential fish habitat
F	a measure of the instantaneous rate of fishing mortality
$\mathbf{F_{30\%SPR}}$	fishing mortality that will produce a static SPR = 30%
$\mathbf{F_{CURR}}$	the current instantaneous rate of fishing mortality
$\mathbf{F_{MSY}}$	the rate of fishing mortality expected to achieve MSY under equilibrium conditions and a corresponding biomass of B_{MSY}
$\mathbf{F_{OY}}$	the rate of fishing mortality expected to achieve OY under equilibrium conditions and a corresponding biomass of B_{OY}
FEIS	final environmental impact statement
FMP	fishery management plan
FMU	fishery management unit
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

Temporary Measures through Emergency Action for Blueline Tilefish in the South Atlantic

Documents:	Environmental assessment Regulatory impact review
Proposed actions:	Modify annual catch limits and accountability measures for blueline tilefish
Lead agency:	National Marine Fisheries Service (NMFS)
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Appendix C. Letter from Dr. Roy Crabtree, the Regional Administrator of NOAA Fisheries Southeast Regional Office, to Ben Hartig, the Chairman of the South Atlantic Fishery Management Council, dated December 6, 2013, stating that the South Atlantic blueline tilefish stock is undergoing overfishing and is overfished

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Chapter 1.
Introduction

1.1 What Actions Are Being Proposed?

Fishery managers are proposing temporary changes to the blueline tilefish regulations by means of a temporary rule through emergency action under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). Managers are temporarily revising the annual catch limits (ACL) and in-season accountability measures (AM), beginning in 2014, for the deep-water complex, including blueline tilefish.

1.2 Who is Proposing the Actions?

The South Atlantic Fishery Management Council (Council) evaluated new information regarding blueline tilefish at their December 2013 meeting and voted to request emergency action. The Council then sent their request in a December 10, 2013, letter addressed to the National Marine Fisheries Service (NMFS) (**Appendix B**). NMFS is an agency within the National Oceanic and Atmospheric Administration and the Department of Commerce. Under the Magnuson-Stevens Act, the Secretary of Commerce may promulgate emergency regulations if the Council requests the taking of such action by less than a unanimous vote. The Council voted 12 to 1 to request emergency action at their December 2013 meeting.

South Atlantic Fishery Management Council

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

1.3 Where is the Project Located?

Management of the federal snapper grouper fishery located off the southeastern United States (South Atlantic) in the 3-200 nautical miles U.S. Exclusive Economic Zone is conducted under the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP, SAFMC 1983) (**Figure 1-1**). Blueline tilefish is one of fifty-nine species managed by the Council under the Snapper Grouper FMP.

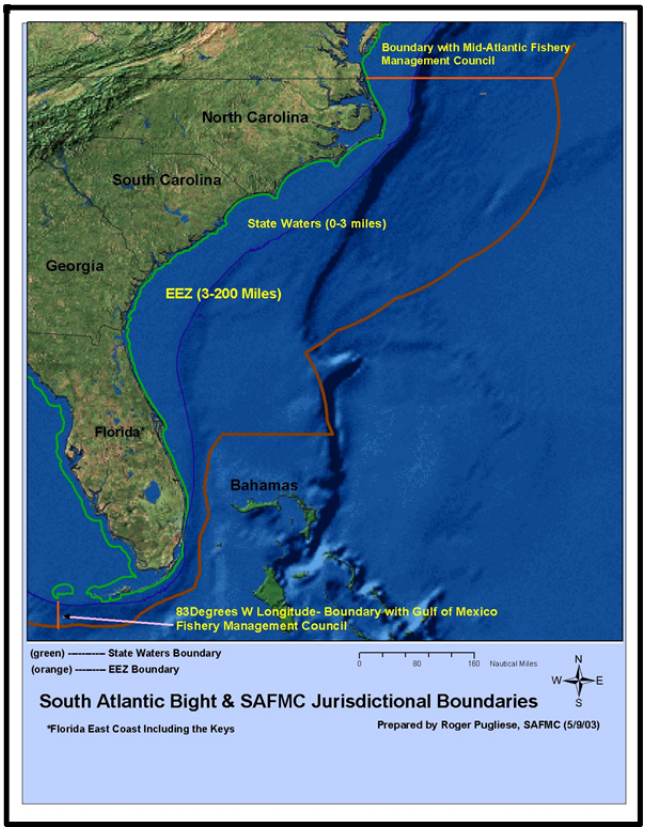

Figure 1-1. Jurisdictional boundaries of the South Atlantic Fishery Management Council.

1.4 Why is the Council and NMFS Considering Action (Purpose and Need)?

The stock health of the blueline tilefish stock in the South Atlantic was assessed in 2013. The results of the assessment indicate that the blueline tilefish stock in the South Atlantic is experiencing overfishing and is overfished according to the current definition for the minimum stock size threshold (**Figures 1-2** and **1-3**).

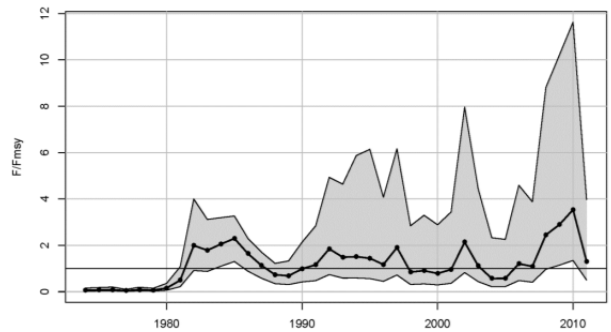

Figure 1-2. The overfishing ratio for blueline tilefish over time. The stock is undergoing overfishing when the F/F_{MSY} is greater than one (SEDAR 32 2013).

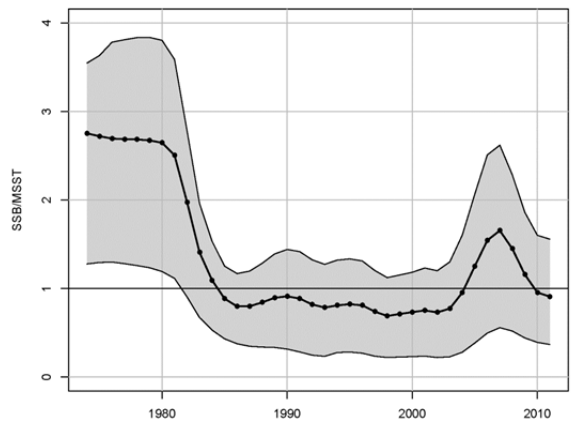

Figure 1-3. The overfished ratio for blueline tilefish over time. The stock is overfished when the SSB/MSST is less than one (SEDAR 32 2013).

The Council intends, through the request for emergency action, to reduce overfishing of blueline tilefish while permanent management measures and regulations are being developed. The Council's goal through emergency action is to minimize adverse biological effects to the blueline tilefish stock and adverse socio-economic effects to fishermen and fishing communities that utilize the blueline tilefish portion of the snapper grouper fishery. Although the actions in the emergency rule, if implemented, would likely have adverse, socio-economic effects beginning in 2014, the Council has determined that the short-term effects would be justified to minimize long-term reductions in harvest that may be required if the current levels of unsustainable harvest continue to reduce the biomass of the blueline tilefish stock. Landings in 2012 (477,126 pounds (lbs) whole weight (ww)) were significantly greater than the maximum sustainable yield at equilibrium (226,500 lbs ww). Continued exploitation at levels similar to the 2012 landings would negatively affect the health of the blueline tilefish stock.

Purpose for Action

Reduce the harvest of blueline tilefish while the South Atlantic Fishery Management Council explores long-term options to end overfishing and rebuild the stock.

Need for Action

Minimize adverse, biological effects to the blueline tilefish stock and adverse, socio-economic effects to fishermen and fishing communities that utilize the blueline tilefish portion of the snapper grouper fishery by reducing overfishing of blueline tilefish and achieving optimum yield on a continuing basis.

NMFS is also considering modifications to the in-season AMs to ensure that harvest does not exceed the ACLs. NMFS is not considering modifications to the post-season recreational or commercial AMs. Post season AMs are ineffective for temporary actions since any changes to the regulations can only be in effect for a limited time.

1.5 What is an Emergency Rule?

If the Council determines that an emergency exists, NMFS may implement temporary regulations necessary to address the emergency. If the Council vote is unanimous, NMFS must implement the temporary actions. If the vote is not unanimous, NMFS may implement the actions. The temporary regulations may remain in effect by no more than 180 days, but may be extended for an additional 186 days as described in section 305(c) of the Magnuson-Stevens Act.

1.6 If These Regulations are Temporary, Will There Be Permanent Measures?

NMFS notified the Council of the stock status in a letter dated December 6, 2013 (**Appendix C**). As mandated by Magnuson-Stevens Act, NMFS and the Council must prepare and implement a plan amendment and regulations by December 6, 2015, to end overfishing immediately and rebuild the stock.

At their December 2013 meeting, the Council initiated the development of Amendment 32 to the Snapper Grouper FMP (Amendment 32). The Council and NMFS, through actions in Amendment 32, plan to develop management actions that would end overfishing immediately and rebuild the blueline tilefish stock. Blueline tilefish is currently in the deep-water complex along with yellowedge grouper, silk snapper, misty grouper, queen

snapper, sand tilefish, black snapper, and blackfin snapper; in the same amendment, the Council proposes to separate blueline tilefish from the complex and revise the ACLs and AMs for the deep-water complex accordingly. Without the emergency action, the earliest that fishing regulations resulting from Amendment 32 would be changed would likely be in 2015.

1.7 What is the History of Management for Blueline Tilefish?

The Council and NMFS first implemented regulations affecting blueline tilefish in the South Atlantic Region in 1983 (**Table 1-1**). See **Appendix D** for a detailed history of management of blueline tilefish.

Table 1-1. Select regulations for blueline tilefish.

Date Implemented	Regulations Implemented
2/24/1999	Establishment of 5-fish aggregate grouper bag limit, which includes blueline tilefish
2/12/2009	Establishment of eight deep-water marine protected areas to protect a portion of the population and habitat of long-lived deep-water snapper grouper species
7/29/2009	Reduction of 5-fish aggregate grouper bag limit to a 3-fish aggregate.
1/31/2011	Prohibition on possession of deep-water snapper grouper species, including blueline tilefish, seaward of 240 feet in the South Atlantic EEZ.
4/16/2012	Creation of the deep-water complex. For deep-water complex, acceptable biological catch/annual catch limit = 675,908 pounds whole weight and established accountability measures
5/10/2012	Elimination of the harvest prohibition for six deep-water species, including blueline tilefish in depths greater than 240 feet

SSC Recommendations for Blueline Tilefish for 2014

OFL
Yield at P*=50%

ABC
Yield at P*=30%

Maximum Overfishing Risk (P*)
30%

Minimum Probability of Rebuilding Success
70%

Note: The numerical values of OFL and ABC will become available for the April 2014 SSC meeting.

1.8 What Public Comments Were Received on the Council's Motion to Request Emergency Action?

The Council held a public comment session at their December 2013 meeting prior to approving any motions pertaining to the management blueline tilefish. Only two members of the public commented on blueline tilefish management and both comments pertained to the stock assessment and Amendment 32; not the proposed emergency actions. One member of the public felt that blueline tilefish should be managed with appropriate possession limits to avoid total closures. Another member of the public expressed concerns with the 1981 through 1986 data that were utilized in the assessment.

Chapter 2. Proposed Actions and Alternatives

2.1 Action 1. Temporarily Revise Annual Catch Limits for Species in the Deep-Water Complex

Alternative 1 (no action). Retain the current annual catch limits for the deep-water complex (yellowedge grouper, blueline tilefish, silk snapper, misty grouper, queen snapper, sand tilefish, black snapper, and blackfin snapper).

	Sector	Annual Catch Limit (pounds whole weight)
Deep-water complex	Commercial	376,469
	Recreational	334,556

Alternative 2. Revise the current commercial and recreational annual catch limits for the deep-water complex by reducing the blueline tilefish portion.

> **Sub-alternative 2a.** Reduce the blueline tilefish portion of the deep-water complex to equal the equilibrium yield at **75%F_{MSY}**. The commercial and recreational annual catch limits for the deep-water complex would be 172,578 and 131,206 pounds whole weight, respectively.
>
> **Sub-alternative 2b.** Reduce the blueline tilefish portion of the deep-water complex to the yield at **F_{MSY}** (based on current biomass). The commercial and recreational annual catch limits for the deep-water complex would be 157,006 and 115,678 pounds whole weight, respectively.

Alternative 3. Preferred. Separate blueline tilefish from the deep-water complex and establish annual catch limits for blueline tilefish. The deep-water complex ACL would remain at current levels with the current blueline tilefish portion removed.

> **Sub-alternative 3a. Preferred.** Establish commercial and recreational annual catch limits for blueline tilefish based upon the equilibrium yield at **75%F_{MSY}** and existing sector allocations (50.07% commercial and 49.93% recreational).

Sector	Annual Catch Limit (pounds whole weight)	
	Commercial	Recreational
Blueline tilefish	112,207	111,893
Deep-water Complex without blueline tilefish	60,371	19,313

Sub-alternative 3b. Establish commercial and recreational annual catch limits for blueline tilefish based upon the yield at $\mathbf{F_{MSY}}$ (based on current biomass) and existing sector allocations (50.07% commercial and 49.93% recreational).

Sector	Annual Catch Limit (pounds whole weight)	
	Commercial	Recreational
Blueline tilefish	96,635	96,365
Deep-water Complex without blueline tilefish	60,371	19,313

Note: The value for F_{MSY} (0.302) and the yield at 75%F_{MSY} (224,100 pounds) may be found in Table 3.12 in the assessment workshop report.

2.2 Action 2. Temporarily Revise In-season Accountability Measures for Species in the Deep-Water Complex

Note: This action only considers changes to the current *in-season* AMs for species in the deep-water complex and does not consider changes to the current *post-season* AMs.

Alternative 1 (no action). Retain the current *in-season* accountability measures for the deep-water complex (yellowedge grouper, blueline tilefish, silk snapper, misty grouper, queen snapper, sand tilefish, black snapper, and blackfin snapper).

	Sector	In-season Accountability Measures
Deep-water complex	Commercial	Close if projected to reach ACL
	Recreational	None

Note: The following post-season AMs are in place for the commercial and recreational sectors for the deep-water complex:
Commercial sector: If commercial landings exceed the ACL and at least one species overfished, reduce the ACL in following year by overage amount.
Recreational sector: If recreational landings for the deep-water complex exceed the recreational ACL then during the following fishing year, recreational landings will be monitored for a persistence in increased landings and, if necessary, NMFS will reduce the length of the following recreational fishing season by the amount necessary to ensure recreational landings do not exceed the recreational ACL in the following fishing year.

Alternative 2. Add the following in-season recreational sector accountability measure for the deep-water complex to the existing accountability measures: If recreational landings for the deep-water complex reach or are projected to reach the recreational annual catch limit, National Marine Fisheries Service will file a notification with the Office of the Federal Register to close the recreational sector for this complex for the remainder of the fishing year.

	Sector	In-season Accountability Measures
Deep-water complex	Commercial	Close if projected to reach ACL
	Recreational	Close if projected to reach ACL

Alternative 3. Preferred. Establish in-season accountability measures for blueline tilefish. If commercial landings for blueline tilefish reach or are projected to reach the commercial annual catch limit, National Marine Fisheries Service will file a notification with the Office of the Federal Register to close the commercial sector for blueline tilefish for the remainder of the fishing year. If recreational landings for blueline tilefish reach or are projected to reach the recreational annual catch limit, National Marine Fisheries Service will file a notification with the Office of the Federal Register to close the recreational sector for blueline tilefish for the remainder of the fishing year.

	Sector	In-season Accountability Measures
Blueline tilefish	Commercial	Close if projected to reach ACL
	Recreational	Close if projected to reach ACL

Retain the existing in-season AM for the deep-water complex as outlined in **Alternative 1 (no action)**.

Chapter 3. Affected Environment

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

Affected Environment

- **Habitat environment (Section 3.1)**

  Examples include coral reefs and sea grass beds

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

  Examples include populations of red snapper, corals, turtles

- **Human environment (Section 3.3)**

  Examples include fishing communities and economic descriptions of the fisheries

- **Administrative environment (Section 3.4)**

  Examples include the fishery management process and enforcement activities

3.1 Habitat Environment

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/Home/EcosystemHome/tabid/435/Default.aspx.

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, Florida, but is most abundant offshore from northeastern Florida. South of Cape Canaveral, Florida, 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.

The distribution of coral and live hard bottom habitat as presented in the Southeast Area Monitoring, 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 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/EcosystemManagement/EcosystemBoundaries/MappingandGISData/tabid/632/Default.aspx .

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 Council's Internet Mapping System at the above address

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; and Council-designated Artificial Reef Special Management Zones (SMZs).

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 Council, in cooperation with National Marine Fisheries Service (NMFS), actively comments on non-fishing projects or policies that may impact essential fish habitat. With guidance from the Habitat Advisory Panel, the 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.

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" or "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 (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 (black grouper, mutton snapper).

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

Several species in the snapper-grouper fishery management unit, though they occupy the same time and space in the reef environment, occupy different trophic niches. For example, blueline tilefish consume a higher diversity of organisms and prey that is more closely associated with the bottom (Bielsa et al 1987). In contrast, the diet of snowy grouper is more specialized and prey items are found higher in the water column. It has been suggested that the different trophic niches reduces the interspecific competition for food items among these two species (Bielsa et al 1987).

Snapper grouper species that reside in deep-water could be affected by the action. In addition to blueline tilefish, snapper grouper species most likely to be affected by the proposed actions includes many species that occupy the same habitat at the same time. Therefore, snapper grouper species are likely to be caught when regulated since they will be incidentally caught when fishermen target other co-occurring species (See Section 3.2.5 for a discussion of the deep-water species).

Blueline Tilefish Life History
An Overview

- Extend from North Carolina to southern Florida and Mexico, including the Gulf of Mexico
- Waters ranging from 98-774 feet
- The fish caught off of VA are considered a part of the South Atlantic stock
- The spawning season extends from March to October, peaking May.
- Oldest fish discovered is 43 years old.

3.2.2 Blueline Tilefish, *Caulolatilus microps*

Blueline tilefish occurs in the Western Atlantic Ocean, North Carolina to southern Florida and Mexico, including the northern (and probably eastern) Gulf of Mexico (Dooley 1978). Blueline tilefish are found along the outer continental shelf, shelf break, and upper slope on irregular bottom with ledges or crevices, and around boulders or rubble piles in depths of 30-236 m (98-774 ft) and temperatures ranging from 15 to 23° C (59-73.4º F) (Ross 1978; Ross and Huntsman 1982; Robins and Ray 1986; Parker and Mays 1998).

Maximum reported size is 90 cm (35.4 in) FL (SEDAR 32 2013) and 7 kg (15 lbs) (Dooley 1978). Maximum reported age is 43 years (SEDAR 32 2013). The SEDAR group estimated the natural mortality rate to be 0.1 (SEDAR 32 2013). Spawning occurs at night, from March to October, with a peak in May (SEDAR 32 (2013) using information from Harris et al. (2004)). Blueline tilefish primarily feeds on benthic invertebrates and fishes (Dooley 1978).

3.2.3 Stock Status of Blueline Tilefish

Stock assessments, through the evaluation of biological and statistical information, provide an evaluation of stock health under the current management regime and other potential future harvest conditions. More specifically, the assessments provide an estimation of maximum sustainable yield (MSY) and a determination of stock status (whether *overfishing* is occurring and whether the stock is *overfished*).

The Southeast Data, Assessment, and Review (SEDAR) process, initiated in 2002, is a cooperative Fishery Management Council process intended to improve the quality, timeliness and reliability of fishery stock assessments in the South Atlantic, Gulf of Mexico, and US Caribbean. SEDAR is managed by the Caribbean, Gulf of Mexico, and South Atlantic Fishery Management Councils in coordination with NMFS and the Atlantic and Gulf States Marine Fisheries Commissions. SEDAR emphasizes constituent and stakeholder participation in assessment development, transparency in the assessment process, and a rigorous and independent scientific review of completed stock assessments.

Following an assessment, the South Atlantic Fishery Management Council's (Council) Scientific and Statistical Committee (SSC) reviews the stock assessment information and advises the Council on whether the stock assessment was performed utilizing the best available data and whether the outcome of the assessment is suitable for management purposes.

The results of SEDAR 32, utilizing the most recent data from 2011, determined that the blueline tilefish stock to be undergoing overfishing and overfished **(Table 3-1).** The SSC reviewed the assessment at their October 2013 meeting and approved it as the best available science and usable for management purposes. The Council, through Amendment 32 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP), intend to implement management measures to end overfishing and rebuild the stock. See **Appendix D** for a history of management of blueline tilefish.

Table 3-1. Stock status of blueline tilefish.

	SEDAR 32 (2011 most recent data)
Overfishing (F_{CURR}/MFMT value)	Yes (1.30)
Overfished (B_{CURR}/MSST value)	Yes (0.909)

- $F_{CURR} = F_{2011}$
- If F_{CURR}>MFMT, then undergoing overfishing. The higher the number, the greater degree of overfishing.
- If B_{CURR}<MSST, then overfished. The lower the number, the greater degree of overfished.
- Note: The stock status is from the base run. Changing the base run changes the level of overfishing/overfished.

3.2.4 Other Fish Species Affected

The following species are in the deep-water complex. For details on the life histories and ecology of these species, the reader is referred to Volume II of the Fishery Ecosystem Plan (SAFMC 2009b) available at: http://www.safmc.net/ecosystem/Home/EcosystemHome/tabid/435/Default.aspx.

black snapper
(Apsilus dentatus)

blackfin snapper
(Lutjanus buccanella)

blueline tilefish
(Caulolatilus microps)

misty grouper
(Epinephelus mystacinus)

queen snapper
(Etelis oculatus)

sand tilefish
(Malacanthus plumieri)

silk snapper
(Lutjanus vivanus)

yellowedge grouper
(Epinephelus flavolimbatus)

3.2.5 Protected Species

There are 44 species protected by federal law that may occur in the exclusive economic zone (EEZ) of the South Atlantic Region and are under the purview of NMFS. Thirty-one of these species are marine mammals protected under the Marine Mammal Protection Act (MMPA). Six of these marine mammal species are also listed as endangered under the Endangered Species Act (ESA) (i.e., sperm, sei, fin, blue, humpback, and North Atlantic right whales). In addition to those six marine mammals, five species of sea turtles (green, hawksbill, Kemp's ridley, leatherback, and loggerhead); the smalltooth sawfish; five distinct population segments of Atlantic sturgeon; and elkhorn coral (*Acropora palmata*) and staghorn coral (*A. cervicornis*) ("*Acropora*" collectively) are also protected under the ESA. Portions of designated critical habitat for North Atlantic right whales and *Acropora* also occur within the Council's jurisdiction. The species potentially affected by the fishery are discussed below.

3.2.5.1 ESA-Listed Sea Turtles

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

Green sea turtle hatchlings are thought to occupy pelagic areas of the open ocean and are often associated with *Sargassum* rafts (Carr 1987, Walker 1994). Pelagic stage green sea turtles are thought to be carnivorous. Stomach samples of these animals found ctenophores and pelagic snails (Frick 1976, Hughes 1974). At approximately 20 to 25 cm carapace length, juveniles migrate from pelagic habitats to benthic foraging areas (Bjorndal 1997). As juveniles move into benthic foraging areas a diet shift towards herbivory occurs. They consume primarily seagrasses and algae, but are also know to consume jellyfish, salps, and sponges (Bjorndal 1980, 1997; Paredes 1969; Mortimer 1981, 1982). The diving abilities of all sea turtles species vary by their life stages. The maximum diving range of green sea turtles is estimated at 110 m (360 ft) (Frick 1976), but they are most frequently making dives of less than 20 m (65 ft.) (Walker 1994). The time of these dives also varies by life stage. The maximum dive length is estimated at 66 minutes with most dives lasting from 9 to 23 minutes (Walker 1994).

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

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

Leatherbacks are the most pelagic of all ESA-listed sea turtles and spend most of their time in the open ocean. Although they will enter coastal waters and are seen over the continental shelf on a seasonal basis to feed in areas where jellyfish are concentrated. Leatherbacks feed primarily on cnidarians (medusae, siphonophores) and tunicates. Unlike other sea turtles, leatherbacks' diets do not shift during their life cycles. Because leatherbacks' ability to capture and eat jellyfish is not constrained by size or age, they continue to feed on these species regardless of life stage (Bjorndal 1997). Leatherbacks are the deepest diving of all sea turtles. It is estimated that these species can dive in excess of 1000 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).

3.2.5.2 ESA-Listed Marine Fish

Historically the **smalltooth sawfish** in the U.S. ranged from New York to the Mexico border. Their current range is poorly understood but believed to have contracted from these historical areas. In the South Atlantic region, they are most commonly found in Florida, primarily off the Florida Keys

(Simpfendorfer and Wiley 2004). Only two smalltooth sawfish have been recorded north of Florida since 1963 [the first was captured off North Carolina in 1963 and the other off Georgia in 2002 (National Smalltooth Sawfish Database, Florida Museum of Natural History)]. Historical accounts and recent encounter data suggest that immature individuals are most common in shallow coastal waters less than 25 meters (Bigelow and Schroeder 1953, Adams and Wilson 1995), while mature animals occur in waters in excess of 100 meters (Simpfendorfer pers. comm. 2006). Smalltooth sawfish feed primarily on fish. Mullet, jacks, and ladyfish are believed to be their primary food sources (Simpfendorfer 2001). Smalltooth sawfish also prey on crustaceans (mostly shrimp and crabs) by disturbing bottom sediment with their saw (Norman and Fraser 1938, Bigelow and Schroeder 1953).

3.3 Human Environment

3.3.1 Economic Description of the Commercial Sector

Blueline tilefish is part of the South Atlantic snapper grouper fishery, and within the fishery it is part of the deep-water complex. In addition to blueline tilefish, the deep-water complex includes yellowedge grouper, silk snapper, misty grouper, queen snapper, sand tilefish, black snapper and blackfin snapper. The commercial sector is allocated approximately 52.9% of the deep-water complex ACL. Presently, the commercial ACL for the complex is 376,469 lbs ww, and blueline tilefish represents 316,098 lbs ww (approximately 84%) of that.

In 2012, commercial landings of the complex exceeded its ACL resulting in the season ending on September 8th of that year. Through December 11, 2013, commercial landings reached up to 71.65% of the commercial ACL and the season remained open for the remainder of the year. Additional information on the complex and commercial snapper grouper fishery as a whole is contained in previous amendments [Amendment 13C (SAFMC 2006), Amendment 15A (SAFMC 2008a), Amendment 15B (SAFMC 2008b), Amendment 16 (SAFMC 2009a), and Amendment 18A (SAFMC 2011f)] and is incorporated herein by reference.

Permits
The numbers of permits associated with the snapper grouper fishery as of January 21, 2014, are provided in **Table 3-2**. The trip permits are limited access permits.

Table 3-2. Number of valid and transferrable/renewable permits associated with the commercial sector of the South Atlantic snapper/grouper fishery as of January 21, 2014.

Commercial Permit	Number Valid and Transferrable/renewable[1]
Unlimited lbs per Trip	570
225 Lbs Limited Trip	125
S/G Dealer[2]	202

[1]Non-expired and expired permits. Expired permits may be transferred and renewed within one year of expiration.
[2]Dealer permits are a one-year permit, not transferrable or renewable.

Landings and Trips

Annual commercial landings of blueline tilefish in the South Atlantic Region from 2002 through 2012 varied from 69,135 lbs ww to approximately 460,000 lbs ww (**Figure 3-1**). North Carolina led in those landings, averaging approximately 79% of annual landings by lbs ww from 2002 through 2012 and approximately 94% since 2008. Commercial landings greatly increased after 2007, although in 2011 fishing for blueline tilefish and five other species in federal waters seaward of 240 feet deep was prohibited after January 30, 2011. Explanation for the increase after 2007 is found in the 100-lb trip limit placed on commercial snowy grouper landings established in 2008. Prior to setting of that trip limit, blueline tilefish was primarily bycatch, caught while targeting the higher priced snowy grouper. Once fishermen reached the trip limit for snowy grouper, they harvested blueline tilefish, which had and still has no trip limit and is found in more areas than snowy grouper. The switch of blueline tilefish from bycatch to targeted species is illustrated in the relationship of dockside revenues (current dollars) of blueline tilefish and snowy grouper (**Figure 3-2**). This is not to suggest, however, that trips that land blueline tilefish target or land only snowy grouper and blueline tilefish.

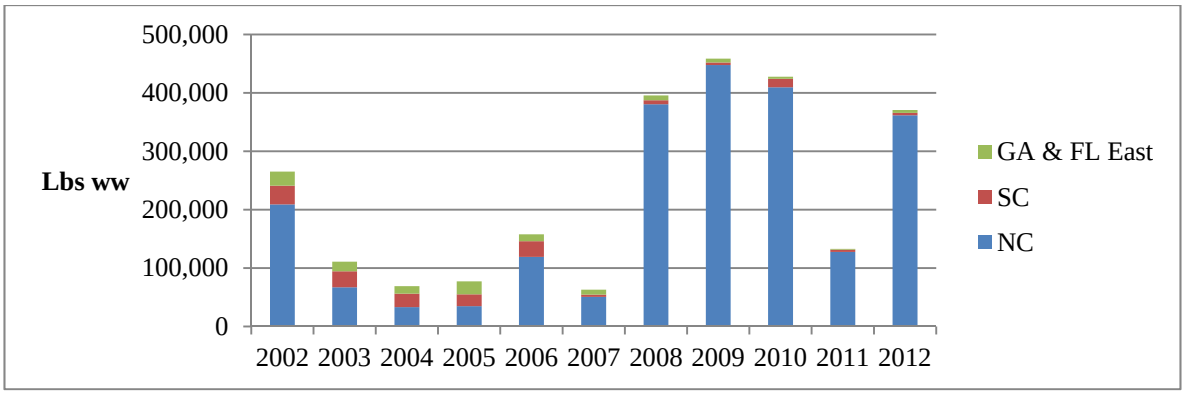

Figure 3-1. Commercial landings (lbs ww) of blueline tilefish, 2002 – 2012. Source: SEDAR 32 (2002-2011) and ACL (2012).

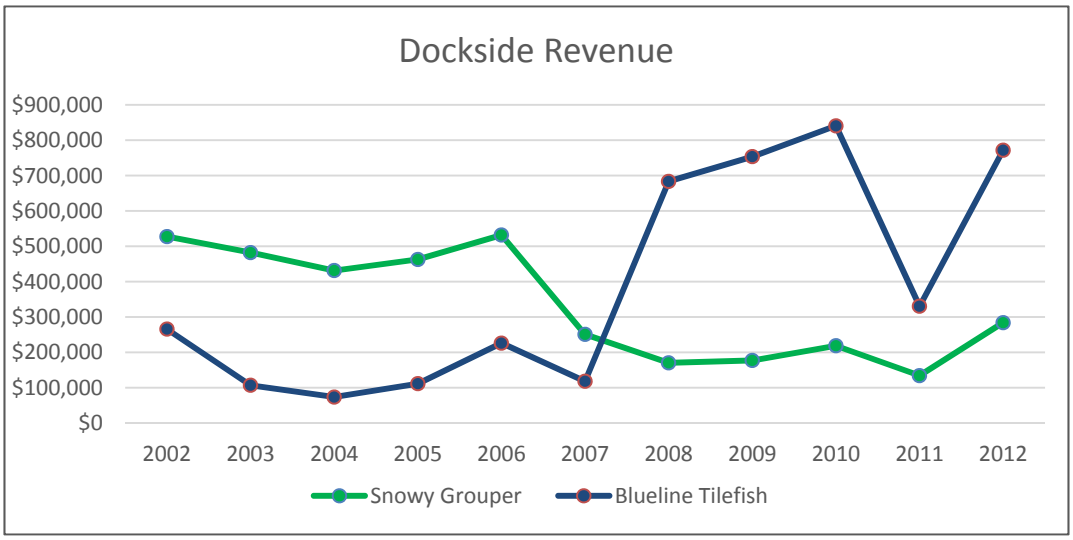

Figure 3-2. Dockside revenue (current dollars) from blueline tilefish and snowy grouper, 2002 – 2012. Source: NMFS, ALS, excluding confidential data.

In North Carolina, the majority of blueline tilefish are landed in gutted condition. Consequently, the following discussion of landings by trip are presented in lbs gw. From 2008 through 2012, an annual average of 124 vessels made 611 commercial trips that combined landed an average of 321,237 lbs gw of blueline tilefish annually with a dockside value (2012 dollars) of $679,289 (**Table 3-3**). The average trip with landings of the species sold 525 lbs gw of blueline tilefish yielding an average dockside revenue of $1,111. If 2011 is excluded, an average of 131 vessels made 684 trips that collectively landed an average of 372,271 lbs gw with a value of $772,738 (2012 dollars) annually. Average annual dockside revenue from blueline tilefish landings represented approximately 34% of total dockside revenue from trips that landed blueline tilefish from 2008 through 2012, and when 2011 is excluded the 4-year average share is approximately 36%.

Table 3-3. Number of vessels and trips with blueline tilefish landings, 2008 – 2012. Source: SEFSC Coastal Fisheries Logbook for weight and NMFS ALS for revenues.

Year	No. vessels that landed blueline tilefish	Number of trips that landed blueline tilefish	Blueline tilefish landings (lbs gw)	Dockside revenue (2012 $) from blueline tilefish landings	Other species' landings jointly caught with blueline tilefish (lbs gw)	Dockside revenue (2012 $) from other species caught during same trip	Total dockside revenue (2012 $) from trips with blueline tilefish landings
2008	119	714	362,562	$711,302	564,485	$1,462,798	$2,174,100
2009	149	795	435,104	$817,298	688,642	$1,680,922	$2,498,220
2010	131	705	397,165	$879,655	557,226	$1,362,821	$2,242,475
2011	98	320	117,102	$305,491	355,018	$946,502	$1,251,993
2012	125	523	294,254	$682,699	383,616	$1,042,293	$1,724,992
5-Year Average	124	611	321,237	$679,289	509,797	$1,299,067	$1,978,356
4-Year Average	131	684	372,271	$772,738	548,492	$1,387,208	$2,159,947

On average, the vessels that harvested blueline tilefish also took 3,612 trips per year without blueline tilefish landings (**Figure 3-3**). The 684 average annual trips that these vessels took with blueline tilefish landings represented approximately 16% of all the annual commercial trips of those vessels in the South Atlantic Region during the four years. When 2011 trips are included, the 5-year average annual percentage is approximately 15%.

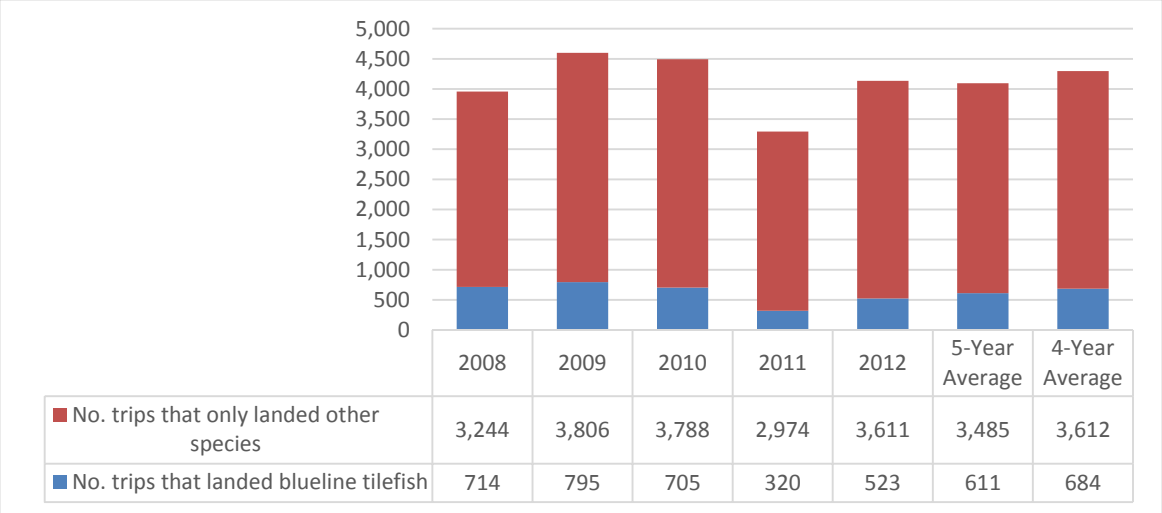

Figure 3-3. All annual trips by vessels that landed blueline tilefish, 2008 – 2012. Source: SEFSC Coastal Fisheries Logbook.

Trips made by the above vessels without landings of blueline tilefish landings had higher landings by weight and value from 2008 through 2012 than the trips with blueline tilefish landings; however, the average weight and value per trip are less for trips without blueline tilefish landings (**Table 3-4**). The 5-year average annual dockside revenue from blueline tilefish landings per vessel is $5,460 and 4-year average (excluding 2011) is $5,898. The 5-year and 4-year average annual dockside revenue from all landings per vessel are shown in **Figure 3-4**.

Table 3-4. Weight and value of landings from trips with and without blueline tilefish landings, 2008 – 2012. Source: SEFSC Coastal Fisheries Logbook for weight and NMFS ALS for revenues.

Year	Total lbs gw from trips with blueline tilefish landings	Total lbs gw from trips without blueline tilefish landings	Dockside revenue (2012 $) from trips with blueline tilefish landings	Dockside revenue (2012 $) from trips without blueline tilefish landings	Average lbs gw per trip with blueline tilefish landings	Average lbs gw per trip without blueline tilefish landings	Average dockside revenue (2012 $) per trip with blueline tilefish landings	Average dockside revenue (2012 $) per trip without blueline tilefish landings
2008	927,047	2,931,841	$2,174,100	$7,492,040	1,298	903	$3,044	$2,309
2009	1,123,745	3,526,472	$2,498,220	$8,079,124	1,413	926	$3,142	$2,122
2010	954,391	3,439,819	$2,242,475	$7,601,958	1,353	908	$3,180	$2,006
2011	472,120	2,794,739	$1,251,993	$6,161,852	1,475	939	$3,912	$2,071
2012	677,870	2,652,061	$1,724,992	$6,813,035	1,296	734	$3,298	$1,886
5-Year Average	831,035	3,068,986	$1,978,356	$7,229,602	1,359	880	$3,235	$2,074
4-Year Average	920,763	3,137,548	$2,159,947	$7,496,539	1,345	868	$3,156	$2,075

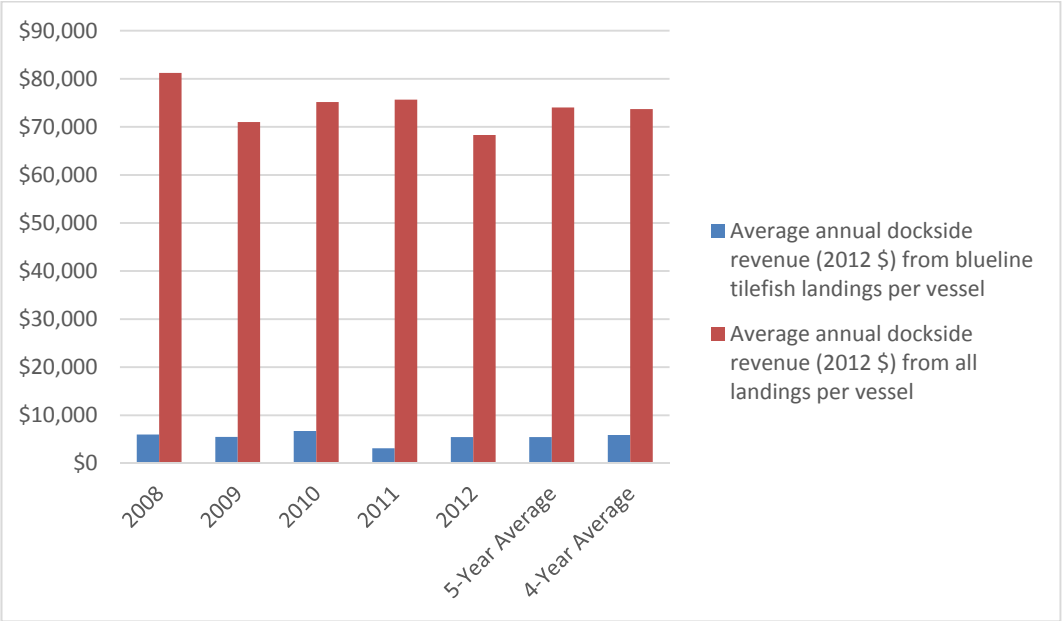

Figure 3-4. Average dockside revenue (2012 $) from blueline tilefish and all landings per vessel with blueline tilefish landings, 2008 – 2012. Source: SEFSC Coastal Fisheries Logbook for weight and NMFS ALS for revenues.

Gears

Over the 10-year period from 2002 through 2011, handlines and longlines accounted for 48% and 45% of commercial blueline tilefish landings, respectively (SEDAR 32). However, in 2010 and 2011, the use of longlines accounted for 56% and 81% of annual landings.

3.3.2 Economic Description of the Recreational Sector

As stated previously, blueline tilefish is part of the deep-water complex. The recreational sector is allocated 52.61% of the deep-water complex ACL. In 2012, recreational landings reached 32% of the recreational ACL for the year, and in 2013, 99% of the recreational ACL had been landed by the end of August. If that rate of harvest continued through the end of the year, 498,399 lbs ww of the deep-water complex would have been landed, which would exceed the ACL (334,556 lbs ww) by 163,843 lbs ww. Blueline tilefish recreational landings represented approximately 82% of recreational landings of the complex in 2012. If that proportion of harvest also occurred in 2013, blueline tilefish recreational landings may have reached 408,687 lbs ww by the end of the year. The recreational ACL for blueline tilefish is presently 315,243 lbs ww. Although recreational landings for blueline tilefish and the complex were likely exceeded last year, and possibly substantially, there were and are no measures in place to end the recreational fishing season when the ACL is reached or projected to be reached.

There is a 3-fish bag limit for grouper/tilefish, including blueline tilefish, and captain and crew cannot retain any blueline tilefish caught during a for-hire trip. Additional information about recreational fishing for the deepwater complex and the snapper-grouper fishery as a whole is contained in previous

amendments [Amendment 13C (SAFMC 2006), Amendment 15A (SAFMC 2008a), Amendment 15B (SAFMC 2008b), Amendment 16 (SAFMC 2009a), and Amendment 18A (SAFMC 2011f)] and is incorporated herein by reference.

Permits

For-hire vessels that harvest blueline tilefish and other snapper grouper stocks from federal waters must have a Charter/Headboat Snapper Grouper Permit, which is an open access permit. As of January 6, 2014, there are 1,364 valid permits.

Landings

Recreational landings of blueline tilefish varied considerably from 2002 through 2012, with substantially higher landings from 2006 through 2008 (**Figure 3-5**). The average annual harvest over those three years was 116,850 lbs ww. Excluding those three years, the annual recreational harvest drops to 34,047 lbs ww from 2002 through 2012. North Carolina leads the South Atlantic Region in recreational landings of blueline tilefish, averaging approximately 66% of annual recreational landings during those 11 years.

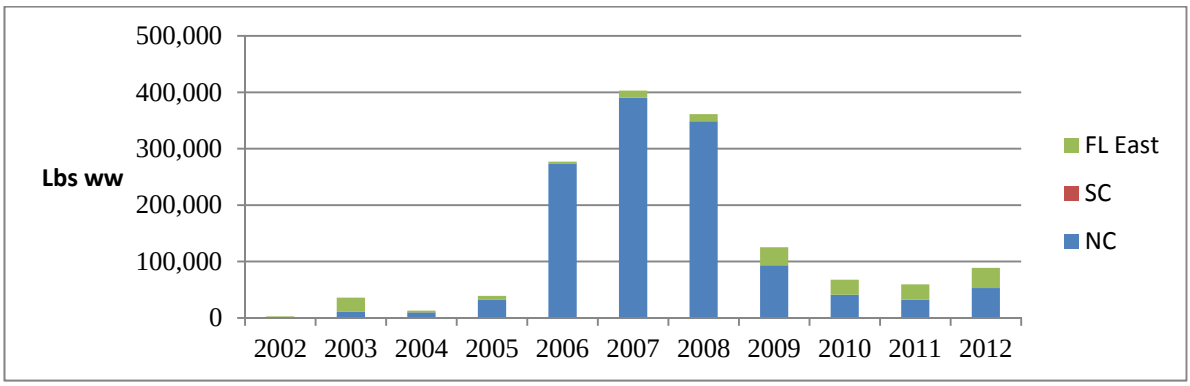

Figure 3-5. Recreational landings (lbs ww) of blueline tilefish, 2002 – 2012. Source: SEDAR 32 and NMFS ACL.

The recreational sector is comprised of anglers engaged in private and for-hire fishing. Private fishing for deep-water species, such as blueline tilefish, is performed by anglers fishing offshore in private/rental boats and for-hire fishing is performed by anglers fishing offshore in charter vessels and headboats (also called party boats). From 2002 through 2011, for-hire fishing accounted for from 29% to 100% of annual recreational landings (lbs ww) of blueline tilefish, and averaged 66% over this period (**Figure 3-6**). On average, charter boats accounted for 99.8% of the for-hire sector's annual blueline tilefish landings (SEDAR 32).

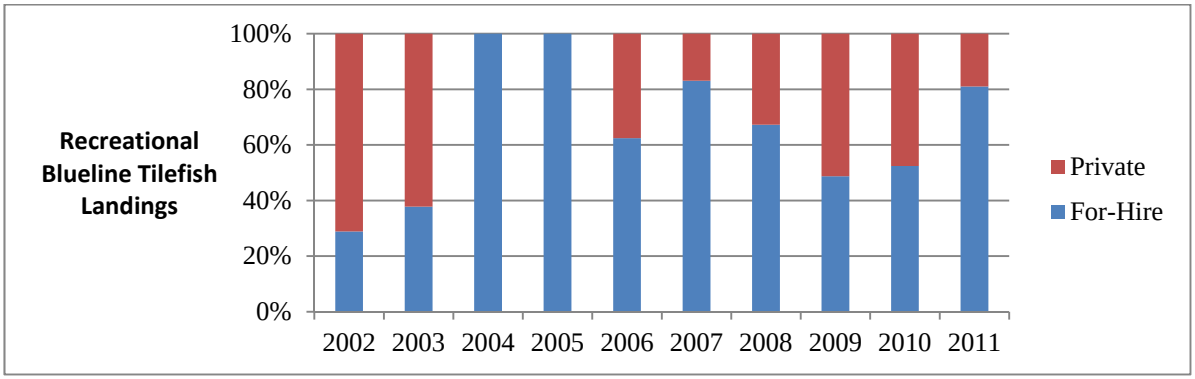

Figure 3-6. Percent of recreational landings (lbs ww) by private and for-hire recreational fishing from ME to FL East Coast, 2002 - 2011. Source: SEDAR 32.

3.3.3 Social Environment

More detailed descriptions of the social environment for the snapper grouper fishery appear in the SAFMC (2009; 2010a; 2011b) which include demographic information at the county level for areas of substantial snapper grouper fishing activity. Communities with substantial landings of snapper grouper species were identified in SAFMC (2010b) with demographic descriptions for those communities. **Figure 3-7** below provides a depiction of blueline tilefish regional quotient pounds and value of landings for South Atlantic communities. A regional quotient is the amount of local landings and/or value divided by the total landings and value for the region. For this analysis, total landings for Florida Keys communities were included as we are unable to disaggregate landings at the community level to Gulf or Atlantic. The community of Wanchese, North Carolina leads all other communities in terms of RQ for blueline tilefish by a wide margin.

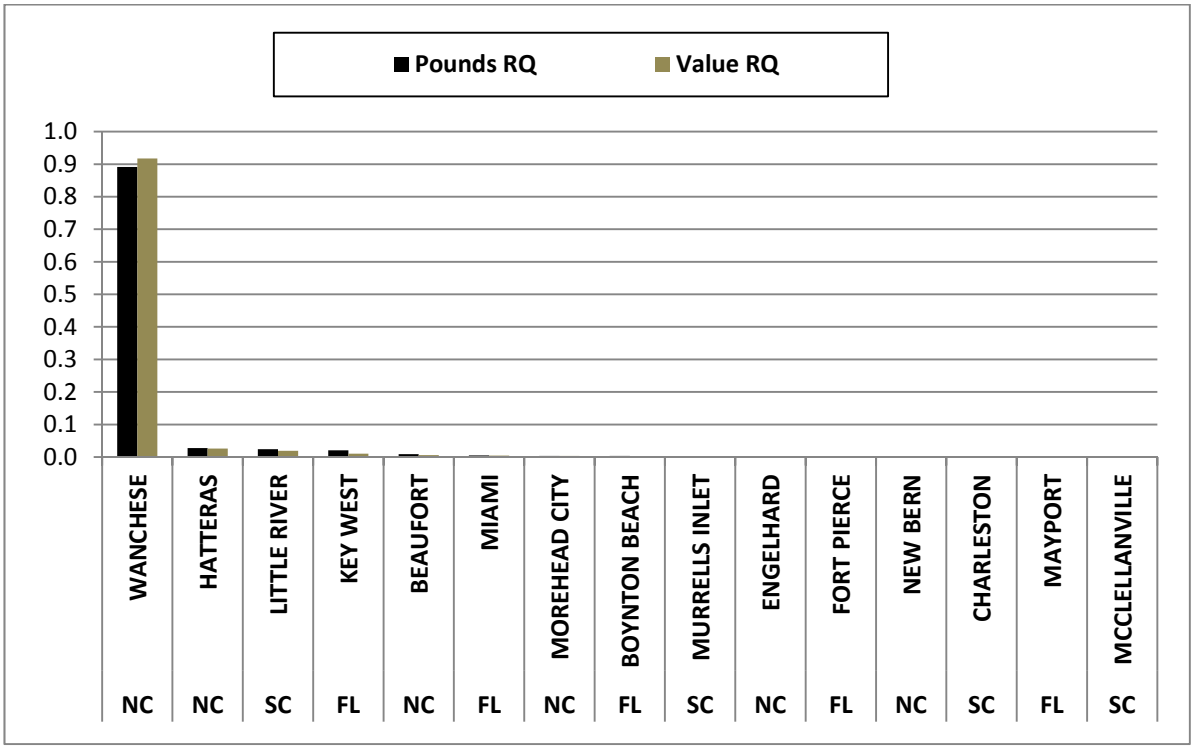

Figure 3-7. Top 15 blueline tilefish commercial fishing communities by regional quotient (RQ) for 2011.
Source: SEFSC accumulated landings system (2011)

Because Wanchese has the majority of blueline landings, it is useful to look at how blueline tilefish landings and value rank compared to other species landed in the community. **Figure 3-8** provides the local quotient for value and landings for the community of Wanchese. The local quotient is the percentage of value and landings of a particular species out of the total for all species landed at dealers within a community. Blueline tilefish represents 2% of value and less than 1% in terms of landings local quotient for Wanchese. We do not have a similar analysis at the vessel level at this time.

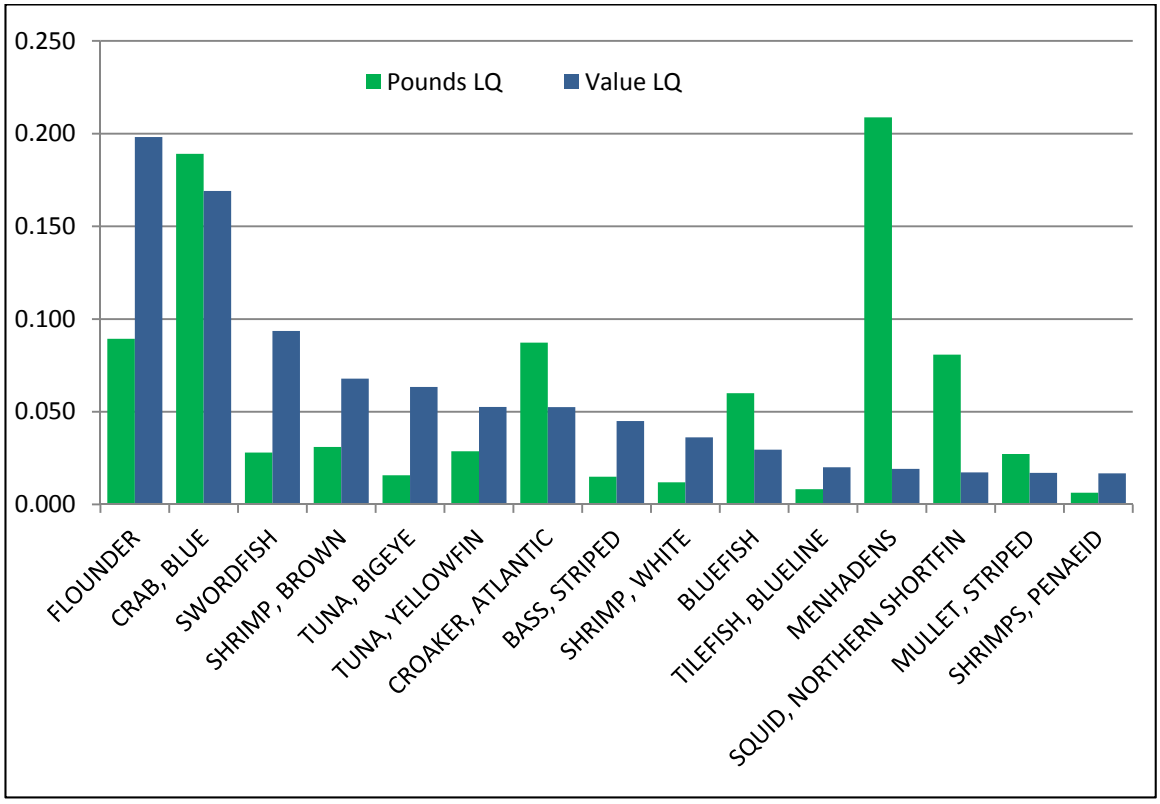

Figure 3-8. Top 15 species landed in Wanchese, NC by local quotient (LQ) value for 2011.
Source: SEFSC accumulated landings system (2011)

To better understand how South Atlantic blueline tilefish fishing communities are engaged and reliant on fishing, indices were created using secondary data from permit and landings information for the commercial sector and permit information for the recreational sector (Colburn and Jepson, 2012; Jacob et al., 2012). Fishing engagement is primarily the absolute numbers of permits, landings and value of fishing activity within a community. For commercial fishing, the analysis used the number of vessels designated commercial by homeport and owner address, value of landings and total number of commercial permits for each community. For receational engagement we used the number of recreational permits, vessels designated as recreational by homeport and owners address. Fishing reliance has the same variables as engagement divided 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. Taking the fifteen communities in **Figure 3-9**, factor scores of both engagement and reliance for both commercial and recreational fishing were plotted onto radar graphs. Factor scores are represented by the colored bars and are standardized, therefore the mean is zero. Two thresholds of one and ½ standard deviation above the mean are plotted onto the graphs to help determine a threshold for significance. The factor scores are standardized therefore a score above 1 is also above one standard deviation. Those communities with factor scores above the one or both thresholds are considered to be substantially reliant or engaged and if both probably dependent upon that type of fishing.

In **Figure 3-9**, several communities have factor scores that exceed 1/2 standard deviation above the mean for commercial engagement and reliance. The communities of Wanchese, North Carolina; Morehead City, North Carolina and Key West, Florida exceed both thresholds for commercial and recreational engagement and reliance. The communities of Little River and Murrell's Inlet, South Carolina exceed both thresholds for commercial and recreational engagement and for recreational reliance.

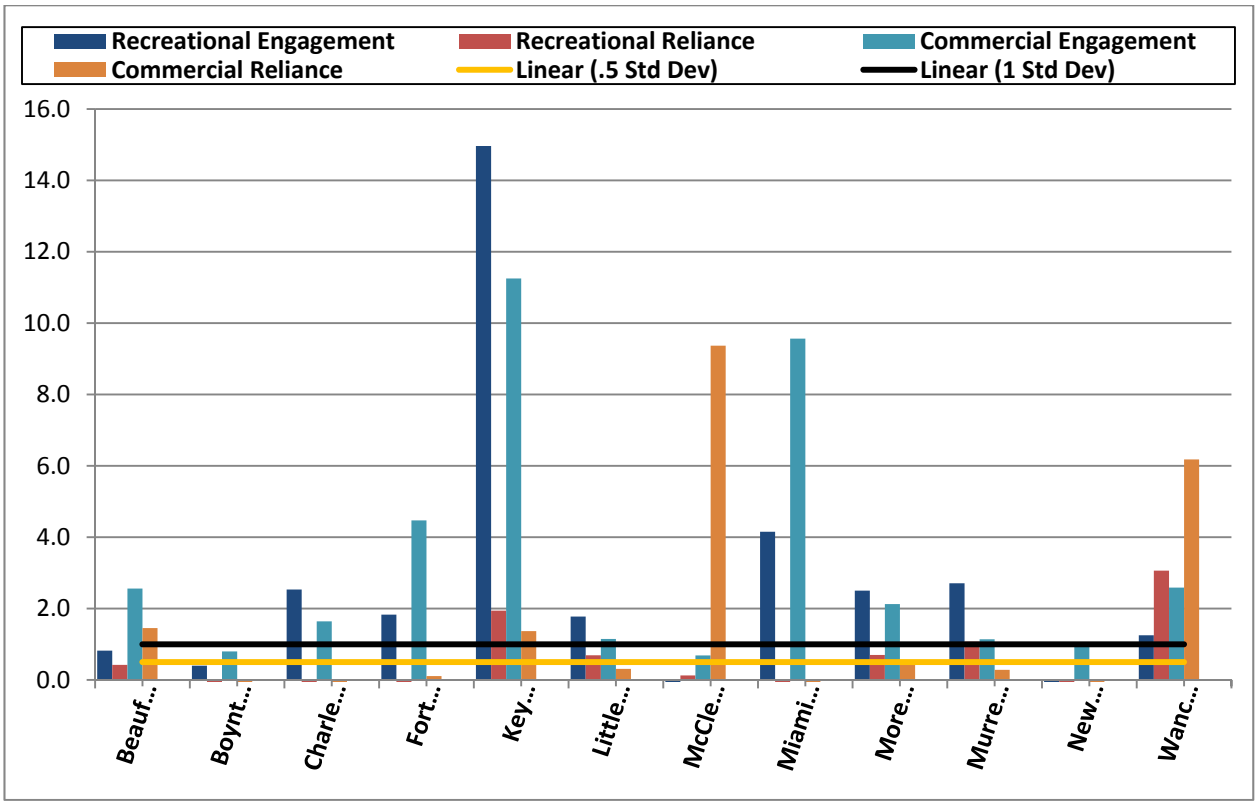

Figure 3-9. Recreational and Commercial Engagement and Reliance for Blueline Tilefish Communities.
Source: SERO social indicator database (2011)

As Wanchese is the primary commercial fishing community that will be affected under the action within this emergency rule, it is clear that the community is substantially engaged and reliant upon both commercial and recreational fishing. Although, it has the highest regional quotient for blueline tilefish value and landings, the species is not particularly high in terms of the local quotient for the community. Unfortunately, we are not able at this time to identify recreational fishing communities by their regional or local quotient for a particular species. Instead, we can only assume that those communities where there are high commercial landings of blueline tilefish, there will also be high recreational landings. Because Wanchese is also engaged and reliant upon recreational fishing, we assume that sector will be also be affected in similar ways as the commercial sector.

The communities discussed here are those that have been identified as being engaged and reliant on commercial and recreational fishing and are those communities that have substantial landings of the species addressed in this amendment. While we lack the ability to specifically identify the impacts on businesses and vessels within these communities at this time, we have developed analyses that measure some of the social vulnerabilities these communities may be experiencing which are discussed below.

The link between commercial and recreational fishing and these social vulnerabilities may not be direct, but we suggest that placing this fishing activity within a community and then recognizing the social vulnerabilities is the most comprehensive measure we have at this time of how some communities may be more affected by negative social effects than others.

3.3.4 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. This executive order is generally referred to as environmental justice (EJ).

Another suite of indices created to examine the social vulnerability of coastal communities is depicted in **Figure 3-10**. 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 households with children under the age of 5, disruptions such as higher separation rates, higher crime rates and unemployment all are signs of populations experiencing vulnerabilities. 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.

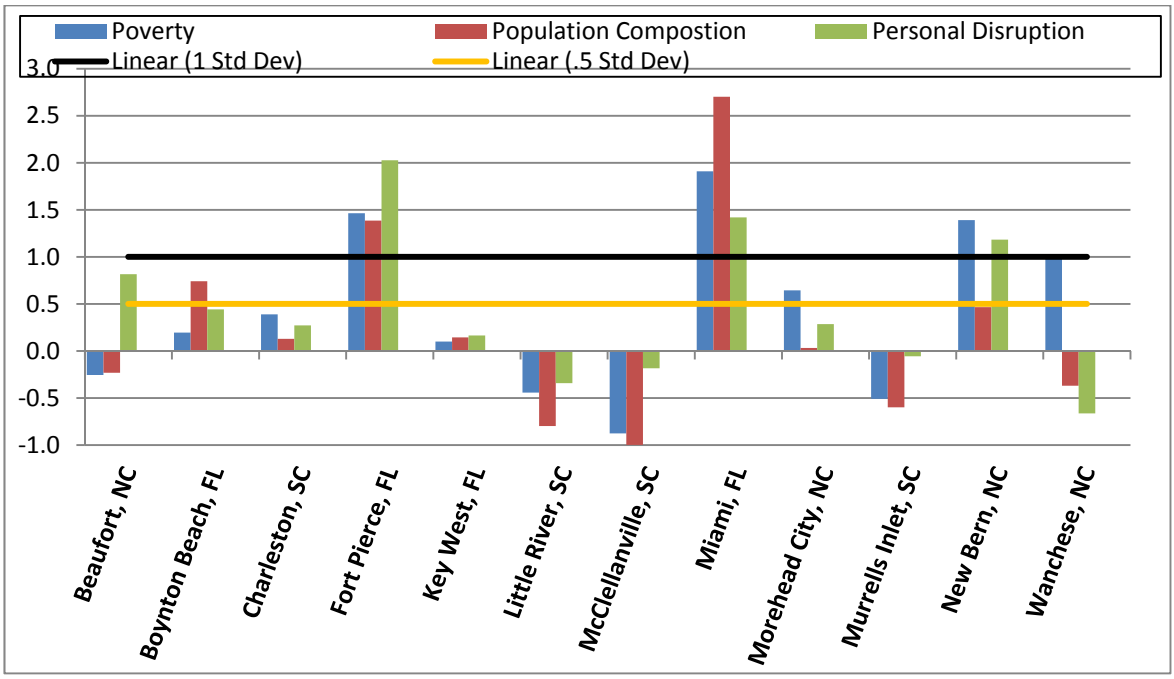

Figure 3-10. Social Vulnerability Indices for Blueline Tilefish Fishing Communities.
Source: SERO social indicator database (2011)

3.4 Administrative Environment

3.4.1 The Fishery Management Process and Applicable Laws

3.4.1.1 Federal Fishery Management

Federal fishery management is conducted under the authority of the Magnuson-Stevens Act (16 U.S.C. 1801 et seq.), originally enacted in 1976 as the Fishery Conservation and Management Act. The Magnuson-Stevens Act claims sovereign rights and exclusive fishery management authority over most fishery resources within the EEZ, an area extending 200 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. Federal fishery management is also conducted under the authority of other laws as outlined in **Appendix H**.

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 Council is responsible for conservation and management of fishery resources in federal waters of the U.S. South Atlantic. These waters extend from three to 200 mi offshore from the seaward boundary of North Carolina, South Carolina, Georgia, and east Florida to Key West. The 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 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 Council has adopted procedures whereby the non-voting members serving on the Council Committees have full voting rights at the Committee level but not at the full Council level. Council members serve three-year terms and are recommended by state governors and appointed by the Secretary from lists of nominees submitted by state governors. Appointed members may serve a maximum of three consecutive terms.

Public interests also are involved in the fishery management process through participation on Advisory Panels and through council meetings, which, with few exceptions for discussing personnel matters, are open to the public. The Council uses its 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 Council. The purpose of state representation at the Council level is to ensure state participation in federal fishery management decision-making and to promote the development of compatible regulations in state and federal waters.

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

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

3.4.1.3 Enforcement

Both the National Oceanic and Atmospheric Administration (NOAA) Fisheries Office for Law Enforcement (NOAA/OLE) and the United States Coast Guard (USCG) have the authority and the responsibility to enforce 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 Schedules can be found at www.gc.noaa.gov/enforce-office 3.html.

Chapter 4. Environmental Consequences and Comparison of Alternatives

4.1 Action 1. Temporarily Revise Annual Catch Limits for Species in the Deep-Water Complex

4.1.1 Biological and Ecological Effects

There are negative biological consequences with retaining the annual catch limits (ACL) for blueline tilefish as outlined in **Alternative 1 (no action)**. The most recent stock assessment has determined that the stock is undergoing overfishing and is overfished according to the current definition of the minimum stock size threshold. **Alternative 1 (no action)** would not reduce fishing mortality levels by reducing the allowable harvest. The biomass of blueline tilefish, already in an overfished state, would likely further decrease if harvest levels are not reduced.

Potential adverse impacts from overfishing (fishing mortality too high) include a decrease in the average age and size structure of the blueline tilefish stock, which may decrease population robustness to environmental perturbations. Also, older and larger females have greater reproductive potential because fecundity increases exponentially with size. Therefore, high fishing mortality rates can decrease the number of young each year (recruitment).

In turn, continued overexploitation of any snapper grouper species may disrupt the natural community structure of the reef ecosystems that support these species. Predator species could decrease in abundance in response to a decline of an exploited species. Alternatively, predators could target other species as prey items. Conversely, the abundance of those prey and competitor species of the non-targeted species could increase in response to a decline in the abundance of a targeted species such as blueline tilefish.

***Alternatives*[1]**
(preferred alternatives in red)

1. **No action.** Deep-water complex ACLs[2] = 376,469 (commercial) and 334,556 (recreational)

2. Retain blueline tilefish in the deep-water complex.

   2a. Blueline tilefish portion of ACL = equilibrium yield at 75%F_{MSY}. Deep-water complex ACLs = 172,578 (commercial) and 131,206 (recreational)

   2b. Blueline tilefish portion of ACL = yield at F_{MSY} (based on current biomass) Deep-water complex ACLs = 157,006 (commercial) and 115,678 (recreational)

3. **Preferred.** Separate blueline tilefish from deep-water complex.

   3a. Preferred. Blueline tilefish ACL = equilibrium yield at 75%F_{MSY} Blueline tilefish ACLs = 112,207 (commercial) and 111,893 (recreational) Deep-water complex ACLs = 60,371 (commercial) and 19,313 (recreational)

   3b. Blueline tilefish ACL = yield at F_{MSY} (based on current biomass) Blueline tilefish ACLs = 96,635 (commercial) and 96,365 (recreational) Deep-water complex ACLs = 60,371 (commercial) and 19,313 (recreational)

[1]See Chapter 2 for a more detailed description of the alternatives.
[2]All ACLs are pounds are in whole weight.

Sub-alternatives 2a, 2b, 3a (preferred), and **3b**, which temporarily reduce harvest of blueline tilefish, would be expected to have positive biological effects on the stock since allowable harvest levels would be reduced from 2012 landings by 34 to 41%. The harvest reductions are based on the results of the recent stock assessment and harvest level recommendation from the South Atlantic Fishery Management Council's (Council) Scientific and Statistical Committee. **Sub-alternatives 2b** and **3b** would have greater positive effects to blueline tilefish and the deep-water complex compared to **Sub-alternative 2a** and **Preferred Sub-alternative 3a** as the former would establish lower allowable catch levels.

The temporary specification of the reduced ACLs would protect the blueline tilefish stock by reducing the fishing mortality levels. By reducing fishing mortality levels, fishery managers could increase the number of older, larger fish in the population. A robust population with multiple year classes provides additional protections against recruitment failure since several years of poor environmental conditions can reduce survival of eggs and larvae. Reducing harvest of blueline tilefish and improving the age structure of the population would be expected to allow the stock to be less susceptible to adverse environmental conditions that might affect recruitment success.

The difference between **Alternatives 2** and **3 (Preferred)** is that **Alternative 2** would not change the current species composition of the deep-water complex and blueline tilefish would remain in the deep-water complex. In 2012, blueline tilefish represented 96% of the landings of the deep-water complex. Blueline tilefish portion of deep-water ACL is 89% (**Table 4-1**). Therefore, landings of blueline tilefish have, by far, the greatest influence on in-season prohibitions of the deep-water complex. As such, **Alternative 2** could have a greater positive biological effects to species in the deep-water complex than **Alternative 3 (Preferred)** because **Alternative 2** is more likely to result in an in-season closure for all species in the deep-water complex (**Action 2**). In contrast, under **Alternative 3 (Preferred)** an in-season closure would be expected blueline tilefish; however, there is a good chance harvest of other species in the deep-water complex would remain open throughout the fishing year. Regardless, since blueline tilefish represent such a large component of the deep-water complex, the differences in the biological effects between **Alternatives 2** and **3 (Preferred)** would be expected to be minor. Furthermore, as explained in **Section 4.2.1**, the difference in levels of bycatch in not expected to be substantial between alternatives that separate blueline tilefish than those that retain the deep-water complex species composition.

Table 4-1. Species contribution to the Deep-Water Complex ACL.

Species	Commercial Contribution	Recreational Contribution	Total Species Contribution	Percent composition
Yellowedge grouper	27,431	2,790	30,221	4%
Blueline tilefish	316,098	315,243	631,341	89%
Silk snapper	18,564	6,541	25,105	4%
Misty grouper	2,388	475	2,863	0%
Sand tilefish	1,770	6,213	7,983	1%
Queen snapper	8,756	710	9,466	1%
Black snapper	366	16	382	0%
Blackfin snapper	1,096	2,569	3,665	1%
Deep-water Complex ACLs	376,469 (commercial)	334,556 (recreational)	711,025 (total)	n/a

What are the Current ACLs for the Deep-Water Complex and Where Did They Come From?

The Council and NMFS established ACLs for the deep-water complex on April 16, 2012, through the Comprehensive ACL Amendment. Fishery managers placed nine species, including blueline tilefish, into the deep-water complex. The deep-water complex ACL was determined using the ABC recommendation from the SSC and both the ACL and allocation formulas approved by the Council. The SSC summed the median or third highest landings (1999-2008) for each species in the deep-water complex to determine an overall ABC recommendation for the complex. The ABC recommendation was 675,908 lbs ww. The overfishing level of the complex is unknown. The Council then set ACL equal to the ABC. The ACL for the deep-water complex was later changed to 771,025 lbs ww through Regulatory Amendment 13 to incorporate updates to the recreational data as per the new Marine Recreational Information Program. Each species portion of the ACL was divided by the approved allocation formula and then summed. The commercial and recreational ACLs for the deep-water complex are 376,469 and 334,556, respectively.

4.1.2 Economic Effects

Currently, the deep-water complex includes blueline tilefish and the commercial and recreational ACLs for the complex are 376,469 pounds whole weight (lbs ww) and 334,556 lbs ww, respectively. **Alternative 1** is the no-action alternative and, therefore, it would have no effect on current ACLs, AMs, or landings. When commercial landings reach or are projected to reach the ACL, the commercial season would be closed by the commercial in-season AM to cap landings at the commercial ACL. None of the alternatives would change that in-season AM. Consequently, the estimates of maximum losses of commercial landings are derived from comparing the present commercial ACL to its alternative. In 2012, commercial landings of the deep-water complex reached 383,951 lbs ww, approximately 112% of the ACL for that year. Preliminary data show that in 2013, commercial landings of the deep-water complex reached 270,566 lbs ww, approximately 72% of the commercial ACL. In 2012, recreational landings reached 32% of the recreational ACL for the year, which was 332,039 lbs ww. Recreational landings data for 2013 as of January 29, 2014, show that through October of 2013, recreational landings reached 315,746 lbs ww, which is approximately 94% of the complex's recreational ACL of 334,556 lbs ww. If that daily rate continued through 2013, approximately 113% of the ACL (379,103 lbs ww) would have been landed. From January through August of 2013, recreational landings of the deepwater complex reached 309,996 lbs ww, and at that rate, 465,632 lbs ww of the complex (approximately 139% of the recreational ACL) would have been landed by anglers in 2013. There were and are no in-season recreational AMs in place to close the season when recreational landings of the deep-water complex reach or are projected to reach the recreational ACL. Currently, the recreational AM will shorten the length of the following recreational fishing season if the recreational ACL is exceeded. Consequently, annual recreational landings of the deep-water complex can exceed the recreational ACL and, in 2013, could have exceeded the ACL as the above estimates shown. **Alternative 1 (no action)** would continue to allow recreational landings of the deep-water complex to exceed the recreational ACL in 2014, which could reduce long-run recreational landings and associated economic benefits.

Blueline tilefish is the most harvested species within the deep-water complex. In 2012, for example, blueline tilefish accounted for approximately 90% (343,869 lbs ww) of commercial landings of the complex, and the species' landings exceeded its commercial quota of 316,098 lbs ww that year. A recent stock assessment indicates current harvest is at unsustainable levels. **Alternative 1 (no action)** would not reduce the allowable harvest of blueline tilefish and, in the long-run, there would be lower commercial landings of blueline tilefish and economic benefits from those landings.

Annual recreational landings of blueline tilefish in 2012 reached 88,815 lbs ww and recreational landings of the deep-water complex reached 107,849 lbs ww. That year, annual recreational landings of blueline tilefish represented approximately 82% of the complex's recreational landings. If blueline tilefish represents 82% of recreational landings of the complex in 2013, and from 379,103 to 465,632 lbs ww of the complex were recreationally harvested in 2013, the recreational landings of blueline tilefish (310,864 to 381,818 lbs ww) could have exceeded the current blueline tilefish contribution to the recreational ACL for the Deep-Water Complex (315,243 lbs ww) by as much as 66,575 lbs ww. **Alternative 1 (no action)** would continue to allow recreational landings of blueline tilefish to exceed the blueline tilefish contribution, which would reduce long-run recreational landings and associated economic benefits.

Alternatives 2 and **3 (Preferred)** would reduce maximum annual landings of the species that presently comprise the deep-water complex; however, they would increase long-run economic benefits due to healthier stocks of blueline tilefish and other species within the deep-water complex if subsequent action is taken (Action 2). **Alternative 2** would temporarily reduce the deep-water ACL by subtracting the blueline tilefish portion. **Sub-alternative 2a** would set higher commercial and recreational ACLs than **Sub-alternative 2b**; however, blueline tilefish landings would still count against the complex's ACL**.** **Sub-alternative 2b** would have larger short-run reductions in maximum annual commercial landings and associated net economic benefits from those landings than **Sub-alternative 2a**. At an average dockside price of $2.10 per lb ww (2012 dollars), which is based on the average dockside price of blueline tilefish, **Sub-alternative 2b** would reduce annual dockside revenues of the commercial sector by approximately $550,000 and **Sub-alternative 2a** by approximately $430,000 (**Table 4-2**).

***Alternatives*[1]**

(preferred alternatives in red)

1. **No action.** Deep-water complex ACLs[2] = 376,469 (commercial) and 334,556 (recreational)

2. Retain blueline tilefish in the deep-water complex.

   2a. Blueline tilefish portion of ACL = equilibrium yield at 75%F_{MSY}. Deep-water complex ACLs = 172,578 (commercial) and 131,206 (recreational)

   2b. Blueline tilefish portion of ACL = yield at F_{MSY} (based on current biomass) Deep-water complex ACLs = 157,006 (commercial) and 115,678 (recreational)

3. **Preferred.** Separate blueline tilefish from deep-water complex.

   3a. Preferred. Blueline tilefish ACL = equilibrium yield at 75%F_{MSY} Blueline tilefish ACLs = 112,207 (commercial) and 111,893 (recreational) Deep-water complex ACLs = 60,371 (commercial) and 19,313 (recreational)

   3b. Blueline tilefish ACL = yield at F_{MSY} (based on current biomass) Blueline tilefish ACLs = 96,635 (commercial) and 96,365 (recreational) Deep-water complex ACLs = 60,371 (commercial) and 19,313 (recreational)

[1]See Chapter 2 for a more detailed description of the alternatives.
[2]All ACLs are pounds are in whole weight.

Although **Sub-alternatives 2a** and **2b** would reduce the recreational ACL for the deep-water complex, they would not result in reduced recreational landings in 2014 unless additional action to establish in-season recreational AMs for the complex (**Action 2**) is taken. If in-season recreational AMs are established for the complex (**Alternative 2** or **3 (Preferred)** of **Action 2**), and the estimate of 2013 recreational landings (498,399 lbs ww) is representative of baseline landings of the complex, **Sub-alternatives 2a** and **2b** would reduce annual recreational landings of the deep-water complex by approximately 74% (367,193 lbs ww) and 77% (382,721 lbs ww), respectively, in the short run (**Table 4-**

2). Dollar estimates of the losses of economic benefits from these short-run annual decreases in landings are currently unavailable; however, it is reasonable to assume that **Sub-alternative 2b** would have a larger adverse economic impact than **Sub-alternative 2a** on the recreational fishing sector.

Table 4-2. Reductions of annual landings of deep-water complex by **Alternatives 1, 2a** and **2b**.

Sector	Reduction of annual landings					
	lbs ww			2012 $		
	Alt. 1	Alt. 2a	Alt. 2b	Alt. 1	Alt. 2a	Alt. 2b
Commercial[1]	0	203,891	260,791	0	428,171	547,661
Recreational[2]	0	367,193	382,721			

1. Maximum losses due to reductions of ACL; actual losses may be less.
2. Assuming recreational accountability measures (Action 2) are established.

Alternative 3 (Preferred) would temporarily remove blueline tilefish from the deep-water complex and establish ACLs for blueline tilefish as a single stock. Consequently, landings of blueline tilefish would not count against the deep-water complex's ACL. **Preferred sub-alternative 3a** and **Sub-alternative 3b** would establish the same ACLs for the revised deep-water complex; however, **Preferred Sub-alternative 3a** would establish higher commercial and recreational ACLs than **Sub-Alternative 3b** for blueline tilefish. Presently (**Alternative 1**), it is possible, although not likely, that commercial blueline tilefish landings could represent 100% of the complex's commercial landings, and the commercial ACL for the complex before the commercial season is closed. **Table 4-3** considers three scenarios to estimate the annual losses of blueline tilefish and the revised complex's commercial landings, assuming AMs for blueline tilefish (**Preferred Alternative 3** of **Action 2**) are established. In the first scenario, blueline tilefish represent 100% of the current complex's commercial landings; in the second scenario, 90%; and in the third, 80%. Note that among the three scenarios, the total annual loss of landings and dockside revenues is lower when blueline tilefish represent 80% of landings and increases with an increasing share (from 80% to 100%). **Preferred Sub-alternative 3a** would result in annual losses of dockside revenues from $428,171 to $555,601 and **Sub-alternative 3b** from $461,439 to $588,218.

Table 4-3. Comparison of losses of landings and dockside revenues by **Alternatives 1, 3a** and **3b**, assuming **Alternative 3** of **Action 2** chosen.

Scenarios	Reduction of annual commercial landings					
First	**lbs ww**			**2012 dollars**		
	Alt. 1	**Pref. Alt. 3a**	**Alt. 3b**	**Alt. 1**	**Pref. Alt. 3a**	**Alt. 3b**
Revised Complex	0	0	0	$0	$0	$0
Blueline Tilefish	0	264,262[1]	280,104	$0	$554,950	$588,218
Total	0	264,262	280,104	$0	$554,950	$588,218
Second	**lbs ww**			**2012 dollars**		
	Alt. 1	**Pref. Alt. 3a**	**Alt. 3b**	**Alt. 1**	**Pref. Alt. 3a**	**Alt. 3b**
Revised Complex	0	0	0	$0	$0	$0
Blueline Tilefish	0	226,615[2]	242,457	$0	$475,892	$509,160
Total	0	226,615	242,457	$0	$475,892	$509,160
Third	**lbs ww**			**2012 dollars**		
	Alt. 1	**Pref. Alt. 3a**	**Alt. 3b**	**Alt. 1**	**Pref. Alt. 3a**	**Alt. 3b**
Revised Complex	0	14,923	14,923	$0	$31,338	$31,338
Blueline Tilefish	0	188,968[3]	204,810	$0	$396,833	$430,101
Total	0	203,891	219,733	$0	$428,171	$461,439

1. Current commercial ACL for complex (376,469 lbs ww) less Preferred Sub-alternative 3a commercial ACL for blueline tilefish (112,207 lbs ww).
2. Ninety percent of current commercial ACL for complex (376,469 lbs ww) less Preferred Sub-alternative 3a commercial ACL for blueline tilefish (112,207 lbs ww).
3. Eighty percent of current commercial ACL for complex (376,469 lbs ww) less Preferred Sub-alternative 3a commercial ACL for blueline tilefish (112,207 lbs ww).

If blueline tilefish represent 82% of the estimated 498,399 lbs ww of the complex that were recreationally harvested in 2013, an estimated 408,687 lbs ww of blueline tilefish would have been landed by anglers last year. **Preferred Sub-alternative 3a** and **Sub-alternative 3b** would result in annual reductions of blueline tilefish recreational landings of 296,794 lbs ww and 312,322 lbs ww, respectively, assuming recreational AMs for the revised complex and blueline tilefish (**Alternative 3** of **Action 2**) are established (**Table 4-4**). **Preferred Sub-alternative 3a** and **Sub-alternative 3b** would have the same impact on annual recreational landings of the revised complex; they would fall by 70,399 lbs ww.

Table 4-4. Comparison of reductions in annual recreational landings by **Alternatives 1, 3a** and **3b**, assuming recreational accountability measures are established.

Stock	Reduction of annual recreational landings (lbs ww)		
	Alt. 1	**Pref. Alt. 3a**	**Alt. 3b**
Blueline Tilefish	0	296,794	312,322
Revised Complex	0	70,399	70,399
Total	0	367,193	382,721

Preferred Sub-alternative 3a and **Sub-alternative 2a** would reduce total recreational landings by the same amount, as would **Sub-alternatives 3b** and **2b**. However, **Sub-alternatives 2a** and **2b** would allow for larger recreational landings of blueline tilefish than **Preferred Sub-alternative 3a** and **Sub-alternative 3b** (**Table 4-5**). Blueline tilefish landings could theoretically reach up to 131,206 lbs ww under **Sub-alternative 2a** and as high as 115,678 lbs ww under **Sub-Alternative 2b**. **Preferred Sub-alternative 3a** and **Sub-alternative 3b** could have larger long-run economic benefits from recreational harvest of blueline tilefish than **Sub-alternatives 2a** and **2b**, and **Sub-alternatives 3a (preferred)**, **3b**, **2a**, and **2b** would have larger long-run economic benefits from recreational fishing than **Alternative 1 (no action)**, assuming in-season recreational AMs are implemented under **Action 2**. If in-season recreational AMs are not implemented, **Sub-alternatives 3a (Preferred)** and **3b** would have the same economic impact as **Alternatives 1 (no action)**, **Sub-alternative 2a,** and **Sub-alternative 2b**.

Table 4-5. ACLs by **Alternatives 1 (no action)** through **Sub-alternative 3b** of Action 1.

Stock	Recreational ACL (lbs ww)				
	Alt. 1	Alt. 2a	Alt. 2b	Pref. Alt. 3a	Alt. 3b
Deep-water Complex	334,556	131,206	115,678	19,313	19,313
Blueline Tilefish	NA	NA	NA	111,893	96,365
Total	334,556	131,206	115,678	131,206	115,678

4.1.3 Social Effects

The social effects of the **Alternative 1 (no action)** could lead to substantial reductions in the future ACLs of blueline tilefish due to efforts to rebuild the stock, and therefore could have negative short-term social effects greater than those projected in **Sub-alternatives 2a, 2b, 3a (preferred), or 3b**. The difference among the sub-alternatives is that under **Alternative 2**, blueline tilefish remains in the deep-water complex and could trigger a closure of the entire complex when the ACL is reached. Under **Preferred Alternative 3**, blueline tilefish is separated from the deep-water complex with its own ACL. **Sub-alternative 2a** and **Preferred Sub-alternative 3a** with larger ACLs could have fewer negative short term impacts than **Sub-alternative 2b** and **3b**. The impacts from the reduction in ACL would likely mean some species substitution for all sub-alternatives as fishermen target other snapper grouper species or switch to other fisheries altogether. Whether the reductions in harvest would be substantial enough to incur other types of negative social effects, such as reduction in workforce or departure from the fishery is unknown, but unlikely. While blueline tilefish are an important component to the species landed in Wanchese, North Carolina, its overall importance to the community is not as great as other species and blueline tilefish plays a very small role in the local quotient for other communities identified in **Section 3.3.3**. The importance to specific vessels is unknown, but the primary effect would likely be for vessels to substitute other snapper grouper species, if available, when either the deep-water complex or blueline tilefish ACL is met. Another strategy might be to switch to other fisheries as many of the vessels harvesting blueline tilefish target multiple species. While the overall effect of the reductions in **Alternative 2** and **Preferred Alternative 3** would likely have some short-term negative effects, the actions to reduce the ACL should have fewer negative effects in relation to the no action **Alternative 1 (no action).**

4.1.4 Administrative Effects

Alternative 1 (no action) would retain a single ACL for the deep-water complex and retain the current level of administrative impacts through monitoring this ACL and applying the AMs. Lowering the sector ACLs for the deep-water complex through **Alternative 2** are not themselves actions that have direct impacts on the administrative environment, outside of the requisite public notices. However, in general, the lower the ACL is set, the more likely it is to be met or exceeded (if no additional harvest restrictions are implemented), and the more likely an AM would be triggered. Therefore, the adverse administrative effects are likely greater for **Alternative 2** than **Alternative 1 (no action)**.

Preferred Alternative 3 would both create an additional ACL to monitor and lower the blueline tilefish allowable harvest. The additional ACL would likely increase the indirect administrative burdens from monitoring landings, and correcting for and preventing ACL overages would stem from the specification of an ACL. Therefore, the adverse administrative effects are likely greater for **Preferred Alternative 3** than **Alternative 1 (no action)** and **Alternative 2**.

4.2 Action 2. Temporarily Revise Accountability Measures for Species in the Deep-Water Complex

4.2.1 Biological and Ecological Effects

Currently, the commercial in-season AM for the deep-water complex is to prohibit commercial harvest when the ACL for the commercial sector is reached or projected to be reached as outlined in **Alternative 1 (no action)**. There are positive consequences with retaining this AM in this emergency action. Through in-season closures, managers may be able to prevent the deep-water complex commercial ACL from being exceeded, and minimize the degree of overages if they are to occur. For example, for the 2012 fishing year (start date January 1), harvest of the species in the deep-water complex by the commercial sector was prohibited beginning September 8, 2012, as the deep-water complex commercial ACL was projected to be reached by that date. Despite a commercial deep-water complex ACL overage of 11.66% in 2012, the in-season AM prevented a more significant overage, along with its corresponding negative consequences to the blueline tilefish stock.

***Alternatives*[1]**
(preferred alternatives in red)

1. No action. Retain in-season[2] accountability measures for deep-water complex.
   Commercial=close in-season if reaches ACL
   Recreational=no in-season accountability measures
2. *Deep-water complex* (including blueline tilefish) in-season accountability measures: Commercial and recreational=close in-season
3. **Preferred.** *Blueline tilefish* in-season accountability measures: Commercial and recreational=close in-season

[1]See Chapter 2 for a more detailed description of the alternatives.
[2]Note: This action does not consider changes to existing post-season AMs. See Chapter 2 for the existing post-season AMs.

Overages of the ACLs can have an adverse effect to a fish stock and stock conditions. Overages may allow overfishing of fish stocks and decrease stock biomass. For the commercial sector of the deep-water complex, fishery managers deduct overages of the deep-water complex from the allowable harvest the following fishing year if any one of the species in the complex is overfished. An adjustment to the deep-water complex ACL was not made in 2013 because none of the species in the deep-water complex were considered to be overfished. For species under a rebuilding plan, simply lowering the following year's ACL may not offset the adverse impacts of the overage. For example, simply reducing the ACL in the year following an overage may not likely fully compensate for a loss in spawning potential of the stock. In these cases, overages may affect the timing of achieving a rebuilding target and optimum yield.

Alternative 1 (no action) would retain the commercial and recreational AMs that are currently in place, which include a commercial in-season closure and a recreational post-season adjustment for the deep-water complex. If new ACLs in **Action 1** are implemented, an in-season commercial closure for the deep-water complex (**Alternative 2, Action 1**) or blueline tilefish (**Preferred Alternative 3, Action 1**) is likely. The Southeast Regional Office of the National Marine Fisheries Service (NMFS-SERO) predicted the deep-water complex recreational ACL proposed in **Alternative 2** of **Action 1** would be met and closed on July 2014 (**Table 4-6**).

Table 4-6. Predicted dates commercial ACLs would be met for the deep-water complex (including blueline tilefish), and only blueline tilefish as presented in Action 1.

	Alternative 1	Alternative 2a	Alternative 2b	Pref. Alternative 3a	Alternative 3b
ACL includes:	Entire Complex	Entire Complex	Entire Complex	Only Blueline Tilefish	Only Blueline Tilefish
ACL	376,469 lbs ww	172,578 lbs ww	157,006 lbs ww	112,207 lbs ww	96,635 lbs ww
Closure Date	No Closure	17-Jul	6-Jul	18-Jun	29-May

The current deep-water complex AM for the recreational sector (**Alternative 1**) does not include an in-season closure. Instead, there is a post-season AM for the recreational sector. If recreational landings for the deep-water complex exceed the recreational ACL, then during the following fishing year, recreational landings will be monitored for a persistence in increased landings and, if necessary, the length of the following recreational fishing season will be reduced by the amount necessary to ensure recreational landings do not exceed the recreational ACL in the following fishing year. Under **Alternative 1 (no action)** there would not be a recreational in-season closure for the deep-water complex or for blueline tilefish if it is separated from the deep-water complex (**Alternative 3** in **Action 1**). This could allow for recreational landings of blueline tilefish in 2014 and 2015 that result in significant adjustments in allowable harvest to end overfishing and rebuild the stock.

Alternative 2 would apply an in-season closure AM for the deep-water complex (including blueline tilefish) to the recreational sector. Therefore, **Alternative 2** would result in positive effects to the biological environment as **Alternative 2** would create the same opportunities for biological protection by minimizing overages of the recreational ACL as described above for the commercial sector. If the ACLs in **Action 1** and **Alternative 2** of **Action 2** are implemented, an in-season recreational closure for the deep-water complex (**Alternative 2, Action 1**) or blueline tilefish (**Preferred Alternative 3, Action 1**) is likely. NMFS-SERO predicted when the deep-water complex recreational ACL proposed in **Alternative 2** of **Action 1** would be met under two scenarios by evaluating recreational (private recreational, charterboat, and for-hire) catches (**Table 4-7**). Scenario 1 predicted the recreational ACL would be met in early February 2014; whereas, scenario 2 indicated the recreational ACL would not be met. The positive biological effects are greater for **Alternative 2** than **Alternative 1 (no action)** as **Alternative 2** would extend the in-season closure AM to the recreational sector.

Table 4-7. Predicted dates recreational ACLs would be met for the deep-water complex (including blueline tilefish) and only blueline tilefish as presented in Action 1.

	Alternative 1	Alternative 2a	Alternative 2b	Pref. Alternative 3a	Alternative 3b
ACL includes:	Entire Complex	Entire Complex	Entire Complex	Only Blueline Tilefish	Only Blueline Tilefish
ACL	334,556 lbs ww	131,206 lbs ww	115,678 lbs ww	111,893 lbs ww	96,365 lbs ww
Closure Date-Scenario 1	23-Aug	7-Feb	3-Feb	2-Feb	28-Jan
Closure Date-Scenario 2	No Closure	No Closure	No Closure	No Closure	No Closure

What are the Differences Between the Two Scenarios Used to Predict the Closure Dates of the Recreational Sector?

Scenario 1 included 2013 catches from the private recreational and charterboat sectors from the MRIP database for blueline tilefish, and the other seven species in the deep-water complex for a time period from January through August. The 2013 MRIP landings beyond August were not needed because the ACL was reached well before September. The 2012 headboat landings were used to predict the future closure date of the recreational sector instead of from 2013, because headboat landings for 2013 were not available. For *Scenario 2*, recreational landings consisted of 2010 MRIP and headboat landings for blueline tilefish, and the other seven species in the deepwater complex. MRIP Landings from 2011 and 2012 were not used because the harvest prohibition of blueline tilefish, snowy grouper, yellowedge grouper, misty grouper, queen snapper, and silk snapper in depths greater than 240 ft was in place during those years. The report that describes the closure date predictions and scenarios is contained in **Appendix E**.

In-season closures may not be as effective for the recreational sector in preventing/minimizing overages as with the commercial sector. Harvest by the recreational sector takes a longer amount of time to be reported compared to the commercial sector. For example, NMFS receives recreational (charter and private recreational) catch data 45 days after a two month wave period whereas commercial landings data are reported every 14 days. However, greater biological protection would be provided to the stock by a recreational in-season closure when the recreational ACL is projected to be met rather than a scenario where the ACL is exceeded.

Preferred Alternative 3 under Action 1 would temporarily remove blueline tilefish from the deep-water complex and establish commercial and recreational ACLs for the species. **Preferred Alternative 3** under Action 2 would apply an in-season closure AM for blueline tilefish to the commercial and recreational sectors that would be enacted when the ACLs in Action 1 are met or predicted to be met. The closure dates predicted by NMFS-SERO are contained in **Tables 4-2** and **4-3**. This alternative has the same benefits to the blueline tilefish stock as previously described. This alternative could be considered if **Preferred Alternative 3** in Action 1 is chosen. The positive biological effects are greater for **Preferred Alternative 3** than **Alternative 1 (no action)** as **Preferred Alternative 3** would extend the in-season closure AM to the recreational sector. There is no difference between the biological effects of **Alternative 2** and **Preferred Alternative 3,** and whether one is chosen over the other depends which alternative is chosen as a preferred in **Action 1**.

Bycatch

When fishery managers prohibit a particular species, anglers may continue to catch the prohibited species and return the fish to the water as “bycatch”. Such is often the case with the snapper grouper fishery, which is considered a “multi-species fishery”. This means that anglers, at times, may be targeting several species at once, and not just a single species. In a multi-species fishery, fishery managers may increase bycatch (also referred to as “regulatory discards”) by lowering an ACL, which in turn, may cause a species’ prohibition during the fishing year. A significant portion of the released fish may not survive following its release. Blueline tilefish discard mortality was estimated to be 100% by the participants in

the stock assessment. Discard mortality may account for a significant portion of the overall fishing mortality levels for managed snapper grouper species.

Fishery managers, through the measures in **Action 1** and **2**, are proposing a decrease in ACLs for blueline tilefish or the deep-water complex that includes blueline tilefish, in addition to recreational AMs that would prohibit retention when the recreational ACL is reached or projected to be reached. As outlined above, these actions may increase the level of bycatch if harvest of blueline tilefish or the deep-water species (including blueline tilefish) is prohibited in-season. In addition, if fishery managers implement separate blueline tilefish and deep-water complex ACLs and AMs, bycatch could increase if one ACL is closed and another open, and fishermen are forced to discard fish. However, any increase in bycatch of blueline tilefish or other species in the deep-water complex is not expected to be substantial. Also, the difference in levels of bycatch in not expected to be substantial between alternatives that separate blueline tilefish than those that retain the deep-water complex species composition as explained below. First, in 2012, blueline tilefish represented 96% of the landings in the deep-water complex; therefore, fishing effort towards the other species in the deep-water complex would likely be greatly reduced if blueline tilefish is prohibited because the other species in the complex are likely not targeted. Second, commercial fishermen may still retain the recreational bag limit if the commercial sector is closed and the recreational sector is open; the ability to retain the fish, even at low levels, would reduce the adverse effects of bycatch if the recreational sector is still open. Finally, blueline tilefish is largely caught separately from other deep-water species such as snowy grouper; therefore, incidental catch of blueline tilefish is not expected.

The low association between blueline tilefish and other deep-water species, including snowy grouper, may be attributable to the unique habitat preferences of deep-water species compared to blueline tilefish. For example, blueline tilefish inhabit irregular bottoms comprised of troughs and terraces inter-mingled with sand, mud, or shell hash bottom where they live in burrows (Parker and Ross 1986; Parker and Mays 1998), whereas snowy grouper inhabit the upper continental slope, between 240 and 330 ft of depth, in habitats characterized by rocky ledges and swift currents (Matheson and Huntsman 1984) (from NMFS-SERO 2011). A study completed in North Carolina, which monitored fishing trips that targeted blueline tilefish with longline gear, supports the low association between the harvest of blueline tilefish and other deep-water species. In all the trips monitored (100 trips), anglers did not catch any speckled hind, warsaw grouper, misty grouper, queen snapper, silk snapper, or yellowedge grouper (NC DMF 2013), and less than 400 lbs ww of snowy grouper were caught. In conclusion, if the proposed actions in **Actions 1** and **2** are implemented, adverse effects from an increase in bycatch are not likely to be substantial.

4.2.2 Economic Effects

Currently, there are in-season AMs for the commercial fishing sector of the deep-water complex, but none for the recreational sector. Rather, only post-season AMs are in place for the recreational sector. Consequently, **Alternative 1 (no action)** would continue to allow annual recreational landings of the complex to exceed its recreational ACL in 2014 because the recreational season could not be closed in 2014 to cap landings at the recreational ACL.

Currently, there is no commercial ACL for blueline tilefish. Instead, there are commercial and recreational ACLs for the deep-water complex, of which blueline tilefish is a component. As explained in **Section 4.1.2**, annual commercial landings of blueline tilefish can exceed the species' portion of the

complex's commercial ACL. **Alternative 3 (Preferred)** under Action 1 would temporarily remove blueline tilefish from the deep-water complex and establish commercial and recreational ACLs for the species. There are presently no AMs specifically for blueline tilefish that would close its season if its landings reached, or were projected to reach, its portion of the ACL for the deep-water complex or the new ACLs as proposed in **Alternative 3 (preferred)**. **Alternative 1 (no action).** paired with **Alternative 1** or **2** of Action 1. would continue to allow the 2014 commercial and recreational seasons for blueline tilefish to remain open after their respective landings reached or exceeded the species' portion of the complex's commercial and recreational ACLs, which would reduce long-run economic benefits from harvest of the species. If **Alternative 1 (no action)** were paired with **Preferred Alternative 3** of Action 1, the 2014 commercial and recreational seasons for blueline tilefish would remain open after landings reached or were projected to reach the blueline tilefish ACLs, which would also reduce long-run economic benefits from harvest.

Alternative 2 would retain the existing commercial AMs for the deep-water complex and add an in-season AM for the recreational sector of the deep-water complex; if 2014 recreational landings of the complex reach or are projected to reach its recreational ACL, the 2014 recreational season closes. If **Alternative 2** is selected with either **Sub-alternative 2a** or **2b** of **Action 1**, dockside revenues from annual commercial landings of the revised deep-water complex would be reduced by $428,171 to $547,661 and recreational landings would fall from 367,193 to 382,721 lbs ww (**Table 4-2**). If **Alternative 2** is selected with **Alternative 1 (no action)** of **Action 1**, recreational landings of the complex would fall by 163,843 lbs ww.

Because **Alternative 2** would not establish commercial or recreational AMs for blueline tilefish, it would allow 2014 commercial and recreational blueline tilefish landings to exceed their respective ACLs as specified in **Preferred Alternative 3** of **Action 1**. Consequently, if **Alternative 2** were paired with **Preferred Sub-alternative 3a** or **Sub-alternative 3b** of **Action 1**, the reduced ACLs for blueline tilefish would have no economic impact beyond the status quo.

Preferred Alternative 3 would establish temporary in-season commercial and recreational AMs for blueline tilefish, whereas **Alternative 2** would add only recreational AMs for the deep-water complex. **Preferred Alternative 3** and **Alternative 2** would have the same economic impacts on commercial and recreational fishing for the complex when paired with either **Alternative 2** or **Preferred Alternative 3** of **Action 1**. The AMs for blueline tilefish that would be established by **Preferred Alternative 3** would be incompatible with **Alternative 2** of **Action 1**.

***Alternatives*[1]**

(preferred alternatives in red)

1. No action. Retain in-season[2] accountability measures for deep-water complex.
   Commercial=close in-season if reaches ACL
   Recreational=no in-season accountability measures

2. *Deep-water complex* (including blueline tilefish) in-season accountability measures: Commercial and recreational=close in-season

3. **Preferred.** *Blueline tilefish* in-season accountability measures: Commercial and recreational=close in-season

[1]See Chapter 2 for a more detailed description of the alternatives.
[2]Note: This action does not consider changes to existing post-season AMs. See Chapter 2 for the existing post-season AMs.

A detailed description of the impacts of **Preferred Alternative 3** coupled with **Preferred Sub-alternative 3** (**3a** (**Preferred**) or **3b**) of **Action 1** are discussed in **section 4.1.2**.

4.2.3 Social Effects

The setting of AMs can have direct and indirect effects on the social environment as they usually impose some restriction on harvest, either during the current season (in-season) or the next (post-season). The long-term social effects should be beneficial as they provide protection from further negative biological impacts on the stock, which could restrict fishing in the future. While the negative effects of in-season AMs are usually short term, they may at times lead to indirect, unintended consequences through changes in fishing behavior, such as an effort shift and put more pressure on other species. This could lead to serial closures if switching to another species then creates an early closure for that stock. However, without an in-season mechanism to close harvest for a species once catch limits are met, there could be negative social effects in the long-term that stem from post-season AMs that could impose stricter harvest restrictions on the next year's catch limits to make up for over-harvest the previous year. Having in-season recreational AMs in this emergency action may lessen the impacts of decreased harvests the next year when permanent measures are put into place to end blueline tilefish overfishing and rebuild the stock. **Alternative 1 (no action)** would not create new recreational AMs for the deep-water complex and would not impose any short term negative social effects. With substantial reductions in the ACL, continued harvest by either sector, could substantially reduce the harvest for the next season imposing even harsher reductions, which may have further negative social impacts under **Alternative 1 (no action)**.

With an in-season closure for the deep-water complex recreational sector in **Alternative 2**, any substantial modifications to the next year's season might be avoided and minimize the short term negative social effects from a shortened season the next year. By adding an in-season closure for the recreational sector of blueline tilefish in **Preferred Alternative 3**, the effects would be similar to **Alternative 2** in that any modifications to the next season's ACL might be avoided. Again, any closure would have some negative social effects as mentioned earlier. However, without an in-season closure, the negative social effects could be greater the next year for either or both sectors through efforts to end overfishing and rebuild the stock.

***Alternatives*[1]**
(preferred alternatives in red)

1. No action. Retain in-season[2] accountability measures for deep-water complex. Commercial=close in-season if reaches ACL Recreational=no in-season accountability measures
2. *Deep-water complex* (including blueline tilefish) in-season accountability measures: Commercial and recreational=close in-season
3. **Preferred.** *Blueline tilefish* in-season accountability measures: Commercial and recreational=close in-season

[1]See Chapter 2 for a more detailed description of the alternatives.
[2]Note: This action does not consider changes to existing post-season AMs. See Chapter 2 for the existing post-season AMs.

4.2.4 Administrative Effects

Alternative 1 (no action) would retain the current in-season commercial AM for the deep-water complex but there would not be an in-season AM for the recreational sector, or sector AMs for blueline tilefish. Thus, **Alternative 1 (no action)** would retain the current level of administrative impacts through monitoring the ACL and applying the AM. Applying a recreational sector in-season AM to the deep-water complex (including blueline tilefish) through **Alternative 2** is not itself an action that has direct impacts on the administrative environment, outside of the requisite public notices. However, monitoring an additional AM is likely to increase the administrative burden to NMFS. Therefore, the adverse administrative effects are likely greater for **Alternative 2** than **Alternative 1 (no action)**.

Preferred Alternative 3 would both create a blueline tilefish in-season AM for both the commercial and recreational sectors. The additional AMs would likely increase the indirect administrative burdens from monitoring landings and applying an in-season closure if necessary. Therefore, the adverse administrative effects are likely greater for **Preferred Alternative 3** than **Alternative 1 (no action)** and **Alternative 2** as **Preferred Alternative 3** would create two new AMs instead of one.

Chapter 5. Cumulative Effects

As directed by the National Environmental Policy Act (NEPA), federal agencies are mandated to assess not only the indirect and direct impacts, but the cumulative impacts of proposed actions as well. NEPA defines a cumulative impact as *"the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time"* (40 C.F.R. 1508.7). Cumulative effects can either be additive or synergistic. A synergistic effect is when the combined effects are greater than the sum of the individual effects.

Various approaches for assessing cumulative effects have been identified, including checklists, matrices, indices, and detailed models (MacDonald 2000). The Council on Environmental Quality (CEQ) offers guidance on conducting a Cumulative Effects Analysis (CEA) in a report titled "Considering Cumulative Effects under the National Environmental Policy Act". The report outlines 11 items for consideration in drafting a CEA for a proposed action.

1. Identify the significant cumulative effects issues associated with the proposed action and define the assessment goals.
2. Establish the geographic scope of the analysis.
3. Establish the timeframe for the analysis.
4. Identify the other actions affecting the resources, ecosystems, and human communities of concern.
5. Characterize the resources, ecosystems, and human communities identified in scoping in terms of their response to change and capacity to withstand stress.
6. Characterize the stresses affecting these resources, ecosystems, and human communities and their relation to regulatory thresholds.
7. Define a baseline condition for the resources, ecosystems, and human communities.
8. Identify the important cause-and-effect relationships between human activities and resources, ecosystems, and human communities.
9. Determine the magnitude and significance of cumulative effects.
10. Modify or add alternatives to avoid, minimize, or mitigate significant cumulative effects.
11. Monitor the cumulative effects of the selected alternative and adapt management.

This CEA for the biophysical environment will follow a modified version of the 11 steps. Cumulative effects for the socio-economic environment will be analyzed separately.

5.1 Biological and Ecological

1. Identify the significant cumulative effects issues associated with the proposed action and define the assessment goals.

CEQ cumulative effects guidance states that this step is done through three activities. The three activities and the location in the document are as follows:

I. The direct and indirect effects of the proposed actions **(Chapter 4)**;
II. Which resources, ecosystems, and human communities are affected **(Chapter 3)**; and
III. Which effects are important from a cumulative effects perspective **(information revealed in this CEA)**.

2. Establish the geographic scope of the analysis.

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 (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. Therefore, the proper geographical boundary to consider effects on the biophysical environment is larger than the entire South Atlantic exclusive economic zone (EEZ). The ranges of affected species are described in **Section 3.2**. The most measurable and substantial effects would be limited to the South Atlantic region.

3. Establish the timeframe for the analysis.

The timeframe for the analysis of cumulative effects is 1999 through the present. Fishery managers implemented the first significant regulations pertaining to blueline tilefish in 1999 through Amendment 9 to the Snapper Grouper FMP (Amendment 9; SAFMC 1998). The regulations included a five fish aggregate grouper bag limit, which included blueline tilefish. In addition, fishery managers implemented a regulation where vessels with longline gear aboard may only possess snowy grouper, warsaw grouper, yellowedge grouper, misty grouper, golden tilefish, blueline tilefish, and sand tilefish.

4. Identify the other actions affecting the resources, ecosystems, and human communities of concern

Listed are other past, present, and reasonably foreseeable actions occurring in the South Atlantic region. These actions, when added to the proposed management measures, may result in cumulative effects on the biophysical environment.

I. Fishery-related actions affecting the snapper grouper species addressed in this amendment

A. Past

The reader is referred to **Appendix D** for past regulatory activity for species in the Snapper Grouper FMP, including blueline tilefish. Past regulatory activity for the relevant snapper grouper species in this amendment is listed below.

Amendment 9 to the Snapper Grouper FMP (Amendment 9; SAFMC 1998) established minimum size limits for yellowtail snapper, red grouper, black grouper, gag, yellowfin grouper, yellowmouth grouper, and scamp; and created a 20-fish aggregate recreational bag limit for snapper grouper species without a bag limit (with the exception of tomtate and blue runner), including yellowtail snapper. The amendment also prohibited the sale and purchase of gag, red porgy, and black grouper during March and April; and included gag and black grouper within the 5-fish aggregate grouper bag limit, of which no more than 2 fish could be gag or black grouper (individually or in combination). The Council approved Amendment 9 at their December 1998 meeting. The final rule published in the *Federal Register* on January 25, 1999, and became effective on February 24, 1999.

Amendment 14 to the Snapper Grouper FMP (Amendment 14; SAFMC 2007) was implemented on February 12, 2009. Amendment 14 established eight Type II marine protected areas (MPAs) where fishing for and retention of snapper grouper species is prohibited (as is the use of shark bottom longlines), but trolling for pelagic species such as tuna, dolphin, and billfish is allowed. The intent was to achieve a more natural sex ratio, age, and size structure of all species within the MPAs, while minimizing adverse social and economic effects. The Council approved Amendment 14 at their June 2007 meeting. The final rule published in the *Federal Register* on January 13, 2009, and became effective on February 12, 2009.

Amendment 15B to the Snapper Grouper FMP (Amendment 15B; SAFMC 2008b) became effective on December 16, 2009. Management measures in Amendment 15B included a prohibition of the sale of bag limit caught snapper grouper species for fishermen not holding a federal commercial permit for South Atlantic snapper grouper; an action to adopt, when implemented, the Atlantic Coastal Cooperative Statistics Program release, discard and protected species module to assess and monitor bycatch, allocations for snowy grouper, and management reference points for golden tilefish. Biological benefits from Amendment 15B are not expected to result in a significant cumulative biological effect when added to anticipated biological impacts under this amendment. The Council approved Amendment 15B at their June 2008 meeting. The final rule published in the *Federal Register* on November 16, 2009, and became effective on December 16, 2009.

Amendment 17B to the Snapper Grouper FMP (Amendment 17B; SAFMC 2010b), which was implemented on January 31, 2011, established annual catch limits (ACL), annual catch targets, and accountability measures (AMs) for 8 species experiencing overfishing; modified management measures to limit total mortality to the ACL; and updated the framework procedure for specification of total allowable catch. Amendment 17B also prohibited the harvest and possession of deep-water snapper grouper species (snowy grouper, blueline tilefish, yellowedge grouper, misty grouper, queen snapper, and silk snapper) at depths greater than 240 feet. The intent of this measure was to reduce bycatch of speckled hind and warsaw grouper. The Council approved Amendment 17B at their September 2010 meeting. The final rule published in the *Federal Register* on December 30, 2010.

Regulatory Amendment 9 to the Snapper Grouper FMP (SAFMC 2011a) reduced the black sea bass recreational bag limit from 15 fish per person per day to 5 fish per person per day. The final rule published in the *Federal Register* on June 15, 2011.

The Comprehensive ACL Amendment (SAFMC 2011c) includes ACLs and AMs for federally managed species not undergoing overfishing in four FMPs (Snapper Grouper, Dolphin Wahoo, Golden Crab, and *Sargassum*). Actions contained within the Comprehensive ACL Amendment included: (1)

Removal of species from the snapper grouper fishery management unit; (2) designation of ecosystem component species; (3) allocations; (4) management measures to limit recreational and commercial sectors to their ACLs; (5) AMs; and (6) any necessary modifications to the range of regulations. The Council approved the Comprehensive ACL Amendment in September 2011. The final rule published in the *Federal Register* on March 16, 2012, and became effective on April 16, 2012.

Amendment 18A to the Snapper Grouper FMP (SAFMC 2012a) established measures to limit participation and effort for black sea bass. Amendment 18A established an endorsement program than enables snapper grouper fishermen with a certain catch history to harvest black sea bass with pots. In addition, Amendment 18A included measures to reduce bycatch in the black sea bass pot sector, modified the rebuilding strategy, and other necessary changes to management of black sea bass as a result of a 2011 stock assessment. The Council approved Amendment 18A in December 2011. The amendment was partially approved and the final rule published in the *Federal Register* on June 1, 2012. Regulations became effective on July 1, 2012.

Regulatory Amendment 11 to the Snapper Grouper FMP (SAFMC 2012b) eliminated the harvest prohibition of some deep-water snapper grouper species, including blueline tilefish, in waters greater than 240 feet deep that was established through Amendment 17B**.** Regulatory Amendment 11 was approved by the Council in August 2011. The final rule was published on May 10, 2012**,** with an effective date the same day.

Regulatory Amendment 12 to the Snapper Grouper FMP (SAFMC SAFMC 2012c) established a golden tilefish longline endorsement program, and trip limit for golden tilefish commercial fishermen who did not qualify for an endorsement. The regulatory amendment was approved by Council in 2012, and the rule became effective on October 9, 2012

At their March 2012 meeting, the Council requested development of Regulatory Amendment 13 to the Snapper Grouper FMP to allow for adjustment of allocations and ACLs based on the new landings information from the Marine Recreational Information Program. Regulatory Amendment 13 was approved by the Council at their December 2012 meeting. NMFS published the final rule on June 17, 2013, and regulations became effective on July 17, 2013.

At their September 2012 meeting, the Council requested development of Regulatory Amendment 15 to the Snapper Grouper FMP to adjust the yellowtail snapper ABC and ACL based on results from a recent assessment and remove the provision that the commercial harvest of all shallow water grouper species is prohibited when the gag quota is met. The Council approved Regulatory Amendment 15 at their December 2012 and the regulations were effective on September 12, 2013. Additionally, at the Council's request while they were developing Regulatory Amendment 15, NMFS implemented an emergency rule under the Magnuson-Stevens Fishery Conservation and Management Act to increase the commercial sector's ACL based upon the new stock assessment (77 Fed. Reg. 66744, November 7, 2012).

Amendment 18B (SAFMC 2013a) to the Snapper Grouper FMP was approved by the Council at their June 2012 meeting and addressed golden tilefish. The amendment established initial eligibility requirements for a golden tilefish longline endorsement program, allocated golden tilefish quota between gear groups, and specified commercial trip limits for those who did not qualify for the longline endorsement. Amendment 18B was approved by the Secretary of Commerce on January 25, 2013, and

the final rule published in the *Federal Register* on April 23, 2013 (78 Fed. Reg. 23858) with an effective date of May 23, 2013.

B. Present

In addition to snapper grouper fishery management issues being addressed in this amendment, other snapper grouper amendments have been developed concurrently and are in the process of approval and implementation.

The Joint Dealer Reporting Amendment has been approved for Secretarial Review by the Gulf of Mexico and South Atlantic Fishery Management Councils. This amendment is intended to improve the timeliness and accuracy of fisheries data reported by permitted dealers. The amendment would also create one dealer permit for all federally-permitted dealers in the southeast region. Requiring dealers to report landings data weekly will help to improve in-season quota monitoring efforts, which will increase the likelihood that AMs could be more effectively implemented prior to ACLs being exceeded. The notice of availability of the amendment and the proposed rule published on December 19, 2013, and January 2, 2014, respectively.

The South Atlantic Headboat Reporting Amendment requires that all federally-permitted headboats on the South Atlantic report their landings information electronically, and on a weekly basis in order to improve the timeliness and accuracy of harvest data. The proposed rule published in the *Federal Register* on September 27, 2013. The final rule published on December 27, 2013, and regulations became effective on January 27, 2014.

At their September 2012 meeting, the Council directed staff to develop Amendment 27 to the Snapper Grouper FMP to address issues related to blue runner, and extension of management into the Gulf of Mexico for Nassau grouper. The proposed rule published in the *Federal Register* on September 27, 2013. The final rule published on December 27, 2013, and regulations became effective on January 27, 2014.

The Council has recently completed and is developing amendments for coastal migratory pelagic species, spiny lobster, golden crab, dolphin-wahoo, shrimp, and octocorals. See the Council's Web site at http://www.safmc.net/ for further information on Council-managed species.

C. Reasonably Foreseeable Future

The Joint Commercial Logbook Reporting Amendment would require electronic reporting of landings information by federally-permitted commercial 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.

At their June 2012 meeting, the Council further discussed Amendment 22 to the Snapper Grouper FMP to consider measures such as a tag program to allow harvest of red snapper as the stock rebuilds. Scoping of Amendment 22 was conducted during January and February 2011. At their September 2012 meeting, the Council stated their intent to further develop Amendment 22 in 2013 focusing on a

recreational tag program for red snapper, golden tilefish, snowy grouper and wreckfish. In June 2013, the Council changed to focus of Amendment 22 to a recreational tag program to monitor harvest of species with small ACLs.

At their June 2013 meeting, the Council requested development of Regulatory Amendment 16 to the Snapper Grouper FMP to adjust management measures for black sea bass by removing the November through April prohibition on the use of black sea bass pots in Regulatory Amendment 19 (SAFMC 2013f). An options paper was reviewed by the Council in September 2013. The Council held scoping meetings in January 2014.

At their September 2012 meeting, the Council requested development of Regulatory Amendment 17 to the Snapper Grouper FMP to consider MPAs to provide additional protection for speckled hind and warsaw grouper. This action was previously considered in Comprehensive Ecosystem-Based Amendment 3. The Council discussed the regulatory amendment in September 2013. The Council will hold scoping meetings in 2014.

The Council requested development of Regulatory Amendment 14 to the Snapper Grouper FMP at their September 2013 meeting. Options included in Regulatory Amendment 14 are: changes in the fishing years for greater amberjack and black sea bass; changes in AMs for vermilion snapper and black sea bass; and modification of the gag trip limit.

At their June 2013 meeting, the Council began development of Amendment 29 to the Snapper Grouper FMP, which would consider adjustments to the ABCs for data poor snapper grouper species, and management measures for gray triggerfish. Public hearings took place in January 2014, and the Council is expected to take final action in June 2014.

At their December 2013 meeting, the Council began development of Regulatory Amendment 21 to the Snapper Grouper FMP, which would consider redefining the minimum stock size threshold for species, including blueline tilefish, with small natural mortality rates. The Council also began development of Amendment 32 to the Snapper Grouper FMP, which would include actions to end overfishing of blueline tilefish and rebuild the stock.

Once stock assessments are completed for mutton snapper and snowy grouper, the Council will begin development of an amendment to update the ACLs.

II. Non-Council and other non-fishery related actions, including natural events affecting the species in this amendment

A. Past
B. Present
C. Reasonably foreseeable future

In terms of natural disturbances, it is difficult to determine the effect of non-Council and non-fishery related actions on stocks of snapper grouper species. Annual variability in natural conditions such as water temperature, currents, food availability, predator abundance, etc. can affect the abundance of young fish, which survive the egg and larval stages each year to become juveniles (i.e., recruitment). This

natural variability in year class strength is difficult to predict, as it is a function of many interactive and synergistic factors that cannot all be measured (Rothschild 1986). Furthermore, natural factors such as storms, red tide, cold-water upwelling, etc. can affect the survival of juvenile and adult fishes; however, it is very difficult to quantify the magnitude of mortality these factors may have on a stock. Alteration of preferred habitats for snapper grouper species could affect survival of fish at any stage in their life cycles. However, estimates of the abundance of fish, which utilize any number of preferred habitats, as well as, determining the impact habitat alteration may have on snapper grouper species, is problematic.

Climate change can impact marine ecosystems through ocean warming by increased thermal stratification, reduced upwelling, sea level rise, 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 CO_2 emissions may impact a wide range of organisms and ecosystems, particularly organism that absorb calcium from surface waters, such as corals and crustaceans (IPCC 2007, and references therein).

The BP/Deepwater Horizon oil spill event, which occurred in the Gulf of Mexico on April 20, 2010, did not impact fisheries operating the South Atlantic. Oil from the spill site was not been detected in the South Atlantic region, and did not likely to pose a threat to the species addressed in this amendment.

5. Characterize the resources, ecosystems, and human communities identified in scoping in terms of their response to change and capacity to withstand stress.

In terms of the biophysical environment, the resources/ecosystems identified in earlier steps of the CEA are the fish populations directly or indirectly affected by the regulations. This step should identify the trends, existing conditions, and the ability to withstand stresses of the environmental components.

The species most likely to be impacted by alternatives considered in this environmental assessment (EA) are deep-water species. Trends in the condition of these species are determined through the Southeast Data, Assessment and Review (SEDAR) process if they are assessed. More information on the SEDAR process and assessed species that are included in this amendment can be found in **Section 3.2.3** whereas information on other affected species can be found in **Section 3.2.1** and is hereby incorporated by reference.

6. Characterize the stresses affecting these resources, ecosystems, and human communities and their relation to regulatory thresholds.

This step is important in outlining the current and probable stress factors on snapper grouper species identified in the previous steps. The goal is to determine whether these species are approaching conditions where additional stresses could have an important cumulative effect beyond any current plan, regulatory, or sustainability threshold (CEQ 1997). Sustainability thresholds can be identified for some resources, which are levels of impact beyond which the resources cannot be sustained in a stable state. Other thresholds are established through numerical standards, qualitative standards, or management goals. The CEA should address whether thresholds could be exceeded because of the contribution of the proposed action to other cumulative activities affecting resources.

Fish populations

In addition to the information in **Item Number 6** of this CEA, the reader is directed to **Section 3.2.1** of this document for more details regarding the species addressed in this amendment. The results of SEDAR 32, utilizing the most recent data from 2011, determined that the blueline tilefish stock to be undergoing overfishing and overfished**.** The Council's Scientific and Statistical Committee reviewed the assessment at their October 2013 meeting and approved it as the best available science and usable for management purposes. The Council, through Amendment 32, intends to implement management measures to end overfishing and rebuild the stock

Climate change

Global climate changes may or may not have significant effects on South Atlantic fisheries. However, the extent of these effects is not known at this time. Possible impacts include temperature changes in coastal and marine ecosystems that can influence organism metabolism and alter ecological processes such as productivity and species interactions; changes in precipitation patterns and a rise in sea level which could change the water balance of coastal ecosystems; altering patterns of wind and water circulation in the ocean environment; and influencing the productivity of critical coastal ecosystems such as wetlands, estuaries, and coral reefs (IPCC 2007; Kennedy et al. 2002). It is unclear how climate change would affect snapper grouper species in the South Atlantic. Climate change can affect factors such as migration, range, larval and juvenile survival, prey availability, and susceptibility to predators. In addition, the distribution of native and exotic species may change with increased water temperature, as may the prevalence of disease in keystone animals such as corals and the occurrence and intensity of toxic algae blooms. Climate change may significantly impact snapper grouper species in the future, but the level of impacts cannot be quantified at this time, nor is the time frame known in which these impacts will occur.

7. Define a baseline condition for the resources, ecosystems, and human communities.

The purpose of defining a baseline condition for the resource and ecosystems in the area of the proposed action is to establish a point of reference for evaluating the extent and significance of expected cumulative effects. The SEDAR assessments show trends in biomass, fishing mortality, fish weight, and fish length going back to the earliest periods of data collection. For a detailed discussion of the baseline conditions of species addressed in this amendment including blueline tilefish, the reader is referred to the sources referenced in **Item Number 6** of this CEA.

8. Identify the important cause-and-effect relationships between human activities and resources, ecosystems, and human communities.

The cause and effect relationship of fishing and regulatory actions is shown in **Table 5-1**.

Table 5-1. The cause and effect relationship of fishing and regulatory actions within the time period of the Cumulative Effects Analysis (CEA).

Time period/dates	Cause	Observed and/or Expected Effects
Pre-January 12, 1989	Habitat destruction, growth overfishing of vermilion snapper.	Damage to snapper grouper habitat, decreased yield per recruit of vermilion snapper.
January 1989	Trawl prohibition to harvest fish (Snapper Grouper Amendment 1; SAFMC 1988).	Increase yield per recruit of vermilion snapper; eliminate trawl damage to live bottom habitat.
Pre-January 1, 1992	Overfishing of many snapper grouper species.	Spawning stock ratio of these species is estimated to be less than 30% indicating that they are overfished.
January 1992	Prohibited gear: fish traps south of Cape Canaveral, FL; entanglement nets; longline gear inside of 50 fathoms; powerheads and bangsticks in designated SMZs off SC. Size/Bag limits: 10" TL vermilion snapper (recreational only); 12" TL vermilion snapper (commercial only); 10 vermilion snapper/person/day; aggregate grouper bag limit of 5/person/day; and 20" TL gag, red, black, scamp, yellowfin, and yellowmouth grouper size limit (Snapper Grouper Amendment 4; SAFMC 1991).	Reduce mortality of snapper grouper species.
Pre-June 27, 1994	Damage to *Oculina* habitat.	Noticeable decrease in numbers and species diversity in areas of *Oculina* off FL
July 1994	Prohibition of fishing for and retention of snapper grouper species (HAPC renamed Oculina Experimental Closed Area (OECA). Snapper Grouper Amendment 6; SAFMC 1993.	Initiated the recovery of snapper grouper species in OECA.
1992-1999	Declining trends in biomass and overfishing continue for a number of snapper grouper species including golden tilefish.	Spawning potential ratio for golden tilefish is less than 30% indicating that they are overfished.
July 1994	Snapper Grouper Amendment 6; SAFMC 1993.	Commercial quota for golden tilefish; commercial trip limits for golden tilefish; include golden tilefish in grouper recreational aggregate bag limits.
February 24, 1999	Snapper Grouper Amendment 6; SAFMC 1993.	All S-G without a bag limit: aggregate recreational bag limit 20 fish/person/day, excluding tomtate and blue runners. Vessels with longline gear aboard may only possess snowy, warsaw, yellowedge, and misty grouper, and golden, blueline and sand

Time period/dates	Cause	Observed and/or Expected Effects
		tilefish.
Effective October 23, 2006	Stock assessments indicate black sea bass vermilion snapper, red porgy, and snowy grouper are undergoing overfishing. Snapper grouper FMP Amendment 13C (SAFMC 2006)	Management measures implemented to end overfishing of these species.
Effective February 12, 2009	Recognized need to provide additional protection to deep-water snapper grouper species, and to protect spawning locations. Snapper grouper FMP Amendment 14 (SAFMC 2007).	Use MPAs as a management tool to promote the optimum size, age, and genetic structure of slow growing, long-lived deep-water snapper grouper species (e.g., speckled hind, snowy grouper, warsaw grouper, yellowedge grouper, misty grouper, golden tilefish, blueline tilefish, and sand tilefish). Gag and vermilion snapper occur in some of these areas.
Effective March 20, 2008	Stock assessments indicate snowy grouper, black sea bass, and red porgy are overfished. Snapper grouper FMP Amendment 15A (SAFMC 2008a).	Establish rebuilding plans and SFA parameters for snowy grouper, black sea bass, and red porgy.
Effective Dates Dec 16, 2009, to Feb 16, 2010.	Concern that bag limit sales of snapper grouper species obfuscates accurate reporting of landings data. Snapper grouper FMP Amendment 15B (SAFMC 2008b).	End double counting in the commercial and recreational reporting systems by prohibiting the sale of bag-limit caught snapper grouper, and minimize impacts on sea turtles and smalltooth sawfish.
Effective Date July 29, 2009	Stock assessment indicates gaga is experiencing overfishing and is approaching an overfished condition. Snapper grouper FMP Amendment 16 (SAFMC 2009a).	Protect spawning aggregations and snapper grouper in spawning condition by increasing the length of the spawning season closure, decrease discard mortality by requiring the use of dehooking tools, reduce overall harvest of gag and vermilion snapper to end overfishing.
Effective Date January 4, 2010	Stock assessment indicated red snapper is overfished and undergoing overfishing. Red Snapper Interim Rule.	Prohibit commercial and recreational harvest of red snapper from January 4, 2010, to June 2, 2010 with a possible 186-day extension. Reduce overfishing of red snapper while long-term measures to end overfishing are addressed in Amendment 17A.
Effective Dates June 3, 2010, to Dec 5, 2010	Stock assessment indicated red snapper is overfished and undergoing overfishing. Extension of Red Snapper Interim Rule	Extended the prohibition of red snapper to reduce overfishing of red snapper while long-term measures to end overfishing are addressed in Amendment 17A.
Effective Date December 4, 2010	Stock assessment indicated red snapper is overfished and undergoing overfishing. Snapper Grouper FMP Amendment 17A (SAFMC 2010a).	Specified SFA parameters for red snapper; ACLs and ACTs; management measures to limit recreational and commercial sectors to their ACTs; accountability measures. Establish rebuilding plan for red snapper. Large snapper grouper area closure inn EEZ of NE Florida. Emergency rule delayed the effective date of the

Time period/dates	Cause	Observed and/or Expected Effects
		snapper grouper closure.
Effective Date January 31, 2011	Reauthorized Magnuson-Stevens Act requires ACLs for all species undergoing overfishing. Snapper Grouper Amendment 17B (SAFMC 2010b).	Specified ACLs and ACTs; management measures to limit recreational and commercial sectors to their ACTs; AMs, for species undergoing overfishing. Established a harvest prohibition of six snapper grouper species in depths greater than 240 feet.
Effective Date June 1, 2011	New red snapper assessment indicates stock is undergoing overfishing and is overfished but area closures approved in Amendment 17B are not needed. Regulatory Amendment 10 (SAFMC 2010c).	Removed of snapper grouper area closure approved in Amendment 17A.
Effective Date July 15, 2011	Additional management measures are considered to help ensure overfishing of black sea bass, vermilion snapper, and gag does not occur. Desired to have management measures slow the rate of capture to prevent derby fisheries. Regulatory Amendment 9 (SAFMC 2011a)	Harvest management measures for black sea bass; commercial trip limits for gag, vermilion snapper, and greater amberjack
Effective Date May 10, 2012	New analysis demonstrates prohibition to harvest of 6 deep-water species in Amendment 17B is not an effective measure to reduce bycatch of speckled hind and warsaw grouper. Regulatory Amendment 11 (SAFMC 2011b)	Removed the harvest prohibition of six deep-water snapper grouper species implemented in Amendment 17B.
Effective Date April 16, 2012	Reauthorized Magnuson-Stevens Act requires ACLs for species not undergoing overfishing. Comprehensive ACL Amendment (SAFMC 2011c).	ACLs ACTs, and AMs for species not experiencing overfishing; accountability measures; an action to remove species from the fishery management unit as appropriate; and management measures to limit recreational and commercial sectors to their ACTs.
Effective Date July 11, 2012	Stock assessment indicates red grouper is overfished and undergoing overfishing. Amendment 24 (Red Grouper) (SAFMC 2011d).	Established a rebuilding plan for red grouper, specified ABC, and established ACL, ACT and revised AMs for the commercial and recreational sectors.
Effective Date July 1, 2012	Need to slow rate of harvest in black sea bass pot sector to ease derby conditions. Amendment 18A (SAFMC 2012a).	Established an endorsement program for black sea bass commercial sector; established a trip limit; specified requirements for deployment and retrieval of pots; made improvements to data reporting for commercial and for-hire sectors
Effective Dates: September 17, 2012 (commercial); September 14, 2012	As red snapper stock rebuilds some limited harvest of red snapper can occur, as long as rebuilding is not compromised. Temporary Rule	Established limited red snapper fishing seasons (commercial and recreational) in 2012.

Time period/dates	Cause	Observed and/or Expected Effects
(recreational)	through Emergency Action (Red snapper).	
Effective Date January 7, 2013	Clarification of action in Amendment 18A for black sea bass pot endorsement transferability was needed. Amendment 18A Transferability Amendment.	Reconsidered action to allow for transfer of black sea bass pot endorsements that was disapproved in Amendment 18A.
Effective Date October 26, 2012	Some wreckfish catch shares have become available over time. Amendment 20A (Wreckfish) (SAFMC 2012b).	Redistributed inactive wreckfish shares.
Effective Date October 9, 2012	Stock assessment indicates golden tilefish overfishing has been ended and catch levels can be increased. Regulatory Amendment 12 (SAFMC 2012c).	Adjusted the golden tilefish ACL based on the results of a new stock assessment and modified the recreational golden tilefish AM.
Effective Date May 23, 2013	There is a need to reduce effort in the commercial longline sector that targets golden tilefish to ease derby conditions. Snapper Grouper Amendment 18B (SAFMC 2013a)	Establish a commercial longline endorsement program for golden tilefish; establish an appeals process; allocate the commercial ACL by gear; establish trip limit for the hook-and-line sector.
Target 2014	There is a need to control recreational harvest of snapper grouper species with very small ACLs. Snapper Grouper Amendment 22 (under development).	Develop a recreational tag program for snapper grouper species in the South Atlantic.
Effective Date July 17, 2013	The recreational data collection system has changed from MRFSS to MRIP. ACLs and allocations in place utilize MRFSS data. Regulatory Amendment 13. (SAFMC 2013b).	Adjust ACLs and allocations for unassessed snapper grouper species with MRIP recreational estimates
Effective Date January 27, 2014	Blue runner are caught primarily in state waters of FL, and it is not clear if federal management is needed. Nassau grouper is no longer managed by Gulf Council. Council would like to be able to make adjustment to ACLs more quickly after a stock assessment has been completed. Snapper Grouper Amendment 27 (Approved by Council).	Establish the Council as the managing entity for yellowtail and mutton snappers and Nassau grouper in the Southeast U.S., modify the SG framework; modify placement of blue runner in an FMU or modify management measures for blue runner
Effective Date August 23, 2013	As the red snapper stock rebuilds, some allowable harvest could occur if rebuilding is not affected. Snapper Grouper Amendment 28 (SAFMC 2013d).	Modify red snapper management measures including the establishment of a process to determine future annual catch limits and fishing seasons.
Target 2014	Council's SSC has identified new methods to estimate ABC for data poor species. Snapper Grouper Amendment 29 (under development).	Update ABCs, ACLs, and ACTs for snapper grouper species based on recommendations from SSC.
Effective Date September 12, 2013	New stock assessments completed for vermilion snapper and red porgy. Regulatory Amendment 18 (SAFMC	Adjust ACLs and management measure for vermilion snapper and red porgy based on results from new update

Time period/dates	Cause	Observed and/or Expected Effects
	2013e).	assessment.
Effective Date September 23, 2013	New stock assessment for black sea bass indicates the stock is rebuilt and catch levels can be increased. Regulatory Amendment 19 (SAFMC 2013f).	Increase recreational and commercial ACLs for black sea bass. Black sea bass pots prohibited from November 1 through April 30 (effective October 23, 2013).
Effective Date September 5, 2013	New stock assessment indicates catch levels of yellowtail snapper can be increased. Accountability measures for gag can be adjusted because effective means are in place to ensure overfishing does not occur. Regulatory Amendment 15 (SAFMC 2013c).	Increase yellowtail snapper ACL, remove accountability measure for gag that closes commercial harvest for all shallow water grouper species when the gag ACL is met. Reduce gag ACL to account for dead discards when fishermen target co-occurring shallow water grouper species.
Effective Date January 27, 2014	Southeast Fisheries Science Center has established a program that allows headboats to report landings through electronic means. Generic For-Hire Reporting Amendment (Approved by Council).	Require all federally-permitted headboats in the South Atlantic to report landings information electronically and on a weekly basis.
Target 2014	Joint Commercial Logbook Reporting Amendment	Require all federally-permitted commercial fin fish fishermen in the southeast to report electronically.
Target 2014	Regulatory Amendment 14	Change the fishing years for greater amberjack and black sea bass, change in AMs for vermilion snapper and black sea bass, and modify the gag trip limit.
Target 2014	Generic AM and dolphin allocation amendment.	Modify AMs for snapper grouper species and golden crab. Modify allocations for dolphin.
Target 2014/2015	Joint Charterboat Reporting Amendment	Require all federally-permitted charterboats to report landings information electronically.

9. Determine the magnitude and significance of cumulative effects.

When species in the snapper grouper fishery management unit are assessed, stock status may change as new information becomes available. In addition, changes in management regulations, fishing techniques, social/economic structure, etc. can result in shifts in the percentage of harvest between user groups over time. As such, the Council has determined that certain aspects of the current management system should be restructured as necessary. As shown in **Table 6.1.1** above, a number of amendments could be implemented in the near future. For instance, Amendment 22 would establish a recreational tag program for snapper grouper species with very low ACLs.

None of the impacts from the proposed management actions have been determined to be significant. See **Chapter 4** for the detailed discussions of the magnitude of the impacts of the preferred alternatives on the human environment.

None of the actions in this EA would have significant biological, social, or economic effects because even though the actions would reduce ACLs and modify AMs, they are temporary. Therefore, the cumulative effects of the actions are not expected to significantly affect the magnitude of bycatch, diversity and ecosystem structure of fish communities, or safety at sea of fishermen targeting snapper grouper, and other species managed by the Council. Based on the cumulative effects analysis presented herein, the proposed actions will not have any significant cumulative impacts combined with other past, present, and foreseeable future actions.

The actions in this EA are 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 USS 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.

10. Modify or add alternatives to avoid, minimize, or mitigate significant cumulative effects.

The cumulative effects on the biophysical environment are expected to be negligible. Avoidance, minimization, and mitigation are not applicable.

11. Monitor the cumulative effects of the selected alternative and adopt management.

The effects of the proposed actions are, and will continue to be, monitored through collection of data by NMFS, states, stock assessments and stock assessment updates, life history studies, and other scientific observations.

5.2 Socioeconomic

If the decision for the emergency rule is to curb the harvest of blueline tilefish and add AMs in South Atlantic waters, the likely cumulative socioeconomic effects would be species substitution to replace any forgone harvest for both commercial and recreational fishermen. With the temporary establishment of an ACL for blueline tilefish, commercial fishermen would need to monitor harvest levels in anticipation of closures. However, the lower ACLs that would result from some alternatives would definitely require some adjustment to their fishing operations. The economic losses that might be incurred from lower harvest levels may have short-term negative effects if suitable replacements are not available. Yet, in the long-term these losses could be less than if no action were taken and thereby avoid even larger losses.

Because of the recent overall downturn in the economy, any action that restricts economic opportunity may have detrimental social and/or economic effects. The commercial and charter sectors of the snapper grouper fishery have seen significant changes in regulatory actions with limited entry and attempts to pursue other types of management that may seem too restrictive (i.e. individual fishing quotas), in addition to closure of waters through the placement of MPAs. With the recent adoption of ACLs, early closures of some species are occurring that can change fishing behavior by targeting species in other fisheries and adding pressure on other stocks. If those choices are limited, then fishermen are also limited in their flexibility to adapt to regulatory change. Without other options on the water, they may need to make changes in household economics that can have further impacts that extend to the larger community. Much of this discussion is based upon assumption as we do not have enough detailed information on fishermen's businesses or households to determine specific effects.

Since 2005, snapper grouper class 1 and 2 permits have shown a downward trend. With a limited entry program in place since 1998 and a 2 for 1 permit purchase criteria for entry with a class 2 permit, a reduction in permits would be expected over time and will likely continue as long as the criteria are a continued part of management. 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 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, 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 2012).

While some of the same social and economic factors above have affected the for-hire sector 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 sector is also subjected to permit requirements in the for-hire sector as vessels in the South Atlantic are required to have a snapper grouper for-hire permit to fish for or possess snapper grouper species in the EEZ.

The number of for-hire permits issued for the South Atlantic snapper grouper fishery decreased from 1,805 permits in 2008 to 1,797 permits in 2012. It was only in 2009 and 2012 that for-hire snapper grouper permits increased during this period. Most of these permitted for-hire vessels were home-ported in Florida; vessels were also home-ported in North Carolina and South Carolina.

While this emergency rule may have negative short-term effects, it is anticipated that the actions here will avoid larger negative long-term effects and thereby, avoid additional burdens to either sector as restrictive harvest levels would have to be imposed as overfishing continued to occur.

Chapter 6. List of Preparers

Table 6-1. List of preparers of the document.

Name	SAFMC	Title
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NMFS = National Marine Fisheries Service, SF = Sustainable Fisheries Division, SERO = Southeast Regional Office,

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SAFMC Snapper Grouper Advisory Panel
SAFMC Scientific and Statistical Committee
SAFMC Information and Education Advisory Panel
North Carolina Coastal Zone Management Program
South Carolina Coastal Zone Management Program
Georgia Coastal Zone Management Program
Florida Coastal Zone Management Program
Florida Fish and Wildlife Conservation Commission
Georgia Department of Natural Resources
South Carolina Department of Natural Resources
North Carolina Division of Marine Fisheries
North Carolina Sea Grant
South Carolina Sea Grant
Georgia Sea Grant
Florida Sea Grant
Atlantic States Marine Fisheries Commission
Gulf and South Atlantic Fisheries Development Foundation
Gulf of Mexico Fishery Management Council
National Marine Fisheries Service
- Washington Office
- Office of Ecology and Conservation
- Southeast Regional Office
- Southeast Fisheries Science Center

Chapter 8. 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.

Bielsa, L.M. and R.F. Labisky. 1987. Food habitats of blueline tilefish, Caulolatilus microps, and snowy grouper, Epinephelus niveatus, from the lower Florida Keys. Northeast Gulf Science.9(2):77-87.

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

Carter, D. 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, 32:613-625.

CEQ (Council on Environmental Quality). 1997. Considering Cumulative Effects Under the National Environmental Policy Act. U.S. Council on Environmental Quality, Washington, DC. 64 pp.

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.

Dooley, J.K. 1978. Malacanthidae. In W. Fischer (ed.) FAO species identification sheets for fishery purposes. Western Central Atlantic (Fishing Area 31). Volume 3. FAO, Rome.
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.

Francis, R.I.C.C. and R. Shotton. 1997. "Risk" in Fisheries Management: a Review, Canadian Journal of Fisheries and Aquatic Sciences. 54, 1699-1715.

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.

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.

Harris, P.J., D.M. Wyanski, and P.T.P. Mikell. 2004. Age, growth, and reproductive biology of blueline tilefish along the southeastern coast of the United States, 1982-1999. Transactions of the American Fisheries Society 133:1190-1204.

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.

IPCC, 2007: Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, Pachauri, R.K and Reisinger, A. (eds.)]. IPCC, Geneva, Switzerland, 104 pp.
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.

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.

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.

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.

MacDonald, L.H. 2000. Evaluating and managing cumulative effects: process and constraints. Environmental Management 26(3): 299-315.

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.

Márquez -M, R.1994. Synopsis of biological data on the Kemp's ridley turtles, *Lepidochelys kempii* (Garman, 1880). NOAA Technical Memo, NMFS-SEFSC-343. Miami, FL.

Matheson, R.H. III. and G.R. Huntsman. 1984. Growth, mortality, and yield-per-recruit models for speckled hind and snowy grouper from the United States South Atlantic Bight. Trans. Am. Fish. Soc. 113:607-616.

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.
NC DMF (North Carolina Division of Marine Fisheries). 2011. Blueline Tilefish Exempted Fishing Permit (EFP) Final Report. 6 pp.

NMFS-SERO (National Marine Fisheries Service-Southeast Regional Office). 2011. Regulatory Amendment 11: Warsaw Grouper and Speckled Hind Catches in the U.S. South Atlantic NOAA Fisheries Service Southeast Regional Office, June 1, 2011 (revised August 23, 2011), SERO-LAPP-2011-06.

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. Introducción al Estudio Biológico de *Chelonia mydas agassizi* en el Perfil de Pisco, Master's thesis, Universidad Nacional Federico Villareal, Lima, Perú.

Parker, Jr., R.O. and R.W. Mays. 1998. Southeastern U.S. deepwater reef fish assemblages, habitat characteristics, catches, and life history summaries. NOAA Tech. Report, National Marine Fisheries Service 138.

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.

Robins, C. R. and G. C. Ray. 1986. A field guide to Atlantic coast fishes of North America. Houghton Mifflin Company, Boston, U.S.A. 354 pp.

Ross, S.W. 1978. Life history aspects of the gray tilefish *Caulolatilus microps* (Goode and Bean, 1878). M.S. Thesis, College of William and Mary, Williamsburg, VA. 125 p.

Ross, S.W. and G.R. Huntsman. 1982. Age, growth, and mortality of blueline tilefish from North Carolina and South Carolina. Trans. Am. Fish. Soc. 111:585-592.

Rothschild, B.J. 1986. Dynamics of Marine Fish Populations. Harvard University Press. Cambridge, Massachusetts. 277pp.

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). 1988. Amendment 1 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Assessment and Regulatory Impact Review. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405. 63 pp. with appendices.

SAFMC (South Atlantic Fishery Management Council). 1991. Amendment 4 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Assessment, Initial Regulatory Flexibility Analysis, and Regulatory Impact Review. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405. 243 pp. with appendices.

SAFMC (South Atlantic Fishery Management Council). 1993. Amendment 6 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Assessment, Initial Regulatory Flexibility Analysis, and Regulatory Impact Review. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405. 161 pp. with appendices.

SAFMC (South Atlantic Fishery Management Council). 1998. Amendment 9 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Supplemental Final Environmental Assessment, Initial Regulatory Flexibility Analysis, and Regulatory Impact Review. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405. 317 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). 2007. Amendment 14 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. 601 pp. with appendices.

SAFMC (South Atlantic Fishery Management Council). 2008a. Amendment 15A 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. 325 pp. with appendices.

SAFMC (South Atlantic Fishery Management Council). 2008b. 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). 2009a. 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). 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 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). 2010c. Regulatory Amendment 10 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. 101 pp. plus appendices.

SAFMC (South Atlantic Fishery Management Council). 2011a. Regulatory Amendment 10 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. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405. 101 pp. with appendices.

SAFMC (South Atlantic Fishery Management Council). 2011b. 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). 2011c. Regulatory Amendment 11 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Assessment, 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. 86 pp. plus appendices.

SAFMC (South Atlantic Fishery Management Council). 2011d. Amendment 18A 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. 292 pp. plus appendices.

SAFMC (South Atlantic Fishery Management Council). 2011e. 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). 2011f. Regulatory Amendment 9 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. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405. 279 pp. plus appendices.

SAFMC (South Atlantic Fishery Management Council). 2011g. Amendment 20A to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Assessment, Regulatory Flexibility Analysis, Regulatory Impact Review, and Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405. 128 pp. plus appendices.

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. Regulatory Amendment 11 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 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 Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405. 106 pp. plus appendices.

SAFMC (South Atlantic Fishery Management Council). 2012d. 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). 2013. 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

SEDAR 15. 2008. Stock Assessment Report 1 (revised March, 2009). South Atlantic Red Snapper. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

SEDAR 24. 2010. Stock Assessment Report. South Atlantic Red Snapper. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

SEDAR 32. 2013. Stock Assessment Report. South Atlantic Blueline Tilefish. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

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 for NMFS, MARFIN program grant number NA 77FF0551.

Szedlmayer, S. T. and J. D. Lee. 2004. Diet shifts of juvenile red snapper (*Lutjanus campechanus*) with changes in habitat and fish size. Fish. Bull. 102:366–375.

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.

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

Appendix A. Glossary

Acceptable 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 percent 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 federal waters 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_{MSY}: Fishing mortality that if applied constantly, would achieve MSY under equilibrium conditions and a corresponding biomass of B_{MSY}

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}.

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

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.

Marine Recreational Information Program (MRIP): 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 (NOAA): 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: Percent 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 advise 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.

SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

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Dr. Michelle Duval, Vice-Chair

Robert K. Mahood, Executive Director
Gregg Waugh, Deputy Executive Director

December 10, 2013

Dr. Roy E. Crabtree
Regional Administrator
NOAA/NMFS Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701

Dear Dr. Crabtree:

Pursuant to Section 305(c)(2)(B) of the Magnuson-Stevens Fishery Conservation and Management (Magnuson-Stevens) Act as reauthorized, the Council requests emergency measures to adjust the commercial Annual Catch Limit (ACL) for blueline tilefish based on the results of the 2013 stock assessment (SEDAR 32 2013). Specifically, the Council requests that the National Marine Fisheries Service initiate emergency action to:

- Set the blueline tilefish ACL at the yield at 75%F_{MSY} = 224,100 pounds whole weight (lbs ww).
- Apply the allocations for blueline tilefish to the 224,100 lbs ww ACL. The allocations are 50.07% commercial and 49.93% recreational. The commercial ACL would be 112,207 lbs ww and the recreational ACL would be 111,893 lbs ww.
- Take blueline tilefish out of the Deepwater Complex and adjust the Deepwater Complex ACLs accordingly: deepwater complex ACL = 79,684 lbs ww, commercial ACL = 60,371 lbs ww and recreational ACL = 19,313 lbs ww.

The South Atlantic blueline tilefish stock was found to be overfished and undergoing overfishing (SEDAR 32 2013). The Council received notification of the status of the stock via letter dated December 6th, 2013. As outlined in the Magnuson-Stevens Act, the Council has until December 6th, 2015 to implement management measures to end overfishing and establish a rebuilding plan for blueline tilefish in the South Atlantic. The Council has begun development of Amendment 32 to the Snapper Grouper Fishery Management Plan for that purpose.

The current ABC for the blueline tilefish stock (631,341 lbs ww) is nearly three times the estimate of equilibrium MSY from the recent SEDAR 32 assessment (226,500 lbs ww). Stock projections indicate that continued removal of this amount of fish over the next 2 years, while the Council develops management measures to end overfishing by December 6, 2015, will likely reduce the stock to very low levels. This will result in extremely low allowable harvest levels in

2016 and beyond. To prevent this potential reduction in stock abundance, the Council is requesting an emergency rule to reduce ACL to 75% of the MSY yield.

The Policy Guidelines for the Use of Emergency Rules (62 FR 44421, August 21, 1997) list three criteria for determining whether an emergency exists: (1) recent, unforeseen events or recently discovered circumstances; (2) serious conservation or management problems in the fishery; and (3) emergency regulations outweigh the value of advance notice, public comment, and deliberative consideration of the impacts to the same extent as would be expected under the normal rulemaking process. This emergency rule is requested to address the serious conservation issue that may result from continued harvest of the current excessive ACL of blueline tilefish. In addition, the stock assessment results are new information that requires the Council respond quickly. The Council concluded the benefits of this emergency rule outweigh the value of the normal notice and comment process. The public will have a number of opportunities to comment during development of Amendment 32 that will contain a permanent solution to this unforeseen change in stock status.

Furthermore, blueline tilefish were placed in the Deepwater Complex when the Council established ACLs and accountability measures for unassessed snapper grouper species through the Comprehensive ACL Amendment. The Deepwater Complex comprises blueline tilefish, blackfin snapper, black snapper, misty grouper, queen snapper, sand tilefish, silk snapper, and yellowedge grouper. Adjusting the blueline tilefish ACL will also require adjustment of the Deepwater Complex ACL as described above and establishment of accountability measures for blueline tilefish as appropriate.

We appreciate your assistance in expediting implementation of this request. If you require any additional information, please do not hesitate to contact Bob Mahood.

Sincerely,

Ben Hartig
Chairman

cc: Council Members & Staff
Scientific & Statistical Committee
Snapper Grouper Advisory Panel
Bonnie Ponwith, Theo Brainerd, Tom Jamir, & Larry Massey, SEFSC
Monica Smit-Brunello, NOAA GC
Phil Steele & Jack McGovern, NMFS SERO

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
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F/SER25:RD

DEC 06 2013

Mr. Ben Hartig, Chairman
South Atlantic Fishery Management Council
4055 Faber Place Drive, Suite 201
North Charleston, South Carolina, 29405

Dear Mr. Hartig:

NOAA Fisheries has determined, based upon best available scientific information, the South Atlantic blueline tilefish stock is undergoing overfishing and is overfished according to the current definition of the minimum stock size threshold (MSST). This determination was based upon a review of the 2013 assessment of this species by the Southeast Data, Assessment, and Review panel and the South Atlantic Fishery Management Council's (Council) Scientific and Statistical Committee (SSC). A final report for the stock assessment can be obtained from the Southeast Fisheries Science Center's Web site at: www.sefsc.noaa.gov/sedar.

The SSC recommended MSST = 0.75%*SSB_{MSY} because the overfished threshold (MSST) is slightly below the rebuilt threshold (SSB_{MSY}). Their concern was biomass of blueline tilefish could fluctuate between a rebuilt and overfished condition due to natural fluctuations in environmental conditions. If the MSST definition for blueline tilefish is changed to 75%SSB_{MSY}, the stock would not be overfished. The SSC, at their October 2013 meeting, acknowledged that 75%SSB_{MSY} is an acceptable choice for MSST for blueline tilefish, and voiced no concern regarding the adoption of this management reference point.

Within two years following Council notification of stock status, the Magnuson-Stevens Fishery Conservation and Management Act requires the Council and NOAA Fisheries to implement a fishery management plan amendment and regulations to end overfishing immediately, and rebuild the affected stock. I look forward to working with the Council in developing a plan to end overfishing and rebuild blueline tilefish.

Sincerely,

Miles M. Croom

for Roy E. Crabtree, Ph.D.
Regional Administrator

cc: F/SER2 – Phil Steele
F/SEC – Bonnie Ponwith
F/SER25 – Jack McGovern

Appendix D. History of Management of Blueline Tilefish

2. Management Overview

2.1. Fishery Management Plan and Amendments

The following summary describes only those management actions that likely affect blueline tilefish fisheries and harvest.

Original SAMFC FMP

The Fishery Management Plan (FMP), Regulatory Impact Review, and Final Environmental Impact Statement for the Snapper Grouper Fishery of the South Atlantic Region, approved in 1983 and implemented in August of 1983, establishes a management regime for the fishery for snappers, groupers and related demersal species of the Continental Shelf of the southeastern United States in the exclusive economic zone (EEZ) under the area of authority of the South Atlantic Fishery Management Council (Council) and the territorial seas of the states, extending from the North Carolina/Virginia border through the Atlantic side of the Florida Keys to 83° W longitude. Regulations apply only to federal waters.

SAFMC FMP Amendments affecting blueline tilefish

Description of Action	FMP/Amendment	Effective Date
-Gear limitations – poisons, explosives, fish traps, trawls -Designated modified habitats or artificial reefs as Special Management Zones (SMZs)	FMP (1983)	08/31/83
-Prohibited trawl gear to harvest fish south of Cape Hatteras, NC and north of Cape Canaveral, FL. -Directed fishery defined as vessel with trawl gear and ≥200 lbs s-g on board. -Established rebuttable assumption that vessel with s-g on board had harvested such fish in EEZ.	Amendment #1 (1988a)	01/12/89
-Required catch and effort reports from selected, permitted vessels; -Required that fish in the snapper grouper fishery be made available, upon request, to an authorized officer; -Required permitted vessels to display their official numbers; -Made vessel operators responsible for ensuring that no fish from the snapper grouper fishery below the minimum size limit or without their heads and fins attached are possessed aboard the vessel	Amendment #3 (1990b)	01/31/91
-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. -Required permits (commercial & for-hire)	Amendment #4 (1991)	01/01/92

and specified data collection regulations -Established an assessment group and annual adjustment procedure (framework) -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. -charter/headboats and excursion boat possession limits extended		
-Set up separate commercial Total Allowable Catch (TAC) levels for golden tilefish and snowy grouper -Established commercial trip limits for snowy grouper, golden tilefish, speckled hind, and warsaw grouper -Included golden tilefish in grouper recreational aggregate bag limits -Prohibited sale of warsaw grouper and speckled hind -100% logbook coverage upon renewal of permit -Created of the Oculina Experimental Closed Area -Specified data collection needs for evaluation of possible future IFQ system	Amendment #6 (1993)	07/27/94
-Required dealer, charter and headboat federal permits -Allowed sale under specified conditions -Specified allowable gear and made allowance for experimental gear -Allowed multi-gear trips in N. Carolina -Added localized overfishing to list of problems and objectives -Adjusted bag limit and crew specs. for charter and head boats -Modified framework procedure	Amendment #7 (1994a)	01/23/95
-Established program to limit initial eligibility for snapper grouper fishery: Must demonstrate landings of any species in SG FMU in 1993, 1994, 1995 or 1996; and have held valid SG permit between 02/11/96 and 02/11/97. -Granted transferable permit with unlimited landings if vessel landed ≥ 1,000 lbs. of snapper grouper spp. in any of the years -Granted non-transferable permit with 225 lb. trip limit to all other vessels -Modified problems, objectives, OY, and overfishing definitions	Amendment #8 (1997a)	12/14/98

-Expanded Council's habitat responsibility -Allowed retention of snapper grouper spp. in excess of the bag limit on permitted vessels fishing in the EEZ off North Carolina with a sink net -Allowed retention of snapper grouper spp. in excess of bag limit on permitted vessel fishing in the South Atlantic EEZ with a single bait net or cast net on board -Allowed permitted vessels to possess filleted fish harvested in the Bahamas under certain conditions.		
-Specified 5-fish aggregate grouper bag limit, which includes tilefish species, including blueline tilefish. -Vessels with longline gear aboard may only possess snowy, warsaw, yellowedge, and misty grouper, and golden, blueline and sand tilefish.	Amendment #9 (1998b)	2/24/99
-Identified EFH and established HAPCs for species in the SG FMU.	Amendment #10 (1998d)	07/14/00
-MSY proxy = 30% static SPR -OY = 40% static SPR -Approved definitions for overfished and overfishing. MSST = [(1-M) or 0.5 whichever is greater]*B_{MSY}. MFMT = F_{MSY}	Amendment #11 (1998e)	12/02/99
-Extended for an indefinite period the regulation prohibiting fishing for and possessing snapper grouper spp. within the Oculina Experimental Closed Area.	Amendment #13A (2003b)	04/26/04
-Established 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 #14 (2007)	2/12/09
-Prohibited the sale of bag-limit caught snapper grouper species. -Adjusted commercial renewal periods and transferability requirements. -Implemented plan to monitor and assess bycatch.	Amendment #15B (2008b)	2/15/10
-Reduced 5-fish aggregate grouper bag limit, which includes tilefish species including blueline tilefish, to a 3-fish aggregate. -Captain and crew on for-hire trips cannot retain the bag limit of species within the 3-fish grouper aggregate, which includes	Amendment # 16 (2009)	7/29/09

blueline tilefish.		
-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	Amendment #17A (SAFMC 2010a)	circle hooks March 3, 2011
-Updated the framework procedure for specification of OFL, ABC, ACLs, and ACTs. -Established prohibition on possession of deepwater snapper grouper species, including blueline tilefish, seaward of 240 feet in the South Atlantic EEZ.	Amendment #17B (SAFMC 2010b)	1/31/11
-Provided presentation of spatial information for Essential Fish Habitat (EFH) and EFH-Habitat Areas of Particular Concern (EFH-HAPC) designations under the Snapper Grouper FMP - Designated deepwater coral HAPCs	Amendment #19 (Comprehensive Ecosystem-based Amendment 1) (SAFMC 2010c)	7/22/10
-Established species groupings. Blueline tilefish in included in the Deepwater Complex (along with yellowedge grouper, silk snapper, misty grouper, queen snapper, sand tilefish, black snapper, and blackfin snapper) -Blueline tilefish ABC = 592,602 based on SSC recommendation. -Blueline tilefish allocations = 47.39% commercial; 52.61% recreational -Established the following for the Deepwater Complex: ABC/ACL= 675,908 pounds ww. Commercial ACL = 343,869 pounds ww. Recreational ACL = 332,039 pounds ww. Recreational ACT = 205,516 pounds ww. In-season and post-season AMs: Commercial - If the commercial sector ACL for the Deepwater Complex is met or projected to be met, all purchase and sale is prohibited and harvest and/or possession is limited to the bag limit. If the commercial sector ACL is exceeded and one of the species in the complex is overfished, the Regional Administrator shall publish a notice to reduce the commercial sector ACL in the following season by the amount of the overage. Recreational - If the recreational sector ACL for the Deepwater Complex is exceeded, the following year's landings	Comprehensive ACL Amendment (Amendment 25)(SAFMC 2011c)	4/16/12

would be monitored in-season for persistence in increased landings. The Regional Administrator will publish a notice to reduce the length of the fishing season as necessary.		
- Designated the Deepwater MPAs as EFH-HAPCs	Amendment #23 (Comprehensive Ecosystem-based Amendment 2; SAFMC 2011f)	1/30/12
- Improved the accuracy, timing, and quantity of fisheries statistics	Amendment #18A (SAFMC 2012a)	7/1/12

SAFMC Regulatory Amendments affecting blueline tilefish

Description of Action	Amendment	Effective Date
-Prohibited fishing in SMZs except with hand-held hook-and-line and spearfishing gear.	Regulatory Amendment #1 (1987)	03/27/87
-Established 2 artificial reefs off Ft. Pierce, FL as SMZs.	Regulatory Amendment #2 (1988b)	03/30/89
-Established artificial reef at Key Biscayne, FL as SMZ. Fish trapping, bottom longlining, spear fishing, and harvesting of Goliath grouper prohibited in SMZ.	Regulatory Amendment #3 (1989)	11/02/90
-Established 8 SMZs off S. Carolina, where only hand-held, hook-and-line gear and spearfishing (excluding powerheads) was allowed.	Regulatory Amendment #5 (1992c)	07/31/93
-Established 10 SMZs at artificial reefs off South Carolina.	Regulatory Amendment #7 (1998)	01/29/99
-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	Regulatory Amendment #8 (2000a)	11/15/00
- Eliminated the 240 ft closure for six deepwater species, including blueline tilefish.	Regulatory Amendment # 11 (2011b)	5/10/12

2.2. Emergency and Interim Rules (if any)

Emergency Action effective September 3, 1999: reopen the Amendment 8 Snapper Grouper Permit application process.

2.3. Secretarial Amendments (if any)

None

2.4. Control Date Notices (if any)

Notice of Control Date effective July 30, 1991: Anyone entering federal snapper grouper fishery (other than for wreckfish) in the EEZ off South Atlantic states after 07/30/91 was not assured of future access if limited entry program developed.

Notice of Control Date effective October 14, 2005: The Council is considering management measures to further limit participation or effort in the commercial fishery for snapper grouper species (excluding Wreckfish).

Notice of Control Date effective March 8, 2007: The Council may consider measures to limit participation in the snapper grouper for-hire fishery.

Notice of Control Date effective January 31, 2011: Anyone entering federal snapper grouper fishery off S. Atlantic states after 09/17/10 was not assured of future access if limited entry program is developed.

Blueline Tilefish Analysis for the Emergency Rule

Predicting Closure Dates

Commercial landings

Recent commercial landings were used to predict when the ACLs proposed in the emergency rule would be met and the fishery would be closed. Quota monitoring landings by day for 2013 were obtained by the Southeast Fisheries Science Center. This data contained commercial landings for the eight species in the South Atlantic deepwater complex, and were examined to determine when the proposed ACLs would be met. Table 1 provides the predicted closure dates for the alternatives.

Recreational Landings

Recent recreational landings were used to predict when the ACLs proposed in the emergency rule would be met and the fishery would be closed. The most recent year of MRIP landings (2013) had an anomalous spike in wave 1 (Figure 1). Two scenarios were pursued in case the wave 1 2013 MRIP landing are in fact anomalous. Scenario 1 recreational landings consisted of 2013 MRIP recreational landings for blueline tilefish and the other seven species in the deepwater complex for waves 1 to 4 (January to August). 2013 MRIP landings beyond wave 4 were not needed because the ACL was reached well before wave 5. Headboat landings came from 2012 because headboat landings for 2013 are currently unavailable. Scenario 2 recreational landings consisted of 2010 MRIP and headboat landings for blueline tilefish and the other seven species in the deepwater complex. MRIP Landings from 2011 and 2012 were not used because the 240 ft closure was implemented during those years. Figure 1 reveals all of the recreational landings used to predict closure dates. Table 1 provides the predicted closure dates for the alternatives.

Table 1. Predicted commercial and recreational closure dates for the alternatives presented in the South Atlantic's blueline tilefish emergency rule.

	Alternative 1	Alternative 2a	Alternative 2b	Alternative 3a	Alternative 3b
ACL includes:	Entire Complex	Entire Complex	Entire Complex	Only Blueline Tilefish	Only Blueline Tilefish
Commercial Sector					
ACL	376,469 lbs ww	172,578 lbs ww	157,006 lbs ww	112,207 lbs ww	96,635 lbs ww
Closure Date	No Closure	17-Jul	6-Jul	18-Jun	29-May
Recreational Sector					
ACL	334,556 lbs ww	131,206 lbs ww	115,678 lbs ww	111,893 lbs ww	96,365 lbs ww
Scenario 1	23-Aug	7-Feb	3-Feb	2-Feb	28-Jan
Scenario 2	No Closure	No Closure	No Closure	No Closure	No Closure

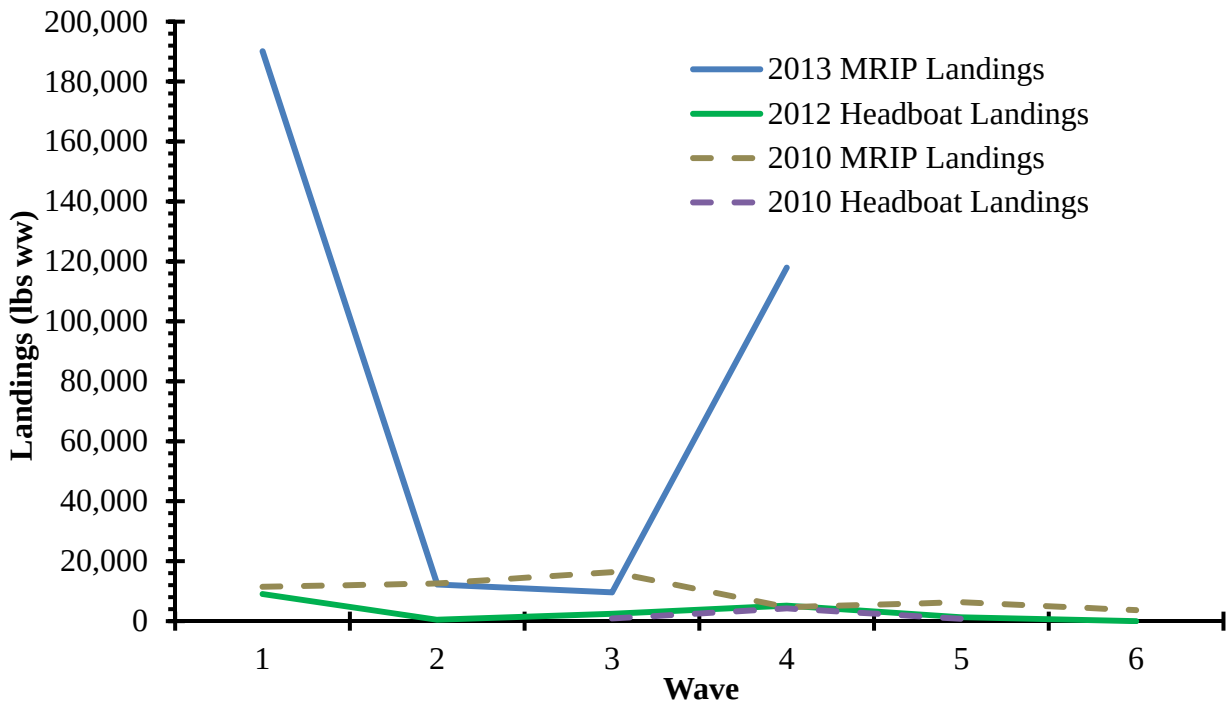

Figure 1. South Atlantic blueline tilefish recreational landings by wave. MRIP landings are for 2010 and 2013 and headboat landings are for 2010 and 2012. The 2013 landings are only available for waves 1 to 4.

Appendix F. Bycatch Practicability Analysis

1.1 Population Effects for the Bycatch Species

Background

The National Marine Fisheries Service (NMFS) is proposing temporary changes to the blueline tilefish regulations by means of a temporary rule through emergency action under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). These changes include temporarily revising the annual catch limits (ACL) and in-season accountability measures (AM), beginning in 2014, for the deep-water complex, including blueline tilefish.

A stock assessment completed in October 2013 determined that the blueline tilefish stock in the South Atlantic is experiencing overfishing and is overfished. NMFS notified the South Atlantic Fishery Management Council (Council) of the stock status in a letter dated December 6, 2013. As mandated by Magnuson-Stevens Act, NMFS and the Council must prepare and implement a plan amendment and regulations to rebuild the stock and end overfishing immediately by December 6, 2015.

At their December 2013 meeting, the Council initiated the development of Amendment 32 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Amendment 32) to end overfishing and rebuild the blueline tilefish stock. Blueline tilefish is currently in the deep-water complex along with yellowedge grouper, silk snapper, misty grouper, queen snapper, sand tilefish, black snapper, and blackfin snapper. In the same amendment, the Council is considering alternatives to separate blueline tilefish from the complex and revise the ACLs and AMs for the deep-water complex accordingly.

Through the implementation of temporary ACLs and AMs through emergency action, the Council's intent is to reduce overfishing of blueline tilefish while Amendment 32 is developed. The Council's goal is to minimize future, adverse biological effects to the blueline tilefish stock and adverse socio-economic effects to fishermen and fishing communities that utilize the blueline tilefish portion of the snapper grouper fishery. Although the actions in the emergency rule, if implemented, would likely have socio-economic adverse effects beginning in 2014, the Council has determined that the short-term effects would be justified to minimize long-term reductions in harvest that may be required if the current levels of unsustainable harvest continue to reduce the biomass of the blueline tilefish stock. Therefore, at their December 2013 meeting, the Council voted 12 to 1 to request the emergency rule.

As outlined in their letter to NMFS, the Council's request is centered on the following items: (1) blueline tilefish ACL equal to the equilibrium yield at 75%F_{MSY} (224,100 pounds whole weight (lbs ww))**,** (2) blueline tilefish ACLs equal to 112,207 lbs ww and 111,893 lbs ww for the commercial and recreational sectors, respectively, as determined by the application of the blueline tilefish allocations**,** (3) removal of blueline tilefish from the deep-water complex, and (4) deep-water complex ACLs equal to 60,371 lbs ww and 19,313 lbs ww for the commercial and recreational sectors, respectively.

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/.

SEDAR 17 (2008) recommended a release mortality rate for vermilion snapper of 41% for the commercial sector and 38% for the recreational sector. 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. SEDAR 32, which is under development, assumes a 12.5% release mortality rate for gray triggerfish. 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). Release mortality of black sea bass is considered to be low (7% for the recreational sector and 1% for the commercial sector) (SEDAR 25; 2011) indicating minimum size limits are probably an effective management tool for black sea bass. Commercial sector discard mortality for red porgy is 35%, and 8% for the recreational sector (SEDAR Update 2012). SEDAR 32 (2013), estimates discard mortality for blueline tilefish is 100%, consistent with other deep-water species (i.e., snowy grouper, and golden tilefish); however, if new management is implemented to reduce the discard mortality rate, it might be appropriate for population projections to consider something lower than 100% (SEDAR 32 2013).

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

Expected Impacts on Bycatch for the Proposed Action

NMFS, through the measures in **Action 1** and **2** of the Environmental Assessment (EA) for the, are proposing a temporary decrease in ACLs for blueline tilefish or the deep-water complex that includes blueline tilefish, in addition to recreational AMs that would prohibit retention when the recreational ACL is reached or projected to be reached. As outlined above, these actions may increase the level of bycatch if harvest of blueline tilefish or the deep-water species (including blueline tilefish) is prohibited in-season. In addition, if fishery managers implement separate blueline tilefish and deep-water complex ACLs and AMs, bycatch would increase if one ACL is closed and another open and fishermen are forced to discard fish. However, any increase in bycatch of blueline tilefish or other species in the deep-water complex is not expected to be

substantial for several reasons. Also, the difference in levels of bycatch in not expected to be substantial between alternatives that separate blueline tilefish than those that retain the deep-water complex species composition. First, in 2012, blueline tilefish represented 96% of the landings in the deep-water complex; therefore, fishing effort towards the other species in the deep-water complex would likely be greatly reduced if blueline tilefish is prohibited because the other species in the complex are likely not targeted. Second, commercial fishermen may still retain the recreational bag limit if the commercial sector is closed and the recreational sector is open; the ability to retain the fish, even at low levels, would reduce the adverse effects of bycatch if the recreational sector is still open. Finally, blueline tilefish is largely caught separately from other deep-water species such as snowy grouper; therefore, incidental catch of blueline tilefish is not expected.

The low association between blueline tilefish and other deep-water species, including snowy grouper, may be attributable to the unique habitat preferences of deep-water species compared to blueline tilefish. For example, blueline tilefish inhabit irregular bottoms comprised of troughs and terraces inter-mingled with sand, mud, or shell hash bottom where they live in burrows (Parker and Ross 1986; Parker and Mays 1998), whereas snowy grouper inhabit the upper continental slope, between 240 and 330 ft of depth, in habitats characterized by rocky ledges and swift currents (Matheson and Huntsman 1984) (from NMFS-SERO 2011). A study completed in North Carolina, which, monitored fishing trips that targeted blueline tilefish with longline gear, supports the low association between the harvest of blueline tilefish and other deep-water species. In all the trips monitored (100 trips), anglers did not catch any speckled hind, warsaw grouper, misty grouper, queen snapper, silk snapper, or yellowedge grouper (NC DMF 2013) and less than 400 lbs ww of snowy grouper were caught. In conclusion, if the proposed actions in **Actions 1** and **2** are implemented, adverse effects from an increase in bycatch are not likely to be substantial.

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

The Comprehensive Ecosystem-Based Amendment 2 (CE-BA 2; SAFMC 2011g) included actions that removed harvest of octocorals off Florida from the Coral, Coral Reefs, and Live/Hard Bottom Habitat Fishery Management Plan (Coral FMP); set the ACL for Georgia, South Carolina, and North Carolina equal to 0; modified management of special management zones (SMZs) off South Carolina; revised sea turtle release gear requirements for the snapper grouper fishery that were established in Amendment 15B to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP; SAFMC 2008); and designated new essential fish habitat (EFH) and EFH-Habitat Areas of Particular Concern in the South Atlantic. There is no bycatch associated with octocoral harvest within the management area of the Coral FMP since harvest is prohibited. CE-BA 2 also 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 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 address overfishing for eight species in the snapper grouper management complex: golden tilefish, snowy grouper, speckled hind, warsaw grouper, black sea bass, gag, red grouper, black grouper, and vermilion snapper. Overfishing is no longer occurring for golden tilefish, black sea bass, red grouper, black grouper, and vermilion snapper.

The Comprehensive ACL Amendment (SAFMC 2011b) implemented ACLs and AMs for species not undergoing overfishing in the Fishery Management Plans 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 2011b) 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 will likely reduce bycatch of target species and species complexes as well as incidentally caught species.

Amendment 18A to the Snapper-Grouper FMP (SAFMC 2011f), included actions that could reduce bycatch of black sea bass and the potential for interactions with protected species. Actions in Amendment 18A limited the number of participants in the black sea bass pot sector, required fishermen bring pots back to port at the completion of a trip, and limited the number of pots a fishermen can deploy. Amendment 24 to the Snapper-Grouper FMP (SAFMC 2011h) established a rebuilding plan for red grouper, which was overfished and undergoing overfishing. Red grouper is no longer undergoing overfishing or overfished. Amendment 24 (SAFMC 2011h) 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 2012), 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, which has been approved by the Council, 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 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, which is under development, includes actions that affect marine protected areas, and could reduce bycatch of many snapper grouper species, especially speckled hind and warsaw grouper.

The Council's For-Hire Reporting Amendment, which went into effect on January 27, 2014, has changed the reporting frequency for landings 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 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 reporting landings information to the Southeast Fisheries Science Center (SEFSC) electronically. Additionally, the Gulf of Mexico and 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 snapper grouper species, as well as all other federally-managed species in the southeast region.

Based on the outcome of the new 2013 SEDAR stock assessment for blueline tilefish, and the subsequent determination that the stock is overfished and undergoing overfishing, the Council has requested an emergency rule to remove blueline tilefish from the deep-water complex and modify the commercial and recreational ACLs consistent with the equilibrium yield at 75%F_{MSY}. Additionally, long-term management measures to end overfishing and rebuild blueline tilefish are being developed in Amendment 32. These actions may reduce harvest of blueline tilefish and; therefore, may reduce bycatch of non-target species most often harvested with blueline tilefish.

Additional information on fishery related actions from the past, present, and future considerations can be found in **Chapter 5** (Cumulative effects) of the environmental assessment.

1.4 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,

actions have been taken, and are underway to reduce bycatch and enhance data reporting for snapper-grouper species. 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.

Fishery managers, through the measures in **Action 1** and **2** of the EA, are proposing a temporary decrease in ACLs for blueline tilefish or the deep-water complex that includes blueline tilefish, in addition to recreational AMs that would prohibit retention when the recreational ACL is reached or projected to be reached. As outlined above, these actions may increase the level of bycatch if harvest of blueline tilefish or the deep-water species (including blueline tilefish) is prohibited in-season. In addition, if fishery managers implement separate blueline tilefish and deep-water complex ACLs and AMs, bycatch could increase if one ACL is closed and another open and fishermen are forced to discard fish. However, any increase in bycatch of blueline tilefish or other species in the deep-water complex is not expected to be substantial for several reasons. First, in 2012, blueline tilefish represented 96% of the landings in the deep-water complex; therefore, fishing effort towards the other species in the deep-water complex would likely be greatly reduced if blueline tilefish is prohibited because the other species in the complex are likely not targeted. Second, commercial fishermen may still retain the recreational bag limit if the commercial sector is closed and the recreational sector is open; the ability to retain the fish, even at low levels, would reduce the adverse effects of bycatch if the recreational sector is still open. Finally, blueline tilefish is largely caught separately from other deep-water species such as snowy grouper; therefore, incidental catch of blueline tilefish is not expected. Furthermore, the difference in levels of bycatch in not expected to be substantial between alternatives that separate blueline tilefish than those that retain the deep-water complex species composition.

The low association between blueline tilefish and other deep-water species, including snowy grouper, may be attributable to the unique habitat preferences of deep-water species compared to blueline tilefish. For example, blueline tilefish inhabit irregular bottoms comprised of troughs and terraces inter-mingled with sand, mud, or shell hash bottom where they live in burrows (Parker and Ross 1986; Parker and Mays 1998), whereas snowy grouper inhabit the upper continental slope, between 240 and 330 ft of depth, in habitats characterized by rocky ledges and swift currents (Matheson and Huntsman 1984) (from NMFS-SERO 2011). A study completed in North Carolina, which, monitored fishing trips that targeted blueline tilefish with longline gear, supports the low association between the harvest of blueline tilefish and other deep-water species. In all the trips monitored (100 trips), anglers did not catch any speckled hind, warsaw grouper, misty grouper, queen snapper, silk snapper, or yellowedge grouper (NC DMF 2013) and less than 400 lbs ww of snowy grouper were caught.

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

The proposed actions are not expected to result in major changes in bycatch of other fish species. The discard mortality rates of various snapper grouper species are discussed in **Section 1.2** of this bycatch practicability analysis. The temporary actions in the environmental assessment consider establishment of ACLs to reduce the allowable catch of blueline tilefish, a reduction in the deep-water complex ACL (including blueline tilefish), implementation of commercial and recreational AMs for blueline tilefish, and a modification to the recreational AM for the deep-water complex on a temporary basis. As previously explained, these proposed actions alternatives would not be expected to significant change bycatch of other fish species and result in population and ecosystem effects.

1.6 Effects on Marine Mammals and Birds

Under Section 118 of the Marine Mammal Protection Act (MMPA), 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 fishery, 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 2013 LOF classifies as a Category II (78 FR 53336, August 29, 2013). 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 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 in the South Atlantic are classified in the 2013 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. NMFS' 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. 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 fishery is not likely to negatively affect the Bermuda petrel and the roseate tern.

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

Fishery managers, through the measures in **Action 1** and **2** of the EA, are temporarily proposing a decrease in ACLs for the deep-water complex (including blueline tilefish), establishment of commercial and recreational ACLs for blueline tilefish to decrease the allowable harvest, a modification to the recreational AM for the deep-water complex, and the addition of commercial and recreational AMs for blueline tilefish. The AMs would prohibit retention when the ACL is reached or projected to be reached. These proposed actions are not expected to significantly alter fishing practices, processing, disposal, or marketing costs in the short term. In the long-term, it is more likely that current fishing, processing, disposal, and marketing costs would be maintained at their status quo levels, since the proposed actions may reduce the instances where blueline tilefish is determined to be overfished. When an overfished determination is made, the Magnuson-Stevens Act requires that a rebuilding plan be implemented within two years of the determination. Rebuilding plans are often associated with reduced harvest levels, and more stringent management measures that could affect fishing, processing, disposal, and marketing costs. The action in this amendment may help to avert such effects on those key elements of the snapper grouper fishery.

1.8 Changes in Fishing Practices and Behavior of Fishermen

In 2012, blueline tilefish represented 96% of the landings in the deep-water complex; therefore, fishing effort towards the other species in the deep-water complex would likely be greatly reduced if blueline tilefish is prohibited as the other species are likely not targeted.

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

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

Research and monitoring is ongoing to understand the effectiveness of proposed management measure 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. In 1999, logbook reporting was initiated for vessels catching king and Spanish mackerel (Gulf of Mexico and South Atlantic Fishery Management Councils). Approximately 20% of commercial fishermen from snapper grouper, dolphin wahoo, and 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 MRIP and logbooks from the NMFS headboat program.

Additional data collection activities for the recreational sector of the snapper grouper, dolphin wahoo, and CMP fisheries are being considered by the Council that could allow for a better monitoring of bycatch in the future. The 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 NMFS 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 NMFS and the various regional fishery management councils. Announcements and news released are also available on the internet and broadcasted over NOAA weather radio.

NMFS 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 from the proposed actions are discussed in **Chapter 4** of the environmental assessment.

1.11 Changes in the Distribution of Benefits and Costs

The distribution of benefits and costs expected from proposed actions in the environmental assessment are discussed in **Chapter 3**. Economic and social effects of the proposed actions are addressed in **Chapter 4** of this document.

1.12 Social Effects

The social effects of all the measures are described in **Chapter 4** of the environmental assessment.

1.13 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 proposed actions in the environmental assessment are not likely to significantly contribute or detract from the current level of bycatch in the snapper grouper fishery. The Council, NMFS, 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. Furthermore, if the proposed measures in **Actions 1** and **2** are implemented, adverse effects from an increase in bycatch are not likely to be substantial. Therefore, no additional action is needed to minimize bycatch or bycatch mortality within the snapper grouper fishery.

References

NMFS-SERO (National Marine Fisheries Service-Southeast Regional Office. 2011. Regulatory Amendment 11: Warsaw Grouper and Speckled Hind Catches in the U.S. South Atlantic NOAA Fisheries Service Southeast Regional Office, June 1, 2011 (revised August 23, 2011), SERO-LAPP-2011-06.

NC DMF (North Carolina Division of Marine Fisheries). 2011. Blueline Tilefish Exempted Fishing Permit (EFP) Final Report. 6 pp.

Parker, Jr., R.O. and R.W. Mays. 1998. Southeastern U.S. deepwater reef fish assemblages, habitat characteristics, catches, and life history summaries. NOAA Tech. Report, National Marine Fisheries Service 138.

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). 2011a. Comprehensive-BA2

SAFMC (South Atlantic Fishery Management Council). 2011b. 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.

SEDAR 4. 2004. Stock Assessment Report 1. Stock assessment of the deep-water snapper-grouper complex in the South Atlantic. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

SEDAR 10. 2006. Stock assessment of gag in the South Atlantic. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

SEDAR 17 Update Assessment. 2012. Stock Assessment of Vermilion Snapper off the southeastern U.S. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

SEDAR 19. 2010. Stock Assessment Report 1 (South Atlantic and Gulf of Mexico Black Grouper); and Stock Assessment Report 2 (South Atlantic Red Grouper). Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

SEDAR 24. 2010. Stock Assessment Report. South Atlantic Red Snapper. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

SEDAR 25. 2011. Stock Assessment Report. South Atlantic Black Sea Bass. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

SEDAR Update. 2012. Stock Assessment Update Report. South Atlantic Red Porgy. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

SEDAR 32. 2013. Stock Assessment Report. South Atlantic Blueline Tilefish. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

CHAPTER 5. REGULATORY IMPACT REVIEW

5.1 Introduction

The National Marine Fisheries Service (NMFS) requires a Regulatory Impact Review (RIR) for all regulatory actions that are of public interest. The RIR does three things: (1) It provides a comprehensive review of the level and incidence of impacts associated with a regulatory action; (2) it provides a review of the problems and policy objectives prompting the regulatory proposals and an evaluation of the major alternatives which could be used to solve the problem; and (3) it ensures that the regulatory agency systematically and comprehensively considers all available alternatives so that the public welfare can be enhanced in the most efficient and cost effective way.

The RIR also serves as the basis for determining whether any proposed regulations are a "significant regulatory action" under certain criteria provided in Executive Order 12866 (E.O. 12866) and whether the approved regulations will have a "significant economic impact on a substantial number of small business entities" in compliance with the Regulatory Flexibility Act of 1980.

5.2 Problems and Objectives

The purpose and need, issues, problems, and objectives of this action are presented in Chapter 1, Section 1.4, and is incorporated herein by reference.

5.3 Methodology and Framework for Analysis

This RIR assesses management measures from the standpoint of determining the resulting changes in costs and benefits to society. To the extent practicable, the net effects of the proposed measures for an existing fishery should be stated in terms of producer and consumer surplus, changes in profits, and employment in the direct and support industries. Where figures are available, they are incorporated into the analysis of the economic impacts of the different actions and alternatives.

5.4 Description of the Fishery

A description of the snapper grouper fishery is contained in Chapter 3 and is incorporated herein by reference.

5.5 Effects of Management Measures

This action will directly affect up to 695 commercial vessels that have a South Atlantic snapper grouper permit and unknown number of anglers who harvest species of the deep-water complex of the snapper grouper fishery in federal waters: black snapper, blackfin snapper, blueline tilefish, misty grouper, queen snapper, sand tilefish, silk snapper and yellowedge grouper. It will

indirectly affect up to 202 wholesale seafood dealers who possess a South Atlantic snapper grouper dealer permit, 1,364 for-hire fishing operations with a South Atlantic charter/headboat snapper grouper permit, and unknown numbers of other individuals who personally consume these species or may benefit from the revenues generated by the retail sales of these species or from fishing for these species.

Currently, landings of species within the deep-water complex are combined to count against the annual catch limit (ACL) for the complex. The commercial and recreational ACLs for the deep-water complex are 376,469 lbs ww and 334,556 lbs ww, respectively. During a season if commercial landings of the complex reach or are projected to reach the commercial ACL for the complex, the fishing season is closed to cap landings at the ACL. In 2012, for example, the commercial season for the deep-water complex closed September 8 because commercial landings had reached the ACL at that time. The 2013 season, however, was not closed early. If recreational landings of the complex reach or exceed the recreational ACL, the following season is shortened in proportion to the overage. To date, a recreational season for the deep-water complex has not been shortened.

Blueline tilefish is the most frequently landed species of the deep-water complex. **Preferred Alternative 3** of **Action 1** will temporarily separate blueline tilefish from the deep-water complex and establish annual catch limits for blueline tilefish. The blueline tilefish portion of the commercial ACL for the deep-water complex is 316,098 lbs ww, and its portion of the recreational ACL for the complex is 315,243 lbs ww. The deep-water complex ACL will remain at current levels with the current blueline tilefish portion removed (commercial: 376,469 lbs ww less 316,098 lbs ww and recreational: 334,556 lbs ww less 315,243 lbs ww). In turn, **Preferred Sub-alternative 3a** will establish commercial and recreational annual catch limits for blueline tilefish**.**

Preferred Alternative 3 of **Action 2** will establish in-season accountability measures (AMs) for blueline tilefish. If commercial or recreational landings of blueline tilefish reach or are projected to reach their respective ACL in 2014, the season will be closed before December 31 to cap landings at the ACL.

In 2012, commercial landings of the deep-water complex reached 383,951 lbs ww and blueline tilefish landings accounted for approximately 97% of those commercial landings. Three different scenarios regarding blueline tilefish's portion of the current complex's maximum commercial landings are constructed to establish baseline commercial landings for blueline tilefish and the revised deep-water complex. First, it is assumed blueline tilefish has represented 100% of the deep-water complex's annual commercial landings; second, 90%, and third, 80% (**Table 5.1**).

Table 5.1. Baseline maximum commercial landings for three scenarios.

Species/Group	**Baseline maximum commercial landings (lbs ww)**		
	Scenarios		
	1	**2**	**3**
Blueline Tilefish	376,469	338,822	301,175

Revised Deep-water Complex	0	37,647	75,294
Total	376,469	376,469	376,469

Preferred Alternative 3 and **Preferred Sub-alternative 3a** would set the commercial ACL for blueline tilefish at 112,207 lbs ww and commercial ACL for the revised deep-water complex at 60,371 (**Table 5.2**) and these figures are subtracted from the above to estimate the reductions in commercial blueline tilefish and the revised deep-water complex. The preferred alternatives of Action 1 and 2 would reduce blueline tilefish landings to as much as 188,968 to 264,262 lbs ww and the revised deep-water complex from zero to 14,923 lbs ww (**Table 5.3**). With an average dockside price of $2.1 per pound whole weight, commercial vessels could lose up to $326,419 to $554,950 in dockside revenue from blueline tilefish landings and from $0 to $31,338 in dockside revenue from the revised deep-water complex in 2014. The losses of these landings represent losses of income to fishing vessel crews, losses of revenue to wholesale dealers and retail sellers, and losses to consumers of the species/complex.

Table 5.2. Preferred Alternative 3 and **Preferred Sub-alternative 3a**.

Species/Group	ACL (lbs ww)	
	Commercial	**Recreational**
Blueline tilefish	112,207	111,893
Deep-water Complex without blueline tilefish	60,371	19,313

Table 5.3. Maximum reductions in annual commercial landings by scenario.

Species/Group	Maximum reduction in commercial landings (lbs ww)		
	Scenarios		
	1	**2**	**3**
Blueline Tilefish	264,262	226,615	188,968
Revised Deep-water Complex	0	0	14,923
Total	264,262	226,615	203,891

In 2012, recreational landings of blueline tilefish represented approximately 82% of recreational landings of the deep-water complex. Eighty-two percent of the recreational ACL for the deep-water complex (334,556 lbs ww) is 274,336 lbs ww. Presently, there are no in-season accountability measures to end the recreational season for the deep-water complex, and, consequently, the ACL does not necessarily establish maximum recreational landings. However, preliminary recreational data for 2013 indicated that through August, 331,811 lbs ww of the

complex had been landed. If that rate continued through the end of last year, an estimated 498,399 lbs ww of the deep-water complex could have been landed, and 82% of that figure is 408,687 lbs ww. The following estimate of the impacts on recreational landings presumes maximum baseline recreational landings of blueline tilefish at 408,687 lbs ww and revised deep-water complex recreational landings at 89,712 lbs ww. The preferred alternatives will reduce annual recreational landings of blueline tilefish up to 296,794 lbs ww and the revised deep-water complex by as much as 70,399 lbs ww (**Table 5.4**). Economic benefits of recreational landings are typically estimated using willingness-to-pay studies of private and for-hire fishing; however, there is presently insufficient information to estimate the dollar values of the losses of the recreational landings to anglers and for-hire operations

Table 5.4. Maximum baseline landings and reduction of recreational landings.

Species/Group	Annual recreational landings (lbs ww)	
	Maximum baseline	Reduction in landings
Blueline Tilefish	408,687	296,794
Revised Deep-water Complex	89,712	70,399
Total	498,399	367,193

5.6 Public and Private Costs of Regulations

The preparation, implementation, enforcement, and monitoring of this or any Federal action involves the expenditure of public and private resources, which can be expressed as costs associated with the regulations. Costs associated with this action include, but are not limited to Council costs of documentation preparation, meeting, and other costs; NMFS administration costs of document preparation, meetings and review, and annual law enforcement costs. A preliminary estimate is up to $100,000 before annual law enforcement costs, if any.

5.7 Determination of Significant Regulatory Action

Pursuant to E.O. 12866, a regulation is considered a “significant regulatory action” if it is expected to result in: (1) an annual effect of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights or obligations of recipients thereof; or (4) raise novel legal or policy issues arising out of legal mandates, the President’s priorities, or the principles set forth in this executive order.

This rule will not have an adverse economic effect of $100 million or more, create a serious inconsistency or otherwise interfere with an action taken by another agency, materially alter the budgetary impact of programs or rights or obligations of recipients, or raise novel legal or policy issues. Hence, it is not a significant regulatory action.

Appendix C. Other Applicable Law

1.1 Administrative Procedure Act (APA)

All federal rulemaking is governed under the provisions of the APA (5 U.S.C. Subchapter II), which establishes a "notice and comment" procedure to enable public participation in the rulemaking process. This temporary rule will be effective immediately upon publication in the *Federal Register*. The immediate benefits of implementing temporary annual catch limits (ACL) and accountability measures (AM) for the deep-water complex and blueline tilefish outweigh the value of advance notice and public comment. Temporary ACLs and AMs must be implemented immediately to minimize future, adverse biological effects to the blueline tilefish stock and adverse socio-economic effects to fishermen and fishing communities that utilize the blueline tilefish portion of the snapper grouper fishery. Also, the public already had a chance to comment on this action at the December 2013 South Atlantic Fishery Management Council (Council) meeting. The Council considered this information when they made a motion to request a temporary rule for emergency action.

1.2 Information Quality Act (IQA)

The IQA (Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Public Law 106-443)) which took effect October 1, 2002, directed the Office of Management and Budget (OMB) to issue government-wide guidelines that "provide policy and procedural guidelines to federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information disseminated by federal agencies." OMB directed each federal agency to issue its own guidelines, establish administrative mechanisms allowing affected persons to seek and obtain correction of information that does not comply with OMB guidelines, and report periodically to OMB on the number and nature of complaints. The NOAA Section 515 Information Quality Guidelines require a series of actions for each new information product subject to the IQA. The Environmental assessment (EA) for the temporary rule has used the best available information and made a broad presentation thereof. The information contained in this document was developed using best available scientific information. Therefore, this document is in compliance with the IQA.

1.3 Coastal Zone Management Act (CZMA)

Section 307(c)(1) of the federal CZMA of 1972 requires that all federal activities that directly affect the coastal zone be consistent with approved state coastal zone management programs to the maximum extent practicable. While it is the goal of the Council to have management measures that complement those of the states, federal and state administrative procedures vary and regulatory changes are unlikely to be fully instituted at the same time. The Council believes this document is consistent to the maximum extent practicable with the Coastal Zone Management Plans of Florida, Georgia, South Carolina, and North Carolina. This determination was submitted to the responsible state agencies under Section 307 of the CZMA administering approved Coastal Zone Management Programs in the States of Florida, South Carolina, Georgia, and North Carolina on January 7, 2014. Letters of concurrence were received from Georgia Department of Natural Resources (January 9, 2014) and Florida Department of Environmental Protection (January 8, 2014).

1.4 Endangered Species Act (ESA)

The ESA of 1973 (16 U.S.C. Section 1531 et seq.) requires that federal agencies must ensure actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or the habitat designated as critical to their survival and recovery. The ESA requires the National Marine Fisheries Service (NMFS) to consult with the appropriate administrative agency (itself for most marine species, and the U.S. Fish and Wildlife Service for all remaining species) when proposing an action that may affect threatened or endangered species or adversely modify critical habitat. Consultations are necessary to determine the potential impacts of the proposed action. They are concluded informally when proposed actions may affect but are "not likely to adversely affect" threatened or endangered species or designated critical habitat. Formal consultations, resulting in a biological opinion, are required when proposed actions may affect and are "likely to adversely affect" threatened or endangered species or adversely modify designated critical habitat.

NMFS completed a biological opinion (NMFS 2006) in 2006 evaluating the impacts of the continued authorization of the South Atlantic snapper grouper fishery under the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP) and Amendment 13C to the Snapper Grouper FMP on ESA-listed species (see **Section 3.0**). The opinion stated the fishery was not likely to adversely affect North Atlantic right whale critical habitat or marine mammals (see NMFS 2006 for discussion on these species). However, the opinion did state that the snapper grouper fishery would adversely affect sea turtles and smalltooth sawfish, but would not jeopardize their continued existence. An incidental take statement was issued for green, hawksbill, Kemp's ridley, leatherback, and loggerhead sea turtles, as well as smalltooth sawfish. Reasonable and prudent measures to minimize the impact of these incidental takes were specified, along with terms and conditions to implement them. The anticipate number of sea turtle takes over consecutive 3-year periods are shown in **Table H-1**.

Table H-1. Three-year South Atlantic anticipated takes sea turtles by 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.

Regulations implemented through Amendment 15B to the Snapper Grouper FMP (74 FR 31225; June 30, 2009) and updated in Comprehensive Ecosystem-Based Amendment 2 (76 FR 82183; December 30, 2011) 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. These regulations are thought to decrease the mortality associated with accidental interactions with sea turtles and smalltooth sawfish.

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.

Additionally, 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.

1.5 Executive Order 12612: Federalism

E.O. 12612 requires agencies to be guided by the fundamental federalism principles when formulating and implementing policies that have federalism implications. The purpose of the Order is to guarantee the division of governmental responsibilities between the federal government and the states, as intended by the framers of the Constitution. No federalism issues have been identified relative to the actions proposed in this document and associated regulations. Therefore, preparation of a Federalism assessment under E.O. 13132 is not necessary.

1.6 Executive Order 12866: Regulatory Planning and Review

E.O. 12866, 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, NMFS prepares a Regulatory Impact Review (RIR) for all fishery regulatory actions that implement a new fishery management plan (FMP) or that significantly amend an existing plan. RIRs provide a comprehensive analysis of the costs and benefits to society associated with 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 will have a significant economic impact on a substantial number of small entities in compliance with the Regulatory Flexibility Act. A regulation is significant if it is likely to result in an annual effect on the economy of at least $100,000,000 or if it has other major economic effects.

In accordance with E.O. 12866, the following is set forth by the Council: (1) this rule is not likely to have an annual effect on the economy of more than $100 million or to adversely affect in a material way the economy, a sector of the economy, productivity, jobs, the environment, public health or safety, or state, local, or tribal governments or communities; (2) this rule is not likely to create any serious inconsistencies or otherwise interfere with any action taken or planned by another agency; (3) this rule is not likely to materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights or obligations of recipients thereof; (4) this rule is not likely to raise novel or policy issues arising out of legal mandates, or the principles set forth in the Executive Order; and (5) this rule is not controversial.

This amendment includes the RIR as **Appendix G**.

1.7 Executive Order 12898: Environmental Justice

E.O. 12898 requires that “to the greatest extent practicable and permitted by law…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…”

The alternatives being considered in this document are not expected to result in any disproportionate adverse human health or environmental effects to minority populations or low-income populations of Florida, North Carolina, South Carolina, or Georgia, rather the impacts would be spread across all participants in the blueline tilefish portion of the snapper grouper fishery regardless of race or income. A detailed description of the communities impacted by the actions contained in this document and potential socioeconomic impacts of those actions are contained in **Sections 3.0** and **4.0** of this document.

1.8 Executive Order 12962: Recreational Fisheries

E.O. 12962 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. Additionally, the Order establishes a seven-member National Recreational Fisheries Coordination 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 National Recreational Fisheries Coordination 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.

The alternatives considered in this document are consistent with the directives of E.O. 12962.

1.9 Executive Order 13089: Coral Reef Protection

E.O. 13089, signed by President William Clinton on June 11, 1998, recognizes the ecological, social, and economic values provided by the Nation's coral reefs and ensures that Federal agencies are protecting these ecosystems. More specifically, the Order requires federal agencies to identify actions that may harm U.S. coral reef ecosystems, to utilize their program and authorities to protect and enhance the conditions of such ecosystems, and to ensure that their actions do not degrade the condition of the coral reef ecosystem.

The alternatives considered in this document are consistent with the directives of E.O. 13089.

1.10 Executive Order 13158: Marine Protected Areas

E.O. 13158 was signed on May 26, 2000, to strengthen the protection of U.S. ocean and coastal resources through the use of Marine Protected Areas (MPAs). The E.O. defined MPAs as "any area of the marine environment that has been reserved by federal, state, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein". It directs federal agencies to work closely with state, local and non- governmental partners to create a comprehensive network of MPAs "representing diverse U.S. marine ecosystems, and the Nation's natural and cultural resources".

The alternatives considered in this document are consistent with the directives of E.O. 13158.

1.11 Marine Mammal Protection Act (MMPA)

The 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; and 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 commercial hook-and-line components of the South Atlantic snapper grouper fishery (i.e., bottom longline, bandit gear, and handline), which targets blueline tilefish are listed as part of a Category III fishery (78 FR 53336, August 29, 2013) because there have been no documented interactions between these gear and marine mammals. The black sea bass pot component of the South Atlantic snapper grouper fishery is part of the Atlantic mixed species trap/pot fishery, a Category II fishery, in the 2013 proposed LOF (78 FR 53336, August 29, 2013). The Atlantic mixed species trap/pot fishery designation was created in 2003 (68 FR 41725, July 15, 2003), by combining several separately listed trap/pot fisheries into a single group. This group was designated Category II as a precaution because of known interactions between marine mammals and gears similar to those included in this group. Prior to this consolidation, the black sea bass pot fishery in the South Atlantic was a part of the "U.S. Mid-Atlantic and Southeast U.S. Atlantic Black Sea Bass Trap/Pot" fishery (Category III). There has never been a documented interaction between marine mammals and black sea bass trap/pot gear in the South Atlantic. The actions in this EA are not expected to negatively impact the provisions of the MMPA

1.12 National Environmental Policy Act (NEPA)

This document has been written and organized in a manner that meets NEPA requirements, and thus is a consolidated NEPA document, including an EA, as described in NOAA Administrative Order (NAO) 216- 6, Section 6.03.a.2.

Purpose and Need for Action

The purpose and need for this action are described in **Section 1.0.**

Alternatives

The alternatives for this action are described in **Section 2.0.**

Affected Environment

The affected environment is described in **Section 3.0**.

Impacts of the Alternatives

The impacts of the alternatives on the environment are described in **Section 4.0.**

1.13 National Marine Sanctuaries Act (NMSA)

Under the NMSA (also known as Title III of the Marine Protection, Research and Sanctuaries Act of 1972), as amended, the U.S. Secretary of Commerce is authorized to designate National Marine Sanctuaries to protect distinctive natural and cultural resources whose protection and beneficial use requires comprehensive planning and management. The National Marine Sanctuary Program is administered by the Sanctuaries and Reserves Division of NOAA. The NMSA provides authority for comprehensive and coordinated conservation and management of these marine areas. The National Marine Sanctuary Program currently comprises 13 sanctuaries around the country, including sites in American Samoa and Hawaii. These sites include significant coral reef and kelp forest habitats, and breeding and feeding grounds of whales, sea lions, sharks, and sea turtles. The two main sanctuaries in the South Atlantic exclusive economic zone are Gray's Reef and Florida Keys National Marine Sanctuaries.

The alternatives considered in this document are not expected to have any adverse impacts on the resources managed by the Gray's Reef and Florida Keys National Marine Sanctuaries.

1.14 Paperwork Reduction Act (PRA)

The purpose of the PRA is to minimize the burden on the public. The PRA is intended to ensure that the information collected under the proposed action is needed and is collected in an efficient manner (44 U.S.C. 3501 (1)). The authority to manage information collection and record keeping requirements is vested with the Director of the Office of Management and Budget (OMB). This authority encompasses establishment of guidelines and policies, approval of information collection requests, and reduction of paperwork burdens and duplications. The PRA requires NMFS to obtain approval from the OMB before requesting most types of fishery information from the public. Actions in this document are not expected to affect PRA.

1.15 Small Business Act (SBA)

Enacted in 1953, the SBA requires that agencies assist and protect small-business interests to the extent possible to preserve free competitive enterprise. The objectives of the SBA are to foster business ownership by individuals who are both socially and economically disadvantaged; and to promote the competitive viability of such firms by providing business development assistance including, but not limited to, management and technical assistance, access to capital and other forms of financial assistance, business training, and counseling, and access to sole source and limited competition federal contract opportunities, to help firms achieve competitive viability. Because most businesses associated with fishing are considered small businesses, NMFS, in implementing regulations, must make an assessment of how those regulations will affect small businesses.

1.16 Public Law 99-659: Vessel Safety

Public Law 99-659 amended the Magnuson-Stevens Fishery Conservation and Management Act to require that a FMP or FMP amendment must consider, and may provide for, temporary adjustments (after consultation with the U.S. Coast Guard and persons utilizing the fishery) regarding access to a fishery for vessels that would be otherwise prevented from participating in the fishery because of safety concerns related to weather or to other ocean conditions. No vessel would be forced to participate in South Atlantic fisheries under adverse weather or ocean conditions as a result of the imposition of management regulations proposed in this EA. No concerns have been raised by South Atlantic fishermen or by the U.S. Coast Guard that the proposed management measures directly or indirectly pose a hazard to crew or vessel safety under adverse weather or ocean conditions.

References

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.