Appendix A. Considered But Rejected Alternatives

This section describes actions and alternatives that the South Atlantic Fishery Management Council (South Atlantic Council) considered in developing Regulatory Amendment 14 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Regulatory Amendment 14), but decided not to pursue. The description of each alternative is followed by a summary statement of why it was eliminated from Regulatory Amendment 14.

Greater Amberjack

Action 2. Reduce the trip limit for greater amberjack.

Alternative 1 (No Action). The current trip limit is 1,200 pounds gutted weight (gw).

Alternative 2. Reduce the commercial trip limit to 1,000 pounds gw.

Discussion: The South Atlantic Council considered an action in Regulatory Amendment 14 that would reduce the trip limit to extend the length of the May 1 through April 30 fishing season to help ensure commercial harvest would be open during Lent of each year (around March). Although the alternatives are appropriate for consideration under this action, the South Atlantic Council is also considering an action in Regulatory Amendment 14 that would change the start of the fishing season, which would provide a better means of accomplishing the same objective. Therefore, at their March 2013 meeting, the South Atlantic Council moved the action to reduce the greater amberjack trip limit to the considered but rejected appendix.

Mutton Snapper

Action 3. Implement additional regulations to protect mutton snapper during the spawning season.

Alternative 1. No Action. Do not implement additional regulations to protect mutton snapper during the spawning season. During May and June, commercial snapper grouper permit holders are limited to a commercial harvest of mutton snapper of 10 fish per person or 10 fish per trip, whichever is more restrictive, which is equivalent to the aggregate snapper recreational bag limit.

Alternative 2. Designate area closures coinciding with known spawning aggregation sites and close them to fishing for mutton snapper during May and June.

Sub-Alternative 2a. Designate Western Dry Rocks as a mutton snapper spawning aggregation area closure.

Sub-Alternative 2b. Designate Eyeglass Bar as a mutton snapper spawning aggregation area closure.

Alternative 3. Implement a reduction in the bag limit to 5 mutton snapper per person per day during May and June.

Alternative 4. Implement a reduction in the bag limit to 3 mutton snapper per person per day during May and June.

Alternative 5. Modify the commercial spawning season closure.

Sub-Alternative 5a. All commercial and recreational harvest is prohibited during May and June.

Sub-Alternative 5b. All commercial and recreational harvest is prohibited during April, May, and June.

Alternative 6. Reduce the bag limit of mutton snapper year-round.

Sub-alternative 6a. Reduce the bag limit of mutton snapper year-round to 3 per person per day (included in the aggregate 10-snapper bag limit).

Sub-alternative 6b. Reduce the bag limit of mutton snapper year-round to 5 per person per day (included in the aggregate 10-snapper bag limit).

Sub-alternative 6c. Reduce the bag limit of mutton snapper year-round to 7 per person per day (included in the aggregate 10-snapper bag limit).

Discussion: The South Atlantic Council considered an action in Regulatory Amendment 14 that would provide additional protection for mutton snapper. The South Atlantic Council discussed that mutton snapper predominantly occur in the Florida Keys. Although the alternatives are appropriate for consideration under this action, the South Atlantic Council felt this action would be best addressed by the South Florida Management Committee. The South Atlantic Council and the Gulf of Mexico Fishery Management Council established this joint committee to address South Florida management issues to discuss fishery management issues in South Florida, including Monroe County and the Florida Keys. Therefore, the South Atlantic Council removed this action from Regulatory Amendment 14 so that it could be addressed by the South Florida Management Committee.

Black Sea Bass

Action 6. Revise the annual catch limit (ACL), including sector ACLs, optimum yield (OY), and annual catch target (ACT) for black sea bass.

Alternative 1 (No Action).
Current ABC = 847,240 lb ww landed catch = 717,797 lb gw
Current ACL = 847,240 lb ww = 718,000 lb gw
Allocation: 43% commercial; 57% recreational
Commercial ACL = 364,620 lb ww = 309,000 lb gw
Recreational ACL = 482,620 lb ww = 409,000 lb gw
Recreational ACT = 160,098 lb ww = 153,940 lb gw

Alternative 2. Revise the ACL (including sector ACLs) for black sea bass based on the SSC's recommendation of P-rebuild of 62.5%, and results of the black sea bass assessment update.

Discussion: The South Atlantic Council considered an action in Regulatory Amendment 14 that would update ACLs for black sea bass based on the results of a recent stock assessment update. Although the alternatives are appropriate for consideration under this action, the South Atlantic Council moved this action from Regulatory Amendment 14 to Regulatory Amendment 19 in March 2013. Regulatory Amendment 19 updated the black sea bass ACLs based on the results of the update assessment.

Vermilion Snapper

Action 9. Modify the recreational bag limit for vermilion snapper.

Alternative 1 (No Action). The current recreational bag limit is 5 per person per day.

Alternative 2. Increase the recreational bag limit for vermilion snapper to 6 per person per day.

Alternative 3. Increase the recreational bag limit for vermilion snapper to 8 per person per day.

Alternative 4. Increase the recreational bag limit for vermilion snapper to 10 per person per day.

Discussion: A new stock assessment update indicates vermilion snapper is no longer undergoing overfishing, and the ACLs can be increased. The South Atlantic Council considered an action in Regulatory Amendment 14, which would increase the bag limit for vermilion snapper in conjunction with an assessment update that indicates catch levels could increase. Effective September 5, 2013, Regulatory Amendment 18 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Regulatory Amendment 18) increased the ACLs for vermilion snapper based on the stock assessment update. Regulatory Amendment 18 also eliminates a November through March recreational closure for vermilion snapper. In March 2013, the South Atlantic Council discussed the measures being proposed in Regulatory Amendment 18, and expressed concern that increasing the bag limits might result in the recreational ACLs being met too quickly if the measure to eliminate the seasonal recreational closure in Regulatory Amendment 18 was implemented. Although the alternatives are appropriate for consideration under this action, the South Atlantic Council felt it was appropriate to evaluate the effect of removing the recreational seasonal closure in Regulatory Amendment 18 before consideration of an increase in the recreational bag limit. Therefore, the South Atlantic Council moved the action to increase the vermilion snapper bag limits to the considered but rejected appendix.

Gray Triggerfish

Action 2. Change the measurement method for gray triggerfish to have consistency between state and federal waters.

Alternative 1 (No Action). Currently, the minimum size limit for gray triggerfish is specified in inches total length (TL) in federal waters off east Florida only. In Florida state waters, the minimum size for gray triggerfish is specified in inches fork length (FL). The minimum size limit is 12 inches TL in federal waters off Florida and 12 inches FL in Florida state waters.

Alternative 2. Specify a minimum size limit for gray triggerfish of 12 inches FL in federal waters off east Florida.

Alternative 3. Specify a minimum size limit for gray triggerfish of 12 inches FL in federal waters off North Carolina, South Carolina, Georgia, and east Florida.

Discussion: The South Atlantic Council considered an action in Regulatory Amendment 14 that would specify a minimum size limit for gray triggerfish in federal waters, and would establish a consistent minimum size limit with what is in place in state waters. At their June 2013 meeting, the South Atlantic Council discussed that gray triggerfish was currently being assessed through Southeast Data, Assessment, and Review (SEDAR) 32, and that assessment is scheduled for completion in 2013. Although the alternatives are appropriate for consideration under this action, the stock assessment could reveal that another minimum size limit might be more appropriate, or additional management measures might be needed. Therefore, the South Atlantic Council removed this action from consideration until the stock assessment for gray triggerfish is completed.

Hogfish

Action 3. Increase the minimum size limit for hogfish.

Alternative 1 (No Action). Currently, the minimum size limit for hogfish is 12 FL in federal waters of the South Atlantic Region, and state waters of South Carolina, North Carolina, and Florida. There is no minimum size limit for hogfish in state waters of Georgia.

Alternative 2. Increase the minimum size limit for hogfish in federal waters to 13 inches FL.

Alternative 3. Increase the minimum size limit for hogfish in federal waters to 14 inches FL.

Discussion: The South Atlantic Council considered an action in Regulatory Amendment 14 that would increase the minimum size limit for hogfish. At their June 2013 meeting, the South Atlantic Council discussed that hogfish was currently being assessed by the state of Florida through SEDAR 37. Although the alternatives are appropriate for consideration under this action, the stock assessment may reveal that another minimum

size limit might be more appropriate, or additional management measures might be needed. Therefore, the South Atlantic Council removed this action from consideration until the stock assessment for hogfish is completed.

Black Sea Bass

Alternative 3. Open the black sea bass commercial season only to the hook and line sector on January 1, with a trip limit of 50 pounds. The trip limit ends with the opening of the black sea bass pot season.

Alternative 4. Open the black sea bass commercial season only to the hook and line sector on May 1, with a trip limit of 50 pounds. The trip limit ends with the opening of the black sea bass pot season.

Alternative 5. Consider a closed season for the black sea bass pot fishery from November 15 through April 15.

Discussion: Alternatives 3 and 4 were removed from further analysis because fishermen indicated the 50-pound trip limit was too low to be profitable. Alternative 5 was removed from Regulatory Amendment 14 because the preferred alternative in Regulatory Amendment 19 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Regulatory Amendment 19) prohibited the use of black sea bass pot gear during November 1 through April.

Gag

Alternative 2. Modify the commercial AM for gag. Reduce the trip limit when 75% of the gag commercial ACL is landed.

Sub-alternative 2a. Reduce the trip limit to 50 lbs gw

Discussion: The South Atlantic Council is considering an action to reduce the 1,000 lb gw trip limit when 75% of the quota is met. In March 2013, the range of trip limit reductions extended from 50 lbs gw in Sub-alternative 2a to 500 lbs gw in Sub-alternative 2b. Sub-alternative 2a was removed because fishermen indicated the 50-pound trip limit was too low to be profitable for commercial fishermen. Furthermore, analysis provided in Regulatory Amendment 14 demonstrated that the commercial quota was not likely going to be met if the trip limit was reduced to 50 lbs gw when 75% of the quota was met. As this would represent an unnecessary negative social and economic burden, the South Atlantic Council did not consider Sub-alternative 2a to be a reasonable alternative.

Action 7. Modify the aggregate grouper bag limit.

Alternative 1 (No Action). The current aggregate grouper bag limit is 3 fish per person per day. Within this limit, only one fish can be a gag or black grouper.

Alternative 2. Modify the aggregate grouper bag limit.

Sub-alternative 2a. Increase the aggregate grouper bag limit from 3 to 4 fish. Within this limit, two fish can be gag. The bag limit for black grouper will remain at one fish.

Sub-alternative 2b. Increase the aggregate grouper bag limit from 3 to 4 fish. Within this limit, 1 fish can be a gag. The bag limit for black grouper will remain at one fish.

Alternative 3. Do not increase the aggregate grouper bag limit, but allow for retention of 2 gag. Maintain black grouper at 1 fish within that aggregate.

Alternative 4. Do not increase the aggregate grouper bag limit, but allow for retention of 2 gag. Maintain black grouper at 1 fish within that aggregate. If at the end of any season, it is determined that the recreational sector has exceeded its gag ACL, the bag limit will be reduced to 1 fish.

Discussion: Recreational landings of gag in the last several years have been below the gag recreational ACL. Thus, the South Atlantic Council was considering an action that could increase the aggregate grouper aggregate and the amount of gag that could be caught within the grouper aggregate bag limit. Although the alternatives are appropriate for consideration under this action, the South Atlantic Council indicated that it would be best to wait until the results of an update assessment for gag is completed in 2014 before taking action to modify the aggregate grouper bag limit. Therefore, in June 2013, the action was removed from consideration pending the completion of the gag stock assessment.

Appendix B. Glossary

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

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

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

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

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

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

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

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

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

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

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

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

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

Discards: Fish captured, but released at sea.

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

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

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

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

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

F: Fishing mortality.

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

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

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

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

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

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

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

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

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

F_{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 fisheries data.

Marine Recreational Information Program (MRIP): Survey operated by NMFS in cooperation with states that collects marine recreational fisheries data. It replaced the MRFSS survey.

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 advice to a fishery management council.

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

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

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

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

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

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

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

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

Appendix C. Other Applicable Laws

1.1 Administrative Procedure Act (APA)

All federal rulemaking is governed under the provisions of the APA (5 U.S.C. Subchapter II), which establishes a "notice and comment" procedure to enable public participation in the rulemaking process. Under the APA, the National Marine Fisheries Service (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. Regulatory Amendment 14 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Regulatory Amendment 14) 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 a request for public comments, which complies with the APA, and upon publication of the final rule, there will be a 30-day wait period before the regulations are effective.

1.2 Information Quality Act (IQA)

The IQA (Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Public Law 106-443)) which took effect October 1, 2002, directed the Office of Management and Budget (OMB) to issue government-wide guidelines that "provide policy and procedural guidelines to federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information disseminated by federal agencies." OMB directed each federal agency to issue its own guidelines, establish administrative mechanisms allowing affected persons to seek and obtain correction of information that does not comply with OMB guidelines, and report periodically to OMB on the number and nature of complaints. The NOAA Section 515 Information Quality Guidelines require a series of actions for each new information product subject to the IQA. Amendment 28 has used the best available information and made a broad presentation thereof. The information contained in this document was developed using best available scientific information. Therefore, this document is in compliance with the IQA.

1.3 Coastal Zone Management Act (CZMA)

Section 307(c)(1) of the federal CZMA of 1972 requires that all federal activities that directly affect the coastal zone be consistent with approved state coastal zone management programs to the maximum extent practicable. While it is the goal of the 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. The South Atlantic Council believes this document is consistent to the maximum extent practicable with the Coastal Zone Management Plans of Florida, Georgia, South Carolina, and North Carolina. This determination 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.

1.4 Endangered Species Act (ESA)

The ESA of 1973 (16 U.S.C. Section 1531 et seq.) requires that federal agencies must ensure actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or the habitat designated as critical to their survival and recovery. The ESA requires NMFS to consult with the appropriate administrative agency (itself for most marine species, and the U.S. Fish and Wildlife Service for all remaining species) when proposing an action that may affect threatened or endangered species or adversely modify critical habitat. Consultations are necessary to determine the potential impacts of the proposed action. They are concluded informally when proposed actions may affect but are "not likely to adversely affect" threatened or endangered species or designated critical habitat. Formal consultations, resulting in a biological opinion, are required when proposed actions may affect and are "likely to adversely affect" threatened or endangered species or adversely modify designated critical habitat. NMFS completed a biological opinion (NMFS 2006) in 2006 evaluating the impacts of the continued authorization of the South Atlantic snapper grouper fishery under the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP) and Amendment 13C to the Snapper Grouper FMP on ESA-listed species (see **Chapter 3**). The opinion stated the fishery was not likely to adversely affect North Atlantic right whale critical habitat, seabirds, 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. See NMFS (2006) for a full discussion of impacts to smalltooth sawfish.

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

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

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

Sea turtles are vulnerable to capture by bottom longline and vertical hook-and-line gear. The magnitude of the interactions between sea turtles and the South Atlantic snapper grouper fishery was evaluated in NMFS (2006) using data from the Supplementary Discard Data Program (SDDP). Three loggerheads and three unidentified sea turtles were caught on vertical lines; one leatherback and one loggerhead were caught on bottom longlines, all were released alive. The effort reported in the program

represented between approximately 5% and 14% of all South Atlantic snapper-grouper fishing effort. These data were extrapolated in NMFS (2006) to better estimate the number of interactions between the entire snapper-grouper fishery and ESA-listed sea turtles. The extrapolated estimate was used to project future interactions (**Table C-1**).

The SDDP does not provide data on recreational fishing interactions with ESA-listed sea turtle species. However, anecdotal information indicates that recreational fishermen occasionally take sea turtles with hook-and-line gear. The biological opinion also used the extrapolated data from the SDDP to estimate the magnitude of recreational fishing on sea turtles (**Table C-1**).

Regulations implemented through Amendment 15B to the Snapper Grouper FMP (74 FR 31225; June 30, 2009) required all commercial or charter/headboat vessels with a South Atlantic snapper grouper permit, carrying hook-and-line gear on board, to possess required literature and release gear to aid in the safe release of incidentally caught sea turtles and smalltooth sawfish. These regulations are thought to decrease the mortality associated with accidental interactions with sea turtles and smalltooth sawfish.

Subsequent to the June 7, 2006, biological opinion, elkhorn and staghorn coral (*Acropora cervicornis* and *Acropora palmata*) were listed as threatened. In a consultation memorandum dated July 9, 2007, NMFS concluded the continued authorization of the South Atlantic snapper grouper fishery is not likely to adversely affect these *Acropora* species. On November 26, 2008, an *Acropora* critical habitat was designated. In a consultation memorandum dated December 2, 2008, NMFS concluded the continued authorization of the snapper grouper fishery is not likely to adversely affect *Acropora* critical habitat.

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

1.5 Executive Order 12612: Federalism

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

1.6 Executive Order 12866: Regulatory Planning and Review

E.O. 12866, signed in 1993, requires federal agencies to assess the costs and benefits of their proposed regulations, including distributional impacts, and to select alternatives that maximize net benefits to society. To comply with E.O. 12866, NMFS prepares a Regulatory Impact Review (RIR) for all fishery regulatory actions that implement a new fishery management plan (FMP) or that significantly amend an existing plan. RIRs provide a comprehensive analysis of the costs and benefits to society associated with proposed regulatory actions, the problems and policy objectives prompting the regulatory proposals, and the major alternatives that could be used to solve the problems. The reviews also serve as the basis for the agency's determinations as to whether proposed regulations are a "significant regulatory action" under the criteria provided in E.O. 12866 and whether proposed regulations will have a significant economic impact on a substantial number of small entities in compliance with the Regulatory Flexibility Act. A regulation is significant if it is likely to result in an annual effect on the economy of at least $100,000,000 or if it has other major economic effects.

In accordance with E.O. 12866, the following is set forth by the 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 taken or planned by another agency; (3) this rule is not likely to materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights or obligations of recipients thereof; (4) this rule is not likely to raise novel or policy issues arising out of legal mandates, or the principles set forth in the Executive Order; and (5) this rule is not controversial.

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

1.7 Executive Order 12898: Environmental Justice

E.O. 12898 requires that "to the greatest extent practicable and permitted by law…each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations in the United States and its territories and possessions…"

The alternatives being considered in this document are not expected to result in any disproportionate adverse human health or environmental effects to minority populations or low-income populations of Florida, North Carolina, South Carolina, or Georgia, rather the impacts would be spread across all participants in the snapper grouper fishery regardless of race or income. A detailed description of the communities impacted by the actions contained in this document and potential socioeconomic impacts of those actions are contained in **Chapters 3** and **4** of this document.

1.8 Executive Order 12962: Recreational Fisheries

E.O. 12962 requires federal agencies, in cooperation with states and tribes, to improve the quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities through a variety of methods. Additionally, the Order establishes a seven-member National Recreational Fisheries Coordination Council responsible for, among other things, ensuring that social and economic values of healthy aquatic systems that support recreational fisheries are considered by federal agencies in the course of their actions, sharing the latest resource information and management technologies, and reducing duplicative and cost-inefficient programs among federal agencies involved in conserving or managing recreational fisheries. The National Recreational Fisheries Coordination Council also is responsible for developing, in cooperation with federal agencies, states and tribes, a Recreational Fishery Resource Conservation Plan - to include a five-year agenda. Finally, the Order requires NMFS and the U.S. Fish and Wildlife Service to develop a joint agency policy for administering the ESA.

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

1.9 Executive Order 13089: Coral Reef Protection

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

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

1.10 Executive Order 13158: Marine Protected Areas (MPAs)

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. The E.O. defined MPAs as "any area of the marine environment that has been reserved by federal, state, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein". It directs federal agencies to work closely with state, local and non- governmental partners to create a comprehensive network of MPAs "representing diverse U.S. marine ecosystems, and the Nation's natural and cultural resources".

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

1.11 Marine Mammal Protection Act (MMPA)

The MMPA established a moratorium, with certain exceptions, on the taking of marine mammals in U.S. waters and by U.S. citizens on the high seas. It also prohibits the importing of marine mammals and marine mammal products into the United States. Under the MMPA, the Secretary of Commerce

(authority delegated to NMFS) is responsible for the conservation and management of cetaceans and pinnipeds (other than walruses). The Secretary of the Interior is responsible for walruses, sea otters, polar bears, manatees, and dugongs. Part of the responsibility that NMFS has under the MMPA involves monitoring populations of marine mammals to make sure that they stay at optimum levels. If a population falls below its optimum level, it is designated as "depleted". A conservation plan is then developed to guide research and management actions to restore the population to healthy levels.

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

Under the MMPA, to legally fish in a Category I and/or II fishery, a fisherman must take certain steps. For example, owners of vessels or gear engaging in a Category I or II fishery, are required to obtain a marine mammal authorization by registering with the Marine Mammal Authorization Program (50 CFR 229.4). They are also required to accommodate an observer if requested (50 CFR 229.7(c)) and they must comply with any applicable take reduction plans. The commercial hook-and-line components of the South Atlantic snapper grouper fishery (i.e., bottom longline, bandit gear, and handline), which targets snapper grouper species are listed as part of a Category III fishery (78 FR 53336, August 29, 2013) because there have been no documented interactions between these gear and marine mammals. The black sea bass pot component of the South Atlantic snapper grouper fishery is part of the Atlantic mixed species trap/pot fishery, a Category II fishery, in the final 2013 LOF (78 FR 53336, August 29, 2013). The Atlantic mixed species trap/pot fishery designation was created in 2003 (68 FR 41725, July 15, 2003), by combining several separately listed trap/pot fisheries into a single group. This group was designated Category II as a precaution because of known interactions between marine mammals and gear similar to those included in this group. Prior to this consolidation, the black sea bass pot fishery in the South Atlantic was a part of the "U.S. Mid-Atlantic and Southeast U.S. Atlantic Black Sea Bass Trap/Pot" fishery (Category III). There has never been a documented interaction between marine mammals and black sea bass trap/pot gear in the South Atlantic. The actions in this EA are not expected to negatively impact the provisions of the MMPA

1.12 National Environmental Policy Act (NEPA)

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

Purpose and Need for Action

The purpose and need for this action are described in **Chapter 1**.

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**.

1.13 National Marine Sanctuaries Act (NMSA)

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

The alternatives considered in this document are not expected to have any adverse impacts on the resources managed by the National Marine Sanctuaries.

1.14 Paperwork Reduction Act (PRA)

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

1.15 Regulatory Flexibility Act (RFA)

The 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, NMFS 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 RFA 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 RFA's provisions.

As NMFS has determined whether a proposed fishery regulation would have a significant economic impact on a substantial number of small entities, a certification to this effect will be prepared and submitted to the Chief Counsel for Advocacy of the Small Business Administration.

This amendment includes the RFA as **Appendix H**.

1.16 Small Business Act (SBA)

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

1.17 Public Law 99-659: Vessel Safety

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

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" total length (TL) 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 the exclusive economic zone (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 (1990a)	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 fishery management unit (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 vessel; -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 -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.

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.
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" TL limit – lane snapper -10" TL limit – vermilion snapper (recreational only) -12" TL limit – red porgy, vermilion snapper (commercial only), gray, yellowtail, mutton, schoolmaster, queen, blackfin, cubera, dog, mahogany, and silk snappers -20" TL limit – red snapper, gag, and red, black, scamp, yellowfin, and yellowmouth groupers. -28" fork length (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

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.
Amendment #5 (1992a)	04/06/92	PR: 56 FR 57302 FR: 57 FR 7886	-Wreckfish: established limited entry system with individual transferable quotas (ITQs); required dealer to have permit; rescinded 10,000 lb. trip limit; required off-loading between 8 am and 5 pm; reduced occasions when 24-hour advance notice of offloading required for off-loading; established procedure for initial distribution of percentage shares of total allowable catch (TAC)
Emergency Rule	8/31/92	57 FR 39365	-Black Sea Bass (bsb): modified definition of bsb pot; allowed multi-gear trips for bsb; allowed retention of incidentally-caught fish on bsb trips
Emergency Rule Extension	11/30/92	57 FR 56522	-Black Sea Bass: modified definition of bsb pot; allowed multi-gear trips for bsb; allowed retention of incidentally-caught fish on bsb trips
Regulatory Amendment #4 (1992b)	07/06/93	FR: 58 FR 36155	-Black Sea Bass: modified definition of bsb pot; allowed multi-gear trips for bsb; allowed retention of incidentally-caught fish on bsb trips
Regulatory Amendment #5 (1992c)	07/31/93	PR: 58 FR 13732 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 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 individual fishing quota 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 NC -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

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.
Amendment #8 (1997)	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 the snapper grouper (SG) FMU in 1993, 1994, 1995 or 1996; and have held valid SG permit between 02/11/96 and 02/11/97 -Granted transferable permit with unlimited landings if vessel landed ≥ 1,000 pounds (lbs) of snapper grouper species in any of the years -Granted non-transferable permit with 225 lb trip limit to all other vessels -Modified problems, objectives, optimum yield (OY), and overfishing definitions -Expanded Council's habitat responsibility -Allowed retention of snapper grouper species 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 (1998a)	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 the Magnuson-Stevens Act
Action Suspended	5/14/98		-NMFS informed the Council that action on the interim rule request was suspended
Emergency Rule Request	9/24/98		-Council requested Amendment 9 be implemented via emergency rule
Request not Implemented	1/22/99		-NMFS informed the Council that the final rule for Amendment 9 would be effective 2/24/99; therefore they did not implement the emergency rule

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.
Amendment #9 (1998b)	2/24/99	PR: 63 FR 63276 FR: 64 FR 3624	-Red porgy: 14" TL (recreational and commercial); 5 fish rec. bag limit; no harvest or possession > bag limit, and no purchase or sale, in March and April -Black sea bass: 10" TL (recreational and commercial); 20 fish rec. bag limit; required escape vents and escape panels with degradable fasteners in bsb pots -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" TL (recreational), 12" TL commercial -Gag: 24" TL (recreational); no commercial harvest or possession > bag limit, and no purchase or sale, during March and April -Black grouper: 24" TL (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 snapper grouper without a bag limit: aggregate recreational bag limit 20 fish/person/day, excluding tomtate and blue runner -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
Emergency Interim Rule	09/08/99, expired 08/28/00	64 FR 48324 and 65 FR 10040	-Prohibited harvest or possession of red porgy
Emergency Action	9/3/99	64 FR 48326	-Reopened the Amendment 8 permit application process
Amendment #10 (1998c)	07/14/00	PR: 64 FR 37082 and 64 FR 59152 FR: 65 FR 37292	-Identified essential fish habitat (EFH) and established habitat areas of particular concern (HAPC) for species in the snapper grouper FMU

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.
Amendment #11 (1998d)	12/02/99	PR: 64 FR 27952 FR: 64 FR 59126	-Maximum sustainable yield (MSY) proxy: goliath and Nassau grouper = 40% static spawning potential ratio (SPR); all other species = 30% static SPR -OY: hermaphroditic groupers = 45% static SPR; goliath and Nassau grouper = 50% static SPR; all other species = 40% static SPR -Overfished/overfishing evaluations: BSB: overfished (minimum stock size threshold (MSST)=3.72 mp, 1995 biomass=1.33 mp); undergoing overfishing (maximum fishing mortality threshold (MFMT)=0.72, F1991-1995=0.95) 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}
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
Amendment #12 (2000b)	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 (2003)	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 = 151,000 lbs

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.
			gutted weight (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. 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" TL size limit. 4. Black Sea Bass Commercial: Commercial quota 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 sector
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 status determination criteria 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

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.
			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% rec) and red porgy (50% com & 50% rec)
Amendment #16 (SAFMC 2009a)	7/29/09	PR: 74 FR 6297 FR: 74 FR 30964	-Specify status determination criteria for gag and vermilion snapper -For gag: Specify interim allocations 51% com & 49% rec; rec & com shallow water grouper spawning closure January through April; directed com quota= 352,940 lbs gw; -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 vermilion snapper and species within the 3-fish grouper aggregate -For vermilion snapper: Specify interim allocations 68% com & 32% rec; directed com quota split Jan-June=315,523 lbs gw and 302,523 lbs gw July-Dec; reduce bag limit from 10 to 5 and a rec closed season November through March -Require dehooking tools
Amendment #19 (Comprehensive Ecosystem-Based Amendment 1; SAFMC 2009b)	7/22/10	PR: 75 FR 14548 FR: 75 FR 35330	-Provide presentation of spatial information for EFH and EFH-HAPC designations under the Snapper Grouper FMP - Designation of deepwater coral HAPCs
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 6 deepwater species seaward of 240 feet to curb bycatch of speckled hind and warsaw grouper

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.
Notice of Control Date	12/4/08	74 FR 7849	-Establishes a control date for the golden tilefish portion of the snapper grouper fishery in the South Atlantic
Notice of Control Date	12/4/08	74 FR 7849	-Establishes control date for black sea bass pot sector in the South Atlantic
Regulatory Amendment #10 (SAFMC 2010c)	5/31/11	PR: 76 FR 9530 FR: 76 FR 23728	-Eliminate closed area for snapper grouper species approved in Amendment 17A
Regulatory Amendment #9 (SAFMC 2011a)	Bag limit: 6/22/11 Trip limits: 7/15/11	PR: 76 FR 23930 FR: 76 FR 34892	- Establish trip limits for vermilion snapper and gag, increase trip limit for greater amberjack, and reduce bag limit for black sea bass
Regulatory Amendment #11 (2011b)	5/10/12	PR: 76 FR 78879 FR: 77 FR 27374	- Eliminate 240 ft harvest prohibition for six deepwater species
Amendment # 25 (Comprehensive ACL Amendment) (SAFMC 2011c)	4/16/12	PR: 76 FR 74757 Amended PR: 76 FR 82264 FR: 77 FR 15916	-Establish acceptable biological catch (ABC) control rules, establish ABCs, annual catch limits (ACLs), and accountability measures (AMs) for species not undergoing overfishing -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 SMZs 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 sector - Modifications to management of the black sea bass pot sector - 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.

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.
Regulatory Amendment #12 (SAFMC 2012c)	10/9/12	FR: 77 FR 61295	-Adjust the ACL and OY for golden tilefish -Consider specifying a commercial Annual Catch Target (ACT) -Revise recreational AMs for golden tilefish
Amendment #18B (SAFMC 2013a)	5/23/13	PR: 77 FR 75093 FR: 77 FR 23858	-Limit participation and effort in the golden tilefish commercial sector through establishment of a longline endorsement -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 (SAFMC 2013b)	7/17/13	PR: 78 FR 17336 FR: 78 FR 36113	-Revise the ABCs, ACLs (including sector ACLs), and ACTs implemented by the Comprehensive ACL Amendment (SAFMC 2011c). The revisions may prevent a disjunction between the established ACLs and the landings used to determine if AMs are triggered.
Regulatory Amendment #14	TBD	TBD	-Modify the fishing year for greater amberjack -Modify the fishing year for black sea bass -Revise the AMs for vermilion snapper and black sea bass -Modify the trip limit for gag
Regulatory Amendment #15 (SAFMC 2013c)	9/12/13	PR: 78 FR 31511 FR: 78 FR 49183	-Modify the existing specification of OY and ACL for yellowtail snapper in the South Atlantic -Modify the existing gag commercial ACL and AM for gag that requires a closure of all other shallow water groupers (black grouper, red grouper, scamp, red hind, rock hind, graysby, coney, yellowmouth grouper, and yellowfin grouper) in the South Atlantic when the gag commercial ACL is met or projected to be met
Regulatory Amendment #16	TBD	TBD	-Consider removal of the November-April prohibition on the use of black sea bass pots
Amendment #27	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

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			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
Amendment #28 (SAFMC 2013d)	8/23/13	PR: 78 FR 25047 FR: 78 FR 44461	-Establish regulations to allow harvest of red snapper in the South Atlantic
Regulatory Amendment #18 (SAFMC 2013e)	9/5/13	PR: 78 FR 26740 FR: 78 FR 47574	-Adjust ACLs for vermilion snapper and red porgy, and remove the 4-month recreational closure for vermilion snapper
Regulatory Amendment #19 (SAFMC 2013f)	ACL: 9/23/13 Pot closure: 10/23/13	PR: 78 FR 39700 FR: 78 FR 58249	-Adjust the ACL for black sea bass and implement an annual closure on the use of black sea bass pots from November 1 to April 30
Regulatory Amendment #17	TBD	TBD	-Adjust or establish new MPAs to enhance protection of speckled hind and warsaw grouper
Amendment #22	TBD	TBD	-Establish a recreational tagging program for snapper grouper species with small ACLs

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Appendix E. Bycatch Practicability Analysis (BPA)

1.1 Population Effects for the Bycatch Species

Background

Regulatory Amendment 14 to the Fishery Management Plan (FMP) for the Snapper Grouper Fishery of the South Atlantic Region (Regulatory Amendment 14) considers modifications to the fishing years for greater amberjack and black sea bass; change in the commercial fishing season for vermilion snapper; modification of trip limits for gag; and revision of the recreational accountability measures for black sea bass and vermilion snapper. There are 60 species in the snapper grouper fishery management unit (FMU), many of which co-exist with each other, and are encountered by fishers. Therefore, this BPA includes landings and discard information for species in the snapper grouper FMU, in addition to the four species (greater amberjack, black sea bass, gag, and vermilion snapper) considered in Regulatory Amendment 14 (**Table 1**). Actions and alternatives in Regulatory Amendment 14 for black sea bass, vermilion snapper, and gag are closely associated with those in three other amendments that have recently been implemented or could be implemented by the end of 2013, and are briefly discussed below.

The black sea bass stock was reassessed in 2011 by the Southeast Data, Assessment, and Review (SEDAR-25 2011) and was determined to no longer be overfished or undergoing overfishing, but was not fully rebuilt. In 2013, the SEDAR-25 Update assessment determined that the black sea bass stock is now rebuilt and annual catch limits (ACLs) can be increased without jeopardizing the health of the population. The final rule for Regulatory Amendment 19 to the Snapper Grouper FMP (Regulatory Amendment 19) published on September 23, 2013 (78 FR 58249), and the increase in ACLs for both sectors of black sea bass was implemented the same day. Regulatory Amendment 19 (SAFMC 2013c) will also implement an annual prohibition on the use of black sea bass pots in the South Atlantic from November 1 through April 30, on October 23, 2013.

In October 2012, the SEDAR-17 Update stock assessment indicated vermilion snapper is not undergoing overfishing and is not overfished. Additionally, the SEDAR-17 Update (2012) indicated the vermilion snapper acceptable biological catch (ABC) level and the ACL can be increased without jeopardizing the sustainability of the stock. The final rule for Regulatory Amendment 18 to the Snapper Grouper FMP (Regulatory Amendment 18) published on August 6, 2013 (78 FR 47574) with an effective date of September 5, 2013. Among other actions, Regulatory Amendment 18 (SAFMC 2013b) increases the sector ACLs, reduces the commercial trip limit, and removes the November through March recreational seasonal closure for vermilion snapper.

On June 29, 2009, the final rule for Amendment 16 to the Snapper Grouper FMP (Amendment 16) established a suite of management measures to end the overfishing of gag (74 FR 30964). One of the measures established a four month seasonal closure for shallow water grouper species including gag. Amendment 16 also implemented a management measure that closed the commercial sector for gag and all other shallow water grouper for the remainder of the fishing year when the gag quota (ACL) was met. This measure was implemented to reduce bycatch of gag, and help ensure overfishing did not occur. However, new information suggests the closure

of gag and all other shallow water grouper is not as effective as previously thought at reducing bycatch of gag. Also, because ACLs and accountability measures (AMs) for gag and other shallow water grouper species are now in place to prevent overfishing, the closure of gag and all other shallow water grouper species when the gag ACL is met, is no longer necessary. The final rule for Regulatory Amendment 15 to the Snapper Grouper FMP (Regulatory Amendment 15) published on August 13, 2013 (78 FR 49183), with an effective date of September 12, 2013. Among other actions, Regulatory Amendment 15 (SAFMC 2013a) modified the commercial AM for gag so that only the commercial sector for gag will close when the gag commercial ACL is met or projected to be met. The ACLs and AMs for all other shallow water grouper species remain unchanged. Regulatory Amendment 15 (SAFMC 2013a) also reduced the gag commercial ACL to account for projected gag discard mortality from commercial trips that target co-occurring species (i.e., red grouper and scamp) after the gag commercial ACL is met and harvest is prohibited.

Most of the species in the snapper grouper FMU, including greater amberjack, gag, and vermilion snapper are taken with hook and line gear (see **Chapter 3**) by both the commercial and recreational sectors. SEDAR-25 (2011) demonstrated that black sea bass are predominantly taken with pots in the commercial sector (87% of the commercial landings); whereas, hook and line gear is the predominant gear type used to capture black sea bass by the recreational sector. **Appendix D** contains the history of management for species in the Snapper Grouper FMP, including changes in size limits, trip limits, seasonal closures, etc.

During 2008-2012, total commercial landings for greater amberjack, gag, and vermilion snapper were higher than the recreational sector (private and for-hire (charterboat/headboat) categories combined)), but the recreational sector has dominated black sea bass landings. The number of greater amberjack, gag, vermilion snapper, and black sea bass discarded was much higher for the recreational sector than the commercial sector (**Table 1**).

Commercial Sector

During 2008-2012, regulations (50 C.F.R. § 622.176) required participants in the South Atlantic snapper grouper fishery who were selected by the Science and Research Director (SRD) to maintain and submit a fishing record on forms provided by the SRD. Fishermen in the snapper grouper fishery were also required to submit logbooks with trip and effort information. For the four species in Regulatory Amendment 14, commercial landings (pounds whole weight, lbs ww) during 2008-2012 were dominated by vermilion snapper followed by greater amberjack, gag, and black sea bass (**Table 1**). Commercial discards during 2008-2012 were highest for vermilion snapper followed by black sea bass, gag, and greater amberjack (**Table 1**). For snapper grouper species not considered in Regulatory Amendment 14, commercial landings were also high for yellowtail snapper, followed by golden tilefish, gray triggerfish, blueline tilefish, and red grouper (**Table 1**).

Information from commercial logbook, commercial observer, headboat, logbook, recreational, survey, and fishery-independent data were used to evaluate similarities in spatial and temporal patterns of fisheries exploitation in the southeastern U.S. Atlantic Ocean for species in the SAFMC Snapper Grouper FMP (**Table 2**). While vermilion snapper is most closely associated with gray triggerfish, and gag with red grouper, all four species considered in Regulatory

Amendment 14 occur together and are often caught on the same trip (see **Section 3.2.2** of Regulatory Amendment 14 and **Table 2** of this BPA).

Currently, discard data are collected using a supplemental form that is sent to a 20% stratified random sample of the active permit holders in the snapper grouper fishery. However, due to limited observer data, there are concerns about the accuracy of logbook data in collecting bycatch information. Biases associated with logbooks primarily result from inaccuracy in reporting of species that are caught in large numbers or are of little economic interest (particularly of bycatch species), and from low compliance rates. Actions that could help resolve some of these issues are currently being considered in an amendment being developed by the South Atlantic Fishery Management Council (South Atlantic Council) and the Gulf of Mexico Fishery Management Council (Gulf of Mexico Council), which would allow for commercial logbook data (including discard information) to be entered electronically.

Release mortality estimates for the commercial sector compiled from the most recent stock assessments (as available) using Southeast Fishery Science Center's (SEFSC) SEDAR process are: 1% black sea bass (SEDAR-25, 2011); 41% vermilion snapper (SEDAR-17, 2008b; SEDAR-17 Update, 2012b); 40% gag (SEDAR-10, 2006b); 20% greater amberjack (SEDAR-15, 2008a); 48% red snapper (SEDAR-24, 2010b); 20% red grouper (SEDAR-19, 2010a); 35% red porgy (SEDAR-1 Update, 2012a); and 12.5% gray triggerfish (SEDAR-32, under development). 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 during 2008-2012, estimates of the number of recreational discards were available from Marine Recreational Fisheries Statistical Survey (MRFSS) and the NMFS Southeast Headboat Survey. The MRFSS system classified 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.

Recent improvements have been made to the MRFSS program, and the program is now called the Marine Recreational Information Program (MRIP). Beginning in 2013, samples were drawn from a known universe of fishermen rather than randomly dialing coastal households. Other improvements have been and will be made that should result in better estimating recreational

catches and the variances around those catch estimates. MRIP methods have been used to recalculate previous MRFSS estimates dating back to 1986.

During 2008-2012, information for charter trips came from two sources. Charter vessels for the snapper grouper fishery were selected to report by the SRD to maintain a fishing record for each trip, or a portion of such trips as specified by the SRD, and on forms provided by the SRD. Harvest and bycatch information was monitored by MRFSS/MRIP. Since 2000, a 10% sample of charter vessel captains were called weekly to obtain trip level information, such as date, fishing location, target species, etc. In addition, the standard dockside intercept data were collected from charter vessels and charter vessel clients were sampled through the standard random digital dialing of coastal households. Precision of charter vessel effort estimates has improved by more than 50% due to these changes (Van Voorhees et al. 2000).

Harvest from headboats was monitored by NMFS-SEFSC Beaufort Laboratory. Collection of discard data began in 2004. Daily catch records (trip records) were filled out by the headboat operators, or in some cases by NMFS approved headboat samplers based on personal communication with the captain or crew. Headboat trips were subsampled for data on species lengths and weights. Biological samples (scales, otoliths, spines, reproductive tissues, and stomachs) were obtained as time allowed. Lengths of discarded fish were occasionally obtained but these data were not part of the headboat database.

During 2008-2012, private recreational landings and subsequent discards (numbers of fish, N) for species in Regulatory Amendment 14 were dominated by black sea bass, gag, vermilion snapper, and greater amberjack (**Table 1**). In the for-hire category, charterboats landed mostly black sea bass, followed by vermilion snapper, greater amberjack, and gag (**Table 1**). However, discards in the charterboat category were highest for gag, followed by black sea bass, vermilion snapper, and greater amberjack (**Table 1**). As mentioned in the background portion of this BPA, actions in Regulatory Amendment 15 (2013a) are expected to reduce bycatch and discards of gag. For headboats, landings were highest for vermilion snapper and black sea bass, followed by gag and greater amberjack; while discards were disproportionately higher for black sea bass, followed by vermilion snapper, gag, and greater amberjack (**Table 1**). For snapper grouper species not included in Regulatory Amendment 14, landings and discards in all recreational categories were high for blue runner, gray triggerfish, yellowtail snapper, gray snapper, white grunt, tomtate, lane snapper, and Atlantic spadefish (**Table 1**). Most of these species are also included in the top five species associated with the four species considered in Regulatory Amendment 14 (**Table 2**).

Release mortality estimates for species in the recreational sector compiled from the most recent SEDAR stock assessments (as available) are: 7% black sea bass (SEDAR-25 2011); 38% vermilion snapper (SEDAR-17 2008b); 25% gag (SEDAR-10 2006b); 20% greater amberjack (SEDAR-15 2008a); 20% red grouper (SEDAR-19 2010a); 8% red porgy (SEDAR-1 Update 2012a); and 12.5% gray triggerfish (SEDAR-32, under development). Despite the high number of black sea bass discarded (**Table 1**), discard mortality during 2008-2012 is estimated to be small due to low release mortality rates.

Table 1. Mean headboat, MRIP (charter and private), and commercial estimates of landings and discards of snapper grouper species in the South Atlantic (2008-2012). Headboat, MRIP (charter and private) landings are in numbers of fish (N); commercial landings are in pounds whole weight (lbs ww). Discards represent numbers of fish that were caught and released alive. Species considered in Regulatory Amendment 14 are in boldface.

Species	HEADBOAT			MRIP CHARTER			MRIP PRIVATE			COMMERCIAL	
	Catch (N)	Landings (N)	Discards (N)	Catch (N)	Landings (N)	Discards (N)	Catch (N)	Landings (N)	Discards (N)	Landings (lbs ww)	Discards (N)
Almaco jack	3,576	3,337	240	3,858	2,592	1,266	9,416	3,688	5,728	204,422	869
Atlantic spadefish	158	128	30	236	188	48	267,887	110,718	157,169	26,936	0
Banded rudderfish	19,008	16,651	2,357	5,634	3,159	2,475	13,703	6,847	6,855	60,615	142
Bank sea bass	5,788	5,788	0	2,913	691	2,222	10,413	2,393	8,020	387	4
Bar jack	290	230	59	261	76	186	11,222	2,805	8,417	4,111	17
Black grouper	1,622	315	1,307	9,755	1,422	8,334	31,487	7,760	23,727	50,001	2,006
Black sea bass	**629,922**	**166,255**	**463,667**	**250,778**	**63,803**	**186,974**	**2,873,854**	**275,845**	**2,598,008**	**486,316**	**29,772**
Black snapper	0	0	0	0	0	0	0	0	0	213	7
Blackfin snapper	119	51	68	101	101	0	1,843	1,843	0	1,616	1
Blue runner	22,821	17,484	5,337	25,885	11,601	14,284	1,325,020	610,399	714,621	227,946	854
Blueline tilefish	3,085	3,013	73	18,503	18,055	448	8,569	8,324	245	370,077	244
Coney	121	70	51	37	33	4	1,314	1,100	214	34	0
Cottonwick	17	17	0	0	0	0	148	148	0	0	0
Cubera snapper	377	359	17	4	4	0	2,907	2,631	275	5,060	0
Dog snapper	92	64	28	57	57	0	954	822	133	395	0
Gag	**15,489**	**10,214**	**5,276**	**19,365**	**2,983**	**16,382**	**131,170**	**21,430**	**109,740**	**495,064**	**9,490**
Golden tilefish	0	0	0	493	493	0	3,123	3,123	0	421,923	26

Species	HEADBOAT			MRIP CHARTER			MRIP PRIVATE			COMMERCIAL	
	Catch (N)	Landings (N)	Discards (N)	Catch (N)	Landings (N)	Discards (N)	Catch (N)	Landings (N)	Discards (N)	Landings (lbs ww)	Discards (N)
Gray snapper	46,371	40,624	5,747	5,220	5,024	196	1,434,333	229,482	1,204,852	113,992	40,381
Gray triggerfish*	67,258	55,192	12,066	39,155	32,706	6,449	226,603	110,045	116,558	400,273	2,097
Graysby	3,001	2,041	960	1,049	919	131	10,074	3,049	7,025	192	29
Greater amberjack	**6,614**	**4,710**	**1,904**	**25,898**	**20,209**	**5,689**	**58,129**	**22,383**	**35,746**	**859,929**	**3,353**
Hogfish	260	169	91	32	29	3	30,321	27,550	2,770	45,169	55
Jolthead porgy	7,050	6,913	137	2,232	2,232	0	12,594	11,869	725	3,853	11
Knobbed porgy	5,584	5,439	145	832	832	0	6,838	6,398	441	23,726	1
Lane snapper	23,340	20,227	3,112	11,993	8,882	3,111	166,037	42,246	123,791	3,526	210
Lesser amberjack	22	17	6	12	12	0	393	393	0	17,044	34
Longspine porgy	3	3	0	0	0	0	460	290	170	0	0
Mahogany snapper	32	30	2	0	0	0	35	35	0	30	0
Margate	856	662	195	265	206	59	9,512	3,559	5,952	3,725	30
Misty grouper	0	0	0	0	0	0	0	0	0	971	1
Mutton snapper	17,683	13,996	3,687	31,630	18,609	13,021	294,792	111,060	183,732	74,212	1,636
Ocean triggerfish	473	473	0	363	285	77	7,366	3,454	3,912	0	0
Queen snapper	0	0	0	1	1	0	0	0	0	3,734	107
Red grouper	11,559	1,629	9,930	9,138	3,647	5,491	81,675	31,172	50,503	367,462	3,610
Red hind	383	313	70	86	86	0	2,588	928	1,660	9,865	88
Red porgy	41,064	23,659	17,405	20,579	12,733	7,845	38,282	24,793	13,489	169,468	27,818
Rock hind	2,150	1,509	642	132	92	40	4,087	908	3,179	15,839	14

Species	HEADBOAT			MRIP CHARTER			MRIP PRIVATE			COMMERCIAL	
	Catch (N)	Landings (N)	Discards (N)	Catch (N)	Landings (N)	Discards (N)	Catch (N)	Landings (N)	Discards (N)	Landings (lbs ww)	Discards (N)
Rock sea bass	0	0	0	415	177	238	11,477	4,287	7,190	453	49
Sailors choice	123	123	0	732	23	709	32,818	14,324	18,494	0	0
Sand tilefish	1,712	895	817	4,053	484	3,568	23,983	6,091	17,891	0	238
Saucereye porgy	228	228	1	0	0	0	1,034	1,034	0	0	0
Scamp	5,602	3,195	2,407	4,631	2,771	1,860	8,852	5,108	3,745	221,922	2,204
Schoolmaster	344	344	0	2	2	0	7,251	4,427	2,824	181	0
Scup	11,364	9,531	1,833	246	219	28	1,086	596	490	0	0
Silk Snapper	1,371	1,249	122	1,379	1,209	171	1,141	153	988	11,379	8
Snowy grouper	123	72	50	1,684	1,388	295	969	550	419	85,047	273
Tomtate	119,474	49,453	70,021	19,269	11,868	7,401	331,321	84,819	246,502	212	2,441
Vermilion snapper	**282,092**	**176,802**	**105,290**	**63,968**	**41,150**	**22,818**	**169,085**	**70,051**	**99,034**	**1,010,587**	**38,174**
White grunt*	179,271	144,826	34,445	42,015	34,665	7,349	419,442	193,338	226,104	126,477	348
Whitebone porgy	4,836	4,577	258	1,833	1,784	49	11,919	10,710	1,209	14	31
Yellowedge grouper	7	4	3	27	27	0	44	44	0	16,080	13
Yellowfin grouper	20	14	5	0	0	0	97	97	0	3,780	6
Yellowmouth grouper	22	17	5	15	15	0	0	0	0	290	0
Yellowtail snapper	134,179	100,724	33,454	199,283	134,871	64,412	967,208	362,141	605,067	1,123,532	90,695

Sources: MRIP data from SEFSC Recreational ACL Dataset (May 2013), Headboat data from SEFSC Headboat Logbook CRNF files (expanded; May 2013), Commercial landings data from SEFSC Commercial ACL Dataset (July 10, 2013) with discard estimates from expanded SEFSC Commercial Discard Logbook (Jun 2013).
Note: Estimates of commercial discards are highly uncertain and are for vertical line gear only.
*Commercial gray triggerfish includes "triggerfishes, unclassified" category; commercial white grunt includes "grunts, unclassified" category.
Goliath grouper, Nassau grouper, Warsaw grouper, Speckled hind, and Red snapper are excluded from Table 1 since they are prohibited species, and landings records are not available for all the years 2007-2011. Wreckfish landings are confidential.

Table 2. Top five associated stocks and level of association (parenthesis) for 35 snapper grouper species evaluated in **Table A6** of **Appendix O** in the Comprehensive ACL Amendment (SAFMC 2011b), including the four species considered in Regulatory Amendment 14 (boldface). Species groups were evaluated using cluster association matrix with life history weighted equal to maximum from fishery data.

COMMON NAME	1	2	3	4	5
yellowedge grouper	snowy grouper (.4)	blueline tilefish (.24)	warsaw grouper (.17)	tilefish (.07)	silk snapper (.04)
snowy grouper	blueline tilefish (.55)	yellowedge grouper (.23)	warsaw grouper (.09)	tilefish (.06)	silk snapper (.05)
blueline tilefish	snowy grouper (.56)	yellowedge grouper (.21)	sand tilefish (.1)	scamp (.1)	tilefish (.01)
tilefish	gag (.31)	silk snapper (.23)	snowy grouper (.19)	yellowedge grouper (.12)	blueline tilefish (.11)
wreckfish	silk snapper (.21)	warsaw grouper (.18)	yellowedge grouper (.12)	bar jack (.06)	tomtate (.06)
silk snapper	yellowfin grouper (.34)	tilefish (.15)	wreckfish (.08)	snowy grouper (.07)	warsaw grouper (.03)
warsaw grouper	speckled hind (.18)	yellowedge grouper (.15)	silk snapper (.07)	snowy grouper (.06)	tilefish (.05)
speckled hind	scamp (.19)	yellowfin grouper (.14)	warsaw grouper (.12)	nassau grouper (.07)	knobbed porgy (.05)
yellowfin grouper	speckled hind (.29)	silk snapper (.27)	red hind (.11)	nassau grouper (.08)	yellowedge grouper (.04)
nassau grouper	yellowfin grouper (.12)	yellowedge grouper (.11)	speckled hind (.08)	goliath grouper (.08)	black grouper (.07)
gag	**red grouper (.24)**	**red snapper (.23)**	**gray triggerfish (.23)**	**white grunt (.09)**	**red porgy (.08)**
red grouper	gag (.2)	scamp (.13)	white grunt (.12)	gray snapper (.1)	lane snapper (.1)
scamp	red porgy (.2)	greater amberjack (.17)	red grouper (.15)	speckled hind (.11)	gag (.08)
black grouper	yellowtail snapper (.26)	almaco jack (.16)	gray snapper (.14)	black sea bass (.07)	lane snapper (.06)
goliath grouper	black grouper (.24)	gray snapper (.1)	lane snapper (.1)	yellowedge grouper (.08)	warsaw grouper (.07)
banded rudderfish	almaco jack (.3)	red porgy (.09)	greater amberjack (.09)	scamp (.08)	knobbed porgy (.07)
greater amberjack	**scamp (.21)**	**almaco jack (.2)**	**red snapper (.11)**	**vermilion snapper (.08)**	**gray triggerfish (.08)**
almaco jack	banded rudderfish (.18)	black grouper (.16)	greater amberjack (.13)	vermilion snapper (.1)	gray triggerfish (.1)
red porgy	gray triggerfish (.23)	scamp (.19)	vermilion snapper (.18)	tomtate (.08)	gag (.07)
gray triggerfish	vermilion snapper (.38)	gag (.21)	lane snapper (.12)	red porgy (.1)	white grunt (.05)
vermilion snapper	**gray triggerfish (.45)**	**tomtate (.18)**	**red porgy (.14)**	**lane snapper (.07)**	**gag (.04)**
red snapper	gag (.33)	greater amberjack (.14)	vermilion snapper (.13)	red porgy (.08)	scamp (.07)
black sea bass	**tomtate (.2)**	**knobbed porgy (.12)**	**whitebone porgy (.09)**	**black grouper (.09)**	**vermilion snapper (.08)**
red hind	rock hind (.24)	jolthead porgy (.15)	red grouper (.11)	whitebone porgy (.08)	tomtate (.08)
rock hind	red hind (.28)	knobbed porgy (.27)	jolthead porgy (.24)	bar jack (.06)	white grunt (.04)
knobbed porgy	rock hind (.26)	jolthead porgy (.17)	white grunt (.1)	scamp (.08)	black sea bass (.07)

COMMON NAME	1	2	3	4	5
whitebone porgy	tomtate (.55)	red hind (.13)	almaco jack (.07)	greater amberjack (.06)	banded rudderfish (.04)
jolthead porgy	white grunt (.21)	rock hind (.19)	red hind (.17)	sand tilefish (.16)	knobbed porgy (.12)
tomtate	whitebone porgy (.38)	vermilion snapper (.33)	red hind (.08)	black sea bass (.08)	gray triggerfish (.02)
white grunt	jolthead porgy (.23)	red grouper (.13)	gray triggerfish (.1)	knobbed porgy (.09)	gag (.09)
sand tilefish	jolthead porgy (.33)	bar jack (.19)	blueline tilefish (.11)	yellowtail snapper (.1)	knobbed porgy (.04)
bar jack	sand tilefish (.24)	jolthead porgy (.1)	knobbed porgy (.08)	rock hind (.08)	nassau grouper (.06)
gray snapper	lane snapper (.58)	yellowtail snapper (.37)	red porgy (.05)	warsaw grouper (.)	silk snapper (.)
lane snapper	gray snapper (.62)	gray triggerfish (.17)	yellowtail snapper (.11)	vermilion snapper (.06)	whitebone porgy (.02)
yellowtail snapper	gray snapper (.45)	black grouper (.19)	lane snapper (.19)	sand tilefish (.09)	red porgy (.05)

Sources: SERO-LAPP-2010-06.

Finfish Bycatch Mortality

Recent SEDAR assessments for species in Regulatory Amendment 14 include estimates of release mortality rates based on published studies. Stock assessment reports can be found at http://www.sefsc.noaa.gov/sedar/.

SEDAR-17 (2008b) recommended a release mortality rate for vermilion snapper of 38% for both the commercial and recreational sectors. An update to the stock assessment for vermilion snapper in 2012 recommended a release mortality rate of 41% for the commercial and 38% for the headboat and private recreational sectors (SEDAR-17 Update Assessment, 2012b). This was based on a 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.

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. 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.

SEDAR-10 (2006b) 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). 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. Overton et al. (2008) reported post-release mortality for gag as 13.3%. The data workshop for SEDAR-33, which is under development, has proposed a lower release mortality rate for gag (Nick Farmer pers.com. Southeast Regional Office).

SEDAR-15 (2008a) estimated a 20% release mortality rate for greater amberjack. The data workshop for the South Atlantic gray triggerfish assessment has recommended a release mortality rate of 12.5% (SEDAR-32). An update to the stock assessment for red porgy in 2012 used a release mortality rate of 35% for the commercial and headboat sectors, and 8% for the private recreational sector (SEDAR-1 Update, 2012a). The most recent stock assessment for yellowtail snapper in the South Atlantic used a release mortality of 11.5% for the commercial sector and 10% for the recreational sector (O'Hop et al. 2012). SEDAR-24 (2010b) used release mortality rates of 48% commercial; 41% for-hire, and 39% private recreational for red snapper. Release mortality rates were estimated as 20% for black grouper and red grouper in SEDAR-19 (2010a). Snowy grouper are primarily caught in water deeper than 300 feet and golden tilefish

are taken at depths greater than 540 feet; therefore, release mortality of the species are probably near 100% (SEDAR-4 2004).

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

The snapper grouper fishery represents many species occupying the same location at the same time. Species most closely associated with directed fisheries for gag, greater amberjack, vermilion snapper, and black sea bass are red grouper, red snapper, gray triggerfish, scamp, almaco jack, tomtate, and red porgy (**Table 2**, SERO-LAPP-2010-06). Fishermen could harvest one of these species and return co-occurring species to the water as "regulatory discards" (e.g., if the fish are under the size limit) or if undesirable. A portion of the discarded fish would not survive.

Alternatives under **Action 1** propose to change the start of the fishing year for greater amberjack for both the commercial and recreational sectors, and are not expected to affect major changes in bycatch. A change in the start date of the commercial fishing season would affect the time of year when the commercial ACL is expected to be met. The length of the commercial closure is estimated to be greatest under **Alternative 2**, and least under **Preferred Alternative 3**. The AM for the commercial sector is to prohibit harvest of greater amberjack when the commercial ACL is met. When harvest of greater amberjack is prohibited in the commercial sector, bycatch of greater amberjack could occur when fishermen target co-occurring species. **Preferred Alternative 3** would start the fishing year in March and the ACL could be met in February (based on landings from 2009/2010) or December (based on landings from 2010/2011). Positive biological effects could be expected under **Preferred Alternative 3**, since the commercial ACL could be met before the onset of the January-June spawning season and thus provide more protection to the species. Under **Alternative 2**, the commercial sector could be closed in September (based on 2010 and 2011 landings), three months before the end of the proposed fishing year. Late fall represents a time of the year when weather is poor in the South Atlantic, and harvest of many species is closed because ACLs have been met. Further, survival of released greater amberjack is high (80%), and the benefits of prohibiting harvest of greater amberjack when an ACL is met outweighs the small amount of bycatch that might occur. For the recreational sector, the AM is to reduce the length of the following fishing season if the recreational ACL is met or projected to be met. An evaluation of historical landings indicates the recreational ACL is not expected to be met unless conditions are similar to those of 2008. Furthermore, greater amberjack is neither overfished nor undergoing overfishing, and ACLs/AMs are in place to ensure overfishing does not occur. Thus, the proposed alternatives under **Action 1** are not expected to affect the magnitude of bycatch of greater amberjack in the recreational or commercial sectors.

Preferred Alternative 3 in **Action 2** would modify the recreational fishing year for black sea bass to begin on April 1 instead of June 1 (**Alternative 1**, **No Action**). Under **Preferred Alternative 3**, harvest of black sea bass would be prohibited during most of the January-April spawning season closure for shallow water grouper species, which would be a biological benefit. **Alternative 2** (January-December fishing year) would allow fishing for black sea bass to occur throughout the January-May spawning season. **Alternative 4** would start the fishing year in

October; whereas, **Alternative 5** would modify the recreational fishing year to begin on May 1. Similar to **Preferred Alternative 3**, **Alternative 5** would result in black sea bass being closed during part of the peak spawning months, and thus would impart a similar level of biological benefit to the black sea bass stock. Due to the actions implemented through Regulatory Amendment 18, recreational harvest of vermilion snapper is expected to remain open all year. Vermilion snapper is the top co-occurring recreational species with black sea bass. Therefore, regardless of when the recreational fishing year starts for black sea bass under all the alternatives, it is expected there will be a period of time when vermilion snapper will be open and black sea bass will be closed. Although bycatch of black sea bass is expected after its recreational ACL is met, survival of incidentally caught black sea bass when fishermen target vermilion snapper is expected to be very good (93%). Thus, the alternatives proposed in **Action 2** are not expected to change the magnitude of black sea bass bycatch or affect fishing mortality of the species.

Action 3 considers alternatives that would modify the recreational AMs for black sea bass. Under **Alternative 1 (No Action)**, recreational harvest of black sea bass would be prohibited when the recreational ACL is met, and the ACL would be reduced in the following year to account for any overage. With a reduced ACL, increased bycatch could be expected during a closed season; however, the biological benefits would outweigh any bycatch because even if black sea bass are caught and discarded, survival of released fish is very high. **Preferred Alternative 2** would open recreational harvest of black sea bass on April 1, which could make the recreational season last until the end of June or early December. NMFS would announce the length of the season based on predictions of when the recreational ACL would be met. **Preferred Alternative 2** would be expected to have a smaller amount of bycatch than **Alternative 1 (No Action),** but the biological benefits would be less for the black sea bass stock. Under **Alternative 3**, NMFS would use the recreational annual catch target (ACT) to predict the length of the season instead. In this case, the recreational black sea bass season would be from one to three weeks shorter than that predicted for **Preferred Alternative 2**. With a shorter fishing season, there is a greater chance for bycatch of black sea bass when fishermen target co-occurring species during the closed season. However, survival of released black sea bass is extremely high, and a shorter fishing under **Alternative 3** with a smaller amount of harvest would be expected to have a greater biological effect than under **Preferred Alternative 2**. **Alternative 4** would have similar biological effects as **Alternative 1 (No Action)**, but without the benefit of a payback if an ACL overage were to occur, the amount of bycatch would likely be less under **Alternative 4** than under **Alternative 1 (No Action)**. However, the biological benefits would also be less under **Alternative 4**. The black sea bass stock is not undergoing overfishing and is rebuilt (SEDAR 25 Update, 2013), and a payback provision is not biologically needed to ensure overfishing does not occur. Thus, the action alternatives proposed in **Action 3** could affect bycatch of black sea bass to a small degree. However, as survival of released black sea bass is extremely high, any change in bycatch associated with the proposed alternatives would not be a concern to the health of the stock.

Action 4 includes alternatives that would modify the commercial fishing year for black sea bass. Most (87%) commercial harvest of black sea bass is with pots, which has a very small amount of bycatch (SAFMC 2011). Therefore, any difference in the magnitude of discards from **Alternatives 2**, **3(Preferred,** along with **Preferred sub-alternative 3c)**, and **4** would be

expected to be extremely small. Furthermore, the survival rate of black sea bass released by the commercial sector is extremely high 99%. Therefore, the actions proposed in **Action 4** are not expected to have a significant effect on bycatch of black sea bass or co-occurring species.

Action 5 considers alternatives that would change the split season commercial ACLs, and modify the start of the two commercial vermilion snapper fishing seasons. Regulatory Amendment 18 increased the vermilion snapper ACL, which will have an effect of reducing vermilion snapper discards, since the length of the closed season will be shorter. However, it is still expected that the commercial ACL for vermilion snapper will be met regardless of which alternative is selected under **Action 5** of Regulatory Amendment 14. The effect of the alternatives under **Action 5** is to shift the opening and closing dates of commercial harvest. The magnitude of bycatch of vermilion snapper would depend on whether or not ACLs for co-occurring species have been met. Alternatives that result in the greatest number of co-occurring species open at the same time would be expected to result in the least amount of bycatch. Early closures of vermilion snapper could result in bycatch of vermilion snapper when fishermen target co-occurring species such as shallow water grouper species and gray triggerfish. Late closures of vermilion snapper could result in bycatch of species such shallow water groupers and gray triggerfish if ACLs for those species have been met. **Section 4** shows that the expected closure dates for vermilion snapper are somewhat similar among the alternatives. Therefore, little difference in bycatch of vermilion snapper or co-occurring species is expected among the alternatives in **Action 5**. In September 2013, the South Atlantic Council selected **Alternative 1 (No Action)** as their preferred alternative.

Action 6 considers alternatives that would reduce to 1,000 lb gutted weight (gw) gag trip limit when 75% of the commercial ACL is met. The trip limit reductions in the action alternatives range from 100 to 500 lbs gw, with 300 lbs gw being the South Atlantic Council's preferred alternative. Trip limits specified under **Preferred Alternative 2** could help reduce discards of gag, because a trip limit reduction would have the effect of lengthening the gag fishing season. Improvements have been made to the quota monitoring system, and the South Atlantic Council has approved a Dealer Reporting Amendment, which should enhance data reporting to further ensure that the ACL for gag and other snapper grouper species is not exceeded. Furthermore, Regulatory Amendment 15 (2013a) reduced the gag commercial ACL to account for projected gag discard mortality from commercial trips that target co-occurring species (red grouper and scamp) during a gag closure.

Regulatory Amendment 18 (2013b) removed the November 1-March 31 recreational seasonal closure for vermilion snapper in September 2013. Therefore, **Action 7** in Regulatory Amendment 14 considers alternatives to modify the recreational AM for vermilion snapper to prohibit harvest when the recreational ACL is met and consider payback in a year following an overage. **Alternative 1 (No Action)** would be expected to yield the least biological benefit since it would not provide any in-season or post-season protection against overfishing. However, **Alternative 1 (No Action)** would result in the least amount of vermilion snapper bycatch, because fishermen would not have to discard the species after the ACL is caught. **Alternative 2** is the most conservative of the alternatives since it includes both an in-season closure if the recreational ACL is met and a payback provision if the recreational ACL is exceeded, and hence would yield the best protection against overfishing. However, **Alternative 2** would be expected

to result in a greater amount of bycatch than other alternatives because it could result in the longest harvest prohibition for vermilion snapper when the species would have to be discarded if incidentally caught. **Alternative 3** would provide an in-season closure, but there would be no payback provision in the following fishing year if the ACL was exceeded. Therefore, while the amount of bycatch would be less, so would the biological protection to the stock. **Preferred Alternative 4** provides an in-season closure, but payback of an ACL overage would only go into effect if the species were overfished and the total ACL (commercial + recreational) was exceeded. Currently, there is no payback provision in place for the commercial sector. Payback of the amount of a recreational overage would include a deduction from the following year's recreational ACL. **Preferred Alternative 4** is intermediate between **Alternatives 2** and **4** in terms of biological protection to the stock and the magnitude of bycatch.

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 and subsequently disrupt the ecological function of a species within the ecosystem. Stock assessments for greater amberjack, black sea bass, gag, and vermilion snapper have taken expected bycatch into consideration when specifying the overfishing limit and acceptable biological catch upon which ACLs for those species are based.

As summarized in **Section 1.1** of this BPA, most actions in Regulatory Amendment 14 are not expected to result in significant changes in bycatch of greater amberjack, black sea bass, and vermilion snapper, or co-occurring species. Reducing the trip limit for gag is expected to reduce bycatch of gag by extending the fishing season for the species, and allowing incidental catch of the species to be retained. ACLs and AMs are in place for these species to ensure overfishing does not occur, and expected bycatch has been taken into consideration when specifying catch levels. Modifying fishing seasons, reducing trip limits, and establishing new AMs would add further assurance that overfishing does not occur. Additionally, as stated in **Chapter 3,** and analyzed in detail in **Chapter 4**, the biological (and consequently ecological) effects due to changes in the bycatch would likely be negligible.

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

Regulatory Amendment 14 is not expected to affect major changes in bycatch of other fish species. While Regulatory Amendments 18 (2013b) and 19 (2013c) increase the ACLs for vermilion snapper and black sea bass, AMs are in place to ensure that overfishing does not occur. Regulatory Amendment 15 (2013a) reduced the commercial trip limit for gag, and modified the gag AM to only close the commercial sector for gag (not other shallow water grouper species as well). Regulatory Amendment 15 (2013a) also reduced the gag commercial ACL to account for dead discards that could occur after the gag commercial ACL is met when fishermen target co-occurring grouper species. Therefore, bycatch and discards of closely associated species such as gray triggerfish, tomtate, red grouper, and scamp are not expected to be affected by the proposed actions in Regulatory Amendment 14.

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 proposed rule for the 2013 LOF classifies as a Category II (78 FR 53336, August 29, 2013). Gear types used in these sectors 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 in the snapper grouper fishery; each was taken by handline gear and each released alive (McCarthy SEFSC database). The longline and hook and line gear components of the snapper grouper fishery in the South Atlantic are classified in the 2013 LOF (78 FR 23708; April 22, 2013) as Category III fisheries. Category II means that there is a remote likelihood or no known incidental mortality and serious injuries of marine mammals.

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) and these whales generally occur further offshore. However, the November 1 through April 30 closure to the pot sector in Regulatory Amendment 19 (SAFMC 2013c) will further reduce the potential risk to protected species as this is the calving season for right whales in the South Atlantic. In addition, the potential risk to protected species has likely been reduced with implementation of Amendment 18A to the Snapper Grouper FMP (SAFMC 2012), which established 32 black sea bass pot endorsements, limited the number of pots that can be fished to 35, and required that pots be returned to shore at the conclusion of a trip. There are no documented interactions between the black sea bass pot sector and large whales.

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

The actions in Regulatory Amendment 14 to change the fishing years, reduce trip limits, and modify AMs would be expected to affect the cost of fishing operations for vermilion snapper, black sea bass, gag, and greater amberjack. It is likely that all four states (North Carolina, South Carolina, Georgia, and Florida) would be affected by actions in the amendment if implemented through rulemaking. Additionally, factors such as waterfront property values, availability of less expensive imports, etc. may affect economic decisions made by recreational and commercial fishermen who target these species.

Economic effects of the actions proposed in Regulatory Amendment 14 are addressed in **Chapter 4**, as well as **Appendices G** (Regulatory Impact Review) and **H** (Regulatory Flexibility Act Analysis).

1.6 Changes in Fishing Practices and Behavior of Fishermen

Actions proposed in Regulatory Amendment 14 could result in a modification of fishing practices by commercial and recreational fishermen. However, as discussed in **Sections 1.1** and **1.2** of this BPA, the magnitude of discards is not expected to be significantly affected by the proposed actions. It is difficult to quantify any of the measures in terms of reducing discards until bycatch has been monitored over several years. Commercial and recreational bycatch information is collected by NMFS, and that information will continue to be analyzed to determine what changes, if any, have taken place in terms of fishing practices and fishing behavior as a result of the actions implemented through this amendment.

Social effects of actions proposed in Regulatory Amendment 14 are addressed in **Chapter 4** of this document. **Section 3.3.4** includes information on environmental justice.

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

Research and monitoring is ongoing to understand the effectiveness of proposed management measures and their effect on bycatch. In 1990, the SEFSC initiated a logbook program for vessels with federal permits in the snapper grouper fishery from the Gulf of Mexico and South Atlantic. Approximately 20% of commercial fishermen 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. The SEFSC is developing electronic logbooks, which could be used to enable fishery managers to obtain information on species composition, size distribution, geographic range, disposition, and depth of fishes that are released. Further, The Joint Commercial Logbook Reporting Amendment is being developed by the South Atlantic Council and the Gulf of Mexico Council, which would require electronic reporting of landings

information by federally-permitted commercial vessels to increase the timeliness and accuracy of landings and discard data.

Recreational discards are obtained from MRIP and logbooks from the NMFS headboat program. Additional data collection activities for the recreational sector are being considered by the South Atlantic Council that could allow for a better monitoring of snapper grouper bycatch in the future. Some observer information has been provided by Marine Fisheries Initiative and Cooperative Research Programs (CRP), but more is desired for the snapper grouper fishery. In December 2012, the Southeast Region Headboat Survey underwent a transition from paper logbooks to electronic logbooks, which is expected to improve the quality of data in that sector. As of January 1, 2013, the paper logbook form has been replaced by a new electronic logbook. The form is available through a password protected Web site on the internet, which can be accessed by personal computer, computer tablet, or "smart phone". The South Atlantic Council approved an amendment at their March 2013 meeting, which if implemented, would require weekly electronic reporting.

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

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

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

Additional administrative and enforcement efforts would help to implement and enforce fishery regulations. NMFS established the South East Fishery-Independent Survey in 2010 to strengthen fishery-independent sampling efforts in southeast U.S. waters, addressing both immediate and long-term fishery-independent data needs, with an overarching goal of improving fishery-independent data utility for stock assessments. Meeting these data needs is critical to improving

scientific advice to the management process, ensuring overfishing does not occur, and successfully rebuilding overfished stocks on schedule.

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

The preferred management measures and any changes in economic, social, or cultural values are discussed in **Chapter 4** of Regulatory Amendment 14. Further analysis can be found in **Appendices G** (Regulatory Impact Review) and **H** (Regulatory Flexibility Act Analysis).

1.9 Changes in the Distribution of Benefits and Costs

The distribution of benefits and costs expected from the action in Regulatory Amendment 14 are expected to be negligible and discussed in **Chapter 3**. Economic and social effects of the actions proposed in Regulatory Amendment 14 are addressed in **Chapter 4**.

1.10 Social Effects

The social effects of all the measures are described in **Chapter 4** of Regulatory Amendment 14.

1.11 Conclusion

This section evaluates the practicability of taking additional action to minimize bycatch and bycatch mortality using the ten factors provided at 50 CFR 600.350(d)(3)(i). In summary, measures proposed in Regulatory Amendment 14 are intended to modify the commercial and recreational fishing years for greater amberjack and black sea bass; consider changing the commercial fishing season for vermilion snapper; modify the commercial trip limit for gag; and revise the recreational AMs for black sea bass and vermilion snapper. As summarized in **Section 1.1** of this BPA, most actions in Regulatory Amendment 14 are not expected to result in significant changes in bycatch of greater amberjack, black sea bass, and vermilion snapper, or co-occurring species. Reducing the trip limit for gag is expected to reduce bycatch of gag by extending the fishing season for the species, and allowing incidental catch of the species to be retained. Furthermore, Regulatory Amendment 14 is not expected to affect major changes in bycatch of other fish species.

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Appendix F. Data analysis for actions in Regulatory Amendment 14

Action 1. Modify the commercial and recreational fishing years for greater amberjack.

Commercial landings

The commercial ACL dataset (Commercial_ACL_TABLES_07032012) was summarized to provide the South Atlantic greater amberjack landings. The landings did not include the general category amberjack landings but instead only included greater amberjack landings. Commercial landings were in whole weight and were converted to gutted weight to match the ACL unit. A conversion of 1.04 was used. The SERO website South Atlantic greater amberjack quota monitoring landings were exactly the same as the landings generated from the commercial ACL dataset.

The commercial trip limit is 1,200 pounds gutted weight (lbs gw; effective July 15, 2011). **Figure F-1** displays the monthly greater amberjack landings from 2007 to 2011. Landings were reduced in April from the fixed closed season for this month and landings peaked in May. A trip limit of 1,200 lbs gw was implemented on July 15, 2011 to reduce landings. The full impact of the trip limit will not be discernible until 2012 commercial data are available. **Table F-1** provides the landings (lbs gw) for the greater amberjack commercial sector from fishing years 2007/2008 to 2011/2012.

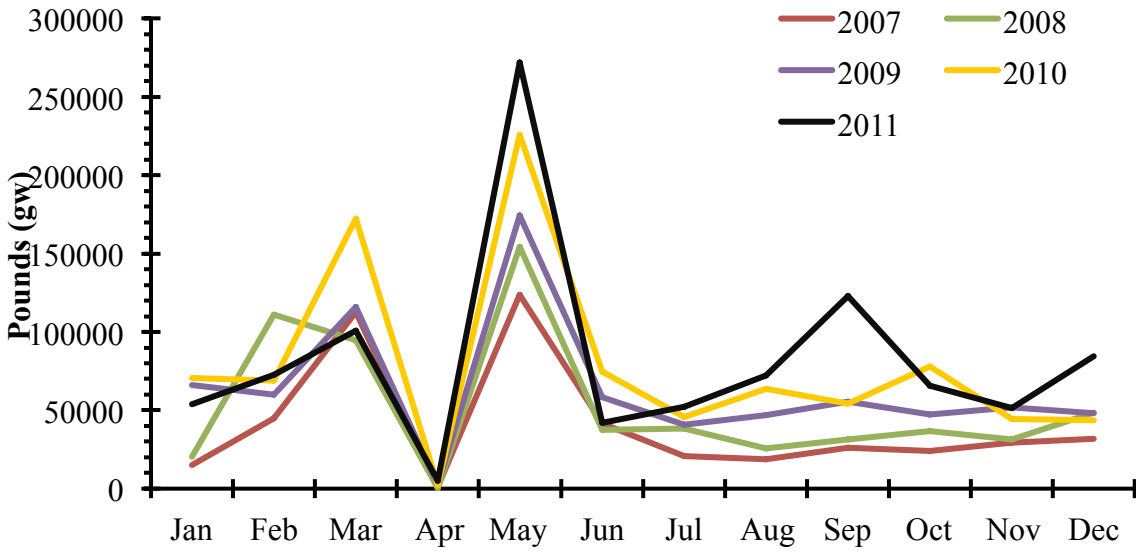

Figure F-1. South Atlantic greater amberjack commercial landings by month from 2007 to 2011. The weight units are in gutted weight (gw) to match the commercial ACL. Note: Conversion factor from gutted weight to whole weight is 1.04 for greater amberjack.

Table F-1. Commercial landings (lbs gw) for greater amberjack from fishing years 2007/2008 to 2011/2012.

Year	Fishing Season*	Total Landings (gw)	ACL (gw)	Quota %	Closure Date
2011-2012	May 1 - April 30	1,119,989	1,169,931	95.73	No closure
2010-2011		862,087	1,169,931	73.69	No closure
2009-2010		837,077	1,169,931	71.55	No closure
2008-2009		648,247	1,169,931	55.41	No closure
2007-2008		542,438	1,169,931	46.36	No closure

*Commercial harvest of greater amberjack is prohibited during April. Note: Conversion factor from gutted weight to whole weight is 1.04 for greater amberjack.

The supplemental final rule for the Comprehensive ACL Amendment, implemented on August 17, 2012, reduced the commercial ACL for greater amberjack from 1,169,931 lbs gw to 769,388 lbs gw.

Table F-2 provides the predicted closure dates for all three alternatives for **Action 1** of Regulatory Amendment 14. Landings came from the years 2006-2011.

Table F-2. Predicted closure dates for all three alternatives for **Action 1** of Regulatory Amendment 14 for the South Atlantic greater amberjack commercial sector. Predicted closure dates came from the years of data of 2006-2011. Note: Predicted closure dates reflect current commercial ACL of 769,388 lbs gw. Conversion factor from gutted weight to whole weight is 1.04 for greater amberjack.

Fishing Year	Alt 1	Alt 3	Fishing Year	Alt 2
	May-Apr	Mar-Feb		Jan-Dec
2006/2007	No Closure	No Closure	2007	No Closure
2007/2008	No Closure	No Closure	2008	No Closure
2008/2009	No Closure	No Closure	2009	No Closure
2009/2010	19-Mar	23-Feb	2010	25-Sep
2010/2011	4-Mar	6-Dec	2011	23-Sep

Recreational landings

Recreational landings were generated from ACL dataset (ACLspec_rec81_12wv6_25Feb13.sas7bdat). The Gulf of Mexico greater amberjack recreational landings originating in the Florida Keys were added to the South Atlantic greater amberjack landings. The recreational landings are organized by wave and were split into months by multiplying the wave landings by the proportion of days the month contributed to the wave. For example, April landings were determined by multiplying wave 2 landings by 0.491803 because April had 30 of the 61 days in wave 2. **Figure F-2** provides the South Atlantic greater amberjack recreational landings by month. This figure includes both MRFSS and Headboat landings. **Table F-3** presents South Atlantic greater amberjack recreational landings from 2006/2007 to 2010/2011 with the current fishing season of May 1 to April 30.

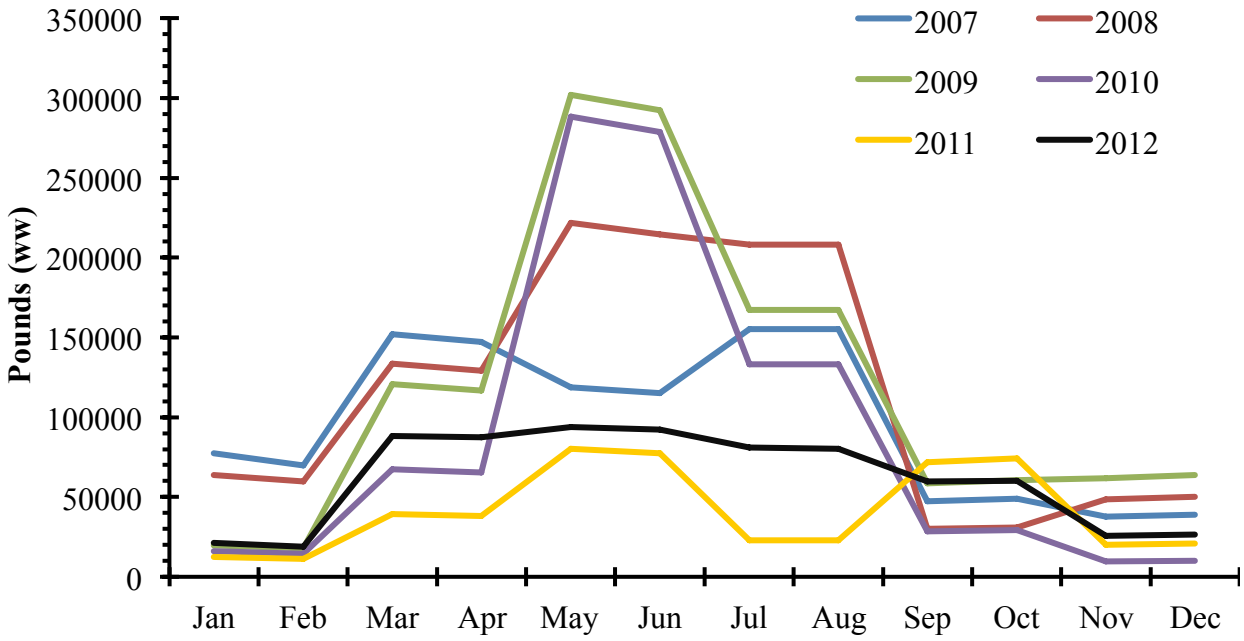

Figure F-2. South Atlantic greater amberjack recreational landings by month from 2007 to 2012. The recreational landings include MRFSS and HBS landings. The weight units are in whole weight to match the recreational ACL.

Table F-3. South Atlantic greater amberjack recreational landings (lbs ww) from 2006/2007 to 2010/2011 for the current May-April fishing year.

Season	Landings (lbs ww)
2006/2007	998,900
2007/2008	1,103,171
2008/2009	1,287,695
2009/2010	1,337,001
2010/2011	1,012,783
2011/2012	610,606

Table F-4 provides the predicted closure dates for all three alternatives for Action 1 of Regulatory Amendment 14. Landings came from the years 2006-2011 and included both MRFSS and Headboat landings.

Table F-4. Predicted closure dates for all three alternatives for Action 1 of Regulatory Amendment 14 for the South Atlantic greater amberjack recreational sector. Predicted closure dates came from the years of data of 2006-2011. The recreational landings include both MRFSS and HBS landings. Note: Predicted closure dates reflect current recreational ACL of 1,167,837 lbs ww.

Fishing Year	Alternative 1	Alternative 3	Fishing Year	Alternative 2
	May-Apr	Mar-Feb		Jan-Dec
2006/2007	No Closure	No Closure	2007	No Closure
2007/2008	No Closure	No Closure	2008	20-Aug
2008/2009	30-Mar	22-Oct	2009	24-Aug
2009/2010	28-Dec	31-Aug	2010	No Closure
2010/2011	No Closure	No Closure	2011	No Closure

Action 2. Modify the fishing year for the black sea bass recreational sector.

Black sea bass harvest rates have increased in recent years, and quota closures have resulted in an early season 'derby' fishery, changing the seasonal dynamic of harvest (**Figure F-3**). The 2012/13 recreational black sea bass fishing season opened on June 1, 2012 and was closed due to a quota overage on September 4, 2012. Projecting the 2013/2014 season length is complicated primarily due to two factors: (1) rebuilding status of the population and (2) persistence (or not) of increasing catch rates. If the black sea bass stock is rebuilt, a plateau in exploitable population biomass might lead to a stabilized catch rate. Coupled with an increased ACL, this could result in a longer season. A recent assessment (SEDAR-25 Update 2013) has indicated that a strong year class is moving through the fishery. An increase in exploitable population abundance might lead to an increase in catch rate, resulting in the quota being caught more quickly. If the increased ACLs proposed in Regulatory Amendment 19 reduce derby fishing conditions that have led to increasingly compressed recreational fishing seasons in recent years, the quota may be caught more slowly. Due to uncertainty in these dynamics, a variety of projection methods were used to explore possible quota closure dates for the South Atlantic recreational black sea bass fishery under the increased ACL proposed by Regulatory Amendment 19, for the fishing year modifications proposed in Action 2 of Regulatory Amendment 14.

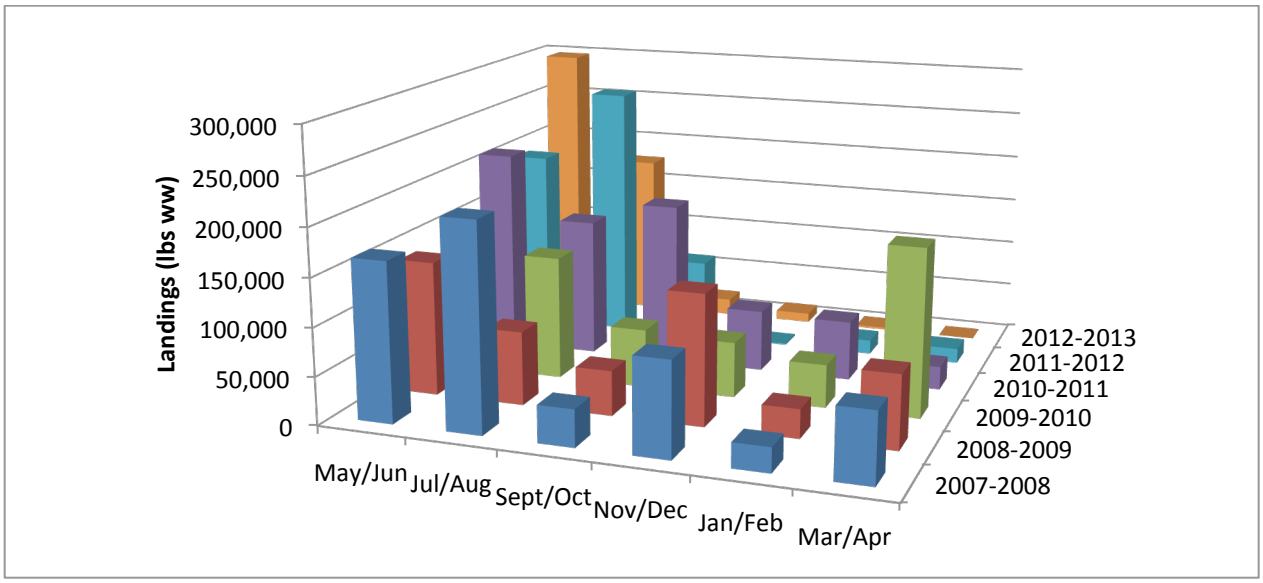

Figure F-3. South Atlantic recreational harvest of black sea bass by wave and fishing season. Note in years without quota closures, some portion of the May/June landings may be from the previous season. Source: SEFSC MRFSS-based ACL Data (2013).

Over 50 different recreational catch rate projection models were developed, with three selected as the most useful for management. The best-fitting of the numerous Seasonal Autoregressive Integrated Moving Average (SARIMA) models evaluated predicted an extremely

high catch rate for 2013 (**Figure F-4**). This model explained 51% of the variability in catch rate by wave between 1999/2000-2012/2013. Exploitable population abundance was not a significant predictor of catch rate. This SARIMA model represented a 'continuity run' of the model used to predict the quota closure date for the 2012/2013 season (**SERO-LAPP-2012-04**). This high predicted catch rate is likely due to the increases in catch rate observed between the 2010/2011-2012/2013 recreational seasons. Assuming the stock is recovered, as indicated by the recent assessment (SEDAR-25 Update 2013), then the increasing catch rates observed in 2011/2012 and 2012/2013 may plateau somewhat. Additionally, the large increase in quota, such as that anticipated, may result in relaxation recreational fishing effort and associated high daily catch rates. Finally, the model predicts high catch per day in the later months (September on), which may not be possible in the South Atlantic, as fishing pressure may be reduced in fall and winter due to school schedules, deteriorating weather conditions, etc.

The second model developed used the observed catch rates from the 2012/2013 for June-August 2013, assuming catch rates have plateaued with stock recovery. This model then used the SARIMA 2013 forecast catch rates for September on. If the stock continues to grow, this model may underestimate early season catch rates. If localized depletion occurs, this model may overestimate late season catch rates.

The third model evaluated ignores the seasonal trend, and simply projects the in-season mean annual harvest rates using a generalized linear model (GLM) with a log-linked negative binomial error distribution (**Figure F-4**). A seasonal trend was then imposed upon the GLM forecast annual total harvest using the mean catch per month from 2008-2010, the most recent years in which all months were open (**Figure F-5**).

The majority of models estimated that a quota closure will be necessary under the status quo between September-December 2013 (**Table F-5**). If the catch rates have not plateaued and continue to increase, it could close as early as late August. However, this would require catch rates to more than double between the 2012/13 and 2013/14 fishing seasons, which is unlikely. If catch rates have plateaued, and the increased ACL spreads out fishing effort and landings, the recreational sector may remain open as late as mid-March.

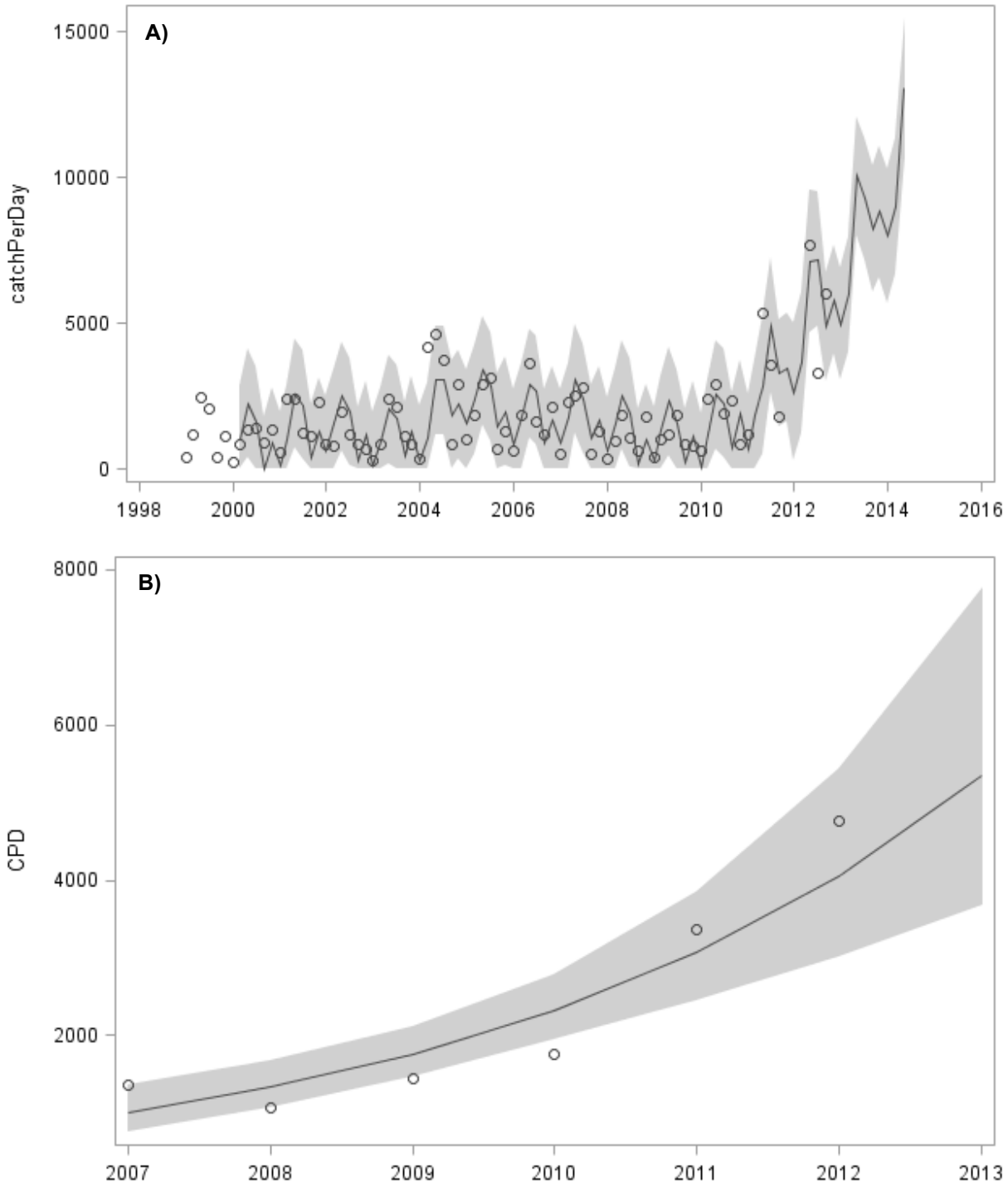

Figure F-4. Forecasts of 2013-2014 season recreational South Atlantic black sea bass fishery daily catch rates ('CPD' or 'catchPerDay') using (**A**) seasonal autoregressive integrated moving average model fit to bimonthly ('wave') catch rates and (**B**) generalized linear model fit to fishing season catch rates. Gray bands denote 95% confidence limits, open circles denote observed catch rates. Note the model fits for the final two years of Model (A) are rather poor, and these trends are perpetuated in the projections.

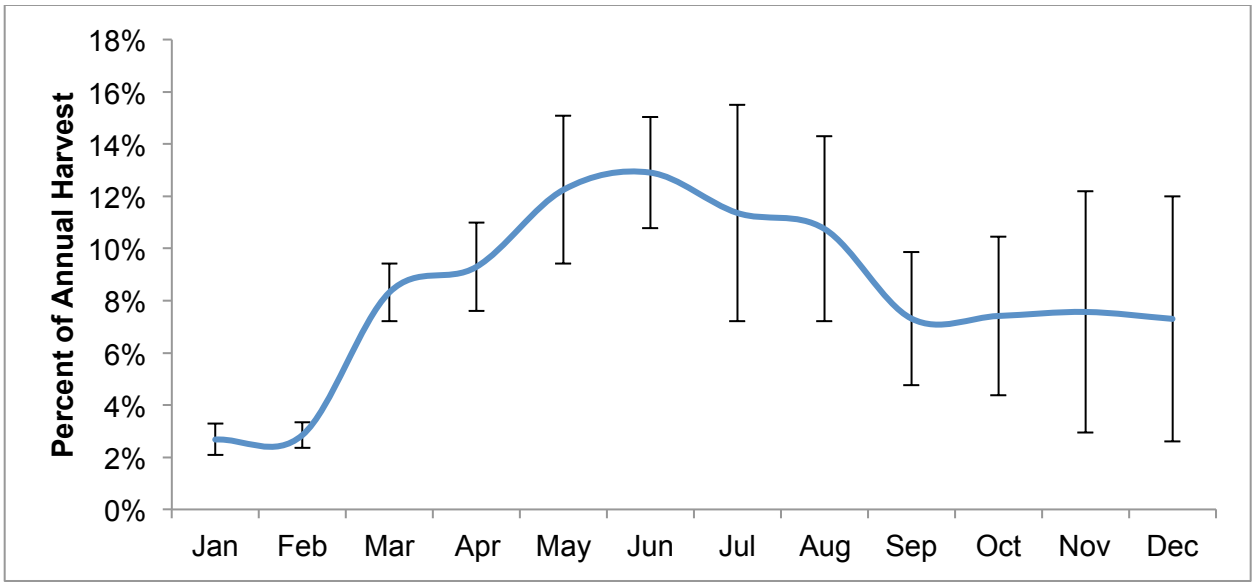

Figure F-5. Mean percent of annual recreational South Atlantic black sea bass harvest, by month (2008-2010). These monthly harvest percentages were used to seasonalize the projected harvest rate from the GLM shown in Figure F-4.

Table F-5. Projected closure dates and season length (days) for Action 2 recreational fishing season alternatives under three different projection model runs, with 95% confidence intervals. Note these projections use the 2014 ACL from Regulatory Amendment 19 of 1,033,980 lbs ww.

ACTION 2	SARIMA			2012 (Jun-Aug), SARIMA (Sept-May)			GLM (Seasonal)		
Alternative	**Mean**	**L95%**	**U95%**	**Mean**	**L95%**	**U95%**	**Mean**	**L95%**	**U95%**
Alternative 1 (No Action): June 1-May 31	20-Sep 111	28-Oct 149	29-Aug 89	23-Dec 205	27-Feb 271	25-Nov 177	14-Nov 166	27-Mar 299	7-Sep 98
Alternative 2: January 1-December 31	2-May 121	6-Jun 156	7-Apr 96	18-Jun 168	10-Sep 252	15-May 134	14-Jul 194	28-Sep 270	3-Jun 153
Alternative 3: April 1-March 31	17-Jul 107	18-Aug 139	27-Jun 87	8-Oct 190	8-Dec 251	10-Sep 162	21-Aug 142	24-Nov 237	6-Jul 96
Alternative 4: October 1-September 30	31-Jan 122	16-Mar 166	4-Jan 95	9-Apr 190	17-Jun 259	21-Feb 143	20-May 231	18-Jul 290	2-Apr 183
Alternative 5: May 1-April 30	15-Aug 106	17-Sep 139	27-Jul 87	11-Nov 194	10-Jan 254	15-Oct 167	24-Sep 146	4-Jan 248	31-Jul 91

All analyses assume monthly catch rates projected for the 2013-2014 season, due to increasing uncertainty with projecting further into time. If catch rates for the 2014-2015 season are higher (due to increased effort or a good year class moving through the fishery), the season would be shorter than projected above. If catch rates are lower due to reduced effort, drops in

spawning stock biomass, or some other factor, the season could be longer than projected above. Also, this modeling approach does not account for any transition of high CPUEs early in the season (regardless of start date) or derby-fishery conditions that may transpire with a change in season start date.

Action 3. Modify the recreational accountability measure for black sea bass.

Similar analyses to those presented under Action 2 were performed for predicting the recreational season length if it were to be constrained by the ACT, as opposed to the ACL. Table F-7 below shows the results of the projections.

Table F-7. Projected closure dates and season length (days) for Action 3, Alternative 3 recreational fishing season alternatives under three different projection model runs, with 95% confidence intervals. Note these projections use the ACT from Regulatory Amendment 19 of 903,905 lbs ww.

SARIMA			2012 (Jun-Aug), SARIMA (Sept-May)			GLM (Seasonal)		
Mean	**L95%**	**U95%**	**Mean**	**L95%**	**U95%**	**Mean**	**L95%**	**U95%**
3-Jul	30-Jul	16-Jun	11-Sep	5-Nov	11-Aug	2-Aug	16-Oct	25-Jun
93	120	76	163	218	132	123	198	85

In the Gulf of Mexico recreational red snapper fishery, analyses showed that the announcement of a fishing season end date at the start of fishing season, as proposed under **Alternatives 2** and **3** of this action, can lead to a derby mentality (see SERO-LAPP-2011-01). Effort compression during a fixed season leads to increased daily catch rates, and this cycle becomes difficult to reverse, leading to progressively shorter seasons in subsequent years to prevent an ACL overage. This process can become quite contentious, reduces safety at sea, and reduces ability to prevent ACL overages by truncating the season length and the ability to use in-season recreational harvest data to project a quota overage date. **Figure F-6** below shows that, as red snapper season length has decreased over time, the number of angler trips per day has actually increased (http://sero.nmfs.noaa.gov/sf/pdfs/SERO-LAPP-2012-01%20Gulf%20Red%20Snapper%20Quota%20Closure%2012April2012%20FINAL.pdf)

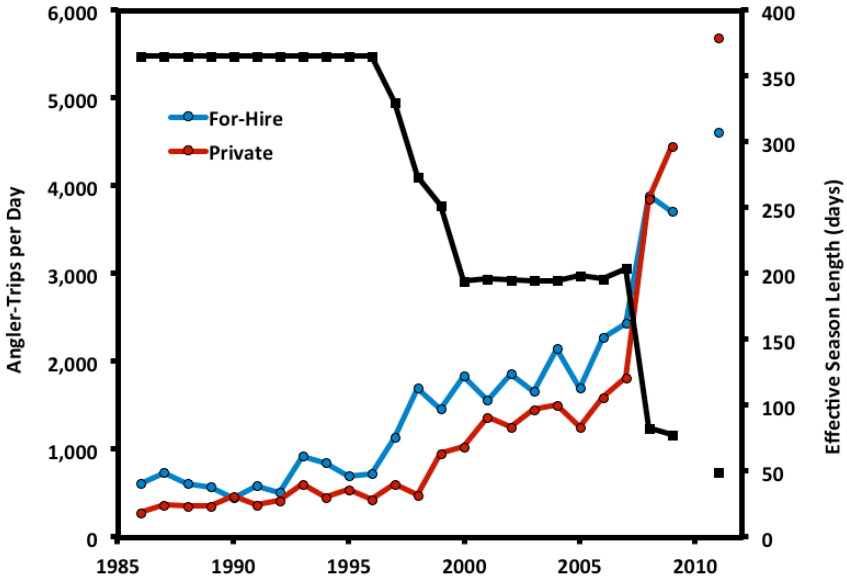

Figure F-6. Red snapper angler-trips per day (red and blue lines) and effective season length (black line), 1986-2011, excluding 2010.

Action 4. Modify the fishing year for the black sea bass commercial sector.

Black sea bass harvest rates have increased in recent years, and quota closures have resulted in an early season 'derby' fishery, changing the seasonal dynamic of harvest (**Figure F-7**). For the 2012/13 South Atlantic commercial black sea bass fishing season, the start date of the fishing year was delayed from June 1 to July 1 to allow the black sea bass pot endorsement program to be effective. Additionally, the stock appears to be rebuilding ahead of previous projections. An increase in exploitable population abundance, due to population recovery, might also lead to an increase in catch rate, resulting in the quota being caught more quickly. A plateau in exploitable population biomass might lead to a stabilized catch rate; coupled with an increased ACL, this could result in a longer season. These factors make it challenging to estimate when the increased commercial ACL, implemented by Regulatory Amendment 19, would be met.

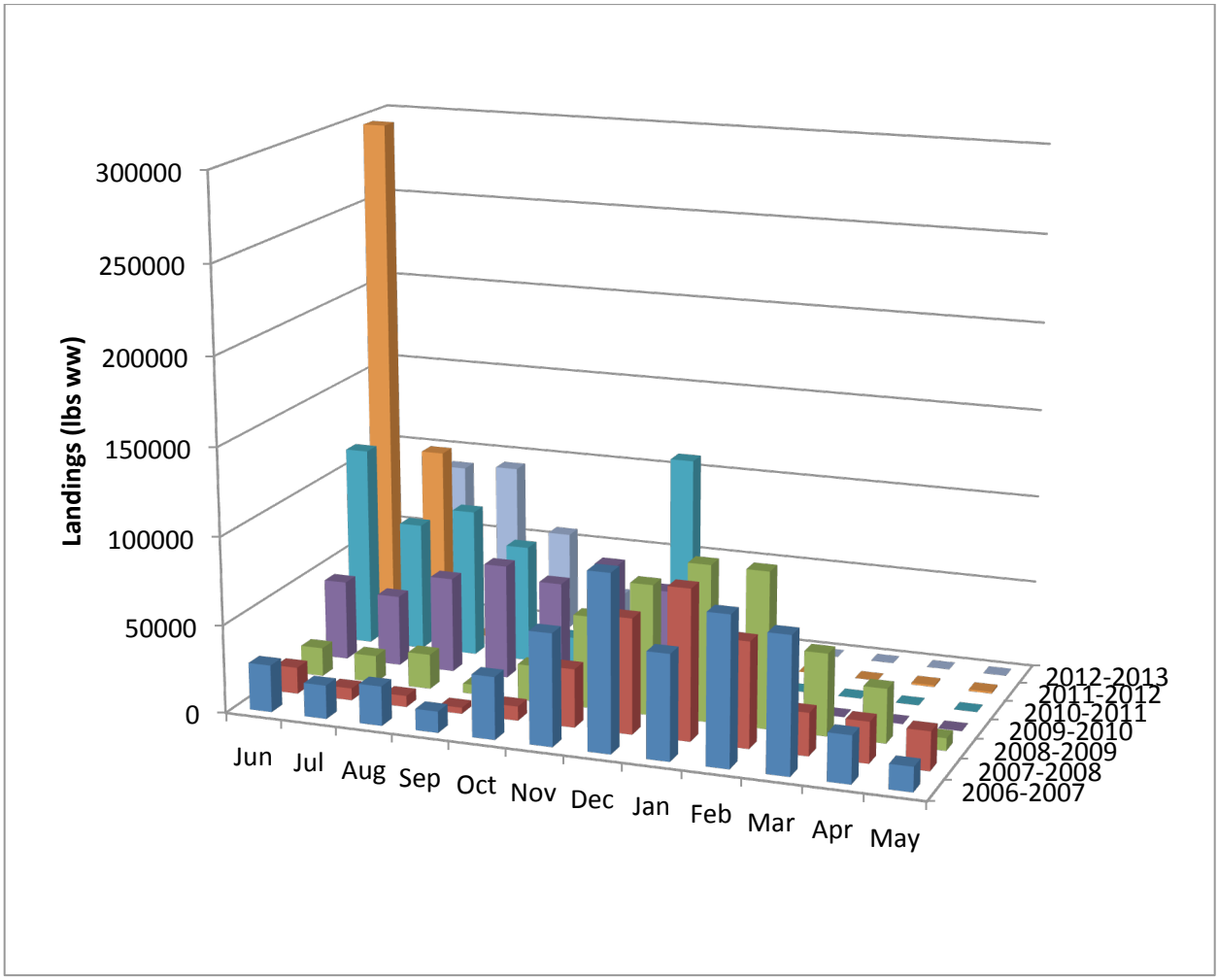

Figure F-7. South Atlantic commercial harvest (lbs ww) of black sea bass by month and fishing season.

Commercial landings were very high in June and July of 2011-2012 and 2012-2013, when compared with previous fishing seasons (**Figure F-7**). Previously, state-licensed commercial harvest of black sea bass comprised <5% of the annual total. Only federally-licensed commercial operators are required to submit the logbook reports that were used in the analyses described below. In the past two complete fishing seasons (2011-2012 and 2012-2013), harvest that was reported by dealers but not to federal logbooks comprised 29% and 12% of the total harvest, respectively. This was probably due the increased presence of non-federally licensed commercial operators, harvesting black sea bass from state waters. The expansion factor necessary to extrapolate the impacts of logbook-simulated trap effort reductions and trip limits to these state operators is uncertain. A scalar of 12% was used, as this was the most recent value; however, uncertainty in this parameter might substantially impact the results of our analyses. If the recovery of black sea bass stock leads to higher catch per unit effort in state waters compared with previous years, these expansion factors, and associated catch rates, may be underestimated. In addition, the endorsement requirement for pot gear imposed under Amendment 18A appears to have substantially shifted fishing effort from pot gear to hook-and-line gear. Vertical line landings more than doubled between the 2011/12 and 2012/13 seasons. The simulations of black sea bass commercial harvest for this action applied commercial vertical line catch rates from the 2012/13 season under all scenarios. If more participants shift into the vertical line sector, this would result in earlier closures than projected herein.

Table F-8 shows the projected dates when the ACL would be met based on four different projection model runs. The projections are based on the ACL that would be implemented by Regulatory Amendment 19. A major point of sensitivity with the projection model runs is whether black sea bass is open when the pot gear closure becomes effective on November 1. The vertical line catch rates are lower, so commercial harvest for black sea bass as a whole remains open longer, if it is still open by November 1.

Table F-8. Projected closure dates and season length (days) for Action 4 commercial fishing season alternatives under four different projection model runs. First model assumes 2012/2013 catch rates continue for the 2013/2014 season (column titled, "2012/13 Catch Rate"). A second model assumes the higher catch rates from 2011/2012's season return (column titled, "2011/12 Catch Rate"). The third model uses a logarithmic regression of in/season catch rates to project the 2013/2014 catch rate (column titled, "In-season Projection"). The final projection model applies a Seasonal Autoregressive Integrated Moving Average (SARIMA) model to project seasonal and interannual dynamics in catch rate forward in time, with 95% confidence limits. Note these model runs assume a commercial ACL of 661,034 lbs gw (Regulatory Amendment 19). Note: Conversion factor from gutted weight to whole weight is 1.18 for black sea bass.

Alternative	PROJECTION MODEL					
	2012/13 Catch Rate	2011/12* Catch Rate	In-Season Projection	SARIMA Projection		
				L95%	MEAN	U95%
1 (No Action): June 1-May 30	No Closure	No Closure	7-May	No Closure	1-May	7-Oct
Season (days)	365	365	340	365	334	128
2: July 1-June 30	No Closure	13-Jun	7-May	31-May	3-May	5-Jan
	365	347	310	334	306	188
3c:	5-Nov	27-Oct	18-Sep	13-Oct	10-Sep	18-Aug

Alternative	PROJECTION MODEL					
	2012/13 Catch Rate	2011/12* Catch Rate	In-Season Projection	SARIMA Projection		
				L95%	MEAN	U95%
Jan 1-Apr 30: 300 lb trip limit	308	299	260	285	252	229
3b: Jan 1-Apr 30: 200-lb trip limit	7-Nov 310	29-Oct 301	19-Sep 261	15-Oct 287	11-Sep 253	19-Aug 230
3a: Jan 1-Apr 30: 100-lb trip limit	12-Nov 315	3-Nov 306	23-Sep 265	19-Oct 291	15-Sep 257	22-Aug 233
4: May 1-Apr 30	28-Feb 303	22-Jan 266	7-Oct 159	19-Nov 202	28-Sep 150	3-Sep 125

Sources: SEFSC Commercial Logbook (March 2013), SEFSC ACL Commercial Data (July 2013)

Table F-9 shows the percent reduction in harvest under the various trip limit sub-alternatives under **Alternative 3**.

Table F-9. Percent reduction in harvest of black sea bass under trip limit alternatives for hook and line gear from January 1 to April 30.

Fishing Year	Status Quo	300-lb	200-lb	100-lb
2012- 2013	0%	18%	24%	40%

Source: SEFSC Commercial Logbook (June 2013).

Action 5. Modify the commercial fishing year for vermilion snapper.

The commercial split season quotas were first implemented for vermilion snapper through Amendment 16 to the Snapper Grouper FMP. The purpose of splitting the commercial season into two distinct time periods was to provide opportunities to fish for vermilion snapper throughout the South Atlantic and throughout the calendar year. Amendment 16 implemented a small commercial quota based on the outcome of SEDAR 17 (2008), which indicated vermilion snapper was undergoing overfishing at that time. NMFS anticipated the commercial sector would quickly reach the small annual quota and the fishing season would close very early in the year. By dividing the commercial quota into two six-month fishing seasons, vermilion snapper fishermen were given the opportunity to fish for the species at the beginning of the year and during the summer. The divided commercial quota also provided fishermen in the northern and southern areas of the South Atlantic a chance to fish for vermilion snapper when weather conditions were favorable.

A recent update to the vermilion snapper stock assessment (SEDAR 17 Update 2012) resulted in the total ACL increasing to 1,372,000 lbs ww in 2013 and then decreasing slightly each year through 2016 when the total ACL would be 1,269,000 lbs ww (as the stock returns to SSB_{MSY}) (**Table F-10**). Action 5 proposes modifications to the commercial fishing season and ACLs for commercial vermilion snapper. The action presents options for changing the seasons 1 and 2 ACLs by applying the increase in landings from the new Regulatory Amendment 18 ACL to the first season or the second season. **Alternative 1** (**No Action**) would be no change and continue a 50/50 split between the seasons. **Alternative 2** applies 100% of the increased landings from the new ACL to the second season, and **Alternative 3** applies 25% of the increased landings from the new ACL to the first season and 75% to the second season. **Tables F-11** and **F-12** show the changes in the commercial ACL under **Alternatives 2** and **3**, respectively.

Table F-10. ABC/ACLs and commercial split season ACLs for vermilion snapper using the current fishing season for 2013-2016 based on the recent SEDAR assessment and the South Atlantic Council/SSC-approved ABC control rule.

Year	ABC (lbs ww)	Total ACL (lbs ww)	Comm ACL (lbs ww)	Season 1 (lbs ww)	Season2 (lbs ww)
2013	1,372,000	1,372,000	932,960	466,480	466,480
2014	1,312,000	1,312,000	892,160	446,080	446,080
2015	1,289,000	1,289,000	876,520	438,260	438,260
2016	1,269,000	1,269,000	862,920	431,460	431,460

Table F-11. ABC/ACLs and commercial split season ACLs for vermilion snapper using the current fishing season for 2013-2016 based on the recent SEDAR assessment and the South Atlantic Council/SSC-approved ABC control rule with 100% of the increase in the ACL applied to second season (Alternative 2).

Year	ABC (lbs ww)	Total ACL (lbs ww)	Comm ACL (lbs ww)	Season 1 (lbs ww)	Season2 (lbs ww)
2013	1,372,000	1,372,000	932,960	326,527	606,433
2014	1,312,000	1,312,000	892,160	326,527	565,633
2015	1,289,000	1,289,000	876,520	326,527	549,993
2016	1,269,000	1,269,000	862,920	326,527	536,393

NOTE: Previous total ACL was 653,045 lbs ww.

Table F-12. ABC/ACLs and commercial split season ACLs using the current fishing season for 2013-2016 based on the recent SEDAR assessment and the South Atlantic Council/SSC-approved ABC control rule. 75% of increased ACL applied to second season (Alternative 3).

Year	ABC (lbs ww)	Total ACL (lbs ww)	Comm ACL (lbs ww)	Season 1 (lbs ww)	Season 2 (lbs ww)
2013	1,372,000	1,372,000	932,960	396,504	536,457
2014	1,312,000	1,312,000	892,160	386,304	505,857
2015	1,289,000	1,289,000	876,520	382,394	494,127
2016	1,269,000	1,269,000	862,920	378,994	483,927

NOTE: Previous total ACL was 653,045 lbs.

Commercial Season 1

The commercial ACL dataset was summarized to provide the South Atlantic vermilion snapper commercial landings from January to June. The annual landings from 2007 to 2012 are shown in **Table F-13** and plotted in **Figure F-8**. The annual landings from 2007 to 2009 have a different distribution than 2010 to 2012. The landings in 2007 to 2009 generally increased each month whereas the landings from 2010 to 2012 peaked in January and then decreased each month. This shift in the monthly landings is likely due to changes to the fishery from Amendment 16. In June 2009, Amendment 16 decreased the commercial ACL (quota) by over 450,000 pounds gw and split the annual season into two 6-month seasons (January to June and July to August). These changes appear to have caused a derby fishery. Due to differences in fisher behavior observed since these June 2009 management changes, our analyses for Regulatory Amendment 14 focus on data from recent years under the assumption that landings from recent years are more likely to reflect current and future fishing behavior.

Table F-13. Annual South Atlantic vermilion snapper commercial landings for commercial season 1 from 2007 to 2012. Annual landings were compared to the increased ACL from Regulatory Amendment 18 of 420,252 lbs gw. Note: Conversion factor from gutted weight to whole weight is 1.11 for vermilion snapper.

Year	Landings (lbs gw)	% of ACL
2007	340,342	81%
2008	416,513	99%
2009	421,831	100%
2010	356,822	85%
2011	326,410	78%
2012	383,996	91%

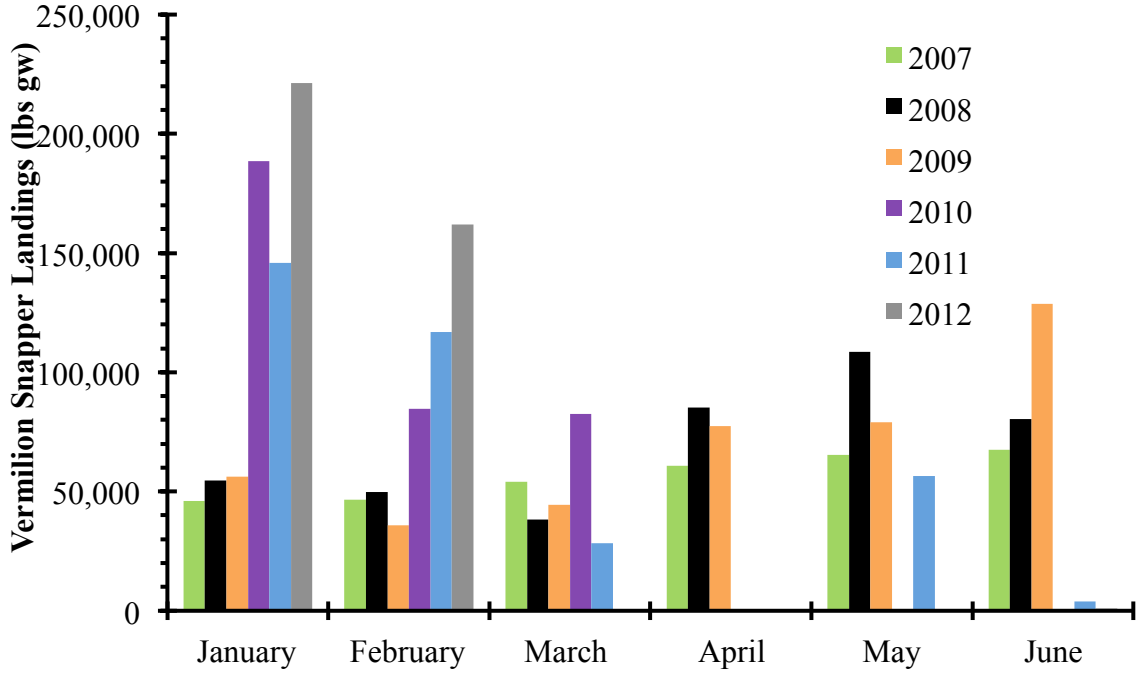

Figure F-8. South Atlantic vermilion snapper commercial landings from January to June for the years of 2007 to 2012. Note: Conversion factor from gutted weight to whole weight is 1.11 for vermilion snapper.

A prediction of future landings is needed to determine closure dates from the proposed regulation changes. Landings from 2012 were used for the analysis since they are the most recent year of complete data and display derby fishing behavior. Predicted future landings for January and February came from 2012 logbook data because the logbook dataset provides the landings per trip. The logbook data allowed analysis of the reduction of landings from the reduced trip limit of 1,500 pounds to 1,000 and 500 pounds from Regulatory Amendment 18. The logbook data was scaled to equal the January and February commercial ACL landings for 2012 (**Figure F-9**). The commercial ACL data is comprised of reviewed and approved

commercial landings data from dealers provided by the states to the Southeast Fisheries Science Center. This data is used for ACL tracking; thus, it is important to scale the analysis to the ACL data. Logbook and ACL data differ due to missing logbook reports and state-licensed commercial operators, who are not required to complete federal logbooks.

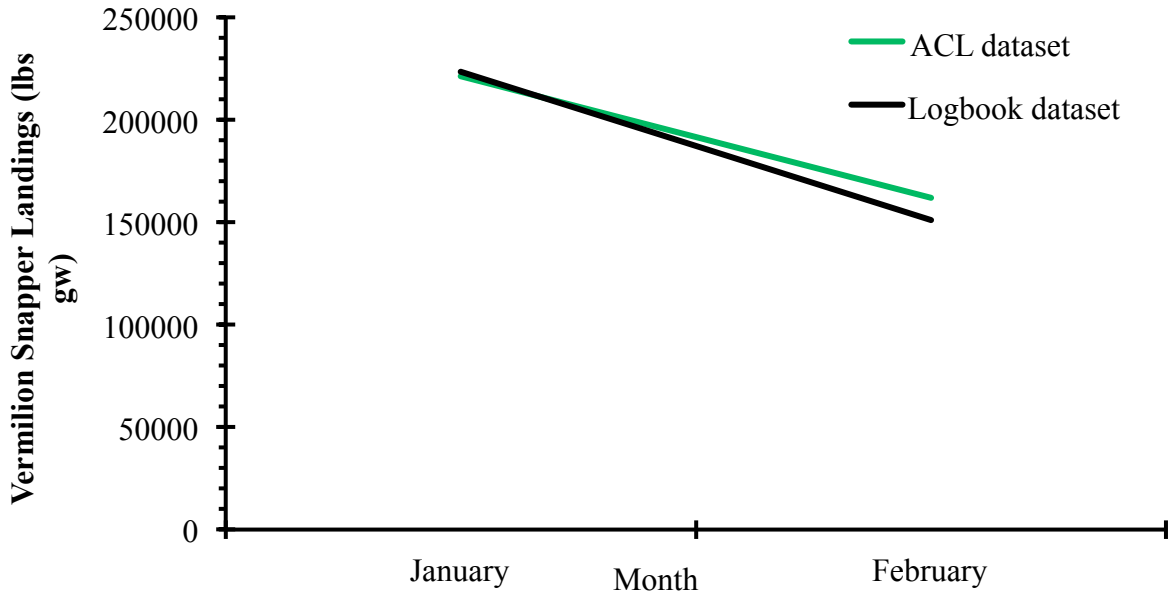

Figure F-9. Monthly commercial vermilion snapper logbook landings and ACL landings for January and February of 2012. Note: Conversion factor from gutted weight to whole weight is 1.11 for vermilion snapper.

Predictions of future landings during closed months (e.g. March) were necessary to make predictions when the ACL will be met. In 2012 the fishery closed on February 29th because the ACL was predicted to be met. Predicted landings for March were determined with two different scenarios. Scenario 1 used the daily catch rate (pounds landed per open day) from the most recent year with the fishery open for some days in March (2011) and multiplying it by the number of days in March to predict total March landings. Scenario 2 assumed the total monthly landings in March were the same as the total monthly landings in February 2012. The commercial fishery has been closed in April since 2009 as a result of changes to the fishery from Amendment 16. Therefore, predicted April landings were assumed to be the same as predicted March landings for both scenarios. **Figure F-10** displays landings from 2010 to 2012 and the predicted landings for the two scenarios for March to April.

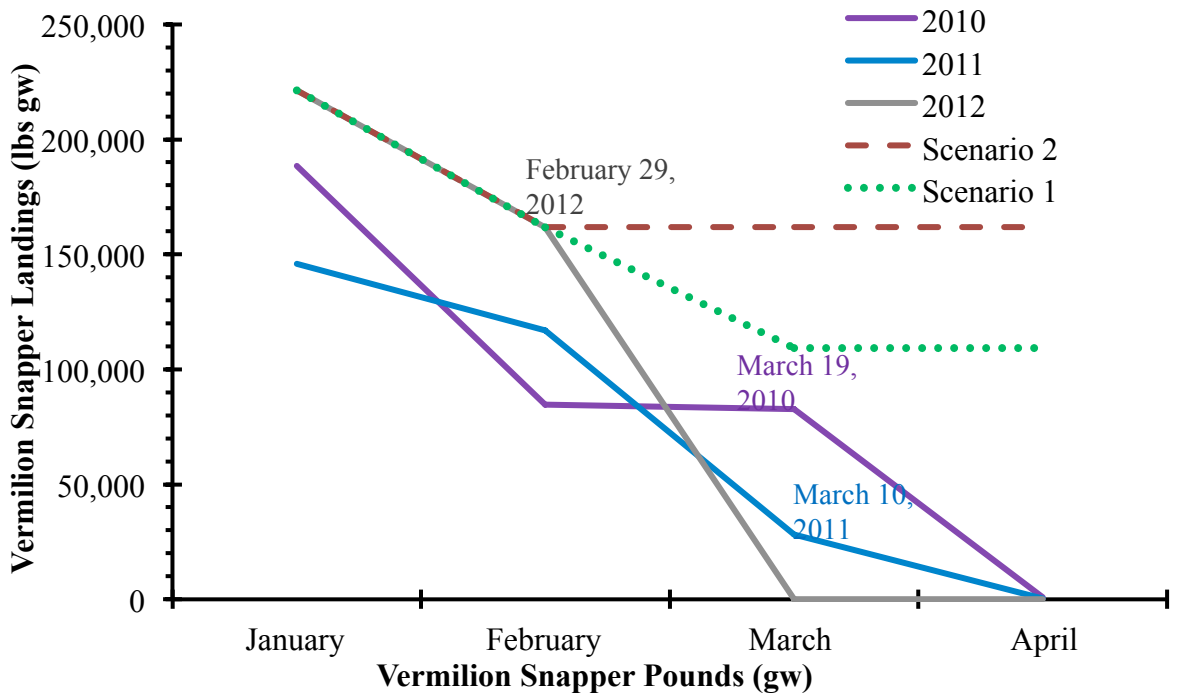

Figure F-10. Season 1 South Atlantic vermilion snapper commercial landings for January to April for 2010, 2011, and 2012, and predicted landings. In all three years the fishery experienced a closure and was not open the entire month of March. Closure dates for each season are included in the figure. Note: Conversion factor from gutted weight to whole weight is 1.11 for vermilion snapper.

Predicted landings came from 2012 when the fishery was open (January and February), and two different scenarios were chosen to predict March and April landings. Scenario 1 came from determining the landings per day in March 2011 when the fishery was open and multiplying landings by day against the number of days in March. Scenario 2 assumes March landings were the same as February 2012. Predicted April landings were assumed to be the same as predicted March landings.

Regulatory Amendment 18 is in the final rule stage and will reduce the current trip limit. Therefore a review of the pounds of vermilion snapper landed per trip is warranted. The majority of the trips from 2010 to 2012 landed more than 1,000 pounds of vermilion snapper (**Figure F-11**).

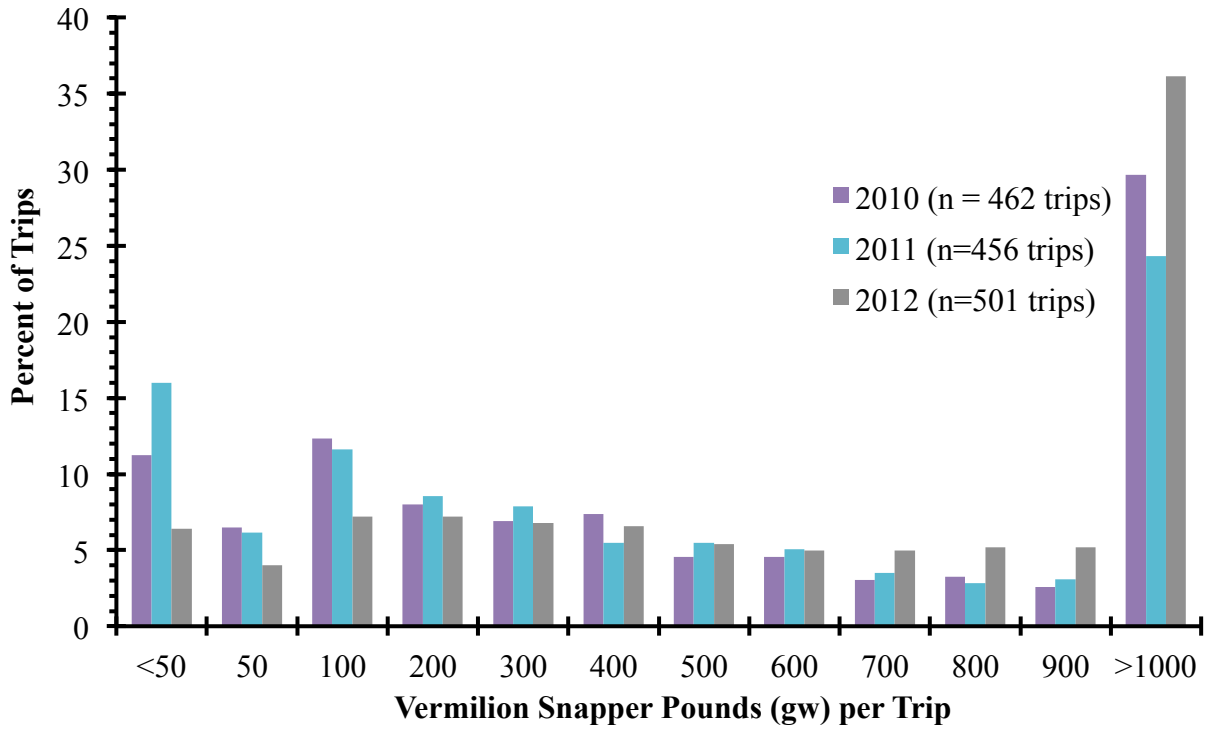

Figure F-11. Frequency distribution of South Atlantic vermilion snapper commercial landings per trip from 2010 to 2012 for the January to June season. Data came from the logbook dataset. Note: Conversion factor from gutted weight to whole weight is 1.11 for vermilion snapper.

Following the actions of Amendment 18 the trip limit will be reduced from 1,500 to 1,000 pounds gutted weight. This change was incorporated into the analysis by applying a 1,000 pound trip limit to logbook data that was scaled to match the quota monitoring data in January and February. Once 75% of the ACL was met the trip limit was reduced to 500 pounds following the regulations in Regulatory Amendment 18. As stated earlier, landings in March and April of 2012 were predicted because no landings were available in these months in recent years since the ACL was met and the fishery was closed. The predicted March and April landings were reduced to account for the reduced trip limit by applying percent reductions from reducing the trip limit that were calculated with 2012 data from season 1 when the fishery was open. **Table F-14** provides the percent reduction of landings from the trip limits calculated from March 2011 data.

Table F-14. Percent reductions South Atlantic commercial vermilion snapper landings from reducing the trip limit. The reductions were calculated from commercial season 1 landings in 2012 when the fishery was open.

Trip Limit	% Reduction
500	47.8
1000	15.3

Table F-15 provides the different ACLs and predicted closure dates for the first season under all three alternatives.

Table F-15. Commercial vermilion snapper season 1 predicted dates for the three alternatives proposed in Regulatory Amendment 14. Note: Conversion factor from gutted weight to whole weight is 1.11 for vermilion snapper.

	Alt. 1		Alt. 2		Alt. 3	
ACL (lbs gw)	420,252		294,168		357,211	
Scenario	1	2	1	2	1	2
Closure Date	23-Apr	5-Apr	5-Mar	3-Mar	30-Mar	21-Mar

Commercial Season 2

The commercial ACL dataset was summarized to provide the South Atlantic vermilion snapper commercial landings from July to December. The annual landings from 2007 to 2012 are shown in **Table F-16** and plotted in **Figure F-12**. The annual landings from 2007 and 2008 have a different distribution than 2009 to 2012. The landings in 2007 and 2008 were available in all six months of the season; however, in 2009 the season was closed early because the ACL was met. This shift in the monthly landings is likely due to changes to the fishery from Amendment 16. In June 2009, Amendment 16 decreased the commercial ACL (quota) by over 450,000 pounds gw and split the annual season into two 6 month seasons (January to June and July to August). These changes appear to have caused a derby fishery. Due to differences in fisher behavior observed since these June 2009 management changes, our analyses for Regulatory Amendment 14 focus on data from recent years under the assumptions that recent landings are more likely to reflect current and future fishing behavior.

Table F-16. Annual South Atlantic vermilion snapper commercial landings for Season 2 (July to December) from 2007 to 2012. Annual landings were compared to the increased ACL from Regulatory Amendment 18 of 420,252 lbs gw. Note: Conversion factor from gutted weight to whole weight is 1.11 for vermilion snapper.

Year	Landings (lbs gw)	% of ACL
2007	632,186	150%
2008	685,691	163%
2009	406,166	97%
2010	520,069	124%
2011	532,075	127%
2012	500,377	119%

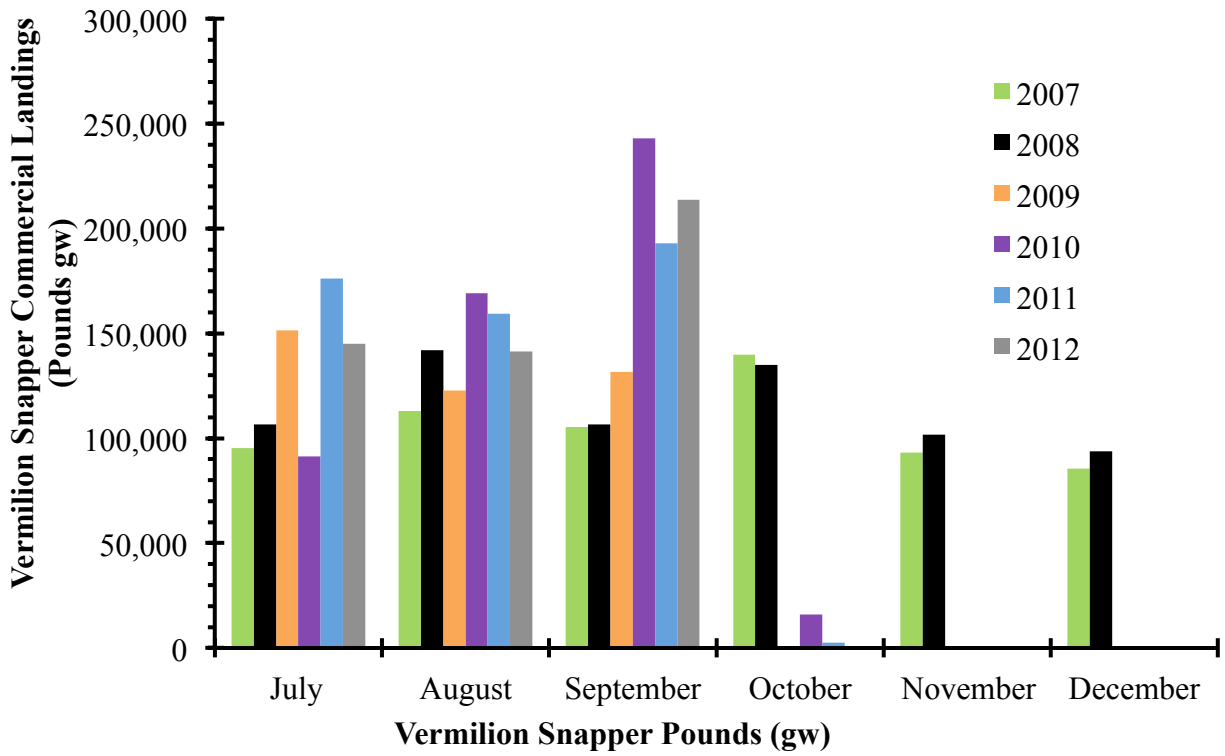

Figure F-12. South Atlantic vermilion snapper commercial landings (lbs gw) from July to December for the years of 2007 to 2012. Note: Conversion factor from gutted weight to whole weight is 1.11 for vermilion snapper.

A prediction of future landings is needed to determine closure dates from the proposed regulatory changes. Landings from 2012 were used for the analysis since they are the most recent year of complete data and account for increased early season catch rates (i.e., 'derby fishing behavior'). Predicted future landings for July, August, and the first twenty-seven days of September (commercial fisher closed on September 28 in 2012) came from 2012 logbook data because the logbook dataset provides the landings per trip. The logbook data allowed analysis of the reduction of landings from the reduced trip limit of 1,500 pounds to 1,000 and 500 pounds from Regulatory Amendment 18. The logbook data was scaled to equal the January and February commercial ACL landings for 2012 (**Figure F-13**).

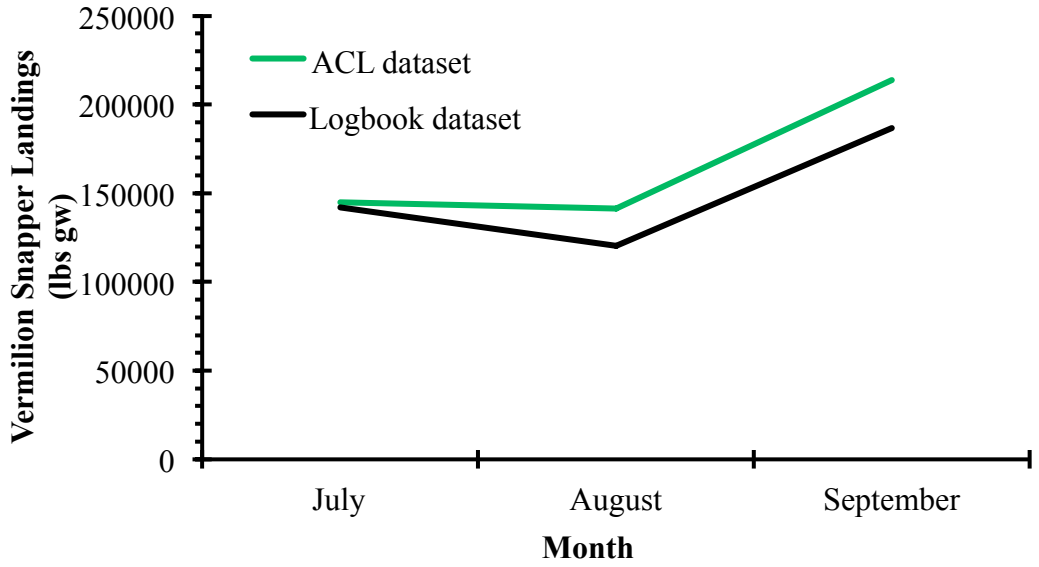

Figure F-13. Monthly commercial vermilion snapper logbook landings and ACL landings for July, August, and September of 2012. The September landings only include landings until September 28th because the fishery was closed on September 28th in 2012. Note: Conversion factor from gutted weight to whole weight is 1.11 for vermilion snapper.

Predictions of commercial landings when the fishery was closed were necessary to make predictions of closure dates. In 2012 the fishery closed on September 28th because the ACL was met. Predicted landings from September 28th to December were generated by first expanding September 2012 landings to account for the three closed days (September 28-30) using the daily catch rate from September 2012 (e.g., pounds landed divided by open days). Landings for October were predicted under two scenarios (**Figure F-14**). The first scenario assumed the total monthly landings in October were the same as the total monthly landings in September 2012 landings. The second scenario assumed the total monthly landings in October were the same as the total monthly landings in August 2012 landings. Predicted November and December landings were assumed to be the same as the predicted October landings for each scenario.

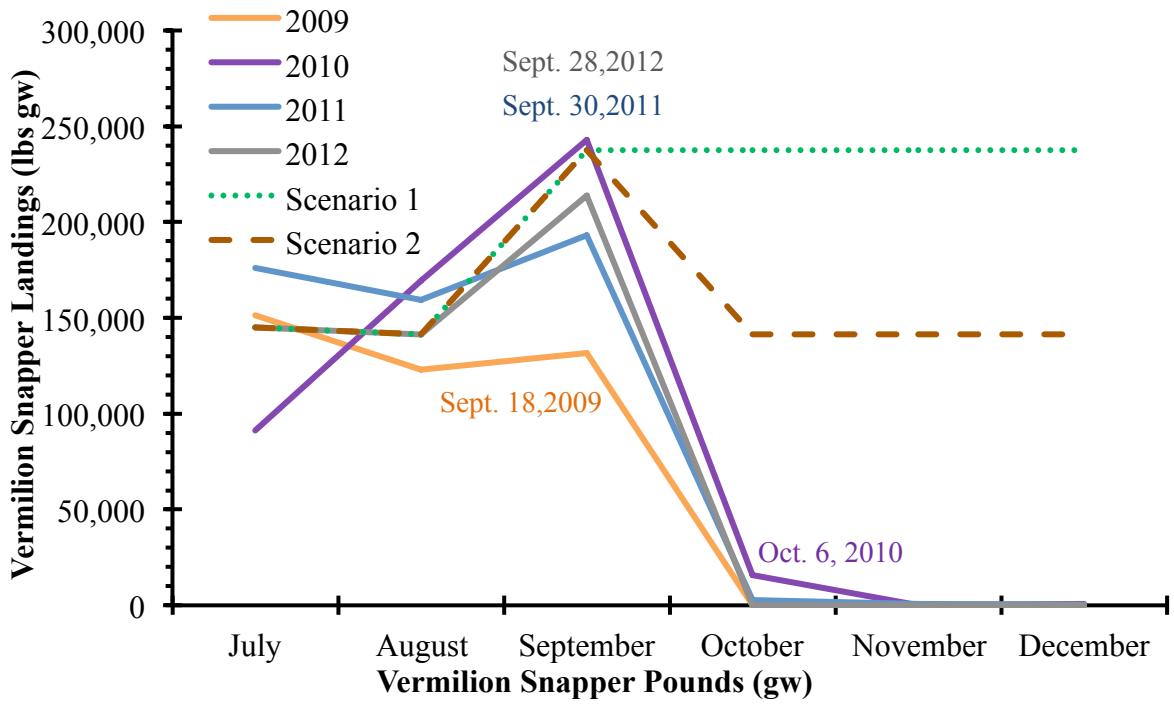

Figure F-14. Season 2 South Atlantic vermilion snapper commercial landings (lbs gw) for July to December for 2009, 2010, 2011, and 2012 and predicted landings. Note: Conversion factor from gutted weight to whole weight is 1.11 for vermilion snapper.

In all four years the fishery experienced a closure and was not open the entire month of September except for 2010. Closure dates for each season are included in the figure. Predicted landings came from 2012 landings when the fishery was open (July, August, and 27 days of September) and predicted landings for the three days in September was closed came from determining the landings per day in September 2012 and applying the landings per day to the three closed days. Predicted landings for October came from two scenarios. Scenario 1 assumed the landings in October were the same as the September 2012 landings. Scenario 2 assumed the landings in October were the same as August 2012 landings. Predicted November and December landings were assumed to be the same as predicted October landings.

Regulatory Amendment 18 is in the final rule stage and will reduce the trip limit. Therefore a review of the pounds of vermilion snapper landed per trip is warranted. The distribution of the landings per trip is bimodal with peaks at less than 50 pounds and greater than 1,000 pounds (**Figure F-15**).

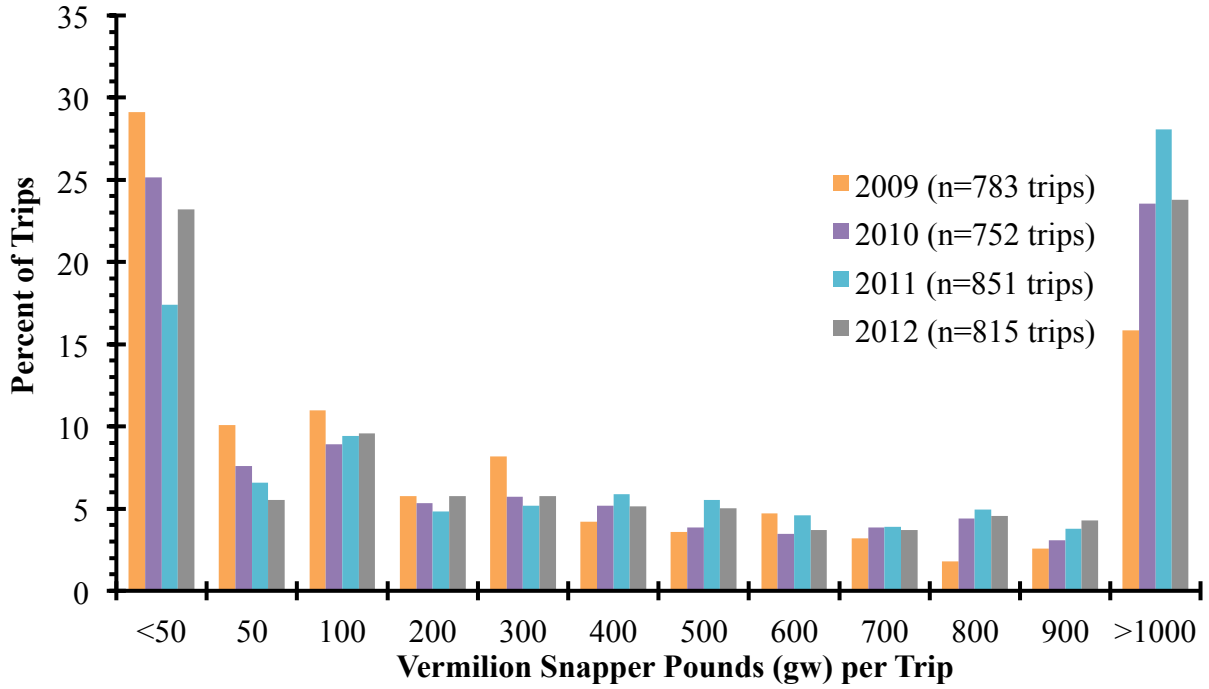

Figure F-15. Frequency distribution of South Atlantic vermilion snapper commercial landings per trip from 2010 to 2012 for the July to December season. Data came from the logbook dataset. Note: Conversion factor from gutted weight to whole weight is 1.11 for vermilion snapper.

Following the actions of Amendment 18 the trip limit will be reduced from 1,500 to 1,000 pounds gutted weight. This change was incorporated into the analysis by applying a 1,000 pound trip limit to logbook data that was scaled to match the quota monitoring data in July and August. Once 75% of the ACL was met the trip limit was reduced to 500 pounds following the regulations in Regulatory Amendment 18. As stated earlier, landings in March and April of 2012 were predicted because no landings were available in these months in recent years since the ACL was met and the fishery was closed. The predicted March and April landings were reduced to account for the reduced trip limit by applying percent reductions calculated from reducing the trip limit with available 2012 data from season 2 when the fishery was open. **Table F-17** provides the percent reduction of landings from the trip limits calculated from March 2011 data.

Table F-17. Percent reductions South Atlantic commercial vermilion snapper landings from reducing the trip limit. The reductions were calculated from commercial season 2 landings in 2012 when the fishery was open.

Trip Limit	% Reduction
500	49.3
1000	19.0

Table F-18 provides the different ACLs under **Alternatives 1 (No Action)-3**. Action 5 also proposes changing the second season start date from July 1st to June 1st or May 1st. Changes to the start date were incorporated in the analysis by assuming the predicted second season landings distributions will be the same but shifted to account for the change in start date. For example, if the season were changed from July 1st to May 1st the predicted landings for May 1st are assumed to be the same as the predicted landings for the start date of July 1st. Unfortunately there are no commercial vermilion snapper landings in May and July since the implementation of Amendment 16, and the derby fisher behavior, to evaluate seasonality differences in these months. **Table F-18** provides the predicted closure dates for the second season under all three alternatives. **Table F-19** includes predicted closure dates for season 2 with changes to both the ACL and the start date of the season under the two scenarios.

Table F-18. Commercial vermilion snapper season 2 predicted dates for the three alternatives proposed in Regulatory Amendment 14. The predicted closure dates incorporate the alternatives changes to both the ACL and the start date of the season. Note: Conversion factor from gutted weight to whole weight is 1.11 for vermilion snapper.

	Alt. 1		**Alt. 2**		**Alt. 3**	
ACL (lbs gw)	**420,252**		**546,336**		**483,294**	
Scenario	1	2	1	2	1	2
July 1st Start Date	12-Oct	20-Oct	1-Nov	25-Nov	21-Oct	9-Nov
June 1st Start Date	12-Sep	20-Sep	2-Oct	26-Oct	21-Sep	10-Oct
May 1st Start Date	12-Aug	20-Aug	1-Sep	25-Sep	21-Aug	9-Sep

Table F-19. Commercial vermilion snapper season 1 and season 2 predicted dates for the three alternatives proposed in Regulatory Amendment 14. The predicted closure dates for season 2 incorporate the alternatives changes to both the ACL and the start date of the season. No changes to the start date are proposed for season 1. Note: Conversion factor from gutted weight to whole weight is 1.11 for vermilion snapper.

Season 1						
	Alt. 1		**Alt. 2**		**Alt. 3**	
ACL (lbs gw)	420,252		294,168		357,211	
Scenario	1	2	1	2	1	2
Closure Date	23-Apr	5-Apr	5-Mar	3-Mar	30-Mar	21-Mar
Season 2						
	Alt. 1		**Alt. 2**		**Alt. 3**	
ACL (lbs gw)	420,252		546,336		483,294	
Scenario	1	2	1	2	1	2
July 1st Start Date	12-Oct	20-Oct	1-Nov	25-Nov	21-Oct	9-Nov
June 1st Start Date	12-Sep	20-Sep	2-Oct	26-Oct	21-Sep	10-Oct
May 1st Start Date	12-Aug	20-Aug	1-Sep	25-Sep	21-Aug	9-Sep

Discussion

Analysis of the two different seasons resulted in two different methods. Different methods were necessary because the two seasons displayed differences in monthly landings distributions.

This analysis attempted to bracket the possible range of future landings during months with very little or no landings data because of recent closures. Uncertainty exists in these projections, as economic conditions, weather events, changes in catch-per-unit effort, fisher response to management regulations, and a variety of other factors may cause departures from the predictions.

Action 6. Modify the trip limit for the commercial sector for gag.

This action proposes implementing trip limits for the South Atlantic gag commercial sector once 75% of the annual catch limit (ACL) is met. The current commercial ACL for South Atlantic gag is 352,940 pounds gutted weight (lbs gw), and 75% percent of the ACL is 264,705 lbs gw. However, Regulatory Amendment 15 is proposing a reduction of the gag ACL to 326,722 lbs gw. Seventy-five percent of the Regulatory Amendment ACL is 245,042 lbs gw. The first step in analyzing Action 6 is exploring recent commercial landings (2009-2012). Landings were obtained from the Southeast Fisheries Science Center. South Atlantic commercial gag landings from 2009 to 2011 came from the commercial ACL dataset, and quota monitoring methods provided the 2012 landings. **Figure F-16** plots the annual landings by month.

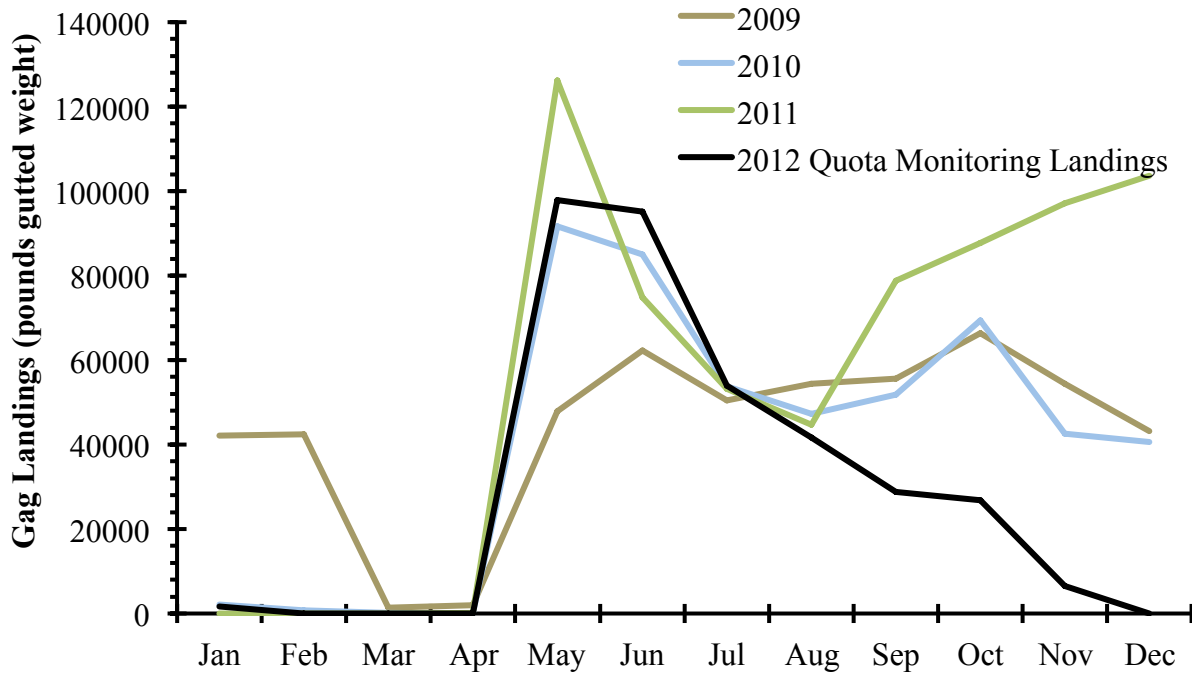

Figure F-16. South Atlantic gag commercial landings by month from 2009 to 2012. Landings from 2009-2011 came from the commercial ACL dataset, and landings from 2012 came from a quota monitoring dataset. Note: Conversion factor from gutted weight to whole weight is 1.18 for gag.

The South Atlantic commercial gag sector experienced different closed seasons throughout the years which impacted the landings shown in **Figure F-16**. In 2009 gag harvest was prohibited in March and April as a result of Amendment 9, which was implemented on February 24, 1999. In 2010 and 2011 gag harvest was prohibited from January 1st to April 30th as a result of Amendment 16 which was implemented on July 29, 2009. In 2012 the gag commercial fishery was closed on October 20, 2012 because the gag commercial quota was projected to be met. Then late in 2012 it was discovered that the quota was not met and the gag fishery was reopened from November 13-21, 2012.

Gag landings from 2009 to 2012 were used to determine when 75% of the two ACLs would be met. Landings were cumulatively summed from January 1 until 75% of the ACL was met. **Table F-20** provides the dates for reaching 75% of the two ACLs. The landings were highest in 2011 which resulted in the earliest date that 75% of the ACL was met. The more recent year of 2012 had lower landings than 2011, and the 75% mark was not met until a little later in the season.

Table F-20. Dates when 75% of the two commercial gag ACLs were met during 2009-2012. The current commercial gag ACL is 352,940 lbs gw and Regulatory Amendment 15 is proposing a reduction in the ACL to 326,722 lbs gw. Note: Conversion factor from gutted weight to whole weight is 1.18 for gag.

ACL	352,940 lbs gw	326,722 lbs gw
75% of ACL	264,705 lbs gw	245,042 lbs gw
2009	9-Aug	28-Jul
2010	20-Aug	7-Aug
2011	7-Aug	25-Jul
2012	12-Aug	28-Jul

Data from 2011 and 2012 are the most recent years of complete data and most likely to reflect current fishing behavior and catch rates. Therefore data from these two years were used for the analysis. These two years reached seventy-five percent of the commercial ACL in August for the current ACL (**Table F-20**) and the very end of July for the Reg Am. 15 proposed ACL. Trip limits were explored only for the months of August to December. **Figure F-17** provides the distribution of gag pounds per trip for the commercial landings in August to December.

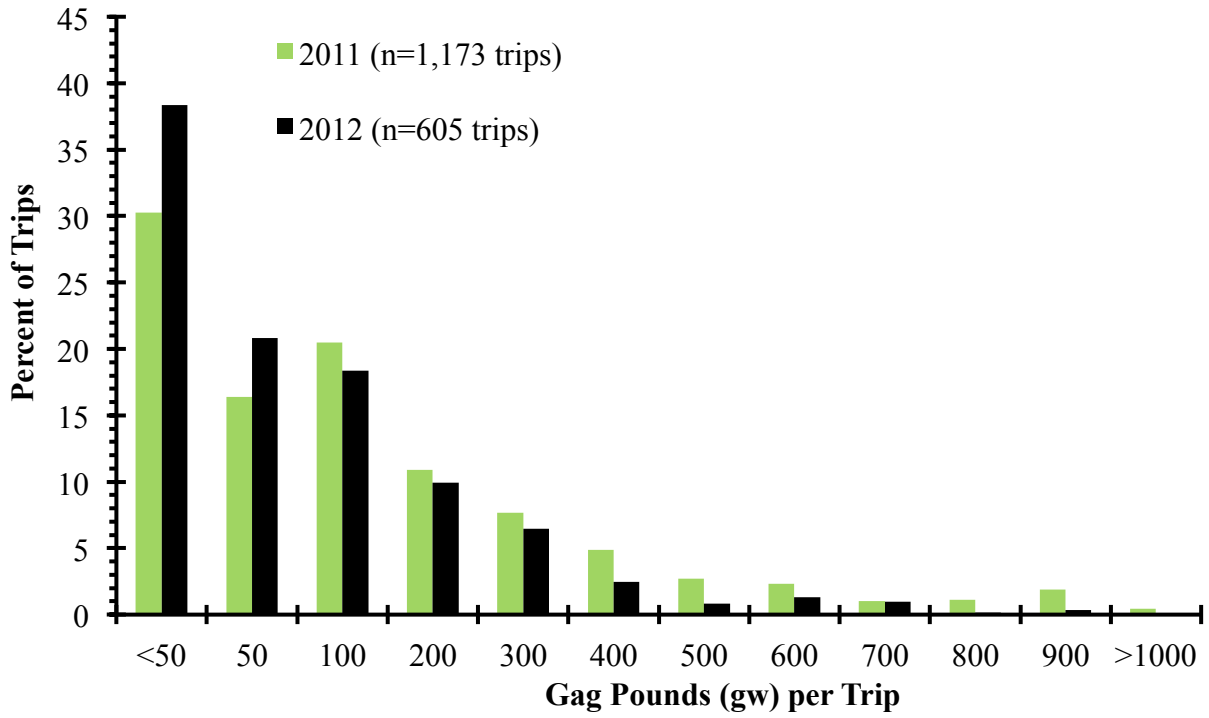

Figure F-17. Frequency distribution of South Atlantic gag commercial landings per trip in the months of August to December. Landings come from the logbook dataset and 2012 had closures in October, November, and December. Note: Conversion factor from gutted weight to whole weight is 1.18 for gag.

Using 2011 and 2012 data, gag trip limits from 50 to 900 pounds gutted weight were applied once 75% of the ACL was met. The impact of the trip limits came from an analysis that used the logbook data after 75% of the ACL was met. For 2011, the logbook landings did not exactly match the commercial ACL data, and the logbook landings were adjusted to match the landings in the commercial ACL data. For 2012, the logbook landings were adjusted to match the landings from the quota monitoring dataset, however, additional work was done to predict 2012 landings for the closure impacted months of October, November, and December. October 2012 landings were calculated using the daily landings per day from open days in October 2012 (October 1-19, 2012) and multiplying the daily landings by the total number of days in October. Landings during the closed months of November and December 2012 were assumed to be the same as October 2012 landings. **Figure F-18** displays the annual landings and the predicted 2012 landings.

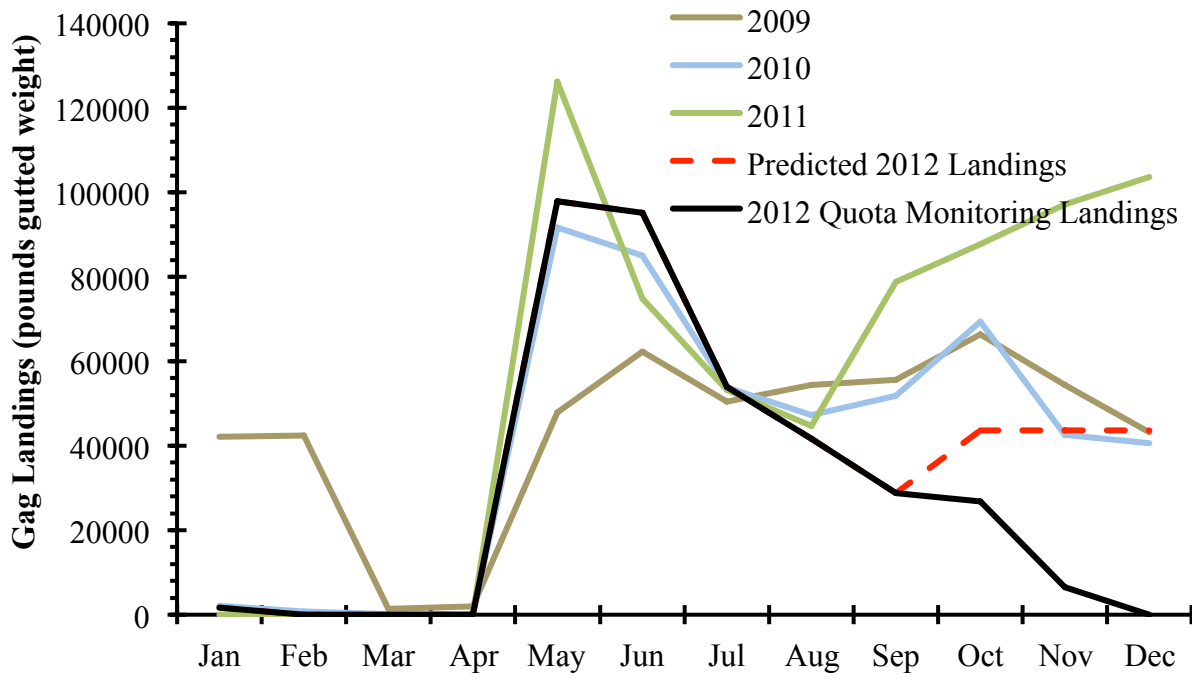

Figure F-18. South Atlantic gag commercial landings by month from 2009 to 2012. Landings from 2009-2011 came from the commercial ACL dataset, and landings from 2012 came from a quota monitoring dataset. The red dashed line represents predicted 2012 landings if the fishery was open during the entire months of October, November, and December. Note: Conversion factor from gutted weight to whole weight is 1.18 for gag.

Predicted closure dates generated from a range of trip limits of 50 to 900 pounds gw were calculated using both 2011 and predicted 2012 data. **Table F-21** provides the predicted closure dates.

Table F-21. Predicted closure dates for the South Atlantic gag fishery with the trip limits implemented after 75% of the ACL was reached. Closure dates were predicted for the current ACL (352,940 lbs gw) and the proposed ACL in Regulatory Amendment 15 (326,722 lbs gw). Note: Conversion factor from gutted weight to whole weight is 1.18 for gag.

Trip Limit	ACL = 352,940 lbs gw		ACL = 326,722 lbs gw	
	2011 Data	2012 Data	2011 Data	2012 Data
	Closure Date	Closure Date	Closure Date	Closure Date
50	No Closure	No Closure	No Closure	No Closure
100	23-Dec	No Closure	2-Dec	11-Dec
200	27-Oct	20-Nov	16-Oct	1-Nov
300	16-Oct	6-Nov	27-Sep	19-Oct
400	4-Oct	1-Nov	23-Sep	13-Oct
500	29-Sep	29-Oct	17-Sep	10-Oct
600	27-Sep	28-Oct	13-Sep	8-Oct
700	26-Sep	27-Oct	13-Sep	8-Oct

Trip Limit	ACL = 352,940 lbs gw		ACL = 326,722 lbs gw	
	2011 Data Closure Date	2012 Data Closure Date	2011 Data Closure Date	2012 Data Closure Date
800	25-Sep	27-Oct	13-Sep	7-Oct
900	23-Sep	26-Oct	12-Sep	6-Oct

Figures F-19 and **F-20** below show the predicted behavior of the landings once the various trip limits were implemented under the ACL of 352,940 lbs gw. **Figure F-19** was created from 2011 data and **Figure F-20** was created from predicted 2012 data.

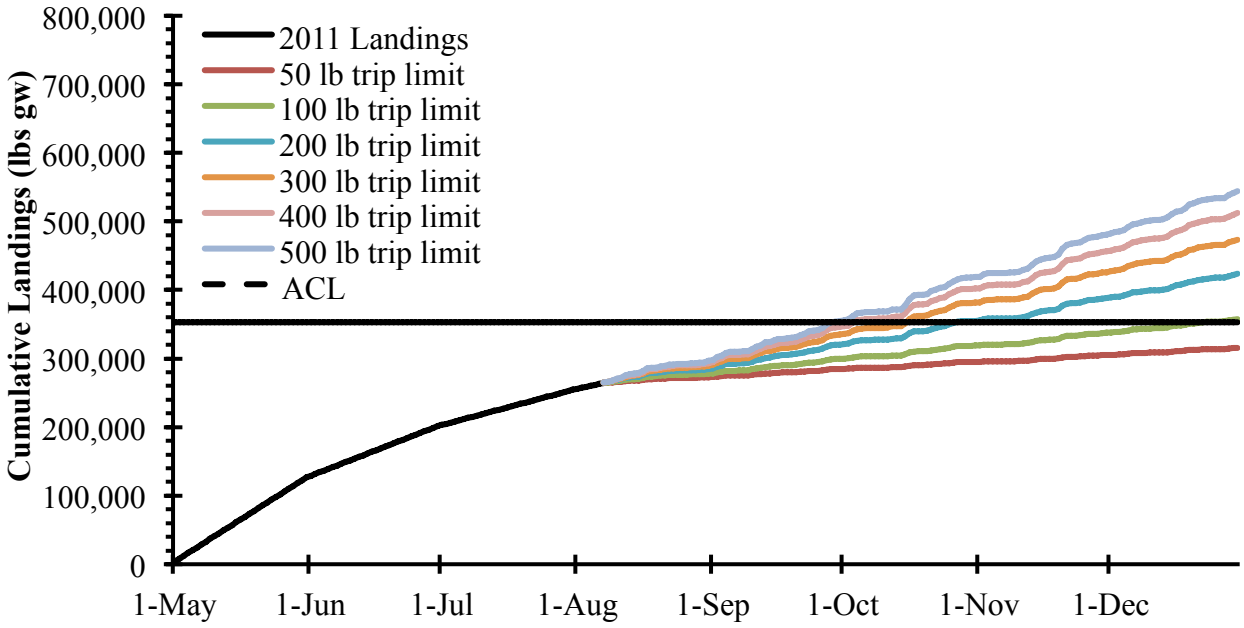

Figure F-19. Predicted South Atlantic gag commercial landings when trip limits are triggered at 75% of the ACL of 352,940 lbs gw. This prediction is based on commercial ACL and logbook data from 2011. Note: Conversion factor from gutted weight to whole weight is 1.18 for gag.

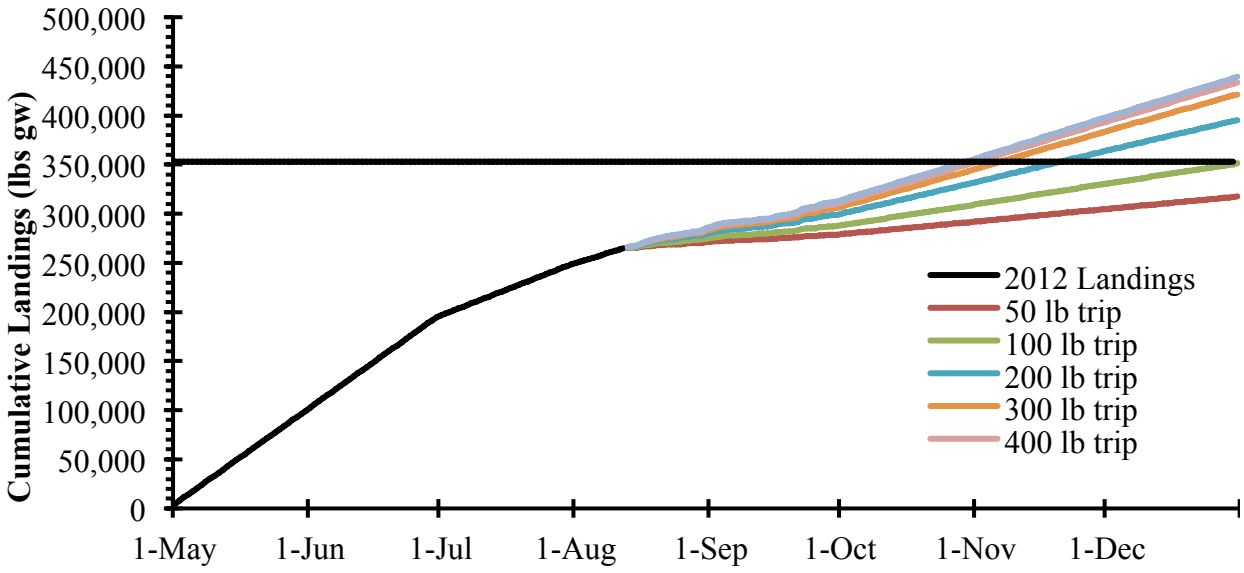

Figure F-20. Predicted South Atlantic gag commercial landings when trip limits are triggered at 75% of the ACL of 352,940 lbs gw. This prediction is based on quota monitoring and logbook data from 2012. Due to closures in the months of October, November, and December the landings in these months were predicted. October landings were predicted using the daily landings per day from open days in October (October 1-19, 2012) and multiplying the daily landings by the total number of days in October. Predicted landings during the closed months of November and December 2012 were assumed to be the same as October landings. Note: Conversion factor from gutted weight to whole weight is 1.18 for gag.

Figures F-21 and **F-22** below show the predicted behavior of the landings once the various trip limits were implemented under the ACL of 326,722 lbs gw. **Figure F-21** was created from 2011 data and **Figure F-22** was created from predicted 2012 data.

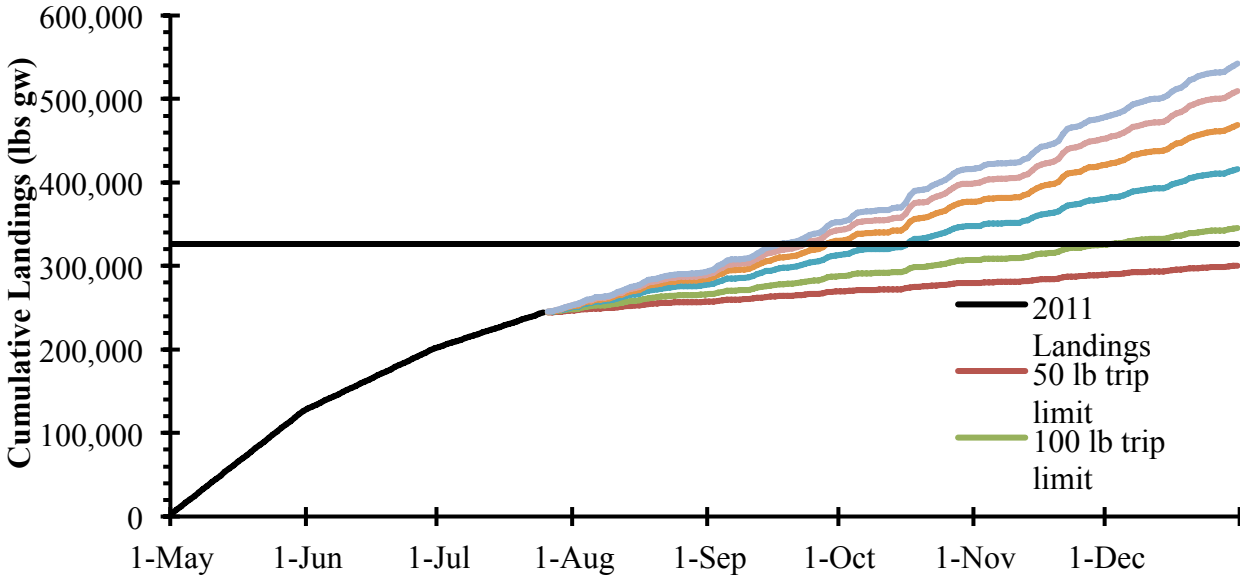

Figure F-21. Predicted South Atlantic gag commercial landings when trip limits are triggered at 75% of the ACL of 326,722 lbs. This prediction is based on commercial ACL and logbook data from 2011. Note: Conversion factor from gutted weight to whole weight is 1.18 for gag.

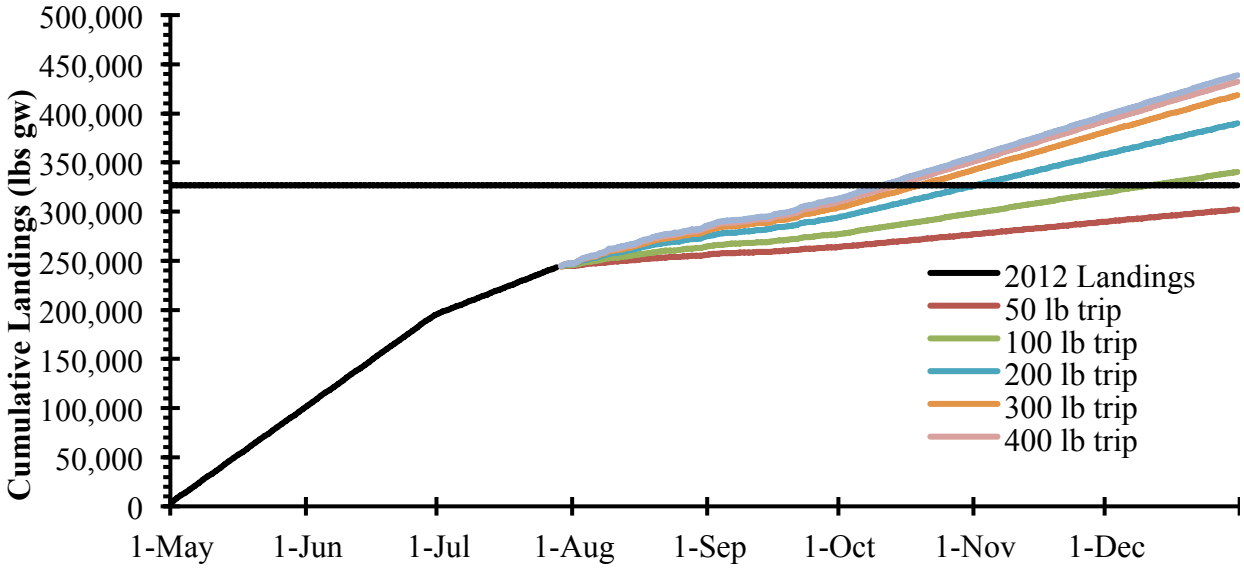

Figure F-22. Predicted South Atlantic gag commercial landings when trip limits are triggered at 75% of the ACL of 326,722 lbs gw. This prediction is based on quota monitoring and logbook data from 2012. Due to closures in the months of October, November, and December the landings in these months were predicted. October landings were predicted using the daily landings per day from open days in October (October 1-19, 2012) and multiplying the daily landings by the total number of days in October. Predicted landings during the closed months of November and December 2012 were assumed to be the same as October landings. Note: Conversion factor from gutted weight to whole weight is 1.18 for gag.

Action 7. Modify the recreational accountability measure for vermilion snapper.

Rationale

The proposed rule for Regulatory Amendment 18 published on May 8th. This rule would increase the recreational ACL for South Atlantic recreational vermilion snapper from 307,315 pounds gutted weight (lbs gw) to 395,532 lbs gw (439,040 lbs whole weight). The ACL of 307,315 lbs gw was based on MRFSS data but the new ACL of 395,532 lbs gw came from the recent update assessment and was based on MRIP data. The Amendment also eliminates the November to March closed season.

Action 7 in Regulatory Amendment 14 includes alternatives to modify the recreational accountability measure for vermilion snapper. An analysis is needed to determine if the new recreational ACL will be met in season and, therefore, what accountability measures are most appropriate.

Analysis

On June 29, 2009 Amendment 16 established a *recreational closed season for South Atlantic vermilion snapper from November 1 through March 31.* Regulatory Amendment 18 would eliminate this closure, if implemented. Predictions of closure dates are required to determine if landings will exceed the ACL since the closed season will be eliminated.

The new recreational ACL proposed in Amendment 18 is based on MRIP data. Therefore, MRIP data was used for this analysis.

Estimates of recreational landings during closed months were necessary to make predictions of closure dates. The recreational ACL dataset was used to provide the most recent years of complete landings (2011 and 2012). These years of data were used as a proxy for future recreational landings for waves 2 through 5 (March through October). In recent years, wave 2 has not been open the entire wave because the recreational season was closed for the month of March but open in April. Total wave 2 landings were calculated as the sum of April landings plus predicted March landings. March landings were calculated using the daily landings per day from April and multiplying it by the number of days in March. Two different scenarios were conducted to predict landings in waves 1 and 6. The first scenario assumed landings in wave 1 were the same as wave 2 landings, and landings in wave 6 were the same as wave 5 landings. The second scenario determined wave 1 landings from the historical proportional relationship with wave 2 landings, and wave 6 landings from the historical proportional relationship with wave 5 landings. The proportional relationships were determined from headboat landings from the most recent year that did not have the closure. The closure was implemented in June of 2009 which makes the most recent landings without the closed season as 2009 for waves 1 and 2 and 2008 for waves 5 and 6. Headboat landings were used to determine the proportional relationship, instead of MRIP landings, since headboat landings are estimated by a logbook program and less subject to sampling variability during low-effort fishing months. Based on headboat landings, landings during wave 1 were 33.5% of landings during wave 2 , and landings during wave 6 were 38.8% of landings during wave 5. **Figure F-23** provides a visual representation of the landings for the two scenarios.

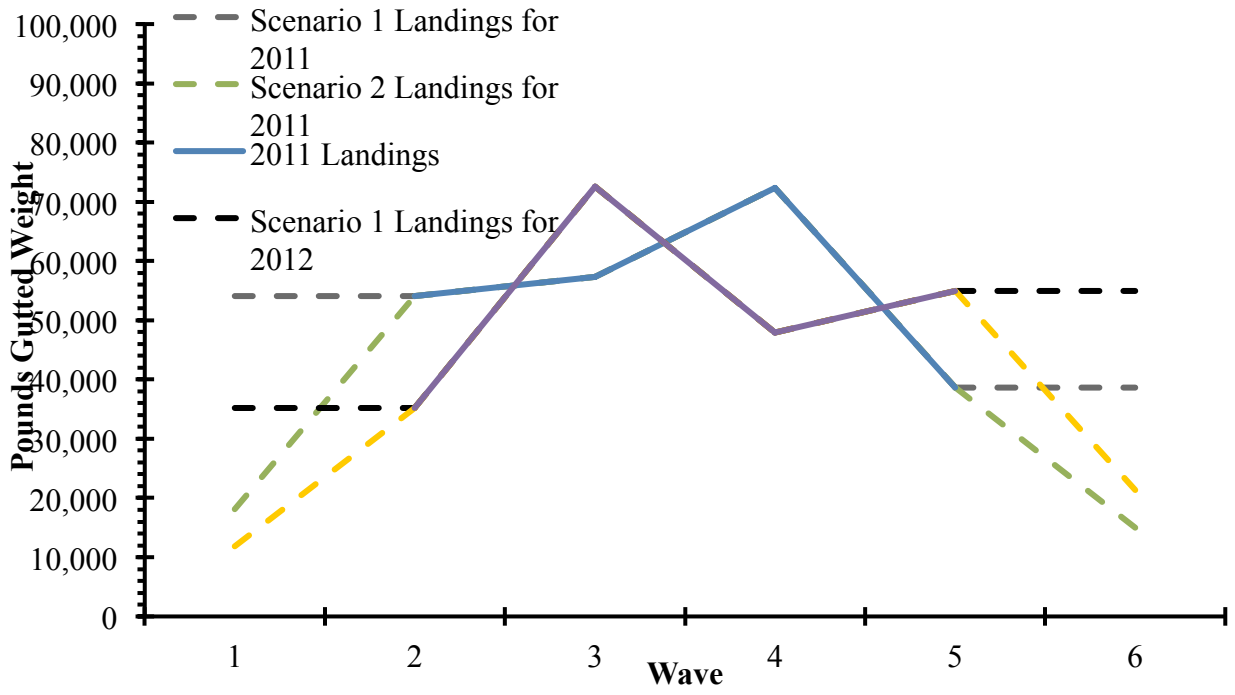

Figure F-23. South Atlantic vermilion snapper recreational landings (MRIP and headboat) by wave. Landings for waves 2 through 5 came from 2011 and 2012 landings data. Two Scenarios were used to predict landings in waves 1 and 6. Scenario 1 assumed wave 1 landings were the same as wave 2, and wave 6 landings were the same as wave 5. Scenario 2 used historical proportional relationships of headboat landings for wave 1 to wave 2, and wave 6 to wave 5 to estimate wave 1 and wave 6 landings. Note: Conversion factor from gutted weight to whole weight is 1.11 for vermilion snapper.

Once the landings for each wave were established for each scenario then it was assumed that each month had a uniform distribution of landings by day. The landings by day were cumulatively summed and compared to ACLs to predict when the ACL would be met. The landings were compared to the ACL of 395,532 lbs gw (439,040 lbs ww). **Table F-22** provides the calculated landings and predicted closure dates. Both scenario's and using both of the most recent years of data predict the season will stay open the entire year.

Table F-22. Predicted annual recreational vermilion snapper landings and closure dates for two scenarios using data from 2011 and 2012. The closure dates were predicted assuming landings do not exceed the ACL of 395,532 lbs gw (439,040 lbs ww). Note: Conversion factor from gutted weight to whole weight is 1.11 for vermilion snapper.

ACL	Scenario 1		Scenario 2	
	Predicted Annual Landings (lbs gw)	Closure Date	Predicted Annual Landings (lbs gw)	Closure Date
2011 Landings	314,956	None	255,410	None
2012 Landings	300,937	None	243,894	None

This analysis attempted to bracket the possible range of future landings during months that are currently closed. Uncertainty exists in this projection, as economic conditions, weather events, changes in catch-per-unit effort, fisher response to management regulations, and a variety

of other factors may cause departures from the predictions. A specific consideration is the fact that South Atlantic vermilion snapper are commonly harvested with gray triggerfish, lane snapper, red porgy, and red snapper (SERO-LAPP-2010-06). All of these species are managed with ACLs and red snapper has been closed since early 2010 with the exception of two weekend openings in September 2012. Management regulations on these other species, and in particular red snapper, likely affect vermilion snapper landings.

Appendix G. Regulatory Impact Review

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

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

1.1 Problems and Objectives

The purpose and need, issues, problems, and objectives of this action are presented in **Chapter 1** of Regulatory Amendment 14 to the Snapper Grouper Fishery of the South Atlantic Region, and are incorporated herein by reference.

1.2 Methodology and Framework for Analysis

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

1.3 Description of the Fishery

A description of the South Atlantic snapper grouper fishery is contained in **Chapter 3** of this amendment and is incorporated herein by reference.

1.4 Effects of the Management Measures

A larger scale discussion of the economic effects of the actions are presented in **Chapter 4** of Regulatory Amendment 14 to the Snapper Grouper Fishery of the South Atlantic Region, and are incorporated herein by reference.

Action 1, Preferred Alternative 3 modifies the dates of the commercial and recreational fishing year for greater amberjack from May 1 – April 30 to March 1 – February 28. This action is not expected to have economic effects.

Action 2, Preferred Alternative 3 modifies the dates of the recreational fishing year for black sea bass from June 1 – May 31 to April 1 – March 31. Depending on the length of future seasons, changing the fishing year to start on April 1 each year could provide economic benefit to the for-hire sector.

Action 3, Preferred Alternative 2 requires NMFS to announce annually the recreational fishing season start and end dates based on NMFS projections of when the recreational ACL will be caught. According to projection analyses, the recreational black sea bass season is expected to be shorter than the status quo. However, announcing the ending date of the fishing season will produce economic benefit for the for-hire sector which will be able to book fishing trips up until the expected closure date. By announcing the closing date, NMFS might underestimate the amount of fish caught resulting in lost opportunity if the season closure occurs before the entire ACL is caught. The overall economic effects of establishing a recreational season closing date at the time of opening are not clear.

Action 4, Preferred Alternative 3, Preferred Sub-alternative 3c changes the start of the commercial fishing year for black sea bass from June 1 to January 1 each year and when pots are not allowed, the hook and line trip limit will be 300 lbs. It is not possible to determine accurately the economic impact of this action. Fish that might otherwise have been discarded as bycatch by the hook and line sector may be kept while the fishery is open, however, the more fish caught by the hook and line sector, the shorter the black sea bass pot sector will be. Whether changing this balance of landings between the two commercial gear groups that land black sea bass will have any economic effects is yet to be determined. However, since the amount of pounds landed will remain the same regardless of which gear group catches them, it could be reasonably expected that economic effects of this action will be minor.

Action 5, considered changes to the starting dates and percent ACL allocation for the commercial fishing seasons for vermilion snapper. As the Council chose status quo as its preferred alternative, **Preferred Alternative 1 (No Action)**, there will be no changes to the vermilion snapper seasons in terms of start date or ACL allocation to each season. Therefore, no additional economic effects are expected from this action.

Action 6, Preferred Alternative 2, Preferred Sub-alternative 2e would reduce the commercial trip limit for gag from 1,000 lbs gw to 500 lbs gw when 75% of the commercial ACL is met or projected to be met. While this action would extend the length of the commercial

fishing season, there can be potential negative economic effects by creating inefficiencies, primarily through increasing trip costs per pound of fish landed. Unless commercial vessels targeting gag will be able to switch to other species as profitable on a trip where they would otherwise have targeted more gag, there will be a direct negative economic effect. However, extending the season by reducing the trip limit could result in fewer regulatory discards and creating profit for fishermen on those trips where they would otherwise have had to discard gag once the ACL is met. For these fishermen, the economic effects would be positive. The overall extent of the economic effects is unknown, but because the commercial ACL constrains the commercial catch of gag, regardless of how they are caught, it is estimated the economic effects would be minor.

Action 7, Preferred Alternative 4 modifies the AMs for recreationally caught vermilion snapper. Exceeding the recreational ACL will not automatically require paybacks of overages. Paybacks for the recreational sector will be required only if vermilion snapper are overfished and if the total ACL (commercial and recreational ACLs combined) are exceeded. Since vermilion snapper are not overfished, there are no expected economic effects.

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, which can be expressed as costs associated with the regulations. Costs associated with this regulatory amendment include, but are not limited to Council costs of document preparation, meeting, and other costs; NMFS administration costs of document preparation, meetings and review, and annual law enforcement costs. A preliminary estimate is up to $150,000 before annual law enforcement costs.

1.6 Determination of Significant Regulatory Action

Pursuant to E.O. 12866, a regulation is considered a “significant regulatory action” if it is expected to result in: (1) An annual effect of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights or obligations of recipients thereof; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this executive order. Based on the information provided above, this regulatory action would not meet the first criterion. Therefore, this regulatory action is determined to not be economically significant for the purposes of E.O. 12866.

Appendix H. Initial Regulatory Flexibility Analysis

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 that 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). The RFA is also intended to ensure that 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 a regulatory flexibility analysis for each proposed rule. The regulatory flexibility analysis 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. In addition to analyses conducted for the RIR, the regulatory flexibility analysis provides: 1) A statement 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 practical, 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.

Additional information on the description of affected entities may be found in **Section 3.3,** and additional information on the expected economic effects of the proposed action may be found in **Chapter 4**.

Statement of Need for, Objectives of, and Legal Basis for the Rule

The purpose and need, issues, problems, and objectives of the proposed rule are presented in **Section 1.4**. The purpose of this proposed rule is to modify the commercial and recreational fishing year for greater amberjack; modify the commercial and recreational fishing years for black sea bass; change the commercial fishing season for vermilion snapper; modify trip limits for gag; and revise the recreational accountability measures (AMs) for black sea bass and vermilion snapper.

The need for this proposed rule is to enhance economic yield from commercial harvest of greater amberjack; allow harvest of black sea bass and vermilion snapper to occur during times of the year when harvest of co-occurring species is occurring; extend the commercial fishing season for gag; and ensure overfishing of greater amberjack, gag, black sea bass, and vermilion snapper does not occur.

The Magnuson-Stevens Fishery Conservation and Management Act, as amended, provides the statutory basis for this proposed rule.

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 with this proposed rule.

Description and Estimate of the Number of Small Entities to Which the Proposed Rule will Apply

This proposed rule is expected to directly affect commercial fishermen and for-hire operators in the South Atlantic. The Small Business Administration established size criteria for all major industry sectors in the U.S. including fish harvesters and for-hire operations. A business involved in fish harvesting is classified as a small business if independently owned and operated, is not dominant in its field of operation (including its affiliates), and its combined annual receipts are not in excess of $19.0 million (NAICS code 114111, finfish fishing) for all of its affiliated operations worldwide. For for-hire vessels, other qualifiers apply and the annual receipts threshold is $7.0 million (NAICS code 713990, recreational industries). The SBA periodically reviews and changes, as appropriate, these size criteria. On June 20, 2013, the SBA issued a final rule revising the small business size standards for several industries effective July 22, 2013 (78 FR 37398). This rule increased the size standard for commercial finfish harvesters from $4.0 million to $19.0 million. Neither this rule, nor other recent SBA rules, changed the size standard for for-hire vessels.

From 2008-2012, an annual average of 223 vessels with valid permits to operate in the commercial snapper-grouper fishery landed at least one pound of black sea bass. These vessels generated average dockside revenues of approximately $3.6 million (2011) from all species caught in the same trips as black sea bass, of which $918,000 (2011 dollars) were from black sea bass. Each vessel, therefore, generated an average of approximately $16,000 in gross revenues, of which $4,000 were from black sea bass. For the same period, an annual average of 252 vessels with valid permits to operate in the commercial snapper-grouper fishery landed at least one pound of gag. These vessels generated dockside revenues of approximately $5.7 million (2011) from all species caught in the same trips as gag, of which $1.7 million (2011 dollars) were from gag. Each vessel, therefore, generated an average of approximately $23,000 in gross revenues, of which $7,000 were from gag. In addition, an annual average of 304 vessels with valid permits to operate in the commercial snapper-grouper fishery landed at least one pound of greater amberjack. These vessels generated dockside revenues of approximately $5.7 million (2011) from all species caught in the same trips as greater amberjack, of which $905,000 (2011

dollars) were from greater amberjack. Each vessel, therefore, generated an average of approximately $23,000 in gross revenues, of which $3,000 were from greater amberjack. Moreover, an annual average of 229 vessels with valid permits to operate in the commercial snapper-grouper fishery landed at least one pound of vermilion snapper. These vessels generated dockside revenues of approximately $6.2 million (2011) from all species caught in the same trips as vermilion snapper, of which $2.9 million (2011 dollars) were from vermilion snapper. Each vessel, therefore, generated an average of approximately $27,000 in gross revenues, of which $13,000 were from vermilion snapper. Some vessels may have caught and landed any combination of the four key species (black sea bass, gag, greater amberjack, and vermilion snapper) and revenues therefrom are included in the foregoing estimates. Vessels that caught and landed any of the four key species may also operate in other fisheries, the revenues of which are not reflected in these totals. Based on revenue information, all commercial vessels affected by the rule can be considered small entities.

From 2008-2012, an annual average of 1,809 vessels had valid or renewable permits to operate in the for-hire sector of the South Atlantic snapper-grouper fishery. As of July 24, 2013, 1,523 vessels held South Atlantic for-hire snapper grouper permits and about 75 are estimated to have operated as headboats in 2013. The for-hire fleet consists of charter boats, which charge a fee on a vessel basis, and headboats, which charge a fee on an individual angler (head) basis. Average annual revenues (2011 dollars) for charter boats are estimated to be $126,032 for Florida vessels, $53,443 for Georgia vessels, $100,823 for South Carolina vessels, and $101,959 for North Carolina vessels. For headboats, the corresponding estimates are $209,507 for Florida vessels and $153,848 for vessels in the other states. Revenue figures for states other than Florida are aggregated to avoid disclosure of confidential information. Based on these average revenue figures, all for-hire operations that would be affected by the rule can be considered small entities.

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

The proposed rule would not introduce any changes to reporting, record-keeping, and other compliance requirements which are currently required.

Substantial Number of Small Entities Criterion

The proposed rule is expected to directly affect all Federally permitted commercial vessels harvesting black sea bass, gag, greater amberjack, or vermilion snapper in the South Atlantic and for-hire vessels that operate in the South Atlantic snapper-grouper fishery. All directly affected entities have been determined, for the purpose of this analysis, to be small entities. Therefore, it is determined that the proposed action will affect a substantial number of small entities.

Significant Economic Impact Criterion

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

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

All entities that are expected to be affected by this proposed rule are considered small entities, so the issue of disproportional effects on small versus large entities does not presently arise.

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

The proposed rule consists of the following:

- Modify the commercial and recreational fishing years for greater amberjack from May 1 – April 30 to March 1 – February 28
- Modify the recreational fishing year for black sea bass from June 1 – May 31 to April 1 – March 31
- Require NMFS to announce annually the recreational fishing season end date for black sea bass based on NMFS projections of when the recreational ACL will be caught
- Change the start date of the commercial fishing year for black sea bass from June 1 to January 1 each year, and when pots are not allowed, the hook-and-line trip limit would be 300 lb gw
- Reduce the commercial trip limit for gag from 1,000 lb gw to 500 lb gw when 75% of the commercial ACL is projected to be met
- Modify the AMs for recreationally caught vermilion snapper such that exceeding the recreational ACL will not automatically require paybacks of overages; paybacks for the recreational sector will be required only if vermilion snapper are overfished and if the total ACL (commercial and recreational ACLs combined) are exceeded

Relative to the no action alternative, the proposed modification to the greater amberjack commercial season is not expected to alter the length of the commercial season. NMFS projections show that if closures were to occur, they would be of about the same length for both the no action alternative and the preferred alternative. For this reason, it is unlikely that total ex-vessel revenues for the commercial sector would change. However, there is a possibility that the distribution of those revenues would change in favor of those with first access to the fishery resource, particularly if fishing closures were to occur. NMFS projections for the recreational sector show that if closures were to occur, they would be shorter under the no action alternative than under the preferred alternative. Thus, it is expected that the proposed fishing year modification for the recreational sector would have negative economic effects on for-hire vessel revenues and profits. Based on average angler trips for 2008-2012, the for-hire fleet would lose about $161,000 (2011 dollars) in annual profits, of which $160,000 (2011 dollars) would be for headboats and $1,000 (2001 dollars) for charter boats.

The economic effects of the proposed modification to the recreational fishing year for black sea bass are uncertain. Projection models used to predict the length of the season provide relatively wide variations. Consequently, the expected effects on for-hire vessel profits would also vary widely. Based on 2008-2012 trip data, the proposed change in the recreational black sea bass

fishing year is expected to change for-hire profits ranging from -$636,000 to $167,000 (2011 dollars), depending on the model used to project the season length.

Setting the end date for the recreational fishing season for black sea bass at the beginning of each fishing year would in effect set a fixed recreational fishing season for that year. Relative to the no action alternative, this alternative is likely to provide a better economic environment for increased short-run profits for for-hire vessels, because for-hire vessel owners/operators could develop better plans (e.g., booking schedules) to take advantage of better fishing opportunities. One downside of this proposed action is that it tends to increase the likelihood of overages because no fishing closure would be implemented during the fixed season. However, if overages occur in one year, the following year's season would be shortened, thereby leading to fewer for-hire vessel trips and less revenues/profits. It cannot be ascertained if a year's increased profits partly due to overages would more than compensate for the following year's profit reductions due to fewer trips taken because of a shortened fishing season.

Changing the commercial fishing year for black sea bass to start on January 1 would effectively mean that the vertical line sector would have first access to the black sea bass resource, because pots are prohibited from November 1 through April 30. In addition, the trip limit for the vertical line sector from January 1 through April 30 would be 300 lb gw; in other months when commercial harvest of black sea bass is allowed, the trip limit for both the pot and vertical line sectors is maintained at 1,000 lb gw. While the change in the fishing year would benefit the vertical line sector, the lower trip limit would increase the sector's fishing cost per fish harvested. It cannot be ascertained as to whether this condition would increase the profits of vertical line vessels. Projections on the length of the commercial fishing season show that, in general, fishery closures under the proposed fishing year change would happen earlier than under the no action alternative. There is then a possibility that vessel revenues would be lower under the proposed fishing year change, and it is likely that the pot sector would bear a greater portion of the revenue loss because of shorter fishing season than the hook-and-line sector. The magnitude of such loss cannot be estimated.

Reducing the commercial trip limit for gag from 1,000 lb gw to 500 lb gw when 75% of the ACL is projected to be met would extend the length of the commercial fishing season by about one week. It is not known if this lengthened season would be sufficient for ex-vessel price for gag to increase. In the absence of an increased ex-vessel price, revenues are unlikely to increase. Under this condition, there arises the possibility for profits per trip to decrease because the fishing cost per fish landed for those already catching above 500 lb gw would be higher. It is noted, however, that maintaining the trip limit at 1,000 lb gw could eventually lead to ever shortening season over the years as fishermen race to harvest fish before the season closes. The one thing that a reduced trip limit would likely bring about is to favor those catching 300 lb gw or less as they would be able to continue their usual fishing activities at relatively the same cost and profit per trip.

Modifying the recreational AM for vermilion snapper would require paybacks only if, in addition to the stock being overfished as in the no action alternative, the aggregate commercial and recreational ACLs are exceeded. Because vermilion is snapper is neither overfished nor

undergoing overfishing, the proposed modification to the recreational AM would have no short-term economic effects.

Description of Significant Alternatives

Three alternatives, including the preferred alternative, were considered for modifying the commercial and recreational fishing years for greater amberjack. The first alternative, the no action alternative, would maintain the May 1-April 30 commercial and recreational fishing years. The second alternative would establish January 1-December 31 as the commercial and recreational fishing years for greater amberjack. The second alternative (January 1-December 31) would allow fishermen in South Florida to harvest the fish in March through May before the fish migrate north in late spring. In effect, the first alternative (May 1-April 30) would restrict South Florida fishermen to have access to the fish in only two months each year; whereas, fishermen in North Florida through North Carolina would have access to the fish for a much longer period. Thus, the Council rejected these two alternatives because they considered the preferred alternative as the best alternative that would allow fishermen across the South Atlantic states more equitable access to the fishery resource.

Five alternatives, including the preferred alternative, were considered for modifying the recreational fishing year for black sea bass. The first alternative, the no action alternative, would maintain the June 1-May31 recreational fishing year. The second alternative would establish a January 1-December 31 fishing year; the third alternative, October 1-September 30 fishing year; and, the fourth alternative, May 1-April 30 fishing year. NMFS employed several models to project the season length for the various alternatives. Projected season lengths vary quite widely within and across the alternative fishing years and projection models. An attempt was made to estimate for-hire profits based on projected season lengths for the various fishing year alternatives. For some models, the preferred alternative would result in higher for-hire vessel profits than any other alternatives, but for other projection models, some alternatives (e.g., no action alternative) would result in higher for-hire profits than the preferred alternative. In essence, profit estimates were quite uncertain. The Council rejected all the other fishing year alternatives because they considered them inferior to the preferred alternative in reducing regulatory discards of black sea bass. The preferred recreational fishing year would reduce the amount of regulatory discards by "lining up" the open seasons for species that are commonly caught together, such as black sea bass and vermilion snapper.

Four alternatives, including the preferred alternative, were considered for modifying the recreational AM for black sea bass. The first alternative, the no action alternative, would prohibit the harvest and retention of black sea bass if the ACL is met or is projected to be met independent of the stock status, and would reduce the recreational ACL in the following season by the amount of the overage. The second alternative would require NMFS to annually announce the recreational fishing season start and end dates, with the season starting on April 1 and the end date being determined by NMFS' projection on when the ACT will be met. The third alternative is the same as the first alternative but without the payback provision. Comparative economic analysis of the various alternatives was made indeterminate by the interplay of such factors as in-season AM that affects overages, paybacks in case of overages, and better planning environment in a given year. The first alternative would provide a business

planning environment that is not as conducive to generating higher for-hire vessel profit as the preferred alternative, but it appears to have a better chance of limiting overages and thus avoid shortening the following year's fishing season that would have adverse effects on for-hire vessel profits. The second alternative would likely result in lower for-hire profits than the preferred alternative, because using the ACT for determining the end date of the fishing season would result in a shorter fishing season in any given year. The third alternative would likely result in lower for-hire vessel profits than the preferred alternative in a given year, but in the event of overages, it would likely provide higher for-hire vessel profits in the following year because it would not require any payback for overages. The Council selected its preferred alternative because it would tend to provide more stability to the recreational sector or higher for-hire vessel profits than the other alternatives.

Four alternatives, including the preferred alternative, were considered for modifying the commercial fishing year for black sea bass. The first alternative, the no action alternative, would maintain the June 1-May 31 fishing year, with pots prohibited from November 1 through April 30 and a 1,000 lb gw trip limit for both the pot and hook-and-line sectors. The second alternative would differ from the no action alternative only by establishing a July 1-June 30 fishing year. The third alternative would differ from the no action alternative only by setting a May 1-April 30 fishing year. In addition, three sub-alternatives, including the preferred sub-alternative, were considered for a trip limit from January 1 through April 30 when pots are prohibited from harvesting black sea bass. The first sub-alternative would impose a 100 lb gw trip limit and the second sub-alternative, a 200 lb gw trip limit. These two sub-alternatives would tend to increase the cost per landed fish more than the preferred sub-alternative. The Council rejected all the other fishing year alternatives because they were inferior to the preferred alternative in minimizing regulatory discards of black sea bass. The preferred alternative would minimize the amount of regulatory discards by allowing the harvest of black sea bass at the same time as that of co-occurring snapper grouper species.

Two alternatives, including the preferred alternative, and five sub-alternatives, including the preferred sub-alternative, were considered for modifying the commercial trip limit for gag. The only other alternative, the no action alternative, would retain the 1,000 lb gw trip limit for gag throughout the open period of the fishing year. The other trip limits considered when 75 percent of gag commercial ACL is landed were the following: 100 lb gw, 200 lb gw, 300 lb gw, and 400 lb gw. Cost per landed fish would be lower under the no action alternative than under the preferred alternative, potentially resulting in higher vessel profit per trip. The Council rejected this alternative because it would lead to a shorter fishing season for gag and thus presents a higher potential to increase discards of gag when vessels fish for co-occurring snapper grouper species. The other trip limits are lower than the preferred alternative so they would tend to increase the cost per landed fish and possibly to lower vessel profit per trip.

Four alternatives, including the preferred alternative, were considered for modifying the recreational AM for vermilion snapper. The first alternative, the no action alternative, would prohibit the recreational harvest of vermilion snapper if recreational landings reach or are projected to be reached and vermilion snapper are overfished. In addition, this alternative would require a payback equal to the amount of overage if recreational landings exceed the ACL, regardless of the status of the stock. The second alternative differs from the no action alternative

only by deleting the overfished condition when imposing the in-season AM. The third alternative differs from the no action alternative by deleting the overfished condition when imposing the in-season AM and dropping the payback provision. Because vermilion snapper is no longer overfished, the various alternatives would have the same in-season economic effects. In the event of an overage, relative to the preferred alternative, the first and second alternatives would likely result in profit reductions because paybacks have to be made regardless of stock status; whereas, the third alternative would likely result less adverse economic effects as it would not require any paybacks. While the commercial sector would be economically better off under the third alternative, the Council rejected this alternative because paybacks are deemed necessary to prevent overfishing the vermilion stock.

The Council also considered three alternatives to modify the commercial fishing season for vermilion snapper, of which they chose the no action alternative. The no action alternative would maintain the twofold split of the commercial fishing year, with January through June as the first season and July through December as the second season. The commercial ACL is split equally between the two seasons. The second alternative, with three sub-alternatives, would retain the twofold split of the fishing year, with 100 percent of the new ACL (implemented through Regulatory Amendment 18) applied to the second season. The three sub-alternatives would change the start date of the second season to July 1, June 1, or May 1. The third alternative, with three sub-alternatives, would retain the twofold split of the fishing year, with 25 percent of the new ACL applied to the first season and 75 percent to the second season. The three sub-alternatives would change the start date of the second season to July 1, June 1, or May 1. The Council chose the no action alternative as their preferred alternative because they considered it the best among the fishing year alternatives to minimize regulatory discards of vermilion snapper by those that fish for co-occurring snapper grouper species.

Appendix I. 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 a more comprehensive understanding of the biological, social, and economic impacts of management necessary to initiate the transition from single species management to ecosystem-based management in the region.

Moving to Ecosystem-Based Management

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

The Fishery Ecosystem Plan for the South Atlantic Region encompasses the following volume structure:

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

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

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

Ecosystem Approach to Deepwater Ecosystem Management

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

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

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

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

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

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

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

SECOORA is one of 11 Regional Associations established nationwide through the US Integrated Ocean Observing System (IOOS) whose primary source of funding is via US IOOS through a 5-year cooperative agreement titled Coordinated Monitoring, Prediction, and Assessment to Support Decision-Makers Needs for Coastal and Ocean Data and Tools, but was recently awarded funding via a NOAA Regional Ocean Partnership grant through the Governors' South Atlantic Alliance. SECOORA is the regional solution to integrating coastal and ocean observing data in the Southeast United States to inform decision makers

and the general public. The SECOORA region encompasses 4 states, over 42 million people, and spans the coastal ocean from North Carolina to the west Coast of Florida and is creating customized products to address these thematic areas: Marine Operations; Coastal Hazards; Ecosystems, Water Quality, Living Marine Resources; and Climate Change. The Council is a voting member and Council staff was recently re-elected to serve on the Board of Directors for the Southeast Coastal Regional Ocean Observing Association (SECOORA) to guide and direct priority needs for observation and modeling to support fisheries oceanography and integration into stock assessments through SEDAR. Cooperation through SECOORA is envisioned to facilitate the following:

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

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

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

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

In addition, the Council serves on the National Habitat Board and, as a member of the Southeast Aquatic Resource Partnership (SARP), has highlighted this collaboration by including the Southeast Aquatic Habitat Plan (SAHP) and associated watershed conservation restoration targets into the FEP. Many of the habitat, water quality, and water quantity conservation needs

identified in the threats and recommendations Volume of the FEP are directly addressed by on-the-ground projects supported by SARP. This cooperation results in funding fish habitat restoration and conservation intended to increase the viability of fish populations and fishing opportunity, which also meets the needs to conserve and manage
Essential Fish Habitat for Council managed species or habitat important to their prey. To date, SARP has funded 53 projects in the region through this program. This work supports conservation objectives identified in the SAHP to improve, establish, or maintain riparian zones, water quality, watershed connectivity, sediment flows, bottoms and shorelines, and fish passage, and addresses other key factors associated with the loss and degradation of fish habitats. SARP also developed the Southern Instream Flow Network (SIFN) to address the impacts of flow alterations in the Southeastern US aquatic ecosystems which leverages policy, technical experience, and scientific resources among partners based in 15 states. Maintaining appropriate flow into South Atlantic estuarine systems to support healthy inshore habitats essential to Council managed species is a major regional concern and efforts of SARP through SIFN are envisioned to enhance state and local partners ability to maintain appropriate flow rates.

Governor's South Atlantic Alliance (GSAA)

Initially discussed as a South Atlantic Eco-regional Compact, the Council has also cooperated with South Atlantic States in the formation of a Governor's South Atlantic Alliance (GSAA). This will also provide regional guidance and resources that will address State and Council broader habitat and ecosystem conservation goals. The GSAA was initiated in 2006. An Executive Planning Team (EPT), by the end of 2007, had created a framework for the Governors South Atlantic Alliance. The formal agreement between the four states (NC, SC, GA, and FL) was executed in May 2009. The Agreement specifies that the Alliance will prepare a "Governors South Atlantic Alliance Action Plan" which will be reviewed annually for progress and updated every five years for relevance of content. The Alliance's mission and purpose is to promote collaboration among the four states, and with the support and interaction of federal agencies, academe, regional organizations, non-governmental organizations, and the private sector, to sustain and enhance the region's coastal and marine resources. The Alliance proposes to regionally implement science-based actions and policies that balance coastal and marine ecosystems capacities to support both human and natural systems. The GSAA Action Plan was released in December 2010 and describes the four Priority Issue Areas that were identified by the Governors to be of mutual importance to the sustainability of the region's resources: Healthy Ecosystems; Working Waterfronts; Clean Coastal and Ocean Waters; and Disaster-Resilient Communities. The goals, objectives, actions, and implementation steps for each of these priorities were further described in the GSAA Implementation Plan released in July 2011. The final Action Plan was released on December 1, 2010 and marked the beginning of intensive work by the Alliance Issue Area Technical Teams (IATTs) to develop implementation steps for the actions and objectives. The GSAA Implementation Plan was published July 6, 2011, and the Alliance has been working to implement the Plan through the IATTs and two NOAA-funded Projects. The Alliance also partners with other federal agencies, academia, non-profits, private industry, regional organizations, and others. The Alliance supports both national and state-level ocean and coastal policy by coordinating federal, state, and local entities to ensure the sustainability of the region's economic, cultural, and natural

resources. The Alliance has organized itself around the founding principles outlined in the GSAA Terms of Reference and detailed in the GSAA Business Plan. A team of natural resource managers, scientists, and information management system experts have partnered to develop a Regional Information Management System (RIMS) and recommend decision support tools that will support regional collaboration and decision-making. In addition to regional-level stakeholders, state and local coastal managers and decision makers will also be served by this project, which will enable ready access to new and existing data and information. The collection and synthesis of spatial data into a suite of visualization tools is a critical step for long-term collaborative planning in the South Atlantic region for a wide range of coastal uses. The Council's Atlas presents the spatial representations of Essential Fish Habitat, managed areas, regional fish and fish habitat distribution, and fishery operation information and it can be linked to or drawn on as a critical part of the collaboration with the RIMS.

South Atlantic Landscape Conservation Cooperative

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

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

species is supported by the SALCC and enhanced by the Council being a voting member of its Steering Committee.
In addition, the Council's Regional Atlas presents spatial representations of Essential Fish Habitat, managed areas, regional fish and fish habitat distribution, and fishery operation information and it be linked to or drawn on as a critical part of the collaboration with the recently developed SALCC Conservation Planning Atlas.

Building Tools to support EBM in the South Atlantic Region

The Council has developed a Habitat and Ecosystem Section of the website http://www.safmc.net/ecosystem/Home/EcosystemHome/tabid/435/Default.aspx and, in cooperation with the Florida Wildlife Research Institute (FWRI), developed a Habitat and Ecosystem Internet Map Server (IMS). The IMS was developed to support Council and regional partners' efforts in the transition to EBM. Other regional partners include NMFS Habitat Conservation, South Atlantic States, local management authorities, other Federal partners, universities, conservation organizations, and recreational and commercial fishermen. As technology and spatial information needs evolved, the distribution and use of GIS demands greater capabilities. The Council has continued its collaboration with FWRI in the now evolution to Web Services provided through the regional SAFMC Habitat and Ecosystem Atlas (http://ocean.floridamarine.org/safmc_atlas/) and the SAFMC Digital Dashboard (http://ocean.floridamarine.org/safmc_dashboard/). The Atlas integrates services for the following:

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

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

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

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

Web Services System Updates:

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

Ecosystem Based Action, Future Challenges and Needs

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

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

Services) and provide resources to regional cooperating partners for expansion to address long-term Council needs.

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

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

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

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

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

The Habitat and Environmental Protection Advisory Panel, as part of their role in providing continued policy guidance to the Council, is during 2013/14, reviewing and proposing revisions and updates to the existing policy statements and developing new ones for Council consideration. The effort is intended to enhance the value of the statements and support

cooperation and collaboration with NOAA Fisheries Habitat Conservation Division and State and Federal partners in better addressing the Congressional mandates to the Council associated with designation and conservation of EFH in the region.

South Atlantic Bight Ecopath Model

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

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

Essential Fish Habitat and Essential Fish Habitat Areas of Particular Concern

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

Snapper Grouper FMP

Essential fish habitat for snapper grouper species includes coral reefs, live/hard bottom, submerged aquatic vegetation, artificial reefs, and medium to high profile outcroppings on and around the shelf break zone from shore to at least 600 feet (but to at least 2,000 feet for wreckfish) where the annual water temperature range is sufficiently warm to maintain adult populations of members of this largely tropical complex. EFH includes the spawning area in the water column above the adult habitat and the additional pelagic environment, including *Sargassum*, required for larval survival and growth up to and including settlement. In addition the Gulf Stream is an essential fish habitat because it provides a mechanism to disperse snapper grouper larvae.

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

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

> EFH-HAPCs for golden tilefish to include irregular bottom comprised of troughs and terraces inter-mingled with sand, mud, or shell hash bottom. Mud-clay bottoms in depths of 150-300 meters are HAPC. Golden tilefish are generally found in 80-540 meters, but most commonly found in 200-meter depths.
>
> EFH-HAPC for blueline tilefish to include irregular bottom habitats along the shelf edge in 45-65 meters depth; shelf break or upper slope along the 100-fathom contour (150-225 meters); hardbottom habitats characterized as rock overhangs, rock outcrops, manganese-phosphorite rock slab formations, or rocky reefs in the South Atlantic Bight; and the Georgetown Hole (Charleston Lumps) off Georgetown, SC.
>
> EFH-HAPCs for the snapper grouper complex to include the following deepwater Marine Protected Areas (MPAs) as designated in Snapper Grouper Amendment 14: Snowy Grouper Wreck MPA, Northern South Carolina MPA, Edisto MPA, Charleston Deep Artificial Reef MPA, Georgia MPA, North Florida MPA, St. Lucie Hump MPA, and East Hump MPA.
>
> Deepwater Coral HAPCs designated in Comprehensive Ecosystem-Based Amendment 1 are designated as Snapper Grouper EFH-HAPCs: Cape Lookout Coral HAPC, Cape Fear Coral HAPC, Blake Ridge Diapir Coral HAPC, Stetson-Miami Terrace Coral HAPC, and Pourtalés Terrace Coral HAPC.

Shrimp FMP

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

For rock shrimp, essential fish habitat consists of offshore terrigenous and biogenic sand bottom

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

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

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

Coastal Migratory Pelagics FMP

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

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

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

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

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

Golden Crab FMP

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

Spiny Lobster FMP

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

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

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

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

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

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

C. Essential fish habitat for octocorals excepting the order Pennatulacea (sea pens

and sea pansies) includes rough, hard, exposed, stable substrate in subtidal to outer shelf depths within a wide range of salinity and light penetration throughout the management area.

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

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

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

Dolphin and Wahoo FMP

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

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

Pelagic *Sargassum* Habitat FMP

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

Actions Implemented That Protect EFH and EFH-HAPCs

Snapper Grouper FMP

- Prohibited the use of the following gears to protect habitat: bottom longlines in the EEZ inside of 50 fathoms or anywhere south of St. Lucie Inlet, Florida; bottom longlines in the wreckfish fishery; fish traps; bottom tending (roller- rig) trawls on live bottom habitat; and entanglement gear.
- Established the *Oculina* Experimental Closed Area where the harvest or possession of all species in the snapper grouper complex is prohibited.
- Established deepwater Marine Protected Areas (MPAs) as designated in Snapper Grouper Amendment 14: Snowy Grouper Wreck MPA, Northern South Carolina MPA, Edisto MPA, Charleston Deep Artificial Reef MPA, Georgia MPA, North Florida MPA, St. Lucie Hump MPA, and East Hump MPA.

Shrimp FMP

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

Pelagic Sargassum Habitat FMP

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

Coastal Migratory Pelagics FMP

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

Golden Crab FMP

- In the northern zone, golden crab traps can only be deployed in waters deeper than 900

feet; in the middle and southern zones traps can only be deployed in waters deeper than 700 feet.

Northern zone - north of the 28°N. latitude to the North Carolina/Virginia border;
Middle zone - 28°N. latitude to 25° N. latitude; and
Southern zone - south of 25°N. latitude to the border between the South Atlantic and Gulf of Mexico Fishery Management Councils.

Coral, Coral Reefs and Live/Hard Bottom FMP

- Established an optimum yield of zero and prohibiting all harvest or possession of these resources which serve as essential fish habitat to many managed species.
- Designated the *Oculina* Bank Habitat Area of Particular Concern.
- Expanded the *Oculina* Bank Habitat Area of Particular Concern (HAPC) to an area bounded to the west by 80°W. longitude, to the north by 28°30' N. latitude, to the south by 27°30' N. latitude, and to the east by the 100 fathom (600 feet) depth contour.
- Established the following two Satellite *Oculina* HAPCs: (1) Satellite *Oculina* HAPC #1 is bounded on the north by 28°30'N. latitude, on the south by 28°29'N. latitude, on the east by 80°W. longitude, and on the west by 80°3'W. longitude; and (2) Satellite *Oculina* HAPC #2 is bounded on the north by 28°17'N. latitude, on the south by 28°16'N. latitude, on the east by 80°W. longitude, and on the west by 80°3'W. longitude.
- Prohibited the use of all bottom tending fishing gear and fishing vessels from anchoring or using grapples in the *Oculina* Bank HAPC.
- Established a framework procedure to modify or establish Coral HAPCs.
- Established the following five deepwater CHAPCs:
    - Cape Lookout Lophelia Banks CHAPC;
    - Cape Fear Lophelia Banks CHAPC;
    - Stetson Reefs, Savannah and East Florida Lithoherms, and Miami Terrace (Stetson- Miami Terrace) CHAPC;
    - Pourtales Terrace CHAPC; and
    - Blake Ridge Diapir Methane Seep CHAPC.
- Within the deepwater CHAPCs, the possession of coral species and the use of all bottom damaging gear are prohibited including bottom longline, trawl (bottom and mid-water), dredge, pot or trap, or the use of an anchor, anchor and chain, or grapple and chain by all fishing vessels.

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

SAFMC Habitat and Environmental Protection Policy

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

SAFMC EFH Policy Statements

In addition to implementing regulations to protect habitat from fishing related degradation, the Council in cooperation with NOAA Fisheries, actively comments on non-fishing projects or policies that may impact fish habitat. The Council adopted a habitat policy and procedure document that established a four-state Habitat Advisory Panel and adopted a comment and policy development process. Members of the Habitat Advisory Panel serve as the Council's habitat contacts and professionals in the field. With guidance from the Advisory Panel, the Council has developed and approved a number of habitat policy statements which are available on the Habitat and Ecosystem section of the Council website (http://www.safmc.net/ecosystem/Home/EcosystemHome/tabid/435/Default.aspx).

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