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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Overfishing: Overfishing occurs when a stock or stock complex is subjected to a rate of fishing mortality that exceeds the maximum fishing mortality threshold (e.g., current fishing mortality rate > MFMT = overfishing).

Quota: 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.

Appendix B. Essential Fish Habitat and Move to Ecosystem Based Management

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

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

Moving to Ecosystem-Based Management

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

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

FEP Volume V - South Atlantic Research Programs and Data Needs
FEP Volume VI - References and Appendices

The Comprehensive Amendment addressing EFH in Fishery Management Plans of the South Atlantic Region (SAFMC 1998d) specified EFH and EFH-HAPCs for all FMPs.

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

Ecosystem Approach to Deepwater Ecosystem Management

The South Atlantic Council manages coral, coral reefs and live/hard bottom habitat, including deepwater corals, through the Fishery Management Plan for Coral, Coral Reefs and Live/Hard Bottom Habitat of the South Atlantic Region (Coral FMP). Mechanisms exist in the FMP, as amended, to further protect deepwater coral and live/hard bottom habitats. The SAFMC's Habitat and Environmental Protection Advisory Panel and Coral Advisory Panel have supported proactive efforts to identify and protect deepwater coral ecosystems in the South Atlantic region. Management actions in Comprehensive Ecosystem-Based Amendment (CE-BA 1) (SAFMC 2009c) established deepwater coral HAPCs (C-HAPCs) to protect what is thought to be the largest continuous distribution (>23,000 square miles) of pristine deepwater coral ecosystems in the world. In addition, CE-BA 1 established areas within the CHAPC, which provide for traditional fishing in limited areas, which do not impact deepwater coral habitat. CE-BA 1, supported by the FEP, also addresses non-regulatory updates for existing EFH and EFH- HAPC information and addresses the spatial requirements of the Final EFH Rule (i.e., GIS presented for all EFH and EFH-HAPCs).

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

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

These efforts include participation as a member and on the Board of the Southeast Coastal Regional Ocean Observing Association (SECOORA) to guide and direct priority needs for observation and modeling to support fisheries oceanography and integration into stock assessment process through SEDAR. Cooperation through SECOORA is envisioned to facilitate the following:

- Refining current or water column designations of EFH and EFH-HAPCs (e.g., Gulf Stream and Florida Current)
- Providing oceanographic models linking benthic, pelagic habitats, and food webs
- Providing oceanographic input parameters for ecosystem models
- Integration of OOS information into Fish Stock Assessment process in the SA region
- Facilitating OOS system collection of fish and fishery data and other research necessary to support the Council's use of area-based management tools in the SA Region including but not limited to EFH, EFH-HAPCs, Marine Protected Areas, Deepwater Coral Habitat Areas of

Particular Concern, Special Management Zones, and Allowable Gear Areas.

- Integration of OOS program capabilities and research Needs into the South Atlantic Fishery Ecosystem Plan
- Collaboration with SECOORA to integrate OOS products on the Council's Habitat and Ecosystem Internet Mapping System to facilitate model and tool development
- Expanding IMS and Arc Services will provide permissioned researchers access to data or products including those collected/developed by SA OOS partners

In addition, the Council serves on the National Habitat Board and, as a member of the Southeast Aquatic Resource Partnership (SARP), has highlighted the collaboration by including the Southeast Aquatic Habitat Plan and associated watershed conservation restoration targets into the FEP. Many of the habitat, water quality, and water quantity conservation needs identified in the threats and recommendations Volume of the FEP are directly addressed by on-the-ground projects supported by SARP. This cooperation results in funding fish habitat restoration and conservation intended to increase the viability of fish populations and fishing opportunity, which also meets the needs to conserve and manage Essential Fish Habitat for Council managed species or habitat important to their prey.

Initially discussed as a South Atlantic Eco-regional Compact, the Council has also cooperated with South Atlantic States in the formation of a Governor's South Atlantic Alliance (SAA). This will also provide regional guidance and resources that will address State and Council broader habitat and ecosystem conservation goals. The SAA was initiated in 2006. An Executive Planning Team (EPT), by the end of 2007, had created a framework for the Governors South Atlantic Alliance. The formal agreement between the four states (NC, SC, GA, and FL) was executed in May 2009. The Agreement specifies that the Alliance will prepare a "Governors South Atlantic Alliance Action Plan" which will be reviewed annually for progress and updated every five years for relevance of content. Alliance mission and purpose is to promote collaboration among the four states, and with the support and interaction of federal agencies, academe, regional organizations, non-governmental organizations, and the private sector, to sustain and enhance the region's coastal and marine resources. The Alliance proposes to regionally implement science-based actions and policies that balance coastal and marine ecosystems capacities to support both human and natural systems. An Action Plan was approved by the Governors and an Implementation Plan is under development.

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

Building Tools to support EBM in the South Atlantic Region

The Council has developed a Habitat and Ecosystem Section of the website http://www.safmc.net/ecosystem/Home/EcosystemHome/tabid/435/Default.aspx and, in cooperation with the Florida Wildlife Research Institute (FWRI), developed a Habitat and Ecosystem Internet Map Server (IMS)

http://www.safmc.net/EcosystemManagement/EcosystemBoundaries/MappingandGISData/tabid/632/Default.aspx. The IMS was developed to support Council and regional partners' efforts in the transition to EBM. Other regional partners include NMFS Habitat Conservation, South Atlantic States, local management authorities, other Federal partners, universities, conservation organizations, and recreational and commercial fishermen. As technology and spatial information needs evolve, the distribution and use of GIS demands greater capabilities. The Council has continued its collaboration with FWRI in the new evolution to Web Services initially for Essential Fish Habitat (http://ocean.floridamarine.org/SAFMC_EFH/) and Fishery Regulations (http://ocean.floridamarine.org/SAFMC_Regulations/) and is refining permissioned services for Fishery Independent and Habitat Research and developing one for Ocean Energy activities in the region (e.g., wind, wave and current).

Ecosystem Based Action, Future Challenges and Needs

The Council has implemented ecosystem-based principles through several existing fishery management actions including establishment of deepwater Marine Protected Areas for the Snapper Grouper fishery, proactive harvest control rules on species (e.g., dolphin and wahoo) which are not overfished, implementing extensive gear area closures which in most cases eliminate the impact of fishing gear on Essential Fish Habitat and use of other spatial management including Special Management Zones. Pursuant to the development of the Comprehensive Ecosystem-Based Amendment 1, the Council is taking an ecosystem approach to protect deepwater ecosystems while providing for traditional fisheries for the Golden Crab and Royal Red shrimp in areas where they do not impact deepwater coral habitat. The stakeholder based process taps in on an extensive regional Habitat and Ecosystem network. Support tools facilitate Council deliberations and with the help of regional partners, are being refined to address long-term ecosystem management needs.

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

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

Magnuson-Stevens Act. The FEP, serving as the source document for CE-BAs, could also meet NMFS SAFE requirements if information is provided to the Council to update necessary sections.

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

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

1. Energy exploration, development, transportation, and hydropower re-licensing;
2. Beach dredging and filling and large-scale coastal engineering;
3. Protection and enhancement of submerged aquatic vegetation;
4. Alterations to riverine, estuarine, and nearshore flows;
5. Marine aquaculture;
6. Marine Ecosystems and Non-Native and Invasive Species; and
7. Estuarine Ecosystems and Non-Native and Invasive Species.

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

South Atlantic Bight Ecopath Model

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

Essential Fish Habitat and Essential Fish Habitat Areas of Particular Concern

Following is a summary of the current South Atlantic Council's EFH and EFH-HAPCs. Information supporting their designation is being updated (pursuant to the EFH Final Rule) in the Council's Fishery Ecosystem Plan:

Snapper Grouper FMP

Essential fish habitat for snapper-grouper species includes coral reefs, live/hard bottom, submerged aquatic vegetation, artificial reefs and medium to high profile outcroppings on and around the shelf break

zone from shore to at least 600 feet (but to at least 2000 feet for wreckfish) where the annual water temperature range is sufficiently warm to maintain adult populations of members of this largely tropical complex. EFH includes the spawning area in the water column above the adult habitat and the additional pelagic environment, including *Sargassum*, required for larval survival and growth up to and including settlement. In addition the Gulf Stream is an essential fish habitat because it provides a mechanism to disperse snapper grouper larvae.

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

Areas which meet the criteria for EFH-HAPCs for species in the snapper-grouper management unit include medium to high profile offshore hard bottoms where spawning normally occurs; localities of known or likely periodic spawning aggregations; nearshore hard bottom areas; The Point, The Ten Fathom Ledge, and Big Rock (North Carolina); The Charleston Bump (South Carolina); mangrove habitat; seagrass habitat; oyster/shell habitat; all coastal inlets; all state-designated nursery habitats of particular importance to snapper grouper (e.g., Primary and Secondary Nursery Areas designated in North Carolina); pelagic and benthic *Sargassum*; Hoyt Hills for wreckfish; the *Oculina* Bank Habitat Area of Particular Concern; all hermatypic coral habitats and reefs; manganese outcroppings on the Blake Plateau; and Council-designated Artificial Reef Special Management Zones (SMZs). In addition, the Council through the Comprehensive Ecosystem-based Amendment 2 (CE-BA 2; SAFMC 2011e) established the deepwater snapper grouper MPAs and golden tilefish and blueline tilefish habitat as EFH-HAPCs under the Snapper Grouper FMP as follows:

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

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

EFH-HAPCs for the snapper grouper complex to include the following deepwater Marine Protected Areas (MPAs) as designated in Snapper Grouper Amendment 14 (SAFMC 2007); Snowy Grouper Wreck MPA, Northern South Carolina MPA, Edisto MPA, Charleston Deep Artificial Reef MPA, Georgia MPA, North Florida MPA, St. Lucie Hump MPA and East Hump MPA.

Shrimp FMP

For penaeid shrimp, Essential Fish Habitat includes inshore estuarine nursery areas, offshore marine habitats used for spawning and growth to maturity, and all interconnecting water bodies as described in the Habitat Plan. Inshore nursery areas include tidal freshwater (palustrine), estuarine, and marine

emergent wetlands (e.g., intertidal marshes); tidal palustrine forested areas; mangroves; tidal freshwater, estuarine, and marine submerged aquatic vegetation (e.g., seagrass); and subtidal and intertidal non-vegetated flats. This applies from North Carolina through the Florida Keys.

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

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

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

Coastal Migratory Pelagics FMP

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

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

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

Areas which meet the criteria for EFH-HAPCs include sandy shoals of Capes Lookout, Cape Fear, and Cape Hatteras from shore to the ends of the respective shoals, but shoreward of the Gulf stream; The Point, The Ten-Fathom Ledge, and Big Rock (North Carolina); The Charleston Bump and Hurl Rocks (South Carolina); The Point off Jupiter Inlet (Florida); *Phragmatopoma* (worm reefs) reefs off the central east coast of Florida; nearshore hard bottom south of Cape Canaveral; The Hump off Islamorada, Florida; The Marathon Hump off Marathon, Florida; The “Wall” off of the Florida Keys; Pelagic *Sargassum*; and Atlantic coast estuaries with high numbers of Spanish mackerel and cobia based on abundance data from the ELMR Program. Estuaries meeting this criteria for Spanish

mackerel include Bogue Sound and New River, North Carolina; Bogue Sound, North Carolina (Adults May-September salinity >30 ppt); and New River, North Carolina (Adults May-October salinity >30 ppt). For Cobia they include Broad River, South Carolina (Adults & juveniles May-July salinity >25ppt).

Golden Crab FMP

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

Spiny Lobster FMP

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

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

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

Essential fish habitat for corals (stony corals, octocorals, and black corals) must incorporate habitat for over 200 species. EFH for corals include the following:

A. Essential fish habitat for hermatypic stony corals includes rough, hard, exposed, stable substrate from Palm Beach County south through the Florida reef tract in subtidal to 30 m depth, subtropical (15°-35° C), oligotrophic waters with high (30-35$^{o}/_{oo}$) salinity and turbidity levels sufficiently low enough to provide algal symbionts adequate sunlight penetration for photosynthesis. Ahermatypic stony corals are not light restricted and their essential fish habitat includes defined hard substrate in subtidal to outer shelf depths throughout the management area.

B. Essential fish habitat for *Antipatharia* (black corals) includes rough, hard, exposed, stable substrate, offshore in high (30-35$^{o}/_{oo}$) salinity waters in depths exceeding 18 meters (54 feet), not restricted by light penetration on the outer shelf throughout the management area.

C. Essential fish habitat for octocorals excepting the order Pennatulacea (sea pens and sea pansies) includes rough, hard, exposed, stable substrate in subtidal to outer shelf depths within a wide range of salinity and light penetration throughout the management area.

D. Essential fish habitat for Pennatulacea (sea pens and sea pansies) includes muddy, silty bottoms in subtidal to outer shelf depths within a wide range of salinity and light penetration.

Areas which meet the criteria for EFH-HAPCs for coral, coral reefs, and live/hard bottom include: The 10-Fathom Ledge, Big Rock, and The Point (North Carolina); Hurl Rocks and The Charleston Bump (South Carolina); Gray's Reef National Marine Sanctuary (Georgia); The *Phragmatopoma* (worm reefs) reefs off the central east coast of Florida; Oculina Banks off the east coast of Florida from Ft. Pierce to Cape Canaveral; nearshore (0-4 meters; 0-12 feet) hard bottom off the east coast of Florida from Cape Canaveral to Broward County); offshore (5-30 meter; 15-90 feet) hard bottom off the east coast of Florida from Palm Beach County to Fowey Rocks; Biscayne Bay, Florida; Biscayne National Park, Florida; and the Florida Keys National Marine Sanctuary. In addition, the Council through CE-BA 2 (SAFMC 2011e) is proposing the Deepwater Coral HAPCs as EFH-HAPCs under the Coral FMP as follows:

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

Dolphin and Wahoo FMP

EFH for dolphin and wahoo is the Gulf Stream, Charleston Gyre, Florida Current, and pelagic *Sargassum*. This EFH definition for dolphin was approved by the Secretary of Commerce on June 3, 1999 as a part of the South Atlantic Council's Comprehensive Habitat Amendment (SAFMC, 1998d) (dolphin was included within the Coastal Migratory Pelagics FMP).

Areas which meet the criteria for EFH-HAPCs for dolphin and wahoo in the Atlantic include The Point, The Ten-Fathom Ledge, and Big Rock (North Carolina); The Charleston Bump and The Georgetown Hole (South Carolina); The Point off Jupiter Inlet (Florida); The Hump off Islamorada, Florida; The Marathon Hump off Marathon, Florida; The "Wall" off of the Florida Keys; and Pelagic *Sargassum*. This EFH-HAPC definition for dolphin was approved by the Secretary of Commerce on June 3, 1999 as a part of the South Atlantic Council's Comprehensive Habitat Amendment (dolphin was included within the Coastal Migratory Pelagics FMP).

Pelagic *Sargassum* Habitat FMP

The Council through CE-BA 2 (SAFMC 2011e) designated the top 10 meters of the water column in the South Atlantic EEZ bounded by the Gulfstream, as EFH for pelagic Sargassum.

Actions Implemented That Protect EFH and EFH-HAPCs

Snapper Grouper FMP

- Prohibited the use of the following gears to protect habitat: bottom longlines in the EEZ inside of 50 fathoms or anywhere south of St. Lucie Inlet Florida, fish traps, bottom tending (roller- rig) trawls on live bottom habitat, and entanglement gear.
- Established the *Oculina* Experimental Closed Area where the harvest or possession of all species in the snapper grouper complex is prohibited.

Shrimp FMP

- Prohibition of rock shrimp trawling in a designated area around the *Oculina* Bank,
- Mandatory use of bycatch reduction devices in the penaeid shrimp fishery,
- Mandatory Vessel Monitoring System (VMS) in the Rock Shrimp Fishery.
- A mechanism that provides for the concurrent closure of the EEZ to penaeid shrimping if environmental conditions in state waters are such that the overwintering spawning stock is severely depleted.

Pelagic *Sargassum* Habitat FMP

- Prohibited all harvest and possession of *Sargassum* from the South Atlantic EEZ south of the latitude line representing the North Carolina/South Carolina border (34° North Latitude).
- Prohibited all harvest of *Sargassum* from the South Atlantic EEZ within 100 miles of shore between the 34° North Latitude line and the Latitude line representing the North Carolina/Virginia border.
- Harvest of *Sargassum* from the South Atlantic EEZ is limited to the months of November through June.
- Established an annual Total Allowable Catch (TAC) of 5,000 pounds landed wet weight.
- Required that an official observer be present on each *Sargassum* harvesting trip. Require that nets used to harvest *Sargassum* be constructed of four-inch stretch mesh or larger fitted to a frame no larger than 4 feet by 6 feet.

Coastal Migratory Pelagics FMP

- Prohibited of the use of drift gillnets in the coastal migratory pelagic fishery;

Golden Crab FMP

- In the northern zone golden crab traps can only be deployed in waters deeper than 900 feet; in the middle and southern zones traps can only be deployed in waters deeper than 700 feet.
  Northern zone - north of the 28°N. latitude to the North Carolina/Virginia border;
  Middle zone - 28°N. latitude to 25°N. latitude; and
  Southern zone - south of 25°N. latitude to the border between the South Atlantic and Gulf of Mexico Fishery Management Councils.

Coral, Coral Reefs and Live/Hard Bottom FMP

- Established an optimum yield of zero and prohibiting all harvest or possession of these resources which serve as essential fish habitat to many managed species.
- Designated of the *Oculina* Bank Habitat Area of Particular Concern
- Expanded the *Oculina* Bank Habitat Area of Particular Concern (HAPC) to an area bounded to the west by 80°W. longitude, to the north by 28°30' N. latitude, to the south by 27°30' N. latitude, and to the east by the 100 fathom (600 feet) depth contour.
- Established the following two Satellite *Oculina* HAPCs: (1) Satellite *Oculina* HAPC #1 is bounded on the north by 28°30'N. latitude, on the south by 28°29'N. latitude, on the east by 80°W. longitude, and on the west by 80°3'W. longitude, and (2) Satellite *Oculina* HAPC #2 is bounded on the north by 28°17'N. latitude, on the south by 28°16'N. latitude, on the east by 80°W. longitude, and on the west by 80°3'W. longitude.
- Prohibited the use of all bottom tending fishing gear and fishing vessels from anchoring or using

grapples in the *Oculina* Bank HAPC.

- Established a framework procedure to modify or establish Coral HAPCs.
- Established the following six deepwater CHAPCs: Cape Lookout Lophelia Banks, Cape Fear Lophelia Banks, Stetson Reefs, Savannah and East Florida Lithoherms, and Miami Terrace (Stetson-Miami Terrace), Pourtales Terrace, and Blake Ridge Diapir Methane Seep.
- Within the deepwater CHAPCs, the possession of coral species and the use of all bottom damaging gear is prohibited including bottom longline, trawl (bottom and mid-water), dredge, pot or trap, or the use of an anchor, anchor and chain, or grapple and chain by all fishing vessels.

South Atlantic Council Policies for Protection and Restoration of Essential Fish Habitat.

SAFMC Habitat and Environmental Protection Policy

In recognizing that species are dependent on the quantity and quality of their essential habitats, it is the policy of the SAFMC to protect, restore, and develop habitats upon which fisheries species depend; to increase the extent of their distribution and abundance; and to improve their productive capacity for the benefit of present and future generations. For purposes of this policy, “habitat” is defined as the physical, chemical, and biological parameters that are necessary for continued productivity of the species that is being managed. The objectives of the SAFMC policy will be accomplished through the recommendation of no net loss or significant environmental degradation of existing habitat. A long-term objective is to support and promote a net-gain of fisheries habitat through the restoration and rehabilitation of the productive capacity of habitats that have been degraded, and the creation and development of productive habitats where increased fishery production is probable. The SAFMC will pursue these goals at state, Federal, and local levels. The Council shall assume an aggressive role in the protection and enhancement of habitats important to fishery species, and shall actively enter Federal, decision- making processes where proposed actions may otherwise compromise the productivity of fishery resources of concern to the Council.

SAFMC EFH Policy Statements

In addition to implementing regulations to protect habitat from fishing related degradation, the Council in cooperation with NOAA Fisheries, actively comments on non-fishing projects or policies that may impact fish habitat. The Council adopted a habitat policy and procedure document that established a four-state Habitat Advisory Panel and adopted a comment and policy development process. Members of the Habitat Advisory Panel serve as the Council's habitat contacts and professionals in the field. With guidance from the Advisory Panel, the Council has developed and approved the following habitat policy statements which are available on the Habitat and Ecosystem section of the Council website.

Appendix C. Other Applicable Law

Administrative Procedures Act

All federal rulemaking is governed under the provisions of the Administrative Procedures Act (APA) (5 U.S.C. Subchapter II), which establishes a "notice and comment" procedure to enable public participation in the rulemaking process. Under the APA, NMFS is required to publish notification of proposed rules in the *Federal Register* and to solicit, consider and respond to public comment on those rules before they are finalized. The APA also establishes a 30-day wait period from the time a final rule is published until it takes effect, with some exceptions. This amendment complies with the provisions of the APA through the South Atlantic Fishery Management Council's (South Atlantic Council) extensive use of public meetings, requests for comments and consideration of comments. The proposed rule associated with this amendment will have request for public comments, which complies with the APA.

Information Quality Act

The Information Quality Act (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 Information Quality Act (IQA). This document has used the best available information and made a broad presentation thereof. The process of public review of this document provides an opportunity for comment and challenge to this information, as well as for the provision of additional information.

The information contained in this document was developed using best available scientific information. Therefore, Regulatory Amendment 15 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Regulatory Amendment 15) and Environmental Assessment are in compliance with the IQA.

Coastal Zone Management Act

Section 307(c)(1) of the federal Coastal Zone Management Act (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 South Atlantic 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. Based on the analysis of the environmental consequences of the proposed actions in **Section 4.0**, the South Atlantic Council has concluded this amendment would improve federal management of the yellowtail snapper and gag grouper portions of the snapper grouper fishery and is consistent to the maximum extent practicable with the Coastal Zone Management Plans of Florida, Georgia, South Carolina, and North Carolina. This determination will be 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.

Endangered Species Act

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 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 (SAFMC 2006) 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 anticipated number of sea turtle takes over consecutive 3-year periods is shown in **Table C-1**.

Table C-1. Three-year South Atlantic anticipated takes of sea turtles in the snapper grouper fishery.

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

Source: NMFS 2006.

Regulations implemented through snapper-grouper Amendment 15B (SAFMC 2008b) (74 FR 31225; June 30, 2009) and updated in Comprehensive Ecosystem-Amendment 2 (SAFMC 2011e) (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.

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 amendment and associated regulations. Therefore, preparation of a Federalism assessment under E.O. 13132 is not necessary.

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 FMP or that significantly amend an existing plan (**Appendix H**). 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 RFA. 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 South Atlantic 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 take 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.

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

including, but not limited to, developing joint partnerships; promoting the restoration of recreational fishing areas that are limited by water quality and habitat degradation; fostering sound aquatic conservation and restoration endeavors; and evaluating the effects of federally-funded, permitted, or authorized actions on aquatic systems and evaluating the effects of federally-funded, permitted, or authorized actions on aquatic systems and recreational fisheries, and documenting those effects. 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 South Atlantic 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 NOAA Fisheries Service and the U.S. Fish and Wildlife Service to develop a joint agency policy for administering the ESA.

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

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 amendment are consistent with the directives of E.O. 13089.

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 amendment are consistent with the directives of E.O. 13158.

Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) established a moratorium, with certain exceptions, on the taking of marine mammals in U.S. waters and by U.S. citizens on the high seas. It also prohibits the importing of marine mammals and marine mammal products into the United States. Under the MMPA, the Secretary of Commerce (authority delegated to NOAA Fisheries Service) 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 NOAA Fisheries Service has under the MMPA involves monitoring populations of marine mammals to make sure that they stay at optimum levels. If a population falls below its optimum level, it is designated as "depleted." A conservation plan is then developed to guide research and management actions to restore the population to healthy levels.

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

Under the MMPA, to legally fish in a Category I and/or II fishery, a fisherman must take certain steps. For example, owners of vessels or gear engaging in a Category I or II fishery, are required to obtain a marine mammal authorization by registering with the Marine Mammal Authorization Program (50 CFR 229.4). They are also required to accommodate an observer if requested (50 CFR 229.7(c)) and they must comply with any applicable take reduction plans.

The commercial hook-and-line components of the South Atlantic snapper grouper fishery (i.e., bottom longline, bandit gear, and handline) are listed as part of a Category III fishery under the 2012 List of Fisheries (76 FR 73912; November 29, 2011) because there have been no documented interactions between these gear and marine mammals.

Migratory Bird Treaty Act and Executive Order 13186

The Migratory Bird Treaty Act (MBTA) implemented several bilateral treaties for bird conservation between the United States and Great Britain, the United States and

Mexico, the United States and Japan, and the United States and the former Union of Soviet Socialists Republics. Under the MBTA, it is unlawful to pursue, hunt, take, capture, kill, possess, trade, or transport any migratory bird, or any part, nest, or egg of a migratory bird, included in treaties between the, except as permitted by regulations issued by the Department of the Interior (16 U.S.C. 703-712). Violations of the MBTA carry criminal penalties. Any equipment and means of transportation used in activities in violation of the MBTA may be seized by the United States government and, upon conviction, must be forfeited to it.

Executive Order 13186 directs each federal agency taking actions that have, or are likely to have, a measurable negative effect on migratory bird populations to develop and implement a memorandum of understanding (MOU) with the U.S. Fish and Wildlife Service (USFWS) to conserve those bird populations. In the instance of unintentional take of migratory birds, NOAA Fisheries Service would develop and use principles, standards, and practices that will lessen the amount of unintentional take in cooperation with the USFWS. Additionally, the MOU would ensure that NEPA analyses evaluate the effects of actions and agency plans on migratory birds, with emphasis on species of concern.

An MOU was signed on August 15, 2012, which will address the incidental take of migratory birds in commercial fisheries under the jurisdiction of NOAA Fisheries Service. NOAA Fisheries Service must monitor, report, and take steps to reduce the incidental take of seabirds that occurs in fishing operations. The United States has already developed the U.S. National Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries. Under that plan many potential MOU components are already being implemented.

The alternatives considered in this amendment are consistent with the directives of E.O. 13186.

National Environmental Policy Act

Regulatory Amendment 15 has been written and organized in a manner that meets National Environmental Policy Act (NEPA) requirements, and thus is a consolidated NEPA document, including a draft Environmental Assessment 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 1.4.**

Alternatives

The alternatives for this action are described in **Chapter 2.**

Affected Environment
The affected environment is described in **Chapter 3.**

Impacts of the Alternatives
The impacts of the alternatives on the environment are described in **Chapter 4.**

Paperwork Reduction Act

The purpose of the Paperwork Reduction Act (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 OMB. This authority encompasses establishment of guidelines and policies, approval of information collection requests, and reduction of paperwork burdens and duplications. PRA requires NOAA Fisheries Service to obtain approval from the OMB before requesting most types of fishery information from the public. No data collection programs are included in Regulatory Amendment 15.

Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) of 1980 (5 U.S.C. 601 et seq.) requires federal agencies to assess the impacts of regulatory actions implemented through notice and comment rulemaking procedures on small businesses, small organizations, and small governmental entities, with the goal of minimizing adverse impacts of burdensome regulations and record-keeping requirements on those entities. Under the RFA, NOAA Fisheries Service must determine whether a proposed fishery regulation would have a significant economic impact on a substantial number of small entities. If not, a certification to this effect must be prepared and submitted to the Chief Counsel for Advocacy of the Small Business Administration. Alternatively, if a regulation is determined to significantly impact a substantial number of small entities, the Act requires the agency to prepare an initial and final Regulatory Flexibility Analysis to accompany the proposed and final rule, respectively. These analyses, which describe the type and number of small businesses, affected, the nature and size of the impacts, and alternatives that minimize these impacts while accomplishing stated objectives, must be published in the *Federal Register* in full or in summary for public comment and submitted to the chief counsel for advocacy of the Small Business Administration. Changes to the RFA in June 1996 enable small entities to seek court review of an agency's compliance with the Act's provisions. The RFA is included as **Appendix I**.

Small Business Act

Enacted in 1953, the Small Business Act requires that agencies assist and protect small-business interests to the extent possible to preserve free competitive enterprise. The objectives of the act 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, NOAA Fisheries Service, in implementing regulations, must make an assessment of how those regulations will affect small businesses.

Public Law 99-659: Vessel Safety

Public Law 99-659 amended the Magnuson-Stevens Fishery Conservation and Management Act to require that a fishery management plan (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 amendment.

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. Therefore, this amendment proposes neither procedures for making management adjustments due to vessel safety problems nor procedures to monitor, evaluate, or report on the effects of management measures on vessel or crew safety under adverse weather or ocean conditions.

Appendix D. History of Management

History of Management of the South Atlantic Snapper Grouper Fishery

The snapper grouper fishery is highly regulated; some of the species included in this amendment have been regulated since 1983. The following table summarizes actions in each of the amendments to the original FMP, as well as some events not covered in amendment actions.

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
FMP (1983)	08/31/83	PR: 48 FR 26843 FR: 48 FR 39463	-12" limit – red snapper, yellowtail snapper, red grouper, Nassau grouper -8" limit – black sea bass -4" trawl mesh size -Gear limitations – poisons, explosives, fish traps, trawls -Designated modified habitats or artificial reefs as Special Management Zones (SMZs)
Regulatory Amendment #1 (1987)	03/27/87	PR: 51 FR 43937 FR: 52 FR 9864	-Prohibited fishing in SMZs except with hand-held hook-and-line and spearfishing gear. -Prohibited harvest of goliath grouper in SMZs.
Amendment #1 (1988a)	01/12/89	PR: 53 FR 42985 FR: 54 FR 1720	-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.
Regulatory Amendment #2 (1988b)	03/30/89	PR: 53 FR 32412 FR: 54 FR 8342	-Established 2 artificial reefs off Ft. Pierce, FL as SMZs.
Notice of Control Date	09/24/90	55 FR 39039	-Anyone entering federal wreckfish fishery in the EEZ off S. Atlantic states after 09/24/90 was not assured of future access if limited entry program developed.
Regulatory Amendment #3 (1989)	11/02/90	PR: 55 FR 28066 FR: 55 FR 40394	-Established artificial reef at Key Biscayne, FL as SMZ. Fish trapping, bottom longlining, spear fishing, and harvesting of Goliath grouper prohibited in SMZ.
Amendment #2 (1990)	10/30/90	PR: 55 FR 31406 FR: 55 FR 46213	-Prohibited harvest/possession of goliath grouper in or from the EEZ -Defined overfishing for goliath grouper and other species

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
Emergency Rule	8/3/90	55 FR 32257	-Added wreckfish to the FMU -Fishing year beginning 4/16/90 -Commercial quota of 2 million pounds -Commercial trip limit of 10,000 pounds per trip
Fishery Closure Notice	8/8/90	55 FR 32635	- Fishery closed because the commercial quota of 2 million pounds was reached
Emergency Rule Extension	11/1/90	55 FR 40181	-extended the measures implemented via emergency rule on 8/3/90
Amendment #3 (1990b)	01/31/91	PR: 55 FR 39023 FR: 56 FR 2443	-Added wreckfish to the FMU; -Defined optimum yield and overfishing -Required permit to fish for, land or sell wreckfish; -Required catch and effort reports from selected, permitted vessels; -Established control date of 03/28/90; -Established a fishing year for wreckfish starting April 16; -Established a process to set annual quota, with initial quota of 2 million pounds; provisions for closure; -Established 10,000 pound trip limit; -Established a spawning season closure for wreckfish from January 15 to April 15; and -Provided for annual adjustments of wreckfish management measures;
Notice of Control Date	07/30/91	56 FR 36052	-Anyone entering federal snapper grouper fishery (other than for wreckfish) in the EEZ off S. Atlantic states after 07/30/91 was not assured of future access if limited entry program developed.

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Amendment #4 (1991)	01/01/92	PR: 56 FR 29922 FR: 56 FR 56016	-Prohibited gear: fish traps except black sea bass traps north of Cape Canaveral, FL; entanglement nets; longline gear inside 50 fathoms; bottom longlines to harvest wreckfish**; powerheads and bangsticks in designated SMZs off S. Carolina. -defined overfishing/overfished and established rebuilding timeframe: red snapper and groupers ≤ 15 years (year 1 = 1991); other snappers, greater amberjack, black sea bass, red porgy ≤ 10 years (year 1 = 1991) -Required permits (commercial & for-hire) and specified data collection regulations -Established an assessment group and annual adjustment procedure (framework) -Permit, gear, and vessel id requirements specified for black sea bass traps. -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. -8" limit – lane snapper -10" limit – vermilion snapper (recreational only) -12" limit – red porgy, vermilion snapper (commercial only), gray, yellowtail, mutton, schoolmaster, queen, blackfin, cubera, dog, mahogany, and silk snappers -20" limit – red snapper, gag, and red, black, scamp, yellowfin, and yellowmouth groupers. -28" FL limit – greater amberjack (recreational only) -36" FL or 28" core length – greater amberjack (commercial only) -bag limits – 10 vermilion snapper, 3 greater amberjack -aggregate snapper bag limit – 10/person/day, excluding vermilion snapper and allowing no more than 2 red snappers -aggregate grouper bag limit – 5/person/day, excluding Nassau and goliath grouper, for which no retention (recreational & commercial) is allowed -spawning season closure – commercial harvest greater amberjack > 3 fish bag prohibited in April south of Cape Canaveral, FL -spawning season closure – commercial harvest mutton snapper >snapper aggregate prohibited during May and June -charter/headboats and excursion boat possession limits extended
Amendment #5 (1992a)	04/06/92	PR: 56 FR 57302 FR: 57 FR 7886	-Wreckfish: established limited entry system with ITQs; required dealer to have permit; rescinded 10,000 lb. trip limit; required off-loading between 8 am and 5 pm; reduced occasions when 24-hour advance notice of offloading required for off-loading; established procedure for initial distribution of percentage shares of TAC

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
Emergency Rule	8/31/92	57 FR 39365	-Black Sea Bass (bsb): modified definition of bsb pot; allowed multi-gear trips for bsb; allowed retention of incidentally-caught fish on bsb trips
Emergency Rule Extension	11/30/92	57 FR 56522	-Black Sea Bass: modified definition of bsb pot; allowed multi-gear trips for bsb; allowed retention of incidentally-caught fish on bsb trips
Regulatory Amendment #4 (1992b)	07/06/93	FR: 58 FR 36155	-Black Sea Bass: modified definition of bsb pot; allowed multi-gear trips for bsb; allowed retention of incidentally-caught fish on bsb trips
Regulatory Amendment #5 (1992c)	07/31/93	PR: 58 FR 13732 FR: 58 FR 35895	-Established 8 SMZs off S. Carolina, where only hand-held, hook-and-line gear and spearfishing (excluding powerheads) was allowed.
Amendment #6 (1993)	07/27/94	PR: 59 FR 9721 FR: 59 FR 27242	-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 -Creation of the *Oculina* Experimental Closed Area -Data collection needs specified for evaluation of possible future IFQ system
Amendment #7 (1994a)	01/23/95	PR: 59 FR 47833 FR: 59 FR 66270	-12" FL – hogfish -16" TL – mutton snapper -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 management unit for scup to apply south of Cape Hatteras, NC -Modified framework procedure
Regulatory Amendment #6 (1994b)	05/22/95	PR: 60 FR 8620 FR: 60 FR 19683	-Established actions which applied only to EEZ off Atlantic coast of FL: Bag limits – 5 hogfish/person/day (recreational only), 2 cubera snapper/person/day > 30" TL; 12" TL – gray triggerfish
Notice of Control Date	04/23/97	62 FR 22995	-Anyone entering federal bsb pot fishery off S. Atlantic states after 04/23/97 was not assured of future access if limited entry program developed.

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Amendment #8 (1997a)	12/14/98	PR: 63 FR 1813 FR: 63 FR 38298	-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 -Expanded Council's habitat responsibility -Allowed retention of snapper grouper spp. in excess of bag limit on permitted vessel with a single bait net or cast nets on board -Allowed permitted vessels to possess filleted fish harvested in the Bahamas under certain conditions.
Regulatory Amendment #7 (1998)	01/29/99	PR: 63 FR 43656 FR: 63 FR 71793	-Established 10 SMZs at artificial reefs off South Carolina.
Interim Rule Request	1/16/98		-Council requested all Amendment 9 measures except black sea bass pot construction changes be implemented as an interim request under MSA
Action Suspended	5/14/98		-NMFS informed the Council that action on the interim rule request was suspended
Emergency Rule Request	9/24/98		-Council requested Amendment 9 be implemented via emergency rule
Request not Implemented	1/22/99		-NMFS informed the Council that the final rule for Amendment 9 would be effective 2/24/99; therefore they did not implement the emergency rule

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Amendment #9 (1998b)	2/24/99	PR: 63 FR 63276 FR: 64 FR 3624	-Red porgy: 14" length (recreational and commercial); 5 fish rec. bag limit; no harvest or possession > bag limit, and no purchase or sale, in March and April. -Black sea bass: 10" length (recreational and commercial); 20 fish rec. bag limit; required escape vents and escape panels with degradable fasteners in bsb pots -Greater amberjack: 1 fish rec. bag limit; no harvest or possession > bag limit, and no purchase or sale, during April; quota = 1,169,931 lbs; began fishing year May 1; prohibited coring. -Specified size limits for several snapper grouper species (indicated in parentheses in inches TL): including yellowtail snapper (12), mutton snapper (16), red snapper (20); red grouper, yellowfin grouper, yellowmouth grouper, and scamp (20). -Vermilion snapper: 11" length (recreational), 12" length commercial -Gag: 24" length (recreational); no commercial harvest or possession > bag limit, and no purchase or sale, during March and April. -Black grouper: 24" length (recreational and commercial); no harvest or possession > bag limit, and no purchase or sale, during March and April. -Gag and Black grouper: within 5 fish aggregate grouper bag limit, no more than 2 fish may be gag or black grouper (individually or in combination) -All SG 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 tilefish.
Amendment #9 (1998b) resubmitted	10/13/00	PR: 63 FR 63276 FR: 65 FR 55203	-Commercial trip limit for greater amberjack
Regulatory Amendment #8 (2000a)	11/15/00	PR: 65 FR 41041 FR: 65 FR 61114	-Established 12 SMZs at artificial reefs off Georgia; revised boundaries of 7 existing SMZs off Georgia to meet CG permit specs; restricted fishing in new and revised SMZs
Emergency Interim Rule	09/08/99, expired 08/28/00	64 FR 48324 and 65 FR 10040	-Prohibited harvest or possession of red porgy.
Emergency Action	9/3/99	64 FR 48326	-Reopened the Amendment 8 permit application process
Amendment #10 (1998d)	07/14/00	PR: 64 FR 37082 and 64 FR 59152 FR: 65 FR 37292	-Identified EFH and established HAPCs for species in the SG FMU.

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Amendment #11 (1998e)	12/02/99	PR: 64 FR 27952 FR: 64 FR 59126	-MSY proxy: goliath and Nassau grouper = 40% static SPR; all other species = 30% static SPR -OY: hermaphroditic groupers = 45% static SPR; goliath and Nassau grouper = 50% static SPR; all other species = 40% static SPR -Overfished/overfishing evaluations: BSB: overfished (MSST=3.72 mp, 1995 biomass=1.33 mp); undergoing overfishing (MFMT=0.72, F1991-1995=0.95) Vermilion snapper: overfished (static SPR = 21-27%). Red porgy: overfished (static SPR = 14-19%). Red snapper: overfished (static SPR = 24-32%) Gag: overfished (static SPR = 27%) Scamp: no longer overfished (static SPR = 35%) Speckled hind: overfished (static SPR = 8-13%) Warsaw grouper: overfished (static SPR = 6-14%) Snowy grouper: overfished (static SPR = 5=15%) White grunt: no longer overfished (static SPR = 29-39%) Golden tilefish: overfished (couldn't estimate static SPR) Nassau grouper: overfished (couldn't estimate static SPR) Goliath grouper: overfished (couldn't estimate static SPR) -overfishing level: goliath and Nassau grouper = F>F40% static SPR; all other species: = F>F30% static SPR Approved definitions for overfished and overfishing. MSST = [(1-M) or 0.5 whichever is greater]*B_{MSY}. MFMT = F_{MSY}
Amendment #12 (2000c)	09/22/00	PR: 65 FR 35877 FR: 65 FR 51248	-Red porgy: MSY=4.38 mp; OY=45% static SPR; MFMT=0.43; MSST=7.34 mp; rebuilding timeframe=18 years (1999=year 1); no sale of red porgy during Jan-April; 1 fish bag limit; 50 lb. bycatch comm. trip limit May-December; modified management options and list of possible framework actions.
Amendment #13A (2003b)	04/26/04	PR: 68 FR 66069 FR: 69 FR 15731	-Extended for an indefinite period the regulation prohibiting fishing for and possessing snapper grouper spp. within the *Oculina* Experimental Closed Area.
Notice of Control Date	10/14/05	70 FR 60058	-The Council is considering management measures to further limit participation or effort in the commercial fishery for snapper grouper species (excluding Wreckfish).
Amendment #13C (2006)	10/23/06	PR: 71 FR 28841 FR: 71 FR 55096	- End overfishing of snowy grouper, vermilion snapper, black sea bass, and golden tilefish. Increase allowable catch of red porgy. Year 1 = 2006. 1. Snowy Grouper Commercial: Quota (gutted weight) = 151,000 lbs gw in year 1, 118,000 lbs gw in year 2, and 84,000 lbs gw in year 3 onwards. Trip limit = 275 lbs gw in year 1, 175 lbs gw in year 2, and 100 lbs gw in year 3 onwards. Recreational: Limit possession to one snowy grouper in 5 grouper per person/day aggregate bag limit.

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			2. Golden Tilefish Commercial: Quota of 295,000 lbs gw, 4,000 lbs gw trip limit until 75% of the quota is taken when the trip limit is reduced to 300 lbs gw. Do not adjust the trip limit downwards unless 75% is captured on or before September 1. Recreational: Limit possession to 1 golden tilefish in 5 grouper per person/day aggregate bag limit. 3. Vermilion Snapper Commercial: Quota of 1,100,000 lbs gw. Recreational: 12" size limit. 4. Black Sea Bass Commercial: Commercial quota (gutted weight) of 477,000 lbs gw in year 1, 423,000 lbs gw in year 2, and 309,000 lbs gw in year 3 onwards. Require use of at least 2" mesh for the entire back panel of black sea bass pots effective 6 months after publication of the final rule. Require black sea bass pots be removed from the water when the quota is met. Change fishing year from calendar year to June 1 – May 31. Recreational: Recreational allocation of 633,000 lbs gw in year 1, 560,000 lbs gw in year 2, and 409,000 lbs gw in year 3 onwards. Increase minimum size limit from 10" to 11" in year 1 and to 12" in year 2. Reduce recreational bag limit from 20 to 15 per person per day. Change fishing year from the calendar year to June 1 through May 31. 5. Red Porgy Commercial and recreational: 1. Retain 14" TL size limit and seasonal closure (retention limited to the bag limit); 2. Specify a commercial quota of 127,000 lbs gw and prohibit sale/purchase and prohibit harvest and/or possession beyond the bag limit when quota is taken and/or during January through April; 3. Increase commercial trip limit from 50 lbs ww to 120 red porgy (210 lbs gw) during May through December; 4. Increase recreational bag limit from one to three red porgy per person per day.
Notice of Control Date	3/8/07	72 FR 60794	-The Council may consider measures to limit participation in the snapper grouper for-hire fishery
Amendment #14 (2007)	2/12/09	PR: 73 FR 32281 FR: 74 FR 1621	-Establish eight deepwater Type II marine protected areas (MPAs) to protect a portion of the population and habitat of long-lived deepwater snapper grouper species.
Amendment #15A (2008a)	3/14/08	73 FR 14942	- Establish rebuilding plans and SFA parameters for snowy grouper, black sea bass, and red porgy.
Amendment #15B (2008b)	2/15/10	PR: 74 FR 30569 FR: 74 FR 58902	-Prohibit the sale of bag-limit caught snapper grouper species. -Reduce the effects of incidental hooking on sea turtles and smalltooth sawfish. -Adjust commercial renewal periods and transferability requirements. -Implement plan to monitor and assess bycatch, -Establish reference points for golden tilefish. -Establish allocations for snowy grouper (95% com & 5%

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			rec) and red porgy (50% com & 50% rec).
Amendment #16 (SAFMC 2009a)	7/29/09	PR: 74 FR 6297 FR: 74 FR 30964	-Specify SFA parameters for gag and vermilion snapper -For gag grouper: Specify interim allocations 51%com & 49%rec; rec & com spawning closure January through April; directed com quota=348,440 pounds gutted weight; -reduce 5-fish aggregate grouper bag limit, including tilefish species, 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. -For vermilion snapper: Specify interim allocations 68%com & 32%rec; directed com quota split Jan-June=168,501 pounds gutted weight and 155,501 pounds July-Dec; reduce bag limit from 10 to 4 and a rec closed season October through May 15. In addition, the NMFS RA will set new regulations based on new stock assessment. -Require dehooking tools.
Amendment #17A (SAFMC 2010a)	12/3/10 red snapper closure; circle hooks March 3, 2011	PR: 75 FR 49447 FR: 75 FR 76874	- Required use of non-stainless steel circle hooks when fishing for snapper grouper species with hook-and-line gear north of 28 deg. N latitude in the South Atlantic EEZ -Specify an ACL and an AM for red snapper with management measures to reduce the probability that catches will exceed the stocks' ACL -Specify a rebuilding plan for red snapper -Specify status determination criteria for red snapper -Specify a monitoring program for red snapper
Emergency Rule	12/3/10	75 FR 76890	- Delay the effective date of the area closure for snapper grouper species implemented through Amendment 17A
Amendment #17B (SAFMC 2010b)	January 31, 2011	PR: 75 FR 62488 FR: 75 FR 82280	-Specify ACLs, ACTs, and AMs, where necessary, for 9 species undergoing overfishing. -Modify management measures as needed to limit harvest to the ACL or ACT. -Update the framework procedure for specification of total allowable catch. -Prohibited harvest of deepwater species seaward of 240 feet to curb bycatch of speckled hind and warsaw grouper
Notice of Control Date	12/4/08	74 FR 7849	Establishes a control date for the golden tilefish fishery of the South Atlantic
Notice of Control Date	12/4/08	74 FR 7849	- Establishes control date for black sea bass pot fishery of the South Atlantic
Amendment #19 (Comprehensive Ecosystem-based Amendment 1; SAFMC 2009c)	7/22/10	PR: 75 FR 14548 FR: 75 FR 35330	-Provide presentation of spatial information for Essential Fish Habitat (EFH) and EFH-Habitat Areas of Particular Concern (EFH-HAPC) designations under the Snapper Grouper FMP - Designation of deepwater coral HAPCs
Regulatory Amendment #10 (SAFMC 2010c)	5/31/11	PR: 76 FR 9530 FR: 76 FR 23728	-Eliminate closed area for snapper grouper species approved in Amendment 17A

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Regulatory Amendment #9 (SAFMC 2011a)	Bag limit: 6/22/11 Trip limits: 7/15/11	PR: 76 FR 23930 FR: 76 FR 34892	- Establish trip limit for vermilion snapper and gag, increase trip limit for greater amberjack, and reduce bag limit for black sea bass
Regulatory Amendment #11 (2011b)	5/10/12	PR: 76 FR 78879 FR: 77 FR 27374	- Eliminate 240 ft closure for six deepwater species.
Amendment # 25 (Comprehensive ACL Amendment) (SAFMC 2011c)	4/16/12	PR: 76 FR 74757 Amended PR: 76 FR 82264 FR: 77 FR 15916	-Establish ABC control rules, establish ABCs, ACLs, and AMs for species not undergoing overfishing -Remove some species from South Atlantic FMU and designate others as Ecosystem Component Species -Specify allocations between the commercial and, recreational sectors for species not undergoing overfishing -Limit the total mortality for federally managed species in the South Atlantic to the ACLs
Amendment #24 (SAFMC 2011d)	7/11/12	PR: 77 FR 19169 FR: 77 FR 34254	-Specify MSY, rebuilding plan (including ACLs, AMs, and OY), and allocations for red grouper
Amendment #23 (Comprehensive Ecosystem-based Amendment 2; SAFMC 2011e)	1/30/12	PR: 76 FR 69230 FR: 76 FR 82183	- Designate the Deepwater MPAs as EFH-HAPCs - Limit harvest of snapper grouper species in SC Special Management Zones to the bag limit - Modify sea turtle release gear
Amendment #20B	TBD	TBD	-Update wreckfish ITQ according to reauthorized Magnuson-Stevens Act
Amendment #18A (SAFMC 2012a)	7/1/12	PR: 77 FR 16991 FR: 77FR3 2408	- Limit participation and effort in the black sea bass fishery - Modifications to management of the black sea bass pot fishery - Improve the accuracy, timing, and quantity of fisheries statistics
Amendment #20A (SAFMC 2012b)	10/26/12	PR: 77 FR 19165 FR: 77 FR 59129	-Redistribute latent shares for the wreckfish ITQ program.
Regulatory Amendment #12 (SAFMC 2012c)	10/9/12	FR: 77 FR 61295	-Adjust the Annual Catch Limit (ACL) and Optimum Yield (OY) for golden tilefish -Consider specifying a commercial Annual Catch Target (ACT) -Revise recreational Accountability Measures (AMs) for golden tilefish.

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Amendment #18B	TBD	TBD	-Limit participation and effort in the golden tilefish fishery through establishment of a longline endorsement -Change the golden tilefish fishing year -Modify trip limits -specify allocations for gear groups (longline and hook and line)
Amendment # 26 (Comprehensive Ecosystem-Based Amendment 3)	TBD	TBD	-Modify bycatch and discard reporting for commercial and for-hire vessels
Regulatory Amendment 13	TBD	TBD	-Revise the ABCs, ACLs (including sector ACLs), and ACTs implemented by the Comprehensive ACL Amendment (SAFMC 2011c). The revisions may prevent a disjunction between the established ACLs and the landings used to determine if AMs are triggered.
Regulatory Amendment 14	TBD	TBD	-Revise the ACL (including sector ACLs), OY, and ACT for black sea bass; -Modify the fishing year and reduce of the trip limit for greater amberjack; -Provide protective measures during the spawning season for mutton snapper; -Change the measurement method for gray triggerfish; -Increase the minimum size limit for hogfish; -Modify the fishing year for both sectors for black sea bass; -Change the recreational bag limit for vermilion snapper; -Modify the aggregate grouper bag limit; and -Revise the AMs for gag, vermilion snapper, and red porgy.
Reg 15	TBD	TBD	-Modify the existing specification of optimum yield and annual catch limit for yellowtail snapper in the South Atlantic; -Modify existing regulations for yellowtail snapper in the South Atlantic; and -Modify the existing gag commercial annual catch limit and/or accountability measure for gag that requires a closure of all other shallow water groupers (black grouper, red grouper, scamp, red hind, rock hind, graysby, coney, yellowmouth grouper, and yellowfin grouper) in the South Atlantic when the gag commercial annual catch limit is met or projected to be met.
Reg 16	TBD	TBD	-Address existing derby conditions and lengthen the fishing season for the commercial longline sector of the golden tilefish portion of the snapper grouper fishery.

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Am 27	TBD	TBD	-Establish the South Atlantic Council as the responsible entity for managing Nassau grouper throughout its range including federal waters of the Gulf of Mexico; -Modify the crew member limit on dual-permitted snapper grouper vessels; -Modify the restriction on retention of bag limit quantities of some snapper grouper species by captain and crew of for-hire vessels; -Minimize regulatory delay when adjustments to snapper grouper species' ABC, ACLs, and ACTs are needed as a result of new stock assessments; -Address harvest of blue runner by commercial fishermen who do not possess a South Atlantic Snapper Grouper Permit.
Am 28	TBD	TBD	-Establish regulations to allow harvest of red snapper in the South Atlantic.
Am 30	TBD	TBD	-Consider requiring Vessel Monitoring Systems (VMS) for commercial snapper grouper vessels in the South Atlantic

Appendix E. South Atlantic Gag Dead Discard Analysis for Regulatory Amendment 15

NOAA Fisheries Service
Southeast Regional Office
St. Petersburg, FL
November 15, 2012

On October 23, 2012, NOAA Fisheries Service's Southeast Regional Office (SERO) provided South Atlantic Council staff with an analysis of post-quota closure commercial gag discards. This analysis is an update of the previous analysis and contains more up to date logbook landings data. Additionally, improvements were made to the methodology to better estimate post-quota discards.

A new logbook dataset was provided to SERO on October 26, 2012. In the previous analysis, logbook records submitted through February 15, 2012 were used. The number of trips reported from October 20 to December 31, 2011, increased from 479 in the February dataset to 523 in the October dataset.

The other major change to the methodology was the exclusion of discards associated with trips using spear gear, as gag would not be discarded on these trips after the quota closure. In 2011, there were 18,936 pounds gutted weight (n=73 trips) of gag caught with spear gear from October 21 to December 31, 2011. These landings were removed since spear fishermen can avoid targeting gag when the fishery is closed.

Similar to the previous analysis, scenarios were explored to estimate pounds of gag lost from discard mortality after the October 20 closure. Scenario 1 assumed all trips, including gag target trips, would continue to occur and all previously landed gag would be discarded with a 40% discard mortality rate. Table 1 summarizes the amount of gag pounds lost to discard mortality under Scenario 1.

Table 1. Scenario 1 South Atlantic gag landings and estimated dead discards from all reported trips during October 21 to December 31, 2011. All pounds are in gutted weight.

Year	Trips*	Pounds	Pounds of Gag lost to Discard Mortality
2011	450	108,160	43,264

*73 trips catching 18,935 pounds gutted weight of gag using spear were removed.

Scenario 2 eliminated gag target trips and applied a 40% discard mortality rate to the remaining pounds of gag caught on 'non-target' trips. Gag target trips were defined as a percentage of South Atlantic shallow-water grouper (SASWG) landings that came from gag on a trip. Percentages ranged from 25 to 90 percent of SASWG landings coming from gag on a trip. Table 2 summarizes the amount of gag pounds lost to discard mortality under Scenario 2.

Table 2. Scenario 2 South Atlantic gag landings and estimated dead discards in 2011 from October 21 to December 31 with gag target trips removed. Gag target trips were defined as trips where >90%, >75%, >50%, and >25% of the shallow water grouper landings came from gag. All pounds are in gutted weight.

Gag Target Trip Criteria	Trips Excluded*	Non-Target Trips Taken*	Pounds of Gag caught from Non-Target Trips Taken	Pounds of Gag Lost to Discard Mortality
>90%	247	203	58,647	23,459
>75%	290	160	38,785	15,514
>50%	371	79	9,746	3,899
>25%	418	32	1,900	760

*73 trips catching 18,936 pounds gutted weight of gag using spear were removed.

Scenario 3 is the final scenario considered and determined the pounds of gag lost from discard mortality if eliminated target trips still occurred but instead of targeting gag they fished for the other shallow water grouper. This required the average pounds of gag caught per trip to be calculated for non-target gag trips. The pounds of gag per trip displayed a lognormal distribution (Figure 1). Therefore the geometric average was calculated instead of the commonly used arithmetic average because the geometric average is a better measure of central tendency with log-normally distributed data. The geometric average of the pounds of gag per trip was multiplied against the number of gag target trips to provide the pounds of gag that could be landed if gag target trips switched to fishing for other SASWG. The discard mortality rate of 40% was applied to the pounds of gag caught to estimate dead discards in pounds. Additionally, during development of Amendment 16 to the Snapper-Grouper Fishery Management Plan the reef fish advisory panel and other fishermen reported that their trips would be reduced by 20% after a gag quota closure as fishermen would shift to targeting other SASWG. To get an additional estimate of dead discards for Scenario 3, target trips were decreased by 20% to estimate pounds of gag lost to discard mortality. Total dead discards in pounds were calculated by combining the pounds of gag lost to discard mortality from non-target trips (Scenario 2) with the pounds of gag lost to discard mortality from target trips switching to target other shallow water grouper (Scenario 3). Table 3 provides a summary of the calculations.

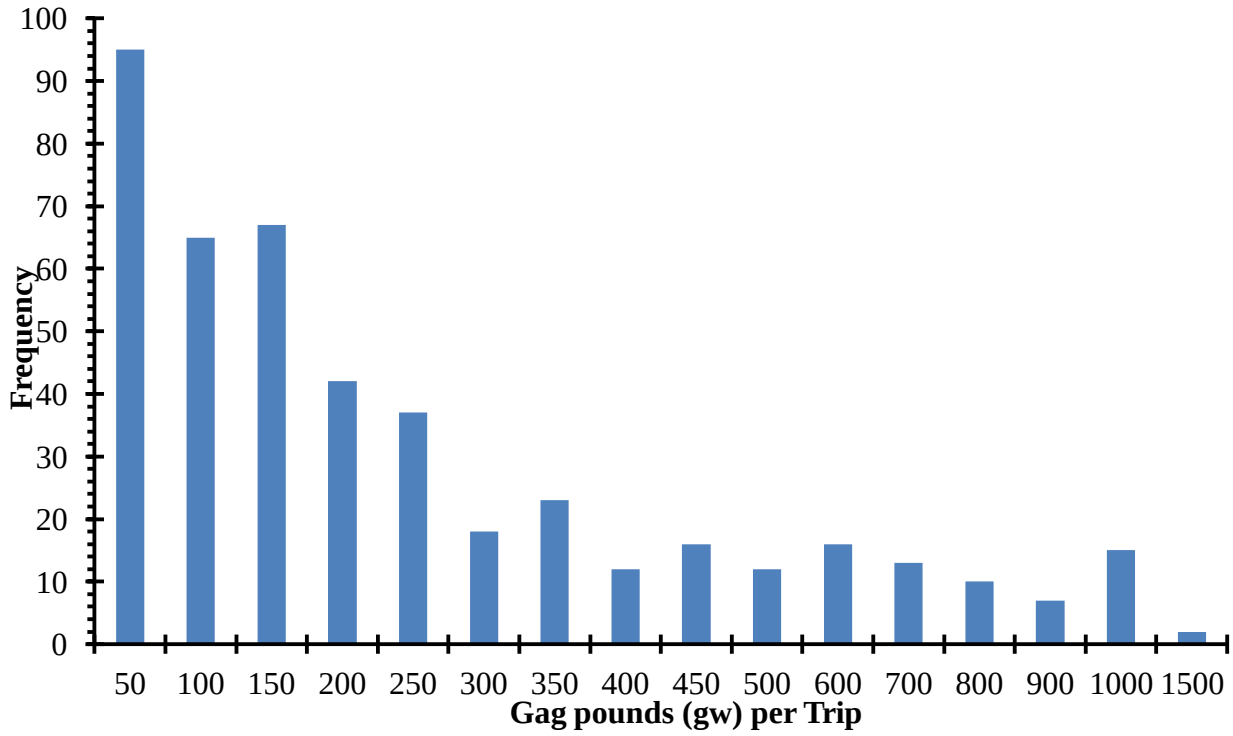

Figure 1. South Atlantic pounds of gag for each trip from October 21 to December 31, 2011 (n=450 trips). Landings by spear were removed.

Table 3. Scenario 3 South Atlantic gag landings and estimated dead discards from October 21 to December 31, 2011, with gag target trips removed. Gag target trips were defined as trips where >90%, >75%, >50%, and >25% of the shallow water grouper landings came from gag. All pounds are in gutted weight.

Gag Target Trip Criteria	Trips Switching to Targeting SASWG*	Non-Target Trips Taken*	Geometric Mean of Gag pounds per trip		Pounds of Gag Caught from Switching Gag Target trips to the other SASWG	Pounds of Gag caught from Non-Target Gag Trips	Total Pounds of Gag Lost to Discard Mortality
			Trips Switching to SASWG	Non-Target Trips Taken			
>90%	247	203	123.8	153.3	37,857	58,647	38,601
>75%	290	160	142.8	126.1	36,575	38,785	30,144
>50%	371	79	159.1	67.3	24,979	9,746	13,890
>25%	418	32	150.3	38.2	15,968	1,900	7,147
Reduction of target trips by 20% following recommendation from Amendment 16							
>90%	198	203	123.8	153.3	30,286	58,647	35,573
>75%	232	160	142.8	126.1	29,260	38,785	27,218
>50%	297	79	159.1	67.3	19,983	9,746	11,892
>25%	334	32	150.3	38.2	12,774	1,900	5,870

*73 trips catching 18,936 pounds gutted weight of gag using spear were removed.

The pounds of gag lost to discard mortality from all three scenarios were combined in Table 4. This allows a side-by-side comparison of the pounds of gag lost to discard mortality for each scenario.

Table 4. Estimates of gag dead discards from October 21 to December 31 for Scenarios 1-3. An additional calculation was done for Scenario 3 following an Amendment 16 recommendation to reduce trips taken after a gag quota closure by 20%.

Scenario 1	Gag Target Trip Criteria	Scenario 2	Scenario 3	Scenario 3 with 20% reduction
43,264	>90%	23,459	38,601	35,573
	>75%	15,514	30,144	27,218
	>50%	3,899	13,890	11,892
	>25%	760	7,147	5,870

Discussion

The commercial gag quota was met on October 20, 2012. It's unknown when the gag quota will be met in future years as landings are contingent on stock abundance, fishing effort, and other factors. Since future closure dates are unknown, this analysis focused on estimating how many gag would be discarded dead if gag closes on October 20 each year, but other SASWG and non-SASWG species remain open to harvest.

The criteria used to define gag target trip significantly impacts the pounds of gag lost to discard mortality. Table 3 summarizes the difference between geometric mean trip catches on target and non-target trips. Under the >90% and >75% target trip criterion, geometric mean catches per trip were relatively similar between 'target' and 'non-target' trips. Using a >50 criterion for defining 'target' trips results in target trips having a geometric mean catch rate 2.4X greater than non-target trips. This seems to be the most appropriate criterion for defining target trips given that catch rates would be expected to be different from trips directed at gag versus trips not directed toward gag.

As with any analysis, results are contingent on analytical assumptions. The analysis uses historical logbook landings data, which is assumed to be representative of future fishing conditions. If catch rates are higher or lower than previously reported, estimates of dead discards may be over or underestimated. Additionally, changes in management and implement of quota closures can affect species caught with one another. Quota and seasonal closure for non-SASWG species could result in 'target' gag trips being overestimated since gag would represent a greater portion of the catch when other non-SASWG species are closed. This analysis also assumes gag 'target' trips will either be eliminated or occur, but some trips that previously targeted gag may still occur, resulting in dead discard estimates.

Appendix F. Gag and other shallow-water grouper landings off North Carolina, 2008-2012.

Gag were the third most commonly landed species on red grouper trips from 2008 to 2011. Red grouper off North Carolina were most commonly landed with vermilion snapper and gray triggerfish.

Table F-1. Top species landed on red grouper "target" trips from 2008 through 2011 off North Carolina. Red grouper "target" trip = trip landing >200 pounds red grouper. Landings in pounds whole weight.

SPECIES	2008	2009	2010	2011	2012[1]	Average Landings
Red Grouper	388,119	232,617	189,994	117,600	71,332	199,932
Vermilion Snapper	229,624	106,926	38,196	40,876	19,961	87,117
Triggerfish	96,883	99,349	60,431	43,191	18,991	63,769
Gag	43,652	30,621	52,182	36,578	26,003	37,807
Red Porgy	47,391	41,281	35,508	30,267	19,822	34,854
Scamp	45,161	35,977	35,031	17,740	19,590	30,700
Grunts	38,099	19,649	13,267	8,473	8,791	17,656
Amberjacks	25,449	14,694	14,344	5,130	5,793	13,082
Almaco Jack	9,067	9,876	12,569	5,003	16,521	10,607
Dolphin	9,457	18,024	8,442	5,940	4,619	9,296
Red Hind	9,975	8,463	5,537	2,649	2,532	5,831

Source: North Carolina Marine Fisheries Division, 2012.
[1] Data for 2012 are preliminary and include only January through August.

Note that commercial harvest of gag was open during the period covered by these analyses. Therefore, fishermen may have a greater ability to avoid gag than is shown. If fishermen were not actively avoiding gag during this time, then it could be expected that they would be more successful at avoiding it if that was indeed their intent.

The analyses above indicate that trips do occur that catch many more red grouper than gag, and vice versa. Also, the percentage of gag occurring on target red grouper trips is increasing.

The percent composition of several shallow-water grouper species, including gag, on trips targeting gag off North Carolina from 2008 to 2011 is shown in **Figure F-1**. Gag trips are consistently 70-80% gag, and there is no noticeable trend over time.

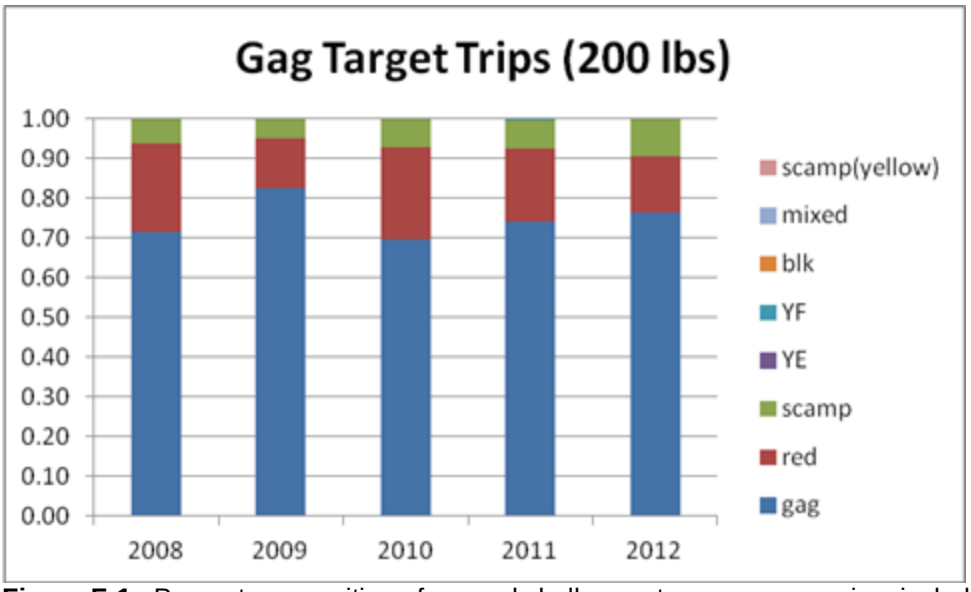

Figure F-1. Percent composition of several shallow-water grouper species, including gag, on trips targeting gag off North Carolina from 2008 to 2011.
Source: NC Division of Marine Fisheries, 2012

Similarly, the proportion of shallow water grouper species on trips targeting red grouper off North Carolina for the same time period is shown in **Figure F-2**.

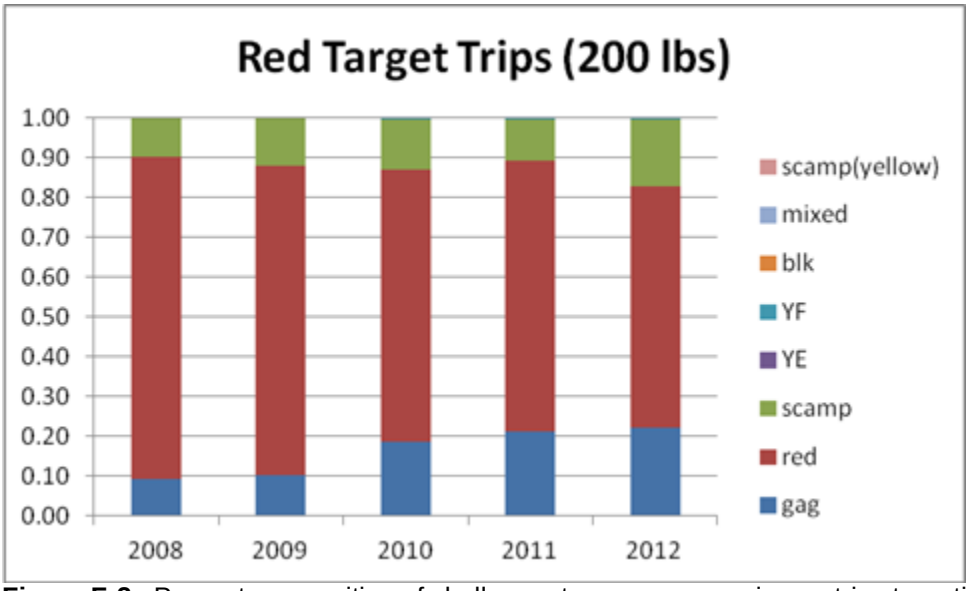

Figure F-2. Percent composition of shallow water grouper species on trips targeting red grouper off North Carolina from 2008 to 2011.
Source: NC Division of Marine Fisheries, 2012.

The red grouper landings comprise from 80% to 60% over the time period whereas landings of gag and scamp both increase over the time period from about from about 10% to about 20% of the trip total.

Considering the data shown in the figures above, fishermen are seemingly able to target gag effectively and keep their catch fairly "clean." On the other hand, the landings composition in trips targeting red grouper seems to be changing, becoming more mixed with gag and scamp. This suggests that perhaps average trips referenced as red target did not go as far offshore, to the areas where it is more red, and therefore encountered more of a mix.

Appendix G.

1 Bycatch Practicability Analysis (BPA)

1.1 Population Effects for the Bycatch Species

Background

Regulatory Amendment 15 to the Fishery Management Plan (FMP) for the Snapper Grouper Fishery of the South Atlantic Region (Regulatory Amendment 15) primarily affects gag, shallow water groupers, and yellowtail snapper. A stock assessment completed in 2006 indicated gag is experiencing overfishing and approaching an overfished condition (SEDAR 10 2006). Amendment 16 to the FMP for the Snapper Grouper Fishery of the South Atlantic Region (Amendment 16; SAFMC 2009a) established management measures to end overfishing of gag. These measures included a four-month (January-April) spawning season closure of the recreational and commercial harvest of shallow-water grouper species including gag, black grouper, red grouper, scamp, rock hind, red hind, coney, graysby, yellowfin grouper, yellowmouth grouper, and tiger grouper (removed from the FMP in 2011); a directed commercial annual catch limit (ACL) for gag; and a reduction in the recreational bag limits for shallow-water grouper species. Also included was a provision to close all shallow-water grouper species when the gag ACL was met or projected to be met. The intent of this action was to reduce incidental catch of gag. Prior to 2012, the gag ACL had never been met since it was implemented in 2009 and shallow-water groupers had never been closed as a result.

The state of Florida recently completed a stock assessment for yellowtail snapper (FWRI 2012), which indicated the species is neither overfished or undergoing overfishing. The South Atlantic Fishery Management Council's (South Atlantic Council) and the Gulf of Mexico Fishery Management Council's Scientific and Statistical Committees reviewed the assessment and determined the acceptable biological catch could be increased. Based on this information, the South Atlantic Council requested that the National Marine Fisheries Service (NMFS) implement a temporary rule for an emergency action to adjust the commercial ACL for the 2012 commercial fishing season for yellowtail snapper as soon as possible. An emergency rule was implemented to temporarily increase the commercial ACL during 2012. The Council intends to adjust the commercial and recreational ACLs and the recreational ACT for 2013 and beyond in Regulatory Amendment 15. In addition, the Council considered changes to the January 1 fishing year start date for the commercial and recreational sectors and the establishment of a commercial spawning season closure. The purpose of the actions is to benefit fishermen and fishing communities that utilize the yellowtail snapper portion of the snapper grouper fishery by minimizing the probability of closures during peak harvest times, and protect yellowtail snapper during spawning periods.

Commercial Sector

The species most associated with gag in the South Atlantic are gray triggerfish, red grouper, and red snapper (NMFS 2011). The species most associated with yellowtail snapper in the South Atlantic are black grouper, gray snapper, and lane snapper (NMFS 2011). Among these species, commercial harvest is greatest for gray triggerfish and red grouper (**Table G-1**).

Table G-1. Mean commercial estimates of landings and discards in the U.S. southern Atlantic Ocean (2007-2011).

Species	COMMERCIAL	
	Landings (pounds whole weight)	Discards (N)
Black grouper	59,427	3,031
Gag	592,108	9,185
Gray snapper	109,225	74,887
Gray triggerfish	427,642	2,091
Lane snapper	4,105	697
Red grouper	480,195	6,793
Schoolmaster	231	0
Red hind	11,883	147
Red porgy	179,256	27,671
Red snapper	148,820	19,561
Yellowtail snapper	949,257	128,323

Note: Commercial discard estimates are for vertical line gear only. Commercial gray triggerfish includes "triggerfishes, unclassified" category
Sources: Commercial landings data from SEFSC Commercial ACL Dataset (July 2012) with discard estimates from expanded SEFSC Commercial Discard Logbook (July 2012).

During 2010 and 2011, approximately 20% of snapper grouper permitted vessels from the Gulf of Mexico and South Atlantic were randomly selected to fill out supplementary logbooks. The average number of trips per year during 2010 and 2011 was 21,318; and fishermen spent an average of 1.66 days at sea per trip (**Table G-2**).

Table G-2. Snapper grouper fishery effort for South Atlantic.

Year	Trips	Days	Days per Trip
2010	13,387	22,347	1.67
2011	12,253	20,289	1.66
Mean	12,820	21,318	1.66

Source: NMFS SEFSC logbook program.

Release mortality estimates for the commercial sector compiled from the most recent stock assessments (as available) using Southeast Fishery Science Center's (SEFSC) Southeast Data, Assessment, and Review (SEDAR) process are: 48% red snapper (SEDAR 24 2010); 40% gag (SEDAR 10 2006); 1% black sea bass (SEDAR 25 2011); 38% vermilion snapper (SEDAR 17 2008); 20% red grouper and 20% black grouper (SEDAR 19 2010); 20% greater amberjack (SEDAR 15 2008); and 0% gray triggerfish (Gulf of Mexico SEDAR 9 2006). See the "Finfish Bycatch Mortality" and "Practicability of Management Measures in Directed Fisheries Relative to their Impact on Bycatch and Bycatch Mortality" sections of this BPA for more details.

Recreational Sector

For the recreational sector, estimates of the number of recreational discards are available from the Marine Recreational Fishery Statistical Survey (MRFSS) and Marine Recreational Information Program (MRIP) and the NMFS headboat survey. The MRIP system classifies recreational catch into three categories:

- Type A - Fishes that were caught, landed whole, and available for identification and enumeration by the interviewers.

- Type B - Fishes that were caught but were either not kept or not available for identification:

    - Type B1 - Fishes that were caught and filleted, released dead, given away, or disposed of in some way other than Types A or B2.

    - Type B2 - Fishes that were caught and released alive.

During 2007-2011, recreational harvest for gag and yellowtail snapper co-occurring species was greatest for gray snapper, gray triggerfish, and vermilion snapper (**Table G-3**).

Release mortality estimates for the recreational sector compiled from the most recent stock assessments using data from SEDAR stock assessments (as available) are: 25% gag (SEDAR 10 2006); 7% black sea bass (SEDAR 25 2011); 38% vermilion snapper (SEDAR 17 2008); 20% red grouper and 20% black grouper (SEDAR 19 2010); 20% greater amberjack (SEDAR 15 2008b); and 0% gray triggerfish (Gulf of Mexico SEDAR 9 2006). The recent assessment for yellowtail snapper conducted by the state of Florida estimates release mortality at 10% for the commercial and recreational sectors (FWRI 2012). Dead discards can be estimated by applying the release mortality rates to the total discards portrayed in **Table G-3**. Between 2007-2011, the number of discarded fish was highest for gray snapper for the private recreational sector (**Table G-3**). For both charter and headboats, the magnitude of discards was highest for vermilion snapper (**Table G-3**).

Table G-3. Mean headboat, MRIP charter and private, and commercial estimates of landings and discards for species in the snapper grouper fishery management unit in the U.S. southern Atlantic Ocean (2007-2011). Headboat, MRIP charter and private landings are in numbers of fish (N); commercial landings are in pounds whole weight (lbs ww).

	HEADBOAT				MRIP CHARTER				MRIP PRIVATE			
	Catch (N)	Landings (N)	Discards (N)	Discards (%)	Catch (N)	Landings (N)	Discards (N)	Discards (%)	Catch (N)	Landings (N)	Discards (N)	Discards (%)
Black grouper	1,551	464	1,086	70%	501	389	112	22%	15,115	2,962	12,153	80%
Gag	8,633	3,736	4,897	57%	8,085	3,787	4,298	53%	150,501	25,430	125,072	83%
Gray snapper	43,494	38,141	5,353	12%	7,291	6,142	1,149	16%	1,624,017	320,071	1,303,945	80%
Gray triggerfish *	68,648	58,654	9,995	15%	48,945	40,356	8,588	18%	255,833	119,986	135,847	53%
Lane snapper	22,610	19,297	3,313	15%	4,988	3,661	1,327	27%	204,274	55,511	148,762	73%
Red porgy	56,191	34,003	22,189	39%	24,792	14,996	9,796	40%	38,511	22,964	15,546	40%
Vermilion snapper	368,271	253,588	114,683	31%	79,351	46,643	32,708	41%	205,807	85,100	120,707	59%
Yellowtail snapper	128,528	95,882	32,646	25%	31,652	25,573	6,079	19%	427,752	197,021	230,731	54%

Note: Recreational MRIP data includes official MRIP 2004-2011 re-estimates and ratio-estimated MRIP catches (1986-2003)
*Commercial gray triggerfish includes "triggerfishes, unclassified" category. Red snapper are excluded from Table D-1 since they are prohibited species, and landings records are not available for all the years (2007-2011).
Sources: MRIP data from SEFSC Recreational ACL Dataset (October 2012), Headboat data from SEFSC Headboat Logbook CRNF files (expanded; July 2012),

Finfish Bycatch Mortality

SEDAR 10 (2006) estimated release mortality rates of 40% and 25% for gag taken by commercial and recreational fishermen, respectively. A tagging study conducted by McGovern et al. (2005) indicated recapture rates of gag decreased with increasing depth. The decline in recapture rate was attributed to depth-related mortality. Assuming there was no depth-related mortality at 0 m, McGovern et al. (2005) estimated depth related mortality ranged from 14% at 11-20 m (36-65 feet) to 85% at 71-80 m (233-262 feet). Similar trends in depth-related mortality were provided by a gag tagging study conducted by Burns et al. (2002). Overton et al. (2008) reported a post-release mortality for gag as 13.3%. With the exception of red grouper and black grouper, release mortality rates have not been estimated for other shallow-water grouper species, but could be similar to gag since they have a similar depth distribution. Rudershausen et al. (2007) estimated release mortality rates of 33% for undersized gag taken with J-hooks in depths of 25-50 m off North Carolina. For other gag caught at depths of 25-50 m, no immediate mortality was observed but delayed mortality was estimated to be 49%. McGovern et al. (2005) estimated a release mortality rate of 50% at 50 m, which is similar to the findings of Rudershausen et al. (2007). Rudershausen et al. (2007) concluded minimum size limits are effective for gag in the shallower portions of their depth range.

Release mortality rates were estimated as 20% for black grouper and red grouper taken by recreational fishermen in SEDAR 19 (2010) during the data workshop. Wilson and Burns (1996) reported potential mortality rates for released red grouper to be low (0-14%) as long as the fish were caught from waters shallower than 44 m. SEDAR 15 (2008) estimated a 20% release mortality rate for greater amberjack. In the Gulf of Mexico, SEDAR 9 (2006) assumed a 0% release mortality rate for gray triggerfish.

SEDAR 3 (2003) used a 30% release mortality rate for yellowtail snapper based upon MRFSS B1 fish and rough calculations from a small amount of discard data in commercial logbooks (Poffenberger 2003) for the all of the modeled fisheries (commercial, MRFSS, and headboat). The 2012 stock assessment used a release mortality rate of 10% for yellowtail snapper (FWRI 2012) in the commercial and recreational sectors. There have been no studies on the delayed mortality of yellowtail snapper after release from fishing gear, but there are programs, which collect information on the observable condition of fish immediately after release. The NMFS at-sea observers gather information on released fish from commercial long line and bandit reel reef fish trips and note release condition of fish. However, released yellowtail snapper are uncommon on those few observed trips (FWRI 2012). FWRI (2012) describes a new source of data collected by biologists on at-sea trips on headboat has accumulated recently, and it represents a more direct and unbiased source of several types of release data such as the size-at-release and the release mortality immediately observable after the release of fish off of Florida's Gulf Coast [funded during 2005-2007 by the Gulf States Marine Fisheries Commission's Fisheries Information Network (FIN) program] and off Florida's Atlantic Coast [funded during 2005-2010 by the Atlantic States Marine Fisheries Commission's Atlantic Coastal Cooperative Statistics Program (ACCSP)]. At-sea samplers were randomly assigned to ride headboats and observe (and interview) recreational anglers according to protocols established by the MRFSS. Samplers monitor a number of anglers fishing and identify and measure (if possible) fish caught by the angler that would be released. After measurement,

the sampler returns the fish to the angler and observes and records information about the release of the fish such as the reason for release, release condition of the fish, and whether the fish was able to swim down from the surface after release. Notes regarding predation (by birds, marine mammals, or other fish) on released fish were also part of data on the release mortality of yellowtail snapper are scarce.

A total of 1,364 MRFSS at-sea sampling trips were completed under the FIN and ACCSP programs from 2005-2010, and yellowtail snapper were seen by samplers in all areas except the Northwest Florida region. Yellowtail snapper were more usually observed on headboat trips in the Florida Keys, Southeast Florida, and the southern portion of Southwest Florida region (FWRI 2012). Most (97-100%) fish released alive and observed by the at-sea samplers were below the 12" TL minimum size limit. About 50% (36-83%; Type B2/Total Catch) of the yellowtail snapper caught were released alive on trips in the Florida Keys when an at-sea sampler was present, and 99% of the released fish observed were below the size limit based upon at-sea measurements by the samplers. Released yellowtail snapper from Southwest Florida and Southeast Florida were about 23% (19-26%) and 15% (11-27%) of the total catch, respectively, and 97% from both regions were observed to be undersized. Yellowtail snapper released by headboat anglers in the Florida Keys/Southwest Florida regions had an immediate release mortality rate of about 4.5%, and those fish released by headboat anglers in Southeast Florida/Northeast Florida regions had an immediate release mortality rate of 10.5% possibly as a result of deeper depths of capture in Southeast Florida compared with the areas normally fished in the Keys and Southwest Florida. 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 24 (2010) estimated acute release mortality rates of red snapper to be 48% for the commercial sector, 41% for recreational for-hire sector (charterboats and headboats), and 39% for the private recreational sector, in the South Atlantic. This stock assessment revised the release mortality estimate of 90% for the commercial sector as reported in SEDAR 15 (2008). There was no significant difference between the two stock assessments regarding the release mortality of red snapper in the recreational sector, which was 40%, as per the findings in SEDAR 15 (2008). Diamond and Campbell (2009) reported a delayed mortality rate of 64% off Texas. A study by Burns et al. (2004) conducted on headboats off Florida in the Atlantic and Gulf of Mexico found a release mortality of 64% for red snapper. The majority of acute mortalities in this study (capture depth of 9-42 m) were attributed to hooking (49%), whereas barotrauma accounted for 13.5%. An earlier study by Burns et al. (2002), also conducted in the Atlantic and Gulf of Mexico, had similar results, as J-hook mortality accounted for 56% of the acute mortalities of red snapper on headboats. Using tagging data and cage studies, Burns et al. (2002) determined the depth at which 50% of the released red snapper would die is 43.7 m (143 feet). SEDAR 15 (2008) indicated red snapper were most often caught at depths of 141-190 feet by the recreational sector and 141-234 feet by the commercial sector. Rummer and Bennett (2005) reported over 70 different overexpansion injuries related to barotrauma in red snapper, and Wilde (2009) observed reduced survival of this species when vented.

SEDAR 17 (2008) recommended a release mortality rate for vermilion snapper of 38% for both the commercial and recreational sectors. This was based on a mortality study conducted by

Ruderhshausen et al. (2007) who estimated release mortality rates of 15% for undersized vermilion snapper. Immediate mortality of vermilion snapper was estimated to be 10% at depths of 25-50 m and delayed mortality was estimated to be 45% at the same depths. Rudershausen et al. (2007) indicated minimum size limits are moderately effective in shallower water for vermilion snapper. Previously, SEDAR 2 (2003) estimated a release mortality rate of 40% and 25% for vermilion snapper taken by commercial and recreational fishermen, respectively. Release mortality rates for vermilion snapper from SEDAR 2 (2003) were based on cage studies conducted by Collins (1996) and Collins et al. (1999). Burns et al. (2002) suggested that release mortality rates of vermilion snapper could be higher than those estimated from cage studies because cages protect the fish from predators. A higher release mortality rate is supported by low recapture rates of vermilion snapper in tagging studies. Burns et al. (2002) estimated a 0.7% recapture rate for 825 tagged vermilion snapper; whereas, recapture rates for red grouper, gag, and red snapper ranged from 3.8% to 6.0% (Burns et al. 2002). McGovern and Meister (1999) estimated a 1.6% recapture rate for 3,827 tagged vermilion snapper. Alternatively, recapture rates could be low if population size was very high or tagged fish were unavailable to fishing gear. Harris and Stephen (2005) indicated approximately 50% of released vermilion snapper caught by one commercial fisherman were unable to return to the bottom. Lower recapture rates were estimated for black sea bass (10.2%), gray triggerfish (4.9%), gag (11%), and greater amberjack (15.1%) (McGovern and Meister 1999; McGovern et al. 2005). Burns et al. (2002) suggested released vermilion snapper did not survive as well as other species due to predation. Vermilion snapper that do not have air removed from swimbladders, are subjected to predation at the surface of the water. Individuals with a ruptured swim bladder or those that have air removed from the swim bladder are subject to bottom predators, since fish would not be able to join schools of other vermilion snapper hovering above the bottom (Burns et al. 2002). However, Wilde (2009) reports that venting appears to be increasingly harmful for fish captured from deep water.

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. McGovern and Meister (1999) report a recapture rate of 10.2% for 10,462 that were tagged during 1993-1998 suggesting that survival of released black sea bass is high. Rudershausen et al. (2007) reported a sub-legal discard rate of 12% for black sea bass. Collins et al. (1999) reported venting of the swim bladder yielded reductions in release mortality of black sea bass, and the benefits of venting increased with capture depth. The same study was analyzed by Wilde (2009) to suggest that venting increased the survival of black sea bass, although this was an exception to the general findings of Wilde's (2009) study.

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

Red porgy, red snapper, vermilion snapper, gray triggerfish, and almaco jack

The snapper grouper fishery represents many species occupying the same location at the same time such as vermilion snapper, scamp, and gag. Fishermen could harvest one of these species when targeting gag and yellowtail snapper, and return them to the water as "regulatory discards" (e.g., if the fish is under the size limit) or if undesirable. A portion of the population would not survive. Cluster analyses were conducted by the Southeast Regional Office (SERO 2010) to identify South Atlantic snapper grouper species that are commonly caught together. The analysis used data from the SEFSC logbook program (accessed 6 May 2010). Based on the evaluation of 136,005 commercial records from 2005-2009, gag were most commonly landed with red porgy, red snapper, vermilion snapper, gray triggerfish, and almaco jack.

Although fishery management actions can adversely impact non-target species, the proposed actions in Regulatory Amendment 15 are not anticipated to significantly increase bycatch of gag as studies conducted since the implementation of Amendment 16 to the FMP for the Snapper Grouper Fishery of the South Atlantic Region (Amendment 16; SAFMC 2009) suggest that gag are not closely associated with shallow-water grouper species other than scamp and red grouper. A detailed discussion on the biological effects of the proposed action, including the effect on bycatch, is contained in **Section 4.3.1** and is summarized below.

Regulations implemented through the requirements of the Reauthorized Magnuson-Stevens Fishery Management and Conservation (Magnuson-Stevens) Act have placed restrictions on species that co-occur with gag and have likely been more effective in reducing incidental catch of gag than the provision to close shallow-water grouper species when the gag quota is met. Additional protection to gag has been provided in the form of ACLs and accountability measures (AMs). Amendment 17B to the FMP for the Snapper Grouper Fishery of the South Atlantic Region (Amendment 17B; SAFMC 2010b) established ACLs and AMs for nine species in the South Atlantic snapper grouper fishery undergoing overfishing in 2009, including gag. Amendment 17B also established commercial and recreational ACLs and AMs for an aggregate of gag, red grouper, and black grouper. The Comprehensive ACL Amendment (SAFMC 2011c) established ACLs for snapper grouper species not undergoing overfishing including scamp as well as an aggregate of the remaining shallow-water grouper species (rock hind, red hind, coney, graysby, yellowfin grouper, and yellowmouth grouper).

The spawning season and in-season closures of species that co-occur with gag may be responsible for the low rate of commercial discards. Examination of discard logbook data shows that the rate (# of fish per hook hour) of discarded gag was very low in 2007-2010, and decreased in 2011. As the gag quota had never been met prior to 2012, the decline in discards is not due to closing shallow-water species when the gag quota is met, and is likely a result of other management measures that have reduced fishing effort on gag and co-occurring species.

For the action that would modify the gag AM, **Alternative 1 (No Action)** established through Amendment 16 (SAFMC 2009a) to close all shallow-water grouper species when the gag quota is met, is not having the intended effect of reducing incidental catch of gag. The gag quota had never been met prior to 2012 and, as mentioned previously, most of the shallow-water grouper species are not taken on the same trip as gag. The ACLs and AMs established for snapper grouper species in Amendment 17B (SAFMC 2010a), the Comprehensive ACL Amendment (SAFMC 2011c), Amendment 24 (SAFMC 2011d), and Amendment 17A(SAFMC 2010a), along with the four-month shallow-water grouper spawning season closure and five-month recreational closure for vermilion snapper, are providing greater protection for gag than the closure of shallow-water grouper species when the gag quota is met, as specified in **Alternative 1 (No Action)**. The gag quota was projected to be met on October 20, 2012, and resulted in a closure of all the shallow-water grouper species. While any closure would be expected to have positive biological effects on gag and other snapper grouper species, measures implemented since Amendment 16 appear to be reducing incidental catch of gag. Therefore, retention of the **Alternative 1 (No Action)** provision to close all shallow-water grouper species when the gag quota is met could have unnecessary economic and social impacts as it is not likely needed to ensure that overfishing of gag does not occur.

Alternative 2 would retain existing AMs for all shallow water groupers, except for gag. Instead of prohibiting harvest of all shallow-water grouper when the gag ACL is met or projected to be met, **Alternative 2** would only prohibit harvest of gag, while harvest of the remainder of the shallow water groupers would be constrained by their respective ACLs (red grouper, black grouper and scamp) or by the Shallow-Water Grouper Complex ACL (red hind, rock hind, yellowfin grouper, yellowmouth grouper, graysby and coney). In general, the biological benefits of **Alternative 2** could be less than those of **Alternative 1 (No Action)**, but harvest of all species would continue to be dictated by the established ACLs, thus ensuring that overfishing does not occur.

In terms of gag bycatch, **Alternative 2** could result in small biological impacts. Recent studies suggest that with the exception of red grouper and scamp, gag are not as closely associated in the landings with other shallow-water grouper species. Red grouper, which co-occur with gag based on trip-level data, can be targeted effectively to avoid encounters with gag. A clear separation is evident between trips that targeted gag versus those that targeted red grouper. Moreover, fishermen have stated that the two species can be effectively targeted, particularly off North Carolina.

Preferred Alternative 3 is similar to **Alternative 2** in that the prohibition on harvest of all shallow-water groupers when the gag ACL is met or projected to be met would be removed. However, **Preferred Alternative 3** would allow for an adjustment to the current commercial gag ACL to account for discard mortality after the closure. The current commercial ACL for gag was specified originally in Amendment 16 (SAFMC 2009a). However, the ACL was lowered by 1,000 pounds gutted weight to account for dead discards of gag that might occur after the gag quota had been met. The 4-month closure and the adjusted ACL are still in place. **Preferred Alternative 3** proposes to further reduce the commercial ACL for gag to account for any discard mortality that would result from targeting other shallow water groupers including red grouper and scamp after the gag quota has been met. It is expected the biological benefits of **Preferred**

Alternative 3 for gag would be greater than **Alternative 2** but similar to **Alternative 1 (No Action)**. As ACLs and AMs are in place for red grouper, scamp, black grouper, and other shallow-water groupers, **Alternative 3** would allow for optimum yield for these species to be achieved. Under the **Alternative 1 (No Action)**, harvest of these species is constrained.

Yellowtail snapper

Measures in Regulatory Amendment 15 include alternatives to increase the ACL for yellowtail snapper based on the results of a new stock assessment, change the start of the fishing year, and establish a spawning season closure. The results of a new stock assessment indicate the ACL for yellowtail snapper can be increased, making the likelihood of an in-season closure for the commercial sector less likely. Some discards of yellowtail snapper could be expected during an in-season closure if the species is taken incidentally when targeting co-occurring species. However, commercial fishermen specifically target yellowtail snapper and fish differently for the species than for other snapper grouper species. Therefore, if an in-season closure for yellowtail snapper occurred, it is not likely to increase bycatch of the species. Similarly, a spawning season closure may reduce bycatch of yellowtail snapper by removing targeting of the species. However, bycatch could occur if other fish are targeted and yellowtail snapper are incidentally caught. As yellowtail snapper are specifically targeted by the commercial sector incidental catch of other snapper grouper species might not be significant. Some bycatch could occur during a recreational closure for yellowtail snapper; however, the overall magnitude of yellowtail snapper mortality would be expected to decrease; thereby providing a biological benefit to a species when it may be vulnerable to fishing pressure in spawning aggregations. Release mortality of yellowtail snapper is very low (10%) so good survival is expected from individuals which are incidentally caught and released.

Other measures that have reduced bycatch of species in Regulatory Amendment 15

Amendment 14 to the FMP for the Snapper Grouper Fishery of the South Atlantic Region (Amendment 14; SAFMC 2007) established eight marine protected areas (MPAs) along the east coast of the United States where harvest and possession of snapper grouper species is prohibited. In addition to providing a refuge for deepwater snapper grouper species, the intent of Amendment 14 is also to protect known spawning areas of snapper grouper species. Many of the species addressed by Regulatory Amendment 15 are known to spawn within the MPAs including gag, scamp, red grouper, and others.

Unobserved mortality to snapper grouper species due to predation or trauma associated with capture could be substantial with snapper-grouper species (Burns et al. 2002; Rummer and Bennett 2005; St. John and Syers 2005; Parker et al. 2006; Rudershausen et al. 2007; Hannah et al. 2008; Diamond and Campbell 2009). Amendment 16 (SAFMC 2009a) also included actions that required the use of dehooking devices, which could help reduce bycatch 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).

Amendment 17A (SAFMC 2010a) implemented regulations requiring the use of non-stainless circle hooks north of 28 degrees N. latitude, effective March 2, 2011. Circle hooks are generally thought to reduce discard mortality rate for red snapper (SEDAR 7 2005; Rummer 2007); however, Burns et al. (2004) did not observe decreased discard mortality rate when comparing recapture rates of red snapper caught on circle and J-hooks. Rummer (2007), and Diamond and Campbell (2009) found that a greater differential between the surface and bottom temperature caused a higher discard mortality rate for red snapper. Amendment 17B to the Snapper Grouper FMP (Amendment 17B; SAFMC 2010b) established ACLs and AMs and addressed overfishing for eight species in the snapper grouper management complex currently listed as undergoing overfishing: golden tilefish, snowy grouper, speckled hind, warsaw grouper, black sea bass, gag, red grouper, and vermilion snapper, in addition to black grouper.

The Comprehensive ACL Amendment (SAFMC 2011c) implemented ACLs and AMs for species not undergoing overfishing in four fishery management plans, in addition to other actions such as allocations and establishing annual catch targets for the recreational sector. The Comprehensive ACL Amendment 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 (Amendment 18A; SAFMC 2012a) contains measures to limit participation and effort for black sea bass, and does not directly affect gag or yellowtail snapper. Amendment 18A established an endorsement program that enables snapper grouper fishermen with a certain catch history to harvest black sea bass with pots. In addition, Amendment 18A (SAFMC 2012a) included measures to reduce bycatch in the black sea bass pot fishery, modify the rebuilding strategy, and other necessary changes to management of black sea bass as a result of a 2011 stock assessment (SEDAR 25 2011).

Amendment 24 to the Snapper Grouper FMP (Amendment 24; SAFMC 2011d) established a rebuilding plan for red grouper, which is overfished and undergoing overfishing. Amendment 24 also established ACLs and AMs for red grouper, which could help to reduce bycatch of red grouper and co-occurring species such as gag. The January-April spawning season closure established in Amendment 16 (SAFMC 2009a) was sufficient to end overfishing of red grouper.

1.2 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.

The management measures for yellowtail snapper in **Actions 1** and **2** of Regulatory Amendment 15 would not be expected to substantially change the magnitude of bycatch, particularly if an increase in the ACL is selected as the preferred alternative in **Action 1**.

Alternative 2 of **Action 3** in Regulatory Amendment 15 would retain existing AMs for all shallow-water groupers, except for gag. Instead of prohibiting harvest of all shallow-water grouper when the gag ACL is met or projected to be met, **Alternative 2** would only prohibit harvest of gag while harvest of the remainder of the shallow-water groupers would be constrained by their respective ACLs (red grouper, black grouper, and scamp) or by the Shallow-Water Grouper Complex ACL (red hind, rock hind, yellowfin grouper, yellowmouth grouper, graysby, and coney). In general, the biological benefits of **Alternative 2** could be less than those of **Alternative 1 (No Action)**, but recent studies suggest that gag are not as closely associated in the landings with the rest of the shallow water grouper species as was previously thought. A detailed discussion on the biological effects of the proposed action, including the effect on bycatch, is contained in **Section 4.3.1**. **Alternative 3** is similar to **Alternative 2** in that harvest of shallow-water groupers could occur after the gag quota is met. However, unlike **Alternative 2**, **Preferred Alternative 3** would reduce the gag by the amount of dead discards that could be expected to occur when fishermen target co-occurring shallow-water grouper species (i.e. red grouper and scamp). Therefore, for gag the biological effects of **Preferred Alternative 3** would be expected to be greater than **Alternative 2** but similar to **Alternative 1 (No Action)**.

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

In terms of gag bycatch, **Alternative 2** would result in small biological impacts, and **Preferred Alternative 3** would result in bycatch levels similar to **Alternative 1 (No Action)**. Recent studies indicate that other than red grouper and scamp, gag are not as closely associated in the landings with other shallow water grouper species. Red grouper, which co-occur with gag based on trip-level data, can be targeted effectively to avoid encounters with gag. A clear separation is evident between trips that targeted gag versus those that targeted red grouper. Moreover, fishermen have stated that the two species can be effectively targeted, particularly off North Carolina.

For the action that would affect yellowtail snapper, an increase in the ACL makes an in-season closure of the species unlikely, regardless of the start date of the fishing year. A change in the magnitude of bycatch is not expected. A spawning season closure may reduce bycatch by removing targeting of the species. Commercial fishermen target yellowtail snapper differently than other snapper grouper species, and incidental catch of the species during a closure is not expected. However, some limited bycatch could occur if other species are targeted and yellowtail snapper are incidentally caught. Since the release mortality of yellowtail snapper is low (10%), any change in the magnitude of dead discards associated with a spawning season closure would be expected to be minor.

1.4 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 2012 LOF classifies as a Category II (76 FR 73912; November 26, 2011). 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 2001. 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 2012 LOF (76 FR 73912; November 26, 2011) 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's 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.

North Atlantic right and humpback whales may overlap both spatially and temporally with the black sea bass pot fishery. Revisions to the Atlantic Large Whale Take Reduction Plan folded the Atlantic mixed species trap/pot fisheries into the plan (72 FR 57104; October 5, 2007). The new requirements 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 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 U.S. 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.

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

Actions in Regulatory Amendment 15 would be expected to affect the cost of fishing operations. It is likely that all four states (North Carolina, South Carolina, Georgia, and Florida) within the Council's jurisdiction would be affected by the regulations. Additionally, factors such as waterfront property values, availability of less expensive imports, etc. may affect economic decisions made by recreational and commercial fishermen. Amendment 18A (SAFMC 2012a) and the Comprehensive Ecosystem-Based Amendment 3 (under development) include actions to enhance current bycatch data collection programs. This might provide more insight into calculating the changes in fishing, processing, disposal, and marketing costs.

1.6 Changes in Fishing Practices and Behavior of Fishermen

Actions proposed in Regulatory Amendment 15 could result in a modification of fishing practices by commercial and recreational fishermen, thereby affecting the magnitude of discards. However, it is difficult to quantify any of the measures in terms of reducing discards until the magnitude of bycatch has been monitored over several years.

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

Research and monitoring is needed to understand the effectiveness of proposed management measure and their effect on bycatch. The states and the SEFSC made efforts to enhance data collection activities during the limited opening for red snapper in September 2012. In addition, the NMFS' MRFSS has regularly collected angler-reported data on dead discards (included with their "Type B1" fish) and live released fish ("Type B2") since 1981. The NMFS Beaufort Headboat Survey has collected reports of live and dead discards from headboat captains on their vessel catch logs beginning in 2004. The NMFS coastal logbooks have required a sample of commercial fishermen to report the quantity of fish discarded by species beginning in 2002, but estimates of release mortality come from trips with at-sea observers on board. Approximately 20% of commercial fishermen 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. There are general concerns about self-reported data and bycatch reporting because of issues such as recall bias, prestige bias, rounding (i.e., digit bias, "dozens", tens, etc.), and perhaps a perception by some fishermen that the accurate reporting of bycatch or discards may lead to future management actions and reduced levels of allowable catch.

Additional data collection activities for the recreational sector are being considered in the Comprehensive Ecosystem-Based Amendment 3 (under development) that could allow for a better monitoring of snapper grouper bycatch in the future. The use of electronic logbooks could

be enhanced to enable fishery managers to obtain information on species composition, size distribution, geographic range, disposition, and depth of fishes that are released. Some observer information has been provided by Marine Fisheries Initiative and Cooperative Research Programs, but more is needed for the snapper grouper fishery.

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

Preferred alternatives for actions concerning yellowtail snapper and shallow-water groupers, including those that could possibly affect the magnitude of discards, could result in social and/or economic impacts as discussed in **Chapter 4** of Regulatory Amendment 15.

1.9 Changes in the Distribution of Benefits and Costs

Management measures proposed for yellowtail snapper and shallow-water groupers have the potential to impact bycatch of snapper grouper species. See earlier section titled, "Practicability of Management Measures in Directed Fisheries Relative to their Impact on Bycatch and Bycatch Mortality", in this BPA for a list of amendments and a summary of actions within them that could help reduce bycatch and discard mortality in the snapper grouper fishery.

1.10 Social Effects

The social effects of all the alternatives, including those most likely to affect bycatch, are described in **Chapter 4** of Regulatory Amendment 15.

1.11 Conclusion

This section evaluates the practicability of taking additional action to minimize bycatch and bycatch mortality in the South Atlantic snapper grouper fishery using the ten factors provided at 50 CFR 600.350(d)(3)(i). In summary, some discards of yellowtail snapper could be expected during an in-season closure if yellowtail snapper taken incidentally when targeting co-occurring species. However, commercial fishermen specifically target yellowtail snapper and fish differently for the species than for other snapper grouper species. Therefore, an in-season closure for yellowtail snapper is not likely to increase bycatch. Increasing the ACL and changing the fishing year are not likely to change the magnitude of bycatch of yellowtail snapper. Similarly, a spawning season closure may reduce bycatch of yellowtail snapper by removing targeting of the species. Bycatch could occur if other fish are targeted and yellowtail snapper are incidentally caught; however, release mortality of yellowtail snapper is low (10%) and most released yellowtail snapper would be expected to survive incidental capture during a harvest prohibition.

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Alternative 2 for **Action 3** would only prohibit harvest of gag while harvest of the remainder of the shallow-water groupers would be constrained by their respective ACLs (red grouper, black grouper and scamp) or by the Shallow-Water Grouper Complex ACL (red hind, rock hind, yellowfin grouper, yellowmouth grouper, graysby and coney). In general, the biological benefits of **Alternative 2** could be less than those of **Alternative 1 (No Action)**, but harvest of all species would continue to be dictated by the established ACLs, thus ensuring that overfishing does not occur.

In terms of gag bycatch, **Alternative 2** would result in low biological impacts. Recent studies suggest that, with the exception of red grouper and scamp, gag are not commonly landed with other shallow-water grouper species. Red grouper, which co-occur with gag based on trip-level data, can targeted effectively to avoid encounters with gag. **Preferred Alternative 3** is similar to **Alternative 2** in that the prohibition on harvest of all shallow-water groupers when the gag ACL is met or projected to be met would be removed. However, **Preferred Alternative 3** would allow for an adjustment to the current commercial gag ACL to account for discard mortality after the closure. The current commercial ACL for gag was specified originally in Amendment 16. However, the ACL was lowered by 1,000 pounds gutted weight to account for post-quota bycatch mortality (PQBM). This adjustment, in addition to the January-April annual closure of shallow-water groupers, resulted in the necessary reduction in harvest to end overfishing of gag. The four-month closure and the adjusted ACL are still in place. **Alternative 3** proposes to further reduce the commercial ACL for gag to account for any discard mortality that would result from harvest of other shallow-water groupers after gag is closed. For gag, **Preferred Alternative 3** would be expected to have a greater biological effect for gag than **Alternative 2** but a similar biological effect as **Alternative 1 (No Action)**. **Preferred Alternative 3** would allow for increased harvest of red grouper, scamp, black grouper, and other shallow water groupers; however, no negative biological effects would be expected for these species because harvest would be constrained by ACLs and AMs to ensure overfishing does not occur. In contrast to **Alternative 1 (No Action)**, **Preferred Alternative 3** would allow optimum yield to be achieved for these species.

The requirement of dehooking devices, a recreational/commercial seasonal closure for gag, reduction of recreational bag limits, a four-month spawning season closure for all shallow-water groupers, and a November through March recreational closure for vermilion snapper specified in Amendment 16 (SAFMC 2009a) have likely reduced bycatch of gag and co-occurring species. Furthermore, the prohibition of possession and harvest of red snapper implemented through Amendment 17A (SAFMC 2010a) has likely contributed to decreases in bycatch of gag, yellowtail snapper, and other co-occurring species. However, the magnitude of bycatch decrease depends on if fishermen shift effort to other species, seasons, or fisheries and if effort decreases in response to more restrictive management measures as well as changes in community structure and age/size structures that could result from ending overfishing. Furthermore, overall fishing effort could decrease in the commercial and recreational sectors in response to more restrictive management measures, thereby reducing the potential for bycatch.

ACLs and AMs established by Amendment 17B (SAFMC 2010b) and the Comprehensive ACL Amendment (SAFMC 2011c) could help reduce bycatch by limiting the amount of harvest, and provide for accountability if the ACL is exceeded. Management measures in Amendment

17B limit harvest of co-occurring species (black grouper, red grouper), and could help reduce discard mortality of gag and yellowtail snapper. Amendment 24 (SAFMC 2011d) specifies ACLs and AMs for red grouper, which could reduce bycatch of red grouper co-occurring species such as gag.

Finally, at their June 2012 meeting the Council requested development of a regulatory amendment to adjust management measures for greater amberjack, vermilion snapper, black sea bass, gray triggerfish, and vermilion snapper, which could also impact levels of bycatch of snapper grouper species.

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APPENDIX H

1.0 REGULATORY IMPACT REVIEW

1.1 Introduction

The National Marine Fisheries Service requires a Regulatory Impact Review (RIR) for all regulatory actions that are of public interest. The RIR does three things: 1) provides a comprehensive review of the level and incidence of impacts associated with a proposed or final regulatory action; 2) provides a review of the problems and policy objectives prompting the regulatory proposals and an evaluation of the major alternatives that could be used to solve the problem; and 3) 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 the proposed regulations are a "significant regulatory action" under the criteria provided in Executive Order (E.O.) 12866 and provides some information that may be used in conducting an analysis of impacts on small business entities pursuant to the Regulatory Flexibility Act (RFA). This RIR analyzes the impacts that the proposed management alternatives in this rule would be expected to have on the yellowtail snapper and shallow water grouper component of the South Atlantic snapper grouper fishery.

1.2 Problems and Objectives

The problems and objectives addressed by this action are discussed in **Section 1.4** of this document and are incorporated herein by reference. In summary, the objectives of this action are to ensure yellowtail snapper ACLs are based on the best available science regarding stock status of this species in the South Atlantic; enhance socioeconomic benefits to fishermen and fishing communities that utilize the yellowtail snapper component of the snapper grouper fishery; and reduce adverse socioeconomic effects to fishermen and fishing communities that utilize the shallow water grouper component of the snapper grouper fishery.

1.3 Description of Fisheries

A description of the South Atlantic snapper grouper fishery and the yellowtail snapper and shallow water grouper components thereof is provided in **Chapter 3** of this document and is incorporated herein by reference.

1.4 Impacts of Management Measures

1.4.1 Action 1: Revise Annual Catch Limit (ACL) and Optimum Yield (OY) for Yellowtail Snapper

A detailed analysis of the economic effects expected to result from this action is provided in **Section 4.1.2** and is incorporated herein by reference. Specifically, **Preferred Alternative 2** is expected to lead to an increase in gross revenue of approximately $1.3 million for the commercial sector and a potential increase of approximately $4.68 million in consumer surplus for the recreational sector relative to **Alternative 1 (No Action)**.

Annual commercial landings of yellowtail snapper were 895,145 lbs (gw) on average from 2007-2011, generally trended upward during that time, and were 1,026,374 lbs (gw) in 2011. Thus, the 2011 landings were basically equivalent to the commercial ACL implemented in 2012 of 1,029,421 lb (gw) under **Alternative 1 (No Action)**, or rather the commercial ACL that existed prior to the current temporary rule and would exist upon its expiration. In effect, for the commercial sector, the status quo and 2011 conditions are equivalent. As such, the potential increase in gross revenue under this action is likely to occur as commercial vessels are expected to take full advantage of any increase in the commercial ACL.

In addition, with respect to the estimated changes in gross revenues in the commercial sector, it is possible these estimates could represent changes in net revenue if vessels can increase their landings of yellowtail snapper without increasing their effort (i.e., trips) and thereby costs, which is quite possible given that vessels were able to achieve about the same level of landings in 2011 as in 2009 but with approximately 16% less effort. However, if vessels do take more trips, it is likely that gross revenue from other species will also increase, at least to some extent. These increases may not be proportional to the increase in yellowtail snapper gross revenue as ACLs for these other species (e.g., gag, vermilion snapper, etc.) may restrict harvest increases. Thus, it is possible the actual gains in gross revenue and economic benefits for the commercial sector under **Alternative 2 (Preferred)** have been underestimated.

Conversely, the potential increase in consumer surplus for the recreational sector is unlikely to occur, at least in the short-term. Annual recreational landings of yellowtail snapper were 541,301 lbs (ww) on average from 2007-2011, trended downward during this time, and were only 390,998 lbs (ww) in 2011. Thus, average and 2011 recreational landings were substantially less than the recreational ACL, under **Alternative 1 (No Action)**. As such, the current recreational ACL is not constraining harvest in the private recreational or for-hire sectors at the present time and likely will not constrain it in the near future.

Further, the expected effect on NOR for for-hire vessels is uncertain. Since the for-hire and private recreational sectors do not have separate allocations, it is unknown how potential changes in the recreational ACL and recreational landings would be allocated

between the for-hire and private recreational sectors. Thus, changes in NOR for the for-hire sector cannot be estimated.

However, if landings in the recreational sector increase in the future, and those increases allow the for-hire sector to increase its harvests beyond what would have otherwise occurred without the increase in the recreational ACL, then consumer surplus in the recreational sector and NOR in the for-hire sector would be expected to increase as a result. Thus, although increases in consumer surplus and NOR are not expected in the short-term, increases may occur in the long-term.

1.4.2 Action 2: Yellowtail Snapper: Commercial and Recreational Fishing Year and Commercial Spawning Season Closure

A detailed analysis of the economic effects expected to result from this action is provided in **Section 4.2.2** and is incorporated herein by reference. No direct or indirect economic effects are expected under **Preferred Alternative 1 (No Action)** as this maintains the status quo. However, by taking no action with respect to a potential spawning closure, the full effects resulting from the increased commercial ACL under Action 1 are expected to occur.

1.4.3 Action 3: Gag and Shallow Water Groupers: Commercial Annual Catch Limit and Accountability Measures

A detailed analysis of the economic effects expected to result from this action is provided in **Section 4.3.2** and is incorporated herein by reference. **Alternative 1 (No Action)** would retain the current accountability measure (AM), which would close the entire shallow water grouper complex if the commercial ACL for gag is met or projected to be met. In 2012, such a closure occurred on October 20. According to the 2011 logbook data, 4,453 snapper grouper commercial trips occurred between October 20 and December 31. The gross revenue from these trips was $4,726,883. Of these 4,453 trips, 510 trips targeted species in the SWG complex, where the trip's target species is represented by the species accounting for the highest proportion of gross revenue on the trip. The total gross revenue from landings of all species on these trips was $1,209,990. It is assumed these trips did not occur in 2012 as a result of the closure and would not occur in the future if the AM remains as is. In addition, landings of gag from trips targeting species other than SWG accounted for an additional $29,960 in gross revenue. Thus, the total loss in gross revenue under **Alternative 1 (No Action)** is estimated to be $1,239,950.

Under **Alternative 3 (Preferred)**, it is assumed the trips targeting SWG that were canceled under **Alternative 1 (No Action)** would have occurred unless they targeted gag. That is, trips targeting gag would still be canceled under **Alternative 3 (Preferred)**. There were 336 trips that targeted gag between October 20 and December 31, 2011. The gross revenue from all species on those trips was $901,544. In addition, landings of gag

from trips targeting species other than gag and SWG would also not be retained under **Alternative 3 (Preferred)**. These landings accounted for an additional $74,563 in gross revenue. Thus, the loss in gross revenue from the cancelation of trips targeting SWG other than gag and the loss of gag landings from other trips due to a closure for gag is estimated to be $976,107 in absolute terms. Thus, the resulting loss in gross revenue is $263,843 less than under **Alternative 1 (No Action)**, which in effect represents a gain of $263,843 in gross revenue relative to **Alternative 1 (No Action)**.

However, the reduction in the commercial ACL under **Preferred Alternative 3** would partially offset that gain. Specifically, a lower commercial ACL would be expected to cause an earlier closure of gag than under **Alternative 1 (No Action)**. It is not possible to accurately predict how much earlier that closure would occur based on currently available data. Thus, a simpler approach to estimating the loss in gross revenue due to the reduced ACL is employed. Specifically, the difference between the current and proposed commercial ACL is 26,218 lbs (gw). Given an average price of $5.42/lb for gag in 2011, the loss in landings due to the reduced ACL is estimated to cause a loss in gross revenue of $142,102. The loss in gross revenue would be greater if the lower ACL causes the cancelation of trips targeting gag and the loss of all gross revenue from species harvested on those trips. Since the losses associated with the potential cancelation of those trips cannot be estimated with currently available data, the net gain in gross revenue under **Preferred Alternative 3** relative to **Alternative 1 (No Action)** is $121,741.

1.4.4 Economic Impacts

By increasing the commercial ACL for yellowtail snapper, modifying the AM for gag, and reducing the ACL for gag, the combination of Action 1 and Action 3 is expected to increase annual gross revenue by $1,417,877, assuming the commercial ACLs for yellowtail snapper and gag are fully harvested. This increase in gross revenue will in turn generate economic impacts for seafood dealers, restaurants, and other onshore businesses. The estimated economic impacts are presented in **Table H-1** below. According to the information in this table, the expected increase in annual gross revenue is expected to increase employment, income, and output by 267 jobs, $7.96 million, and $18.67 million, respectively.

Table H-1. Summary of Commercial Economic Impacts

Industry Sector	Direct	Indirect	Induced	Total
Harvesters				
Employment impacts (FTE jobs)	23	3	10	35
Income Impacts (000 of dollars)	575	158	437	1,169
Output Impacts (000 of dollars)	1,055	573	1,411	3,039
Primary dealers/processors		25,527		
Employment impacts (FTE jobs)	8	2	11	21
Income Impacts (000 of dollars)	373	128	482	983
Output Impacts (000 of dollars)	1,058	443	1,557	3,059
Secondary wholesalers/distributors	1,873	45,416		
Employment impacts (FTE jobs)	8	2	8	18
Income Impacts (000 of dollars)	519	87	356	962
Output Impacts (000 of dollars)	821	284	1,151	2,256
Grocers	1,305	62,540		
Employment impacts (FTE jobs)	7	0	3	11
Income Impacts (000 of dollars)	224	25	151	400
Output Impacts (000 of dollars)	306	77	488	871
Restaurants	1,220	32,596		
Employment impacts (FTE jobs)	140	4	38	182
Income Impacts (000 of dollars)	2,516	227	1,698	4,441
Output Impacts (000 of dollars)	3,291	676	5,476	9,443
Harvesters and seafood industry	5,101	17,980		
Employment impacts (FTE jobs)	186	11	70	267
Income Impacts (000 of dollars)	4,206	625	3,125	7,956
Output Impacts (000 of dollars)	6,530	2,054	10,084	18,668

Economic impacts are not expected to result in the short-run from the increased recreational ACL for yellowtail snapper under Action 1 as the recreational sector's recent landings have been significantly below the current ACL. Further, even if recreational landings did increase in response to the higher ACL, additional economic impacts from the recreational sector would be due to an increase in the number of trips. Currently, insufficient information exists to estimate the potential increase in trips and thus the potential economic impacts.

1.5 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 that can be expressed as costs associated with the regulations. Costs associated with this specific action would include:

Council costs of document preparation, meetings, public hearings, and information dissemination……..$35,000

NMFS administrative costs of document preparation, meetings, and review…….....$20,000

TOTAL……....$55,000

The Council and Federal costs of document preparation are based on staff time, travel, printing, and any other relevant items where funds were expended directly for this specific action.

1.6 Determination of Significant Regulatory Action

Pursuant to E.O. 12866, a regulation is considered a "significant regulatory action" if it is likely 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. Based on the information provided above, this action has been determined to not be economically significant for purposes of E.O. 12866.

APPENDIX I

1.0 REGULATORY FLEXIBILITY ACT ANALYSIS

1.1 Introduction

The purpose of the Regulatory Flexibility Act (RFA) is to establish a principle of regulatory issuance that agencies shall endeavor, consistent with the objectives of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of businesses, organizations, and governmental jurisdictions subject to regulation. To achieve this principle, agencies are required to solicit and consider flexible regulatory proposals and to explain the rationale for their actions to assure such proposals are given serious consideration. The RFA does not contain any decision criteria; instead the purpose of the RFA is to inform the agency, as well as the public, of the expected economic impacts of various alternatives contained in the FMP or amendment (including framework management measures and other regulatory actions) and to ensure the agency considers alternatives that minimize the expected impacts while meeting the goals and objectives of the FMP and applicable statutes.

With certain exceptions, the RFA requires agencies to conduct an initial regulatory flexibility analysis (IRFA) for each proposed rule. The IRFA is designed to assess the impacts various regulatory alternatives would have on small entities, including small businesses, and to determine ways to minimize those impacts. An IRFA is conducted to primarily determine whether the proposed action would have a "significant economic impact on a substantial number of small entities." In addition to analyses conducted for the RIR, the IRFA provides: 1) a description of the reasons why action by the agency is being considered; 2) a succinct statement of the objectives of, and legal basis for, the proposed rule; 3) a description and, where feasible, an estimate of the number of small entities to which the proposed rule will apply; 4) a description of the projected reporting, record-keeping, and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirements of the report or record; 5) an identification, to the extent practicable, of all relevant federal rules, which may duplicate, overlap, or conflict with the proposed rule; and (6) a description of any significant alternatives to the proposed rule which accomplish the stated objectives of applicable statutes and which minimize any significant economic impact of the proposed rule on small entities.

In addition to the information provided in this section, additional information on the expected economic impacts of the proposed action is included in **Chapter 4** and **Appendix H**.

1.2 Statement of the need for, objectives of, and legal basis for the rule

A discussion of the reasons why action by the agency is being considered is provided in **Section 1.4** of this document. In summary, the purposes of this proposed rule are to modify the existing specification of optimum yield (OY) and annual catch limit (ACL)

for yellowtail snapper in the South Atlantic and modify the existing gag commercial ACL and accountability measure for gag that requires a closure of all other shallow water groupers (SWG) in the South Atlantic when the gag commercial ACL is met or projected to be met. The objectives of this proposed rule are to ensure yellowtail snapper ACLs are based on the best available science regarding stock status of this species in the South Atlantic; enhance socioeconomic benefits to fishermen and fishing communities that utilize the yellowtail snapper component of the snapper grouper fishery; and reduce adverse socioeconomic effects to fishermen and fishing communities that utilize the shallow water grouper component of the snapper grouper fishery. The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) serves as the legal basis for the proposed rule.

1.3 Description and estimate of the number of small entities to which the proposed action would apply

This proposed rule is expected to directly affect commercial fishing vessels that possess commercial snapper grouper permits and for-hire vessels that possess for-hire snapper grouper permits for the South Atlantic. The Small Business Administration has established size criteria for all major industry sectors in the U.S. including fish harvesters. A business involved in fish harvesting is classified as a small business if it is independently owned and operated, is not dominant in its field of operation (including its affiliates), and has combined annual receipts not in excess of $4.0 million (NAICS code 114111, finfish fishing) for all its affiliated operations worldwide. For for-hire vessels, the other qualifiers apply and the receipts threshold is $7.0 million (NAICS code 713990, recreational industries).

In 2003-2007, the number of commercial snapper grouper permits averaged 944, of which 749 were transferable and 195 were non-transferable. Transferable permits have no harvest limit per trip, except for species subject to trip limits, while non-transferable permits are restricted to 225 pounds of harvest per trip. The comparable numbers for 2008-2010 were 788 total permits, of which 643 were transferable permits and 145 transferable permits. As of October 30, 2012, there were 690 vessels with commercial snapper grouper permits, of which 563 were transferable and 127 were non-transferable.

Any commercial vessel with a commercial snapper grouper permit may commercially harvest yellowtail snapper or shallow water grouper (SWG), including gag, in the South Atlantic. Average annual commercial landings of all snapper grouper species in the South Atlantic from 2003-2007 was approximately 6.43 million pounds with an ex-vessel value of approximately $14.98 million. For 2007-2011, landings averaged approximately 5.33 million pounds and were valued at $14.28 million in 2011 dollars. All landings (all trips and all species) by all vessels landing snapper grouper averaged approximately 11.24 million pounds valued at $24.74 million from 2003 through 2007. For 2007-2011, landings by these vessels averaged 12.21 million pounds and were valued at $24.35 million. During 2003-2007, an average of 890 commercial vessels per year harvested snapper grouper species and took an annual average of 14,665 trips. The corresponding figures for 2007-2011 are 865 vessels and 14,271 trips. Thus, for 2007 through 2011,

average annual gross revenue per vessel in the snapper grouper fishery was approximately $28,150. In 2011, the maximum annual gross revenue for a commercial snapper grouper vessel was $618,272.

The average annual yellowtail snapper commercial harvest in the South Atlantic over the 2007-2011 time period was approximately 895,145 pounds gutted weight (lb gw). More than 99% of commercially harvested yellowtail snapper are harvested off of and landed in Florida and are harvested using hook and line gear. The average ex-vessel price per pound for yellowtail snapper over this period was approximately $3.00. As a result, this harvest resulted in an average of approximately $2.67 million per year in gross revenue, ranging from a low of around $1.93 million in 2007 to a high of nearly $3.25 million in 2011 and thus trended upward during this time.

From 2007 through 2011, 639 vessels harvested South Atlantic yellowtail snapper in at least one of those years. However, only half or less of these vessels actually harvested yellowtail snapper in any given year. Thus, many vessels commonly enter and exit the yellowtail snapper component of the snapper grouper fishery's commercial sector from year to year. Further, many of these vessels are not active in commercial fishing every year as, on average, only 465 of these vessels (73%) showed any commercial fishing activity in the South Atlantic or Gulf of Mexico per year during this time. Thus, some of these vessels enter and exit commercial fisheries from year to year as well, suggesting they commercially fish on a part-time basis. On average, these vessels accounted for approximately $15.3 million in total gross revenue per year between 2007 and 2011. Average annual total gross revenue per vessel was approximately $32,949 during this time. Average annual gross revenue from yellowtail snapper was about $5,765, increasing from $4,093 to $7,317 between 2007 and 2011.

The average number of vessels commercially harvesting South Atlantic yellowtail snapper was 313 during this time period, but trended downward from around 335 between 2007 and 2009 to 266 vessels in 2011. On a per vessel basis, average annual gross revenue from harvests of yellowtail snapper on trips harvesting yellowtail snapper was about $8,707 during this time, ranging from a low of $5,767 in 2007 to a high of $12,213 in 2011. Total gross revenue from all species on these trips averaged $11,619 per vessel between 2007 and 2011, increasing from $8,226 in 2007 to $15,340 in 2011.

Vessels harvesting South Atlantic yellowtail snapper also take trips on which no South Atlantic yellowtail snapper is harvested. The landings and revenue associated with these trips constitute a substantial amount of the gross revenue for these vessels. Although harvests of South Atlantic yellowtail snapper account for the vast majority of revenue on trips that harvest yellowtail snapper, they represent only about 27.3% of these vessels' total annual gross revenue on average. From 2007 through 2011, these vessels became more dependent on revenue from coastal migratory pelagic species (e.g., king mackerel) and less dependent on revenue from shallow water grouper species (e.g., gag).

The average annual SWG commercial harvest in the South Atlantic over the period 2007-2011 was approximately 1.098 million pounds gutted weight (lb gw), but has

trended downward since 2007. Most SWG were landed in North Carolina (41%), South Carolina (39%), and East Florida (14%) between 2007 and 2011 and the vast majority (88%) are harvested using hook and line gear. The average ex-vessel price per pound for SWG over this period was approximately $4.37, but increased to $5.14 per pound in 2011. As a result, this harvest resulted in an average of approximately $4.8 million per year in gross revenue, ranging from a high of around $6.54 million in 2007 to a low of about $3.93 million in 2010 and 2011. Thus, the trend is generally downward, with annual gross revenue decreasing by approximately 40% during this time.

The average number of vessels harvesting South Atlantic SWG was 468 from 2007 through 2011. However, the number of vessels declined from a high of 542 in 2007 to a low of 381 in 2011, with the biggest decline occurring in 2010 primarily due to the prohibition on commercial harvest of red snapper and the abbreviated commercial season for vermilion snapper. On a per vessel basis, average annual gross revenue from harvests of SWG on trips harvesting SWG was about $10,236 during this time, ranging from a high of $12,072 in 2007 to a low of $9,034 in 2009, but increasing somewhat in 2010 and 2011 due to the decline in number of vessels and increase in the average price of SWG. Total gross revenue from all species on these trips averaged about $22,000 per vessel between 2007 and 2011, decreasing from $24,540 in 2007 to $19,539 in 2010, but increasing in 2011 to $21,816.

The average annual gag commercial harvest in the South Atlantic over the period 2007-2011 was approximately 405,254 pounds gutted weight (lb gw). Landings ranged from a high of 515,834 lb gw in 2007 to a low of 365,768 lb gw in 2011. Most gag were landed in South Carolina (36%), North Carolina (33%), and East Florida (29%) between 2007 and 2011 and the vast majority (76%) are harvested using hook and line gear. The average ex-vessel price per pound for gag over this period was approximately $4.77, although it increased to $5.42 per pound in 2011. As a result, this harvest resulted in an average of approximately $1.93 million per year in gross revenue, ranging from a high of around $2.39 million in 2007 to a low of about $1.73 million in 2010. Again, the trend is generally downward during this time.

The average number of vessels harvesting South Atlantic gag was 273 from 2007 through 2011. However, the number of vessels harvesting gag trended downwards during this time, declining from a high of 306 in 2007 to a low of 231 in 2011. On a per vessel basis, average annual gross revenue from gag on trips harvesting gag was about $7,130 during this time, ranging from a low of $5,960 in 2009 to a high of $8,580 in 2011. Although gag gross revenue per trip declined by 24% from 2007 to 2009, it subsequently increased by 44% between 2009 and 2011. Gross revenue from all species on these trips averaged $24,173 per vessel between 2007 and 2011, decreasing from $25,880 in 2007 to $21,954 in 2009, but increasing to $26,272 in 2011.

Given the information above on the SWG and gag components of the snapper grouper fishery's commercial sector, and further noting that gag is part of the SWG complex, it is clear these components of the fishery have been noticeably if not highly unstable from 2007 to 2011. In addition to the red and vermilion snapper closures in 2010, a deep water

grouper (DWG) area closure was implemented in 2011, then subsequently eliminated in 2012, the spawning season closure for gag was extended in 2010 from March-April to January-April, and a 1,000 lb trip limit was implemented in mid-2011. Economic and market factors also appear to have played a role, particularly with respect to changes in the price of SWG and gag in 2011. Thus, as of 2011, these components of the fishery bear little resemblance to what they were in 2007-2009, while 2010 appears to have been a transition year during which many of these changes occurred or were just starting to take effect and vessel owners were adjusting to those changes. As such, in terms of vessel behavior and the outcomes of that behavior (e.g., vessel participation, landings, gross revenue, etc.), information for years prior to 2011 is probably irrelevant with respect to evaluating the expected effects of additional management measures. Thus, the following description of vessels' gross revenue portfolios for the commercial South Atlantic SWG and gag components of the snapper grouper fishery only examines information from 2011.

Vessels harvesting South Atlantic SWG also take trips on which no South Atlantic SWG are harvested. The landings and gross revenue associated with these trips constitute a substantial amount of the gross revenue for these vessels. Although harvests of South Atlantic SWG accounted for about 47% of the gross revenue on trips that harvested South Atlantic SWG in 2011, they represented only 26% of these vessels' total annual gross revenue. These vessels are also relatively dependent on gross revenue from shallow water snapper (e.g., lane snapper), coastal migratory pelagics, mid-depth snapper (e.g., vermilion snapper), and jacks, which account for approximately 23%, 18%, 10%, and 7% of their total annual gross revenue, with grunts/porgies (3%) and other species (12%) accounting for the rest of their gross revenue, respectively. This information indicates that South Atlantic SWG vessels' operations are not only multi-species in nature, but multi-fishery in nature as well. These results are not intended to suggest that none of these vessels are highly dependent on gross revenue from South Atlantic SWG. However, gross revenue from South Atlantic SWG harvests represented 50% or more of total annual gross revenue for only 78 of the 381 vessels that harvested SWG in 2011. These 381 vessels accounted for approximately $16.7 million in gross revenue in 2011, of which about $3.93 million came from landings of SWG. Thus, average annual gross revenue in 2011 for vessels harvesting SWG was approximately $43,830, with SWG accounting for about $10,314 of that revenue.

Similarly, vessels harvesting South Atlantic gag also take trips on which no South Atlantic gag are harvested. The landings and gross revenue associated with these trips constitute a substantial amount of the gross revenue for these vessels. Although harvests of South Atlantic gag account for about one third of the gross revenue on trips that harvest South Atlantic gag, they represented only about 21% of these vessels' total annual gross revenue on average. These vessels are also relatively dependent on gross revenue from coastal migratory pelagics, other shallow water grouper, shallow water snapper, jacks, and mid-depth snapper which account for approximately 18%, 14%, 14%, 8%, and 6% of their total annual gross revenue, with other species accounting for the other 20%. Thus, South Atlantic gag vessels' operations are not only multi-species in nature, but multi-fishery in nature as well. These results are not intended to suggest that

none of these vessels are highly dependent on gross revenue from South Atlantic gag. However, gross revenue from South Atlantic gag harvests represented 50% or more of total annual gross revenue for only 27 of the 231 vessels that harvested gag in 2011. These 231 vessels accounted for approximately $11.91 million in gross revenue in 2011, of which about $1.98 million came from landings of SWG. Thus, average annual gross revenue in 2011 for vessels harvesting gag was approximately $51,560, with gag accounting for about $8,570 of that revenue.

From 2003 through 2008, the average of number of snapper grouper for-hire permits in the South Atlantic was 1,811. In 2009-2010, the number of South Atlantic snapper grouper for-hire permits averaged 1,953. As of July 9, 2012, the number of for-hire vessels with South Atlantic for-hire snapper grouper permits was 1,524. Florida is the homeport state for most of these vessels. For-hire permits do not distinguish charterboats from headboats and thus the specific number of charterboats and headboats with for-hire snapper-grouper permits cannot be estimated. The number of for-hire vessels that landed snapper grouper in general or yellowtail snapper specifically during this time period also cannot be estimated based on currently available data.

Any for-hire vessel with a for-hire snapper grouper permit may recreationally harvest snapper grouper in general or yellowtail snapper specifically in the South Atlantic. Recreational snapper grouper landings in the South Atlantic averaged approximately 10.8 million pounds per year during 2005-2009. Private boat anglers accounted for the largest landings, accounting for approximately 6.1 million pounds, followed by shore anglers (1.7 million pounds), charter vessels (1.6 million pounds), and headboat vessels (1.4 million pounds). In 2010-2011, recreational snapper grouper landings averaged approximately 11.8 million pounds annually, with 6.7 million pounds contributed by private vessels, 2.7 million pounds by shore anglers, 1.2 million pounds by charter vessels, and 1.2 million pounds by headboats.

As in the commercial sector, more than 99% of yellowtail snapper recreationally harvested in the South Atlantic occurred in waters off Florida. In the aggregate, recreational yellowtail snapper landings averaged 541,301 pounds (ww) between 2007 and 2011, but have generally been trending downward, decreasing by 53% in 2009 before increasing and then decreasing again in 2010 and 2011.

Recreational landings of yellowtail snapper also varied across the various fishing modes during 2007-2011. Charterboat landings followed the same pattern as total recreational landings and accounted for about 24% of total recreational landings. Headboat landings accounted for about 15% of total recreational landings and were far more stable during this time, but also decreased in 2009. The private/rental mode was by far the dominant sector with respect to landings of yellowtail snapper, accounting for approximately 60% of the total recreational landings. As such, private/rental landings basically followed the same pattern as total recreational landings from 2007 to 2011. Finally, the shore mode is relatively unimportant, accounting for only 1% of total recreational yellowtail snapper landings during this time.

From 2005 through 2009, an average of approximately 945,000 individual angler trips per year targeted snapper grouper species across all modes and states in the South Atlantic, or approximately 4% of all recreational trips. Snapper grouper target effort was highest in Florida, at approximately 694,000 trips per year, and in the private mode, approximately 626,000 trips per year. In 2010-2011, total angler target trips for snapper grouper dropped to about 826,000 per year. This still comprised about 4% of all recreational trips. Florida accounted for the highest number of target trips at about 579,000 trips and the private mode accounted for the highest number of target trips at 592,000 trips. For the most recent five years (2007-2011), total target effort for snapper grouper in the South Atlantic averaged 906,106 trips annually.

Substantially more recreational trips catch snapper grouper species than target these species. From 2003-2008, an average of approximately 3.5 million recreational trips caught snapper grouper each year. Over 80% if these trips occurred off Florida. In 2009-2011, this figure decreased to an average of about 2.8 million recreational trips, with about 76% occurring off Florida. Thus, the average catch effort for 2007 through 2011 is 3.3 million recreational trips per year.

For yellowtail snapper, the private/rental mode is by far the dominant sector in terms of catch and target trips, with charter vessels only accounting for about 11% and 3% of catch trips and target trips on average from 2007 through 2011, respectively. In addition, from 2007 through 2011, a substantial difference exists between the number of target and catch trips for yellowtail snapper, with target trips being generally less than 20% of catch trips. Thus, while 19,449 trips recorded landings of yellowtail snapper on average during this time, only 862 trips recorded this species as the target species on average. Like recreational landings, more than 99% of catch trips occur in waters off Florida while all target trips occur in waters off Florida.

Headboat effort cannot be attributed to specific species using available data. However, the stationary bottom nature of headboat fishing, as opposed to trolling, suggests that most headboat trips and, hence, angler days, are snapper grouper trips by intent. From 2005 to 2009, an average of approximately 225,000 headboat trips were taken each year in the South Atlantic. The majority of these trips, approximately 153,000 per year, were taken in Florida and Georgia. In 2010-2011, the number of headboat trips increased to 188,000 on average, with Florida and Georgia accounting for about 144,000 of those trips.

For-hire vessels receive value from the services they provide. Producer surplus is the measure of the economic value these operations receive. Producer surplus is the difference between the gross revenue a business receives for a good or service, such as a charter or headboat trip, and the cost the business incurs to provide that good or service. Estimates of the producer surplus associated with snapper grouper or yellowtail snapper for-hire trips are not available. However, proxy values in the form of net operating revenue (NOR) are available. NOR for charter vessels is estimated to be $132 (2011 dollars) per charter trip. Since NOR from the harvest of a particular species is only attributed to trips targeting that species, NOR per year from trips targeting yellowtail

snapper is estimated to have been approximately $113,800 on average for charter vessels between 2007 and 2011. Holland et al. (2012) reported that charter vessels in the South Atlantic had average gross revenues of approximately $106,000 per vessel in 2009, or approximately $109,700 in 2011 dollars. Holland et al. (2012) also report that, in 2009, no charter vessels earned more than $500,000 in gross revenues.

Net operating revenue per angler trip is lower for headboats than for charterboats. Net operating revenue estimates for a representative headboat trip are $48 in the Gulf of Mexico, including all of Florida, and $63-$68 in North Carolina. For full-day and overnight headboat trips, net operating revenue is estimated to be $74-$77 in North Carolina. These estimates are in 2009 dollars and comparable estimates are not available for Georgia and South Carolina. Based on this information, net operating revenue per headboat angler trip is estimated to be $68 (2009 dollars), or approximately $70 in 2011 dollars. Since target effort by headboat vessels cannot be estimated for specific species, NOR from trips targeting yellowtail snapper cannot be estimated for headboat vessels. Holland et al. (2012) reported that headboats in the South Atlantic had average gross revenues of approximately $188,000 per vessel in 2009, or approximately $194,570 in 2011 dollars.

Based on the figures above, all commercial fishing vessels expected to be directly affected by this proposed rule are determined for the purpose of this analysis to be small business entities. Similarly, based on these figures, all for-hire fishing vessels expected to be directly affected by this proposed rule are determined for the purpose of this analysis to be small business entities.

1.4 Description of the projected reporting, record-keeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for the preparation of the report or records

This proposed action would not establish any new reporting, record-keeping, or other compliance requirements.

1.5 Identification of all relevant federal rules, which may duplicate, overlap or conflict with the proposed rule

No duplicative, overlapping, or conflicting federal rules have been identified.

1.6 Significance of economic impacts on small entities

<u>Substantial number criterion</u>

This proposed rule, if implemented, would be expected to directly affect all federally permitted commercial fishing entities and for-hire fishing entities in the South Atlantic snapper grouper fishery. All affected entities have been determined, for the purpose of

this analysis, to be small entities. Therefore, it is determined that the proposed rule will affect a substantial number of small entities.

Significant economic impacts

The outcome of "significant economic impact" can be ascertained by examining two factors: disproportionality and profitability.

Disproportionality: Do the regulations place a substantial number of small entities at a significant competitive disadvantage to large entities?

All entities expected to be directly affected by the measures in this proposed rule are determined for the purpose of this analysis to be small business entities, so the issue of disproportionality does not arise in the present case.

Profitability: Do the regulations significantly reduce profits for a substantial number of small entities?

For the action to revise the ACL and optimum yield for yellowtail snapper**,** the commercial yellowtail snapper ACL would increase from 1,142,657 pounds whole weight (lb ww) to 1,596,510 lb ww and the recreational yellowtail snapper ACL would increase from 1,031,286 lb ww to 1,440,990 lb ww. Since commercial landings have been trending upward and the 2011 landings were basically equivalent to the 2012 commercial ACL, commercial vessels are expected to take full advantage of any increase in the commercial ACL. Thus, the increase in the commercial ACL is expected to result in an increase in gross revenue of approximately $1.3 million for the commercial sector.

Although 639 vessels had some landings of yellowtail snapper between 2007 and 2011, on average, only 465 of these vessels were active in commercial fishing in a given year. Increases in gross revenue would only be expected to accrue to vessels actively engaged in commercial fishing. Thus, the expected increase in gross revenue per vessel is expected to be approximately $2,790. Given that average annual gross revenue is $32,949 for these vessels, this change represents an increase of approximately 8.5% in annual gross revenue per vessel on average. The expected increase in gross revenue may also yield an equivalent increase in profit if vessels can increase their landings of yellowtail snapper without increasing their effort, and thereby costs, which is possible given that vessels were able to achieve about the same level of landings in 2011 as in 2009 but with approximately 16% less effort. In addition, even if vessels increase their effort and costs do increase, it is likely that gross revenue from other species will also increase, at least to some extent. However, these increases may not be proportional to the increase in yellowtail snapper gross revenue as ACLs for these other species (e.g., gag, vermilion snapper, etc.) may restrict harvest increases.

With respect to the increase in the recreational ACL, the expected effect on NOR for for-hire vessels is not as certain. Since the for-hire and private recreational sectors do not have separate allocations, it is unknown how potential changes in the recreational ACL

and recreational landings and would be allocated between the for-hire and private recreational sectors. Thus, changes in NOR for the for-hire sector cannot be estimated. Further, annual recreational landings of yellowtail snapper were 541,301 lb (ww) on average from 2007 through 2011, trended downward during this time, and were only 390,998 lb (ww) in 2011. Thus, average and 2011 recreational landings are less than the current recreational ACL and substantially less than the proposed recreational ACL. As such, the current recreational ACL is not constraining harvest in the for-hire sector at the present time and likely will not constrain it in the near future. However, if landings in the recreational sector increase in the future, and those increases allow the for-hire sector to increase its harvests beyond what would have otherwise occurred without the increase in the ACL, then NOR in the for-hire sector would be expected to increase as a result. Thus, although increases in NOR in the for-hire sector are not expected in the short-term, increases may occur in the long-term.

For the action to change the commercial AM and ACL for gag, the AM would change from prohibiting commercial harvest of all SWG when the gag commercial ACL has been or is projected to be met to only prohibiting the commercial harvest of gag when the gag commercial ACL has been or is projected to be met. In 2012, the commercial ACL for gag was projected to be met on October 19 and a prohibition on commercial harvest of SWG went into effect on October 20. The total loss in annual gross revenue as a result of this prohibition is estimated to be $1,239,950. For the proposed AM, it is assumed trips targeting SWG that were canceled under the current AM would have occurred unless they targeted gag. That is, trips targeting gag would still be canceled under the proposed AM. Based on the most currently available data, it is estimated there were 336 trips that targeted gag after the prohibition went into effect. The gross revenue from all species on those trips was $901,544. In addition, landings of gag from trips targeting species other than gag and SWG would also not be retained under the proposed AM. These landings accounted for an additional $74,563 in gross revenue. Thus, the loss in annual gross revenue from the cancelation of trips targeting SWG other than gag and the loss of gag landings from other trips due to a closure for gag is estimated to be $976,107. As a result, the annual loss in gross revenue under the proposed AM is estimated to be $263,843 less than under current AM, which in effect represents a gain in annual gross revenue of $263,843.

However, the proposed action would also reduce the gag commercial ACL from 352,940 lb gw to 326,722 lb gw. A lower commercial ACL would be expected to cause an earlier closure of gag than under current commercial ACL. It is not possible to accurately predict how much earlier that closure would occur based on currently available data. Thus, a simpler approach to estimating the loss in gross revenue due to the reduced ACL is employed. Specifically, the difference between the current and proposed commercial ACL is 26,218 lb gw. Given an average price of $5.42/lb for gag in 2011, the loss in landings due to the reduced ACL is estimated to cause a loss in annual gross revenue of $142,102. The loss in annual gross revenue would be greater if the lower ACL causes the cancelation of trips targeting gag and the loss of all gross revenue from species harvested on those trips. Since the losses associated with the potential

cancelation of those trips cannot be estimated with currently available data, the net gain in gross revenue under the proposed action is $121,741.

Because the 231 vessels that harvested gag in 2011 are a subset of the 381 vessels that harvested SWG in 2011, it is assumed this gain in annual gross revenue will accrue to the 381 vessels that harvested SWG. Thus, the increase in annual gross revenue per vessel under the proposed action to change the commercial gag AM and ACL is estimated to be approximately $320 which, given an average annual gross revenue of $43,830 per vessel, represents an increase of about 1% in annual gross revenue per vessel on average.

As a result of the information above, no reduction in profits for a substantial number of small entities would be expected.

1.7 Description of significant alternatives to the proposed action and discussion of how the alternatives attempt to minimize economic impacts on small entities

This proposed action, if implemented, would not be expected to have a significant direct adverse economic effect on the profits of a substantial number of small entities. As a result, the issue of significant alternatives is not relevant.