DRAFT

Amendment 18A to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region

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South Atlantic Fishery Management Council
4055 Faber Place Drive, Suite 201
North Charleston, South Carolina 29405
(843) 571-4366
(843) 769-4520 (FAX)
Email (general): safmc@safmc.net
Website: www.safmc.net

National Marine Fisheries Service
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701
(727) 824-5301 / FAX (727) 824-5308

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ABBREVIATIONS AND ACRONYMS

ABC	Acceptable biological catch
ACCSP	Atlantic Coastal Cooperative Statistics Program
ACL	Annual Catch Limits
ACT	Annual Catch Target
AM	Accountability Measure
APA	Administrative Procedures Act
ASMFC	Atlantic States Marine Fisheries Commission
B	A measure of stock biomass in either weight or other appropriate unit
B_{MSY}	The stock biomass expected to exist under equilibrium conditions when fishing at F_{MSY}
B_{OY}	The stock biomass expected to exist under equilibrium conditions when fishing at F_{OY}
B_{CURR}	The current stock biomass
CEA	Cumulative Effects Analysis
CEQ	Council on Environmental Quality
CFMC	Caribbean Fishery Management Council
CPUE	Catch per unit effort
CRP	Cooperative Research Program
CZMA	Coastal Zone Management Act
DEIS	Draft Environmental Impact Statement
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EFH-HAPC	Essential Fish Habitat - Habitat Area of Particular Concern
EIS	Environmental Impact Statement
ESA	Endangered Species Act of 1973
F	A measure of the instantaneous rate of fishing mortality
$F_{30\%SPR}$	Fishing mortality that will produce a static SPR = 30%.
$F_{45\%SPR}$	Fishing mortality that will produce a static SPR = 45%.
F_{CURR}	The current instantaneous rate of fishing mortality
F_{MSY}	The rate of fishing mortality expected to achieve MSY under equilibrium conditions and a corresponding biomass of B_{MSY}
F_{OY}	The rate of fishing mortality expected to achieve OY under equilibrium conditions and a corresponding biomass of B_{OY}
FEIS	Final Environmental Impact Statement
FMP	Fishery management plan
FMU	Fishery management unit
FONSI	Finding of No Significant Impact
GFMC	Gulf of Mexico Fishery Management Council
IFQ	Individual fishing quota
M	Natural mortality rate
MARFIN	Marine Fisheries Initiative
MARMAP	Marine Resources Monitoring Assessment and Prediction Program
MBTA	Migratory Bird Treaty Act

MFMT	Maximum Fishing Mortality Threshold
MMPA	Marine Mammal Protection Act of 1972
MRFSS	Marine Recreational Fisheries Statistics Survey
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
MSST	Minimum Stock Size Threshold
MSY	Maximum Sustainable Yield
NEPA	National Environmental Policy Act of 1969
NMFS	National Marine Fisheries Service
NMSA	National Marine Sanctuary Act
NOAA	National Oceanic and Atmospheric Administration
OY	Optimum Yield
PQBM	Post Quota Bycatch Mortality
R	Recruitment
RFA	Regulatory Flexibility Act
RIR	Regulatory Impact Review
SAFE Report	Stock Assessment and Fishery Evaluation Report
SAMFC	South Atlantic Fishery Management Council
SDDP	Supplementary Discard Data Program
SEDAR	Southeast Data, Assessment, and Review
SEFSC	Southeast Fisheries Science Center
SERO	Southeast Regional Office
SFA	Sustainable Fisheries Act
SIA	Social Impact Assessment
SPR	Spawning Potential Ratio
SSC	Scientific and Statistical Committee
TAC	Total allowable catch
TL	Total length
T_{MIN}	The length of time in which a stock could rebuild to B_{MSY} in the absence of fishing mortality
USCG	U.S. Coast Guard

AMENDMENT 18A TO THE FISHERY MANAGEMENT PLAN FOR THE SNAPPER GROUPER FISHERY OF THE SOUTH ATLANTIC REGION

INCLUDING A DRAFT ENVIRONMENTAL IMPACT STATEMENT, INITIAL REGULATORY FLEXIBILITY ANALYSIS, DRAFT REGULATORY IMPACT REVIEW AND DRAFT SOCIAL IMPACT ASSESSMENT/FISHERY IMPACT STATEMENT

Proposed actions:	Limit participation and effort in the golden tilefish fishery; modify management of the black sea bass pot fishery; and improve the accuracy, timing, and quantity of fisheries statistics.
Lead agency:	FMP Amendment – South Atlantic Fishery Management Council EIS - NOAA Fisheries Service
For Further Information Contact:	Robert K. Mahood South Atlantic Fishery Management Council 4055 Faber Place, Suite 201 North Charleston, SC 29405 866-SAFMC-10 Robert.mahood@safmc.net Roy E. Crabtree NOAA Fisheries, Southeast Region 263 13th Avenue South St. Petersburg, FL 33701 727-824-5301
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ABSTRACT

The Council is concerned that regulations implementing several recent snapper grouper amendments could increase the incentive to fish for golden tilefish or black sea bass. Therefore, the Council is proposing management measures that would limit participation in these two sectors of the snapper grouper fishery. The Council is also concerned about the accuracy, timing, and quantity of fisheries data and is proposing management measures that would improve fisheries data.

Actions in Amendment 18A would:

- Limit participation in the golden tilefish fishery through an endorsement program
- Establish commercial quota allocations for longline and hook and line gear users
- Establish criteria for transferability of endorsements
- Change the golden tilefish fishing year
- Change golden tilefish commercial trip limits
- Establish trip limits for fishermen who do not receive an endorsement in the golden tilefish endorsement program
- Modify management of the black sea bass fishery to limit participation and effort and reduce bycatch
- Improve the accuracy, timing, and quantity of fisheries data.

This Draft Environmental Impact Statement (DEIS) has been prepared to analyze the effects of implementing regulations to achieve the actions listed above . Comments on this DEIS will be accepted for 45 days from publication of the Notice of Availability (NOA) in the Federal Register.

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SUMMARY

The South Atlantic Fishery Management Council is proposing, in Amendment 18A, to either alter current management measures or implement new management measures that would address several issues which have arisen within the snapper grouper fishery of the South Atlantic region.

Actions proposed in Amendment 18A would:

- Limit participation in the golden tilefish fishery through an endorsement program
- Establish commercial quota allocations for longline and hook and line gear users
- Establish criteria for transferability of endorsements
- Change the golden tilefish fishing year
- Change golden tilefish commercial trip limits
- Establish trip limits for fishermen who do not receive an endorsement in the golden tilefish endorsement program
- Modify management of the black sea bass fishery to limit participation and effort and reduce bycatch
- Improve the accuracy, timing, and quantity of fisheries data.

The Reauthorized Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) requires that United States fisheries be managed to optimize yield while maintaining sustainability of the resource.

Alternatives Being Considered

The Council's current alternatives are listed in **Section 2.0** and are hereby incorporated by reference. Alternatives to the proposed actions the Council considered but eliminated from detailed consideration in developing this amendment are described in **Appendix A**.

1 Introduction

1.1 Background

Management of the Federal snapper grouper fishery located off the South Atlantic in the 3-200 nautical mile (nm) U.S. Exclusive Economic Zone (EEZ) (**Figure 1-1**) is conducted under the Fishery Management Plan (FMP) for the Snapper Grouper Fishery (SAFMC 1983). The FMP and its amendments are developed under the Magnuson-Stevens Act, other applicable Federal laws, and executive orders (E.O.s) and affect the management of 73 species (**Table 1-1**). The purpose of the FMP, as amended, is to manage the snapper grouper fishery for optimum yield (OY) and to allocate harvest among user groups while preventing overfishing and conserving marine resources.

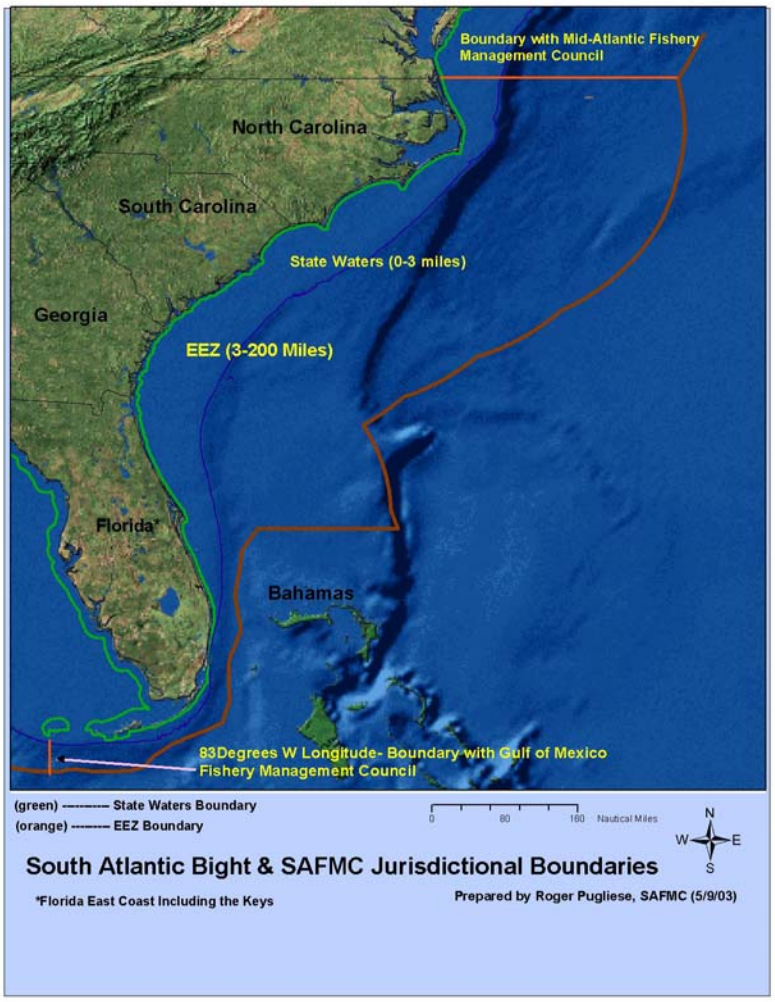

Figure 1-1. Jurisdictional boundaries of the South Atlantic Fishery Management Council.

Table 1-1. Species in the Snapper Grouper Fishery Management Unit (FMU).

Almaco jack, *Seriola rivoliana*
Atlantic spadefish, *Chaetodipterus faber*
Banded rudderfish, *Seriola zonata*
Bank sea bass, *Centropristis ocyurus*
Bar jack, *Caranx ruber*
Black grouper, *Mycteroperca bonaci*
Black margate, *Anisotremus surinamensis*
Black sea bass, *Centropristis striata*
Black snapper, *Apsilus dentatus*
Blackfin snapper, *Lutjanus buccanella*
Blue runner, *Caranx crysos*
Blueline tilefish, *Caulolatilus microps*
Bluestriped grunt, *Haemulon sciurus*
Coney, *Cephalopholis fulva*
Cottonwick, *Haemulon melanurum*
Crevalle jack, *Caranx hippos*
Cubera snapper, *Lutjanus cyanopterus*
Dog snapper, *Lutjanus jocu*
French grunt, *Haemulon flavolineatum*
Gag, *Mycteroperca microlepis*
Golden tilefish, *Lopholatilus chamaeleonticeps*
Goliath grouper, *Epinephelus itajara*
Grass porgy, *Calamus arctifrons*
Gray (mangrove) snapper, *Lutjanus griseus*
Gray triggerfish, *Balistes capriscus*
Graysby, *Cephalopholis cruentata*
Greater amberjack, *Seriola dumerili*
Hogfish, *Lachnolaimus maximus*
Jolthead porgy, *Calamus bajonado*
Knobbed porgy, *Calamus nodosus*
Lane snapper, *Lutjanus synagris*
Lesser amberjack, *Seriola fasciata*
Longspine porgy, *Stenotomus caprinus*
Mahogany snapper, *Lutjanus mahogoni*
Margate, *Haemulon album*
Misty grouper, *Epinephelus mystacinus*
Mutton snapper, *Lutjanus analis*
Nassau grouper, *Epinephelus striatus*
Ocean triggerfish, *Canthidermis sufflamen*
Porkfish, *Anisotremus virginicus*
Puddingwife, *Halichoeres radiatus*
Queen snapper, *Etelis oculatus*
Queen triggerfish, *Balistes vetula*
Red grouper, *Epinephelus morio*
Red hind, *Epinephelus guttatus*
Red porgy, *Pagrus pagrus*
Red snapper, *Lutjanus campechanus*
Rock hind, *Epinephelus adscensionis*
Rock Sea Bass, *Centropristis philadelphica*
Sailors choice, *Haemulon parra*
Sand tilefish, *Malacanthus plumieri*
Saucereye porgy, *Calamus calamus*
Scamp, *Mycteroperca phenax*
Schoolmaster, *Lutjanus apodus*
Scup, *Stenotomus chrysops*
Sheepshead, *Archosargus probatocephalus*
Silk snapper, *Lutjanus vivanus*
Smallmouth grunt, *Haemulon chrysargyreum*
Snowy grouper, *Epinephelus niveatus*
Spanish grunt, *Haemulon macrostomum*
Speckled hind, *Epinephelus drummondhayi*
Tiger grouper, *Mycteroperca tigris*
Tomtate, *Haemulon aurolineatum*
Yellow jack, *Caranx bartholomaei*
Yellowedge grouper, *Epinephelus flavolimbatus*
Yellowfin grouper, *Mycteroperca venenosa*
Yellowmouth grouper, *Mycteroperca interstitialis*
Yellowtail snapper, *Ocyurus chrysurus*
Vermilion snapper, *Rhomboplites aurorubens*
Warsaw grouper, *Epinephelus nigritus*
White grunt, *Haemulon plumieri*
Whitebone porgy, *Calamus leucosteus*
Wreckfish, *Polyprion americanus*

1.2 Purpose of the Proposed Action

The purpose of Amendment 18A to the FMP for the Snapper Grouper Fishery of the South Atlantic Region is to limit participation in the golden tilefish fishery, change the golden tilefish fishing year, change the golden tilefish commercial trip limits, limit participation and effort in the black sea bass pot fishery, limit bycatch in the black sea bass pot fishery, and improve the accuracy, timing, and quantity of fisheries data. These actions will address issues that have arisen as a result of a more stringent regulatory regime in the South Atlantic region.

1.3 Need for the Proposed Action

The need for action in Amendment 18A is to reduce overcapacity in the golden tilefish and black sea bass portions of the snapper grouper fisheries. Recent amendments to the Snapper Grouper FMP have imposed more restrictive harvest limitations on snapper grouper fishermen. In an effort to identify other species to target, a greater number of fishermen may target golden tilefish and black sea bass. An increase in effort on these species would intensify the "race to fish" that already exists, which has resulted in a shortened season for both species. The fishing season for golden tilefish in recent years has already been shortened to such a degree that South Carolina longline fishermen, who are typically unable to fish until April or May due to weather conditions and hook and line fishermen from Florida, who typically do not fish until the fall, are increasingly unable to participate in the fishery. Furthermore, the commercial quota for black sea bass was met in 2009 and 2010 before fishermen had a chance to fish during the portion of the year (November-February) that has historically been most productive. The Council is concerned an increase effort on these species will deteriorate profits.

The actions proposed in Amendment 18A are listed below:

Action 1: Limit Participation in the Golden Tilefish Fishery
Action 2: Allocate commercial Golden Tilefish Quota among Gear Groups
Action 3: Transferability of golden tilefish endorsements
Action 4: Change Golden Tilefish Fishing Year
Action 5: Change the Golden Tilefish Commercial Trip Limit
Action 6: Establish trip limits for commercial fishermen who do not receive an endorsement in the commercial golden tilefish hook and line fishery
Action 7: Limit Participation in the Black Sea Bass Pot Fishery
Action 8: Limit Effort in the Black Sea Bass Pot Fishery
Action 9: Reduce Bycatch in the Black Sea Bass Fishery
Action 10: Improvements to Commercial Data Reporting
Action 11. Improvements to For-Hire Data Reporting

1.4 History of Management

The snapper grouper fishery is highly regulated; some of the species included in this amendment have been regulated since 1983. The original Snapper Grouper FMP (SAFMC 1983) included size limits for black sea bass (8" TL). Trawl gear, primarily targeting vermilion snapper, was prohibited starting in January 1989. Fish traps (not including black sea bass pots) and entanglement nets were prohibited starting in January 1992. Bag limits (10 vermilion snapper; 5 groupers) and size limits (10" TL recreational vermilion snapper; 12" TL commercial vermilion snapper; 12" TL recreational & commercial red porgy) were also implemented in January 1992. Quotas and trip limits for snowy grouper and golden tilefish were implemented in July 1994; tilefish were also added to the 5-grouper aggregate bag limit. A controlled access program for the commercial fishery was implemented fully beginning in 1999. In February 1999, red porgy regulations were 14" TL size limit and 5 fish bag limit and commercial closure during March and April; black sea bass size limit increased to 10" TL and a 20-fish bag limit was included. All harvest of red porgy was prohibited from September 8, 1999 until August 28, 2000. Beginning on August 29, 2000 red porgy regulations included a January through April commercial closure, 1 fish bag limit, and 50 pound commercial bycatch allowance May through December.

Snapper Grouper Amendment 13C (SAFMC 2006) implemented actions to end or phase out overfishing of the snowy grouper, golden tilefish, vermilion snapper, and black sea bass stocks, and to increase catches of red porgy to a level consistent with the approved stock rebuilding plan in federal waters of the South Atlantic.

Snapper Grouper Amendment 14 (SAFMC 2007) established a series of deepwater marine protected areas in the South Atlantic Exclusive Economic Zone.

Snapper Grouper Amendment 15A (SAFMC 2008a) established rebuilding plans and Sustainable Fishery Act parameters for snowy grouper, black sea bass, and red porgy.

Amendment 15B (SAFMC 2008) prohibited the sale of bag limit sales of snapper grouper species, established allocations and adjusted the quotas for red porgy, and snowy grouper, and extended the renewal periods for Federal Commercial Snapper Grouper Permits.

Amendment 16 (SAFMC 2009) established a four month prohibition on recreational and commercial harvest of shallow-water grouper species, a five month prohibition on recreational harvest of vermilion snapper, a quota for gag, a modification to the vermilion snapper commercial quota, reductions in recreational bag limits for vermilion snapper, gag, black grouper, and the grouper aggregate; and a requirement for the commercial and recreational sectors to use venting and dehooking tools when necessary.

Amendment 17A wasdeveloped by the Council to establish measure to end red snapper overfishing, rebuild the stock and establish annual catch limits (ACLs) for red snapper. The amendment was approved for submission to the Secretary of Commerce during the Council's meeting in June 2010 and sent to the Secretary on July 19, 2010. The amendment would specify an ACL and AMs, prohibit all harvest and retention of red

snapper and establish areas closed to all snapper grouper fishing with an allowance for black sea bass pots and spearfishing, and specify a rebuilding plan, status determination criteria and a monitoring program.

Amendment 17B wasdeveloped by the Council to specify ACLs and accountability measures (AMs) for other snapper grouper species undergoing overfishing. Amendment 17B was approved for submission to the Secretary of Commerce during the Council's meeting in December 2009 and sent to the Secretary on March 30, 2010. The amendment is currently under review. The amendment would establish Annual Catch Limits (ACLs) and Accountability Measures (AMs) and address overfishing for nine species in the snapper grouper management complex currently listed as undergoing overfishing: golden tilefish, snowy grouper, speckled hind, warsaw grouper, black grouper, black sea bass, gag, red grouper, and vermilion snapper. Measures in Amendment 17B include a deepwater closure (240 ft. seaward) for deepwater species to help protect warsaw grouper and speckled hind, two deepwater species extremely vulnerable to overfishing. The closure will also help protect other deepwater species where release mortality is estimated at 100% for the multi-species fishery, and ensure catches are below the Annual Catch Limits for these species. Additional measures in the amendment include a reduction in the snowy grouper bag limit to one fish per vessel per trip; establishment of a combined ACL for gag, black grouper, and red grouper of 662, 403 lbs (gutted weight) for the commercial fishery, and 648,663 lbs (gutted weight) for the recreational fishery; an allocation of 97% commercial and 3% recreational for the golden tilefish fishery based on landings history; and establishment of accountability measures as necessary.

Amendment 18B is being developed by the Council to consider expansion of the South Atlantic Fishery Management Council's jurisdiction for the snapper grouper fishery to account for fish harvested in the Mid-Atlantic and New England areas.

Specific details on these and all the other regulations implemented in the snapper grouper fishery can be found in Table 1.4

Table 1-2. History of management for the Snapper Grouper Fishery.

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
FMP (1983)	08/31/83	PR: 48 FR 26843 FR: 48 FR 39463	-12" limit – red snapper, yellowtail snapper, red grouper, Nassau grouper -8" limit – black sea bass -4" trawl mesh size -Gear limitations – poisons, explosives, fish traps, trawls -Designated modified habitats or artificial reefs as Special Management Zones (SMZs)
Regulatory Amendment #1 (1986)	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 (1988)	01/12/89	PR: 53 FR 42985 FR: 54 FR 1720	-Prohibited trawl gear to harvest fish south of Cape Hatteras, NC and north of Cape Canaveral, FL. -Directed fishery defined as vessel with trawl gear and ≥200 lbs s-g on board. -Established rebuttable assumption that vessel with s-g on board had harvested such fish in EEZ.
Regulatory Amendment #2 (1988)	03/30/89	PR: 53 FR 32412 FR: 54 FR 8342	-Established 2 artificial reefs off Ft. Pierce, FL as SMZs.
Notice of Control Date	09/24/90	55 FR 39039	-Anyone entering federal wreckfish fishery in the EEZ off S. Atlantic states after 09/24/90 was not assured of future access if limited entry program developed.
Regulatory Amendment #3 (1989)	11/02/90	PR: 55 FR 28066 FR: 55 FR 40394	-Established artificial reef at Key Biscayne, FL as SMZ. Fish trapping, bottom longlining, spear fishing, and harvesting of Goliath grouper prohibited in SMZ.
Amendment #2 (1990)	10/30/90	PR: 55 FR 31406 FR: 55 FR 46213	-Prohibited harvest/possession of goliath grouper in or from the EEZ -Defined overfishing for goliath grouper and other species

Table 1-2. Continued. History of management for the Snapper Grouper Fishery.

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 FM -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	-the fishery was 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 (1990)	01/31/91	PR: 55 FR 39023 FR: 56 FR 2443	-Add wreckfish to the FMU; -Defined optimum yield and overfishing -Required permit to fish for, land or sell wreckfish; -Required catch and effort reports from selected, permitted vessels; -Established control date of 03/28/90; -Established a fishing year for wreckfish starting April 16; -Established a process to set annual quota, with initial quota of 2 million pounds; provisions for closure; -Established 10,000 pound trip limit; -Established a spawning season closure for wreckfish from January 15 to April 15; and -Provided for annual adjustments of wreckfish management measures;
Notice of Control Date	07/30/91	56 FR 36052	-Anyone entering federal snapper grouper fishery (other than for wreckfish) in the EEZ off S. Atlantic states after 07/30/91 was not assured of future access if limited entry program developed.

Table 1-2. Continued. History of management for the Snapper Grouper Fishery.

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" limit – lane snapper -10" limit – vermilion snapper (recreational only) -12" limit – red porgy, vermilion snapper (commercial only), gray, yellowtail, mutton, schoolmaster, queen, blackfin, cubera, dog, mahogany, and silk snappers -20" limit – red snapper, gag, and red, black, scamp, yellowfin, and yellowmouth groupers. -28" FL limit – greater amberjack (recreational only) -36" FL or 28" core length – greater amberjack (commercial only) -bag limits – 10 vermilion snapper, 3 greater amberjack -aggregate snapper bag limit – 10/person/day, excluding vermilion snapper and allowing no more than 2 red snappers -aggregate grouper bag limit – 5/person/day, excluding Nassau and goliath grouper, for which no retention (recreational & commercial) is allowed -spawning season closure – commercial harvest greater amberjack > 3 fish bag prohibited in April south of Cape Canaveral, FL -spawning season closure – commercial harvest mutton snapper >snapper aggregate prohibited during May and June -charter/headboats and excursion boat possession limits extended

Table 1-2. Continued. History of management for the Snapper Grouper Fishery.

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 (1991)	04/06/92	PR: 56 FR 57302 FR: 57 FR 7886	-Wreckfish: established limited entry system with ITQs; required dealer to have permit; rescinded 10,000 lb. trip limit; required off-loading between 8 am and 5 pm; reduced occasions when 24-hour advance notice of offloading required for off-loading; established procedure for initial distribution of percentage shares of TAC
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 (1992)	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 (1992)	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	-commercial quotas for snowy grouper, golden tilefish -commercial trip limits for snowy grouper, golden tilefish, speckled hind, and warsaw grouper -include golden tilefish in grouper recreational aggregate bag limits -prohibited sale of warsaw grouper and speckled hind -100% logbook coverage upon renewal of permit -creation of the *Oculina* Experimental Closed Area -data collection needs specified for evaluation of possible future IFQ system
Amendment #7 (1994)	01/23/95	PR: 59 FR 47833 FR: 59 FR 66270	-12” FL – hogfish -16” TL – mutton snapper -required dealer, charter and headboat federal permits -allowed sale under specified conditions -specified allowable gear and made allowance for experimental gear -allowed multi-gear trips in N. Carolina -added localized overfishing to list of problems and objectives -adjusted bag limit and crew specs. for charter and head boats -modified management unit for scup to apply south of Cape Hatteras, NC -modified framework procedure
Regulatory Amendment #6 (1994)	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

Table 1-2. Continued. History of management for the Snapper Grouper Fishery.

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

Table 1-2. Continued. History of management for the Snapper Grouper Fishery.

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 (1998)	2/24/99	PR: 63 FR 63276 FR: 64 FR 3624	-Red porgy: 14" length (recreational and commercial); 5 fish rec. bag limit; no harvest or possession > bag limit, and no purchase or sale, in March and April. -Black sea bass: 10" length (recreational and commercial); 20 fish rec. bag limit; required escape vents and escape panels with degradable fasteners in bsb pots -Greater amberjack: 1 fish rec. bag limit; no harvest or possession > bag limit, and no purchase or sale, during April; quota = 1,169,931 lbs; began fishing year May 1; prohibited coring. -Vermilion snapper: 11" length (recreational) Gag: 24" length (recreational); no commercial harvest or possession > bag limit, and no purchase or sale, during March and April -Black grouper: 24" length (recreational and commercial); no harvest or possession > bag limit, and no purchase or sale, during March and April. -Gag and Black grouper: within 5 fish aggregate grouper bag limit, no more than 2 fish may be gag or black grouper (individually or in combination) -All SG without a bag limit: aggregate recreational bag limit 20 fish/person/day, excluding tomtate and blue runners -Vessels with longline gear aboard may only possess snowy, warsaw, yellowedge, and misty grouper, and golden, blueline and sand tilefish.
Amendment #9 (1998) resubmitted	10/13/00	PR: 63 FR 63276 FR: 65 FR 55203	-Commercial trip limit for greater amberjack
Regulatory Amendment #8 (2000)	11/15/00	PR: 65 FR 41041 FR: 65 FR 61114	-Established 12 SMZs at artificial reefs off Georgia; revised boundaries of 7 existing SMZs off Georgia to meet CG permit specs; restricted fishing in new and revised SMZs
Emergency Interim Rule	09/08/99, expired 08/28/00	64 FR 48324 and 65 FR 10040	-Prohibited harvest or possession of red porgy.
Emergency Action	9/3/99	64 FR 48326	-Reopened the Snapper grouper Amendment 8 permit application process
Amendment #10 (1998)	07/14/00	PR: 64 FR 37082 and 64 FR 59152 FR: 65 FR 37292	-Identified EFH and established HAPCs for species in the SG FMU.

Table 1-2. Continued. History of management for the Snapper Grouper Fishery.

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	-MSY proxy: goliath and Nassau grouper = 40% static SPR; all other species = 30% static SPR -OY: hermaphroditic groupers = 45% static SPR; goliath and Nassau grouper = 50% static SPR; all other species = 40% static SPR -Overfished/overfishing evaluations: BSB: overfished (MSST=3.72 mp, 1995 biomass=1.33 mp); undergoing overfishing (MFMT=0.72, F1991-1995=0.95) Vermilion snapper: overfished (static SPR = 21-27%). Red porgy: overfished (static SPR = 14-19%). Red snapper: overfished (static SPR = 24-32%) Gag: overfished (static SPR = 27%) Scamp: no longer overfished (static SPR = 35%) Speckled hind: overfished (static SPR = 8-13%) Warsaw grouper: overfished (static SPR = 6-14%) Snowy grouper: overfished (static SPR = 5=15%) White grunt: no longer overfished (static SPR = 29-39%) Golden tilefish: overfished (couldn't estimate static SPR) Nassau grouper: overfished (couldn't estimate static SPR) Goliath grouper: overfished (couldn't estimate static SPR) -overfishing level: goliath and Nassau grouper = F>F40% static SPR; all other species: = F>F30% static SPR Approved definitions for overfished and overfishing. MSST = [(1-M) or 0.5 whichever is greater]*Bmsy. MFMT = Fmsy
Amendment #12 (2000)	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 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).

Table 1-2. Continued. History of management for the Snapper Grouper Fishery.

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 #13C (2006)	10/23/06	PR: 71 FR 28841 FR: 71 FR 55096	- End overfishing of snowy grouper, vermilion snapper, black sea bass, and golden tilefish. Increase allowable catch of red porgy. Year 1 = 2006. 1. Snowy Grouper Commercial: Quota (gutted weight) = 151,000 lbs gw in year 1, 118,000 lbs gw in year 2, and 84,000 lbs gw in year 3 onwards. Trip limit = 275 lbs gw in year 1, 175 lbs gw in year 2, and 100 lbs gw in year 3 onwards. Recreational: Limit possession to one snowy grouper in 5 grouper per person/day aggregate bag limit. 2. Golden Tilefish Commercial: Quota of 295,000 lbs gw, 4,000 lbs gw trip limit until 75% of the quota is taken when the trip limit is reduced to 300 lbs gw. Do not adjust the trip limit downwards unless 75% is captured on or before September 1. Recreational: Limit possession to 1 golden tilefish in 5 grouper per person/day aggregate bag limit. 3. Vermilion Snapper Commercial: Quota of 1,100,000 lbs gw. Recreational: 12" size limit. 4. Black Sea Bass Commercial: Commercial quota (gutted weight) of 477,000 lbs gw in year 1, 423,000 lbs gw in year 2, and 309,000 lbs gw in year 3 onwards. Require use of at least 2" mesh for the entire back panel of black sea bass pots effective 6 months after publication of the final rule. Require black sea bass pots be removed from the water when the quota is met. Change fishing year from calendar year to June 1 – May 31. Recreational: Recreational allocation of 633,000 lbs gw in year 1, 560,000 lbs gw in year 2, and 409,000 lbs gw in year 3 onwards. Increase minimum size limit from 10" to 11" in year 1 and to 12" in year 2. Reduce recreational bag limit from 20 to 15 per person per day. Change fishing year from the calendar year to June 1 through May 31. 5. Red Porgy Commercial and recreational 1. Retain 14" TL size limit and seasonal closure (retention limited to the bag limit); 2. Specify a commercial quota of 127,000 lbs gw and prohibit sale/purchase and prohibit harvest and/or possession beyond the bag limit when quota is taken and/or during January through April; 3. Increase commercial trip limit from 50 lbs ww to 120 red porgy (210 lbs gw) during May through December; 4. Increase recreational bag limit from one to three red porgy per person per day.

Table 1-2. Continued. History of management for the Snapper Grouper Fishery.

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	3/8/07	72 FR 60794	-The Council may consider measures to limit participation in the snapper grouper for-hire fishery
Amendment #14 (2007)	2/12/09	PR: 73 FR 32281 FR: 74 FR 1621	-Establish eight deepwater Type II marine protected areas (MPAs) to protect a portion of the population and habitat of long-lived deepwater snapper grouper species.
Amendment #15A (2007)	3/14/08	73 FR 14942	- Establish rebuilding plans and SFA parameters for snowy grouper, black sea bass, and red porgy.
Amendment #15B (2008b)	February 15, 2010	PR: 74 FR 30569 FR:74 FR 58902	- Prohibit the sale of bag-limit caught snapper grouper species. -Reduce the effects of incidental hooking on sea turtles and smalltooth sawfish. - Adjust commercial renewal periods and transferability requirements. - Implement plan to monitor and assess bycatch, - Establish reference points for golden tilefish. - Establish allocations for snowy grouper (95% com & 5% rec) and red porgy (50% com & 50% rec).
Amendment #16 (SAFMC 2008c)	July 29, 2009	PR: 74 FR 6257 FR: 74 FR 30964	-Specify SFA parameters for gag and vermilion snapper -For gag grouper: Specify interim allocations 51%com & 49%rec; rec & com spawning closure January through April; directed com quota=348,440 pounds gutted weight; reduce 5-grouper aggregate to 3-grouper and 2 gag/black to 1 gag/black and exclude captain & crew from possessing bag limit. -For vermilion snapper: Specify interim allocations 68%com & 32%rec; directed com quota split Jan-June=168,501 pounds gutted weight and 155,501 pounds July-Dec; reduce bag limit from 10 to 4 and a rec closed season October through May 15. In addition, the NMFS RA will set new regulations based on new stock assessment. -Require de-hooking tools.
Notice of Control Date	December 4, 2008	74 FR 7849	Establishes a control date for the golden tilefish fishery of the South Atlantic
Notice of Control Date	December 4, 2008	74 FR 7848	Establishes control date for black sea bass pot fishery of the South Atlantic
Amendment #17A (SAFMC 2010b)	TBD	PR:75 FR 49947	-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
Amendment #17B (SAFMC 2010a)	TBD	PR: 75 FR 62488	-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.

Table 1-2. Continued. History of management for the Snapper Grouper Fishery.

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 18A (SAFMC 2010c)	TBD	TBD	limit participation in the golden tilefish fishery; allow for transferability o endorsements; change the golden tilefish fishing year; change the golden tilefish trip limit; modifications to management of the black sea bass pot fishery; and improve the accuracy, timing, and quantity of fisheries statistics
Amendment 18B (TBD)	TBD	TBD	Extend the range of the snapper grouper FMP north and designate EFH in new areas
Amendment 20 (TBD)	TBD	TBD	-Update wreckfish ITQ program
Amendment 21	TBD	TBD	-Catch Share Programs for the Snapper Grouper Fishery
Amendment 22	TBD	TBD	-Long term management for red snapper
Amendment 24	TBD	TBD	-End overfishing and rebuild red grouper stocks
Comprehensive ACL Amendment	TBD	TBD	-Establish ABC control rules, establish ABCs, ACTs, and AMs for species not undergoing overfishing -Remove some species from South Atlantic FMUs -Specify allocations among the commercial, recreational, and for-hire sectors for species not undergoing overfishing -Limit the total mortality for federally managed species in the South Atlantic to the ACTs .
Regulatory Amendment 9	TBD	TBD	-Trip limits for gag, greater amberjack, vermilion, and black sea bass.
Regulatory Amendment 10	TBD	TBD	-Modification to red snapper area closure.

1.5 Management Objectives

The following are the fishery management plan objectives for the snapper grouper fishery as specified by the Council. These were last updated in Snapper Grouper FMP Amendment 8 (June 1996).

1. Prevent overfishing.
2. Collect necessary data.
3. Promote orderly utilization of the resource.
4. Provide for a flexible management system.
5. Minimize habitat damage.
6. Promote public compliance and enforcement.
7. Mechanism to vest participants.
8. Promote stability and facilitate long-run planning.
9. Create market-driven harvest pace and increase product continuity.
10. Minimize gear and area conflicts among fishermen.
11. Decrease incentives for overcapitalization.
12. Prevent continual dissipation of returns from fishing through open access.
13. Evaluate and minimize localized depletion.

The existing management program does not currently include objectives to end overfishing and rebuild overfished stocks, actions now required by the Reauthorized Magnuson-Stevens Act. Therefore, the Council has recommended adding the following two new management objectives to the FMP in Amendment 17A, which is under review:

14. End overfishing of snapper grouper stocks undergoing overfishing.
15. Rebuild stocks declared overfished.

2 Actions and Alternatives

Section 2.1 outlines alternatives considered by the Council in this amendment and provides a summary of their environmental consequences (environmental consequences of the alternatives are described in detail in **Section 4.0**). These alternatives were identified and developed through multiple processes, including the scoping process, public hearings and/or comments, interdisciplinary plan team meetings, and meetings of the Council, the Council's Snapper Grouper Committee, Snapper Grouper Advisory Panel, and Scientific and Statistical Committee. Alternatives the Council considered but eliminated from detailed consideration during development of this amendment are described in **Appendix A**.

2.1 Action 1: Limit Participation in the Golden Tilefish Fishery

Alternative 1 (No Action). Do not limit effort in the golden tilefish fishery through an endorsement program.

Alternative 2. Limit golden tilefish effort through a golden tilefish gear endorsement program: Distribute golden tilefish gear specific endorsements for snapper grouper permit holders that qualify under the eligibility requirements stated below. Only snapper grouper permit holders with a golden tilefish longline endorsement or a golden tilefish hook and line endorsement associated with their snapper grouper permit will be allowed to possess golden tilefish. Individuals that meet the qualifying criteria for both hook and line and longline endorsements only receive one endorsement.

Golden Tilefish Hook and Line Endorsement Initial Eligibility Requirements

Preferred Sub-Alternative 2a. To receive a golden tilefish hook and line endorsement, the individual must have a harvest level of 1,000 pounds gw (with hook and line gear) when the individual's best three of five years from 2001-2005 are aggregated. (Sub-alternative devised by the GT LAP WG.)

Sub-Alternative 2b. To receive a golden tilefish hook and line endorsement, the individual must have a harvest level of 500 pounds gw (with hook and line gear) when the individual's best three of five years from 2001-2005 are aggregated. (Sub-alternative devised by the GT LAP WG)

Sub-Alternative 2c. To receive a golden tilefish hook and line endorsement, the individual must have a harvest level of 500 pounds gw (with hook and line gear) when the individual's landings from 2001-2005 are averaged.

Sub-Alternative 2d. To receive a golden tilefish hook and line endorsement, the individual must have a harvest level of 500 pounds gw (with hook and line gear) when the individual's landings from 1999-2008 are averaged.

Sub-Alternative 2e. To receive a golden tilefish hook and line endorsement, the individual must have a harvest level of 1,000 pounds gw (with hook and line gear) when the individual's landings from 1999-2008 are averaged.

Sub-Alternative 2f. To receive a golden tilefish hook and line endorsement, the individual must have a harvest level of 1,000 pounds gw (with hook and line gear) when the best 3 of 5 yrs 2001-05 are aggregated and at least 1 lb was landed in 2008.

Sub-Alternative 2g. To receive a golden tilefish hook and line endorsement, the individual must have a harvest level of 1,000 pounds gw (with hook and line gear) when the best 3 of 5 yrs 2001-05 are aggregated and at least 1 lb was landed in 2007 or 2008.

Sub-Alternative 2h. To receive a golden tilefish hook and line endorsement, the individual must have a harvest level of 500 pounds gw (with hook and line gear) when the best 3 of 5 yrs 2001-05 are aggregated and at least 1 lb was landed in 2008.

Sub-Alternative 2i. To receive a golden tilefish hook and line endorsement, the individual must have a harvest level of 500 pounds gw (with hook and line gear) when the best 3 of 5 yrs 2001-05 are aggregated and at least 1 lb was landed in 2007 or 2008.

Sub-Alternative 2j. To receive a golden tilefish hook and line endorsement, the individual must have a harvest level of 500 pounds gw (with hook and line gear) when the best 3 of 5 yrs 2001-05 are averaged and at least 1 lb was landed in 2008.

Sub-Alternative 2k. To receive a golden tilefish hook and line endorsement, the individual must have a harvest level of 500 pounds gw (with hook and line gear) when the best 3 of 5 yrs 2001-05 are averaged and at least 1 lb was landed in 2007 or 2008.

Golden Tilefish Longline Endorsement Initial Eligibility Requirements

Preferred Sub-Alternative 2l. To receive a golden tilefish longline endorsement, the individual must have a total of 2,000 pounds gw golden tilefish caught (with longline gear) between 2006 and 2008. (Sub-alternative devised by the GT LAP WG)

Sub-Alternative 2m. To receive a golden tilefish longline endorsement, the individual must have a total of 5,000 pounds gw golden tilefish caught (with longline gear) between 2006 and 2008.

Sub-Alternative 2n. To receive a golden tilefish longline endorsement, the individual must have an average of 5,000 pounds gw golden tilefish caught (with longline gear) between 2006 and 2008.

2.1.1 Comparison of Alternatives

Alternative 1 (No Action) would maintain the current level of participation in the golden tilefish fishery, and may allow overcapitalization of the fishery in the future. **Alternatives 2a** through **2k** cap the number of participants in the hook and line fishery. **Alternatives 2l through 2n** cap the number of participants in the longline fishery. Among the hook and line sub-alternatives, **Sub-Alternative 2b** would implement the *least* restrictive requirement resulting in issuance of 29 hook and line endorsements, and **Sub-Alternative 2e** would implement the *most* restrictive endorsement eligibility requirement resulting in 7 permits that qualify for an endorsement. Among the longline Sub-Alternatives, **Preferred Sub-Alternative 2l** would implement the *least* restrictive requirement resulting in issuance of 17 longline endorsements, and **Sub-Alternatives 2m and 2n** would implement the *most* restrictive endorsement eligibility requirement resulting in 12 permits that qualify for an endorsement.

All of the Sub-Alternatives under **Alternative 2** would result in a cap placed on the number of participants but not necessarily limit the effort or harvest in the golden tilefish fishery. It is possible that alternatives which limit the number of participants could also result in a reduction in the amount of gear deployed and golden tilefish landed. If this were the case, then biological benefits could be expected for golden tilefish and the chance of interactions with protected species could be reduced under some alternatives. **Preferred Sub-Alternative 2a** would result in 23 hook and line endorsements**.** Therefore, the biological benefits of **Preferred Sub-Alternative 2a** could be greater than alternatives with less than 23 hook and line endorsements (**Alternatives 2c-2k**). Likewise, the biological benefits of **Preferred Sub-Alternatives 2m and 2n**, which result in 12 endorsements, could result in greater biological benefits compared to **Sub-Alternative 2l**, which results in 17 endorsements. However, it is also possible that effort would remain the same regardless of the number of vessels fishing.

Regarding economic benefits, in general, it is expected that any of the Sub-Alternatives will yield greater economic benefits compared to **Alternative 1** because the Sub-Alternatives limit the number of participants. Who economically benefits from each of these Sub-Alternatives is largely a distributional issue. It is not expected that a smaller number of endorsements will necessarily yield higher *total* or *aggregate* profits compared to a larger number of endorsements. However, theoretically, the expectation is that a smaller number of vessels could be more profitable than a larger number of vessels because a smaller number of vessels would cut costs. However, too few vessels could limit catch and therefore revenues. The benefit of a smaller number of endorsements is an expectation of higher *average* profits per endorsement holder. Therefore, it can be expected that the highest average profits per hook and line endorsement holder could occur under **Sub-Alternative 2e** and the lowest under **Sub-Alternative 2b**. The highest average profits per longline endorsement holder would occur under **Sub-Alternatives 2m and 2n** and the lowest under **Sub-Alternative 2l**.

Social impacts resulting from **Action 1** are expected to be mixed. While the alternatives should preserve and possibly increase the social benefits to the more active producers and dealers and associated communities, absent fishermen landing in multiple ports and selling to multiple dealers in the same city and reduced social and economic benefits will

be experienced by some communities and dealers as well as the fishermen who do not receive an endorsement.

Table 2-1a. Summary of effects of Action 1 hook and line alternatives under consideration.

Hook and Line Endorsement Alternatives												
	1 (No Action)	**Preferred 2a**	**2b**	**2c**	**2d**	**2e**	**2f**	**2g**	**2h**	**2i**	**2j**	**2k**
Biological	-	+	+	+	+	+	+	+	+	+	+	+
Economic	-	+-	+-	+-	+-	+-	+-	+-	+-	+-	+-	+-
Social	+-	+-	+-	+-	+-	+-	+-	+-	+-	+-	+-	+-
Administrative	+-	-	-	-	-	-	-	-	-	-	-	-

Table 2-1b. Summary of effects of Action 1 hook and line alternatives under consideration.

	Longline Endorsement Alternatives			
	Alternative 1 (No Action)	**Preferred Alternative 2l**	**Alternative 2m**	**Alternative 2n**
Biological	-	+	+	+
Economic	-	+-	+-	+-
Social	+-	+-	+-	+-
Administrative	+-	-	-	-

+) beneficial; (++) significantly beneficial; (-) adverse; (--) significantly adverse;
(+-) some beneficial and some adverse effects

2.2 Action 2: Allocate commercial golden tilefish quota among gear groups

Alternative 1 (No Action). Do no allocate commercial golden tilefish quota among gear groups.

Alternative 2. Allocate the golden tilefish commercial quota based on 75% longline, 25% hook and line.

Alternative 3. Allocate the golden tilefish commercial quota based on 85% longline, 15% hook and line.

Alternative 4. Allocate the golden tilefish commercial quota based on 90% longline and 10% hook and line.

2.2.1 Comparison of Alternatives

Alternatives 1-4 provide options for splitting the commercial quota between hook and line and longline gear users. Historical landings indicate that from 2004-08, 90% of the golden tilefish were taken by longline gear while the remaining 10% were taken by hook and line gear users. However, at one time, golden tilefish were only harvested with hook and line gear. **Alternative 4** results in an allocation most similar to recent harvest levels; **Alternative 3** provides a split benefitting hook and line users slightly more than **Alternative 4**. **Alternative 2** provides an allocation most benefitting hook and line fishermen and closest to historical catch prior to the 1990s.

The biological effect of the alternatives would be similar since it is likely the quota would be met regardless of which alternative is selected. However alternatives allocating a greater portion of the quota to hook and line gear users could have greater biological benefits for protected species and the benthic habitat as well as sea turtles.

Availability of economic data for the golden tilefish participants specifically prevents a quantitative analysis. For obvious reasons, opportunities for greater profitability for each gear group increase with the quota portion allocated to them.

Table 2-2. Summary of effects of Action 2 alternatives under consideration.

	Adjust Golden Tilefish Fishing Year			
	Alternative 1 (No Action)	**Alternative 2**	**Preferred Alternative 3**	**Alternative 4**
Biological	+-	+-	+-	+-
Economic	+-	+-	+-	+-
Social	+-	+	+	+-
Administrative	+-	+-	+-	+-

(+) beneficial; (++) significantly beneficial; (-) adverse; (--) significantly adverse;
(+-) some beneficial and some adverse effects

2.3 Action 3: Allow for Transferability of Golden Tilefish Endorsements

Alternative 1 (No Action). Longline and hook and line golden tilefish endorsements are not allowed to be transferred.

Alternative 2. Longline and hook and line golden tilefish endorsements can be transferred between any two individuals or entities that hold valid SG permits.

Option 1: Transferability allowed upon program implementation.
Option 2: Transferability not allowed during the first 2 years of the program.
Option 3: Transferability not allowed during the first 3 years of the program.
Option 4: Transferability not allowed during the first 5 years of the program.

Alternative 3. Longline golden tilefish endorsements can be transferred between any two individuals or entities that hold valid commercial unlimited SG permits.

Option 1: Transferability allowed upon program implementation.
Option 2: Transferability not allowed during the first 2 years of the program.
Option 3: Transferability not allowed during the first 3 years of the program.
Option 4: Transferability not allowed during the first 5 years of the program.

Alternative 4. Hook and line golden tilefish endorsements can be transferred between any two individuals or entities that hold valid commercial unlimited SG permits.

Option 1: Transferability allowed upon program implementation.
Option 2: Transferability not allowed during the first 2 years of the program.
Option 3: Transferability not allowed during the first 3 years of the program.
Option 4: Transferability not allowed during the first 5 years of the program.

Alternative 5. Hook and line golden tilefish endorsements can be transferred between any two individuals or entities that hold valid commercial limited (225 lb) SG permits.

Option 1: Transferability allowed upon program implementation.
Option 2: Transferability not allowed during the first 2 years of the program.
Option 3: Transferability not allowed during the first 3 years of the program.
Option 4: Transferability not allowed during the first 5 years of the program.

Alternative 6. Hook and line and longline golden tilefish endorsements can be transferred between any two individuals or entities that hold valid commercial unlimited SG permits regardless of gear endorsement category.

Option 1: Transferability allowed upon program implementation.
Option 2: Transferability not allowed during the first 2 years of the program.
Option 3: Transferability not allowed during the first 3 years of the program.
Option 4: Transferability not allowed during the first 5 years of the program.

2.3.1 Comparison of Alternatives

Alternative 1 would not allow for transferability of golden tilefish endorsements and could result in decreased participation in the golden tilefish fishery over time as fishermen with endorsements exit the fishery permanently. Decreased participation could result in a corresponding decrease in effort and landings of golden tilefish. However, it is also possible that effort would not decrease with decreased participation and the same amount of golden tilefish would be caught, albeit with fewer participants. Therefore, among **Alternatives 1-6**, no action **Alternative 1** could have the greatest biological benefit for the golden tilefish stock if it results in decreased landings of golden tilefish. However, actions have been taken to end overfishing of golden tilefish in Amendment 13C, and Amendment 17B, if implemented, will further ensure overfishing of golden

tilefish does not occur with the establishment of annual catch limits. Therefore, there is not a biological need to decrease landings of golden tilefish.

Alternatives 2-6, which would allow transferability of golden tilefish endorsement, would not be expected to negatively impact the golden tilefish stock. The biological effects of **Alternatives 2-6** would likely be very similar. Among **Options 1-4**, **Option 4** could have the greatest positive effect for golden tilefish because it would place the longest time period on when an endorsement could be transferred. However, as stated under **Alternative 1**, effort might not show a corresponding decrease with the number of participants in the fishery.

Under **Alternative 1** fishermen would be able to sell their snapper grouper permit but they would not be able to sell their golden tilefish gear endorsement which could result in difficultly selling their permit, vessel, and gear since permits are often sold with the vessel and gear. Since longline gear is restricted in many of the South Atlantic fisheries, sale of the gear and a larger vessel suitable for longlining for golden tilefish, would be difficult without sale of the golden tilefish longlining endorsement. **Alternatives 2-6** would provide the opportunity for new entrants without an increase in the overall number of participants. **Alternative 2** would provide the greatest amount of endorsement transfer flexibility. The degree of transfer flexibility could influence the aggregate profitability of the fishery and the average individual profitability. If participation remains steady over the years of the program during which transferability is not allowed, aggregate profitability of the fishery could remain steady. If, however, landings drop due to people leaving the fishery and not transferring the endorsement due to restrictions, aggregate profitability would decline. However, at the same time, individual average profitability could increase because there would be less people sharing the same amount of landings as under **Alternative 1**.

Under each alternative, are various options for when transferability would be allowed. The rationale behind delaying transferability of catch privilege assets, like endorsements, is to allow people time to develop an understanding of the value of the endorsements before selling them. **Option 1** would allow for transferability of permits to take place immediately upon implementation and this is expected to maximize economic benefits. **Option 4** would allow for the longest delay in transferability allowances. While this might allow for people to best assess the value of the gear endorsements and make more accurate permit market transactions, it would delay transfers that could benefit fishermen. **Options 2 and 3** would fall in between **Options 1 and 4** with regard to expected economic benefits.

Table 2-3. Summary of effects of Action 3 alternatives under consideration.

	Hook and Line Endorsement Alternatives					
	Alternative 1 (No Action)	**Alternative 2**	**Alternative 3**	**Alternative 5**	**Alternative 5**	**Alternative 6**
Biological	+	+-	+-	+-	+-	+-
Economic	-	+	+	+	+	+

Social	+-	+	+	+	+	+
Administrative	+-	-	-	-	-	-

(+) beneficial; (++) significantly beneficial; (-) adverse; (--) significantly adverse;
(+-) some beneficial and some adverse effects

2.4 Action 4: Adjust Golden Tilefish Fishing Year

Alternative 1 (No Action). Retain existing January 1st start date for the golden tilefish fishing year.

Alternative 2. Change the start of the golden tilefish fishing year from January 1st to September 1st.

Preferred Alternative 3. Change the start of the golden tilefish fishing year from January 1st to August 1st.

Alternative 4. Change the start of the golden tilefish fishing year from January 1st to May 1st.

2.4.1 Comparison of Alternatives

Alternative 1 (No Action) would retain the January 1 fishing year start date. Retention of the no action **Alternative 1 (No Action)**, would allow fishermen to target golden tilefish when other fisheries such as shallow water grouper species and other species are closed. **Alternative 2** would begin the fishing year for golden tilefish in September, the period of time when the greatest commercial hook and line catches of golden tilefish have historically occurred. **Preferred Alternative 3** would begin the fishing year in August and also allow hook and line fishermen to fish during the period of time when their catches have been greatest. **Alternative 4** would start the fishing year in May but would still allow hook and line fishermen to fish for golden tilefish in the fall but there is a greater chance the quota would met sometime during September through November.

A shift in the fishing year would also allow longline fishermen from South Carolina to have greater access to the golden tilefish fishery since bad weather off the Carolinas may restrict some individuals from fishing at the beginning of the fishing year. However, examination of South Carolina landings data from 2006-2008 indicates the magnitude of landings of golden tilefish during January-March is similar to those during summer months when whether is generally better off of the Carolinas.

The biological effects of **Alternatives 2-4** would be very similar. Changing the fishing year is unlikely to increase landings or decrease the number of months the fishery operates due to the small amount of landings taken by the hook and line sector historicially.
The economic impact of **Alternatives 2-4** are distributional and could benefit hook and line users and Carolina fishermen primarily. However, as stated above, since

Alternative 1 (No Action) allows fishing for tilefish during months when other fisheries are closed, **Alternative 1** could result in higher ex-vessel prices for tilefish than in the past and could help dealers maintain customers.

Table 2-4. Summary of effects of Action 4 alternatives under consideration.

	Adjust Golden Tilefish Fishing Year			
	Alternative 1 (No Action)	Alternative 2	Preferred Alternative 3	Alternative 4
Biological	+-	+-	+-	+-
Economic	+-	+-	+-	+-
Social	+-	+-	+-	+-
Administrative	+-	+-	+-	+-

(+) beneficial; (++) significantly beneficial; (-) adverse; (--) significantly adverse;
(+-) some beneficial and some adverse effects

2.5 Action 5: Establish Golden Tilefish Fishing Limits

Alternative 1 (No Action). Retain the 300 pound gutted weight trip limit when 75% of the quota is taken.

Preferred Alternative 2. Remove the 300 pound gutted weight trip limit when 75% of the quota is taken.

Alternative 3: Prohibit longline fishing after 75% of the quota is taken.

2.5.1 Comparison of Alternatives

Alternatives 1 would retain the trip limit reduction from 4,000 lbs gutted weight to 300 pounds gutted weight when 75% of the quota was met. **Preferred Alternative 2** would remove the 300 pound gutted weight trip limit when 75% of the quota is met. Reducing the 4,000 pound gutted weight trip limit to 300 pound gutted weight when 75% of the quota is met was originally intended to allow the fishery to remain open all year and allow for commercial hook and line fishermen to target golden tilefish in the fall. The advantage of retaining the 300 lb trip limit when 75% of the quota is met is that it slows the rate at which the quota is filled and increases the chance the quota will not be exceeded. However, if the quota monitoring system is operating properly, annual harvest in excess of the quota should be minor. The expected biological effect of **Preferred Alternative 2** is expected to be minimal. In the commercial fishery, most golden tilefish (92%) are taken with longline gear deployed by large vessels that make long trips and depend on large catches (> 3,000 pounds) to make a trip economically feasible. Therefore, a 300 pound gutted weight trip limit when 75% of the quota is met would shut down commercial longline sector, and might reduce their potential annual catch. If the quota monitoring system can handle large catches in short periods of time then elimination of the trip limit reduction then harvest in excess of the quota should be minor. **Alternative 3** would close the longline fishery once 75% of the quota is taken. This

would allow a slower harvest of the remaining quota for the hook and line sector and reduces the rate at which the quota is met.

The economic effects of **Alternatives 1-3** are largely distributional. **Alternative 2** benefits longline fishermen while **Alternative 3** benefits hook and line fishermen compared to the status quo.

Table 2-5. Summary of effects of Action 5 alternatives under consideration.

	Alternative 1 (No Action)	Alternative 2	Alternative 3
Biological	+-	+-	+-
Economic	+-	+-	+-
Social	+-	+-	+-
Administrative	-	-	-

(+) beneficial; (++) significantly beneficial; (-) adverse; (--) significantly adverse;
(+-) some beneficial and some adverse effects

2.6 Action 6: Establish trip limits for commercial fishermen who do not receive an endorsement in the commercial golden tilefish hook and line fishery.

Alternative 1 (No Action). Do not establish trip limits for the golden tilefish hook and line fishery for commercial fishermen who do not receive an endorsement in the commercial golden tilefish hook and line fishery.

Alternative 2. Establish trip limits of 300 lbs for the golden tilefish hook and line fishery for commercial fishermen who do not receive an endorsement in the commercial golden tilefish hook and line fishery.

Alternative 3. Establish trip limits of 400 lbs for the golden tilefish hook and line fishery for commercial fishermen who do not receive an endorsement in the commercial golden tilefish hook and line fishery.

Alternative 4. Establish trip limits of 500 lbs for the golden tilefish hook and line fishery for commercial fishermen who do not receive an endorsement in the commercial golden tilefish hook and line fishery.

(Note: Catches under the trip limits would count towards the hook and line gear group quota established under Action 2.)

2.6.1 Comparison of Alternatives

Alternatives 2-4 would provide fishermen who do not qualify for an endorsement under **Action 1** to still participate in the golden tilefish fishery. The biological impacts would be similar for all of the alternatives and would not increase or decrease the biological impacts from the status quo. Economic impacts of the action alternatives would be positive for fishermen who did not qualify for an endorsement under **Action 1** but because catches under the trip limits would count towards the hook and line quota, the economic impacts would be negative on the hook and line historical participants with significant landings.

The biological effect of **Alternatives 1-4** would be similar since it is likely that the quota would be met regardless of which alternative is selected. Furthermore, since the same gear would be used under all alternatives, different trip limits for a small amount of hook and line quota is likely to have little biological effect.

Because it is not possible to reliably predict how much would be landed under the trip limits identified in **Alternatives 2-4** because we don't know how many people would choose to participate or how many trips they would make, a range of options for participation and number of trips were used. All estimates made are much higher than the hook and line allocation. This would result in decreased ability of endorsement holders, who have the greatest amount of historical participation, to continue fishing for golden tilefish because of a possibly much shorter season than anticipated. With increased participation, these people might be incorporated in a future amendment into a catch share or other program which would further erode profits for historical participants. Again, analysis of how much of a decrease in profits might occur is not possible to make due to the small sample size from the economic cost logbook program and the unknown number of future participants in the fishery under **Alternatives 2-4**.

Administrative impacts would be greater under **Alternatives 2-4** due to enforcement and increase in the number of possible participants. Quota monitoring duties would also increase under the action alternatives.

Table 2-6. Summary of effects of Action 6 alternatives under consideration.

	Alternative 1 (No Action)	**Alternative 2**	**Alternative 3**	**Alternative 4**
Biological Impacts	+	+	+	+
Economic Impacts	+	-	-	-
Social Impacts	-	-	-	-
Administrative Impacts	+	-	-	-

(+) beneficial; (++) significantly beneficial; (-) adverse; (--) significantly adverse;
(+-) some beneficial and some adverse effects

2.7 Action 7: Limit Participation in the Black Sea Bass Pot Fishery

Alternative 1 (No Action). Do not further limit participation in the black sea bass pot fishery.

Preferred Alternative 2. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 1 pound of black sea bass caught with pot gear between 12/8/98 and the control date of 12/04/08.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 2a. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 500 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 12/04/08.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 2b. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 1,000 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 12/04/08.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 2c. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 2,000 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 12/04/08.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 2d. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 5,000 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 12/04/08.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 2e. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 10,000 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 12/04/08.

Sub-Alternative 1. Minimum poundage based on average.

Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 3. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 1 pound of black sea bass caught with pot gear between 12/8/98 and the control date of 10/14/05.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 3a. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 500 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 10/14/05.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 3b. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 1,000 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 10/14/05.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 3c. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 2,000 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 10/14/05.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 3d. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 5,000 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 10/14/05.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 3e. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 10,000 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 10/14/05.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 4. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 1 pound of black sea bass caught with pot gear by the date of 12/31/09.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 4a. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 500 pounds of black sea bass caught with pot gear by the date of 12/31/09.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 4b. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 1,000 pounds of black sea bass caught with pot gear by the date of 12/31/09.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 4c. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 2,000 pounds of black sea bass caught with pot gear by the date of 12/31/09.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 4d. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 5,000 pounds of black sea bass caught with pot gear by the date of 12/31/09.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 4e. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 10,000 pounds of black sea bass caught with pot gear by the date of 12/31/09.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

2.7.1 Comparison of Alternatives

The Council is concerned increased restrictions imposed through Snapper Grouper Amendments 13C, 16, 17A, and 17B including a commercial quota for black sea bass, commercial quota for vermilion snapper, and seasonal closure for shallow water groupers could serve as an incentive for a greater number of fishermen with Federal snapper grouper commercial permits to fish pots for black sea bass. Currently, tags for black sea bass pots can be issued to any fisherman who possesses a Federal snapper grouper commercial permit. In 2007, there were 877 fishermen who possessed Federal snapper grouper commercial permits; however, only 53 of these individuals fished black sea bass pots that year (Table 3-4). Therefore, the potential exists for increase participation in the pot fishery for black sea bass. An increase in participation in the black sea bass pot fishery could increase the rate at which the quota is met and deteriorate profits for current participants in that fishery.

Alternative 1 (No Action) could have negative effects by creating a derby situation as more individuals become involved in the fishery resulting in the quota being met even more quickly. The biological effects of **Alternatives 1-4** could be similar since the fishery would close when the quota is met regardless of the number of participants. **Alternative 1 (No Action)** could have the greatest biological effect because the quota would be met quickly and gear would be removed from the water for the longest period of time. Conversely, if there were a large number of pots in the water at the same time, this could increase the chance of entanglement with protected species.

Preferred Alternative 2-2e, **Alternative 3-3e**, and **Alternative 4-4e** would restrict participation in the black sea bass fishery to those individuals who historically fished pots for black sea bass. As far fewer individuals fish pots than possess Federal snapper grouper commercial permits, **Preferred Alternative 2-2e**, **Alternative 3-3e**, and **Alternative 4-4e** would constrain participation in the fishery to a level that is more manageable and profitable.

Preferred Alternative 2 and **Alternatives 2a-2e** propose to limit participation in the black sea bass fishery based on landings of black sea bass caught with pot gear between 12/8/98 and the control date of 12/4/08. **Preferred Alternative 1** would require landings of at least one pound. **Alternatives 2a-2e** specify greater landings requirements of 500, 1,000, 2,000, 5,000, and 10,000 pounds, respectively. As the landing requirement increases, the number of qualifying individuals decreases. **Alternatives 2-2e** would also need to specify if the poundage requirement will be calculated based on average, aggregate or landings in one year through **Sub-Alternatives 1-3**.

Alternatives 3a-3e propose to limit participation in the black sea bass fishery based on landings of black sea bass caught with pot gear between 12/8/98 and the control date of 10/14/05. **Alternatives 3-3e** specify greater landings requirements of 500, 1,000, 2,000, 5,000, and 10,000 pounds, respectively. As the landing requirement increases, the number of qualifying individuals decreases. **Alternatives 3-3e** would also need to specify if the poundage requirement will be calculated based on average, aggregate or landings in one year through **Sub-Alternatives 1-3**.

Alternatives 4-4e propose to limit participation in the black sea bass fishery based on landings of black sea bass caught by 12/31/09. **Alternatives 4-4e** specify greater landings requirements of 500, 1,000, 2,000, 5,000, and 10,000 pounds, respectively. As the landing requirement increases, the number of qualifying individuals decreases. **Alternatives 4-4e** would also need to specify if the poundage requirement will be calculated based on average, aggregate or landings in one year through **Sub-Alternatives 1-3**.

The biological effects of **Alternatives 1-4** could be similar since the fishery would close when the quota is met regardless of the number of participants. **Alternative 1 (No Action)** could have the greatest biological effect because the quota would be met quickly and gear would be removed from the water for the longest period of time. Conversely, if there were a large number of pots in the water at the same time, this could increase the chance of entanglement with protected species.

Preferred Alternative 2 would result in 12-107 vessels able to fish for black sea bass with pot gear, depending on the sub-alternative chosen and methodology option chosen. In general, an average (versus aggregate or one year total) minimum poundage requirement yields a lower number of participants for all sub-alternatives. **Alternative 3** would result in 15-96 vessels able to fish for black sea bass with pot gear, depending on the sub-alternative chosen and methodology option used. As is true for **Alternative 2**, in general, an average minimum poundage requirement yields a lower number of participants across all sub-alternatives. **Alternative 4** cannot yet be analyzed since data has not yet been finalized, as stated above.

The economic effects considered in this amendment are both aggregate, to the Nation, and distributional. Aggregate effects to the Nation require analysis of changes in aggregate profitability between the alternatives, sub-alternatives, and options. Analysis of changes in aggregate profitability of the black sea bass portion of the snapper grouper fishery is not able to be conducted since it would require specific data on the costs and revenues of black sea bass pot vessels, which is not available.

Distributional changes between alternatives deal with who benefits and who does not benefit as the result of the various alternatives, sub-alternatives, and options. In general, choosing an alternative that allows for a smaller number of vessels than currently fish for black sea bass to continue fishing, could increase average vessel profitability. Choosing an alternative that allows for a larger number of vessels than currently fish for black sea bass to fish for black sea bass, could decrease average vessel profitability.

Table 2-7. Summary of effects of Action 7 alternatives under consideration.

	Biological Impacts	**Economic Impacts**	**Social Impacts**	**Administrative Impacts**
Alternative 1	+	-	-	+
Alternative 2	-	+	+	-
Alternative 2a	-	+	+	-

Alternative 2b	-	+	+	-
Alternative 2c	-	+	+	-
Alternative 2d	-	+	+	-
Alternative 2e	-	+	+	-
Alternative 3	-	+	+	-
Alternative 3a	-	+	+	-
Alternative 3b	-	+	+	-
Alternative 3c	-	+	+	-
Alternative 3d	-	+	+	-
Alternative 3e	-	+	+	-
Alternative 4	-	+	+	-
Alternative 4a	-	+	+	-
Alternative 4b	-	+	+	-
Alternative 4c	-	+	+	-
Alternative 4d	-	+	+	-
Alternative 4e	-	+	+	-

(+) beneficial; (++) significantly beneficial; (-) adverse; (--) significantly adverse;
(+-) some beneficial and some adverse effects

2.8 Action 8: Limit Effort in the Black Sea Bass Pot Fishery

Alternative 1 (No Action). Do not annually limit the number of black sea bass pots deployed or pot tags issued to holders of snapper grouper commercial permits.

Alternative 2. Require that each black sea bass pot in the water or at sea on a vessel in the South Atlantic EEZ have an attached valid identification tag issued by NOAA Fisheries Service. Limit the black sea bass pot tags to 100 per vessel annually. NOAA Fisheries Service will issue new identification tags each fishing year that will replace the tags from the previous fishing year.

Preferred Alternative 3. Require that each black sea bass pot in the water or at sea on a vessel in the South Atlantic EEZ have an attached valid identification tag issued by NOAA Fisheries Service. Limit the black sea bass pot tags to 50 per vessel annually. NOAA Fisheries Service will issue new identification tags each fishing year that will replace the tags from the previous fishing year.

Alternative 4. Require that each black sea bass pot in the water or at sea on a vessel in the South Atlantic EEZ have an attached valid identification tag issued by NOAA Fisheries Service. Limit the black sea bass pot tags to 25 per vessel annually. NOAA Fisheries Service will issue new identification tags each fishing year that will replace the tags from the previous fishing year.

Alternative 5. Require that each black sea bass pot in the water or at sea on a vessel in the South Atlantic EEZ have an attached valid identification tag issued by NOAA

Fisheries Service. Limit the black sea bass pot tags to 100 per vessel in year 2011, 50 in year 2012, and 25 in year 2013. NOAA Fisheries Service will issue new identification tags each fishing year that will replace the tags from the previous fishing year.

Alternative 6. Require that each black sea bass pot in the water or at sea on a vessel in the South Atlantic EEZ have an attached valid identification tag issued by NOAA Fisheries Service. Limit the black sea bass pot tags to 100 per vessel in year 2011 and 50 in year 2012. NOAA Fisheries Service will issue new identification tags each fishing year that will replace the tags from the previous fishing year.

Alternative 7. Annually issue tags to individuals based on a 10% reduction in the number of tags issued as of 12/04/08.

Alternative 8. Annually issue tags to individuals based on a 25% reduction in the number of tags issued as of 12/04/08.

2.8.1 Comparison of Alternatives

If the Council takes action to limit participation in the black sea bass fishery through **Action 7, Alternative 7** which would reduce the number of tags issued to fishermen by 10% would be the least conservative of all the alternatives in the long-term and would therefore be the least biologically beneficial. This is because fishermen generally request and are issued more tags than pots that they actually fish. Therefore, little reduction in the number of pots fished would likely occur under **Alternatives 7-8**. The Council's preferred alternative in Action 7 is to limit participation in the black sea bass pot fishery to vessels that fished pots and landed black sea bass between December 8, 1998, and December 4, 2008.

Alternative 2 would have the least beneficial effects to the biological environment as it would allow fishermen to fish up to 100 traps each year. Short-term biological impacts of **Alternative 2** would be equal to **Alternatives 5** and **6** in year one, after which **Alternatives 5** and **6** become more biologically beneficial than **Alternative 2** since they would reduce the number of traps allowed on any one vessel in successive years. Biological impacts of **Preferred Alternative 3** would be moderate when compared to **Alternatives 2**, **4**, **5**, and **6**. **Preferred Alternative 3** would be more biologically beneficial than **Alternative 2**, but less biologically beneficial than **Alternatives 4** and **5**. **Preferred Alternative 3** would have the same biological impact as **Alternative 6** *after* the first year of implementation. **Alternative 4** would be the most biologically conservative alternative in the short-term, and would have the same impacts as **Alternative 5** *afte*r year 2 of implementation. **Alternatives 5** and **6** only differ in their long-term impacts since **Alternative 5** would reduce the number of tags issued to 50 after the first year of implementation and reduce the number of tags again to 25 after the second year of implementation. **Alternative 6** would only reduce the number of tags to 50 after the first year of implementation, and therefore is the least biologically beneficial when compared to **Alternative 5**.

If no action is taken on limiting participation in the snapper grouper fishery (Section 2.1.4) then **Alternatives 7-8** could have a greater biological effect than **Alternatives 2-6** because **Alternatives 7-8** would only affect individuals who were issued tags. During 2003-2008, an average of 138 individuals per year requested tags when renewing their snapper grouper permit (**Table 4-5**). Under **Alternatives 2-6**, any individuals with a Federal snapper grouper commercial permit would be able to fish pots. There were 877 individuals with snapper grouper permits in 2007 (Table 3-4). Therefore, if the Council does not take action to limit the number of fishermen participating in the black sea bass fishery (**Section 4.3**) then there is greater potential for additional fishermen to fish pots under **Alternatives 2-6** than under **Alternative 7-8**.

In general, it is expected that the short-term economic benefits of **Alternatives 2-6** increase with the larger number of traps allowed per vessel. However, how the total number of traps in the fishery influences the catch per unit effort will ultimately determine the long-term economic impacts of these alternatives. It is possible that even a low number of traps per vessel could have negative economic impacts in the short and long-term if there are large numbers of vessels participating in the fishery. Assuming the catch per unit effort remains stable, **Alternative 2** would offer the greatest short-term economic benefits but probably the smallest long-term economic benefits since the total number of traps in the fishery is not capped. **Preferred Alternative 3** would have the next largest short-term economic benefits (and next smallest long-term economic benefits) followed by **Alternatives 3, 4, 5, and 6**, in that order. If **Alternative 1 (No Action)** is chosen under the previous action, **Alternatives 7 and 8** would have the greatest long-term economic benefits compared to the other alternatives in this action because this would restrict participation to individuals (based on the time frame) *and* limit the total number of pots used.

If we assume that the number of pots carried per vessel is currently optimal for that individual vessel's operation, then any reduction in the number of vessels will have a negative impact on the profitability of that operation. **Alternative 2** restricts the number of pots per vessel to 100. While most vessels carry less than 100 pots, those that currently carry more than 100 pots will be negatively impacted since they will be restricted to 100 pots. While the cost of vessel operations remain largely fixed, except crew and food costs, the number of pots, which are used to generate revenue have decreased. The overall economic benefit of any of the alternatives will be a summation of the individual changes in profits. Given that there are only a few vessels fishing greater than 100 pots, the negative economic impacts from alternatives with larger number of pots allowed per vessel are expected to be less than the negative economic impact of the alternatives with smaller numbers of pots allowed per vessel. Actual estimation of each vessel's profitability requires vessel specific cost data for black sea bass vessels, which is not available at this point in time.

Alternative 1 requires no new administrative process and as such would be least burdensome of the alternatives. The administrative burden of **Alternatives 2-6** increases with the number of tags being issued or the complexity of the program. **Alternative 2** (100 tags per vessel) would be more burdensome than **Alternative 4** (25 tags per vessel);

however, the increased burden would be very small. **Alternative 5** and **Alternative 6** would result in slightly more of an administrative burden as the tag issuance would decrease each year until modified. **Alternatives 2-6** could constitute an increased burden to law enforcement since they would need to ensure that each pot was tagged and the number of traps deployed was within the legal limit. The burden to law enforcement would increase with the number of pots that could be fished. **Alternatives 7** and **8** would be the most burdensome of all the alternatives. Administratively, it could be difficult to determine the actual number of tags that should be issued to each fisherman. These alternatives would be difficult to enforce because of the lack of consistency in number of pots a fisherman could deploy.

Table 2-8. Summary of effects of Action 8 alternatives under consideration.

	Alternatives							
	Alt. 1 (No Action).	**Alt. 2**	**Preferred Alt. 3**	**Alt. 4**	**Alt. 5**	**Alt. 6**	**Alt. 7**	**Alt. 8**
Biological	-	+	+	++	++	+	-	-
Economic	+	+-	+-	+-	+-	+-	+-	+-
Social	+	-	-	-	+-	+-	-	-
Administrative	-	-	-	-	-	-	--	--

(+) beneficial; (++) significantly beneficial; (-) adverse; (--) significantly adverse;
(+-) some beneficial and some adverse effects

2.9 Action 9: Implement Measures to Reduce Bycatch in the Black Sea Bass Pot Fishery

Alternative 1 (No Action). Do not implement additional regulations stipulating when black sea bass pots must be removed from the water.

Preferred Alternative 2. Black sea bass pots must be brought back to shore at the conclusion of each trip.

Alternative 3. Allow fishermen to leave pots in the water for no more than 72 hours.

2.9.1 Comparison of Alternatives

Alternative 1 (No Action) would continue the risks of ghost fishing due to lost pots and entanglement with protected species, particularly when gear is left at sea for long periods of time and therefore would have the least amount of biological benefit for the alternatives considered. The biological benefit of **Preferred Alternative 2** would be

greater than **Alternative 3** because most trips last 1 day. Therefore, under **Preferred Alternative 2**, pots would be in the water for the least amount of time and would have the least amount of risk for ghost fishing or entanglement with protected species. The biological benefit of **Alternative 3** would be less than **Preferred Alternative 2** because it would allow fishermen to leave pots in the water for as long as 72 hours and would increase the chance that pots could be lost or could interact with protected species. Furthermore, under **Alternative 3**, fishermen would be able to return to the dock while pots soak decreasing the chance gear could be retrieved during bad weather. Selecting both **Preferred Alternative 2** and **Alternative 3** as preferred would have an intermediate biological effect in that a trip could last for as long as 72 hours but fishermen would not be able to return to the dock without their pots. However, as approximately 99% of the trips were 72 hours or less (**Table 4-13**), a restriction on the length of the trip (**Alternative 3**) is not needed.

Given that **Preferred Alternative 2 and Alternative 3** protect the biological resource as well as the surrounding ecosystem, the fishery would experience long-term economic benefits from these alternatives.

Table 2-9. Summary of effects of Action 9 alternatives under consideration.

	Alternatives		
	Alt. 1 (No Action)	**Alt. 2**	**Alt. 3**
Biological	-	++	+
Economic	-	+	+
Social	+	+-	+-
Administrative	+	-	-

(+) beneficial; (++) significantly beneficial; (-) adverse; (--) significantly adverse;
(+-) some beneficial and some adverse effect

2.10 Action 10: Improvements to Commercial Data Reporting

Note: More than one preferred may be chosen.

Alternative 1 (No Action). Retain existing data reporting systems for the commercial sector.

Under this alternative, as recently implemented by Amendment 15B, a private recreational vessel that fishes in the exclusive economic zone (EEZ), if selected by NOAA Fisheries Service, is required to maintain and submit fishing records; requires a vessel that fishes in the EEZ, if selected by NOAA Fisheries Service, to carry an observer and install an electronic logbook (ELB) and/or video monitoring equipment provided by NOAA Fisheries Service.

Alternative 2. Require all vessels with a Federal snapper grouper commercial permit to have an electronic logbook tied to the vessel's GPS onboard the vessel.

(*NOTE: Alternative 2 would require 100% of vessels to have an electronic logbook; whereas, current data reporting programs only require electronic logbooks if selected.)*

Preferred Alternative 3. Provide the option for fishermen to submit their logbook entries electronically via an electronic version of the logbook made available online.

Alternative 4. Require that commercial landings and catch/effort data be submitted in accordance with ACCSP standards, using the SAFIS system.

(NOTE: Alternative 4 would require that 100% of dealers and fishermen report electronically using the SAFIS system.)

2.10.1 Comparison of Alternatives

It may be assumed that any alternative other than **Alternative 1 (No Action)** would contribute to more refined, complete, and timely information that can be used to inform future fishery management decisions, and would therefore, be socially and biologically beneficial. Administratively, however, each of the alternatives (with the exception of **Alternative 1**) seek to improve fisheries statistics and may result in negative impacts to greater or lesser degrees**.** The no action includes current data reporting requirements including those recently implemented through Amendment 15B (74 FR 58902). Current reporting requirements do not include provisions for reporting by dealers, if selected. Under **Alternative 2** all vessels with snapper grouper Federal permits would be required to have an electronic logbook tied to the vessel's GPS. It is likely that the economic and social impacts of this alternative will be high as purchasing, installing, and learning to use the equipment will take significant resources. Furthermore, additional administrative impacts would be expected to collect and process data from electronic logbooks. **Preferred Alternative 3** is likely the least costly alternative and would likely result in timely and accurate data from the fishermen who chose to participate. **Alternative 4** would require dealers and fishermen to report through the SAFIS system. This alternative would result in reliable data at a cost to NOAA Fisheries Service. The SAFIS system has already been implemented in other regions with great success. Upon examination of overarching data needs and feasibility of the various alternatives, one may conclude that a combination of one or more these methods would provide the most well-rounded data collection program.

Economic effects resulting from **Alternatives 2-4** depend partially on whether fishermen or government pay for equipment needed to implement and maintain these alternatives. **Preferred Alternative 3** is expected to be least expensive to fishermen. **Alternative 2**, while less costly than observers and electronic monitoring, could be prohibitive for some fishermen depending on whether fishermen or government are expected to pay for implementation and upkeep. **Alternative 4** could be costly to those fishermen and dealers

without access to a computer and internet service. **Alternatives 2-4** are expected to provide long-term economic and social benefits through improved fisheries management.

Table 2-10. Summary of effects of Action 10 alternatives under consideration.

	Alternative 1. (No Action).	**Alternative 2.**	**Preferred Alternative 3.**	**Alternative 4**
Biological	-	+	+	+
Economic	-	+-	+	+-
Social	-	+-	+	+-
Administrative	+	-	-	-

(+) beneficial; (++) significantly beneficial; (-) adverse; (--) significantly adverse;
(+-) some beneficial and some adverse effects

2.11 Action 11. Improvements to For-Hire Data Reporting

Note: More than one preferred alternative may be chosen.

Alternative 1 (No Action). Retain existing data reporting systems for the for-hire sector. Refer to Table 1-3 for a complete list of current data reporting requirements.

Alternative 2. Require *selected* vessels with a Federal For-Hire Permit to report electronically; NOAA Fisheries Service is authorized to require weekly or daily reporting as required.

Alternative 3. Require vessels operating with a Federal For-Hire permit to maintain a logbook for discard characteristics (e.g., size and reason for discarding), *if selected*.

Alternative 4. Require that for-hire landings and catch/effort data be submitted in accordance with the ACCSP standards, using the SAFIS system.

2.11.1 Comparison of Alternatives

It may be assumed that any alternative other than **Alternative 1 (No Action)** would contribute to more refined, complete, and timely information that can be used to inform future fishery management decisions, and would therefore, be socially and biologically beneficial. However, each of the alternatives differs in the amount and quality of data collected from the for-hire sector. Administratively, each of the alternatives to improve fishery statistics in the for-hire sector could result in negative impacts to greater or lesser degrees relative to one another**. Alternative 2** would require selected federally permitted for-hire snapper grouper vessels to report electronically. Under **Alternative 2**, the agency could select 100% of the fishery for reporting which would result in negative economic and social impacts to participants. **Alternative 3** would require fishermen to

maintain a logbook for discard characteristics. This alternative would provide useful information on bycatch and discards but would not increase the overall data collection for the retained species. **Alternative 3** would be the least intrusive and most cost effective means of gathering discard information. However, it would not collect the amount or quality of information as **Alternatives 2**, and would likely not contribute greatly to improving the current data collection program. **Alternative 3** would be most effective if combined with **Alternatives 2** or **4**. **Alternative 4** would implement the electronic reporting module through the SAFIS system, as developed by the ACCSP. This system has been implemented in other fisheries with success. The agency would specify the frequency of reporting and would incur the cost of implementation.

Alternatives 2-4 are expected to provide long-term economic and social benefits through improved fisheries management. However, **Alternatives 2 and 4** might result in additional costs for some fishermen without a computer or internet access.

Alternatives 2-4 would all result in an additional administrative burden.

Table 2-11. Summary of effects of Action 11 alternatives under consideration.

	Alternatives			
	Alternative 1. (No Action)	**Alternative 2.**	**Alternative 3.**	**Alternative 4**
Biological	-	+	+	+
Economic	+	+-	+	+-
Social	-	+-	+	+-
Administrative	+	-	-	-

(+) beneficial; (++) significantly beneficial; (-) adverse; (--) significantly adverse;
(+-) some beneficial and some adverse effects

3 Affected Environment

3.1 Habitat

3.1.1 Inshore/Estuarine Habitat

Many deepwater snapper grouper species utilize both pelagic and benthic habitats during several stages of their life histories; larval stages of these species live in the water column and feed on plankton. Most juveniles and adults are demersal and associate with hard structures on the continental shelf that have moderate to high relief (e.g., coral reef systems and artificial reef structures, rocky hard-bottom substrates, ledges and caves, sloping soft-bottom areas, and limestone outcroppings). Juvenile stages of some snapper grouper species also utilize inshore seagrass beds, mangrove estuaries, lagoons, oyster reefs, and embayment systems. In many species, various combinations of these habitats may be utilized during diurnal feeding migrations or seasonal shifts in cross-shelf distributions. More detail on these habitat types is found in **Sections 3.2.1** and **3.2.2** of the Council's Habitat Plan (SAFMC 1998e).

3.1.2 Offshore Habitat

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

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

Rock outcroppings occur throughout the continental shelf from Cape Hatteras, North Carolina to Key West, Florida (MacIntyre and Milliman 1970; Miller and Richards 1979; Parker *et al*. 1983), which are principally composed of limestone and carbonate sandstone (Newton *et al*. 1971), and exhibit vertical relief ranging from less than 0.5 to over 10 meters (33 feet). Ledge systems formed by rock outcrops and piles of irregularly sized boulders are also common. Parker *et al*. (1983) estimated that 24% (9,443 km^2) of the area between the 27 and 101 meters (89 and 331 feet) isobaths from Cape Hatteras, NC to Cape Canaveral, FL is reef habitat. Although the benthic communities found in water depths between 100 and 300 meters (328

and 984 feet) from Cape Hatteras, NC to Key West, FL is relatively small compared to the whole shelf, this area, based upon landing information of fishers, constitutes prime reef fish habitat and probably significantly contributes to the total amount of reef habitat in this region.

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

The distribution of coral and live hard bottom habitat as presented in the SEAMAP Bottom Mapping Project is a proxy for the distribution of the species within the snapper grouper complex. The method used to determine hard bottom habitat relied on the identification of reef obligate species including members of the snapper grouper complex. The Florida Fish and Wildlife Research Institute (FWRI), using the best available information on the distribution of hard bottom habitat in the south Atlantic region, prepared ArcView maps for the four-state project. These maps, which consolidate known distribution of coral, hard/live bottom, and artificial reefs as hard bottom, are included in Appendix E of the Habitat Plan (SAFMC 1998e). These maps are also available on the Internet at the Council's following Internet Mapping System website: http://ocean.floridamarine.org/efh_coral/ims/viewer.htm.

The South Carolina Department of Natural Resources, NOAA/Biogeographic Characterization Branch, and the South Atlantic Fishery Management Council cooperatively generated additional information on managed species' use of offshore fish habitat. Plots of the spatial distribution of offshore species were generated from the Marine Resources Monitoring, Assessment, and Prediction Program (MARMAP) data (**Figures 35-41**) in the Habitat Plan (SAFMC 1998e). The plots should be considered as point confirmation of the presence of each species within the scope of the sampling program. These plots, in combination with the hard bottom habitat distributions presented in Appendix E of the Habitat Plan (SAFMC 1998e), can be employed as proxies for offshore snapper grouper complex distributions in the south Atlantic region. Maps of the distribution of snapper grouper species by gear type based on MARMAP data can be generated through the Council's Internet Mapping System at the following web address: http://ocean.floridamarine.org/efh_coral/ims/viewer.htm.

3.1.3 Essential Fish Habitat

Essential fish habitat (EFH) is defined in the Magnuson-Stevens Fishery Conservation and Management Act as "those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 U.S. C. 1802(10)). Specific categories of EFH identified in the South Atlantic Bight, which are utilized by federally managed fish and invertebrate species, include both estuarine/inshore and marine/offshore areas. Specifically, estuarine/inshore EFH includes: Estuarine emergent and mangrove wetlands, submerged aquatic vegetation, oyster reefs and shell banks, intertidal flats, palustrine emergent and forested systems, aquatic beds, and estuarine water column. Additionally, marine/offshore EFH includes: Live/hard bottom habitats, coral and coral reefs, artificial and manmade reefs, *Sargassum* species, and marine water column.

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

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

3.1.3.1 Habitat Areas of Particular Concern

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

Areas that meet the criteria for EFH-HAPCs include habitats required during each life stage (including egg, larval, postlarval, juvenile, and adult stages).

In addition to protecting habitat from fishing related degradation though FMP regulations, the Council, in cooperation with NOAA Fisheries, actively comments on non-fishing projects or policies that may impact essential 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. With guidance from the Advisory Panel, the Council has developed and approved habitat policies on: energy exploration, development, transportation and hydropower re-licensing; beach dredging and filling and large-scale coastal engineering; protection and enhancement of submerged aquatic vegetation; and alterations to riverine, estuarine and near shore flows (Appendix C of Habitat Plan; SAFMC 1998e).

3.2 Biological and Ecological Environment

3.2.1 Species Most Impacted By This FMP Amendment

Species most likely to be impacted by actions in Amendment 18A are black sea bass and golden tilefish. Actions in Amendment 18A could limit participation and effort in the black sea bass and golden tilefish fisheries.

3.2.1.1 Golden Tilefish, *Lopholatilus chamaeleonticeps*

Golden tilefish are distributed throughout the Western Atlantic, occurring as far north as Nova Scotia, to southern Florida, and in the eastern Gulf of Mexico (Robins and Ray 1986) (Table 3-1). According to Dooley (1978), golden tilefish occurs at depths of 80-540 meters (263-1,772 feet). Robins and Ray (1986) report a depth range of 82-275 meters (270-900 feet) for golden tilefish. It is most commonly found at about 200 meters (656 feet), usually over mud or sand bottom but, occasionally, over rough bottom (Dooley 1978).

Maximum reported size is 125 centimeters (50") total length and 30 kilograms (66 lbs) (Dooley 1978; Robins and Ray 1986). Maximum reported age is 40 years (Harris *et al.* 2001). Radiocarbon aging indicates golden tilefish may live for at least 50 years (Harris, South Carolina Department of Natural Resources, personal communication). A recent SEDAR assessment estimated natural mortality (M) at 0.08 (SEDAR 4 2004). Golden tilefish spawn off the southeast coast of the U.S. from March through late July, with a peak in April (Table 3-1; Harris *et al*. 2001). Grimes *et al.* (1988) indicate peak spawning occurs from May through September in waters north of Cape Canaveral. Golden tilefish primarily prey upon shrimp and crabs, but also eat fishes, squid, bivalves, and holothurians (Dooley 1978).

3.2.1.2 Black Sea Bass, *Centropristis striata*

Black sea bass occur in the Western Atlantic, from Maine to southeastern Florida, and in the eastern Gulf of Mexico (McGovern *et al.* 2002) (Table 3-1). Separate populations were reported to exist to the north and south of Cape Hatteras, North Carolina (Wenner *et al.* 1986). However, genetic similarities suggest this is one stock (McGovern *et al.* 2002). This species is common around rock jetties and on rocky bottoms in shallow water (Robins and Ray 1986) at depths from 2-120 meters (7-394 feet). Most adults occur at depths from 20-60 meters (66-197 feet) (Vaughan *et al.* 1995).

Maximum reported size is 66.0 centimeters (26.1") total length and 3.6 kilograms (7.9 lbs) (McGovern *et al.* 2002). Maximum reported age is 10 years (McGovern *et al.* 2002); however, ages as great as 20 years have been recorded in the Mid Atlantic region (Lavenda 1949). Natural mortality is estimated to be 0.30 (SEDAR 2 2003). The minimum size and age of maturity for females reported off the southeastern U.S. coast is 10.0 centimeters (3.6") standard length and age 0. All females are mature by 18.0 centimeters (7.1") standard length and age 3 (McGovern *et al.* 2002; Table 3-1). Wenner *et al.* (1986) report peak spawning occurs from March through May in the South Atlantic Bight. McGovern *et al.* (2002) indicate black sea bass females are in spawning condition during March-July, with a peak during March through May (McGovern *et al.* 2002). Some spawning also occurs during September and November. Spawning takes place in the evening. Black sea bass change sex from female to male (protogyny). Females dominate the first 5 year classes and individuals over the age of 5 are more commonly males. The size at maturity and the size at transition of black sea bass was smaller in the 1990s than during the early 1980s off the southeast U.S. Black sea bass appear to compensate for the loss of larger males by changing sex at smaller sizes and younger ages (McGovern *et al.* 2002).

The diet of black sea bass is generally composed of shrimp, crab, and fish (Sedberry 1988). Smaller black sea bass eat small crustaceans and larger individuals feed on decapods and fishes.

3.2.2 Science Underlying the Management of Snapper Grouper Species Most Impacted By this FMP Amendment

The status of black sea bass and golden tilefish have been assessed through the Southeast Data, Assessment, and Review (SEDAR) process.

The SEDAR process consists of a series of workshops aimed at ensuring that each assessment is based on the best available scientific information. First, representatives from NOAA Fisheries Service, state agencies, and the South Atlantic Council, as well as experts from non-governmental organizations and academia, participate in a data workshop. The purpose of a data workshop is to assemble and review available fishery-dependent and fishery-independent data and information on a stock, and to develop consensus about what constitutes the best available scientific information on the stock, how that information should be used in an assessment, and what type of stock assessment model should be employed.

Second, assessment biologists from these agencies and organizations participate in a stock assessment workshop, where data from the data workshop are input into one or more stock assessment models (e.g., production, age-structured, length structured, etc.) to generate estimates of stock status and fishery status. Generally, multiple runs of each model are conducted: base runs and a number of additional runs to examine sensitivity of results to various assumptions (e.g., different natural mortality rates, different data sets/catch periods, etc.).

Finally, a stock assessment review workshop is convened to provide representatives from the Center for Independent Experts the opportunity to peer review the results of the stock

assessment workshop. Representatives from NOAA Fisheries Service, the South Atlantic Council, and constituent groups may attend and observe the review but the actual review is conducted by the Center for Independent Experts. The Council's Scientific and Statistical Committee (SSC) then reviews the report of the stock assessment review workshop.

The review portion of the SEDAR process has helped improve the acceptance of stock assessments. However, continued lack of basic fishery data has resulted in uncertainty in the assessment results. Each SEDAR Review Panel has identified significant shortcomings in data and research (see Section 4.3 for a detailed list of research and data needs). In addition, not all of the reviews have been completed with 100% consensus.

3.2.2.1 Black sea bass assessment and stock status

SEDAR Assessment

Black Sea Bass was assessed at the second SEDAR (SEDAR 2 2003b). Data for the SEDAR assessment were assembled and reviewed at a data workshop held during the week of October 7, 2002 in Charleston, South Carolina. The assessment utilized commercial and recreational landings, as well as abundance indices and life history information from fishery-independent and fishery-dependent sources. Six abundance indices were developed by the data workshop. Two CPUE indices were used from the NMFS headboat survey (1978-2001) and the MRFSS recreational survey (1992-1998). Four indices were derived from CPUE observed by the South Carolina MARMAP fishery-independent monitoring program ("Florida" trap index, 1981-1987; blackfish trap index, 1981-1987; hook and line index, 1981-1987; and chevron trap index, 1990-2001) (SEDAR 2 2003b).

Age-structured and age-aggregated production models were applied to available data at the assessment workshop. The age-structured model was considered the primary model, as recommended by participants in the data workshop. The stock assessment indicated black sea bass was overfished and overfishing was occurring.

At the request of the South Atlantic Council, the SEDAR panel convened to update the 2003 black sea bass stock assessment, using data through 2003, and to conduct stock projections based on possible management scenarios (SEDAR Update #1 2005). The update indicated the stock was still overfished and overfishing was still occurring but results showed the stock was much more productive that previously indicated. The stock could be rebuilt to the biomass level capable of producing the maximum sustainable yield in 5 years if all fishing mortality were eliminated; previously this was estimated to take 11 years (SEDAR 2 2003b).

Stock Status

The black sea bass stock in the Atlantic is undergoing **overfishing** and is **overfished** as of 2004 (last year of data in the stock assessment update). Actions were taken in Amendment 13C to end overfishing and rebuild the stock. For black sea bass the most recent estimate of the fishing mortality rate is from 2003 and was = 2.64 and F_{MSY} = 0.429 as the maximum fishing mortality threshold. Comparing these two numbers:

- F_{2003}/MFMT = 0.729/0.355 = 6.15

This comparison is referred to as the **overfishing ratio**. If the ratio is greater than 1, then overfishing is occurring.

The black sea bass stock in the Atlantic is **overfished**. For black sea bass, the estimated level of spawning stock biomass in 2005 was 4,099,884 pounds whole weight. The Minimum stock size threshold (MSST) = 10,511,633 pounds whole weight. Comparing these two numbers:

- SSB_{2005}/MSST = 4,099,884/10,511,633 = 0.39

This comparison is referred to as the **overfished ratio**. If the ratio is less than 1, then the stock is overfished.

3.2.2.2 Golden tilefish assessment and stock status

SEDAR Assessment

There two indices of abundance available for the golden tilefish stock assessment. A fishery-independent index was developed from MARMAP horizontal longlines (SEDAR 4 2004). A fishery-dependent index was developed from commercial logbook data during the data workshop. Commercial and recreational landings as well as life history information from fishery-independent and fishery-dependent sources were used in the assessment. A statistical catch-at-age model and a production model were used to assess the golden tilefish population.

Exploitation status in 2002 was analyzed relative to the maximum fishing mortality threshold (MFMT; limit reference point in *F*). The MFMT was assumed equal to E_{MSY} or F_{MSY}, depending on the measure of exploitation. Stock status in 2002 was estimated relative to SSB_{MSY} and to maximum spawning size threshold (MSST). The MSST was computed as a fraction *c* of SSB_{MSY}. Restrepo *et al.* (1998) recommend a default definition for that fraction: $c=\max(1 - M,1/2)$, where *M* is the natural mortality rate. However, this definition does not account for age-dependent *M*, as was used in this assessment. Hence to accommodate the default definition, a constant *M* was computed that would correspond to an age-dependent *M*, by providing the same proportion of survivors at the maximum observed age [$M = -\log(P)/A$, where *P* is the proportion survivors at maximum observed age *A*]. This value of constant *M* was computed uniquely for each of the MCB runs.

Stock Status

Golden tilefish is undergoing overfishing but is not overfished. Actions were taken to end overfishing in Amendment 13C. Overfishing of golden tilefish (F>MFMT) began in the early 1980's and has continued in most years since then. The population responded to the fishing with a steady population decline to levels near SSB_{MSY} starting in the mid-1980's. The median value of $E(2002)/E_{MSY}$ is 1.55, with a 10_{th} to 90_{th} percentile range of [0.77,3.25]. The median value of $F(2002)/F_{MSY}$ is 1.53, with a range of [0.72,3.31]. The median value of $SSB(2002)/SSB_{MSY}$ is 0.95, with a range of [0.61,1.53]. The median value of SSB(2002)/MSST is 1.02, with a range of [0.65,1.67].

It appears likely that overfishing was occurring in 2002; however it is less clear whether the stock was overfished in 2002. The data do not include an abundance index that covers the entire

assessment period. To determine stock status, therefore, the assessment must rely in part on other data sources, such as average weight and length from landings as well as the observed age and length composition data. This was explored in the following way: Assuming an equilibrium age-structure, the predicted average weight of landed fish from commercial fisheries is portrayed as a function of stock status. The average weight in 2002 from the handline fishery suggests that the population is near 52% of SSB_{MSY}; the average weight in 2002 from the longline fishery suggests that the population is near 100.1% of SSB_{MSY}. Taken together, these results are consistent with those from the assessment model that the stock is on the border between overfished and not overfished, and that the variability around the point estimate of stock status includes both possibilities. The length composition data from the most recent years (2000 to 2002) also suggests that golden tilefish SSB is near SSB_{MSY}. Observed length distributions are skewed toward smaller fish as compared to an equilibrium virgin length composition, but correspond to the predicted length composition at SSB_{MSY}. Under F=0, the median projection depicts a tilefish stock that recovers to SSB_{MSY} within one year.

3.2.3 Other Affected Council-Managed Species

Black sea bass are commonly taken on hook and line trips with species such as white grunt, vermilion snapper, gray triggerfish, red snapper, and red porgy. However, most black sea bass are taken with pots where the species makes up 90% of the catch. Other affected species in black sea bass pots include gray triggerfish and white grunt. Golden tilefish are primarily taken with longline gear over mud habitat where no other snapper grouper species commonly occur. However, longline gear is also deployed in mud and rock habitat where snowy grouper, blueline tilefish, and yellowedge grouper will be caught along with golden tilefish. A detailed description of the life history of these species is provided in the snapper-grouper SAFE report (NMFS 2005).

3.3 Protected Species

There are 31 different species of marine mammals that may occur in the EEZ of the South Atlantic region. All 31 species are protected under the MMPA and six are also listed as endangered under the ESA (i.e., sperm, sei, fin, blue, humpback, and North Atlantic right whales). There are only three known interactions between the South Atlantic snapper grouper fishery and marine mammals. All three marine mammals were likely dolphins, all were caught in Florida on handline gear, and all three animals were released alive. Other species protected under the ESA occurring in the South Atlantic include five species of sea turtle (green, hawksbill, Kemp's ridley, leatherback, and loggerhead); the smalltooth sawfish; and two *Acropora* coral species (elkhorn [*Acropora palmata*] and staghorn [*A. cervicornis*]). A discussion of these species is included below. Designated critical habitat for the *Acropora* corals also occurs within the South Atlantic region.

The impacts of the South Atlantic snapper grouper fishery on ESA-listed species have been evaluated in a biological opinion on the continued authorization of snapper grouper fishing under the South Atlantic Snapper grouper Fishery Management Plan and Amendment 13C (NMFS 2006), and during subsequent informal ESA section 7 consultations. The biological opinion stated the fishery was not likely to adversely affect any critical habitat or marine mammals (see NMFS 2006 for discussion on these species). However, the opinion did state that the snapper grouper fishery would adversely affect sea turtles and smalltooth sawfish. A discussion of these species is included below.

NOAA Fisheries Service conducted an informal section 7 consultation on July 9, 2007, evaluating the impacts of the South Atlantic snapper grouper fishery on ESA-listed *Acropora* species. The consultation concluded that the continued operation of the snapper grouper fishery was not likely to adversely affect newly listed *Acropora* species. On November 26, 2008, a final rule designating *Acropora* critical habitat was published in the *Federal Register*. A memo dated December 2, 2008, evaluated the effects of the continued authorization of the South Atlantic snapper grouper fishery on *Acropora* critical habitat pursuant to section 7 of the ESA. The evaluation concluded the proposed actions are not likely to adversely affect *Acropora* critical habitat.

3.3.1 ESA-Listed Sea Turtles

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

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

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

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

Leatherbacks are the most pelagic of all ESA-listed sea turtles and spend most of their time in the open ocean, although they will enter coastal waters and are seen over the continental shelf on a seasonal basis to feed in areas where jellyfish are concentrated. Leatherbacks feed primarily on cnidarians (medusae, siphonophores) and tunicates. Unlike other sea turtles, leatherbacks' diets do not shift during their life cycles. Because leatherbacks' ability to capture and eat jellyfish is not constrained by size or age, they continue to feed on these species regardless of life stage (Bjorndal 1997). Leatherbacks are the deepest diving of all sea turtles. It is estimated that these species can dive in excess of 1000 m (Eckert *et al.* 1989) but more frequently dive to depths of 50 m to 84 m (Eckert *et al.* 1986). Dive times range from a maximum of 37 minutes to more routines dives of 4 to 14.5 minutes (Standora *et al.* 1984, Eckert *et al.* 1986, Eckert *et al.* 1989, Keinath and Musick 1993). Leatherbacks may spend 74% to 91% of their time submerged (Standora *et al.* 1984).

Loggerhead hatchlings forage in the open ocean and are often associated with *Sargassum* rafts (Hughes 1974, Carr 1987, Walker 1994, Bolten and Balazs 1995). The pelagic stage of these sea turtles are known to eat a wide range of things including salps, jellyfish, amphipods, crabs, syngnathid fish, squid, and pelagic snails (Brongersma 1972). Stranding records indicate that when pelagic immature loggerheads reach 40-60 cm straight-line carapace length they begin to live in coastal inshore and nearshore waters of the continental shelf throughout the U.S. Atlantic (Witzell 2002). Here they forage over hard- and soft-bottom habitats (Carr 1986). Benthic foraging loggerheads eat a variety of invertebrates with crabs and mollusks being an important prey source (Burke *et al.* 1993). Estimates of the maximum diving depths of loggerheads range from 211 m to 233 m (692-764ft.) (Thayer *et al.* 1984, Limpus and Nichols 1988). The lengths of loggerhead dives are frequently between 17 and 30 minutes (Thayer *et al.* 1984, Limpus and Nichols 1988, Limpus and Nichols 1994, Lanyan *et al.* 1989) and they may spend anywhere from 80 to 94% of their time submerged (Limpus and Nichols 1994, Lanyan *et al.* 1989).

3.3.2 ESA-Listed Marine Fish

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

3.3.3 ESA-Listed Marine Invertebrates

Elkhorn (*Acropora palmata)* and staghorn (*A. cervicornis*) coral were listed as threatened under the ESA on May 9, 2006. The Atlantic *Acropora* Status Review (*Acropora* Biological Review Team 2005) presents a summary of published literature and other currently available scientific information regarding the biology and status of both these species.

Elkhorn and **staghorn** corals are two of the major reef-building corals in the wider Caribbean. In the South Atlantic region, they are found most commonly in the Florida Keys; staghorn coral occurs the furthest north with colonies documented off Palm Beach, Florida (26º3'N). The depth range for these species ranges from <1 m to 60 m. The optimal depth range for elkhorn is considered to be 1 to 5 m depth (Goreau and Wells 1967), while staghorn corals are found slightly deeper, 5 to 15 m (Goreau and Goreau 1973).

All Atlantic *Acropora* species (including elkhorn and staghorn coral) are considered to be environmentally sensitive, requiring relatively clear, well-circulated water (Jaap *et al.* 1989). Optimal water temperatures for elkhorn and staghorn coral range from 25° to 29°C (Ghiold and Smith 1990, Williams and Bunkley-Williams 1990). Both species are almost entirely dependent upon sunlight for nourishment, contrasting the massive, boulder-shaped species in the region (Porter 1976, Lewis 1977) that are more dependent on zooplankton. Thus, Atlantic *Acropora* species are much more susceptible to increases in water turbidity than some other coral species.

Fertilization and development of elkhorn and staghorn corals is exclusively external. Embryonic development culminates with the development of planktonic larvae called planulae (Bak *et al.* 1977, Sammarco 1980, Rylaarsdam 1983). Unlike most other coral larvae, elkhorn and staghorn planulae appear to prefer to settle on upper, exposed surfaces, rather than in dark or cryptic ones (Szmant and Miller 2006), at least in a laboratory setting. Studies of elkhorn and staghorn corals indicated that larger colonies of both species had higher fertility rates than smaller colonies (Soong and Lang 1992).

3.3.4 South Atlantic Snapper grouper Fishery Interactions with ESA-Listed Species

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 (**Table 3-1**). The effort reported program represented between approximately 5% and 14% of all South Atlantic snapper grouper fishing effort. These data were extrapolated in NMFS (2006) to better estimate the number of interactions between the entire snapper grouper fishery and ESA-listed sea turtles. The extrapolated estimate was used to project future interactions (**Table 3-2**).

The SDDP does not provide data on recreational fishing interactions with ESA-listed sea turtle species. However, anecdotal information indicates that recreational fishermen occasionally take sea turtles with hook-and-line gear. The biological opinion also used the extrapolated data from the SDDP to estimate the magnitude of recreational fishing on sea turtles (**Table 3-2**).

Smalltooth sawfish are also considered vulnerable to capture by bottom longline and vertical hook-and-line gear based on their capture in other southeast fisheries using such gear (Poulakis and Seitz 2004; Simpfendorfer and Wiley 2004). SDDP data does not include any reports of smalltooth sawfish being caught in the South Atlantic commercial snapper grouper fishery. There are no other documented interactions between smalltooth sawfish and the South Atlantic commercial snapper grouper fishery. However, the potential for interaction, led NOAA Fisheries Service to estimate future interactions between smalltooth sawfish and the snapper grouper fishery in the 2006 biological opinion (**Table 3-2**).

Regulations implemented through Snapper Grouper Amendment 15B (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.

Table 3-1. Sea turtle incidental take data from the supplementary discard data program (SDDP) for the Southeast U.S. Atlantic.

Reporting Period	Month	Logbook Statistical Grid	Species Caught	Number Caught	Discard Condition
Vertical Hook-and-Line Sea Turtle Catch Data					
8/1/01-7/31/02	April	2482	Unidentified	1	Alive
8/1/01-7/31/02	November	3377	Loggerhead	1	Alive
8/1/02-7/31/03	February	2780	Loggerhead	1	Alive
8/1/02-7/31/03	November	3474	Loggerhead	1	Alive
8/1/02-7/31/03	November	3476	Unknown	1	Alive
8/1/02-7/31/03	December	3476	Unknown	1	Alive
Bottom Longline Sea Turtle Catch Data					
8/1/01-7/31/02	August	3674	Leatherback	1	Alive
8/1/03-7/31/04	January	3575	Loggerhead	1	Unknown

Source: SEFSC Supplementary Discard Data Program

Table 3-2. Three year South Atlantic anticipated takes of ESA-Listed species for snapper grouper gear.

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
Smalltooth sawfish	Total Take	8
	Lethal Take	0

Source: NMFS 2006

3.4 Federal Fishery Management

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

Responsibility for Federal fishery management decision-making is divided between the U.S. Secretary of Commerce and eight regional fishery management councils that represent the expertise and interests of constituent states. Regional councils are responsible for preparing, monitoring, and revising management plans for fisheries needing management within their jurisdiction. The Secretary of Commerce (Secretary) is responsible for collecting and providing the data necessary for the councils to prepare fishery management plans and for promulgating regulations to implement proposed plans and amendments after ensuring that management measures are consistent with the Magnuson-Stevens Act and with other applicable laws summarized in Chapter 8. In most cases, the Secretary has delegated this authority to NOAA Fisheries Service.

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

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

3.5 State Fishery Management

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

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

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

3.6 Enforcement

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

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

on Federal priorities and, in some circumstances, prosecute resultant violators through the State when a state violation has occurred.

NOAA General Counsel issued a revised Southeast Region Magnuson-Stevens Act Penalty Schedule in June 2003, which addresses all Magnuson-Stevens Act violations in the Southeast Region. In general, this Penalty Schedule increases the amount of civil administrative penalties that a violator may be subject to up to the current statutory maximum of $120,000 per violation.

3.7 Human Environment

3.7.1 Economic Description of the Commercial Fishery

Additional information on the commercial snapper grouper fishery is contained in previous amendments [Amendment 13C (SAFMC 2006), Amendment 15A (SAFMC 2007), Amendment 15B (SAFMC 2008), and Amendment 16 (SAFMC 2008)] and is incorporated herein by reference.

3.7.1.1 Gear and Fishing Behavior, South Atlantic Commercial Snapper Grouper Fishery

The commercial snapper grouper fishery utilizes vertical lines, longlines, black sea bass pots/traps, spears, and powerheads (i.e., spears with spring-loaded firearms). Vertical lines are used from the North Carolina/Virginia border to the Atlantic side of Key West, Florida. The majority of hook and line fishermen use either electric or hydraulic reels (bandit gear) and generally have 2-4 bandit reels per boat. The majority of the bandit fleet fishes year round for snapper grouper with the only seasonal differences in catch associated with the regulatory spawning season closures in March and April for gag. Most fluctuations in fishing effort in this fishery are a result of the weather. Trips can be limited during hurricane season and also during the winter months from December through March. Some fishermen stop bandit fishing to target king mackerel when they are running.

The Council allows the use of bottom longlines north of St. Lucie Inlet, Florida, in depths greater than 50 fathoms. Bottom longline gear is used to target snowy grouper and golden tilefish. Longline boats are typically bigger than bandit boats, their trips are longer, and they cost more to operate because they operate farther offshore. A longline spool generally holds about 15 miles of cable. Longlines are fished from daylight to dark because sea lice eat the flesh of hooked fish at night. The fishery is operated year long with little or no seasonal fluctuation barring hurricane disruption.

Spears or powerheads are most commonly used off Florida and are illegal for killing snapper grouper species in South Carolina and in Special Management Zones.

Black sea bass pots are used exclusively to target black sea bass, though bycatch of other snapper grouper species is allowed. The pots have mesh size, material, and construction restrictions to facilitate bycatch reduction. All sea bass pots must have a valid identification tag attached and more than 87% of tags in April 2003 were for vessels with homeports in North Carolina. Fishing practices vary by buoy practices, setting/pulling strategies, number of

pots set, and length of set, with seasonal variations. The South Carolina pot fishery is mainly a winter fishery with short soak times (in some cases about an hour) and relatively few pots per boat. Most trips are day trips with pots being retrieved before heading to port. The North Carolina pot fishery also is primarily a winter fishery with some fishermen continuing to pot through the summer. North Carolina fishermen tend to use more pots than those in South Carolina. Although most North Carolina trips with sea bass pots last one day, more pots are left to soak for several days than in South Carolina. Many participants in the black sea bass fishery are active in other fisheries, including the recreational charter fishery during the summer months. Many snapper grouper permit holders maintain pot endorsements but are not active in the pot fishery.

3.7.1.2 Landings, Ex-vessel Value, Price, and Effort, South Atlantic Commercial Snapper Grouper Fishery

Landings of all species in the snapper grouper management unit averaged 6.4 million pounds from 2003 through 2007, with an average annual dockside value of $13.0 million in current year dollars and $13.8 million in 2007 dollars (Table 3-5).[1] Since 1993, landings of snapper grouper have exhibited a downward trend with year-to-year variation (Figure 3-1).

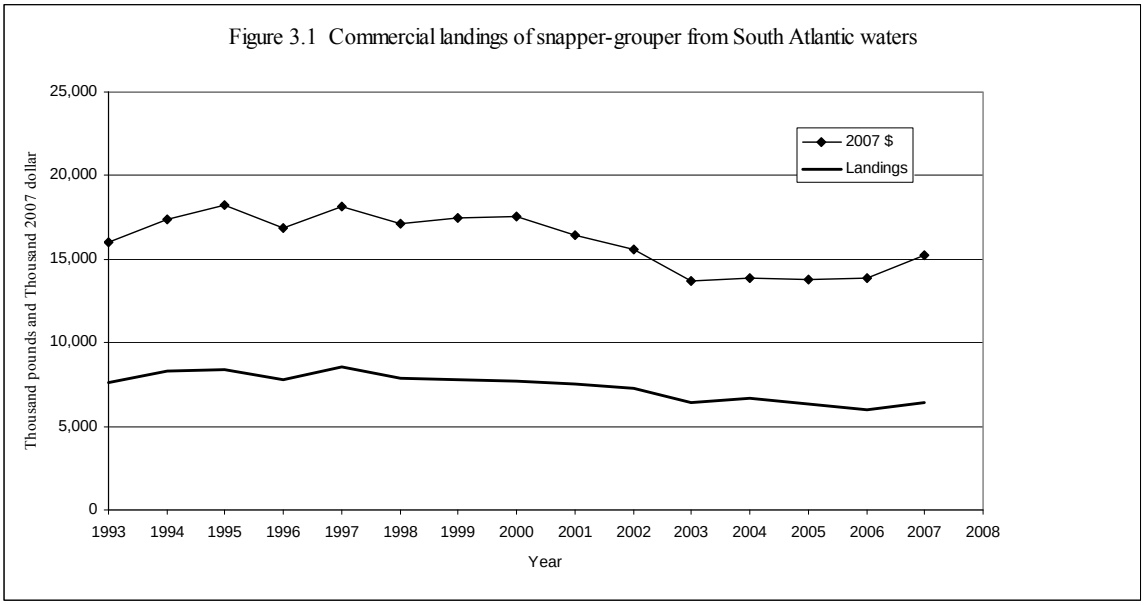

Figure 3-1. Commercial landings of snapper grouper species from South Atlantic waters.

The shallow water groupers and mid-shelf snappers are the largest species groups by volume and value within the snapper grouper fishery. Vermilion snapper in the mid-shelf snapper group is the largest volume species in the fishery, and accounts for 13% of total landings and

[1] Fishermen are required to report their landings by species by trip to NOAA Fisheries Service Southeast Fisheries Science Center logbook program. However, they do not report prices or revenues on their logbook sheets. Therefore, trip revenues were approximated as reported landings from individual logbook reports multiplied by average monthly prices for each species as calculated from the NOAA Fisheries Service Accumulated Landings System (ALS). To obtain values in 2007 dollars, the BLS Consumer Price Index for urban dwellers was used to adjust for the effects overall price inflation in the U.S. economy at the consumer level.

16% of dockside revenues on trips with at least one pound of snapper grouper species. Gag is the largest volume shallow water grouper, and accounts for 7% of total landings and 11% of dockside revenues on trips that landed at least one pound of snapper grouper species. Fishermen also landed an average of 1.9 million pounds of non-snapper grouper snapper grouper species worth $2.3 million in 2007 dollars on trips that landed at least one pound of species in the snapper grouper management unit. These trips included trips that targeted species in the snapper grouper management unit and trips that landed snapper grouper species while targeting non snapper grouper species.

Table 3-3. Annual landings and dockside (ex-vessel) revenues for trips with at least one pound of species in the snapper grouper fishery management unit in the South Atlantic, 2003-2007.

Item	2003	2004	2005	2006	2007	Average
	Trips with at least one pound of snapper grouper					
Landings of snapper grouper, thousand pounds, whole wt	6,471	6,693	6,365	6,112	6,528	6,434
Dockside revenue from snapper grouper, thousand current $	$12,214	$12,155	$12,316	$13,069	$15,435	$13,038
Dockside revenue from snapper grouper, thousand 2007 $	$13,762	$13,340	$13,078	$13,431	$15,426	$13,807
Price/lb (whole wt) for snapper grouper	$1.89	$1.82	$1.93	$2.14	$2.36	$2.03
BLS Producer price index for #2 diesel fuel, index=100 for 2007	43	54	80	92	100	67
Landings of other species, same trips, thousand pounds	2,092	1,651	1,751	2,116	2,122	1,946
Dockside revenue from other species, same trips, thousand 2007 $	$2,149	$2,001	$2,225	$2,394	$2,738	$2,301

Source: NOAA Fisheries Service, Southeast Fisheries Science Center logbook database as of September 22, 2008, and Accumulated Landings System data base as of September 17, 2008. The BLS Consumer Price Index for all Urban Consumers was used to adjust dockside revenues and average annual prices for inflation.

Landings and dockside revenues varied between 2003 and 2007 for species in the snapper grouper management unit (Table 3-3). While lower in 2007 than in 2003, the numbers for trips, days away from port and vessels varied during 2003-2006 (Table 3-4). Part of the variation in snapper grouper landings overall appears to be attributable to landings of vermilion snapper, which experienced a significant decline in 2003 due to unusually cold water temperatures in the summer and fall of 2003. Landings of vermilion snapper recovered in 2004 and 2005, declined in 2006, and recovered in 2007.

Table 3-4. Fishing effort and distribution of landings for trips with at least one pound of species in the snapper grouper fishery management unit in the South Atlantic, 2003-2007.

Item	2003	2004	2005	2006	2007	Average
	Trips with at least one pound of snapper grouper					
Number of trips	16,545	15,045	13,756	13,224	14,753	14,665
Days away from port	27,556	24,820	22,794	23,160	24,216	26,296
Number of vessels landing snapper grouper	931	905	857	868	889	890
Number of vessels landing 101-1,000 lbs of snapper grouper	245	225	242	258	261	246
Number of vessels landing 1001-5000 lbs of snapper grouper	270	263	239	228	225	245
Number of vessels landing 5,001-10,000 lbs of snapper grouper	104	96	86	64	86	87
Number of vessels landing 10,001-50,000 lbs of snapper grouper	152	133	123	127	134	134
Number of vessels landing more than 50,000 lbs of snapper grouper	20	32	29	27	28	27
Number of permitted vessels	1059	1001	909	874	877	944
Number of vessels with transferable permits*	828	782	721	697	718	749
Number of vessels with non-transferable permits	231	219	188	177	159	195
Number of dealer permits	271	269	268	251		265

Source: NOAA Fisheries Service, Southeast Fisheries Science Center logbook database as of September 22, 2008 and NOAA Fisheries Service, Southeast Regional Office permits database. *Because of possible problems in estimation for 2006, the number of vessels with transferable permits seems low (697).

The number of boats with snapper grouper permits has exhibited a mostly downward trend since 1999 (1,251 permits). There were 1,059 permits in 2003 and 877 in 2007 (Table 3-6). Two types of permits were created with the limited access program for the snapper grouper fishery that was implemented in 1998. The number of transferable permits that allow an unlimited harvest per trip was 828 in 2003 and 718 in 2007 compared with 938 in 1999. The number of vessels with non-transferable permits with a 225-pound trip limit declined year-by-year from 313 in 1999 to 213 in 2003 and 159 in 2007. The number of transferable permits

declined, in part, because new entrants into the fishery must buy two permits and retire one as the condition for entry into the fishery. Furthermore, it is likely that the number of vessels in the snapper grouper fishery declined for economic reasons. For example, fuel prices doubled between 2003 and 2005 and continued to increase through mid-2008. By contrast, average annual prices for species in the snapper grouper management unit were relatively flat (Table 3-3, average annual prices represented by the ratio of annual commercial revenues to landings in current year dollars). The number of fish dealers with permits to operate in the snapper grouper fishery reached a maximum in 2003 (271) and has declined since then (Table 3-4, data through 2006).

From 2003 through 2007, an average of 890 boats averaged 14,665 trips per year on which at least one pound of snapper grouper species was landed (Table 3-4). On average, 246 boats landed 101 – 1,000 pounds of snapper grouper species annually; 245 boats landed 1,001 - 5,000 pounds; 87 boats landed 5,001 - 10,000 pounds; 134 boats landed 10,001 – 50,000 pounds; and 27 boats landed at least 50,000 pounds of snapper grouper species.

3.7.1.3 Economic Impacts of the South Atlantic Commercial Snapper Grouper Fishery

Estimates of the economic impacts of the commercial snapper grouper fishery are derived using the model developed for and applied in USDOC (2009). Based on the average annual ex-vessel revenues for all snapper grouper species in the South Atlantic over the period 2003-2007 of $13.8 million (2007 dollars), the commercial snapper grouper fishery is estimated to support 2,679 full time equivalent (FTE) jobs and generate approximately $182 million in output (sales) impacts and approximately $77 million in income impacts per year to the U.S. economy. Among the jobs supported, 350 FTE jobs are estimated to be in the harvesting sector and 213 FTE jobs are in the dealer/processor sector. Approximately two-thirds of the jobs supported by the commercial snapper grouper fishery are estimated to accrue to the restaurant sector. The estimates of economic activity include the direct effects (effects in the sector where an expenditure is actually made), indirect effects (effects in sectors providing goods and services to directly affected sectors), and induced effects (effects induced by the personal consumption expenditures of employees in the direct and indirectly affected sectors).

In addition to these snapper grouper harvests, the vessels that harvested snapper grouper also harvested other species on the trips where snapper grouper were harvested, as well as on other trips on which no snapper grouper were harvested. All revenues from all species on all these trips contributed towards making these vessels economically viable and contributed to the economic activity associated with these vessels. The average annual total ex-vessel revenues from all species (including snapper grouper) harvested during this period (2003-2007) by vessels that harvested snapper grouper species was approximately $22.8 million (2007 dollars). The economic activity associated with these revenues is estimated to support 4,426 FTE jobs (578 in the harvesting sector and 352 in the dealer/processor sector) and generate approximately $300 million in output (sales) impacts and approximately $128 million in income impacts.

For the individual species addressed by this amendment, black sea bass generated the largest average annual ex-vessel revenues, approximately $937,000 (2007 dollars) per year from 2003-2007. The economic activity associated with black sea bass is estimated to support 182

FTE jobs (24 in the harvest sector and 14 in the dealer/processor sector), approximately $12 million in output (sales) impacts, and approximately $5 million in income impacts. All harvests by the vessels that harvest black sea bass support approximately 1,860 FTE jobs (243 in the harvest sector and 148 in the dealer/processor sector) and approximately $126 million in output (sales) impacts and approximately $54 million in income impacts.

One further caveat to these estimates should be noted. The species composition of other harvests by vessels that harvested snapper grouper has not been evaluated. For the assessment above, all revenues, regardless of the species harvested, were treated the same from an impact modeling perspective. However, in reality, not all species, and associated revenues, flow through harvesters, dealers/processors, and the consuming public in the same way. As a result, the estimates of economic effects provided above for all revenues by vessels with recorded snapper grouper harvest may be greater than or less than actual effects.

3.7.1.5 South Atlantic Commercial Snapper Grouper Fishery by State

The following discussion uses annual averages from 2003 to 2007. To maintain the confidentiality of individual reporting units, summaries are provided for regions defined as North Carolina, South Carolina, Georgia and northeast Florida combined, and central and south Florida combined. The northeast Florida region consists of trips landed in Nassau, Duval, and St. Johns Counties, and the central and south Florida region consists of trips landed from Flagler through Miami-Dade Counties and trips from Atlantic waters off the Florida Keys and landed in Monroe County.

The average annual quantities of snapper grouper species harvested from 2003-2007 included 1.82 million pounds worth $3.74 million (in 2007 dollars) per year in North Carolina, 1.60 million pounds worth $3.80 million in South Carolina, 0.73 million pounds worth $1.65 million in Georgia and northeast Florida, and 0.79 million pounds worth $1.61 million in central and south Florida, and 1.50 million pounds worth $3.0 million in the Florida Keys (Table 3-5). Snapper grouper landings by state were not proportional to total days fished in each state. Boats in central and south Florida, and the Florida Keys made 73% of the trips that landed species in the snapper grouper management unit and accounted for 35% of the total snapper grouper harvest. Conversely, boats in other states accounted for relatively larger portions of the total snapper grouper harvest. Boats in North Carolina made 18% of the trips and landed 28% of the snapper grouper harvest. Boats in South Carolina made 6% of the trips and landed 25% of the harvest. In addition, boats in Georgia and northeast Florida made 3% of the trips and landed 12% of the snapper grouper harvest. Boats in South Carolina and Georgia and northeast Florida took fewer but longer trips than their counterparts in North Carolina or central and south Florida and the Florida Keys.

Table 3-5. Average annual landings and dockside revenues for trips with at least one pound of species in the snapper grouper fishery, averages for 2003-2007 by state.

Item	North Carolina	South Carolina	Georgia and Northeast Florida	Central and South Florida	Florida Keys	South Atlantic
	Trips with at least one pound of snapper grouper					
Snapper grouper landings, thousand pounds, whole wt	1,816	1,591	734	790	1,504	6,434
Percentage of South Atlantic snapper grouper landings, by state	28%	25%	11%	12%	23%	100%
Dockside revenue, snapper grouper, thousand 2007 $	$3,738	$3,795	$1,651	$1,615	$3,008	$13,807
Landings of other species, same trips, thousand lbs	286	125	54	1,293	188	1,946
Dockside revenue, other species, same trips, thousand 2007 $	$389	$182	$123	$1,406	$202	$2,301
Number of boats*	175	64	46	342	294	921
Number of trips	2,607	916	486	4,691	5,964	14,665
Percent of trips	18%	6%	3%	32%	41%	100%
Number of days	4,727	4,702	1,946	5,473	7,661	24,509
Trips per boat	14.9	14.2	10.6	13.7	20.3	15.9
Days per trip	1.8	5.1	4.0	1.2	1.3	1.7

Source: NOAA Fisheries Service, Southeast Fisheries Science Center logbook database as of September 22, 2008, and Accumulated Landings System data base as of September 17, 2008. The BLS Consumer Price Index for all Urban Consumers was used to adjust dockside revenues and average annual prices for inflation. *Some boats land in more than one area.

Gag and other shallow water groupers and vermilion snapper and other mid-shelf snappers tend to be landed in North Carolina, South Carolina, and Georgia and northeast Florida, while jacks and shallow water snappers tend to be landed in central and south Florida (Tables 3-6 and 3-7). The species groups that accounted for more than 10% of total landings and revenues in North Carolina include shallow water groupers with nearly 24% of total pounds landed and nearly 34% of total revenues on trips with at least one pound of snapper grouper species; black sea bass with 17% of total landings and 19% of total revenues; and mid-shelf snappers with 18% of total landings and 23% of total revenues. In South Carolina, the shallow water groupers accounted for 32% of total pounds and 46% of total revenues, and the mid-shelf snappers accounted for 21% of total pounds and 23% of total revenues. In Georgia and northeast Florida, mid-shelf snappers accounted for 44% of total pounds and 51% of total revenues; shallow water groupers accounted for 19% of total pounds and 21% of total revenues; and jacks accounted for 17% of total pounds and 7% of total revenues. In central and south Florida, coastal pelagics accounted for 49% of total pounds and 38% of total revenues, and jacks accounted for 12% of total pounds and 7% of total revenues, while tilefish accounted for 11% of total pounds and 17% of total revenue on trips with at least one pound of snapper grouper species. Fishermen in central and south Florida, especially in the Keys, tend to catch larger quantities of non-snapper grouper snapper grouper species such as mackerels.

Table 3-6. Average annual landings (in thousands of pounds, whole weights) on trips that landed at least one pound of snapper grouper species: averages for 2003-2007, by state and species group.

Item	North Carolina		South Carolina		Georgia and Northeast Florida		Central and South Florida		Florida Keys		South Atlantic	
	1000 lbs	col%[1]	1000 lbs	col%	1000 lbs	col%	1000 lbs	col%	1000 lbs	col%	1000 lbs	col%
Shallow water groupers	504	24%	555	32%	152	19%	107	5%	100	6%	1,418	17%
Deep water groupers	84	4%	78	5%	5	1%	28	1%	59	3%	254	3%
Tilefish	78	4%	112	6%	1	0%	227	11%	12	1%	430	5%
Shallow water snappers	10	0%	20	1%	21	3%	128	6%	887	52%	1,065	13%
Mid-shelf snappers	375	18%	366	21%	347	44%	33	2%	15	1%	1,136	14%
Triggerfish / Spadefish	131	6%	77	4%	56	7%	5	0%	2	0%	271	3%
Jacks	111	5%	159	9%	132	17%	240	12%	406	24%	1,047	12%
Grunts / porgies	127	6%	92	5%	14	2%	16	1%	24	1%	274	3%
Sea basses	395	19%	133	8%	6	1%	6	0%	0	0%	540	6%
Snapper grouper	1,816	86%	1,591	93%	734	93%	790	38%	1,504	89%	6,434	77%
Coastal pelagics	216	10%	52	3%	34	4%	1,016.50	49%	81	5%	1,399	17%
Sharks	9	0%	19	1%	6	1%	195	9%	77	5%	306	4%
Tunas	22	1%	2	0%	1	0%	1	0%	0	0%	25	0%
Other	39	2%	54	3%	13	2%	81	4%	30	2%	217	3%
All species	2,102	100%	1,717	100%	787	100%	2,083	100%	1,692	100%	8,380	100%

Source: NOAA Fisheries Service, Southeast Fisheries Science Center logbook database as of September 22, 2008.
[1]"col %" equals the percentage contribution of this species group to total harvest on these trips. Individual snapper or grouper species totals (e.g., shallow water groupers) are also included in the "snapper grouper" group and the total (100%) is comprised of the individual snapper grouper, coastal pelagic, sharks, tunas, and other totals. Summation may not match exactly due to rounding.

Table 3-7. Average annual dockside revenues (thousand 2007 dollars) for trips that landed at least one pound of snapper grouper species: averages for 2003-2007 by state and species group.

Item	North Carolina		South Carolina		Georgia and Northeast Florida		Central and Southeast Florida		Florida Keys		South Atlantic	
	$1,000, 2007$	col %[1]	$1,000, 2007$	col %	$1,000, 2007$	col %	$1,000, 2007$	col %	$1,000, 2007$	col %	$1,000, 2007$	col %
Shallow water groupers	$1,404	34%	$1,847	46%	$475	27%	$338	11%	$272	8%	$4,336	27%
Deep water groupers	$216	5%	$219	5%	$13	1%	$77	3%	$156	5%	$680	4%
Tilefish	$100	2%	$203	5%	$2	0%	$518	17%	$15	0%	$838	5%
Shallow water snappers	$23	1%	$52	1%	$51	3%	$330	11%	$2,112	66%	$2,567	16%
Mid-shelf snappers	$969	23%	$933	23%	$909	51%	$100	3%	$37	1%	$2,947	18%
Triggerfish / Spadefish	$109	3%	$62	2%	$48	3%	$4	0%	$2	0%	$225	1%
Jacks	$106	3%	$161	4%	$126	7%	$223	7%	$396	12%	$1,011	6%
Grunts / porgies	$122	3%	$90	2%	$18	1%	$16	1%	$20	1%	$266	2%
Sea basses	$689	17%	$229	6%	$10	1%	$10	0%	$0	0%	$937	6%
Snapper grouper	$3,738	91%	$3,795	95%	$1,651	93%	$1,615	53%	$3,008	94%	$13,807	86%
Coastal pelagics	$299	7%	$100	3%	$66	4%	$1,139	38%	$104	3%	$1,708	11%
Sharks	$4	0%	$11	0%	$2	0%	$78	3%	$23	1%	$118	1%
Tunas	$44	1%	$4	0%	$1	0%	$2	0%	$0	0%	$50	0%
Other species	$42	1%	$67	2%	$55	3%	$187	6%	$75	2%	$425	3%
All species	$4,127	100 %	$3,977	100 %	$1,775	100 %	$3,020	100 %	$3,210	100 %	$16,108	100 %

Source: NOAA Fisheries Service, Southeast Fisheries Science Center logbook database as of September 22, 2008, and Accumulated Landings System data base as of September 17, 2008. The BLS Consumer Price Index for all Urban Consumers was used to adjust dockside revenues and average annual prices for inflation.

[1]"col %" equals the percentage contribution of this species group to total harvest on these trips. Individual snapper or grouper species totals (e.g., shallow water groupers) are also included in the "snapper grouper" group and the total (100%) is comprised of the individual snapper grouper, coastal pelagic, sharks, tunas, and other totals. Summation may not match exactly due to rounding.

3.7.1.6 South Atlantic Commercial Snapper Grouper Fishery by Gear

The following discussion uses annual averages from 2003 to 2007. To maintain the confidentiality of individual reporting units, summaries are provided for vertical lines, longlines, black sea bass pots, and all other gears combined. The all-other-gear category includes trolling lines, nets, and other gears. Most of the snapper grouper harvest, including vermilion snapper and gag, is taken by some type of vertical hook-and-line gear. There are exceptions. Black sea bass are harvested primarily with black sea bass pots, while golden tilefish and yellowedge grouper are harvested primarily with bottom longlines. Some species, such as snowy grouper, are harvested by both vertical lines and longlines. Longlines used in the shark fishery may catch snapper grouper as secondary species.

The average quantities of snapper grouper species harvested from 2003-2007 included 5.2 million pounds worth $11.3 million (in 2007 dollars) per year with vertical lines, 0.41 million pounds with longlines, 0.12 million pounds with black sea bass pots, 0.22 million pounds with dive gear, and 0.51 million pounds with other gear (Table 3-8). Vertical lines accounted for 78% of all trips that landed at least one pound of snapper grouper, 81% of the snapper grouper landed, 81% of days fished, and 76% of the trip revenue. Trips with longlines tend to be longer than trips with other gear.

Table 3-8. Annual landings and dockside revenues for trips with at least one pound of species in the snapper grouper fishery by primary gear, 2003-2007, landings in whole weight.

Item	Diving	Hook & Line	Longline	Pots	Other gear	Total
Snapper grouper, 1,000 lbs	219	5,185	408	116	506	6,434
Percentage of landings	3%	81%	6%	2%	8%	100%
Snapper grouper, 1,000 2007$	$571	$11,314	$895	$168	$861	$13,807
Other spp, same trips, 1,000 lbs	49	674	265	941	17	1,946
Percentage of landings, other	3%	35%	14%	48%	1%	100%
Trip revenue, thousand 2007 $	$762	$12,272	$1,048	$1,148	$880	$16,108
Percentage of trip revenue	5%	76%	7%	7%	5%	100%
Number of boats*	65	723	27	50	245	1,110
Number of trips	648	11,405	246	690	1,676	14,665
Percent of trips	4%	78%	2%	5%	11%	100%
Number of days fished	920	19,910	924	944	1,811	24,509
Percent of days fished	4%	81%	4%	4%	7%	100%
Trips per boat	10.0	15.8	9.0	13.8	6.8	13.2
Days per trip	1.4	1.7	3.8	1.4	1.1	1.7
Source: Same as first table, this section.						

3.7.1.7 Golden Tilefish

Table 3-9. Annual landings, dockside revenues and fishing effort, trips and boats with landings of at least one pound of golden tilefish, 2003-2007.

Item	2003	2004	2005	2006	2007	Average
	Trips or boats with at least one pound of golden tilefish					
Number of trips with at least one pound of golden tilefish	391	336	359	331	593	402
Landings of golden tilefish, thousand pounds, whole weight	344	272	307	410	320	330
Dockside revenue from golden tilefish, thousand current $	$658	$511	$664	$827	$748	$682
Dockside revenue from golden tilefish, thousand 2007 $	$741	$561	$702	$849	$753	$721
Dockside price, current $ / pound	$1.92	$1.88	$2.17	$2.02	$2.34	$2.06
Landings of all species, same trips, thousand pounds	686	504	497	691	408	557
Dockside revenue, all species, same trips, thousand 2007 $	$1,287	$930	$1,068	$1,336	$905	$1,105
Dockside revenue, all species, all trips, same boats, thousand 2007 $	$2,668	$2,264	$2,627	$2,801	$2,578	$2,588
Number of boats that landed golden tilefish	63	65	65	60	65	64
Number of boats landing 1-100 lbs per year of golden tilefish	23	20	16	25	18	20
Number of boats landing 101-1000 lbs per year of golden tilefish	21	21	25	16	19	20
Number of boats landing 1,001-5,000 lbs per year of golden tilefish	3	13	16	9	18	12
Number of boats landing more than 5,000 lbs per year of golden tilefish	15	11	8	10	10	11

Source: NOAA Fisheries Service, Southeast Fisheries Science Center logbook database as of September 22, 2008, and Accumulated Landings System data base as of September 17, 2008. The BLS Consumer Price Index for all Urban Consumers was used to adjust dockside revenues and average annual prices for inflation.

Table 3-10. Annual landings and dockside revenues on trips with golden tilefish as the top source of trip revenue, 2003-2007.

Item	2003	2004	2005	2006	2007	Average
	Trips with golden tilefish as the top source of trip revenue					
Trips	240	233	247	216	481	283
Boats	40	43	45	33	47	42
Landings of golden tilefish, thousand pounds	307	243	276	378	312	303
Dockside revenue for golden tilefish, thousand 2007 $	$671	$505	$639	$786	$735	$667
Landings of other species on trips where golden tilefish is the top source of trip revenue, thousand pounds	140	81	40	78	27	73
Dockside revenue for other species on trips where golden tilefish is the top source of trip revenue, thousand 2007 $	$188	$116	$64	$123	$40	$106

Source: NOAA Fisheries Service, Southeast Fisheries Science Center logbook database as of September 22, 2008, and Accumulated Landings System data base as of September 17, 2008. The BLS Consumer Price Index for all Urban Consumers was used to adjust dockside revenues and average annual prices for inflation.

Table 3-11. Annual landings and dockside revenues on trips with golden tilefish as a lesser source of trip revenue, 2003-2007.

Item	2003	2004	2005	2006	2007	Average
	Trips with golden tilefish as a lesser source of trip revenue					
Trips	151	103	112	115	112	119
Boats	50	45	46	45	39	45
Landings of golden tilefish on trips with golden tilefish as a lesser source of revenue, thousand pounds	36	30	30	32	7	27
Dockside revenues for golden tilefish on trips with golden tilefish as a lesser source of revenue, thousand 2007 $	$70	$56	$63	$63	$18	$54
Landings of other fish on trips with golden tilefish as a lesser source of revenue, thousand pounds	203	150	150	203	61	153
Dockside revenues for other fish on trips with golden tilefish as a lesser source of revenue, thousand 2007 $	$357	$253	$301	$365	$112	$278

Source: NOAA Fisheries Service, Southeast Fisheries Science Center logbook database as of September 22, 2008, and Accumulated Landings System data base as of September 17, 2008. The BLS Consumer Price Index for all Urban Consumers was used to adjust dockside revenues and average annual prices for inflation.

Table 3-12. Annual number of golden tilefish for trips with at least one pound of golden tilefish, by region and primary gear, 2003-2007.

Item	2003	2004	2005	2006	2007	Average
	Trips with at least one pound of golden tilefish					
Golden tilefish caught off North Carolina, thousand pounds	17	40	1	2	2	12
Golden tilefish caught off South Carolina, thousand pounds	128	105	62	122	27	89
Golden tilefish caught off Georgia and northeast Florida, thousand pounds			0		0	0
Golden tilefish caught off central and southeast Florida, thousand pounds	191	126	240	283	289	226
Golden tilefish caught off Florida Keys, thousand pounds	8	1	4	2	1	3
Golden tilefish caught with vertical lines, thousand pounds	18	25	38	35	44	32
Golden tilefish caught with dive gear, thousand pounds		0	0		0	0
Golden tilefish caught with other gear, thousand pounds	325	248	269	374	296	302

Source: NOAA Fisheries Service, Southeast Fisheries Science Center logbook database as of September 22, 2008.

3.7.1.8 Black Sea Bass

Table 3-13. Annual landings, dockside revenues and fishing effort, trips and boats with landings of at least one pound of black sea bass, 2003-2007.

Item	2003	2004	2005	2006	2007	Average
	Trips and boats with at least one pound of black sea bass					
Number of trips with at least one pound of black sea bass	2,238	2,372	2,056	2,172	1,949	2,157
Landings of black sea bass, thousand pounds, whole weight	597	707	460	527	409	540
Dockside revenue from black sea bass, thousand current $	$916	$842	$571	$988	$1,089	$881
Dockside revenue from black sea bass, thousand 2007 $	$1,033	$927	$611	$1,020	$1,097	$937
Dockside price, current $ / pound	$1.53	$1.19	$1.24	$1.87	$2.66	$1.63
Landings of all species, same trips, thousand pounds	4,189	4,616	4,441	4,508	4,805	4,512
Dockside revenue, all species, same trips, thousand 2007 $	$4,411	$4,643	$4,358	$4,549	$4,594	$4,511
Dockside revenue, all species, all trips, same boats, thousand 2007 $	$8,835	$8,961	$9,116	$9,569	$11,441	$9,584
Number of boats that landed black sea bass	225	243	240	220	256	237
Number of boats landing 1-100 lbs per year of black sea bass	84	86	104	87	134	99
Number of boats landing 101-1,000 lbs per year of black sea bass	85	93	81	81	72	82
Number of boats landing 1,001-5,000 lbs per year of black sea bass	35	34	36	31	27	33
Number of boats landing 5,001-10,000 lbs per year of black sea bass	7	12	7	6	11	9
Number of boats landing more than 10,000 lbs per year of black sea bass	14	18	12	15	12	14

Source: NOAA Fisheries Service, Southeast Fisheries Science Center logbook database as of September 22, 2008, and Accumulated Landings System data base as of September 17, 2008. The BLS Consumer Price Index for all Urban Consumers was used to adjust dockside revenues and average annual prices for inflation.

Table 3-14. Annual landings and dockside revenues on trips with black sea bass as the top source of trip revenue, 2003-2007.

Item	2003	2004	2005	2006	2007	Average
	Trips with black sea bass as the top source of trip revenue					
Trips	858	889	620	811	649	765
Boats	86	94	83	85	88	87
Landings of black sea bass on trips with black sea bass as the top source of revenue, thousand pounds	546	637	403	482	378	489
Dockside revenue for black sea bass on trips with black sea bass as the top source of revenue, thousand 2007 $	$948	$827	$539	$936	$1,023	$855
Landings of other species, same trips	51	57	38	69	57	54
Dockside revenue for other species, same trips, thousand 2007 $	$62	$66	$43	$94	$76	$68

Source: NOAA Fisheries Service, Southeast Fisheries Science Center logbook database as of September 22, 2008, and Accumulated Landings System data base as of September 17, 2008. The BLS Consumer Price Index for all Urban Consumers was used to adjust dockside revenues and average annual prices for inflation.

Table 3-15. Annual landings and dockside revenues on trips with black sea bass as a lesser source of trip revenue, 2003-2007.

Item	2003	2004	2005	2006	2007	Average
	Trips with black sea bass as a lesser source of trip revenue					
Trips	1,380	1,483	1,436	1,361	1,300	1,392
Boats	195	217	216	194	233	211
Landings of black sea bass on trips with black sea bass as a lesser source of revenue, thousand pounds	51	70	57	45	31	51
Dockside revenues for black sea bass on trips with black sea bass as a lesser source of revenue, thousand 2007 $	$85	$99	$73	$84	$74	$83
Landings of other species, same trips	1,446	1,721	1,674	1,498	1,408	1,549
Dockside revenue for other species, same trips, thousand 2007 $	$3,316	$3,651	$3,704	$3,436	$3,422	$3,506

Source: NOAA Fisheries Service, Southeast Fisheries Science Center logbook database as of September 22, 2008, and Accumulated Landings System data base as of September 17, 2008. The BLS Consumer Price Index for all Urban Consumers was used to adjust dockside revenues and average annual prices for inflation.

Table 3-16. Annual landings of black sea bass for trips with at least one pound of black sea bass, by region and primary gear, 2003-2007.

Item	2003	2004	2005	2006	2007	Average
	Trips with at least one pound of black sea bass					
Black sea bass caught off North Carolina, thousand pounds	476	485	324	421	271	395
Black sea bass caught off South Carolina, thousand pounds	112	210	120	94	128	133
Black sea bass caught off Georgia and northeast Florida, thousand pounds	4	7	8	6	5	6
Black sea bass caught off central and southeast Florida, thousand pounds	4	5	9	7	4	6
Black sea bass caught off Florida Keys, thousand pounds			0		0	0
Black sea bass caught with vertical lines, thousand pounds	70	85	63	58	44	64
Black sea bass caught with traps, thousand pounds	521	617	390	466	362	471
Black sea bass caught with dive gear, thousand pounds	0	1	0	0	0	0
Black sea bass caught with other gear, thousand pounds	6	5	6	3	2	4

Source: NOAA Fisheries Service, Southeast Fisheries Science Center logbook database as of September 22, 2008.

3.7.1.9 Imports

Imports have been a major source of seafood supply in the U.S., and the domestic snapper grouper market is not an exception. For the period 2003-2006, imports of fresh and frozen snappers and groupers have stayed at relatively high levels, averaging 44.7 million pounds (Table 3-17). Compared with the average overall landings of snapper grouper in the South Atlantic for the same period of 6.43 million pounds (whole weight; Table 3-5), the dominance of imports in the snapper grouper market is apparent. At an annual average of $79.2 million for the years 2003-2006, imports dwarf the $12.99 million ex-vessel value of South Atlantic snapper grouper landings. Dominance of imports in the snapper grouper market would be expected to limit the movement of domestic ex-vessel prices resulting from changes in domestic landings of snappers and groupers.

Table 3-17. U.S. imports of snappers and groupers, 2003-2006.

YEAR	Pounds of imports by product form Millions of pounds*			Value of imports by product form Millions of dollars		
	FRESH	FROZEN	TOTAL	FRESH	FROZEN	TOTAL
2003	31.1	8.4	39.4	$51.7	$10.6	$62.3
2002	33.4	9.2	42.6	$57.1	$12.3	$69.5
2003	34.3	10.2	44.5	$58.9	$14.4	$73.3
2004	33.3	9.8	43.1	$61.7	$13.9	$75.6
2005	35.9	13.8	49.7	$72.0	$21.0	$93.0
2006	35.2	13.4	48.6	$78.8	$22.9	$101.7
Average	33.9	10.8	44.7	$63.4	$15.9	$79.2

Source: NOAA Fisheries, Foreign Trade Database.
*Weights are not converted to equivalent whole weights.

3.7.2 Economic Description of the Recreational Sector of the Snapper Grouper Fishery

Additional information on the recreational sector of the snapper-grouper fishery is contained in previous amendments [Amendment 13C (SAFMC 2006), Amendment 15A (SAFMC 2007), Amendment 15B (SAFMC 2008), Amendment 16 (SAFMC 2008), Amendment 17A (SAFMC 2010), and Amendment 17B (SAFMC 2010)] and is incorporated herein by reference.

The recreational sector of the snapper grouper fishery is comprised of the private sector and for-hire sector. The private sector includes anglers fishing from shore (all land-based structures) and private/rental boats. The for-hire sector is composed of the charterboat and headboat (also called partyboat) sectors. Charterboats generally carry fewer passengers and charge a fee on an entire vessel basis, whereas headboats carry more passengers and payment is per person. The type of service, from a vessel- or passenger-size perspective, affects the flexibility to search different fishing locations during the course of a trip and target different species, since larger concentrations of fish are required to satisfy larger groups of anglers.

3.7.2.1 Harvest

Recreational snapper grouper harvest in the South Atlantic was variable during the period 2003-2008, averaging slightly above 11 million pounds (Table 3-18). On average, the private/shore mode of fishing accounted for the largest harvests at approximately 7.62 million pounds (MP). Charter and headboat harvests were 1.92 MP and 1.63 MP, respectively. Harvests by state also fluctuated during the same period (Table 3-19). On average, Florida accounted for most of the snapper grouper harvest in the South Atlantic at approximately 6.90 MP, followed by North Carolina at 2.21 MP, South Carolina at 1.51 MP, and Georgia at 0.62 MP.

Table 3-18. Harvest (lbs) of snapper grouper species in the South Atlantic, by mode, 2003-2008.

Year	Charterboat[1]	Headboat[2]	Shore and Private/Rental Boat[1]	Total
2003	2,301,303	1,375,688	7,265,886	10,942,877
2004	1,517,384	1,889,010	6,688,596	10,094,990
2005	2,313,468	1,649,210	6,123,049	10,085,727
2006	1,998,902	1,648,405	7,282,328	10,929,635
2007	1,697,350	1,893,031	8,777,570	12,367,950
2008	1,720,683	1,306,996	9,572,258	12,601,945
Average	1,924,848	1,627,057	7,618,281	11,170,521

Source: The Headboat Survey, NOAA Fisheries, SEFSC, Beaufort Lab and MRFSS database, NOAA Fisheries, NMFS, SERO.

[1] Pounds of A and B1 fish estimated from the MRFSS Survey.

[2] The total annual estimate of headboat catch derived from data collected through the NMFS headboat survey.

Table 3-19. Harvest (lbs) of snapper grouper species in the South Atlantic, by state, 2003-2008.

Year	Florida	Georgia	South Carolina	North Carolina
2003	7,848,011	770,993	1,042,157	1,281,714
2004	5,970,816	763,609	1,625,212	1,735,353
2005	6,696,212	622,302	852,105	1,915,107
2006	6,474,221	746,982	1,466,944	2,241,489
2007	7,173,255	320,927	2,079,880	3,199,767
2008	7,262,726	490,209	1,980,075	2,866,928
Average	6,904,207	619,170	1,507,729	2,206,726

Source: The Headboat Survey, NOAA Fisheries, SEFSC, Beaufort Lab and MRFSS database, NOAA Fisheries, NMFS, SERO.

Harvest distribution by mode of black sea bass and golden tilefish is provided in Table 3-20. Black sea bass harvests averaged approximately 780,000 lbs and golden tilefish harvests averaged approximately 57,000 lbs from 2003-2008. Charterboats dominated the harvest of golden tilefish. Headboats recorded no golden tilefish landings. Black sea bass were harvested by all modes, with the shore/private mode being the dominant sector, followed by headboats and charterboats.

Table 3-21 presents the geographic distribution of golden tilefish and black seas bass harvests for 2003-2008. Only two states, Florida and North Carolina, recorded harvests of golden tilefish, with North Carolina accounting for most of the harvests. All four states recorded harvests of black sea bass, with South Carolina recording the highest harvests, followed by Florida, North Carolina, and Georgia.

The seasonal distribution of golden tilefish and black sea bass harvests is presented in Table 3-22. The peak harvest period for golden tilefish was July-August and for black seas bass May-June. The slowest harvests occurred in January-February and November-December for

golden tilefish and January-February for black sea bass. Except for January-February and September-October, a substantive amount of black seas bass were harvested throughout the year.

Table 3-20. South Atlantic average harvest (lbs) of 2 key species in this amendment, by mode, 2003-2008.

Species	Charterboat	Headboat	Shore and Private/Rental Boat	Total
Golden Tilefish	46,202	0	10,819	57,021
Black Sea Bass	93,691	164,465	525,001	783,157

Source: The Headboat Survey, NOAA Fisheries, SEFSC, Beaufort Lab and MRFSS database, NOAA Fisheries, NMFS, SERO.

Table 3-21. South Atlantic average harvest (lbs) of 2 key species in this amendment, by state, 2003-2008.

Species	Florida	Georgia	South Carolina	North Carolina
Golden Tilefish	3,522	0	0	53,499
Black Sea Bass	244,222	87,574	245,727	205,635

Source: The Headboat Survey, NOAA Fisheries, SEFSC, Beaufort Lab and MRFSS database, NOAA Fisheries, NMFS, SERO.

Table 3-22. South Atlantic average harvest (lbs) of 2 key species in this amendment, by wave, 2003-2008.

Species	Jan-Feb	Mar-Apr	May-Jun	Jul-Aug	Sept-Oct	Nov-Dec
Golden Tilefish	0	843	19,878	31,938	4,362	0
Black Sea Bass	45,768	144,853	220,940	178,973	62,636	129,988

Source: The Headboat Survey, NOAA Fisheries, SEFSC, Beaufort Lab and MRFSS database, NOAA Fisheries, NMFS, SERO.

3.7.2.2 Effort

Recreational effort derived from the MRFSS can be characterized in terms of the number of trips as follows:

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

Estimates of recreational effort (catch and target trips) for the entire snapper grouper fishery in the South Atlantic are provided in Table 3-23 for trips by mode and Table 3-24 for trips by state. The total column refers to the total number of trips taken by anglers in the South Atlantic snapper grouper fishery and not to the sum of catch and target trips.

In the South Atlantic, total angler trips were highest for the private mode, followed by the shore mode, and then by the charter mode (Table 3-23). In addition, average catch trips were highest on those taken through the private mode and lowest on those through the charter mode. The same is true with target trips: they were highest for private mode and lowest for charter mode. For the charter mode, target trips rose steadily through the years while catch trips peaked in 2007. Shore mode catch trips dropped from 2003 to 2004 but steadily increased thereafter to a peak in 2007; shore mode target trips fell from 2003 to 2005 and increased thereafter to a peak in 2007. For the private mode, both catch and target trips fell in 2004 but increased thereafter, reaching a peak in 2007.

Florida registered the highest total angler trips, followed in order by North Carolina, South Carolina, and Georgia (Table 3-24). The same pattern holds for catch trips but not for target trips, with South Carolina registering slightly higher target trips than North Carolina. For Florida, both catch and target trips declined in 2004, rose in the following years, and peaked in 2007. Georgia catch trips fluctuated between 2003 and 2006 and remained at relatively high levels in 2007 and 2008; target trips declined substantially in 2004, remained low until 2007, and increased in 2008 to a level close to that in 2003. South Carolina catch trips fluctuated at relatively low levels between 2003 and 2005 but at higher levels in subsequent years; target trips fell in 2004 but subsequently rose to a peak in 2007. Catch trips in North Carolina steadily rose over the years and peaked in 2007; target trips, on the other hand, fluctuated throughout the period.

Table 3-23. Recreational effort (catch and target trips) for snapper grouper in the South Atlantic, in thousand trips, by mode, 2003-2008.

	Charter Mode Trips			Shore Mode Trips			Private Mode Trips		
	Catch	Target	Total	Catch	Target	Total	Catch	Target	Total
2003	117	24	412	982	247	6,493	2,026	687	9,963
2004	135	33	434	851	199	6,754	1,867	496	9,369
2005	127	32	508	924	192	7,009	2,055	517	10,073
2006	109	31	459	1,151	257	8,211	2,520	556	10,749
2007	136	47	501	1,308	297	7,983	3,163	783	13,137
2008	124	48	439	1,002	270	6,317	2,629	772	11,009
Avg.	125	36	459	1,036	244	7,128	2,377	635	10,717

Man-made and beach/bank trips are excluded.
Source: MRFSS database, NOAA Fisheries, NMFS, SERO.

Table 3-24. Recreational effort (catch and target trips) for snapper grouper in the South Atlantic, in thousand trips, by state, 2003-2008.

	Florida			Georgia			South Carolina			North Carolina		
	Catch	Target	Total	Catch	Target	Total	Catch	Target	Total	Catch	Target	Total
2003	2,716	761	11,444	92	46	971	141	95	2,098	175	56	2,354
2004	2,342	558	10,660	87	26	936	184	85	2,239	239	59	2,721
2005	2,595	607	12,049	96	26	851	143	58	2,083	272	48	2,607
2006	3,126	627	13,115	66	28	790	214	133	2,629	374	56	2,885
2007	3,780	876	15,169	117	26	926	295	140	2,529	416	86	2,996
2008	2,947	841	11,215	226	42	1,282	246	134	2,528	336	73	2,740
Avg.	2,918	712	12,275	114	32	959	204	108	2,351	302	63	2,717

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

Estimates of the average (2003-2008) recreational effort for golden tilefish and black sea bass are provided in Table 3-25 for trips by mode and Table 3-26 for trips by state. The total column refers to the total number of angler trips by mode or state and not to the sum of catch trips and target trips.

For golden tilefish, the charter mode recorded the highest number of catch trips while the private mode recorded the highest number of target trips (Table 3-25). No golden tilefish target of catch trips were recorded for the shore mode. For black sea bass, the private mode recorded the highest numbers of both catch and target trips.

Only Florida and North Carolina recorded catch and target trips for golden tilefish (Table 3-26). North Carolina recorded the most catch trips, but Florida recorded more target trips. All four states recorded catch and target trips for black sea bass. Florida recorded the highest number of catch trips, followed by North Carolina, South Carolina, and Georgia. South Carolina recorded the most black sea bass target trips, followed by Florida, North Carolina, and Georgia.

The seasonal distribution of recreational effort for golden tilefish and black sea bass is presented in Table 3-27 for catch trips and Table 3-28 for target trips. For golden tilefish, the peak period for catch trips was consistent with the period of peak harvests for golden tilefish (July-August). For black sea bass, however, peak harvest occurred in May-June, whereas the peak catch effort occurred in July-August, although catch effort in May-June were not far behind. Peak target effort for golden tilefish occurred in January-February, whereas peak harvests occurred in May-June. For black sea bass, peak target effort matched the period of peak harvests (May-June).

Table 3-25. South Atlantic average recreational effort (catch and target trips) for the 2 key species in this amendment, in thousand trips, by mode, 2003-2008.

	Charter Mode Trips			Shore Mode Trips			Private Mode Trips		
Species	**Catch**	**Target**	**Total**	**Catch**	**Target**	**Total**	**Catch**	**Target**	**Total**
Golden Tilefish	2.6	0.2	458.8	0.0	0.0	7,127.8	1.5	0.4	10,716.6
Black Sea Bass	35.0	3.7	458.8	40.6	0.9	7,127.8	490.8	45.7	10,716.6

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

Table 3-26. South Atlantic average recreational effort (catch and target trips) for the 2 key species in this amendment, in thousand trips, by state, 2003-2008.

	Florida			Georgia			South Carolina			North Carolina		
Species	**Catch**	**Target**	**Total**	**Catch**	**Target**	**Total**	**Catch**	**Target**	**Total**	**Catch**	**Target**	**Total**
Golden Tilefish	1.1	0.4	12,275.4	0.0	0.0	959.5	0.0	0.0	2,351.0	3.0	0.2	2,717.2
Black Sea Bass	197.7	12.0	12,275.4	43.4	5.7	959.5	143.9	23.1	2,351.0	181.4	9.6	2,717.2

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

Table 3-27. South Atlantic average catch trips (all modes) for the 2 key species in this amendment, by two-month wave, 2003-2008.

Species	Jan-Feb	Mar-Apr	May-Jun	Jul-Aug	Sept-Oct	Nov-Dec
Golden Tilefish	0.4	0.0	1.0	2.1	0.6	0.0
Black Sea Bass	27.2	70.4	138.1	148.1	103.0	79.7

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

Table 3-28. South Atlantic average target trips (all modes) for the 2 key species in this amendment, by two-month wave, 2003-2008.

Species	Jan-Feb	Mar-Apr	May-Jun	Jul-Aug	Sept-Oct	Nov-Dec
Golden Tilefish	0.3	0.0	0.1	0.1	0.2	0.0
Black Sea Bass	3.0	11.8	12.5	8.6	6.0	8.3

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

Similar analysis of headboat effort is not possible because headboat data are not collected at the angler level. Estimates of effort in the headboat sector are provided in terms of angler days, or the number of standardized 12-hour fishing days that account for the different half-, three-quarter-, and full-day fishing trips by headboats. Despite the inability to associate headboat effort with specific species, the stationary bottom nature of headboat fishing, as opposed to trolling, suggests that most headboat trips and, hence, angler days, are snapper grouper trips by intent.

The state-by-state distribution of headboat angler days is presented in Table 3-29. Due to confidentiality considerations, Georgia estimates of headboat angler days are combined with those of Florida. For the period 2003-2008, the total number of headboat angler days

fluctuated around the mean of 230,878 days. On average, Florida accounted for the largest number of angler days (157,764), or about 68 percent of all headboat angler days. Nevertheless, the numbers of headboat angler days for South Carolina (47,524 days) and North Carolina (25,591 days) are far from being negligible.

The seasonal distribution of headboat angler days is presented in Table 3-30. The peak for angler days consistently occurred in July-August each year. The lowest amount of angler days occurred in the last two months of the year, except for 2004 and 2008 when the lowest effort occurred in September-October.

Table 3-29. South Atlantic headboat angler days, 2003-2008.

	Florida	South Carolina	North Carolina	Total
2003	145,011	36,556	22,998	204,565
2004	173,701	50,461	27,255	251,417
2005	171,078	34,036	31,573	236,687
2006	175,522	56,074	25,736	257,332
2007	157,150	60,729	29,002	246,881
2008	124,119	47,287	16,982	188,388
Average	157,764	47,524	25,591	230,878

Source: The Headboat Survey, NOAA Fisheries, SEFSC, Beaufort Lab.

Table 3-30. South Atlantic headboat angler days, by two-month wave, 2003-2008.

	Jan-Feb	Mar-Apr	May-Jun	Jul-Aug	Sept-Oct	Nov-Dec
2003	21,805	36,363	48,210	59,982	22,431	15,774
2004	27,593	45,468	59,144	70,141	22,811	26,260
2005	27,672	41,799	54,892	70,369	21,390	20,565
2006	27,432	48,572	60,525	73,413	29,344	18,046
2007	24,285	41,464	57,268	75,900	27,029	20,935
2008	21,587	36,634	49,223	51,635	13,768	15,541
Average	25,062	41,717	54,877	66,907	22,796	19,520

Source: The Headboat Survey, NOAA Fisheries, SEFSC, Beaufort Lab.

3.7.2.3 Permits

For-hire vessels in the South Atlantic are required to have a snapper grouper for-hire permit to fish for or possess snapper grouper species in the EEZ. The number of permitted vessels for the period 2003-2008 is provided in Table 3-31. The for-hire sector operates as an open access fishery and not all permitted vessels necessarily target or harvest snapper grouper species. Some vessel owners have been known to purchase open access permits as insurance for uncertainties in the fisheries in which they routinely operate.

The number of for-hire permits issued in the South Atlantic snapper grouper fishery steadily increased over 2003 through 2008, from 1,477 permits in 2003 to 1,811 permits in 2008. Most of the increases would be expected to be for strictly for-hire business operation because permits issued to vessels operating as both for-hire and commercial entities remained about

flat from 2005 to 2006, declined in 2007, and increased in 2008. The majority of snapper grouper for-hire permitted vessels were home-ported in Florida, followed by North Carolina and South Carolina. Interestingly, several vessels with homeports in states outside the South Atlantic Council's area of jurisdiction had for-hire permits. Most of the vessels with both for-hire and commercial permits were home-ported in the South Atlantic Council's area of jurisdiction.

The for-hire permit does not distinguish between whether the vessel operates as a charterboat or headboat. Based on a 1997 survey, Holland *et al.* (1999) estimated that a total of 1,080 charter vessels and 96 headboats supplied for-hire services in all South Atlantic fisheries during 1997.

Table 3-31. South Atlantic snapper grouper for-hire permit holders by home port state, 2003-2008.

	Number of vessels issued for-hire vessel permits							**Number of vessels with both a for-hire permit and a commercial snapper grouper permit**						
Home Port State	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**Avg.**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**Avg.**
Florida	957	1,084	1,119	1,108	1,140	1,125	**1,115**	148	151	148	151	122	128	**141**
North Carolina	206	232	254	284	315	342	**272**	45	42	43	46	40	43	**43**
South Carolina	122	108	121	119	129	140	**123**	34	33	33	34	24	25	**31**
Georgia	36	27	33	33	30	27	**31**	4	2	2	2	3	4	**3**
Virginia	5	13	10	10	8	18	**11**		4	3	2		0	**2**
Other States	69	48	51	62	69	85	**64**	8	3	5	3	2	3	**4**
Gulf States	82	82	79	65	63	74	**74**							
Total	**1,477**	**1,594**	**1,667**	**1,681**	**1,754**	**1,811**	**1,690**	**239**	**235**	**234**	**238**	**191**	**203**	**224**

Source: Southeast Permits Database, NOAA Fisheries, SERO.

3.7.2.4 Economic Value and Expenditures

Participation, effort, and harvest are indicators of the value of saltwater recreational fishing. However, a more specific indicator of value is the satisfaction that anglers experience over and above their cost of fishing. The monetary value of this satisfaction is referred to as consumer surplus. The value or benefit derived from the recreational experience is dependent on several quality determinants, which include fish size, catch success rate, and the number of fish kept. These variables help determine the value of a fishing trip and influence total demand for recreational fishing trips.

Estimates of the economic value of a day of saltwater recreational fishing in the South Atlantic indicate that the mean value of access per marine recreational fishing trip is $109.31

for the South Atlantic (Haab *et al.* 2001). While this estimate is not specific to snapper grouper fishing trips, it may shed light on the magnitude of an angler's willingness to pay for this type of recreational experience.

Willingness to pay for an incremental increase in catch and keep rates per trip was also estimated to be $3.01 for bottom fish species by Haab *et al.* (2001). Whitehead *et al.* (2001) estimated the marginal willingness to pay to avoid a one fish red snapper bag limit decrease to be $1.06 to $2.20. Finally, Haab *et al.* (2001) provided a compensating variation (the amount of money a person would have to receive to be no worse off after a reduction of the bag limit) estimate of $2.49 per fish when calculated across all private boat anglers that targeted snapper grouper species in the South Atlantic.

In their study of the North Carolina for-hire fishery, Dumas *et al.* (2009) estimated several measures of consumer surplus for anglers fishing through the for-hire mode. Anglers were distinguished as to whether fishing was their primary or secondary purpose for taking the trip to the coasts. An additional snapper grouper caught and kept would generate consumer surplus of $93.51 per trip for primary purpose anglers and $60.79 per trip for secondary purpose anglers. Consumer surplus per site per trip for primary purpose anglers ranged from $4.88 to $27.03 in charter trips taken in Federal waters, or from $0.35 to $9.55 in charter trips taken in state waters. The corresponding range of values for secondary purpose anglers were $0.24 to $16.62 for charter trips in Federal waters, or $0.12 to $16.54 for charter trips in state waters. On headboat trips in both state and Federal waters, consumer surplus per site per trip ranged from $0.59 to $4.12 for primary purpose anglers and from $0.48 to $4.76 for secondary purpose anglers. Consumer surplus trip for the opportunity to take a for-hire fishing trip was estimated at $624.02 per angler per trip on charterboats and $101.64 per anger per trip on headboats.

In addition to the above economic values, there are estimates of the economic value of a red snapper and a red snapper trip provided in (NOAA 2008). Although these values are derived for the Gulf of Mexico recreational fishery, they can be used as proxy values for the South Atlantic fishery. It is noted, however, that red snapper is a significantly more important recreational target fishery in the Gulf of Mexico than in the South Atlantic. As a result, the estimates of economic value may overstate the true values for the South Atlantic. The estimated CS to a recreational angler of one red snapper is $6.04, while the estimated CS of a red snapper fishing trip is $53.53. These values were used to estimate the impacts of the red snapper interim rule in the South Atlantic.

Most recently, NOAA Fisheries (NMFS 2009) developed estimates of consumer surplus per angler trip based on various studies and data in the last ten years. These estimates were culled from various studies – Haab *et al.* (2009), Dumas *et al.* (2009), and NOAA SEFSC SSRG (2009). The values/ranges of consumer surplus estimates are (in 2009 dollars) $112 to $128 for red snapper, $123 to $128 for grouper, $11 for other snappers, and $80 for snapper grouper. These values are deemed directly applicable in assessing the changes in consumer surplus due to management measures in Amendment 18.

While anglers receive economic value as measured by the consumer surplus associated with fishing, for-hire businesses receive value from the services they provide. Producer surplus (PS) is the measure of the economic value these operations receive. PS is the difference between the revenue a business receives for a good or service, such as a charter or headboat trip, and the cost the business incurs to provide that good or service. Estimates of the PS associated with for-hire trips are not available. However, proxy values in the form of net operating revenues are also provided in NMFS (2008). These values are not PS estimates because they are not net of crew costs and returns to the owner. The estimated net operating revenues per angler trip for the for-hire sector are $162 for a charterboat trip and $78 for a headboat trip.

NOAA Fisheries recently provided estimates of charterboat and headboat net operating revenues for various areas in the Southeast (NMFS 2009). These estimates were culled from several studies – Liese *et al.* (2009), Dumas et al. (2009), Holland *et al.* (1999), and Sutton *et al.* (1999). Estimates of net operating revenue per angler trip (2009 dollars) on representative charter trips are $135 for east Florida, $146 for Louisiana through east Florida, $156 for northeast Florida, and $128 for North Carolina. For charter trips into the EEZ only, net operating revenues are $141 in east Florida and $148 in northeast Florida. For full day and overnight trips only, net operating revenues are $160 in North Carolina and $155 in central and south North Carolina. Net operating revenues per angler trip are lower for headboats than for charterboats. Net operating revenue estimates for a representative headboat trip are $48 in the Gulf of Mexico, $63 in North Carolina, and $68 in central and south North Carolina. For full day and overnight headboat trips, net operating revenues are $74 in North Carolina and $77 in central and south North Carolina.

These valuation estimates should not be confused with angler expenditures or economic activity (impacts) associated with these expenditures. While expenditures for a specific good or service may represent a proxy or lower bound of value (a person would not logically pay more for something than it was worth to them), they do not represent the net value (benefits minus cost), nor the change in value associated with a change in the fishing experience.

Estimates of the economic impacts of the recreational snapper grouper fishery were derived using average output (sales) and job (FTE) impact coefficients for recreational angling across all fisheries (species), as derived by an economic add-on to the MRFSS, and described and utilized in USDOC (2009). Estimates of the average expenditures by recreational anglers are provided in USDOC (2009) and are incorporated herein by reference. Estimates of the average snapper grouper effort (2003-2007) and associated economic impacts (2007 dollars) are provided in Table 3-32. Snapper grouper target trips were selected as the measure of snapper grouper effort. More trips catch snapper grouper than target snapper grouper, however, as described in Tables 3-23 and 3-24. Estimates of the economic impacts associated with snapper grouper catch trips can be calculated based on the ratio of catch trips to target trips because the average output impact and jobs per trip cannot be differentiated by trip intent. For example, if the number of catch trips were three times the number of target trips for a particular state and mode, the estimate of the associated output or jobs impacts would equal three times the estimate associated with target trips. The total 2007 output (sales) impacts across all modes and states for trips which targeted snapper grouper was

approximately $43.3 million, the value added impact was approximately $25.3 million, and the economic activity associated with these trips supported an estimated 467 FTE jobs. The contributions by private/rental mode anglers were the greatest, accounting for approximately half of the total impacts. It should be noted that output impacts and value added impacts are not additive.

Table 3-32. Summary of snapper grouper target trips (2003-2007 average) and associated economic impacts (2007 dollars). Output and value added impacts are not additive.

	North Carolina	South Carolina	Georgia	East Florida	Total
	Shore Mode				
Target Trips	22,713	12,046	6,650	210,735	252,144
Output Impact	$3,620,977	$1,093,668	$100,261	$5,810,261	$10,625,167
Value Added Impact	$2,016,356	$608,981	$60,119	$3,373,175	$6,058,631
Jobs	44	13	1	62	120
	Private/Rental Mode				
Target Trips	58,883	85,387	22,275	402,804	569,349
Output Impact	$3,209,442	$3,726,440	$337,692	$14,698,955	$21,972,529
Value Added Impact	$1,809,705	$2,174,328	$204,838	$8,783,407	$12,972,278
Jobs	35	42	3	155	234
	Charter Mode				
Target Trips	1,493	3,068	1,543	24,665	30,769
Output Impact	$556,467	$966,706	$91,719	$9,041,651	$10,656,542
Value Added Impact	$312,290	$546,149	$53,530	$5,323,074	$6,235,044
Jobs	7	12	1	93	113
	All Modes				
Target Trips	83,089	100,501	30,468	638,204	852,262
Output Impact	$7,386,885	$5,786,815	$529,671	$29,550,867	$43,254,238
Value Added Impact	$4,138,351	$3,329,458	$318,488	$17,479,656	$25,265,953
Jobs	85	68	5	309	467

Source: effort data from the MRFSS, economic impact results calculated by NMFS SERO using the model developed for USDOC (2009).

As noted in the previous paragraph, the values provided in Table 3-32 reflect only effort derived from the MRFSS. Because the headboat sector in the Southeast is not covered in the MRFSS, the results in Table 3-32 do not include estimates of the economic impacts by headboat anglers. Estimates of headboat effort are available, however, from the NMFS Headboat Survey and are provided in Tables 3-29 and 3-30. Species target information, however, is not collected in the Headboat Survey, which prevents the generation of estimates of the number of headboat target trips for individual species. It is assumed for the purpose of this assessment, though, that while some headboat anglers may not care what species they catch, all headboat anglers expect to catch snapper grouper due to the bottom fishing-nature of headboat angling. As a result, using total headboat effort as a proxy for snapper grouper target effort is not expected to be a significant issue for estimating the economic impacts associated with snapper grouper trips in the headboat sector.

Estimates of the economic impacts associated with headboat snapper grouper effort are provided in Table 3-33. Aside from the issue of possibly using too high a measure of target

effort, it should be noted that the estimates of economic impacts are expected to be substantially higher than actual impacts because they were generated using the average impact values associated with charter trips. Because the headboat sector is not included in the MRFSS in the South Atlantic, appropriate estimates of the economic impacts per headboat trip in South Atlantic states were not generated in the development of USDOC (2009) and are not available. Estimates of the impacts of charter trips are expected to be substantially greater than those of headboat trips. The difference in fee scale for charter trips compared to headboat trips, where charter trip is rented on a boat basis whereas anglers pay per person for headboat trips, may be the primary determinant in the difference, but other factors, such as different rates of tourist versus local clientele, may also contribute. The headboat (party boat) sector is included in the MRFSS in the mid-Atlantic (and New England) states and the estimated output (sales) impact per trip for charter and party boats combined in the mid-Atlantic states ranges from approximately $140 to $180 (2007 dollars), whereas the output (sales) impact per charter trip across all South Atlantic states is estimated to exceed $300. Further, the mid-Atlantic values may exceed actual values for just headboat (partyboat) trips because they incorporate charter trips as well in their total. Rather than use an alternative value from outside the region, this analysis simply uses the higher South Atlantic charter value and notes that actual impacts could be substantially less than the estimated value.

Table 3-33. Summary of snapper grouper headboat trips (2003-2007 average) and associated economic impacts (2007 dollars).
Note: these estimated economic impact values may substantially exceed actual values because they are based on average trip values from charter trips. Output and value added impacts are not additive.

	North Carolina	South Carolina	Georgia+Florida	Total
Trips	27,312	47,571	164,492	239,375
Output Impact	$10,179,650	$14,989,306	$60,299,176	$85,468,133
Value Added Impact	$5,712,840	$8,468,342	$35,499,819	$49,681,001
Jobs	130	191	620	941

Source: effort data from the NMFS Headboat Survey, economic impact results calculated by NMFS SERO using the model developed for USDOC (2009).

Golden tilefish and black sea bass are the two key species in this amendment. The economic impact contributions of these species are included in the information in Tables 3-32 and 3-33. It may be noted, though, that there are no target trips for golden tilefish in headboat and shore modes or in Georgia and South Carolina (all modes). Moreover, target trips for golden tilefish in Florida are taken only by the private mode. All in all, target trips for golden tilefish in the South Atlantic are very low.

Individually, the economic impacts associated with target trips for black sea bass are estimated to be approximately $3 million (2007 dollars) in output (sales) impacts, approximately $1.7 million in value added impacts, and the economic activity associated with trips for these species is estimated to support 35 FTE jobs (based on the average annual number of black sea bass target trips; tabular results not shown). Across all states, private/rental mode target trips for black sea bass accounted for the largest portion of these

impacts, approximately $1.9 million in output (sales) impacts, approximately $1.1 million in value added impacts, and 21 FTE jobs, and across all modes South Carolina led with approximately $1.8 million in output (sales) impacts, approximately $1.0 million in valued added impacts, and 22 FTE jobs. The comparable values for golden tilefish target trips are approximately $96,000 (output/sales impacts), $54,000 (value added), and 1 FTE job total, led by the charter mode sector contributing approximately $79,000 and $45,000 in output (sales) and value added impacts, respectively, and 1 FTE job; and North Carolina, accounting for approximately $82,000 and $46,000 in output (sales) and value added impacts, respectively, and 1 FTE job. It should be noted that because these results are embedded in the results for the entire snapper grouper fishery, they are not additive to the totals in Table 3-32.

For the reasons discussed above on the economic impacts of snapper grouper trips, estimates of the economic impacts of headboat target trips for black sea bass cannot be produced with available data. In the absence of any target trips for golden tilefish in headboats, there are no economic impacts associated with headboat target trips.

3.7.2.5 Financial Operations of the Charter and Headboat Sectors

Holland *et al.* (1999) estimated that the charterboat fee in the South Atlantic ranged from $292 to $2,000. The actual cost depended on state, trip length, and the variety of services offered by the charter operation. Depending on the state, the average fee for a half-day trip ranged from $296 to $360, for a full day trip the range was $575 to $710, and for an overnight trip the range was $1,000 to $2,000. Most (>90 percent) Florida charter operators offered half-day and full-day trips and about 15 percent of the fleet offered overnight trips. In comparison, only about 3 percent of operations in the other South Atlantic states offered overnight trips.

For headboats, the average fee in Florida was $29 for a half-day trip and $45 for a full day trip. For North and South Carolina, the average base fee was $34 per person for a half-day trip and $61 per person for a full day trip. Most of these headboat trips operated in Federal waters in the South Atlantic (Holland *et al.* 1999).

Capital investment in charter vessels averaged $109,301 in Florida, $79,868 for North Carolina, $38,150 for South Carolina and $51,554 for Georgia (Holland *et al.* 1999). Charterboat owners incur expenses for inputs such as fuel, ice, and tackle in order to offer the services required by their passengers. Most expenses incurred in 1997 by charter vessel owners were on crew wages and salaries and fuel. The average annual charterboat business expenditures incurred was $68,816 for Florida vessels, $46,888 for North Carolina vessels, $23,235 for South Carolina vessels, and $41,688 for vessels in Georgia in 1997. The average capital investment for headboats in the South Atlantic was approximately $220,000 in 1997. Total annual business expenditures averaged $135,737 for headboats in Florida and $105,045 for headboats in other states in the South Atlantic.

The 1999 study on the for-hire sector in the Southeastern U.S. presented two sets of average gross revenue estimates for the charter and headboat sectors in the South Atlantic (Holland *et al.*, 1999). The first set of estimates were those reported by survey respondents and were as follows: $51,000 for charterboats on the Atlantic coast of Florida; $60,135 for charterboats in

North Carolina; $26,304 for charterboats in South Carolina; $56,551 for charterboats in Georgia; $140,714 for headboats in Florida; and $123,000 for headboats in the other South Atlantic states (Holland *et al*., 1999). The authors generated a second set of estimates using the reported average trip fee, average number of trips per year, and average number of passengers per trip (for the headboat sector) for each vessel category for Florida vessels. Using this method, the resultant average gross revenue figures were $69,268 for charterboats and $299,551 for headboats. Since the calculated estimates were considerably higher than the reported estimates (22 percent higher for charterboats and 113 percent higher for headboats), the authors surmised that this was due to sensitivity associated with reporting gross receipts, and subsequent under reporting. Alternatively, the respondents could have overestimated individual components of the calculated estimates. Although the authors only applied this methodology to Florida vessels, assuming the same degree of under reporting in the other states results in the following estimates in average gross revenues: $73,365 for charterboats in North Carolina, $32,091 for charterboats in South Carolina; $68,992 for charterboats in Georgia; and $261,990 for headboats in the other South Atlantic states.

It should be noted that the study's authors were concerned that while the reported gross revenue figures may be underestimates of true vessel income, the calculated values could overestimate gross income per vessel from for-hire activity (Holland *et al.*, 1999). Some of these vessels are also used in commercial fishing activities and that income is not reflected in these estimates.

A more recent study of the North Carolina for-hire fishery provides some updated information on the financial status of the for-hire fishery in the state (Dumas et al., 2009). Depending on vessel length, regional location, and season, charter fees per passenger per trip ranged from $168.14 to $251.59 for a full-day trip and from $93.63 to $123.95 for a half-day trip; headboat fees ranged from $72.50 to $81.78 for a full-day trip and from $38.08 to $45 for a half-day trip. Charterboats generated a total of $55.7 million in passenger fees, $3.2 million in other vessel income (e.g., food and beverages), and $4.8 million in tips. The corresponding figures for headboats were $9.8 million in passenger fees, $0.2 million in other vessel income, and $0.9 million in tips. Non-labor expenditures (e.g., boat insurance, dockage fees, bait, ice, fuel) amounted to $43.6 million for charterboats and $5.3 million for headboats. Summing across vessel lengths and regions, charter vessels had an aggregate value (depreciated) of $120.4 million and headboats had an aggregate value (depreciated) of $10.2 million.

3.7.3 Social and Cultural Environment

Additional information on the social and cultural environment of the snapper-grouper fishery is contained in Amendment 13C (SAFMC 2006) and is incorporated herein by reference. Because so many communities in the South Atlantic benefit from snapper-grouper fishing, discussion of affected communities focuses on "indicator communities," defined as communities thought to be most heavily impacted by snapper-grouper regulations.

Indicator communities were identified primarily based on permit and employment activity using data obtained from the U.S. Bureau of the Census (Census) and from state and federal permitting agencies. Census data must be used with caution because it is collected every ten

years and may not reflect shifting community demographics or key changes in business activity. Further, census estimates do not include seasonal visitors and tourists, those that live less than half the year in the surveyed area, and some types of labor, such as day laborers, undocumented crew members, or family members that help with bookkeeping responsibilities.

To help fill information gaps, members of the South Atlantic Council's Snapper-grouper Advisory Panel, Council members, and representatives from the angling public identified communities they believed would be most impacted by the management measures proposed in Amendment 13C on the species addressed by this amendment. Details of their designation of particular communities, and the factors considered in this designation, can be found in Amendment 13C (SAFMC 2006).

Descriptions of the indicator communities in the South Atlantic expected to be potentially affected by the actions in this amendment are included in Amendment 17B (SAFMC 2010) and are incorporated herein by reference.

3.7.3.1 Communities in the South Atlantic

3.7.3.1.1 *North Carolina*

Figure 3-2. North Carolina communities with substantial fishing activity, as identified by South Atlantic Advisory Panels.

Statewide

Overview

Of the four states in the South Atlantic region, North Carolina (Figure 3-2) is often recognized as possessing the most "intact" commercial fishing industry; that is, it is more robust in terms of viable fishing communities and fishing industry activity than the other three states. The state offers a wide variety of fishing opportunities, including sound fishing, trolling for tuna, bottom fishing, and shrimping. Perhaps because of the wide variety of fishing opportunities, fishermen have been better able to weather regulations and coastal development pressures, adjusting their annual fishing patterns as times have changed.

Commercial Fishing

There has been a steady decline in the number of federal commercial snapper grouper permits North Carolina since 1999, with 194 unlimited commercial permits in 1999, but only 139 in 2004. Limited permits similarly declined from 36 to16.

State license sale and use statistics for all types of licenses also indicate an overall decrease since 1994. While the overall number of state licenses to sell any species of fish or shellfish increased from 6,781 in 1994 to 9,712 in 2001/2002, the number of license holders actually reporting sales decreased from 6,710 in 1994/1995 to 5,509 in 2001/2002 (SAFMC 2006).

North Carolina fishermen demographics are detailed in Cheuvront and Neal (2004). Ninety eight percent of surveyed fishermen were white and 58% had completed some college or had graduated from college. Of those who chose to answer the question, 27% of respondents reported a household income of less than $30,000 per year, and 21% made at least $75,000 per year. On average, respondents had been fishing for 18 years, and had lived in their communities for 27 years.

Cheuvront and Neal (2004) also provided an overview of how North Carolina commercial snapper grouper fishermen carry out their fishery. Approximately 65% of surveyed fishermen indicated year-round fishing. Gag is the fish most frequently targeted by these fishermen, with 61% of fishermen targeting gag at some point in the year, despite the prohibition of commercial sales and limit to the recreational bag limit in March and April. Vermilion snapper (36.3%) and black sea bass (46%) are the next most frequently targeted species. A significant number of fishermen land king mackerel during each month, with over 20% of fishermen targeting king mackerel between October and May. During the gag closed season, king mackerel are targeted by about 35% of the fishermen. Other snapper/grouper complex species landed by at least 5% of the fishermen in any given month were red grouper (39.5%), scamp (27.4%), snowy grouper (9.7%), grunts (14.5%), triggerfish (13.7%), and golden tilefish (5.6%). Non-snapper/grouper complex species landed by at least 5% of the fishermen in any given month included Atlantic croaker, yellowfin tuna, bluefin tuna, dolphin, and shrimp.

By looking at the commercial landings data on the snapper grouper complex it is possible to see which communities are involved with the commercial fisheries for these species (Table 3-34). Although rankings can fluctuate from year to year, this can give us a starting point for

understanding some of the communities that would be impacted by more restrictive regulations.

Table 3-34. Top three communities in North Carolina, listed by species, for commercial cumulative landings for 2005-2007.

	Location	Pounds	Location	Pounds	Location	Pounds
Gag	New Hanover County	675,714	Carteret County	640,750	Brunswick County	390,242
Vermillion Snapper	Brunswick County	2,317,534	Carteret County	1,483,802		
Black Sea Bass	Onslow County	2,100,034	Dare County	1,552,624	New Hanover County	1,165,877
Snowy Grouper	Dare County	439,301	Carteret County	387,333	New Hanover County	211,988
Golden tilefish	Brunswick County	117,658	Dare County	13,526		
Red snapper	Carteret County	60,491	Brunswick County	31,007		
Black grouper	Brunswick County	518	Hyde County	406		
Red grouper	Brunswick County	636,262	New Hanover County	602,521	Carteret County	589,856
Warsaw grouper	Onslow County	15				
Speckled hind	Dare County	428	Hyde County	174		

Source: Logbook data, SEFSC 2009.

Recreational Fishing

Recreational fishing is well developed in North Carolina and, due to natural geography, is not limited to areas along the coast. Data show that North Carolina is almost on par with east Florida for total recreational fishing participation effort (data not shown; see SAFMC (2006)). A brief discussion of public boat ramps and local recreational fishing clubs, as well as sources of information used by these anglers, can be found in SAFMC (2006).

The North Carolina state legislature approved the creation of a state recreational saltwater fishing license in 2004. The license created controversy for both the recreational and commercial sectors, each believing that it will hurt or help their access to marine resources. Possession of the license, subject to exemptions, has been required as of January 1, 2007 (http://www.ncdmf.net/recreational/NCCRFLfaq.htm).

Hatteras Village, Dare County

A detailed history of this community, from its discovery by Italian explorers in the 16th century to establishment of a National Seashore in 1953, can be found in SAFMC (2006).

Overview

Census data indicate there was not a significant increase in population size in Hatteras Village from 1990 to 2000 (SAFMC 2006). The demographics of the island have shifted, as is evidenced in the decreasing percentage of the population that is actively in the workforce, perhaps reflecting a larger number of retirees in the community, and the increasing proportion of residents with higher education, also reflecting a retired, professional segment of the population. Hatteras Village has also experienced a significant increase in the percent of the population in the farming, fishing, and forestry occupations, from 5.6% to 10.8%. This may be reflective of the increasing number of persons employed in businesses related to recreational fishing, such as charter boat captains and crew, boat repair and sales, marinas, etc. See SAFMC (2006) for the raw data describing community demographics. Figure 3-3 includes two maps detailing the area.

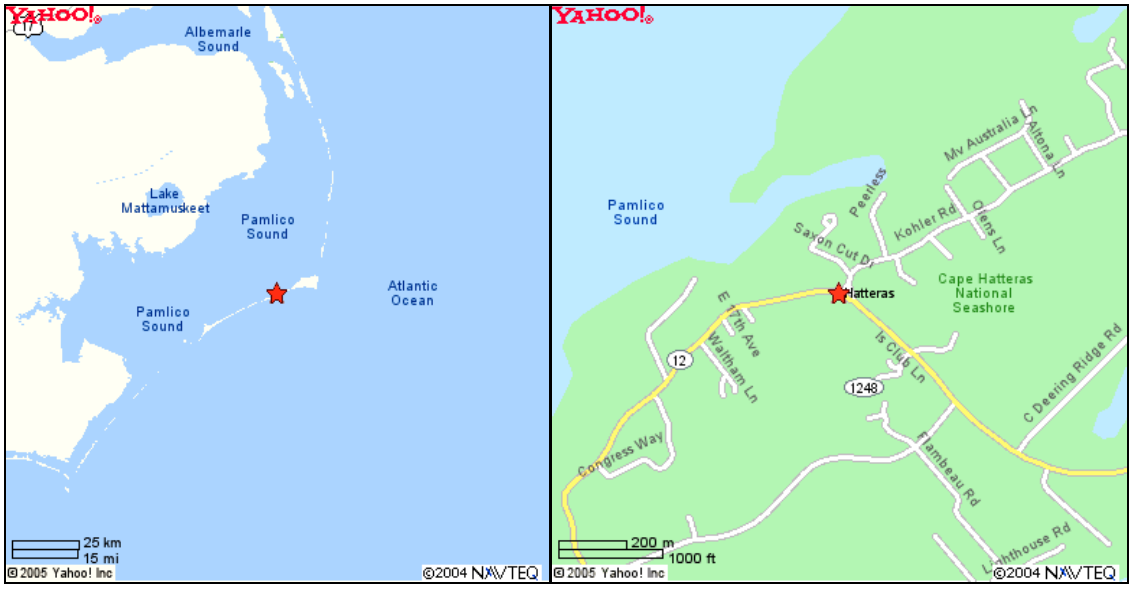

Figure 3-3. Hatteras Island and Village, Outer Banks, North Carolina.
Source: Yahoo Maps, http://www.yahoo.com.

Commercial Fishing

Anecdotal information from Hatteras residents indicates the number of fish houses has decreased as tourism has increased (SAFMC 2006). Residents, however, still promote the fisherman's way of life through festivals and special community designations (SAFMC 2006).

Mirroring the statewide trend, the number of unlimited commercial permits held by residents of Hatteras decreased from 1999 (9 permits) to 2004 (5 permits). The number of limited commercial permits has remained at 3 (SAFMC 2006). Twenty people stated they were employed in fishing related industry in the 1998 census, with 18 of these employed by marinas. A listing of the six marinas and eight bait and tackle stores in Hatteras Village can be found in SAFMC (2006).

Recreational Fishing
Hatteras is host to several prestigious fishing tournaments and is homeport for the island's famous charter fishing fleet. The number of charter/headboat permits held by Hatteras residents has dramatically increased, from one permit in 1999 to 28 in 2004.

Wanchese, Dare County

A history of this community, and neighboring Manteo, describing its persistence as a small, close-knit community focused on making its living from the sea, can be found in SAFMC (2006).

Figure 3-4. Map of Roanoke Island, North Carolina, showing Wanchese and Manteo. Source: Kitner 2005.

Overview
A map of Roanoke Island, including Wanchese and Manteo is provided in Figure 3-4. While Wanchese has maintained its identity as a commercial fishing community, it faces continuing pressure from developers in nearby Manteo and other Outer Banks communities. However, the town has recently approved a zoning document that would prevent unplanned growth and would help preserve working waterfronts and residential areas (Kozak 2005). A partial community profile detailing local traffic patterns, businesses, and prominent families can be found in SAFMC (2006).

The largest industrial area in Wanchese is centered on the Wanchese Seafood Industrial Park, built to enhance business opportunities in the seafood and marine trades. Tenants of the park

are able to ship products overnight to major domestic and international markets through the airport in Norfolk, Virginia. The park is utilized by fishermen and seafood dealers, as well as boatbuilding and boat maintenance businesses. The park is full of activity and it is common to find large numbers of people, especially Hispanics, working in the marine trade industries.

Census statistics from 2000 show the population of Wanchese is aging and very homogenous, with little ethnic diversity. There has been a slight increase in the Hispanic population since 1990, mirroring most other communities in North Carolina. Education levels have also increased, and the poverty rate has decreased. A higher percentage of people are employed in fishing-related professions in Wanchese than in almost any other community – 10% – although even that number has decreased nearly 50% since 1990.

Commercial Fishing

Commercial landings and value for Wanchese/Stumpy Point declined from 31.9 million pounds valued at $26.1 million in 2001 to 28.7 million pounds valued at $23.2 million in 2002. In 2001, Wanchese/Stumpy Point was listed as the 28th most prominent United States port based on the value of the product landed, declining to 30th in 2002. While landings increased in 2003, to 33 million pounds, value further declined to $21 million (31st place), with further declines in both poundage (31 million pounds) and value ($20.5 million) in 2004.

Amendment 8, which limited entry into the commercial snapper grouper fishery, does not appear to have caused a decrease in the number of commercial permits held by residents of Wanchese (SAFMC 2006). In 1999, seven unlimited commercial permits were held, with eight in 2004. Three limited commercial licenses were held in both 1999 and in 2004.

One hundred twenty residents of Wanchese stated they were employed in fishing related industries in the 1998 census (SAFMC 2006). Sixteen of these were listed as employed in fishing, 56 in fish and seafood, and 40 in boatbuilding.

There were 228 commercial vessels registered and 201 state standard commercial fishing licenses issued in the community in 2002 (SAFMC 2006). Wanchese residents also held 12 dealer licenses. The town is an important unloading port for many vessels transiting to and from the Mid-Atlantic and South Atlantic.

Recreational Fishing

As of 2005, nine boatbuilding businesses were located in Wanchese, building either pleasure yachts, recreational fishing vessels or, less often, commercial fishing vessels. There were two bait and tackle businesses and two marinas in town. All these businesses rely on the fishing industry. Manteo also maintains an active private and for-hire recreational fishing community. From 1999 to 2004, there was an increase in the number of charter/headboat licenses held, from two permits to nine permits. As most of the recreational sector for the region operates out of Manteo and Nags Head, these communities would be more affected by recreational fishing restrictions than would Wanchese.

Figure 3-5. Area of Carteret County, North Carolina, showing Morehead City, Atlantic Beach (at the red star), and Beaufort.
Source: Yahoo Maps, http://www.yahoo.com.

Morehead City, Carteret County

In Carteret County, Morehead City, Beaufort, and Atlantic Beach form a triad of different but complementary communities in close geographic proximity (Figure 3-5). A detailed history of Morehead City, from its founding in the 1840s-1850s to its development as a center for sport and tournament fishing in recent years, can be found in SAFMC (2006).

Overview

Morehead City's economy is currently based on tourism, fishing (commercial and recreational), light industry, government, and other service and professional industries. The town has regained its commercial viability as a modern port terminal, and benefits from its location on the "sound-side" of the Atlantic Beach resort trade. Diving has become an important tourist activity; Rodale's Scuba Diving magazine recently named North Carolina as the best wreck diving destination in North America, and Morehead City as the best overall dive destination. Recreational fishing effort is growing quickly, as new marinas, boat storage areas, boat builders, and marine supply stores open in the city.

Detailed statistics detailing community demographics of Morehead City in 1990 and 2000 can be found in SAFMC (2006). The population of Morehead City increased from 1990 to 2000, with sizable increases in the number of people declaring non-white ethnicities. Median income increased from approximately $20,000 to nearly $29,000 from 1990 to 2000. Median

home value nearly doubled, and median rent increased 35%. The percentage of those completing high school increased by 10%, and there was a 7% increase in those receiving a bachelor's degree or higher. The poverty level decreased. However, the unemployment rate increased. The occupations of farming, fishing, and forestry employ more than 1% of the population of Morehead City.

Commercial Fishing
In 1998, 100 people were employed in fishing related businesses according to census figures, with 40 employed in marinas and 36 employed in fish and seafood businesses (SAFMC 2006). Over 200 state commercial vessel licenses, 150 state standard commercial fishing licenses, and 14 dealer licenses were issued by the state to residents of Morehead City in 2002. The number of unlimited commercial permits held by Morehead City residents was 15 in 1999 and 14 in 2004, while the three limited commercial permits held in 1999 were no longer held by 2004 (SAFMC 2006). As of 2002, the state had issued 211 commercial vessel registrations, 150 standard commercial licenses, and 14 dealer licenses to Morehead City residents. Residents of Morehead City were primarily employed by marinas (40%) and fish and seafood (36%), with 16% employed in boatbuilding businesses.

A narrative detailing the fishing methods, habits, and observations of a bandit-rig fisherman in Morehead City can be found in SAFMC (2006).

Recreational Fishing
The number of charter/headboat permits held by Morehead City residents nearly doubled, from seven in 1999 to 13 in 2004.

Beaufort, Carteret County
Beaufort is located on the coast near Cape Lookout, and borders the southern portion of the Outer Banks. Its deep harbor is home to vessels of all sizes, and its marinas are a favorite stop-over for transient boaters. A detailed history of Beaufort, from its establishment to its importance as a trade center during the 18th and 19th centuries, to its later involvement in the menhaden fishing industry, can be found in SAFMC (2006).

Overview
Tourism, service industries, retail businesses, and construction are important mainstays of the Beaufort area, with many shops and restaurants catering to people from outside the area. Census data show a slight decrease in population size from 1990 to 2000, from 3,808 inhabitants to 3,771, perhaps due to the aging population. Educational attainment rose over the last decade, and the percentage of individuals below the poverty line fell slightly. The percentage of those in the labor force decreased, another possible indication of an aging population. However, the percentage unemployed also decreased. The number of people working in farming, fishing, and forestry remained about the same from 1990 to 2000. According to census business pattern data from 1998, most of the fishing-related employment in Beaufort (total 300 persons) occurs in the boat building industry, which employs 184 residents (SAFMC 2006). Forty-eight people reported working in marinas, while others are employed in fish processing, fish harvesting, and seafood marketing.

Commercial Fishing
There has been a slight decrease in the number of unlimited commercial permits held by residents of Beaufort, from 5 permits in1999 to 4 permits in 2004. In the last two years, the one limited commercial permit held by a Beaufort resident was no longer reported. As of 2002, the state had issued 430 commercial vessel registrations, 294 standard commercial licenses, and 32 dealer licenses to Beaufort residents.

Recreational Fishing
There has been virtually no change in the number of charter/headboat permits, 1 permit in 2003 and 2004, held by residents.

Atlantic Beach, Carteret County

Atlantic Beach has been a popular resort town since the 1870s. The first bathing pavilion was built on Bogue Banks in 1887. Tourists flocked to the resorts, and ferry service to Atlantic Beach increased. Other resorts and tourism related development occurred over the next century, and the area remains a popular vacation destination (www.atlanticbeach-nc.com).

Overview
Atlantic Beach demographic data from 1990 and 2000 show a slight population decline since 1990, as well as decreases in the percent of the population involved in farming, fishing, and forestry (SAFMC 2006). The median age of the population has increased, perhaps a reflection of the growing number of retirees moving to this area of the coast.

Commercial Fishing
As observed in other areas of North Carolina, since limited access was put into place, the number of commercial permits has decreased from eight unlimited commercial permits in 1999 to four in 2004, and four limited commercial permits to zero (SAFMC 2006). In 1998, 60 residents of Atlantic Beach were employed in fishing related industry, with 93% of those employed by the marine sector. In 2002, 56 vessels were registered with the state as commercial fishing vessels, 42 standard commercial fishing licenses were held by Atlantic Beach residents, and there were ten valid dealer licenses issued to community members (SAFMC 2006).

Recreational Fishery
Since 1999, the number of federal charter/headboat permits held by Atlantic City residents has increased from six to 19, though only one permit was recorded in 2002. Of the 60 individuals reporting working in a fishing related industry in 1998, 46 worked in marinas. Two state permits were issued to recreational fishing tournaments to sell licenses in 2002 (SAFMC 2006).

Figure 3-6. General area of Sneads Ferry, North Carolina.
Source: Yahoo Maps, http://www.yahoo.com.

Sneads Ferry, Onslow County

Sneads Ferry is a historical fishing village located on the New River near the northern tip of Topsail Island (Figure 3-6). The river joins the Intracoastal Waterway at Sneads Ferry, with easy access to the Atlantic Ocean. A very active commercial fishing community, Sneads Ferry takes in more fish than any other Onslow County port (http://www.cbcoastline.com). It also includes Camp Lejeune, a U.S. Marine base. The Sneads Ferry Shrimp Festival has been held annually since 1971. Now grown to a two-day event, the annual shrimp festival is the

town's major fund-raiser. From its proceeds, the town established a 14-acre community park and built a 7200-sq. ft. Shrimp Festival Community Building (www.sneadsferry.com/areahistory/his_sf.htm).

Overview

Census data indicate the population of Sneads Ferry increased by about 10% from 1990 to 2000, from 2,031 inhabitants to 2,248. Most new residents were white, and the number of black or African American residents decreased from 159 to 115. Median income increased from about $20,000 to nearly $35,000. Median home value increased from $65,000 to $110,000, but median rent remained about the same. The percentage of those completing high school increased by 10% and the percent of residents with at least a Bachelor's degree doubled, from 6 to 12.8%. The poverty level decreased from 20.9% to 13.5%, and the percentage of the population unemployed decreased from 8.3% to 2.2%. The percentage of residents employed in farming, fishing, and forestry decreased by half from 18.2% to 9%, while employment in sales and office occupations increased by over 17%. It is unclear who may be buying home sites on newly developed land in the town, but the town's current demographics may point to an increase in retirees in Sneads Ferry, as they are better educated, have higher incomes, and are older. The dramatic decline by approximately 50% of persons employed in extractive natural resource occupations may be due to increasing job opportunities outside of the community, the changing impacts of regulations, or status of the resources

Commercial Fishing

Sneads Ferry is a small town with little of the large-scale development seen elsewhere on the North Carolina coast. Many houses in the community have fishing vessels docked in front of the house or on the lawn. The white rubber boots worn by commercial fishermen in this community and many other parts of North Carolina are commonly referred to as "Sneads Ferry Sneakers", suggesting the importance of commercial fishing to the area. Most of the fishermen in town are shrimpers and net fishermen who go out daily. There is also a strong contingent of black sea bass pot fishermen resident in the town. The species with the highest consistent landings in the town are black sea bass, button clams, blue crab, flounders, mullet, shrimp, spot, and whiting.

The number of federal charter/headboat permits held by residents increased from six in 1999 to 13 in 2004, while the number of unlimited commercial permits decreased from 22 to 17, and the number of limited commercial permits remained at one (SAFMC 2006). Over 347 commercial fishing vessels were registered with the state in 2002, and 228 residents held state-issued standard commercial fishing licenses. There were also 18 dealer licenses in the community and 169 shellfish licenses. In 1998, 16 persons were employed in fishing related industry, with 75% working in fish and seafood.

Recreational Fishing

Recreational fishing in Sneads Ferry is not as prominent an activity as in Morehead City. However, there are a large number of vessels with charter permits for snapper grouper homeported there. Little is currently known about recreational fishing out of Sneads Ferry, aside for its advertisement as an important tourist attraction in many websites that discuss the

community. At least five marinas cater to recreational fishermen. There are two other marinas at Camp LeJeune Marine Base, just across the Neuse River. Some smaller river and sound fishing charters operating out of the area and one headboat runs from Sneads Ferry. Other than black sea bass, it does not appear that many snapper grouper species are frequently caught recreationally from Sneads Ferry.

3.7.3.1.2 South Carolina

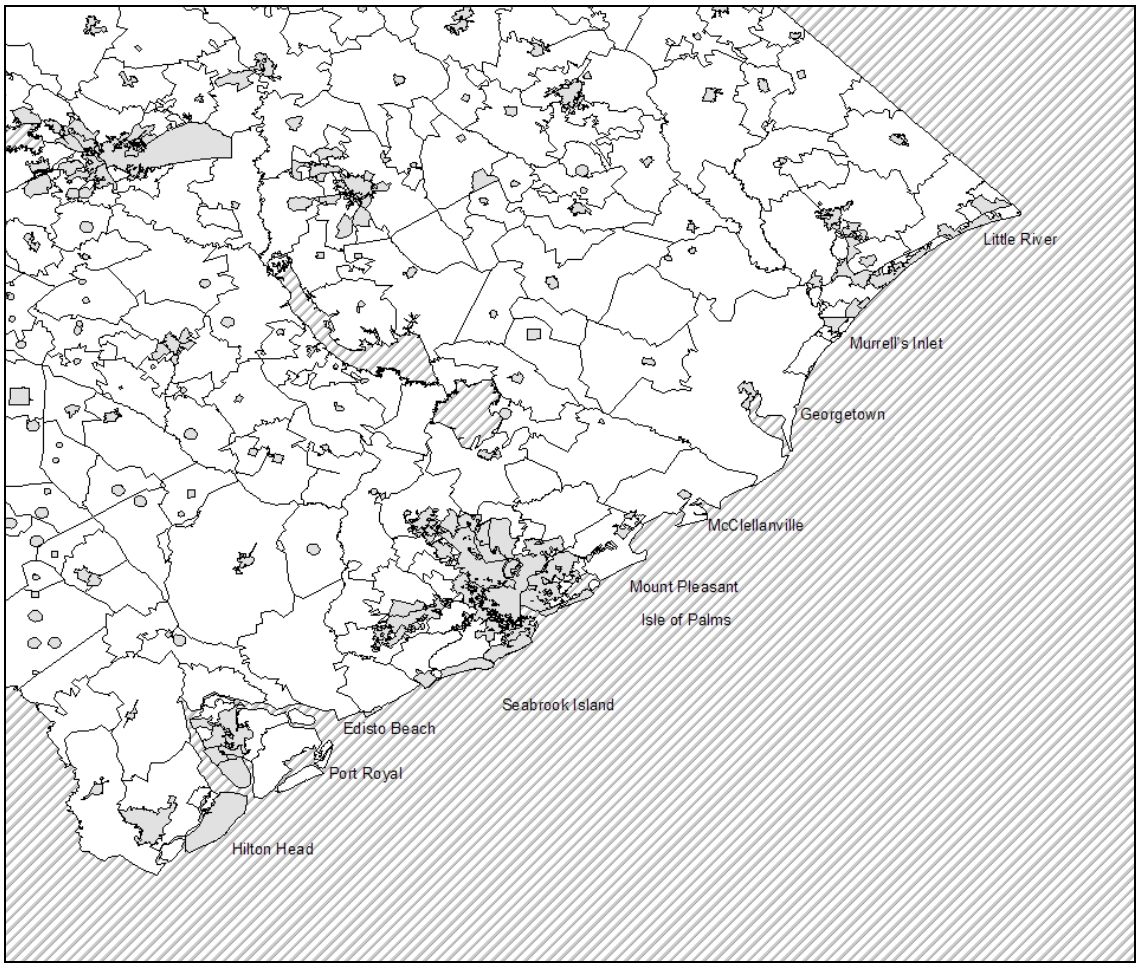

Figure 3-7. South Carolina communities with substantial fishing activity, as identified by South Atlantic Advisory Panels.

Statewide

Overview
South Carolina communities with substantial fishing activity are less developed than those in North Carolina and, over the past 20 to 30 years, the state has seen much more tourist-oriented development along its coasts than Georgia or North Carolina. In Horry County, the urban area of Myrtle Beach has expanded greatly in the past few decades, and much of the coastal area has been developed as vacation homes, condominiums, and golf courses. The communities most impacted by this development are Little River, Murrells Inlet, Pawleys Island, and Georgetown, although the latter three are located in Georgetown County (**Figure** 3-7). The same is true of rapid developing Charleston County, and the cities and communities of McClellanville, Mt. Pleasant, Sullivans Island, Wadmalaw and Edisto Islands feel the impact of urban sprawl from the city of Charleston. Further south along the coast, the Hilton Head Island resort development has been the impetus for changing coastal landscapes in the small towns of Port Royal, Beaufort, St. Helena Island, and Bluffton.

For the purpose of this document, only Little River will be singled out as a community with a high concentration of both commercial and recreational fishing, along with other types of coastal oriented leisure pursuits. Other analyses will consider South Carolina as a whole.

Commercial Fishing
While pockets of commercial fishing activities remain in the state, most are being displaced by the development forces and associated changes in demographics. The number of unlimited commercial permits, however, increased from 74 in 1999 to 87 in 2004, while the number of limited commercial permits decreased by 75% from 12 to 4 (SAFMC 2006).

Recreational Fishing
Many areas that used to be dedicated to commercial fishing endeavors are now geared towards the private recreational angler and for hire sector. The number of federal charter/headboat permits held by South Carolina residents increased from 41 in 1999 to 111 in 2004. The majority of saltwater anglers fish for coastal pelagic species such as king mackerel, Spanish mackerel, tunas, dolphins, and billfish. A lesser number focus primarily on bottom fish such as snapper and groupers and often these species are the specialty of the headboats that run out of Little River, Murrells Inlet, and Charleston. There are 35 coastal marinas in the state and 34 sportfishing tournaments (SAFMC 2006).

Little River, Georgetown County

A history of Little River detailing its settlement in the late 1600s, its popularity as a vacation destination in the 1920s, and the concurrent rise in charter fishing, can be found in SAFMC (2006).

Figure 3-8. Little River, South Carolina, and surrounding area.
Source: Yahoo Maps, http://www.yahoo.com.

Overview

Little River and the surrounding area is shown in Figure 3-8. A detailed description of changes in land-use patterns in and near Little River can be found in SAFMC (2006). Nearby Murrells Inlet is gradually transforming into a residential community for Myrtle Beach, and SAFMC (2006) argues this is also true for Little River.

Census data indicate the Little River population more than doubled from 1990 (3,470 persons) to 2000 (7,027 persons) and became more ethnically diverse with more people of American Indian or Alaskan Native, and Hispanic or Latino ethnicities. Median income increased by over 40%, from nearly $29,000 to over $40,000. Median home value also increased by over 40%, and median rent increased by nearly 35%. The percentage of those completing high school and those with a Bachelor's degree remained about the same. The poverty level decreased by nearly two-thirds to 4.7%, and the percentage of the population unemployed decreased from 6.6% to 3.4%. The percentage of residents employed in farming, fishing, and forestry decreased from 3.6% to 0.9%.

Commercial Fishing

In 1998, 38 residents of Little River were employed in fishing related industry according to the U.S. Census, with 81% of those employed by the marina sector. The number of snapper grouper unlimited harvest commercial permits held by community residents remained about the same between 1999 and 2004, from 15 permits to 16 permits, and one resident still held a limited harvest commercial license. Twenty-four Little River residents held state permits, with the most being saltwater licenses (8 permits) or trawler licenses (5 permits) (SAFMC 2006).

Commercial cumulative landings by pounds and ranking in the South Atlantic for Little River for the years 2003-2207 for major species in this amendment is shown in Table 3-35. Little River had little or no landings of black grouper, speckled hind, or warsaw grouper.

Table 3-35. Commercial cumulative landings by pounds and ranking in the South Atlantic for Little River for the years 2005-2007.

Species	Pounds	Ranking in South Atlantic
Gag	409,721	4th
Vermillion Snapper	1,035,287	5th
Black Sea Bass	549,944	6th
Snowy Grouper	289,128	3rd
Golden tilefish	615,373	4th
Red snapper	31,777	11th
Red grouper	21,535	20th

Source: Logbook Data, SEFSC 2009.

Recreational Fishing
As observed in other coastal communities described herein, the number of charter/headboat permits held by community residents increased from nine in 1999 to 16 in 2004. Three headboats operated out of Little River, and this part of the for-hire industry has a long and storied past in the community. Recreational fishing, primarily as headboat effort, came about as a way for commercial fishermen to continue fishing in the summer months. A detailed account of how recreational fishing developed in Little River can be found in Burrell (2000). Most of the private recreational fishing effort in this area occurs out of marinas in North Myrtle Beach, Myrtle Beach, and Murrells Inlet.

3.7.3.1.3 Georgia

Statewide

Overview
Only one community in Georgia (Townsend) lands a substantial amount of the snapper grouper species addressed in this amendment. Other parts of the state involved in the commercial harvest of seafood are focused on penaeid shrimp, blue crabs, and other finfish such as flounder, shad, croaker, and mullet.

Brunswick, the other community that has a commercial fishing presence, was once a more thriving commercial fishing community but now tourism and other related activities are competing for waterfront in the town. The most commonly harvested species in Brunswick are blue crab and different species of penaeid shrimp. According to the ACCSP website, there

have been no snapper grouper species landed in Brunswick in since 2001. Other parts of the state involved in the commercial harvest of seafood are focused on penaeid shrimp, blue crabs, and other finfish such as flounder, shad, croaker, and some mullet.

Commercial Fishing
Unlike the pattern observed in many other areas, the number of unlimited commercial permits and limited commercial permits held by Georgia residents did not decrease from 1999 to 2004, with eight permits and one permit, respectively. In 2002, 947 vessels were registered with the state as commercial fishing vessels, 612 full-time state commercial fishing licenses were held by Georgia residents, and 147 residents held part-time state commercial fishing licenses. Within the commercial fishing fleet, 482 vessels had shrimp gear on board in that year (SAFMC 2006).

Commercial cumulative landings by pounds and ranking in the South Atlantic for Townsend, Georgia for the years 2003-2207 for major species in this amendment is shown in Table 3-36. Townsend had little or no landings of black grouper, speckled hind, golden tilefish, or warsaw grouper.

Table 3-36. Commercial cumulative landings by pounds and ranking in the South Atlantic for Townsend, Georgia for the years 2005-2007.

Species	Pounds	Ranking in South Atlantic
Gag	397,284	5
Vermillion Snapper	1,428,918	4
Black Sea Bass	19,790	14
Snowy grouper	33,619	19
Red snapper	130,553	3
Red grouper	21,797	20

Source: Logbook Data, SEFSC 2009.

Recreational Fishing
As observed in other areas, the number of charter/headboat permits held by Georgia residents increased markedly from five permits in 1999 to 27 permits in 2004 (SAFMC 2006). Recreational vessels are located at Tybee Island close to Savannah, on the barrier islands off Brunswick, and between Savannah and Brunswick.

Townsend

A history of the area, describing its economy before the Civil War, the rise and fall of lumbering, and the building of the railroad, can be found in SAFMC (2006).

Townsend is a small, rural community. In 2005, the fish house in this community was relocating inland. It is not known if this relocation was successful and whether that fish house will be handling domestically harvested fish in the future.

Overview

The population of Townsend increased by over 1,000 residents from 2,413 in 1990 to 3,538 in 2000. Although there was a large relative increase in the number of Hispanic or Latino residents, from 2 to 27, most of the new inhabitants were white (1,465 in 1990 and 2,437 in 2000). Median income increased from approximately $23,000 to $35,000. Median home value nearly tripled, from $33,000 in 1990 to $98,100 in 2000, and monthly rent nearly doubled, from $213 to $431. In 1990, 26.9% of residents had less than a 9th grade education, but by 2000, that number declined to 11%. The percentage of those completing high school increased by nearly 15%, while the percent receiving a bachelor's degree or higher remained about the same (8.4% to 8.9%). The percent of the population with an income below the poverty line deceased by 4%, but remained high at 14.6%. The percentage of the population unemployed increased from 3.4% to 6.5%. There has been a sizeable decline in the percentage of the population employed in manufacturing, from 29.0% to 16.2%, and the proportion of the population employed in farming, fishing, and industry remained unchanged at approximately 3%.

Commercial Fishing

A comprehensive description of the historic and current fish houses of coastal Georgia and how they operate, focusing on Phillips Seafood of Townsend, can be found in SAFMC (2006). For nearly a decade, only one fish house has consistently handled snapper grouper species. A fish house in Brunswick may have landed these species in the past, but has not reported landings since 2001.

Recreational Fishing

Offshore recreational anglers do not often target or harvest snapper grouper species in Georgia (http://www.st.nmfs.noaa.gov/st1/recreational/overview/overview.html).

Of the snapper grouper species harvested, black sea bass, sheepshead, and vermilion snapper are the most commonly harvested fish at 5, 7 and 2%, respectively. As of 2004, residents of the Savannah area held 11 charter/headboat permits for snapper grouper, and many of these vessels are docked on Tybee Island. Residents of the area around the city of Brunswick, including Jekyll Island and Sea Island, held four snapper grouper charter/headboat permits. Interestingly, unlike the cities profiled in the Carolinas, the number of federally permitted for-hire vessels has declined dramatically. From 2003 to 2004, the number of snapper grouper permitted for hire vessels declined from 43 to 27 (NMFS 2004). The cause of this decline is unknown.

3.7.3.2 Florida

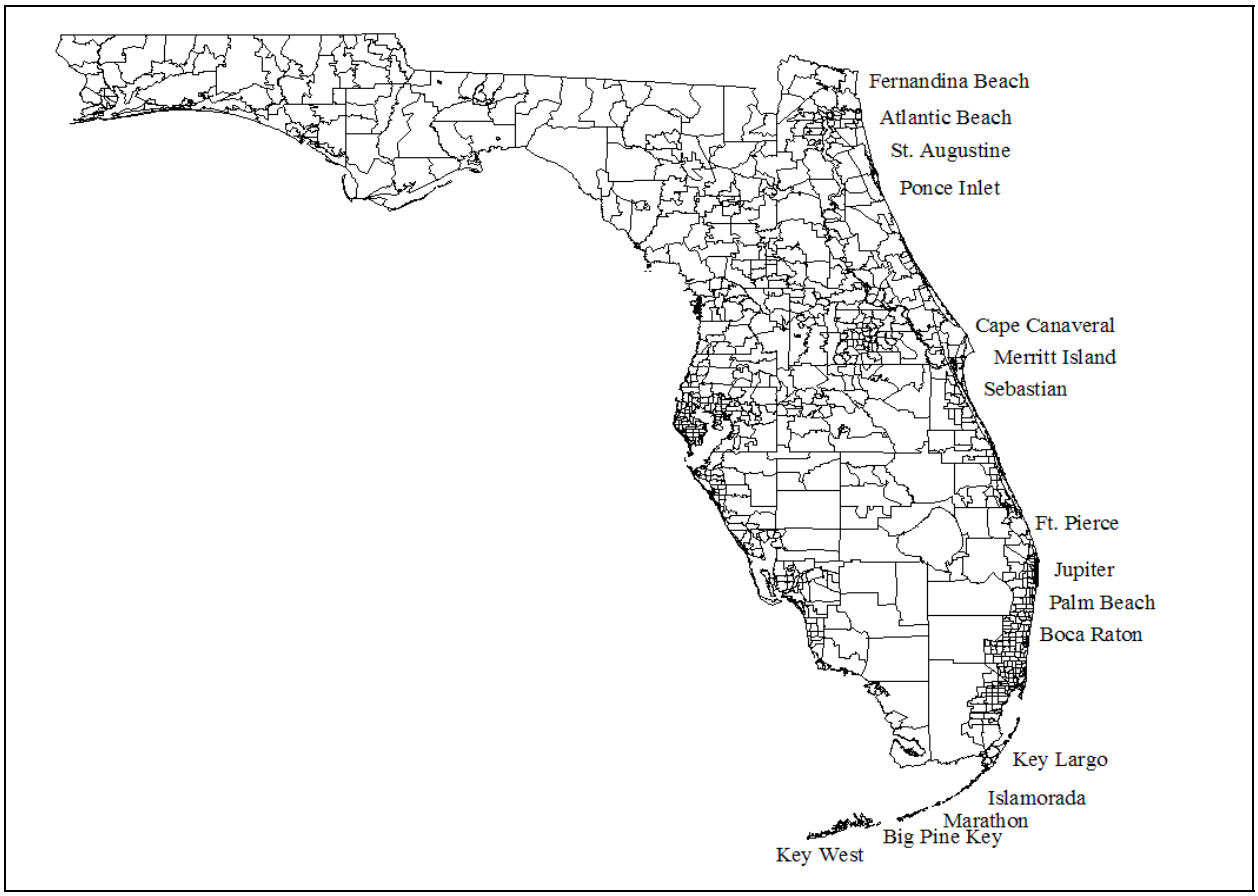

Figure 3-9. Florida communities with substantial fishing activity. Identified by South Atlantic Advisory Panels.
Source: Jepson et al. (2005).

Statewide

Overview
Florida stands apart from other states in the South Atlantic region in fishing behaviors, history, and demographics. Florida has one of the fastest growing populations in the United States, estimated to increase each day by 750 to 1,000 new immigrants. Twenty-five percent of all vacation homes in the United States are located in Florida's coastal counties (Coastal Ocean Resource Economics 2005).

Along with being heavily populated on land, coastal waters off Florida are also heavily used by recreational users of all kinds. This growth of a leisured class occupying coastal areas has led, in part, to conflicts over natural resource access and use-rights. One example of this type of struggle was the conflict over the use of gillnets in state waters. The conflict culminated in a state-wide ban on the use of gillnets, which dealt a resounding blow to many Florida fishermen, ending in the loss of many commercial fishing properties and the displacement of many fishermen. There have also been conflicts between the "environmental community" and commercial fishermen over the closing of the *Oculina* Bank off of Florida's central coast, and

the creation of both the Florida Keys National Marine Sanctuary and the Tortugas Sanctuary, both in the Keys.

The natural geography of Florida also sets it apart from other South Atlantic states, particularly in the area from central Florida through the Keys. The weather is amenable to fishing almost year round, though hurricanes in 2004 were particularly devastating and took a toll on all fisheries in the state, both east and west coast. There was also a cold water event that started near West Palm Beach in 2003, which moved up the east coast causing a substantial decline in snapper grouper fishing that year. The continental shelf is much narrower in Florida than elsewhere in the region, allowing fishermen to access deep waters quickly and return the same day. Finally, the species of snapper grouper available to fishermen in southern Florida are different than further north, with yellowtail snapper, gag and black grouper, and other alternative species such as stone crab, spiny lobster, dolphin, kingfish, and billfish allow a greater variety of both commercial and recreational fishing opportunities. These fisheries are important to many Florida communities identified by the Snapper grouper Advisory Panel as shown in Figure 3-9.

Commercial Sector

Considering the high population growth rates and emphasis on a tourism economy in Florida, the commercial fishing sector in Florida is still robust in some areas. Although total landings and dollar values of all species landed on the Florida East coast have decreased from 1998 to 2003 (from nearly 30 million pounds worth approximately $44 million to approximately 23 million pounds worth $33 million dollars; SAFMC 2006), there is still a considerable commercial fishing presence in east Florida.

Cumulative landings for 2005, 2006, 2007 for the top three communities in Florida for each species in this amendment is shown in Table 3-37. Although, the rankings can change from year to year, but the cumulative landings over a three year range can suggest which communities are most involved with the commercial harvest of each species.

Table 3-37. Top three communities in Florida, listed by species, for commercial cumulative landings for 2005-2007.

	Location	**Pounds**	**Location**	**Pounds**	**Location**	**Pounds**
Gag	Mayport	319,605	Cocoa	265,628	Jacksonville Beach	220,562
Vermillion Snapper	Mayport	833,254	St. Augustine	294,860	Atlantic Beach	124,688
Black Sea Bass	Jacksonville	6,765	Fernandina Beach	6,541	Mayport	5,524
Snowy Grouper	Key West	269,315	Pt. Orange	195,872	Tavernier	114,877
Golden tilefish	Cocoa	1,109,657	Ft. Pierce	933,150	Pt. Orange	678,863
Red snapper	Mayport	173,390	St. Augustine	108,773	Jacksonville Beach	85,461
Black grouper	Key West	951,205	Key Largo	142,787	Summerland Key	142,634
Red grouper	Tavernier	86,21	Summerland Key	75,632	Miami	62,579

Warsaw grouper	Key West	22,781	Cocoa	3,525	Tavernier	2,110
Speckled hind	Key west	77,614	Cocoa	2,528	Tavernier	847

Source: Logbook data, SEFSC 2009.

Recreational Sector

While the commercial fishing industry, though still strong, may be in decline, the recreational sector appears to be stable. Excluding the headboat sector, although the number of participants declined in 2004 to approximately 1.9 million from 2.2 million in 2003 and from a high of 2.6 million in 2001, the number of trips taken in 2003 and 2004 remained at approximately 21 million. As shown in Table 3-29, the headboat sector has exhibited a steady decline. In 2004, many homeports hosted at least one vessel holding both federal charter/headboat permits and federal unlimited commercial permits. Key West and Miami stand out, with 35 and 15 such vessels, respectively.

Cape Canaveral, Brevard County

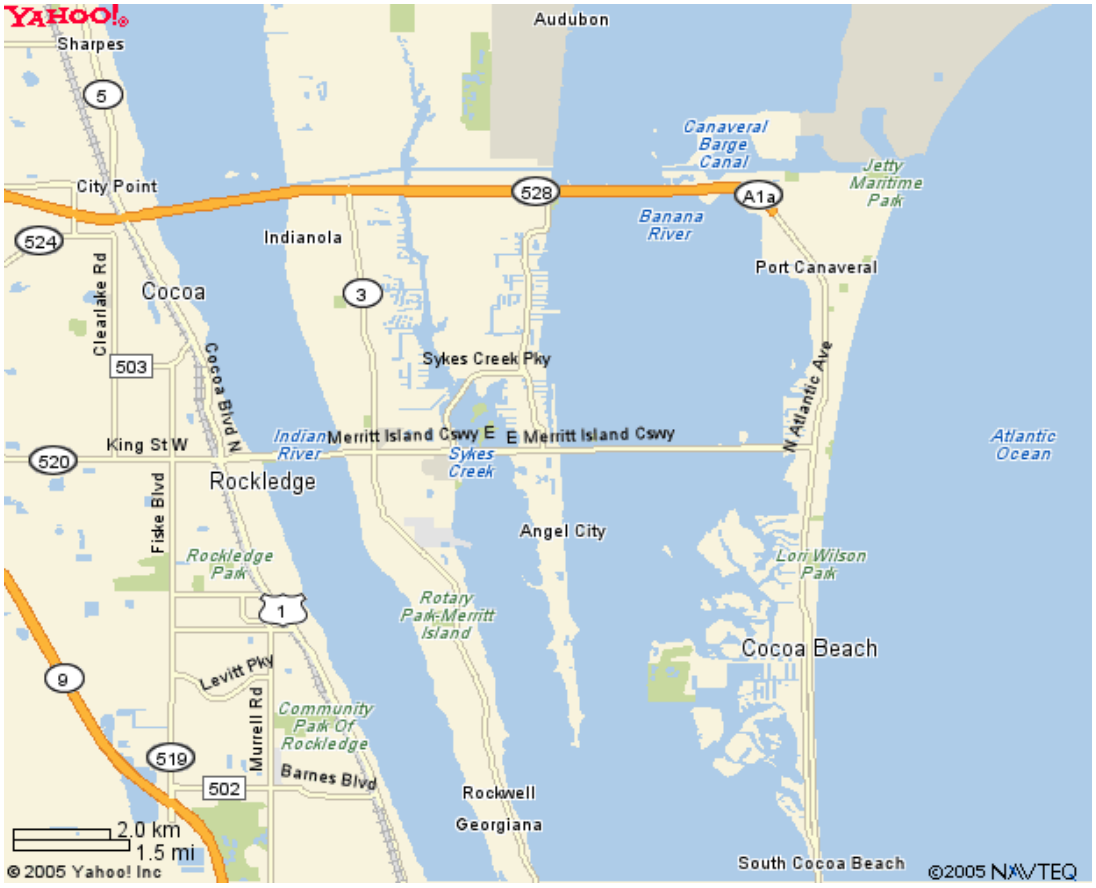

Figure 3-10. Area map of Cape Canaveral, Florida.
Source: Yahoo Maps, http://www.yahoo.com.

A detailed history of Cape Canaveral, Florida, from its first habitation 10,000 years ago, its settlement by the United States in the early 1800s, the establishment of the Banana River Naval Air Station in World War II, to NASA's arrival in 1952, can be found in SAFMC (2006). A map of the area is shown in Figure 3-10.

Overview

Cape Canaveral has a fairly homogenous, aging population, with those 65 years and older growing from 16.1% of the population to 23.1% since 1990. Overall, educational attainment has increased. The number of persons who speak a language other than English at home has increased 2.5%, and fewer people have incomes below the poverty line. Unemployment has decreased, but fewer people are in the labor force today than in 1990, perhaps due to an aging population. The percentage of persons in a service occupation has grown from 14.1% to 20.4%, while there has been a sizeable decline in the percent of residents employed in forestry, mining, and fishing, from 2.7% in 1990 to 0.4% in 2000.

Fisheries in central Florida generally operate in two different environments, inshore river or inlet fishing with associated lagoons, which primarily attracts recreational fishing, and offshore areas, where commercial fishing primarily occurs. Popular inshore areas include the Indian, St. Johns, and Banana Rivers and associated lagoons. Commercial exploitation of the rivers and lagoons declined after implementation of the Florida Net Ban of 1994.

Many commercial fish houses have gone out of business or have shifted to selling imported products to supplement their local supplies. At the same time, the number of businesses possessing federal dealer permits has increased from about 180 in 1999 to a little over 200 in 2001. There is some industry speculation that the increasing number of dealer permits reflects increased decentralization in the domestic fishing markets and the need to increase profits by self-marketing.

Commercial Fishing

Cape Canaveral draws fishermen from Cocoa/Cocoa Beach, Merritt Island, Melbourne, and Titusville. These fishermen target many snapper grouper species, as well as coastal migratory pelagics such as mackerel, highly migratory species such as sharks and swordfish, and shellfish such as oysters, quahogs, and shrimp. Snowy grouper and tilefish (particularly golden or sand tilefish) landings exceed 10,000 pounds per year. Total commercial landings decreased, however, from 8.9 million pounds to 6.0 million pounds from 1998 to 2004 (SAFMC 2006).

The number of unlimited commercial permits in this area increased from nine in 1999 to 16 in 2004. The number of limited commercial permits fluctuated over this period, but ultimately declined from four permits in 1999 to one in 2004 (SAFMC 2006).

The number of Florida Saltwater Products Licenses issued to residents of Brevard County (where Cape Canaveral is located) decreased from 872 in 1998/99 to 492 in 2004/05 (SAFMC 2006). This license is needed to sell marine species in the state. There have also been declines in license sales for various crustacean fisheries.

Recreational Fishing

In 2004, Brevard county supported 36 bait and tackle stores, with five in Cape Canaveral, and 70 marinas with over 3,000 wet slips, indicating the importance of recreational fishing to the area. Fourteen fishing tournaments consistently occur in the area. Additional details about these businesses and tournaments can be found in SAFMC (2006).

As in other coastal areas of Florida, there is a fairly heavy presence in Brevard County of charter boat businesses, private marinas, and other associated businesses catering to the recreational fishing sector. The number of federally permitted charter/headboat vessels in Cape Canaveral increased from zero to seven from 1999 to 2004. According to Holland *et al.* (1999), there were approximately 32 charter boats and 2 headboats in the Canaveral/Melbourne area. Current estimates from permit files show at least 38 for-hire vessels with Snapper grouper permits homeported in Cape Canaveral or Port Canaveral, which includes approximate four headboats. That is likely a low estimate for total the total number of for-hire vessels in the area since it does not include vessels in the nearby Merritt Island and in the Cocoa/Cocoa Beach areas.

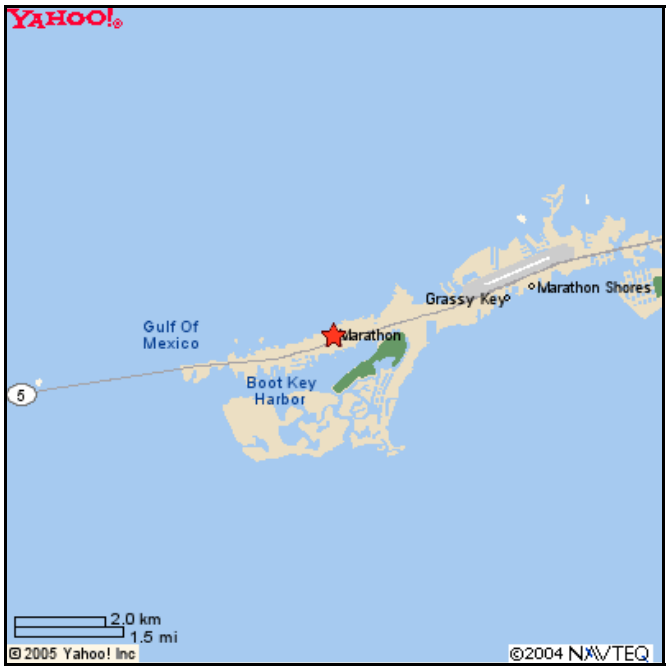

Figure 3-11. Marathon, Florida.
Source: Yahoo Maps, http://www.yahoo.com.

Marathon, Monroe County

A history of Marathon, detailing its settlement in the 1800s, the rise of industry, the effects of the Great Hurricane of 1935, the rise of tourism, and the importance of commercial fishing, can be found in SAFMC (2005). A map of Marathon, which lies in Monroe County is shown in Figure 3-11.

Overview

Census data from 1990 and 2000 show there was an increase in overall population in Marathon from 8,857 in 1990 to 10,255 in 2000. During this period, the Hispanic population more than doubled, increasing from 1,040 to 2,095. This increase accounts for more than two thirds of the total population increase for the area. During this period of time, the median household income increased from approximately $25,000 to over $36,000.

Marathon has maintained a relatively high percentage of the total population, 4.1% in 2000, involved in farming, fishing, and forestry, though the percentage has declined from 8.7% in 1990. Since there is little commercial farming and forestry occurring in the area, the majority of percentage can be assumed to relate to fishing activities. The percentage of people that live below the poverty line decreased slightly from 15.1% in 1990 to 14.2% in 2000.

Commercial Fishing

In 1998, 184 Marathon residents were employed in fishing related industry according to the Census data, with 39 of those in the "fishing" category, 92 employed in "fish and seafood," and 47 employed by marinas (SAFMC 2006). The number of unlimited commercial permits held by community residents decreased from 65 permits to 44 permits between 1999 and 2004. Similarly, the number of limited commercial permits decreased from 43 permits to 31 permits.

Recreational Fishing

While most of the waters around Marathon are open to fishing, some areas have been set aside for eco-tourism and fish-viewing by divers and snorkelers. Sombrero Reef, said to be one of the most beautiful sections of North America's only living coral barrier reef, lies several miles offshore and is protected by the Florida Keys National Marine Sanctuary (http://www.fla-keys.com/marathon).

The importance of recreational boating and fishing to the economy of Marathon is shown by the businesses reliant upon it. As of 2004, there were at least 25 charter boat businesses, two party boat businesses, 8 bait and tackle shops, and 27 marinas in the area. The number of vessels holding the federal charter/headboat permit increased from 16 in 1999 to 30 in 2004. In addition, there were seven fishing tournaments in Marathon. Most tournaments are centered on tarpon fishing. However, there are inshore and offshore fishing tournaments as well. These tournaments begin in February and run through June. Hotels and restaurants fill with participants and charters, guides and bait shops reap the economic benefits of these people coming to the area. These tournaments are positive economic pulses in the local economy, one that thrives on the existence of tourism and recreational fishing.

4 Environmental Consequences

4.1 Action 1: Limit Participation in the Golden Tilefish Fishery

Alternative 1 (No Action). Do not limit effort in the golden tilefish fishery through an endorsement program.

Alternative 2. Limit golden tilefish effort through a golden tilefish gear endorsement program: Distribute golden tilefish gear specific endorsements for snapper grouper permit holders that qualify under the eligibility requirements stated below. Only snapper grouper permit holders with a golden tilefish longline endorsement or a golden tilefish hook and line endorsement associated with their snapper grouper permit will be allowed to possess golden tilefish. Individuals that meet the qualifying criteria for both hook and line and longline endorsements only receive one endorsement.

Golden Tilefish Hook and Line Endorsement Initial Eligibility Requirements

Preferred Sub-Alternative 2a. To receive a golden tilefish hook and line endorsement, the individual must have a harvest level of 1,000 pounds gw (with hook and line gear) when the individual's best three of five years from 2001-2005 are aggregated. (Sub-alternative devised by the GT LAP WG.)

Sub-Alternative 2b. To receive a golden tilefish hook and line endorsement, the individual must have a harvest level of 500 pounds gw (with hook and line gear) when the individual's best three of five years from 2001-2005 are aggregated. (Sub-alternative devised by the GT LAP WG)

Sub-Alternative 2c. To receive a golden tilefish hook and line endorsement, the individual must have a harvest level of 500 pounds gw (with hook and line gear) when the individual's landings from 2001-2005 are averaged.

Sub-Alternative 2d. To receive a golden tilefish hook and line endorsement, the individual must have a harvest level of 500 pounds gw (with hook and line gear) when the individual's landings from 1999-2008 are averaged.

Sub-Alternative 2e. To receive a golden tilefish hook and line endorsement, the individual must have a harvest level of 1,000 pounds gw (with hook and line gear) when the individual's landings from 1999-2008 are averaged.

Sub-Alternative 2f. To receive a golden tilefish hook and line endorsement, the individual must have a harvest level of 1,000 pounds gw (with hook and line gear) when the best 3 of 5 yrs 2001-05 are aggregated and at least 1 lb was landed in 2008.

Sub-Alternative 2g. To receive a golden tilefish hook and line endorsement, the individual must have a harvest level of 1,000 pounds gw (with hook and line gear) when the best 3 of 5 yrs 2001-05 are aggregated and at least 1 lb was landed in 2007 or 2008.

Sub-Alternative 2h. To receive a golden tilefish hook and line endorsement, the individual must have a harvest level of 500 pounds gw (with hook and line gear) when the best 3 of 5 yrs 2001-05 are aggregated and at least 1 lb was landed in 2008.

Sub-Alternative 2i. To receive a golden tilefish hook and line endorsement, the individual must have a harvest level of 500 pounds gw (with hook and line gear) when the best 3 of 5 yrs 2001-05 are aggregated and at least 1 lb was landed in 2007 or 2008.

Sub-Alternative 2j. To receive a golden tilefish hook and line endorsement, the individual must have a harvest level of 500 pounds gw (with hook and line gear) when the best 3 of 5 yrs 2001-05 are averaged and at least 1 lb was landed in 2008.

Sub-Alternative 2k. To receive a golden tilefish hook and line endorsement, the individual must have a harvest level of 500 pounds gw (with hook and line gear) when the best 3 of 5 yrs 2001-05 are averaged and at least 1 lb was landed in 2007 or 2008.

Golden Tilefish Longline Endorsement Initial Eligibility Requirements

Preferred Sub-Alternative 2l. To receive a golden tilefish longline endorsement, the individual must have a total of 2,000 pounds gw golden tilefish caught (with longline gear) between 2006 and 2008. (Sub-alternative devised by the GT LAP WG)

Sub-Alternative 2m. To receive a golden tilefish longline endorsement, the individual must have a total of 5,000 pounds gw golden tilefish caught (with longline gear) between 2006 and 2008.

Sub-Alternative 2n. To receive a golden tilefish longline endorsement, the individual must have an average of 5,000 pounds gw golden tilefish caught (with longline gear) between 2006 and 2008.

4.1.1 Biological Effects

Alternative 1 (No Action) would not limit effort in the golden tilefish fishery. Due to recently implemented regulations for snapper grouper and shark species, there could be an increased incentive to target golden tilefish. An increase in participation in the golden tilefish portion of the snapper grouper fishery would intensify the "race to fish" that already exists and has resulted in a shortened season. The fishing seasons in recent years have already been shortened to such a degree that South Carolina longline fishermen, who are typically unable to fish until April or May due to weather conditions and hook and line fishermen from Florida, who typically do not fish until the fall, are increasingly unable to participate in the fishery. Current regulations for golden tilefish include a 4,000 pound gutted weight trip limit until

75% of the quota is caught, after which, a 300 pound gutted weight trip limit is imposed. The Council is concerned an increase in participation in this fishery could deteriorate profits for current golden tilefish fishermen. In addition, more participants could make it more difficult to track the commercial quota in a timely fashion and prevent overages.

Alternative 2 would distribute golden tilefish gear specific endorsements for snapper grouper permit holders that qualify under the eligibility requirements stated below. Only snapper grouper permit holders with a golden tilefish longline endorsement or a golden tilefish hook and line endorsement associated with their snapper grouper permit will be allowed to possess golden tilefish. Individuals that meet the qualifying criteria for both hook and line and longline endorsements only receive one endorsement.

All of the sub-alternatives under **Alternative 2** would result in a reduction in the number of participants but not necessarily limit the effort or harvest in the golden tilefish segment of the snapper grouper fishery. **Sub-Alternatives 2a-k** would require a certain harvest level averaged or aggregated during various years to receive a hook and line endorsement. **Sub-Alternative 2b** would implement the least restrictive requirement resulting in issuance of 29 hook and line endorsements; whereas, **Sub-Alternative 2e** would implement the most restrictive endorsement eligibility requirement resulting in 7 permits that qualify for an endorsement (**Table 4-1**). To receive a golden tilefish hook and line endorsement, **Preferred Sub-Alternative 2a** would require the individual have a harvest level of 1,000 pounds gutted weight (gw) with hook and line gear when the individual's best three of five years from 2001-2005 are aggregated. A total of 23 individuals would qualify for a golden tilefish endorsement under **Preferred Sub-Alternative 2a**.

Sub-Alternatives 2l-n would require certain harvest levels in aggregate or average during various years to receive a longline endorsement. **Preferred Sub-Alternative 2l** would implement the least restrictive requirement resulting in issuance of 17 longline endorsements. **Sub-Alternatives 2m** and **2n** would implement the most restrictive endorsement eligibility requirement resulting in 12 permits that qualify for an longline endorsement.

It is possible that alternatives, which limit the number of participants, could also result in a reduction in the amount of gear deployed and golden tilefish landed. If this were the case, then biological benefits could be expected for golden tilefish and the chance of interactions with protected species could be reduced. **Preferred Sub-Alternative 2a** would result in 23 hook and line endorsements**.** Therefore, the biological benefits of **Sub-Alternative 2a** could be greater than **Sub-Alternative 2b** for hook and line endorsements. However, it is also possible that effort would remain the same regardless of the number of vessels fishing. Therefore the biological effects of hook and line **Sub-Alternatives 2a-k** as well as longline **Sub-Alternatives 2l-n** could be very similar (**Tables 4-1 and 4-2**). By limiting the number of participants in the golden tilefish fishery, the race for fish could be eliminated allowing for a longer fishing season and greater participation by individuals who met the endorsement requirements.

Alternative 1 (No Action) will likely perpetuate the existing level of risk for interactions between Endangered Species Act (ESA)-listed species and the fishery. **Sub-Alternatives 2a-2n** are unlikely to have adverse effects on listed *Acropora* species. Previous ESA consultations determined the snapper grouper fishery was not likely to adversely affect these species. These alternatives are unlikely to alter fishing behavior in a way that would cause new adverse effects to *Acropora* species. The impacts from **Alternative 2 and associated sub-alternatives** on sea turtles and smalltooth sawfish are unclear. Ultimately, the degree of risk reduction to ESA-listed species is relative to overall effort reduction. If **Alternative 2 and the associated sub-alternatives** reduce fishing effort in the fishery, the risk of interaction between sea turtles and smalltooth sawfish will likely decrease.

4.1.2 Economic Effects

Alternative 1 (No Action) would not limit participation or effort in the golden tilefish fishery. As a result, an increase in the number of fishermen targeting golden tilefish could occur. This could result in a decrease in the profitability of fishing for golden tilefish to historical participants and an increasingly shortened commercial season. An increase in the race for fish would likely occur over time, possibly resulting in safety concerns due to gear conflicts and less time and investment in maintenance of the vessel. A decrease in the quality of golden tilefish landed could also occur due to decreased time spent on storing the fish for transport to shore. This could decrease ex-vessel prices and marketing opportunities.

Alternative 2 would implement an endorsement program for golden tilefish participants. The sub-alternatives would limit the number of participants in the fishery but not necessary limit the effort or harvest. The sub-alternatives identify how many pounds are needed to qualify for an endorsement and in what years those landings need to have been made. This would be based on logbook data associated with an individual's permit at the time of implementation. **Sub-alternative 2b** would implement the *least* restrictive requirement resulting in issuance of 29 hook and line endorsements. **Sub-alternative 2e** would implement the *most* restrictive endorsement eligibility requirement resulting in 7 permits that qualify for a hook and line endorsement. **Preferred Sub-alternative 2a** would result in 23 hook and line endorsements**. Sub-alternatives 2c and 2d** would each implement 13 endorsements (**Table 4-1**). **Sub-alternatives 2f and 2g** are variations of **Sub-Alternative 2a** and decrease the number of endorsements to 13 and 16, respectively. **Sub-alternatives 2h and 2i** are variations of **Sub-alternative 2b** and decrease the number of endorsements to 14 and 18, respectively. Similarly, **Sub-alternatives 2j and 2k** are variations of **Sub-Alternative 2c** and decrease the number of endorsements to 8 and 10 hook and line endorsements, respectively.

Table 4-1. Number of permits that qualify for hook and line endorsements under each sub-alternative.

Hook and Line Sub-Alternatives	Eligibility Requirement	Number of Endorsements
Preferred Sub-Alternative 2a	At least 1,000 lbs ww when best 3 of 5 yrs 2001-05 are aggregated	23
Sub-Alternative 2b	At least 500 lbs ww when best 3 of 5 yrs 2001-05 are aggregated	29
Sub-Alternative 2c	At least 500 lbs ww when 2001-05 landings are averaged	13
Sub-Alternative 2d	At least 500 lbs ww when 1999-07 landings are averaged	13
Sub-Alternative 2e	At least 1,000 lbs ww when 1999-07 landings are averaged	7
Sub-Alternative 2f	At least 1,000 lbs ww when best 3 of 5 yrs 2001-05 are aggregated and at least 1 lb was landed in 2008	13
Sub-Alternative 2g	At least 1,000 lbs ww when best 3 of 5 yrs 2001-05 are aggregated and at least 1 lb was landed in 2007 or 2008	16
Sub-Alternative 2h	At least 500 lbs ww when best 3 of 5 yrs 2001-05 are aggregated and at least 1 lb was landed in 2008	14
Sub-Alternative 2i	At least 500 lbs ww when best 3 of 5 yrs 2001-05 are aggregated and at least 1 lb was landed in 2007 or 2008	18
Sub-Alternative 2j	At least 500 lbs ww when 2001-05 landings are averaged and at least 1 lb was landed in 2008	8
Sub-Alternative 2k	At least 500 lbs ww when 2001-05 landings are averaged and at least 1 lb was landed in 2007 or 2008	10

Preferred Sub-Alternative 2l would implement the *least* restrictive longline endorsement requirement resulting in issuance of 17 longline endorsements. **Sub-alternative 2m** would implement the *most* restrictive endorsement eligibility requirement resulting in 12 permits that qualify for a longline endorsement. **Sub-Alternative 2N** would also implement 12 (**Table 4-2**).

Table 4-2. Number of permits that qualify for hook and line endorsements under each sub-alternative.

Longline Sub-Alternatives	Eligibility Requirement	Number of Endorsements
Preferred Alternative 2l	At least 2,000 lbs ww when landings from 2006-08 are aggregated	17
Alternative 2m	At least 5,000 lbs ww when landings from 2006-08 are aggregated	12
Alternative 2n	At least 5,000 ww lbs when landings from 2006-08 are averaged	12

Who economically benefits from each of these sub-alternatives is a distributional issue and it is not expected that a smaller number of endorsements will necessarily yield higher *total* or *aggregate* profits compared to a larger number of endorsements. However, theoretically, the expectation is that a smaller number of vessels could be more profitable than a larger number of vessels because a smaller number of vessels would cut costs. However, too few vessels could limit catch and therefore revenues. While a quantitative analysis is theoretically possible, economic data specific to the golden tilefish gear groups do not exist at this time and therefore, such an analysis cannot be done.

The benefit of a smaller numbers of endorsements is an expectation of higher *average* profits per endorsement holder. Therefore, it can be expected that the highest average profits per hook and line endorsement holder would occur under **Sub-alternative 2e** and the lowest under **Sub-alternative 2b**. The highest average profits per longline endorsement holder would occur under **Sub-alternatives 2m and 2n** and the lowest under **Sub-alternative 2l**.

4.1.3 Social Effects

A discussion of the general direct and indirect social consequences of regulatory change is provided in Section 4.1.3.

Alternative 1 (No Action) would not make any changes to the current management of golden tilefish. As a result, all current fishing practices would be allowed to continue and no changes in status quo social benefits would be expected. However, these status quo conditions are expected to continue a functional reallocation of the golden tilefish commercial quota to Florida fishermen at the expense of fishermen in North Carolina and South Carolina due to recent management restrictions and the traditional fishing patterns where weather is a key determinant of when fishermen from different states are able to participate in this component of the snapper grouper fishery. While Florida has traditionally recorded the majority of golden tilefish harvests (see Section 3.6.1), recent harvest restrictions have resulted in shortened seasons and reduced harvests by North Carolina and South Carolina fishermen. Increased target effort by fishermen in response to increased restrictions on other species could exacerbate this circumstantial reallocation as well as displace fishermen that have not been adversely affected by the recent regulations. While Annual Catch Limits (ACLs) and

Accountability Measures (AMs) should be effective in protecting the biological health of the resource, from the perspective that traditional fishing participation and patterns results in greater social benefits, shift of harvests away from these traditional users, businesses, and communities would be expected to result in lower social benefits than protection and preservation of the more traditional participation and harvest patterns.

The intent of the adoption of one of the sub-alternatives of **Alternative 2** is to return golden tilefish harvests to the more traditional/historical participation and harvest patterns through the establishment of an endorsement program, limiting endorsement eligibility (initial eligibility; transfer considerations are the subject of **Action 4**) based on alternative minimum harvest performance histories.

It should be noted that the two-tiered qualification criteria are not fully complementary in that the second criteria (current participation) may exclude fishermen that the first criteria (historical participation to address current shifts in participation/harvest activity) seeks to benefit, i.e., a fishermen's current lack of harvests could be a result of the functional reallocation of harvests that is the motivating factor for the proposed action. From this perspective, the smaller the current qualifying poundage, the less likely a historical participant will be excluded.

At the same time, however, the lower the threshold, the more likely the qualification of a participant who may have decreased their golden tilefish harvests for other reasons (e.g., fished less in general, targeted other species, etc.) and they may receive an endorsement to continue harvesting a species they have largely chosen not to target. While qualifying for the endorsement would give these individuals a sellable asset, with associated social and economic benefits, equity issues may arise (i.e., why give a person an endorsement to harvest a species they do not currently harvest in any substantial amount?). It should be noted that the converse of these conditions is also true; the higher the threshold, the more likely a historic participant may be excluded, but the more likely that those who have demonstrated continued higher dependence on the resource will receive the benefits of the endorsement program.

All factors considered, in general, the higher the number of endorsements, the less disruption of current harvest patterns, and associated social conditions, but the less likely historic participation and harvest patterns can be recovered, resulting in the continued loss of the social benefits of the historic participation and harvest pattern.

Although the alternative thresholds for endorsement qualification are intended to allow historic participants to recover their historic roles, absent a companion individual shares program, like a catch shares program, such endorsement programs may reduce, but would not eliminate the current problem of shifting the season away from when North Carolina and South Carolina fishermen can safely fish for golden tilefish because providing an endorsement would not eliminate the weather-related seasonal harvest access-issues of the status quo. Nevertheless, **Alternative 2** would be expected to some extent to restore the assumed increased benefits of historical harvest participation and patterns. However, not all benefits would be expected to be restored.

The following discussion covers only the estimated maximum number of endorsement qualifiers for the various sub-alternatives and does not include consideration of the effects of the possible reduction in endorsements as a result of the sub-alternatives. Additional discussion will be included upon finalization of the content and scope (harvest thresholds, years of consideration, etc.) of the sub-alternatives.

Sub-Alternatives 2a-k would establish an endorsement for the hook and line sector, while **Sub-Alternative 2l-n** would establish an endorsement for the longline sector. Estimates of the number of endorsements that could result from the respective alternatives are provided in Tables 4-1 and 4-2. **Sub-Alternatives 2b** and **2e** would result in the most (29) and fewest (7) endorsements in the hook and line sector, respectively, while **Sub-Alternative 2l** would result in the most (17) endorsements in the longline sector, and **Sub-Alternatives 2m** and **2n** would both result in the fewest (12) endorsements in the longline sector. As a result, total participation could range from 19 vessels (seven hook and line and 12 longline) to 46 vessels (29 hook and line and 17 longline), assuming endorsements for each gear sector are selected. While the period of examination does not match the full 2001-2005 qualifying years for the endorsement, the average number of unique participants harvesting golden tilefish from 2003-2007 landing at least 101 lbs per year was approximately 43 vessels (see Table 3-15; each landings category within the same year represents a unique set of vessels, so the vessel tallies within each column may be summed; 43 equals the sum of the last three data rows under the "Average" column), and ranged from 35 to 49 vessels. Further, the average number of vessels landing more than 5,000 lbs per year over this period was 11 vessels. As a result, none of the endorsement alternatives would appear to qualify all former participants and, as a result, some social benefits may be forgone. Nevertheless, an endorsement program would be expected to help move this component of the snapper grouper fishery back towards historic participation patterns, resulting in greater social benefits than **Alternative 1 (No Action)**. Because **Sub-Alternative 2b** would result in the qualification of more historic participants, this alternative might be expected to result in more social benefits to the hook-and-line sector than **Preferred Sub-Alternative 2a**. However, an optimal number of participants has not been identified, from either an economic or social perspective, so assumption of greater social, or economic, benefits associated with one sub-alternative relative to the other would be speculative. A similar caution should be applied to comparison of **Sub-Alternative 2l** (17 endorsements) with **Sub-Alternatives 2m** or **2n** (12 endorsements). In the short-term, however, it is assumed that the larger the number of historic participants that qualify for the endorsement, the greater the social benefits because of the reduced disruption of current participation.

In 2008, 44 South Atlantic communities (20 in Florida and 19 in North Carolina) involving 69 dealers (33 in Florida and 29 in North Carolina) recorded tilefish landings (golden or blueline). Specific landings statistics cannot be reported due to confidentiality considerations. Although this proposed action would not limit total golden tilefish harvest, restricting participation may affect the total amount of golden tilefish harvested as well as change product flow through the various communities and dealers. If the more significant harvesters receive endorsements, total volume and the communities where most golden tilefish is landed should not be affected. As shown in Tables 3-16 and 3-17, most golden tilefish are harvested on trips where golden tilefish are the top source of revenue. It is possible, however, that smaller harvests of golden tilefish by some fishermen make up a larger portion of total

harvests quantities by these fishermen or sales activity by some dealers. As a result, while the proposed endorsement system should preserve and possibly increase the social benefits to the more active producers and dealers, and associated communities, absent fishermen landing in multiple ports and selling to multiple dealers in the same city, reduced social and economic benefits will be experienced by some communities and dealers as well as the fishermen who do not receive an endorsement.

4.1.4 Administrative Effects

Establishing an endorsement program will have some level of administrative burden on the agency related to developing and administering the program as well as providing information to the fishing community on the program. The least administratively burdensome alternative would be **Alternative 1 (no action)**, followed by **Alternative 2** and the associated **Sub-Alternatives 2a-2n**. Alternatives in which fewer fishermen qualify for an endorsement will result in less of an administrative burden on the agency. **Sub-Alternative 2b** would provide the most administrative burden and **Sub-Alternative 2e** would provide the least for the hook and line sector. Administrative impacts related to endorsements in the longline sector would be similar for **Sub-Alternatives 2m and 2n** and greater for **Sub-Alternative 2l**.

An administrative burden will be felt by fishermen by **Alternative 2 and associated sub-alternatives**, through the process of applying for and renewing endorsements. However, the various sub-alternatives would not increase or decrease the administrative burden of this action relative to each other.

4.1.5 Council's Conclusions

The Council concluded Preferred Sub-Alternatives 2a and 2l best balance historical and current participants while limiting participation and reducing overcapitalization in the golden tilefish commercial sector. The Council is requesting public comment on these alternatives and the estimated impacts as presented. The Council will consider all comments in finalizing their preferred alternatives.

4.2 Action 2: Allocate commercial golden tilefish quota among gear groups

Alternative 1 (No Action). Do no allocate commercial golden tilefish quota among gear groups.

Alternative 2. Allocate the golden tilefish commercial quota based on 75% longline, 25% hook and line.

Alternative 3. Allocate the golden tilefish commercial quota based on 85% longline, 15% hook and line.

Alternative 4. Allocate the golden tilefish commercial quota based on 90% longline and 10% hook and line.

4.2.1 Biological Effects

Alternative 1 (no action) would not allocate portions of the commercial quota to a specific gear type. Currently, about 90% of the golden tilefish are taken with longline gear and the remaining 10% are caught with hook and line. Prior to the reduction in the golden tilefish quota through Amendment 13C, golden tilefish were targeted by some Florida fishermen in the fall by bandit reel vessels. Longline vessels typically fish for golden tilefish at the start of the year when the trip limit is 4,000 pounds. In recent years, effort for golden tilefish has increased with longline gear due to restrictions in the shark longline fishery. As a result, the golden tilefish quota has been reached by late summer and the trip limit has been reduced even sooner in the year. As a result, hook and line fishermen in Florida have been unable to participate since the season closes before they enter in September.

Action 4 includes alternatives that would change the golden tilefish fishing year from January-December to a fishing year that would start later in the year, which would enable hook and line fishermen to catch golden tilefish in the fall. If the Council decides to take no action on changing the fishing year, **Alternatives 2-4** of Action 2 could allocate a portion of the golden tilefish quota to hook and line gear to ensure some portion of the golden tilefish fishery could be taken by the hook and line sector.

Alternative 2 would allocate 75% of the quota to longline gear, 25% of the quota to hook and line gear, and **Alternative 3** would allocate 85% of the quota to longline gear, 15% of the quota to hook and line gear. A query of landings data from NMFS logbook collected during 2004-2008 indicates 90% of the golden tilefish landings were taken with longline gear and 10% were taken with hook and line gear. Therefore, **Alternatives 2 and 3** would allocate a greater portion of the quota to hook and line gear than has historically (2004-08) been taken. **Alternative 4**, which would allocate 90% of the quota to longline gear and 10% to hook and line gear would match what has been taken with the gear types in recent years.

The biological effect of **Alternatives 1-4** for golden tilefish would be similar since it is likely that the quota would be met regardless of which alternative is selected. However, alternatives allocating a greater portion of the quota to the hook and line sector could have greater biological benefits for protected species if it decreases the chance of interaction with sea turtles by longline gear. Furthermore, alternatives that allocate a greater portion of the harvest to longline gear could have a greater negative impact on habitat since longline gear is considered to do greater damage to hard bottom habitat than vertical hook and line gear (SAFMC 2007). However, damage to bottom habitat with longline gear has not been very well documented and golden tilefish are targeted mostly in mud habitat.

4.2.2 Economic Effects

The economic effects resulting from allocation of the golden tilefish commercial quota among the longline and hook and line gear groups, assuming implementation of a gear endorsement

program, are not quantifiable at this time. To compare the economic effects in a quantitative way among **Alternatives 1-4**, revenue and cost information would be needed to estimate the profitability of various endorsement holders. The economic costs logbook program does not hold sufficient data to differentiate between longline and hook and line gear users that catch golden tilefish specifically. However, there are likely to be economic profitability differences between longline and hook and line gear users and therefore differences between the alternatives. Allocation of a relatively low percentage to one of the gear groups compared to the current percentage use of the resource under **Alternative 1** would result in a decrease in profitability for that gear group. Historical catch by gear group using logbook data is shown in **Table 4-3**. Longline gear took an average of 92.3% of the landings recorded in logbooks from 1999-2008 while hook and line gear (hook and line, electronic reel, bandit) took 7.5% of landings. The highest percentage taken by hook and line gear is 12.1% in 2007. However, in recent years, hook and line gear users have been unable to fish because the season ended before they began fishing, typically in September. **Alternative 4** would result in a decrease in the recent high of 12% taken by hook and line gear users while **Alternative 3** would result in a slight increase. **Alternative 2** would result in an allocation between gear users that is closest to the portion of landings taken by hook and line users prior to involvement of the longline vessels in the golden tilefish fishery.

The annual catch limit (ACL) identified for golden tilefish in Amendment 17B is 282,819 pounds (gutted weight). The commercial quota is 97% of the ACL or 274,334. The hook and line allocation under **Alternatives 2, 3, and 4** would be 68,584 pounds, 41,150 pounds, and 27,433 pounds, respectively.

Table 4-3. Historical landings by gear group, 1999-2008.

	Year									
Landings by Gear	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
Longline	391,205	556,275	363,553	333,363	288,536	220,740	230,422	327,314	245,636	279,044
	94.3%	94.7%	95.2%	89.2%	95.0%	92.2%	88.9%	92.1%	87.9%	93.8%
Hook and Line	20,550	28,522	18,197	39,752	15,103	18,671	28,157	28,113	33,805	17,899
	5.0%	4.9%	4.8%	10.6%	5.0%	7.8%	10.9%	7.9%	12.1%	6.0%
OTHER	3,158	2,480	239	444	-	-	484	100	116	683
	0.8%	0.4%	0.1%	0.1%	0.0%	0.0%	0.2%	0.0%	0.0%	0.2%
TOTAL	**414,913**	**587,277**	**381,989**	**373,558**	**303,639**	**239,412**	**259,063**	**355,527**	**279,556**	**297,626**

4.2.3 Social Effects

Alternative 1 (No Action) would not establish any gear allocations for the golden tilefish commercial quota. As a result, all current fishing practices would be allowed to continue and no changes in status quo social benefits would be expected.

The gear allocations specified by **Alternatives 2-4** would be expected to result in social effects consistent with the extent to which the allocations differ from normal harvest patterns. Unless it can be demonstrated that other management measures, such as trip limits or gear controls (i.e., limiting the number of vessels using a particular gear that is more effective in harvesting golden tilefish), the most recent historical harvest distribution rates can be argued to represent the distribution rates that best meet the total needs of the participants from a social and economic perspective because these rates have not been artificially or externally determined. Although practical limitations, such as the effects of the cost of vessel or gear conversion, considerations of differences in where the use of different gears are practical, and distance from these areas should not be ignored in the decision of what size vessel or gear to fish, absent regulatory control (e.g., limits on the number of vessels of certain sizes or using certain gears, or restrictions on who can fish where), these are individual choice decisions, based on personal considerations, and are outside regulatory control and result in distributions of harvest activity that reflect these individual decisions. In such a case, absent an additional specific social or economic management goal that can be best achieved by deviation from the historic distribution of harvests, it is assumed that the further an imposed allocation deviates from the historic distribution, the greater the reduction in social and economic benefits. With respect to golden tilefish, a specific social and economic goal has been advanced. The goal is to preserve access to the resource by vertical line fishermen when they have historically harvested golden tilefish (late summer to early fall) and avoid the quota being taken by longline fishermen before vertical line fishermen traditionally switch over to this species.

Based on the information in Table 4-3 (2003-2007 average data), the longline sector has historically harvested approximately 90% of the golden tilefish quota. These proportions are believed to have persisted at least through 2008 (see the biological effects discussion). Thus, the allocation specified in **Alternative 4** would be consistent with the historical performance of this component of the snapper grouper fishery and, as a result, **Alternative 4** would be expected to result in the greatest social benefits from the perspective that the historic fishery performance maximizes social and economic benefits. **Alternative 2** would result in the greatest deviation from historic harvest patterns and, as a result, would be expected to result in the greatest disruption and loss in social benefits. The effects of **Alternative 3** would be expected to be intermediate to those of **Alternative 2** and **Alternative 4**.

Any alternative that at least meets historic distributions would also satisfy the goal of preserving access to the resource by the hook and line gear sector. Each of **Alternatives 2-4** would achieve this goal. However, **Alternative 4** would achieve this goal without disrupting the historic distribution of harvests. No information has been identified to suggest that preservation of access would be better accomplished, with increased social benefits, under a larger allocation than that contained in **Alternative 4**.

Additional information useful for generating insights into the potential effects of the proposed alternatives is provided in Tables 3-10 and 3-11. Although the information in these tables is not disaggregated by gear sector, it is logical to assume that most trips where golden tilefish are the top source of trip revenue have been longline trips (golden tilefish were likely the target species on these trips and average annual landings for these trips, approximately

303,000 lbs, were almost identical to the total average annual landings by the longline gear sector, approximately 302,000 lbs). For trips where golden tilefish were the top source of trip revenue, golden tilefish accounted for approximately 86% of all trip revenues (Table 3-10). For trips on which golden tilefish were caught but were not the top revenue species, golden tilefish accounted for only approximately 16% of all trip revenues. This suggests that golden tilefish revenues are more important to trips where golden tilefish are the top revenue species, and associated vessels, which are assumed to be longline vessels. If true, by extension, significant deviation from historic harvest patterns, as would occur under **Alternatives 2** and **3**, may be expected to result in greater reductions in social benefits to these longline vessels than the gains to the recipient hook and line sector. However, it should be noted that, total (across all species) average revenues by vessels taking trips where golden tilefish were not the top revenues species was only approximately $7,400 per vessel ($54,000 total per year from golden tilefish plus $278,000 from other species divided by 45 vessels; Table 3-11), whereas the respective revenues for vessels taking trips where golden tilefish was the top revenue species was approximately $18,400 per vessel ($667,000 from golden tilefish plus $106,000 for other species divided by 42 vessels; Table 3-10). As a result, preserved access, which would occur under each of **Alternatives 2-4**, or increased access, which would occur under **Alternatives 2** and **3**, by the lesser revenue group, assumed to be hook and line vessels, could result in greater relative social benefits.

4.2.4 Administrative Effects

Alternative 1 (No Action), would result in no new administrative burden. **Alternatives 2-4** would allocate golden tilefish quota between the longline and hook and line sectors. Establishing any of the allocation scenarios through **Alternatives 2-4** would involve minor administrative impacts in the form of rulemaking, monitoring quota, and developing education and outreach materials.

4.2.5 Council Conclusions

The Council does not have a preferred alternative for this action and is requesting public comment on these alternatives and the estimated impacts as presented. The Council will consider all comments in finalizing their preferred alternative.

4.3 Action 3: Allow for Transferability of Golden Tilefish Endorsements

Alternative 1 (No Action). Longline and hook and line golden tilefish endorsements are not allowed to be transferred.

Alternative 2. Longline and hook and line golden tilefish endorsements can be transferred between any two individuals or entities that hold valid SG permits.

Option 1: Transferability allowed upon program implementation.
Option 2: Transferability not allowed during the first 2 years of the program.
Option 3: Transferability not allowed during the first 3 years of the program.

Option 4: Transferability not allowed during the first 5 years of the program.

Alternative 3. Longline golden tilefish endorsements can be transferred between any two individuals or entities that hold valid commercial unlimited SG permits.

Option 1: Transferability allowed upon program implementation.
Option 2: Transferability not allowed during the first 2 years of the program.
Option 3: Transferability not allowed during the first 3 years of the program.
Option 4: Transferability not allowed during the first 5 years of the program.

Alternative 4. Hook and line golden tilefish endorsements can be transferred between any two individuals or entities that hold valid commercial unlimited SG permits.

Option 1: Transferability allowed upon program implementation.
Option 2: Transferability not allowed during the first 2 years of the program.
Option 3: Transferability not allowed during the first 3 years of the program.
Option 4: Transferability not allowed during the first 5 years of the program.

Alternative 5. Hook and line golden tilefish endorsements can be transferred between any two individuals or entities that hold valid commercial limited (225 lb) SG permits.

Option 1: Transferability allowed upon program implementation.
Option 2: Transferability not allowed during the first 2 years of the program.
Option 3: Transferability not allowed during the first 3 years of the program.
Option 4: Transferability not allowed during the first 5 years of the program.

Alternative 6. Hook and line and longline golden tilefish endorsements can be transferred between any two individuals or entities that hold valid commercial unlimited SG permits. regardless of gear endorsement category.

Option 1: Transferability allowed upon program implementation.
Option 2: Transferability not allowed during the first 2 years of the program.
Option 3: Transferability not allowed during the first 3 years of the program.
Option 4: Transferability not allowed during the first 5 years of the program.

4.3.1 Biological Effects

Alternative 1 would not allow for transferability of golden tilefish endorsements and could result in decreased participation in the golden tilefish fishery over time as fishermen with endorsements exit the fishery permanently. Decreased participation could result in a corresponding decrease in effort and landings of golden tilefish. However, it is also possible that effort would not decrease with decreased participation and the same amount of golden tilefish would be caught, albeit with fewer participants. Therefore, among **Alternatives 1-6**, no action **Alternative 1** could have the greatest biological benefit for the golden tilefish stock if it results in decreased landings of golden tilefish. However, actions have been taken to end

overfishing of golden tilefish in Amendment 13C, and Amendment 17B, if implemented, will further ensure overfishing of golden tilefish does not occur with the establishment of annual catch limits. Therefore, there is no biological need to decrease landings of golden tilefish. Since this action is administrative and does not establish immediate harvest objectives, it will not directly affect the protected species.

Alternatives 2-6, which would allow transferability of golden tilefish endorsement, would not be expected to negatively impact the golden tilefish stock. The biological effects of **Alternatives 2-6** would likely be very similar as landings would be constrained by a quota. Therefore, the effects of **Alternatives 2-6** may be more economic and administrative than biological. **Alternative 2** would allow transfer of golden tilefish hook and line or longline endorsements among individuals who hold snapper grouper Federal commercial permits. **Alternatives 3-4** would place stipulations on transfer of endorsements among specific gear types including longline gear in **Alternative 3** and hook and line gear in **Alternative 4**. **Alternatives 5** and **6** would restrict transfer of hook and line endorsements to specific categories of snapper grouper permits. **Alternative 6** would only allow transfer of hook and line endorsements among individuals with unlimited Federal snapper grouper commercial permits; whereas, **Alternative 5** would restrict transfer of hook and line endorsements to individuals who possess a limit 225 lb snapper grouper Federal commercial permit. Four options under **Alternatives 2-6** would put a time constraint on when transfer could begin. For **Option 4** under **Alternatives 2-6** could have the greatest positive effect for golden tilefish because it would place the longest time period on when an endorsement could be transferred. It is possible an individual might not be able to go fishing in a particular year and there could be a resulting benefit to the resource. However, as stated under **Alternative 1**, effort might not show a corresponding decrease with the number of participants in the fishery. The rationale behind delaying transferability of endorsements is to allow people time to develop an understanding of the value of the endorsements before selling them.

4.3.2 Economic Effects

Alternative 1 (No Action) would not allow for transferability of golden tilefish endorsements and would therefore result in decreased participation in the golden tilefish fishery over time as fishermen with endorsements exit the fishery permanently. While they will be able to sell their snapper grouper permit, they would not be able to sell their golden tilefish gear endorsement which could result in difficultly selling their permit, vessel, and gear since permits are often sold with the vessel and gear. Since longline gear is restricted in many of the South Atlantic fisheries, sale of the gear and a larger vessel suitable for longlining for golden tilefish, would be difficult without sale of the golden tilefish longlining endorsement.

Alternatives 2-6 would provide the opportunity for new entrants without an increase in the overall number of participants. **Alternative 2** would provide the greatest amount of endorsement transfer flexibility relative to **Alternative 1 (No Action)** in that it would allow transferability of all permits between any two permit holders (regardless of permit gear category). However, the permit purchased would maintain the gear category it originally held. Therefore, the total number of longline permits would remain as would the total number of hook and line permits. Currently, limited permits are not allowed to be transferred. **Alternatives 3-5** grant specific gear permits transferability allowances. There are no limited

(225 lb.) permits being used to longline and therefore there is no alternative for transferability of longline limited permits.

Alternative 6 would allow maximum flexibility for unlimited permit holders whereby no permit holder would be restricted by the gear endorsement category.

The rationale behind delaying transferability of catch privilege assets, like endorsements, is to allow people time to develop an understanding of the value of the endorsements before selling them. In general, the value of an asset under a catch share program increases over time as people come to understand the possibilities for improved management of the fishery and the impact that might have on the asset. That is, if catch shares appear to be resulting in better stock management or greater ex-vessel prices, quota share tends to increase. However, an endorsement program does not have the same characteristics as quota share and therefore a two year or more delay in transferability allowances might not be necessary. An endorsement program would decrease the race to fish that is expected to occur under **Alternative 1 (No Action)**. Therefore, there could be an increase in ex-vessel price (and therefore the value of an endorsement) if loss of quality has been a result of the race to fish occurring in recent years and ex-vessel prices have declined. However, there is no known anecdotal or other information to support this at this time. Increases in the precision of stock management are possible due to a cap on the number of participants but not to the same degree as that expected under a catch share program which is often accompanied by increases in monitoring and enforcement that enable better stock management.

Conceptually, the degree of transfer flexibility influences the aggregate profitability of the fishery and the average individual profitability. The greater the degree of transferability allowed, the greater the value of the permit is expected. Also, the greater the degree of transferability allowed, the greater the profitability of the individual who owns the permit because they have the ability to sell their permit when they need to switch to more profitable fisheries or when they are unable to fish. However, lack of participation could benefit the fishermen remaining in the fishery. Considering the above, **Alternative 2** is expected to produce the greatest aggregate and individual profitability over time for the golden tilefish fishery. **Alternative 3** would enhance profitability for longline unlimited permit holders. **Alternative 4** would enhance profitability for hook and line unlimited permit holders. Likewise, **Alternative 5** would enhance profitability for hook and line limited (225 lb.) permit holders. **Alternative 6** would benefit unlimited permit holders only. However, Options 1-4 will likely influence the degree of enhancement to profitability possible. **Option 1** would allow for transferability of permits to take place immediately upon implementation and this is expected to maximize economic benefits. **Option 4** would allow for the longest delay in transferability allowances. While this might allow for people to best assess the value of the gear endorsements and make more accurate permit market transactions, it would delay transfers that could benefit fishermen. **Options 2 and 3** would fall in between **Options 1 and 4** with regard to expected economic benefits.

If participation remains steady over the years of the program during which transferability is not allowed, aggregate profitability of the fishery could remain steady. If, however, landings drop due to people leaving the fishery and not transferring the endorsement due to restrictions,

aggregate profitability would decline. However, at the same time, individual average profitability could increase because there would be less people sharing the same amount of landings as under **Alternative 1 (No Action)**.

4.3.3 Social Effects

A discussion of the general direct and indirect social consequences of regulatory change is provided in Section 4.1.3.

The trade-off of social benefits associated with transferability options relate to considerations of whether social benefits would be enhanced if participation in this component of the snapper grouper fishery can only decrease over time, (**Alternative 1 (No Action)**), would be higher under no restrictions (subject to possession of a valid commercial snapper grouper permit; **Alternative 2**) versus restrictions on gear or permit type (limited versus unlimited) (**Alternatives 3-6**), and how delay in allowing transfer may affect the social benefit stream (**Options 1-4** for **Alternatives 2-6**). Although it cannot be empirically determined with available data, an underlying assumption for the proposed endorsement requirement to harvest commercial quantities of golden tilefish and the proposed change in the fishing year is that social benefits will increase relative to the current management system. None of the endorsement qualification alternatives encompass eliminating all participation and harvest. As such, the implied conclusion is that some level of non-zero participation (and harvest) will maximize social and economic benefits (as long as the resource is not severely overfished). Although it would take time for such to occur, an inability to transfer golden tilefish endorsements, as would be the case under **Alternative 1 (No Action)**, would mean that, absent subsequent action, participation would decrease over time as fishermen retire or cease harvesting golden tilefish for other reasons, eventually ending in no participants or legal commercial harvest. This would be inconsistent with the expectation that active participation, at some unspecified level, and harvest would be expected to result in greater benefits. As a result, **Alternative 1 (No Action)** would be expected to result in reduced social benefits relative to the other alternatives. In all likelihood, however, the adoption of **Alternative 1 (No Action)** would result in subsequent future management action to allow new participation in this component of the snapper grouper fishery.

Generally, it can be argued that social and economic benefits would be maximized the fewer the constraints placed on the transfer of an asset. Unencumbered transfer allows the largest pool of recipients, which would be expected to result in the payment of the highest price for the asset. As previously stated, **Alternatives 2-6** require the recipient hold a valid commercial snapper grouper permit. This restriction would be expected to reduce social benefits relative to no restriction by an indeterminate amount by not allowing anyone to purchase an endorsement. Although allowing an entity that could not use (harvest fish with) the endorsement may seem illogical because, absent a fixed associated harvest rights (catch or quota shares), removing an endorsement from active use would not affect the amount of available harvest, an entity that did not possess a valid commercial snapper grouper permit would only acquire an endorsement if positive benefits were expected to accrue. These benefits could be associated with the possibility of simply reducing effort or "taking" a boat off the water. Regardless of the nature of benefits, these benefits would be expected to be

equal to or greater than the benefits of continuing to harvest golden tilefish under the endorsement, otherwise the endorsement would be sold/transferred to someone who expected to harvest golden tilefish.

Alternatives 2-6 vary by placing different restrictions on endorsement transferability. These restrictions are tacit recognitions of the two types of commercial snapper grouper permits, limited and unlimited, and the operational performance of the different gear sectors. Consistent with the logic and assumptions that resulted in the establishment of the two types of commercial snapper grouper permits, it is assumed that social and economic benefits will be maximized if this management structure is continued and, because a golden tilefish endorsement would constitute an endorsement to the permit, it is logical that the endorsement preserve this permit structure. As a result, **Alternative 2**, which would not preserve the permit structure (an endorsement from a limited permit could be transferred to an unlimited permit and vice versa), would be expected to result in reduced benefits relative to those alternatives (**Alternatives 3-6**) that preserved the permit type structure.

Because of how they address the different gear sectors in the snapper grouper fishery, further comparison of the effects of **Alternatives 2-6** should be nested. **Alternatives 3-6** vary by their recognition of and application to the different gear sectors and can all be compared to **Alternative 2**, which would have no gear restrictions. Because they consider separate single gear sectors, however, **Alternatives 3-5** cannot be compared with each other. Further, only **Alternatives 3** and **4** can be compared with **Alternative 6** because only these alternatives are exclusive to unlimited commercial snapper grouper permits.

Because they would preserve the current permit structure, **Alternatives 3-5** would be expected to result in greater social benefits than **Alternative 2**. **Alternative 6** would also preserve the permit structure and be expected to result in greater social benefits than **Alternative 2**. **Alternative 6** varies from **Alternatives 3** and **4**, however, because **Alternative 6** would not limit endorsement transfers to vessels that use the same gear. Under current commercial snapper grouper permit regulations, no constraint is placed on changing the gear type used by a vessel. As seen in Table 3-18, the majority of golden tilefish is harvested with longline gear (depicted in the table as "other gear"). Thus, although fishermen who have harvested golden tilefish to date have had the flexibility to change their gear type and allowing endorsement transfer across gear types would preserve this flexibility. However, if stabilizing the number of participants and individual harvest performance are the goals of the endorsement system, allowing cross-gear transfers would not be consistent with the second goal because allowing additional longline fishermen to acquire golden tilefish endorsements from hook and line vessels provides a substantial opportunity to disrupt the harvest patterns for this species, at the expense of current harvesters. As a result, while the total number of participants would not be affected, because of the potential change in performance (distribution on harvests across vessels and gear sectors) and associated product flow through dealers and communities, **Alternative 6** would be expected to result in lower social benefits than **Alternatives 3** and **4**.

Any ability to transfer endorsements may also result in equity criticisms, similar to complaints associated with transferable catch share programs. Although the golden tilefish endorsement

would not contain an entitlement to a specific harvest quantity, it would still bestow asset rights to the recipient, because endorsement possession would enable harvest, and the recipient would possess a new marketable asset. The value of this asset (the endorsement) would represent a windfall profit for the endorsement recipient, in addition to any benefits from actual harvest, a circumstance that may seem inequitable to entities denied an endorsement upon their initial issuance. While transferability would allow those denied an endorsement, or others in the snapper grouper fishery who previously did not harvest golden tilefish, an opportunity to acquire an endorsement and harvest this species, they could do so only if they purchased the endorsement, the value of which is unknown at this time. The market price would be expected to increase the lower the total number of endorsements and the higher the total value of harvests. The absence of specific harvest entitlements (catch shares) may keep transfer prices lower than they otherwise may be, even if the harvest history is also transferred, while speculation on the potential development of a catch share program may increase transfer prices (if the transfer includes the harvest history).

The magnitude of equity criticisms would be expected to increase with the value of the windfall and could increase with the immediacy of the windfall. Allowing someone to receive and immediately sell an endorsement could be considered more unfair than requiring they keep it, whether fished or not, for a period of time before transfer is allowed. Further, because the intent of the endorsement program is to return harvests to historic patterns, delayed transfer rights increases the likelihood that endorsement recipients actually use the endorsement (i.e., harvest golden tilefish) and help achieve the expected social and economic benefits of a return to historic harvest patterns. These considerations are relevant to examination of **Options 1-4,** which apply to **Alternatives 3-6**. The determination of which option is preferable hinges on a comparison of the benefits of maximum flexibility (**Option 1**) with the benefits of "stability" (presumed to accrue to allowing this component of the snapper grouper fishery to adjust to operation under the new endorsement system), as would occur under **Options 2-4,** and how of a period of stability is sufficient. As previously stated, generally, social and economic benefits are expected to be greater the broader the freedom to manage one's assets (freedom to sell the endorsement without time constraints), notwithstanding the previous discussion on equity concerns. This is particularly true as situations can arise where a decision to stop fishing is not discretionary, as may be the case should an adverse health situation or personal financial crisis arise. So, to the extent that reduced ability to transfer the endorsements results in reduced benefits, the longer the restriction applies, the greater the expected reduction in social benefits. To the extent that benefits are increased with stability, and in this case stability refers to who the participants are and not their number, the appropriate question is at what point do the benefits of allowing transfer exceed the benefits of stability. This is an empirical question that cannot be answered with available data.

See Section 4.3.3 for discussion on the number of potentially affected communities and dealers with recorded tilefish landings in 2008.

4.3.4 Administrative Effects

Establishing an endorsement program (Action 1) will have some level of administrative burden on the agency related to developing and administering the program as well as providing information to the fishing community on the program. Adding transferability (Action 3) to the endorsement program will increase the administrative burden, requiring the tracking of endorsements, once transferred. The least administratively burdensome alternative would be **Alternative 1 (no action)** which would not allow endorsement transferability. **Alternatives 2-6** would allow some form of transferability between users. These alternatives are expected to have similar administrative impacts. **Options 1-4** specify waiting periods before transferability will be allowed. **Option 1** would allow for endorsement transferability immediately and would have a moderate increase in administrative burden due to tracking endorsements. The addition of the waiting periods as described in **Options 2-4** would not increase or decrease the administrative burden in the long term. **Options 2-4** allow for a period of time in which transferability is not allowed, which may alleviate some of the administrative burden in the short term. However, once the waiting period is over, the administrative burden related to endorsement transfers will resume. An administrative burden will also be felt by fishermen through all of the alternatives, through the process of transferring the endorsements.

4.3.5 Council's Conclusions

The Council does not have a preferred alternative for this action and is requesting public comment on these alternatives and the estimated impacts as presented. The Council will consider all comments in finalizing their preferred alternative.

4.4 Action 4: Adjust Golden Tilefish Fishing Year

Alternative 1 (No Action). Retain existing January 1st start date for the golden tilefish fishing year.

Alternative 2. Change the start of the golden tilefish fishing year from January 1st to September 1st.

Preferred Alternative 3. Change the start of the golden tilefish fishing year from January 1st to August 1st.

Alternative 4. Change the start of the golden tilefish fishing year from January 1st to May 1st.

4.4.1 Biological effects

Alternative 1 (No Action) would retain regulations for golden tilefish through Snapper Grouper Amendments 13C and 15A to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (FMP). Golden tilefish is experiencing overfishing but it is not overfished. The Council has taken action to end overfishing but the determination about overfishing will not be changed until an assessment update is completed. Regulations for golden tilefish established a commercial quota of 295,000 pounds gutted weight with a

4,000 pound gutted weight trip limit that is reduced to 300 pounds gutted weight if 75% of the quota is met on or before September 1. In addition, regulations limited recreational catch to 1 fish per person per day. The commercial catch was based on historic landings during 1999-2003, where 98% of the total catch was captured by commercial fishermen. The commercial portion (98%) was applied to the yield at F_{MSY} to determine the commercial quota. Amendment 17B to the FMP, if approved, would change the commercial quota for golden tilefish to 282,819 pounds gutted weight.

Alternatives 2-4 would change the fishing year for golden tilefish. Public testimony on Snapper Grouper Amendment 13C (SAFMC 2006) indicated some Florida based commercial hook-and-line fishermen are concerned an early closure could prevent them from harvesting golden tilefish from September through November, which is the time they have historically participated in the fishery. As the golden tilefish quota was met in the summer of 2007, 2008, 2009, and spring 2010 this concern has been realized. Consequently, the Council is considering modifying the start date of the fishing year and the stepped trip limit strategy, as appropriate, to ensure the golden tilefish regulations imposed in October 2006 through Snapper Grouper Amendment 13C (SAFMC 2006) do not unnecessarily disproportionately impact select fishermen. However, recent regulations resulting from Amendment 16, have resulted in a seasonal closure for shallow water grouper species during January-April and early closures for vermilion snapper and black sea bass. As a result, one of the only fisheries open during early 2010 was golden tilefish. Thus, commercial fishermen were able to target golden tilefish and generate some income when other fisheries, which fishermen historically targeted, were closed.

Alternative 1 (No Action) would retain the January 1 fishing year start date and allow the trip limit to be reduced from 4,000 lbs gutted weight to 300 lbs gutted weight if 75% of the quota was met on or before September 1. Although the commercial hook and line catch of golden tilefish is minor (~8% during 1999-2004 and ~10% during 2004-2008), 35% of the catch occurred during September and October 1999-2004. After implementation of Amendment 13C in 2006, the quota was met before September and the fishery closed before the period of time when the greatest commercial hook and line catches of golden tilefish have historically occurred. The expected biological effects of retaining or modifying the fishing year are expected to be minimal because hook and line landings are small and total mortality is constrained by a commercial quota. A change in the fishing year would affect how and when fishing effort (longline versus hook and line) is applied to the stock throughout the year.

The Council's **Alternative 2** would begin the fishing year for golden tilefish in September, the period of time when the greatest commercial hook and line catches of golden tilefish have historically occurred. **Preferred Alternative 3** would begin the fishing year in August and also allow hook and line fishermen to fish during the period of time when their catches have been greatest. **Alternative 4** would start the fishing year in May but would still allow hook and line fishermen to fish for golden tilefish in the fall but there is a greater chance the quota would met sometime during September through November.

The biological effects in terms of level of harvest of **Alternatives 2-4** would be very similar. The commercial hook and line catch of golden tilefish is small (~8-10%). Therefore,

changing the fishing year is not likely to substantially increase the commercial hook and line catch. Furthermore, a change in the fishing year probably will not alter the number of months the commercial longline fishery operate as the percentage of golden tilefish landed was evenly distributed among all months before more restrictive regulations were implemented. Even though the fishery has closed before the end of the year from 2007 to 2010, it is unlikely that golden tilefish would be taken incidentally as bycatch since the majority of the catch is with longline gear. Furthermore, golden tilefish do not occupy the same habitat of other deep water species (i.e., snowy grouper, blueline tilefish, blackbelly rosefish, etc.). Golden tilefish prefer a mud habitat whereas the other deep water species occur in a rocky habitat. While there is little biological benefit to changing the fishing year, a shift in the fishing year would allow hook and line fishermen to target golden tilefish in the fall; however, a change in the fishing year would also result in multiple species being open at the same time. Therefore, there could be economic benefit to some fishermen by retaining the January start date (**Alternative 1**) for golden tilefish. It is noted that Action 2, which includes alternatives that would allocate portions of the quota to the longline and hook and line sector, would have a similar effect in ensuring fishermen would be able catch golden tilefish with hook and line gear.

Golden tilefish spawn off the southeast coast of the U.S. from March through late July, with a peak in April (Harris *et al*. 2001). Grimes *et al.* (1988) indicate peak spawning occurs from May through September in waters north of Cape Canaveral. **Alternative 1 (No Action)** would continue to open the season before the start of the spawning season. **Alternative 2** would move the opening until after the bulk of the spawning season. **Preferred Alternative 3** would move the opening until near the end of the spawning season. **Alternative 4** would move the opening to the peak of the spawning season. **Alternative 2** would provide the most biological protection, followed by **Preferred Alternative 3**, **Alternative 4**, and **Alternative 1 (No Action)**.

Alternative 1 (No Action) would perpetuate the existing level of risk for interactions between Endangered Species Act (ESA)-listed species and the fishery. **Alternatives 2-4** are unlikely to have adverse effects on ESA-listed *Acropora* species. Previous ESA consultations determined the snapper grouper fishery was not likely to adversely affect these species. These alternatives are unlikely to alter fishing behavior in a way that would cause new adverse effects to *Acropora*. The impacts from **Alternatives 2-4** on sea turtles and smalltooth sawfish are unclear. Sea turtle abundance in the South Atlantic changes seasonally. Even if **Alternatives 2-4** perpetuate the existing amount of fishing effort, but causes a temporal or spatial effort redistribution, any potential effort shift is unlikely to change the level of interaction between sea turtles and smalltooth sawfish and the fishery as a whole. If these alternatives reduce the overall amount of fishing effort in the fishery, the risk of interaction between sea turtles and smalltooth sawfish will likely decrease.

4.4.2 Economic Effects

Alternatives 2-4 deal with changing the fishing year in the golden tilefish fishery. Under current regulations, the golden tilefish fishing year begins on January 1st with a 4,000 pound gutted weight trip limit. Once 75% of the quota is taken, a 300 pound gutted weight trip limit

goes in to place. The current golden tilefish fishery is characterized by a race to fish, a small number of longline participants taking the majority of the catch (92%), and a larger number of hook and line participants. Longline participants begin fishing in January in Florida. By April or May when the weather improves, Carolina longliners begin fishing, historically. In September and October, hook and line fishermen begin to fish for golden tilefish. This is the time of year when they are not participating in other fisheries.

Alternatives 2-4 would all benefit hook and line golden tilefish fishermen in Florida allowing them to fish for golden tilefish in the fall months when they are not participating in other fisheries. In recent years, hook and line fishermen have not been able to fish for golden tilefish, as they have in the past, in the months of September and October due to earlier closures. Likewise, Carolina fishermen may be able to fish for more months of the year under these alternatives because they will be able to fish at the beginning of the season when weather is amendable to fishing. In past years when the season began in January, Carolina fishermen were not able to begin fishing until April or May. They could only fish for a couple of months sometimes before the 4,000 pound trip limit dropped. A May start date (**Alternative 4**) would benefit Carolina longline fishermen most compared to **Alternatives 2 and Preferred Alternative 3**. A September 1 start date (**Alternative 2**) would perhaps benefit them the least. Under current regulations, the fishery starts January 1st. Carolina fishermen may be able to start fishing May 1st and then fish for four months. A September 1st start date (**Alternative 2**) may not even provide four months of fishable weather.

One significant drawback to a later start date (**Alternatives 2-4**), however, is that under **Alternative 1 (No Action)**, very little landings are available to dealers as a result of the red snapper and shallow water grouper closures imposed through Amendment 17A and the closures and reduction in ACLs for gag and vermilion in Amendment 16 and reduction in ACLs for various species in the Comprehensive ACL Amendment. Having golden tilefish available during January to May when gag and shallow water grouper harvest is closed, could increase the ex-vessel price paid to fishermen for golden tilefish. Even if ex-vessel prices do not increase in the early part of the year, keeping the start date at January 1st could help dealers maintain supply and therefore keep customers.

4.4.3 Social Effects

A discussion of the general direct and indirect social consequences of regulatory change is provided in Section 4.1.3.

This action attempts to respond to the disruption, and presumed adverse social and economic consequences, of historic participation and harvest patterns as a result of recent management measures, specifically the 4,000-pound trip limit that is reduced to 300 pounds if 75% of the quota is taken on or before September 1. As discussed in the previous sections, the golden tilefish component of the snapper grouper fishery has been reduced to less than a full-year harvest activity. Further, in recent years, the trip limits and subsequent early closure have resulted in North Carolina and South Carolina fishermen, who are not able to fish for golden tilefish until spring due to weather conditions, having access to a shorter season, and Florida hook and line fishermen not being able to fish for golden tilefish at all because of quota

closure. As discussed in Section 4.3.3, deviation from these historic patterns is assumed to have resulted in declines in social and economic benefits to the fishery, associated businesses, and communities.

Because **Alternative 1 (No Action)** would not make any regulatory change in the fishing year, no changes in the manner in which the fishery is prosecuted would be expected and, as a result, no changes in the current social benefits of the fishery would be expected to occur. Any decline in social benefits resulting from shifting harvest patterns away from historic/traditional harvest pattern, as discussed in the previous paragraph and Section 4.3.3, would be expected to continue. Increased deviation from historic patterns, and associated social and economic benefits, could occur if fishing effort and patterns shift in response to increasingly restrictive management on other snapper grouper species. While such shift may compensate for social and economic losses associated with these species, this shift would increase the losses in social and economic benefits to historic commercial harvesters, and associated businesses and communities, of golden tilefish.

Alternatives 2-4 attempt to recover these reduced benefits, and prevent further losses, by adjusting the start of the fishing year. While adjusting the start of the fishing year, in conjunction with the annual catch limit (ACL) and accountability measures (AMs), would not affect the total available quota, commencement of the fishing year in September (**Alternative 2**), August (**Alternative 3 (Preferred)**), or May (**Alternative 4**) would be expected to allow increased participation and recovery of historic harvests. The earlier the start (May), the greater the opportunity for participation by North Carolina and South Carolina fishermen, with continued potential jeopardy for Florida hook and line vessels (quota management could still close the fishery in the fall), while the later the start (September) the reverse would occur; Florida hook and line fishermen should be able to fish the entire fall under a September start, whereas North Carolina and South Carolina fishermen could face abbreviated fishing opportunities depending on fall and winter weather conditions and the pace at which the quota is harvested. The step-down trip limit would still apply, and the earlier the season began, the greater the likelihood that longline vessels, particularly Florida vessels, may lose traditional winter fishing time as these vessels would not be expected to be able to profitably fish under 300-pound trip limits. Both **Alternative 2** and **Alternative 3 (Preferred)** would be expected to result in similar fishing opportunities for Florida fishermen, and improved opportunities relative to **Alternative 4**, whereas Carolina fishermen should face better opportunities under **Alternative 3 (Preferred)** relative to **Alternative 2**, but reduced opportunities relative to **Alternative 4**.

See Section 4.3.3 for discussion on the number of potentially affected communities and dealers with recorded tilefish landings in 2008.

4.4.4 Administrative Effects

Alternative 1 (No Action), would result in no new administrative burden. **Alternatives 2-4** would adjust golden tilefish management measures to change the start date of the fishing year.

Implementing a change in the fishing year would incur minor adverse administrative impacts in the form of developing outreach materials such as fishery bulletins.

4.4.5 Council's Conclusions

The Council concluded Preferred Alternative 3 best balances historical participation and the biological impact of beginning the fishing year during the spawning season. The Council is requesting public comment on these alternatives and the estimated impacts as presented. The Council will consider all comments in finalizing their preferred alternative.

4.5 Action 5: Establish Golden Tilefish Fishing Limits

Alternative 1 (No Action). Retain the 300 pound gutted weight trip limit when 75% of the quota is taken.

Preferred Alternative 2. Remove the 300 pound gutted weight trip limit when 75% of the quota is taken.

Alternative 3: Prohibit longline fishing after 75% of the quota is taken.

4.5.1 Biological Effects

Alternative 1 (No Action) would retain regulations for golden tilefish through Snapper Grouper Amendments 13C and 15A to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (FMP). Golden tilefish is experiencing overfishing but it is not overfished. The Council has taken action to end overfishing but the determination about overfishing will not be changed until an assessment update is completed. Regulations for golden tilefish established a commercial quota of 295,000 pounds gutted weight with a 4,000 pound gutted weight trip limit that is reduced to 300 pounds gutted weight if 75% of the quota is met on or before September 1. In addition, regulations limited recreational catch to 1 fish per person per day. The commercial catch was based on historic landings during 1999-2003, where 98% of the total catch was captured by commercial fishermen. The commercial portion (98%) was applied to the yield at F_{MSY} to determine the commercial quota. Amendment 17B to the FMP, if approved, would change the commercial quota for golden tilefish to 282,819 pounds gutted weight.

Commercial longline fishermen are concerned a 300 pound gutted weight trip will not be profitable given the size of their operations. Furthermore, hook and line fishermen are concerned the quota is being met quickly and before fall when they have historically fished for golden tilefish. Consequently, the Council is considering modifying the stepped trip limit strategy, as appropriate, to ensure the golden tilefish regulations imposed in October 2006 through Snapper Grouper Amendment 13C (SAFMC 2006) do not unnecessarily disproportionately impact select fishermen.

Alternative 1 (No Action) would retain the trip limit reduction from 4,000 lbs gutted weight to 300 pounds gutted weight if 75% of the quota was met on or before September 1. Although the commercial hook and line catch of golden tilefish is minor (~8% during 1999-2004 and ~10% during 2004-2008), 35% of the hook and line catch occurred during September and October 1999-2004. After implementation of Amendment 13C, the quota was met before September and the fishery closed before the period of time when the greatest commercial hook and line catches of golden tilefish have historically occurred.

Preferred Alternative 2 would remove the 300 pound gutted weight trip limit when 75% of the quota is met. Reducing the 4,000 pounds gutted weight trip limit to 300 lbs gutted weight when 75% of the quota is met was originally intended to allow the fishery to remain open all year and allow for commercial hook and line fishermen to target golden tilefish in the fall. Based on data from 2007 to 2010, the fishery would not remain open all year even when the trip limit is reduced 300 pounds gutted weight. However, the current advantage of retaining the 300 pound trip limit when 75% of the quota is met is that it slows the rate at which the quota is filled and increases the chance the quota will not be exceeded. The expected biological effect of removing the trip limit reduction when 75% of the quota is met is expected to be minimal. In the commercial fishery, most golden tilefish (90% during 2004-2010) are taken with longline gear deployed by large vessels that make long trips and depend on large catches (> 3,000 pounds) to make a trip economically feasible. Therefore, a 300 pound gutted weight trip limit when 75% of the quota is met should shut down the commercial longline sector, and might reduce their potential annual catch. If the quota monitoring system can handle large catches in short periods of time, then elimination of the trip limit reduction then harvest in excess of the quota should be minor. The Council is proposing improvements to the quota monitoring program in Action 10.

Alternative 3 would close the longline fishery when 75% of the quota is met. Therefore, this alternative would further slow the rate at which the quota is met and reduce the chance that there would be regulatory discards. As longline fishermen deploy a large amount of gear, there is a chance they could exceed the 300 pound gutted weight trip limit and would have to discard golden tilefish. However, it is unlikely that many fishermen are using longline gear to target golden tilefish once the trip limit is reduced because it is not profitable. Therefore, the expected biological effects of closing the longline fishery when 75% of the quota is met is expected to be minimal. The intent of this alternative is to slow down the rate of fishing to allow hook and line fishermen to have access to the fishery in the fall. The Council is considering alternatives in Action 2 and Action 4, which would enable hook and line fishermen access for golden tilefish during the fall months.

Alternative 1 (No Action) will perpetuate the existing level of risk for interactions between Endangered Species Act (ESA)-listed species and the fishery. **Preferred Alternative 2** and **Alternatives 3** are unlikely to have adverse effects on ESA-listed *Acropora* species. Previous ESA consultations determined the snapper grouper fishery was not likely to adversely affect these species. These alternatives are unlikely to alter fishing behavior in a way that would cause new adverse effects to *Acropora*. The impacts from **Preferred Alternative 2** and **Alternative 3** on sea turtles and smalltooth sawfish are unclear. Sea turtle abundance in the South Atlantic changes seasonally. Even if **Preferred Alternative 2** or **Alternative 3**

perpetuates the existing amount of fishing effort, but cause a temporal or spatial effort redistribution, any potential effort shift is unlikely to change the level of interaction between sea turtles and smalltooth sawfish and the fishery as a whole. If these alternatives reduce the overall amount of fishing effort in the fishery, the risk of interaction between sea turtles and smalltooth sawfish will likely decrease.

4.5.2 Economic Effects

Under **Alternative 1 (No Action)**, the 300 pound trip limit that is implemented each year once 75% of the quota is taken under a 4,000 pound trip limit, is maintained. This was established by the Council to benefit hook and line fishermen who often start fishing later in the year. The trip limit attempts to preserve a portion of the commercial quota for hook and line fishermen. **Alternative 2 (Preferred)** removes the trip limit, thereby removing preservation of a portion of the commercial quota for hook and line fishermen. This makes it more likely that longline fishermen will participate after 75% of the quota has been met since the 4,000 pound trip limit would be maintained. **Alternative 3** ensures that longliners do not fish once the 300 pound trip limit goes into place each year.

Action 4 (Change in the start date for the golden ilefish fishery) has alternatives that change the golden tilefish fishing year so that longline fishermen from northern areas and hook and line fishermen can participate in the fishery more easily. If a change in the fishing year occurs under **Action 4**, there is less need for the existing 300 pound trip limit. Under **Alternative 1 (No Action)** for **Action 4** and **Alternative 2** under this action, economic benefits would increase for longliners since the 4,000 pound trip limit would be extended. Hook and liners would doubly benefit from a change in the start of the fishing year (**Action 4**) and **Alternative 3** under this action. The two actions, **Actions 4** (**Alternatives 2-4**) and **Action 5** (**Alternative 3**), could be seen as substitutes for each other in that both have options that result in protection for hook and line fishermen. Likewise, **Action 1, Alternative 2** (Endorsement program) has options that protect hook and line fishermen.

4.5.3 Social Effects

A discussion of the general direct and indirect social consequences of regulatory change is provided in Section 4.1.3.

Alternative 1 (No Action) would result in the continuation of the current step-down trip limit for golden tilefish when 75% of the quota is taken. As a result, no change in customary fishing performance, as affected by this management measure, would be expected to occur. In the absence of other management change on golden tilefish harvests (see Actions 3-5), all current fishing behaviors, harvests, and associated social and economic benefits could continue. However, continuation of the step-down trip limit may be unnecessarily restricting the golden tilefish harvests by longline vessels, particularly if other proposed management changes are effective in returning harvests to historic patterns. If so, **Alternative 1 (No**

Action) would be expected to result in reduced social and economic benefits relative to corrective action.

If social and economic benefits are being reduced under the status quo, this would be expected to be corrected under **Alternative 2 (Preferred)**, particularly if considered in combination with other proposed actions for golden tilefish. **Alternative 2 (Preferred)** would eliminate the step-down and should allow longline vessels to continue to harvest profitable quantities of golden tilefish. Regardless of the decision on the proposed change in the fishing year, elimination of the step-down would be expected to accelerate quota closure of the fishery by not reducing the pace of harvest. The magnitude of impact of accelerated quota closure on vertical line fishermen would depend on how harvests are affected by the proposed endorsement requirement and change in the fishing year. Nevertheless, in tandem with the other proposed golden tilefish management changes, it is expected that the elimination of the 300-pound step-down limit would result in increased social and economic benefits relative to **Alternative 1 (No Action)**.

While **Alternative 3** would attempt to help recover the historic golden tilefish harvest patterns of Florida hook and line (vertical line) vessels by closing the longline fishery if the 300-pound trip limit is triggered, **Alternative 3** may not have any substantive effect on either the longline or hook and line sectors because it is generally assumed that longlining for golden tilefish is no longer profitable at the lower trip limit. As a result, the harvest of golden tilefish with longline gear may already currently effectively end under the status quo. If this is true, regulatory closure of this gear sector would neither increase benefits for hook and line fishermen nor impose any adverse effects on longliner fishermen.

See Section 4.3.3 for discussion on the number of potentially affected communities and dealers with recorded tilefish landings in 2008.

4.5.4 Administrative Effects

Under **Alternative 1**, the 300 pound trip limit when 75% of the quota is reached, will remain. Of the alternatives, **Alternative 1** is the most administratively burdensome. **Alternative 1** requires the monitoring of the quota, rulemaking when 75% of the quota is reached, and rulemaking when the fishery is closed. Associated with the rulemaking is the development of fishery bulletins and other outreach materials to fishermen. **Preferred Alternative 2**, which would remove the 300 pound trip limit once 75% of the quota is reached, would be less administratively burdensome. Under **Preferred Alternative 2**, the fishery would be closed when the quota is reached thus requiring one rulemaking and fishery bulletin. In order to make sure that the quota isn't exceeded, **Preferred Alternative 2** may require increased frequency of monitoring which may be more administratively burdensome. **Alternative 3** is expected to have similar impacts on law enforcement as **Preferred Alternative 2**.

4.5.5 Council's Conclusions

The Council concluded Preferred Alternative 2 best balances historical participation and the need to ensure the quota is not exceeded. The Council is requesting public comment on these alternatives and the estimated impacts as presented. The Council will consider all comments in finalizing their preferred alternative.

4.6 Action 6: Establish trip limits for commercial fishermen who do not receive an endorsement in the commercial golden tilefish hook and line fishery

Alternative 1 (No Action). Do not establish trip limits for the golden tilefish hook and line fishery for commercial fishermen who do not receive an endorsement in the commercial golden tilefish hook and line fishery.

Alternative 2. Establish trip limits of 300 lbs for the golden tilefish hook and line fishery for commercial fishermen who do not receive an endorsement in the commercial golden tilefish hook and line fishery.

Alternative 3. Establish trip limits of 400 lbs for the golden tilefish hook and line fishery for commercial fishermen who do not receive an endorsement in the commercial golden tilefish hook and line fishery.

Alternative 4. Establish trip limits of 500 lbs for the golden tilefish hook and line fishery for commercial fishermen who do not receive an endorsement in the commercial golden tilefish hook and line fishery.

(Note: Catches under the trip limits wouldcount towards the hook and line gear group quota established under Action 2. That is, the landings under these trip limits would count towards the hook and line gear group quota.)

4.6.1 Biological Impacts

Under **Alternative 1 (No Action)**, non-endorsed hook and line vessels would not be allowed to harvest golden tilefish. For **Alternatives 2-4**, trip limits ranging from 300 pounds gutted weight (**Alternative 2**) to 500 pounds gutted weight (**Alternative 5**) would be provided to fishermen who do not qualify for an endorsement under Action 2. An unknown amount of quota for the specified for the hook and line sector under Action 2 would be allocated to hook and line fishermen who do not qualify for endorsement under Action 1.

Under Action 1, **Preferred Alternative 2a**, 23 individuals would qualify for hook and line endorsements but 114 individuals who had caught golden tilefish with hook and line during 2001-2005 would not. Action 2 would allocate between 10% (28,212 pounds gutted weight)

and 25% (72,455 pounds gutted weight) of the 282,819 pound gutted weight quota to the hook and line sector. Under Action 6 some portion of 28,212 pounds gutted weight to 72,455 pounds gutted weight could be harvested by fishermen who do not qualify for endorsements under Action 1. Therefore, the 114 individuals who do not qualify for endorsements could be fishing under a small amount of quota. As a result, it is likely the quota for the non-endorsed fishermen would be filled very quickly under the trip limits specified for **Alternatives 2-4**.

The biological effect of **Alternatives 1-4** would be similar since it is likely that the quota would be met regardless of which alternative is selected. Furthermore, since the same gear would be used under all alternatives, different trip limits for a small amount of hook and line quota is likely to have little biological effect.

4.6.2 Economic Impacts

Information about the number of permits that qualify for each gear endorsement (as shown above under Action 1) as well as the number of permits that do not qualify and the total amount of landings (2006-08) made by the vessels that do not qualify is shonw in Tables 4-4 and 4-5. The data set used to generate Tables 4-4 and 4-5 include any permit with at least 1 pound of golden tilefish landed from 1998-2008. It is assumed that these are the permits that would pursue a golden tilefish trip limit in the future. However, people who have never caught golden tilefish before will also be able to catch the trip limit for golden tilefish. The landings caught by those without endorsements will count towards the hook and line quota. The annual catch limit (ACL) identified for golden tilefish in Amendment 17B is 282,819 pounds (gutted weight). The commercial quota, identified in Amendment 17B, is 97% of the ACL or 274,334. The hook and line allocation under **Action 2**, **Alternatives 2, 3, and 4** would be 68,584 pounds, 41,150 pounds, and 27,433 pounds, respectively.

Table 4-4. Number of permits that qualify for a hook and line endorsement, number of permits that do not qualify for a hook and line endorsement, and the number of pounds landed in aggregate by permits not qualifying 2006-08 that use hook and line gear.

Hook and Line Sub-Alternatives for Action 2	Eligibility Requirement	Number of Endorsements (Number of Permits That Qualify)	Number of Permits That Do Not Qualify	2006-08 Aggregate Landings of Those Not Qualifying (lbs)
Preferred Sub-Alternative 2a	At least 1,000 lbs ww when best 3 of 5 yrs 2001-05 are aggregated	23	114	36,987
Sub-Alternative 2b	At least 500 lbs ww when best 3 of 5 yrs 2001-05 are aggregated	29	108	33,453
Sub-Alternative 2c	At least 500 lbs ww when 2001-05 landings are averaged	13	124	49,452
Sub-Alternative 2d	At least 500 lbs ww when 1999-07 landings are averaged	13	124	31,951
Sub-Alternative 2e	At least 1,000 lbs ww when 1999-07 landings are averaged	7	130	53,700
Sub-Alternative 2f	At least 1,000 lbs ww when best 3 of 5 yrs 2001-05 are aggregated and at least 1 lb was landed in 2008	13	124	42,628
Sub-Alternative 2g	At least 1,000 lbs ww when best 3 of 5 yrs 2001-05 are aggregated and at least 1 lb was landed in 2007 or 2008	16	121	38,351
Sub-Alternative 2h	At least 500 lbs ww when best 3 of 5 yrs 2001-05 are aggregated and at least 1 lb was landed in 2008	14	123	41,886
Sub-Alternative 2i	At least 500 lbs ww when best 3 of 5 yrs 2001-05 are aggregated and at least 1 lb was landed in 2007 or 2008	18	119	34,817
Sub-Alternative 2j	At least 500 lbs ww when 2001-05 landings are averaged and at least 1 lb was	8	129	53,644

	landed in 2008			
Sub-Alternative 2k	At least 500 lbs ww when 2001-05 landings are averaged and at least 1 lb was landed in 2007 or 2008	10	127	50,529

Table 4-5. Number of permits that qualify for a longline endorsement, number of permits that do not qualify for a longline endorsement, and the number of pounds landed in aggregate by permits not qualifying 2006-08 that use longline gear.

Longline Sub-Alternatives for Action 2	**Eligibility Requirement**	**Number of Endorsements (Number of Permits That Qualify)**	**Number of Permits That Do Not Qualify**	**2006-08 Aggregate Landings of Those Not Qualifying (lbs)**
Preferred Sub-Alternative 2l	At least 2,000 lbs ww when landings from 2006-08 are aggregated	17	25	4,012
Sub-Alternative 2m	At least 5,000 lbs ww when landings from 2006-08 are aggregated	12	30	21,128
Sub-Alternative 2n	At least 5,000 ww lbs when landings from 2006-08 are averaged	12	30	21,128

If we assume that the number of people who have caught at least 1 pound of golden tilefish since 1998 would make trips targeting golden tilefish in the future, the upper limit on the number of pounds landed under each of the alternatives would total the number of people who did not qualify for hook and line and longline endorsements multiplied by the average number of trips these vessels might make multiplied by the trip limits identified in **Alternatives 2-4**. It is unknown how many trips the vessels that did not qualify for an endorsement might make given their limited amount of participation since 1998. Therefore, a range of 5 to 15 trips is used to make estimates. Estimates of the number of pounds possibly taken by individuals without endorsements using this approach is shown in Table 4-6.

Table 4-6. Estimated number of pounds that might be landed by vessels that do not qualify for an endorsement.

Action 6 Alternatives	Number of Non-Endorsement Vessels Using Trip Limits (using range from Action 1)	Trip Limit	Number of Trips (Ranging From 5-15 Trips)	Estimated Total Pounds Taken with Trip Limits
Alternative 2	133	300	5	199,500
	133	300	10	399,000
	133	300	15	598,500
	160	300	5	240,000
	160	300	10	480,000
	160	300	15	720,000
Alternative 3	133	400	5	266,000
	133	400	10	532,000
	133	400	15	798,000
	160	400	5	320,000
	160	400	10	640,000
	160	400	15	960,000
Alternative 4	133	500	5	332,500
	133	500	10	665,000
	133	500	15	997,500
	160	500	5	400,000
	160	500	10	800,000
	160	500	15	1,200,000

As stated above, the hook and line allocation under **Action 2**, **Alternatives 2, 3, and 4** would be 68,584 pounds, 41,150 pounds, and 27,433 pounds, respectively. The estimated total landings made by people not holding endorsements shown in Table 4-6 greatly exceed this amount and range from about 200,000 pounds to 1.2 million pounds. If the lower estimate of 133 vessels made 1 trip (not shown in Table 4-6 using the 300 pound trip limit (**Alternative 2**), an estimated 39,900 pounds in landings would result, which is significant compared to the hook and line allocation of 27,433 pounds to 68,584 pounds, depending on the alternative chosen in this action.

Because it is not possible to reliably predict how much would be landed under the trip limits identified in **Alternatives 2-4** because we don't know how many people would choose to participate or how many trips they would make, a range of options for participation and number of trips were used. All estimates made are much higher than the hook and line allocation. This would result in decreased ability of endorsement holders, who have the greatest amount of historical participation, to continue fishing for golden tilefish because of a possibly much shorter season than anticipated. With increased participation, these people might be incorporated in a future amendment into a catch share or other program which would further erode profits for historical participants. Again, analysis of how much of a decrease in profits might occur is not possible to make due to the small sample size from the economic cost logbook program and the unknown number of future participants in the fishery under **Alternatives 2-4**.

4.6.3 Social Impacts

This action attempts to address the expected loss in social and economic benefits to commercial hook and line fishermen who would not qualify for a golden tilefish endorsement and, as a result, would not be allowed to continue to harvest golden tilefish. Because any harvests that would be allowed by fishermen in this sector would be counted towards the proposed hook and line gear group quota, this action deals with the trade-offs between the functional allocation, as a result of the proposed trip limits for non-endorsed vessels, of harvests between fishermen in the two different groups. Under **Alternative 1 (No Action)**, non-endorsed hook and line vessels would not be allowed to harvest golden tilefish. As a result, assuming a hook and line endorsement is adopted, endorsed vessels would receive the increased social and economic benefits associated with their continued harvest of golden tilefish under protected conditions (i.e., reduced competition for the resource from vessels that do not qualify for the endorsement). Conversely, hook and line vessels that do not qualify for an endorsement would be expected to experience the reduced social and economic benefits accruing to their exclusion from operation in this component of the snapper grouper fishery.

Under **Alternatives 2-4**, any fish harvested by non-endorsed hook and line vessels would result in decreased revenues, and associated social benefits, to endorsed hook and line vessels, and increased benefits to the non-endorsed vessels. It is not possible, with available information, to determine the net outcome of this trade. It could be argued that non-endorsed vessels may value any additional harvests more than endorsed vessels. However, the assumptions underpinning the decision to preserve continued participation by some but not all vessels through the establishment of the endorsement system suggests that the benefit flow to qualifying vessels is preferred, otherwise why establish the endorsement system.

The previous point is a key consideration. As shown in Section 4.6.2, the harvest potential of even a single trip under the lowest proposed trip limit, 300 lbs under **Alternative 2**, may be sufficient to take the entire hook and line quota, leaving no quota available to endorsed vessels. While total harvest of the hook and line quota by non-endorsed vessels could not occur instantly (some endorsed vessels would be able to harvest some golden tilefish), if endorsed vessels are sufficiently important from an economic and/or social perspective to protect through an endorsement system, it makes little sense to erode the benefits to this sector by apportioning their quota to another sector. If the lowest proposed limit may be capable of exhausting the quota, the two proposed higher limits in **Alternatives 3** and **4**, would also, be capable of such, increasing the likelihood that endorsed vessels will receive reduced social and economic benefits in favor of non-endorsed vessels.

It may be argued that all non-qualifying vessels might not be expected to avail themselves of any trip limit harvest golden tilefish. It is logical, however, to conclude that the likelihood of trips occurring increases the higher the trip limit. Thus, **Alternatives 2-4** would be expected to result in progressively increased harvests by non-endorsed vessels, with accompanying increased social and economic benefits, the higher the trip limit, and accompanying increased losses in social and economic benefits to endorsed vessels. Overall, the establishment of an

endorsement system, which would be expected to be largely biologically neutral to the resource (the endorsement system would not reduce the quota) suggests a determination of expected increased social and economic benefits of said endorsement system. Eroding these benefits through allocation of harvests to non-endorsed vessels would appear to be inconsistent with the expectations of the endorsement system and would be expected to result in reduced social and economic benefits overall.

4.6.4 Administrative Impacts

There would be no administrative impacts incurred under **Alternative 1 (No Action)**. **Alternatives 2-4** would establish trip limits for fishermen who do not qualify for an endorsement under Action 1. The establishment of the trip limits would require some administrative impacts associated with rule-making, enforcement, and outreach and education. However, these administrative impacts would not differ between **Alternatives 2-4.**

4.6.5 Council Conclusions

The Council does not have a preferred alternative for this action. The Council is requesting public comment on these alternatives and the estimated impacts as presented. The Council will consider all comments in finalizing their preferred alternative.

4.7 Action 7: Limit Participation in the Black Sea Bass Pot Fishery

Alternative 1 (No Action). Do not further limit participation in the black sea bass pot fishery.

Preferred Alternative 2. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 1 pound of black sea bass caught with pot gear between 12/8/98 and the control date of 12/04/08.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 2a. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 500 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 12/04/08.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 2b. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 1,000 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 12/04/08.

Sub-Alternative 1. Minimum poundage based on average.

Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 2c. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 2,000 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 12/04/08.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 2d. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 5,000 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 12/04/08.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 2e. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 10,000 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 12/04/08.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 3. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 1 pound of black sea bass caught with pot gear between 12/8/98 and the control date of 10/14/05.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 3a. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 500 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 10/14/05.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 3b. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 1,000 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 10/14/05.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 3c. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 2,000 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 10/14/05.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 3d. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 5,000 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 10/14/05.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 3e. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 10,000 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 10/14/05.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 4. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 1 pound of black sea bass caught with pot gear by the date of 12/31/09.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 4a. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 500 pounds of black sea bass caught with pot gear by the date of 12/31/09.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 4b. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 1,000 pounds of black sea bass caught with pot gear by the date of 12/31/09.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 4c. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 2,000 pounds of black sea bass caught with pot gear by the date of 12/31/09.

Sub-Alternative 1. Minimum poundage based on average.

Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 4d. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 5,000 pounds of black sea bass caught with pot gear by the date of 12/31/09.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

Alternative 4e. Limit tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 10,000 pounds of black sea bass caught with pot gear by the date of 12/31/09.

Sub-Alternative 1. Minimum poundage based on average.
Sub-Alternative 2. Minimum poundage based on aggregate.
Sub-Alternative 3. Minimum poundage based on landings in one year.

4.7.1 Biological Effects

The Council is concerned increased restrictions imposed through Snapper Grouper Amendments 13C, 16, 17A, and 17B including a commercial quota for black sea bass, commercial quota for vermilion snapper, and seasonal closure for shallow water groupers could serve as an incentive for a greater number of fishermen with Federal snapper grouper commercial permits to fish pots for black sea bass. Currently, tags for black sea bass pots can be issued to any fisherman who possesses a Federal snapper grouper commercial permit. Most black sea bass commercial landings (89%) during 2005-2008 were caught with pots, with the remainder taken with hook-and-line gear. In 2007, there were 877 fishermen who possessed Federal snapper grouper commercial permits; however, only 53 of these individuals fished black sea bass pots that year (Table 3-4). The number of vessels that fished pots and caught black sea bass has varied during 1992 to 2008 from 49 in 2008 to 92 in 1997 (Table 4-7). The number of vessels fishing black sea bass pots increased from 49 in 2008 to 59 in 2009. Some of these vessels fished pots but did not request tags. Therefore, the potential exists for increased participation in pot fishing for black sea bass.

An increase in the number of individuals who fish black sea bass pots could increase the rate at which the quota is met and deteriorate profits for current participants in that portion of the snapper grouper fishery. During the June 2008 to May 2009 fishing year, the 309,000 pound gutted weight commercial quota was met in December 2009, and during the June 2009 to May 2010 fishing, the quota was met in October. Therefore, it does not appear that there is much capacity for increased participation in black sea bass pot sector. In December 2008, the Council requested NOAA Fisheries Service issue a control date of December 4, 2008. The control date sets a date in time the Council could use to limit participation; anyone entering the black sea bass pot portion of the snapper grouper fishery after the specified date may not be guaranteed continued participation. Control dates were also established in 2005 and 1997.

The Council requested these control dates be used as alternatives to possibly limit participation in the black sea bass portion of the snapper grouper fishery.

A limited access system was imposed on the snapper grouper fishery in December 1998. Currently, the only valid commercial vessel permits for South Atlantic snapper grouper are those that have been issued under the limited access criteria specified in the Snapper Grouper Fishery Management Plan. A commercial vessel permit for South Atlantic snapper grouper is either a transferable commercial permit or a 225 pound trip-limited commercial permit. A continuous permit number (cpnum) was assigned to each limited access snapper grouper permit, which did not exist during the Federal open access snapper grouper permit period (1992-1998). Therefore, landings can be associated with the limited access permit through the cpnum and the vessel identification number beginning in December 1998. However, it is more difficult to determine landings associated with a permit without a cpnum and associated vessel identification number prior to December 1998, especially with regard to determining which of those permits remains active today.

At their March 2009 meeting, the Council recognized the difficulty in tracking landings without a cpnum and indicated an alternative, which considered the 1997 control date be moved to Appendix A as an alternative eliminated from detailed consideration. The Council also indicated this control date is old and did not adequately consider present participation in the black sea bass pot portion of the snapper grouper fishery.

Table 4-7. Number of vessels that fished pots and caught black sea bass during 1992-2008.

Year	# vessels
1992	52
1993	71
1994	86
1995	68
1996	80
1997	92
1998	76
1999	71
2000	70
2001	59
2002	53
2003	52
2004	56
2005	51
2006	50
2007	53
2008	49
2009	59

Source: NMFS logbook data 2-26-2010.

Alternative 1 (No Action) could have negative effects by continuing the derby situation as more individuals become involved in fishing for black sea bass with pots resulting in the quota being met even more quickly. Black sea bass is in a rebuilding plan and it is expected that as biomass increases that catch per unit effort would also increase, further contributing to the rate at which the quota is likely to be met.

The biological effects of **Alternatives 1-3** for black sea bass could be similar since black sea bass would close when the quota is met regardless of the number of participants. However, alternatives that reduce the number of participants could increase biological benefits for protected species and interaction with pots if it resulted in a reduction in the amount of gear deployed. **Alternative 1 (No Action)** could have the greatest biological effect because the quota would be met quickly and gear would be removed from the water for the longest period of time. Conversely, if **Alternative 1** resulted in a large number of pots in the water at the same time, this could increase the chance of entanglement with protected species.

Preferred Alternative 2 and **Alternative 3** would restrict participation in the black sea bass pot sector to those individuals who historically fished pots for black sea bass. As far fewer individuals fish pots than possess Federal snapper grouper commercial permits, **Preferred Alternative 2** and **Alternative 3** could constrain participation in the black sea bass pot sector to a level that is more manageable and profitable.

Preferred Alternative 2 would limit participation in the black sea bass pot sector to individuals with active Federal snapper grouper commercial permits who caught at least 1 pound of black sea bass in pots between December 8, 1998 and December 4, 2008. Based on data from 1998, when the 2 for 1 limited entry system was enacted until December 4, 2008, 107 vessels would meet this criterion (Table 4-8). Currently, 50 to 60 individuals fish for black sea bass with pots each year. While **Preferred Alternative 2** would limit the number of fishermen with Federal commercial snapper grouper permits who could fish for black sea bass with pots, there is still the potential that the number of participants could double and the quota would be met even more quickly. **Sub-alternatives 2a-2e** would further reduce the number of individuals who could fish for black sea bass (Table 4-8).

Table 4-8. Number of fishermen with snapper grouper permits who fished pots with minimum black sea bass landings of 1, 500, 1,000, 2,000, 5,000, and 10,000 lbs whole weight in average (over 10 years), aggregate, and for one year (maximum) during 12/8/98 to 12/4/08 (Alternative 2). Values are estimates.

Alternative 2 (98-08)	Average	Aggregate	1 year
Alt 2 (1 lb)	107	107	107
Alt 2a (500 lbs)	65	94	94
Alt 2b (1,000 lbs)	47	89	86
Alt 2c (2,000 lbs)	39	80	70
Alt 2d (5,000 lbs)	19	65	46
Alt 2e (10,000 lbs)	12	47	22

Alternative 3 and its sub-alternatives would limit participation in the black sea bass pot sector to individuals with active Federal snapper grouper permits who caught black sea bass with pots on or before October 14, 2005 (Table 4-9). The biological effect of **Alternative 3** and its

sub-alternatives would be greater than **Preferred Alternative 2** and its corresponding sub-alternatives since **Alternative 3** and its sub-alternatives would constrain participation in the black sea bass pot sector to a greater degree. Since this action is administrative and does not establish immediate harvest objectives, it will not directly affect the protected species. However, a reduction in effort in the fishery may reduce the likelihood for interactions between this sector of the fishery and protected species.

Table 4-9. Number of fishermen with snapper grouper permits who fished pots with minimum black sea bass landings of 1, 500, 1,000, 2,000, 5,000, and 10,000 lbs whole weight in average (over 10 years), aggregate, and for one year (maximum) during 12/8/98 to 10/14/05 (Alternative 3). Values are estimates.

Alternative 3 (98-05)	Average	Aggregate	1 year
Alt 3 (1 lb)	96	96	96
Alt 3a (500 lbs)	62	84	82
Alt 3b (1,000 lbs)	53	76	74
Alt 3c (2,000 lbs)	38	68	60
Alt 3d (5,000 lbs)	23	59	43
Alt 3e (10,000 lbs)	15	43	21

Alternative 4 and its sub-alternatives would limit participation in the black sea bass pot sector to individuals with active Federal snapper grouper commercial permits who caught at least 1 pound of black sea bass in pots between December 8, 1998, and December 31, 2009. Data for 2009 are not currently available to determine the number of permits that would qualify. However, based on Table 4-7, it can be assumed that the number of participants who would qualify for black sea bass tags would increase relative to **Alternatives 2 and 3**, and their corresponding sub-alternatives.

4.7.2 Economic Effects

In 2009, 59 vessels fished for black sea bass with pot gear (**Table 4-7??**). Under **Alternative 1 (No Action)**, over time, this number could be much greater due to the restricted landings and seasons allowed for other stocks. **Alternative 1(No Action)** is expected to reduce profits for current participants and possibly reduce aggregate profitability of the fishery. The rationale for considering **Preferred Alternative 2** and **Alternative 3** was to limit participation to some level lower than would occur under **Alternative 1 (No Action)**. However, since the level of participation under **Alternative 1 (No Action)**, while expected to increase, is unknown, the difference in profitability between the alternatives is also largely unknown. Since the maximum number of participants under alternatives are capped at different levels, the opportunities for long-term profits are predictable and do differ among alternatives. As stated above, **Preferred Alternative 2** would result in 12-107 vessels able to fish for black sea bass with pot gear, depending on the sub-alternative chosen and methodology option chosen. In general, an average (versus aggregate or one year total) minimum poundage requirement yields a lower number of participants for all sub-alternatives. **Alternative 3** would result in 15-96 vessels able to fish for black sea bass with pot gear, depending on the sub-alternative chosen and methodology option used. As is true for **Alternative 2**, in general, an average minimum poundage requirement yields a lower number

of participants across all sub-alternatives. **Alternative 4** cannot yet be analyzed since data has not yet been finalized, as stated above.

The economic effects considered in this amendment are both aggregate, to the Nation, and distributional. Aggregate effects to the Nation require analysis of changes in aggregate profitability between the alternatives, sub-alternatives, and options. Analysis of changes in aggregate profitability of the black sea bass portion of the snapper grouper fishery is not able to be conducted since it would require specific data on the costs and revenues of black sea bass pot vessels, which is not available.

Distributional changes between alternatives deal with who benefits and who does not benefit as the result of the various alternatives, sub-alternatives, and options. In general, choosing an alternative that allows for a smaller number of vessels than currently fish for black sea bass to continue fishing, could increase average vessel profitability. Choosing an alternative that allows for a larger number of vessels than currently fish for black sea bass to fish for black sea bass, could decrease average vessel profitability.

4.7.3 Social Effects

A discussion of the general direct and indirect social consequences of regulatory change is provided in Section 4.1.3.

Alternative 1 (No Action) would not make any changes to the current management of black sea bass. As a result, all current fishing practices would be allowed to continue and no changes in status quo social benefits would be expected. However, increased target effort by fishermen in response to increased restrictions on other species could create excessive pressure on the black sea bass resource as well as displace traditional harvesters. While annual catch limits (ACLs) and accountability measures (AMs) should be effective in protecting the biological health of the resource, from the perspective that traditional fishing participation and patterns results in greater social benefits, changes in harvest participation and patterns away from these traditional users, businesses, and communities would be expected to result in lower social benefits than protection and preservation of the more traditional participation and harvest patterns.

In 2008, 55 South Atlantic communities (29 in North Carolina and 8 in South Carolina) involving 104 dealers (63 in North Carolina and 17 in South Carolina) recorded black sea bass landings. Although a larger number of communities (16) and dealers (22) recorded black sea bass landings in Florida than in South Carolina, total landings in South Carolina (approximately 133,000 lbs) were significantly greater than in Florida (approximately 9,000 lbs). Specific landings statistics cannot be reported due to confidentiality considerations. Although this proposed action would not limit total black sea bass harvest, restricting participation may affect the total amount of black sea bass harvested as well as change product flow through communities and dealers. If the harvesters with traditionally higher landings receive tags, as may be expected, total black sea bass harvest and the landing patterns

through communities where most black sea bass is landed should not be affected. It is possible, however, that smaller harvests of black sea bass by some fishermen make up a larger portion of total harvests by these fishermen or sales activity in some communities by some dealers. As a result, while a limit on tag distribution should preserve and possibly increase the social benefits for the more active producers and dealers, and associated communities, absent fishermen who receive tags landing black sea bass in multiple ports and selling to multiple dealers in the same city, reduced social and economic benefits may be experienced by some communities and dealers in addition to the losses experienced by fishermen who do not qualify for tags.

The following discussion first describes the expected differences between **Alternatives 2-4** without consideration of the options under each alternative that establish alternative qualification based on amount of harvests (1-10,000 lbs; **a-e alternatives**) and how harvest totals are calculated (average, aggregate, or single year; **Sub-Alternatives 1-3**). The effects of these options will then be discussed. For estimates of the potential number of qualifiers under the various alternatives and options, see Section 4.7.1.

Preferred Alternative 2 would eliminate continued harvest opportunities by fishermen who began harvesting black sea bass with pot gear after December 4, 2008, but would be expected to help preserve the social and economic benefits that accrue to harvests by traditional participants. Some of the fishing effort by new entrants (those who began harvesting black sea bass with pot gear after December 4, 2008) may be due to speculation (exploring fishing success for a new species), while some new effort may be a response to reduced harvests or harvest opportunities for other species in an attempt to recover benefits lost in other fisheries (mitigation effort). While **Preferred Alternative 2** would result in a reduction in social and economic benefits to these fishermen, the elimination of mitigation effort may carry a greater social and economic weight due to its cumulative implications; these fishermen have experienced reduced harvest opportunities for other species and would be prevented from mitigating these losses by harvesting alternative species. Preservation or protection of harvest rights by "more" historic participants is presumed, however, to result in increased social and economic benefits, though no quantitative dependence criteria is factored into the presumption.

Alternative 3 would be expected to result in fewer qualifiers for tag distribution than **Preferred Alternative 2**. As a result, more fishermen would be expected to experience reductions in social and economic benefits as a result of an inability to continue to harvest black sea bass with pots. Allowing fewer participants also increases the likelihood of altered product flow through dealers and communities, with associated reductions in social benefits. However, some fishermen, dealers, and communities would be expected to experience increased social and economic benefits because the black sea bass quota could be channeled through fewer entities. Also, it may be argued that the use of the earlier control date in **Alternative 3** would more successfully return this component of the snapper grouper fishery to its historic participants, dealers, and communities.

Alternative 4 would be expected to result in more qualifiers than all the other alternatives except **Alternative 1 (No Action),** and would only exclude fishermen who began harvesting

black sea bass with pots after 2009. As such, less re-allocation of the resource to historic participants would occur and the benefits associated with returning harvests to historic participants, dealers, and communities would be expected to be decreased relative to **Preferred Alternative 2** or **Alternative 3**.

The **a-e** variations of **Alternatives 2-4** and **Sub-Alternatives 1-3** attempt to address the issue of species dependency and persistent participation. The higher the minimum poundage qualification threshold, the fewer the number of tag qualifiers. As a result, because the minimum poundage thresholds increase through the **a-e** variations, the number of qualifiers would be expected to progressively decrease within each alternative "group" (within the **Preferred Alternative 2** variations, the **Alternative 3** variations, etc.). It is possible, however, that the same number of qualifiers, though not the same individual vessels, could qualify under different minimum poundage thresholds across different alternatives.

Regardless of the minimum poundage threshold adopted, the more flexible the method of harvest tabulation, the more vessels would be expected to qualify. None of the sub-alternatives would require annual persistence of harvests; under any of the sub-alternatives, a fisherman could satisfy the landings qualification criterion through harvests in a single year, if those landings are sufficiently high, though the higher the threshold, the more difficult this would be. As a result, a fisherman could have substantive landings several years ago (or in a single year), but subsequently ceased harvesting black sea bass with pot gear, and still qualify to receive tags. This could lead to a fisherman who has ceased harvesting black sea bass with pot gear allowed to resume participation when others who may have more recently recorded harvests are excluded. This situation may raise equity concerns. The older the control date, the greater the possibility that qualifiers may no longer be active harvesters (and potentially the larger the number of non-qualifiers) and the more likely equity issues arise.

Despite these concerns, in general, the higher the harvest threshold (minimum poundage), the more difficult the threshold would be to achieve under **Sub-Alternative 1** (average harvests; the higher the threshold, the fewer the number of qualifiers), the easier to achieve under **Sub-Alternative 2** (aggregate harvests; the higher the threshold, the greater the number of qualifiers relative to **Sub-Alternative 1** and **Sub-Alternative 3**), and the easier to achieve under **Sub-Alternative 3** (single year harvest) relative to **Sub-Alternative 1**.

Combining all the considerations discussed above, it is difficult to develop clear determinations of the expected social effects of the various alternatives or rank them from a social effects perspective. The management objective is to not only limit total participation in this sector of the snapper grouper fishery but to also limit participation to historical participants who have demonstrated a dependence on the resource. Thus, the issue is not just how many vessels would qualify, and there are many ways to achieve a given total vessel target, but also who the qualifiers are and how their benefits compare with those of an alternative group of fishermen. While it is possible to tabulate the number of qualifiers under the alternative minimum poundage qualifying thresholds and tabulation methods, as seen in Section 4.7.1, determination of which threshold is socially "best" is a subjective decision at best (at the least, a key unanswered question is what level of harvest best equates to dependency on the resource). As a result, while it is possible to rank the alternatives by the

number of qualifiers, because such a ranking does not directly translate to social effects ranking, ranking from a social effects perspective is not possible with available information. It should also be noted, as discussed in Section 4.7.1, that the number of potential qualifiers under some alternative combinations greatly exceeds the number of vessels with recorded harvests in recent years. As a result, potential effort could increase greatly under these alternatives, eroding any potential social or economic benefits of participation control. While it could be argued that such an increase may be unlikely given the flexibility that these entities have had to date to remain active in this component of the snapper grouper fishery, changing fishing conditions in general, notably increased restrictions on other species, could provide sufficient motivation for inactive qualifiers to resume fishing for black sea bass with pot gear.

4.7.4 Administrative Effects

Alternative 1, the no-action alternative would result in the least administrative impact as it would not change the level of participation and accordingly, the distribution of black sea bass pot tags. **Preferred Alternative 2** would limit participation in the black sea bass fishery to individuals with active Federal snapper-grouper commercial permits who caught black sea bass in pots between December 8, 1998, and December 4, 2008. Based on data from 1998, when the 2 for 1 limited entry system was enacted until December 4, 2008, 123 vessels would meet this criterion and would be eligible to receive black sea bass pot tags. Under **Alternative 3** a total of 102 vessels would meet this criterion. **Alternative 4** would include participants in the fishery through December 31, 2009, which would increase participation slightly. The difference between the three alternatives are so small that there is not expected to be a significant difference in the administrative burden between **Alternative 2, Alternative 3 or Alternative 4. Sub-Alternatives 1-3** specify how the minimum poundage requirements will be calculated and will not increase the administrative impacts of any of the action alternatives.

4.7.5 Council's Conclusions

The Council concluded Preferred Alternative 2 best balances historical participation and more current participation while limiting participation. The Council is requesting public comment on these alternatives and the estimated impacts as presented. The Council will consider all comments in finalizing their preferred alternative.

4.8 Action 8: Limit Effort in the Black Sea Bass Pot Fishery

Alternative 1 (No Action). Do not annually limit the number of black sea bass pots deployed or pot tags issued to holders of snapper grouper commercial permits.

Alternative 2. Require that each black sea bass pot in the water or at sea on a vessel in the South Atlantic EEZ have an attached valid identification tag issued by NOAA Fisheries Service. Limit the black sea bass pot tags to 100 per vessel annually. NOAA Fisheries Service will issue new identification tags each fishing year that will replace the tags from the previous fishing year.

Preferred Alternative 3. Require that each black sea bass pot in the water or at sea on a vessel in the South Atlantic EEZ have an attached valid identification tag issued by NOAA Fisheries Service. Limit the black sea bass pot tags to 50 per vessel annually. NOAA Fisheries Service will issue new identification tags each fishing year that will replace the tags from the previous fishing year.

Alternative 4. Require that each black sea bass pot in the water or at sea on a vessel in the South Atlantic EEZ have an attached valid identification tag issued by NOAA Fisheries Service. Limit the black sea bass pot tags to 25 per vessel annually. NOAA Fisheries Service will issue new identification tags each fishing year that will replace the tags from the previous fishing year.

Alternative 5. Require that each black sea bass pot in the water or at sea on a vessel in the South Atlantic EEZ have an attached valid identification tag issued by NOAA Fisheries Service. Limit the black sea bass pot tags to 100 per vessel in year 2011, 50 in year 2012, and 25 in year 2013. NOAA Fisheries Service will issue new identification tags each fishing year that will replace the tags from the previous fishing year.

Alternative 6. Require that each black sea bass pot in the water or at sea on a vessel in the South Atlantic EEZ have an attached valid identification tag issued by NOAA Fisheries Service. Limit the black sea bass pot tags to 100 per vessel in year 2011 and 50 in year 2012. NOAA Fisheries Service will issue new identification tags each fishing year that will replace the tags from the previous fishing year.

Alternative 7. Annually issue tags to individuals based on a 10% reduction in the number of tags issued as of 12/04/08.

Alternative 8. Annually issue tags to individuals based on a 25% reduction in the number of tags issued as of 12/04/08.

4.8.1 Biological Effects

The Council is concerned increased restrictions imposed through Snapper Grouper Amendments 13C, 16, 17A, and 17B including a commercial quota for black sea bass, commercial quota for vermilion snapper, and spawning season closure for shallow water grouper species could increase the incentive to fish more black sea bass pots per trip. Currently, there is no limit on the number of tags issued to fishermen who target black sea bass or the number of pots that can be fished. The Council is further concerned about the possibility of fishermen leaving large numbers of pots fishing for multiple days due to vessel or weather problems, which could unnecessarily kill black sea bass. Fishing large numbers of pots also increases the chance that pots could be lost and "ghost fishing" could occur. Furthermore, fishing large numbers of pots increases the chance of entanglement of pot lines with right whales and other protected species.

Without a limitation on the annual number of pot tags distributed to a fisherman, any number of pots could be deployed. During 2003 to 2009, the average number of vessels requesting tags for pots was 136 and the average number of tags requested per vessel per year was 39 (Table 4-10). The number of vessels requesting tags increased in 2008 and 2009. Although some fishermen requested as many as 500 tags per year, the number of vessels with recorded landings of black sea bass with pots was much less that the number of vessels requesting tags (Table 4-11).

Alternative 1 (No Action), by not limiting the number of black sea bass pots deployed or pot tags issued to holders of Federal commercial snapper grouper vessel permits, could result in adverse impacts to protected species. However, under all alternatives, including **Alternative 1 (No Action)**, the restrictions mandated by the Atlantic Large Whale Take Reduction Plan (ALWTRP) final rule (72 FR 57104) would still apply to black sea bass fishermen in the South Atlantic. The ALWTRP is a program to reduce the risk of serious injury to or mortality of large whales due to incidental entanglement in commercial fishing gear. ATWTRP regulations pertain to the universal regulations (no floating buoy lines, no wet storage of gear), gear marking requirements, sinking ground-lines, floatation, and buoy lines with a weak link, etc. The black sea bass pot fishery already adheres to all regulations stipulated in the ALWTRP. For specifics of the ATWTRP regulations as they apply to the South Atlantic black sea bass fishery, see Appendix H or the whale take reduction website: http://www.nero.noaa.gov/whaletrp/plan/2008ALWTRPGuideVs32.pdf

Table 4-10. Number of vessels requesting tags; mean, minimum, maximum, and median number of tags/vessel requested.

Year	Number of Vessels Requesting tags	Mean # Tags Requested	Min # tags requested	Max # tags requested
2003	133	36	4	200
2004	133	40	4	200
2005	132	36	4	200
2006	133	35	4	150
2007	134	39	5	200
2008	147	41	1	500
2009	141	45	2	500
Average	136	39	3	279

Source: NMFS permits office.

Table 4-11. Number of vessels with landings of snapper grouper with pots; number of vessels with landings of snapper grouper who requested tags. Mean, minimum, maximum, median number of tags requested for vessels that fished pots; and mean, minimum, maximum number of pots fished for vessels that requested tags.

Year	# of Vessels that fished pots	# of Vessels that fished pots with tags	Mean # tags requested	Min # tags requested	Max # tags requested	Median # of tags requested	Mean # pots fished	Min # pots fished	Max # Pots Fished
2003	53	49	54	6	200	50	45	1	200
2004	59	52	56	6	200	50	43	2	160
2005	53	47	50	6	160	40	47	1	120
2006	53	46	49	4	150	49	47	1	176
2007	54	51	53	10	200	50	48	1	180
2008	50	49	54	6	200	50	35	1	150
2009	60	60	55	8	200	45	37	1	150
Average	55	51	53	7	187	48	43	1	162

Source: NMFS permits office and NMFS logbook database 5/5/10.

Alternatives 2-8 would all have beneficial impacts to the biological environment by reducing the number of pots fished per trip, which would be accomplished by limiting the number of tags distributed to fishermen and by requiring that pots have an attached identification tag. **Alternatives 2-8** could decrease the adverse impact of pots fishing for multiple days if a fisherman was unable to retrieve large numbers of pots due to inclement weather or vessel difficulties, reduce the number of lost pots and ghost fishing, and reduce the potential for entanglement of pot lines with protected species.

The limitation on the number of pots deployed could reduce the adverse effects of continued fishing by lost gear, commonly called "ghost fishing". Boat propellers and storms are common agents causing pots to be lost. The longer the pots are in the water (commonly called "soak-time"), the greater the opportunity for lost pots. Fishermen may not be able to retrieve pots during periods of inclement weather or vessel repairs. The Council is also considering an action that restricts the length of time pots could be left at sea (See **Section 4-9**).

Among **Alternatives 2-6**, **Alternative 2** would have the least beneficial effects to the biological environment as it would allow fishermen to fish up to 100 pots each year. Relative to the number of pots currently fished, **Alternative 2** would reduce the average number of pots fished by trip by 8% (**Table 4-12**). **Alternative 4** would have the greatest biological effect since it would allow fishermen to fish a maximum of 25 pots. Based on data from 2005-2009, **Alternative 4** would reduce the number of pots fished per trip by 60%. The biological effect of **Preferred Alternative 3** would be intermediate between **Alternatives 2** and **4** as it would allow fishermen to fish up to 50 pots and would reduce the number of pots fished per trip by 17%. **Alternatives 5** and **6** would gradually reduce the maximum number of pots that could be fished each year from 100 to 25 (**Alternative 5**) and from 100 to 50

(**Alternative 4**). Thus, the biological effect of **Alternatives 5** and **6** would be would be similar to **Preferred Alternative 3** and **Alternative 4** but greater than **Alternative 2**.

Table 4-12. Number of pots fished per trip during 2005-2009.

Number of Pots	Number of Trips	Cumulative Freq	Percent Freq	Cumulative Percent
1-10	515	515	16%	16%
11-20	579	1,094	18%	34%
21-30	680	1,774	21%	54%
31-40	521	2,295	16%	70%
41-50	404	2,699	12%	83%
51-60	158	2,857	5%	88%
61-70	24	2,881	1%	88%
71-80	36	2,917	1%	90%
81-90	25	2,942	1%	90%
91-100	44	2,986	1%	92%
>100	273	3,259	8%	100%

Source: NMFS permits office and NMFS logbook database 5/5/10.

Alternatives 7 and **8** would reduce the number of tags issued to fishermen by 10% and 25%, respectively. If the Council takes action to limit participants in the black sea bass fishery, the biological effects of **Alternatives 7** and **8** would be less than **Alternatives 2-6** because large number of pots could still be fished by some fishermen, and risks associated with lost pots and possible entanglement of pot lines with protected species would continue. Under this scenario, **Alternative 4** would have the greatest biological benefit as it would immediately reduce the number of tags to 25 per vessel per year for all participating snapper grouper commercial fishermen. **Alternative 7** would have the least amount of biological benefit as it would reduce the number of tags issued by only 10% (Table 4-13). As more tags are generally issued to fishermen than pots fished, there would little reduction in the number of pots fished under **Alternatives 7** or **8** (Tables 4-13 and 4-14).

Alternative 1 (No Action) would perpetuate the existing level of risk for interactions between Endangered Species Act (ESA)-listed species and the fishery. **Alternatives 2-8** are unlikely to have adverse effects on ESA-listed *Acropora* species. Previous ESA consultations determined the snapper grouper fishery was not likely to adversely affect these species. These alternatives are unlikely to alter fishing behavior in a way that would cause new adverse effects to *Acropora*. The impacts from **Alternatives 2-8** on sea turtles and smalltooth sawfish are unclear. If these alternatives reduce the overall amount of fishing effort in the fishery, the risk of interaction between sea turtles and smalltooth sawfish will likely decrease.

Table 4-13. Average number of tags requested by individuals who fished pots in 2008, 25% and 10% reductions in issued tags, and actual number of pots fished by individuals who requested tags.

	Number of tags requested for vessels that fished pots			25% reduction			10% reduction			Number of pots fished for vessels that requested tags		
Year	Average	min	max	average	min	max	Average	min	max	average	min	max
2008	54	6	200	40	5	150	48	5	180	35	1	150
2009	55	8	200	41	6	150	49	7	180	37	1	150

Source: NMFS permits office and NMFS logbook database 5/5/10.

Table 4-14. Frequency distribution of tags requested by fishermen who fished pots during 2008, distribution of tags that could be requested if reduced by 25% (Alternative 7) and 10% (Alternative 8), and actual number of pots fished in 2008.

Number of Pots	Freq requested	25% red	10% red	Freq actually fished
1 to 10	5	5	5	18
11 to 20	7	11	7	9
21 to 30	9	7	9	8
31 to 40	2	11	2	8
41 to 50	11	2	11	1
51 to 60	2	3	2	0
61 to 70	0	0	1	1
71 to 80	3	6	2	0
81 to 90	0	0	6	1
91 to 100	6	1	0	1
> 100	4	3	4	2

4.8.2 Economic Effects

In general, it is expected that the short-term economic benefits of **Alternatives 2-6** increase with the larger number of pots allowed per vessel. However, how the total number of pots in the fishery influence the catch per unit effort will ultimately determine the long-term economic impacts of these alternatives. It is possible that even a low number of pots per vessel could have negative economic impacts in the short and long-term if there are large numbers of vessels participating in the fishery. Assuming the catch per unit effort remains stable, **Alternative 2** would offer the greatest short-term economic benefits but probably the smallest long-term economic benefits since the total number of pots in the fishery is not capped. **Preferred Alternative 3** would have the next largest short-term economic benefits (and next smallest long-term economic benefits) followed by **Alternatives 4, 5, and 6**, in that order. If **Alternative 1 (No Action)** is chosen under the previous action, **Alternatives 7 and 8** would have the greatest long-term economic benefits compared to the other alternatives in this action because this would restrict participation to individuals (based on the time frame) *and* limit the total number of pots used.

If we assume that the number of pots carried per vessel is currently optimal for that individual vessel's operation, then any reduction in the number of vessels will have a negative impact on the profitability of that operation. **Alternative 2** restricts the number of pots per vessel to 100. While most vessels carry less than 100 pots, those that currently carry more than 100 pots will be negatively impacted since they will be restricted to 100 pots. While the cost of vessel operations remain largely fixed, except crew and food costs, the number of pots, which are used to generate revenue have decreased. The overall economic benefit of any of the alternatives will be a summation of the individual changes in profits. Given that there are only a few vessels fishing greater than 100 pots, the negative economic impacts from alternatives with larger number of pots allowed per vessel are expected to be less than the negative economic impact of the alternatives with smaller numbers of pots allowed per vessel. Actual estimation of each vessels profitability requires vessel specific cost data, which are not available at this point in time.

4.8.3 Social Effects

A discussion of the general direct and indirect social consequences of regulatory change is provided in Section 4.1.3.

Social effects would be expected to accrue to changes in the amount of gear allowed or the manner in which it is allowed to be used if the changes affect normal fishing practices (behavior) and subsequent harvests. The intent of this action is to limit effort and prevent an increase in the number of pots used by black sea bass pot fishermen in response to increased restrictions on other species and reduce the potential adverse effects of lost pots and long soak times. While the proposed measures may indirectly result in the reduction in harvests for some vessels, as well as limit the potential for harvest increases by fishermen, no specific harvest reductions or limits are proposed. Thus, no direct adverse social effects associated with explicit harvest reductions would be expected on average (across all current participants) and the primary social effects of the alternative limits may be largely due to reduced fishing flexibility and interference with personal fishing or business practices. These effects may take the form of reduced independence, lower job satisfaction, reduced time to engage in other activities, or increased costs, among other effects. The latter two potential effects might accrue if the proposed limits induce alteration of the normal fishing patterns, such as the frequency and duration of trips, as well as the time pattern of pot deployment, soak time, and retrieval.

Alternative 1 (No Action) would not impose any new restrictions on the number of black sea bass pots fished or tags issued and, as a result, would not be expected to result in any short-term social effects on fishermen, associated businesses, or communities. In the long term, however, increased restrictions in other fisheries may result in increased effort shift into the black sea bass pot fishery (note that this would be curtailed by proposed Action 7), resulting in decreased economic viability of current pot fishermen, increased bycatch problems, and increased environmental damage from lost pots. While any increased black sea bass revenues for new entrants or existing participants would mitigate the loses in other fisheries that motivate the increased effort in the black sea bass pot fishery, such would not be expected to

compensate for the adverse effects of increased effort on the black sea bass resource and other environmental considerations (bycatch and habitat damage).

Alternatives 2-6 would limit the number of pots fished (deployed) or at sea (on the vessel) by requiring each pot have an identification tag and limit the number of tags issued per vessel per year. **Alternatives 2-4** would establish immediate tag limits (100, 50, or 25 tags), while **Alternatives 5** and **6** would establish an initial limit the first year (100 tags) with subsequent step-down limits in the following years to final limits of either 25 tags (**Alternative 5**) or 50 tags (**Alternative 6**).

Among **Alternatives 2-4**, the short-term adverse social effects would be expected to vary directly with the severity of the limit. As seen in Section 4.3.1, even the most liberal limit, 100 tags (**Alternative 2**), would restrict the fishing practices of some vessels as, although the mean number of tags requested and pots fished by vessels with recorded pot landings over the period 2003-2006 was only 51 tags and 45 pots fished, respectively, the average maximum number of tags requested and pots fished was 170 tags and 164 pots, respectively. Hence, some vessels would not be able to maintain current fishing practices and, as a result, some reduction in revenues, and associated social benefits may occur. These adverse effects would be expected to accrue to more entities and be more severe as the limit is reduced to 50 tags (**Preferred Alternative 3**) and 25 tags (**Alternative 4**). As seen in Section 3.6.1.9, the majority of black sea bass landings from 2003-2007 were made using pots (see Table 3-26) and an even greater proportion of landings were made on trips where black sea bass was the top source of trip revenue (see Table 3-24). While the information in Table 3-23 might suggest that black sea bass revenues are dominated by revenues for other species on the same trips (total average annual revenues from black sea bass were $881,000 for 2003-2007compared to total average annual revenues of $4.5 million from all species on all trips that landed black sea bass), suggesting the potential effects of pot limitation could be relatively small, it appears that the higher revenues of other species primarily come from trips that incidentally harvest black sea bass, as revenues from other species were a minor component of total revenues on trips where black sea bass was the top revenue species (Table 3-24; total average annual black sea bass revenues of $855,000 compared to $68,000 for revenues from all other species on the same trip). As a result, depending upon the severity of the limit, some pot vessels could face substantial restrictions, with associated substantial adverse social effects.

Under current practices, tags may be replaced, if appropriate fees are paid, when tags are lost. Tag replacement would allow fishermen to continue the use of their full allotment if pots (both the pot and tag is lost) or tags (just the tag is lost) are lost, thereby maintaining their current fishing practices and associated benefits. However, tag replacement could be requested for tags that were never lost, presenting an opportunity for vessels to fish more than their allowable limit, particularly if daily return to shore or soak-time limits are not adopted. The incentive to attempt this behavior would increase with the severity of the limit. However, there is no reason to expect that such behavior would become common, nor could it be habitual as systematic request for replacement tags could easily be documented.

Alternative 5 and **Alternative 6** would reduce the severity of the short-term adverse effects of **Alternative 4** and **Alternative 3**, respectively, by allowing a two-year or one-year transition to the target tag limit. Allowing a phase-in would allow vessels to adjust their fishing practices to minimize any adverse effects and/or identify alternative opportunities to mitigate losses in the black sea bass fishery as a result of pot/tag limits.

Instead of target maximums for the number of pots or tags a fisherman may possess, where only fishermen who currently exceed the maximum would be affected, **Alternative 7** and **Alternative 8** would result in uniform percentage reductions for all fishermen of either 10% or 25%, respectively. The primary difference between these alternatives and **Alternatives 2-4** is that **Alternatives 7** and **8** would impose pot reductions on all participants in the fishery, regardless of the number of pots they traditionally fish. While such action may seem equitable from the perspective that all participants in the fishery would contribute to effort reductions, the individual burden may be disproportionate. Fishermen who previously fished more pots would experience greater reductions (individual and total); however, the reduction in pots to fishermen who traditionally fished fewer pots could result in a greater proportionate decline in harvests than the decline in harvests for fishermen experiencing a greater reduction in pots (a reduction of 2 pots for a fishermen who previously fished 20 would be less than the reduction of 4 pots to a fisherman who fished 40; however, it may be easier to "recover" the harvests "lost" by the reduction of 4 pots with the 36 remaining pots than it is to recover losses with only 18 remaining pots; thus, while the percentage reduction in pots would be equal, the fisherman "losing" the fewer number of pots could experience a greater reduction in harvests, revenues, and associated social benefits). Additionally, equal percentage reductions do not incorporate considerations of a reasonable or fair number of pots (i.e., the number of pots sufficient to support a reasonable income) for each fisherman, as could be suggested to be the foundation of the limits in **Alternatives 2-6**, or consideration that the reduction should be proportionate to the potential harm or contribution to the problem addressed by this action (the likelihood and incidence of lost pots or environmental harm would be expected to increase with the number of pots; therefore, it could be suggested that the greater the number of pots used by a fisherman, the higher the reduction should be for that fisherman in both percentage and absolute terms). The potential inequity of these considerations (considerations of fair burden and contribution to the problem) may increase with the size of the proportionate reduction (**Alternative 8** may result in greater perceptions of inequity than **Alternative 7**).

See Section 4.7.3 for discussion on the number of potentially affected communities and dealers with recorded black sea bass landings in 2008.

4.8.4 Administrative Effects

Alternative 1 requires no new administrative process and as such would be least burdensome of the alternatives. The administrative burden of **Alternatives 2-6** increases with the number of tags being issued or the complexity of the program. **Alternative 2** (100 tags per vessel) would be more burdensome than **Alternative 4** (25 tags per vessel); however, the increased burden would be very small. **Alternative 5** and **Alternative 6** would require slightly more of an administrative burden as the tag issuance would decrease each year until modified. **Alternatives 2-6** could constitute an increased burden to law enforcement since they would

need to ensure that each pot was tagged and the number of traps deployed was within the legal limit. The burden to law enforcement would increase with the number of pots that could be fished. **Alternatives 7** and **8** would be the most burdensome of all the alternatives. Administratively, it could be difficult to determine the actual number of tags that should be issued to each fisherman. These alternatives would be difficult to enforce because of the lack of consistency in number of pots a fisherman could deploy.

4.8.5 Council's Conclusions

The Council concluded Preferred Alternative 3 best balances the impacts from limiting the number of pot per vessel and the benefits from reducing the number of pots fished. The Council is requesting public comment on these alternatives and the estimated impacts as presented. The Council will consider all comments in finalizing their preferred alternative.

4.9 Action 9: Implement Measures to Reduce Bycatch in the Black Sea Bass Pot Fishery

Alternative 1 (No Action): Do not implement new regulations specifying when black sea bass pots must be retrieved from the water.

Preferred Alternative 2: Require black sea bass pots to be brought back to the shore at the conclusion of each trip.

Alternative 3: Require fishermen remove their black sea bass pots within 72 hours of the start of the fishing trip.

4.9.1 Biological Effects

The "soak-time" is determined through the method of fishing. Black sea bass pot fishermen deploy gear in three primary manners (Tom Burgess pers. comm.). The most common form of fishing (65% of all trips) is to deploy pots in the morning and retrieve them later in the day after a soak time of about 7 hours. Most of the remaining trips are for multiple days (35%; Table 4-15). A few fishermen leave 100-150 pots out all season and collect them at the conclusion of the fishing season. However, most fishermen on multi-day trips deploy pots at night and retrieve them the next morning for a soak time of about 17 hours. During 2005-2008, only 14 fishermen deployed more than 55 pots for an average of 106 pots deployed per trip (Table 4-16).

Table 4-15. Number of days away from port, number of trips, total lbs of black sea bass landed (whole weight) and number of pots fished during 2005-2008.

Away	Trip Freq	% Freq	Tot lbs	% Tot lbs	# Traps	% Traps
1	1,632	65.28	788,503	49.85%	63,336	64.38%
2	634	25.36	573,180	36.24%	26,522	26.96%
3	194	7.76	193,076	12.21%	7,515	7.64%
4	25	1.00	16,291	1.03%	749	0.76%
5	7	0.28	4,896	0.31%	68	0.07%
6	5	0.20	2,893	0.18%	46	0.05%
7	2	0.08	1,806	0.11%	123	0.13%
8	1	0.04	1,146	0.07%	25	0.03%

Source: NMFS logbook database 4/6/09.

Table 4-16. Pots per trip fished (1/1/05-12/31/08).

	Average pots < 55	Average ≥ 55
No. of vessels	80	14
Average pots/trip	28	107

Source: NMFS logbook database 4/6/09.

Currently, there are instances where large numbers of pots may be left fishing for multiple days due to vessel or weather problems, which could unnecessarily kill black sea bass. Fishing large numbers of pots also increases the chance that pots could be lost and "ghost fishing" could occur. Therefore, limitations on the length of time pots can be left at sea would reduce the adverse effects of continued fishing by lost gear. Boat propellers and storms are common agents causing pots to be lost. Fishermen may not be able to retrieve pots during periods of inclement weather or vessel repairs. Furthermore, fishing large numbers of pots increases the chance of entanglement of pot lines with right whales and other protected species. The longer the pots are in the water, the greater the opportunity for lost pots and entanglement with protected species.

Preferred Alternative 2 would require that black sea bass pots be brought back to shore at the conclusion of a trip but would place no time limit on the length of the trip. **Alternative 3** would put a time limit of 72 hours for how long a pot could remain in the water. **Alternative 1 (No Action)** would continue the risks of ghost fishing due to lost pots and entanglement with protected species, particularly when gear is left at sea for long periods of time and therefore would have the least amount of biological benefit for the alternatives considered. The biological benefit of **Preferred Alternative 2** would be greater than **Alternative 3** because most trips last 1 day. Therefore, under **Preferred Alternative 2**, pots would be in the water for the least amount of time and would have the least amount of risk for ghost fishing or entanglement with protected species.

The biological benefit of **Alternative 3** would be less than **Preferred Alternative 2** because it would allow fishermen to leave pots in the water for as long as 72 hours and would increase the chance pots could be lost or could interact with protected species. Furthermore, under **Alternative 3** fishermen would be able to return to the dock, while pots soak decreasing the chance gear could be retrieved during bad weather. Selecting both **Preferred Alternative 2**

and **Alternative 3** as preferred would have an intermediate biological effect in that a trip could last for no longer than 72 hours but fishermen would not be able to return to the dock without their pots. However, as approximately 99% of the trips were 72 hours or less (Table 4-15), a restriction on the length of the trip (**Alternative 3**) is not needed. **Alternative 1 (No Action)** would perpetuate the existing level of risk for interactions between Endangered Species Act (ESA)-listed species and the fishery. **Alternatives 2-3** are unlikely to have adverse effects on ESA-listed *Acropora* species. Previous ESA consultations determined the snapper grouper fishery was not likely to adversely affect these species. These alternatives are unlikely to alter fishing behavior in a way that would cause new adverse effects to *Acropora*.

4.9.2 Economic Effects

Alternative 1 (No Action) would not implement new regulations that limit the soak time of black sea bass pots and thus would not reduce bycatch in the fishery. **Preferred Alternative 2** and **Alternative 3** would further restrict fishing flexibility by limiting pot soak time. **Preferred Alternative 2** would not explicitly limit soak time because the length of a fishing trip would not be limited. However, **Preferred Alternative 2** may functionally limit soak time if fishermen prefer not to stay at sea longer while their pots soak or force them to stay longer at sea to maintain customary soak times. Further, under **Preferred Alternative 2**, a vessel could not return to port without retrieving all pots, even if the expected soak time was still expected to be short. Only **Alternative 3** would explicitly limit soak time. However, almost all black sea bass pot trips are less than three days, so **Alternative 3** would be expected to have little to no adverse social or economic effects. Unless suspension of the pot recovery requirement was possible, both alternatives could result in hardship or safety issues in the event of engine problems/failure or severe weather such that the vessel has to return to port prior to retrieving all pots. While notice of the suspension of these requirements would be logical in the event of pending severe weather, such as a tropical depression or hurricane, the absence of specific procedures in the event of engine problems may create additional problems for fishermen.

Given that **Preferred Alternative 2** and **Alternative 3** protect the biological resource as well as the surrounding ecosystem, by helping to reduce bycatch, the fishery would experience long-term economic benefits from these alternatives.

4.9.3 Social Effects

A discussion of the general direct and indirect social consequences of regulatory change is provided in Section 4.1.3.

Alternative 1 (No Action) would not impose any new restrictions on the black sea bass pot fishery and, as a result, would not be expected to result in any short-term adverse social effects on fishermen, associated businesses, or communities. In the long term, however, the absence of new restrictions on pot fishing would be expected to result in continued bycatch problems for other species, potential resource problems for these stocks, and associated decreased social and economic benefits associated with the fisheries for these species.

Alternative 2 (Preferred) and **Alternative 3** would be expected to help reduce bycatch, resulting in increased long-term social and economic benefits for affected species, but would restrict fishing flexibility. **Alternative 2** (**Preferred)** would not explicitly limit soak time because the length of a fishing trip would not be defined or limited. However, **Alternative 2** (**Preferred)** may functionally limit soak time if fishermen prefer not to stay at sea while their pots soak for extensive periods of time or force them to stay longer at sea to maintain customary soak times. Further, under **Alternative 2 (Preferred)**, a vessel could not return to port without retrieving all pots, even if the soak time was still expected to be short. Only **Alternative 3** would explicitly limit soak time. However, almost all black sea bass pot trips are less than three days, so **Alternative 3** would be expected to have little to no adverse social or economic effects associated with alteration of normal fishing behavior. Absent suspension of the pot recovery requirement under certain conditions, both alternatives could result in hardship or safety issues in the event of engine problems or severe weather requiring the vessel to return to port prior to retrieving all pots. While notice of the suspension of these requirements would be logical in the event of pending severe weather, such as a tropical depression or hurricane, the absence of specific procedures in the event of engine problems may create additional operational problems for fishermen.

See Section 4.7.3 for discussion on the number of potentially affected communities and dealers with recorded black sea bass landings in 2008.

4.9.4 Administrative Effects

Alternative 1 would not implement new regulations that limit the soak time of black sea bass pots and thus would not reduce bycatch in that fishery. **Alternative 1** would not impose new administrative burden on the agency or the industry. **Preferred Alternatives 2** and **Alternative 3** would require a minimal administrative burden on SERO staff through the development of fishery bulletins and announcements. However, these alternatives would increase enforcement responsibilities in this fishery. **Alternative 3** would be difficult to enforce as the Office of Law Enforcement has stated that limitation on gear soak time is almost impossible to enforce. **Preferred Alternative 2** would be the easiest alternative to enforce.

4.9.5 Council's Conclusions

The Council concluded Preferred Alternative 2 best reduces bycatch while minimizing the economic and social impacts. The Council is requesting public comment on these alternatives and the estimated impacts as presented. The Council will consider all comments in finalizing their preferred alternative.

4.10 Action 10: Improvements to Commercial Data Reporting

Note: More than one preferred may be chosen.

Alternative 1 (No Action). Retain existing data reporting systems for the commercial sector.

Under this alternative, as recently implemented by Amendment 15B, a private recreational vessel that fishes in the exclusive economic zone (EEZ), if selected by NOAA Fisheries Service, is required to maintain and submit fishing records; requires a vessel that fishes in the EEZ, if selected by NOAA Fisheries Service, to carry an observer and install an electronic logbook (ELB) and/or video monitoring equipment provided by NOAA Fisheries Service.

Alternative 2. Require all vessels with a Federal snapper grouper commercial permit to have an electronic logbook tied to the vessel's GPS onboard the vessel.

(Note: Alternative 2 would require 100% of vessels to have an electronic logbook; whereas, current data reporting programs only require electronic logbooks if selected.)

Preferred Alternative 3. Provide the option for fishermen to submit their logbook entries electronically via an electronic version of the logbook made available online.

Alternative 4. Require that commercial landings and catch/effort data be submitted in accordance with ACCSP standards, using the SAFIS system.

(Note: Alternative 4 would require that 100% of dealers and fishermen report electronically using the SAFIS system.)

4.10.1 Biological Effects

Alternative 1 (No Action) would retain existing data reporting systems for the commercial sector including new regulations implemented through Amendment 15B which include a requirement for private recreational vessels that fish in the exclusive economic zone (EEZ), if selected by NOAA Fisheries Service, to maintain and submit fishing records; and requires a vessel that fishes in the EEZ, if selected by NOAA Fisheries Service, to carry an observer and install an electronic logbook (ELB) and/or video monitoring equipment provided by NOAA Fisheries Service (Table 4-17). For the South Atlantic snapper grouper commercial fishery, current regulations (50CFR § 622.5) require commercial and recreational for-hire participants in the South Atlantic snapper grouper fishery, who are selected by the Southeast Science and Research Director (SRD), to maintain and submit a fishing record on forms provided by the SRD. Bycatch data on protected species are currently collected in the commercial snapper grouper fishery through the supplementary discard form. 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. **Alternative 1 (No Action)** would continue to obtain fishing effort information as well as protected species interactions via a logbook.

In 2001, a separate bycatch reporting logbook was added to include numbers on the average size of discarded fish by species. Discard data are collected using a supplemental form that is sent to a 20% stratified random sample of the active permit holders. The sample selections are made in July of each year and the selected fishermen/vessels are required to complete and

submit the form for the trips they make during August through July of the following year. Fishermen are not selected for the next four years after they submit a discard form for a year. However, over a five-year period, 100% of snapper grouper permit holders will have been required to report in one of the five years. In addition, information is collected on protected species interactions. The key advantage of logbooks is the ability to use them to cover all fishing activity relatively inexpensively. However, in the absence of any 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. Many fishermen may perceive that accurate reporting will result in restricted fishing effort or access. This results in a disincentive for reporting accurate bycatch data and an incentive to under-report or not report. Therefore, logbook programs are more useful in recording information on infrequently caught species and providing estimates of total effort by area and season that can then be combined with observer data to estimate total bycatch.

Commercial quotas are monitored by the NOAA Fisheries Service Southeast Fisheries Science Center (SEFSC). Landings data are obtained from dealers. Dealer selections are made for a calendar year based on the production for the previous year. Selected dealers are notified that they must report landings by the 5th of a following month, even if no purchases were made. The SEFSC provides periodic reports to NOAA Fisheries Service Southeast Regional Office (SERO) and the Council (at least prior to each Council meeting). In addition, timing of possible closures are estimated. Periodically, quota monitoring data are compared to general canvas landings data for the same dealers. The purpose is to determine if selected dealers provide an acceptable percentage of total reported landings. The review of the general canvass landings data are also used to identify new dealers handling quota species. If new dealers are identified or if the percentage of landings accounted for by selected dealers drops below a specified percentage, additional dealers would be required to report landings.

Dealers have two options for submitting data: (1) a paper form faxed to SEFSC or (2) online reporting. To enter and use the online system, the dealer uses a valid user login ID and password. This system is secure and only users with valid user IDs and passwords can access it. Furthermore, the user ID and password is unique for each dealer and will only allow access to the data entered by an individual using that password. All entries are logged on a tracking database and each time a user enters the system and makes a change to the data, that entry, and the changes are recorded, along with the date and time the changes were made. Instructions are provided to the dealers on how to use the online system.

Some data are also collected through cooperative research projects. Cooperative research with the commercial and recreational sectors on bycatch was identified as a high priority item at the Southeast Bycatch Workshop during May 2006. There is clearly a need to characterize the entire catch of commercial fishermen and compare differences in abundance and species diversity to what is caught in fishery-independent gear. As we move towards a multi-species management approach, these types of data are essential. In addition, estimates of release mortality are needed for stock assessments but currently this is not being measured for fishery-dependent data. It is anticipated that additional cooperative research projects will be

funded in the future to enhance the database on bycatch in the snapper grouper fishery in the South Atlantic.

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. obtained funding to conduct 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.

Research funds for observer programs, as well as gear testing and testing of electronic devices are also available each year in the form of grants from the Foundation, Marine Fisheries Initiative (MARFIN), Saltonstall-Kennedy (S-K) program, and the Cooperative Research Program (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 NOAA Fisheries Service upon completion of a study.

Included in **Alternative 1 (No Action)** would be the measures proposed in Amendment 15B, which was recently implemented (Table 4-17). The Council's preferred alternative in Amendment 15B allows for the implementation of interim programs to monitor and assess bycatch in the South Atlantic snapper grouper fishery until the Atlantic Coastal Cooperative Statistical Program (ACCSP) Release, Discard and Protected Species (Bycatch) Module can be fully implemented. Funding shortfall prevent full implementation by the SEFSC. The interim programs or first phase of the alternative would allow for the collection of bycatch information utilizing a variety of methods and sources when Amendment 15Bis implemented as follows:

1. Require that selected vessels carry observers (It is the Council's intent that NOAA Fisheries Service and grant-funded programs would cover the cost of observers on snapper grouper vessels.)
2. Require selected vessels employ electronic logbooks or video monitoring (It is the Council's intent that NOAA Fisheries Service and grant-funded programs cover the cost of purchase and installation of these units.)
3. Utilize bycatch information collected in conjunction with grant-funded programs such as MARFIN and Cooperative Research Program (CRP). Require that raw data are provided to NOAA Fisheries Service and the Council.
4. Request that bycatch data collected by states are provided to NOAA Fisheries Service and the Council. Many states may have collected data on snapper grouper bycatch in the past. Furthermore, some states may be currently collecting bycatch data through studies that are conducted in state waters.
5. Develop outreach and training programs to improve reporting accuracy by fishermen.

Table 4-17. Summary of current data collection programs under Alternative 1.

	Submit SRD Reporting Forms if Selected	Must Submit SRD Reporting Form for Each Trip	Carry Observers if Selected	Maintain Electronic Logbook if Selected	Must Provide Offloading, Purchase, and Sales Records if Selected	Carry Video Monitoring System if Selected	MRFFS Participation if Selected
Snapper-Grouper -commercial -for-hire -private rec.	Yes		Yes	Yes		Yes	Yes
Coastal Migratory Pelagics	Yes						
Wreckfish		Yes (for each trip)			Yes		
Golden Crab	Yes						
Dolphin Wahoo	Yes						
Shrimp - rock - penaeid	Yes						
Dealers -snapper-grouper -coastal migratory pelagics -wreckfish -golden crab - dolphin wahoo - shrimp	Yes (submitted on a monthly basis)				Yes		

Alternative 1 (No Action) would not require that commercial vessels with a snapper grouper permit to use the SAFIS system or vessel monitoring systems (VMS).

Alternatives 2-4 identify options for monitoring catch and effort, which are more specific than what was specified in Amendment 15B. There are no direct biological impacts from establishing a standardized reporting methodology to estimate bycatch. However, indirect impacts resulting from **Alternatives 2-4** would provide a better understanding of the composition and magnitude of catch and bycatch; enhance the quality of data provided for stock assessments; increase the quality of assessment output; provide better estimates of interactions with protected species; better limit commercial catches to the commercial ACL; and lead to better decisions regarding additional measures that might be needed to reduce bycatch. Management measures that affect gear and effort for a target species can influence fishing mortality in other species. Therefore, enhanced catch and bycatch monitoring would provide better data that could be used in multi-species assessments.

Alternatives 2-4 differ in type, amount, and quality of data they would provide

Alternative 2 would require all vessels with a Federal snapper grouper commercial permit to have an electronic logbook tied to the vessel's GPS onboard the vessel. This alternative differs from **Alternative 1 (No Action)** in that currently a vessel would only be required to use electronic logbook if it were selected.

The Council tested the use of electronic logbook reporting using the Thistle Marine HMS-110 unit to examine the magnitude and spatial distribution of fishing effort and species composition (O'Malley 2003). The project was implemented on two commercial snapper/grouper vessels in South Carolina and North Carolina from May 2002 through November 2002. Over 4,000 high spatial and temporal resolution data points on commercial catch and effort representing 19 fishing trips were captured. The Thistle box allows fishermen to record all species encountered as well as the disposition of released specimens. A comparison of electronic versus paper reporting for a single trip indicates more than twice the number of species than recorded on the trip ticket (O'Malley 2003). Catch per unit of effort (CPUE) can be expressed in different ways for this fishery and the Thistle logbook device can be configured to record all of the parameters necessary to calculate different types of CPUE. These could include catch per trip/day/hour fished, catch per hook/line/reel fished, or catch per man-trip/man-day/man-hour. The Thistle electronic logbook is also setup to record fish lengths. Electronic logbooks have the potential to automatically collect information on date, time, location, and fishing times. Detailed location information would be very useful as more area closures are considered. The current logbook grids are not very usable given the large area and lack of detailed location data. Information (species, length, disposition) of released species can be manually entered into the system at the end of a fishing event. If the electronic format prompts a fisherman to record data as bycatch occurs, an electronic logbook may provide better estimates of bycatch than a paper logbook. However, for electronic logbooks, like paper logbooks, biases may result from inaccuracy in reporting of species that are caught in large numbers or are of little economic interest.

Preferred Alternative 3 would provide the option for fishermen to submit their logbook entries electronically through an electronic version of the logbook made available online. Paper logbooks have been required for vessels with federal permits in the snapper grouper fishery from the Gulf of Mexico and South Atlantic since 1990. In 2001, a separate bycatch reporting logbook was added to include numbers on the average size of discarded fish by species. However, in the absence of any observer data, there are concerns about the accuracy of these logbook data. Biases associated with paper logbooks primarily result from inaccuracy in reporting of species that are caught in large numbers or are of little economic interest. There is also a delay in the time in which logbook data are provided via mail to the SEFSC. Electronic logbooks could be completed more easily than paper logbooks and allow for quicker delivery of data to the SEFSC. Therefore, **Preferred Alternative 3** has the potential to increase the accuracy of logbook data and speed with which it could delivered to the SEFSC. However, since data would usually not be entered until the end of a fishing trip, some bias from inaccuracy would be expected. Therefore, **Preferred Alternative 3** would be expected to provide data with increased accuracy relative to **Alternative 1** but with less accuracy than **Alternative 2**, which would allow information to be recorded at the end of a fishing event. Furthermore, like paper logbooks, biases could still be expected due to

inaccuracy in reporting of species that are caught in large numbers or are of little economic interest.

Alternatives 4 would require commercial landings and catch/effort data to be submitted in accordance with the ACCSP standards weekly or daily as required, using the Standard Atlantic Fisheries Information System (SAFIS) system. SAFIS is a real-time, web-based reporting system for commercial landings on the Atlantic coast and is currently being used from North Carolina northwards to track quotas. It is comprised of three applications:

- Electronic Dealer Reports (eDR) - A forms based application collecting data from the dealers (landings including condition and price).
- Electronic Trip Reports (eTRIPS) - A Web-based application collecting data from fisherman (catch and effort) including gears used, fishing areas, and catch disposition.
- SAFIS Management System (SMS) - A Web-based application providing administrative tools to SAFIS administrators for management of user accounts, participants, permits etc.

Data reported through SAFIS is fed into the ACCSP Data Warehouse. Daily reports can be automatically provided tracking landings; these data can be made available to the public so they have a real-time estimate of quota remaining. This becomes increasingly important as the number of quota-managed species increases. Beneficial biological impacts would be provided by **Alternatives 4** as data are provided more quickly from the fishermen and dealers to NOAA Fisheries Service and fishery managers. In addition to monitoring quotas in a more timely fashion than under the current quota monitoring system, the SAFIS has the potential to improve the quality of data and stock assessments.

Alternatives 1-4 are unlikely to have adverse effects on ESA-listed species. These alternatives are unlikely to alter fishing behavior in a way that would cause new adverse effects to ESA-listed species. Data collected under **Alternatives 2-4** may indirectly benefit ESA-listed species by improving the quality and quantity of data available for evaluating the impacts of the fishery on protected species.

4.10.2 Economic Effects

In general, an increase in the quantity and/or quality of data increases long-term economic benefits through improvements to management of the stocks. Electronic logbooks (**Alternative 2**), in particular, are seen as a low cost alternative to video monitoring and observers. While paper logbook submittal is already required, **Preferred Alternative 3** would provide fishermen the option to submit their logbooks online. While **Preferred Alternative 3** would likely be the least expensive alternative for fishermen, **Alternative 4** would vary by individual. **Alternative 4** would require dealers and fishermen to enter landings data on a daily, weekly, or monthly basis to an online site. If a dealer or fisherman does not have access to a computer, he would have to buy one or borrow one. This could be prohibitive for some dealers and fishermen if borrowing through the library, fish house, or a friend is not an option. However, the cost of a computer might total only $500. The cost to

fishermen of **Alternative 2** is somewhat unknown. While pilot electronic logbook programs have provided fishermen with electronic logbook equipment, it is unknown if there are available funds to provide electronic logbooks to the entire fishery. Some costs may be passed on to the fishermen.

Alternative 2 would provide a small amount of additional data in the form of detailed location information and could provide length and condition information on discards. .**Preferred Alternative 3** would provide no additional additional data. Although, the data may be ready for usage quicker than under **Alternative 1 (No Action)**. Compared to the other alternatives, **Alternative 4** provides the greatest increase in the quantity of data collected and therefore expected improvement in management of the fishery. Therefore, there are greater long-term economic benefits associated with this alternative. As stated above, **Alternative 4** would improve the quality of data available over **Alternatives 1, 2** and **3**. This would result in higher economic benefits under **Alternative 4** compared to **Alternatives 1, 2,** and **3**.

Implementation of accountability measures (AMs) with pay-back for quota overages makes accurate reporting more important. If a quota is exceeded, that amount of harvest could be reduced from the following year's commercial quota. This would have a negative economic impact on fishermen. The current quota monitoring system continues to result in overages and as the number of species under quota management increases, it will be more difficult to accurately track commercial quotas under **Alternative 1 (No Action)**.

4.10.3 Social Effects

A discussion of the general direct and indirect social consequences of regulatory change is provided in Section 4.1.3.

In general terms, it is assumed that while data collections programs or obligations may be individually burdensome on fishery participants, better data reporting is assumed to support better management through improved stewardship of the biological resource and the timely development and implementation of management action that meet resource targets while minimizing adverse social and economic consequences. In sum, better management, from both the resource and fishery perspective, is assumed to result in greater long-term social and economic benefits. It is not possible to state with any certainty when the amount and type of available data is sufficient for optimal assessment and management purposes so, for the purposes of this discussion, it is assumed that continued improvements in resource stewardship and fishery management will continue to be made with more data. All alternatives under consideration, with the exception of **Alternative 1 (No Action)**, are assumed to constitute improvements to current data collection requirements. Because each of these alternatives would improve data collection relative to **Alternative 1 (No Action)**, it is assumed that each would result in greater long-term social benefits than **Alternative 1 (No Action)**.

Alternative 2 and **Preferred Alternative 3** apply to snapper grouper fishermen, whereas **Alternative 4** also applies to snapper grouper dealers. As a result, effects comparison should be limited to comparisons within the two sub-groups.

All vessels with a Federal snapper grouper permit are required to submit trip logbooks, with electronic reporting required if the vessel is selected. As a result, all vessels could be selected and required to submit electronic logbooks, though such has not occurred to date. Under **Alternative 2,** all logbooks would have to be submitted electronically. **Preferred Alternative 3** would give fishermen the discretion to choose the reporting method that they prefer, paper or electronic. At this time, while it is assumed that it is the intent of the Council that the responsibility for the financial burden of the cost and installation of the electronic logbook lie with grant or government funds, such is not certain, and long-term subscription or maintenance costs may still likely be the responsibility of the vessel. However, given the current mandatory logbook (paper) reporting for this fishery, other than learning how to operate an electronic logbook, the use and submission of the required information may be less burdensome than the current paper logbooks. Electronic reporting may also support both more timely and accurate reporting though, for the purpose of this discussion, it is assumed both methods accurately reflect actual harvest (and both require mandatory reporting of all trips by all vessels) and the primary benefit of electronic reporting is the data is submitted as the trip occurs rather than as part of monthly submissions. As a result of these considerations, **Alternative 2** would be expected to place a greater operational burden on more entities than **Preferred Alternative 3**, while resulting in better total data and management due to the more inclusive scope of data collection. Because the Science Center could still select a vessel for required electronic reporting, **Preferred Alternative 3** would not be expected to reduce the reporting burden to fishermen who are selected. However, the establishment of an electronic reporting system may result in adequate choice behavior to submit logbooks via this method sufficient to decrease the need for vessel selection for mandatory reporting via electronic logbooks.

Although **Alternative 4** would place an increased operational burden on more entities, the individual burden from a work-load perspective may be minimal. Because computers have become more mainstream in both private and business life, it is expected that virtually all dealers currently have, or have easy access to, most of the necessary hardware, internet accessibility, and skills to provide the required information. Use of these tools has become normal in today's business world. With the provision of access to the appropriate internet interface (i.e., the ability to sign into the web-based reporting site), compliance with any new requirements should result in minimal to no additional burden on these entities, resulting in no to minimal adverse social, or economic, impacts on these entities. It should also be noted that the difference between the two alternatives may be illusory as, operationally, all dealers could be selected for reporting under **Alternative 1 (No Action)**, a decision that would be at the discretion of NMFS. Thus, the functional outcome of **Alternative 4** relative to **Alternative 1 (No Action)** on dealers, similar to **Alternative 2** for fishermen, could be identical.

4.10.4 Administrative Effects

Under **Alternative 1 (No Action)** no administrative impacts would be incurred outside of the status-quo. **Alternative 2** and **Preferred Alternative 3** would result in significant

administrative burden to the agency as it would require the development of an electronic reporting system. Under all of the action alternatives**, t**he agency would develop the electronic reporting system and receive compliance from the Paperwork Reduction Act Office, which requires significant effort. **Preferred Alternative 3** would be the least administratively burdensome on the agency and fishermen in that it would be a voluntary program and it is assumed that those that participate have some familiarity with a computer and electronic logbook programs. NOAA Fisheries would need compliance with the Paperwork Reduction Act and would produce educational materials explaining the program. **Alternative 4** would rely on the ACCSP to collect data through the SAFIS system. This system is currently operating in the Northeast Region (North Carolina northwards) and has been tested. The administrative burden on the agency is unknown at this time as it is not clear how the agency would be involved in the program. **Alternative 4** would require compliance with the Paperwork Reduction Act and would result in an economic cost to the Southeast Regional Office. However, there would be economic savings to the SEFSC because they would no longer be tracking the commercial quotas.

4.10.5 Council's Conclusions

The Council concluded Preferred Alternative 3 would provide a cost and time savings to fishermen as they prepare their logbook report and submit them to NMFS. The Council is requesting public comment on these alternatives and the estimated impacts as presented. The Council will consider all comments in finalizing their preferred alternative.

4.11 Action 11: Improvement to For-Hire Data Reporting

Alternative 1 (No Action). Retain existing data reporting systems for the for-hire sector. Refer to Table 1-3 for a complete list of current data reporting requirements.

Alternative 2. Require *selected* vessels with a Federal For-Hire Permit to report electronically; NOAA Fisheries Service is authorized to require weekly or daily reporting as required.

Alternative 3. Require vessels operating with a Federal For-Hire permit to maintain a logbook for discard characteristics (e.g., size and reason for discarding), *if selected*.

Alternative 4. Require that for-hire landings and catch/effort data be submitted in accordance with the ACCSP standards, using the SAFIS system.

4.11.1 Biological Effects

Alternative 1 (No Action) would retain existing data reporting systems for the for-hire sector. This would include those data collection measures implemented by Amendment 15B including a requirement for a vessel, if selected, that fishes in the exclusive economic zone (EEZ), to maintain and submit fishing records; and to carry observers and install an electronic logbook (ELB) and/or video monitoring equipment provided by NMFS. Harvest and bycatch

in the private and for-hire charter vessel sector has been consistently monitored by Marine Recreational Fishery Statistics Survey (MRFSS) since its inception. The survey uses a combination of random digit dialed telephone intercepts of coastal households for effort information and dock-side intercepts for individual trips for catch information to statistically estimate total catch and discards by species for each sub-region, state, mode, primary area and wave. Bycatch is enumerated by disposition code for each fish caught but not kept (B2). Prior to 2000, sampling of the charter vessel sector resulted in highly variable estimates of catch. However, since 2000, a new sampling methodology has been implemented. A 10% sample of charter vessel captains is called weekly to obtain trip level information. In addition, the standard dockside intercept data are collected from charter vessels and charter vessel clients are 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). Additional improvements are scheduled for MRFSS in the next few years.

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

Included in the no-action **Alternative 1 (No Action)** would be the measures proposed in Amendment 15B, which has been approved and implemented by the Secretary (Table 4-17). The Council's preferred alternative in Amendment 15B allows for the implementation of interim programs to monitor and assess bycatch in the South Atlantic snapper grouper fishery until the ACCSP Release, Discard and Protected Species (Bycatch) Module can be fully funded. The interim programs or first phase of the alternative would allow for the collection of bycatch information utilizing a variety of methods and sources when Amendment 15B is implemented as follows:

1. Require that selected vessels carry observers funded by the agency.
2. Require selected vessels employ electronic logbooks or video monitoring funded by the agency.
3. Utilize bycatch information collected in conjunction with grant-funded programs such as MARFIN and Cooperative Research Program (CRP). Require that raw data are provided to NOAA Fisheries Service and the Council.
4. Request that bycatch data collected by states are provided to NOAA Fisheries Service and the Council. Many states may have collected data on snapper grouper bycatch in the past. Furthermore, some states may be currently collecting bycatch data through studies that are conducted in state waters.
5. Develop outreach and training programs to improve reporting accuracy by fishermen.

Alternative 1 (No Action) would not require that for-hire vessels use the Standard Atlantic Fisheries Information System (SAFIS) system or vessel monitoring systems (VMS). This

would include those data collection measures in place as well as those implemented by Amendment 15B that includes all vessels, if selected, that fish in the EEZ, be required to maintain and submit fishing records; and to carry observers and install an electronic logbook ELB and/or video monitoring equipment provided by NOAA Fisheries Service.

Alternatives 2 and 3 identify options for monitoring catch and effort, which are more specific than what was specified in Amendment 15B. There are no direct biological impacts from establishing a standardized reporting methodology. However, indirect impacts resulting from **Alternatives 2 and 3** would provide a better understanding of the composition and magnitude of catch and bycatch; enhance the quality of data provided for stock assessments; increase the quality of assessment output; provide better estimates of interactions with protected species; better track recreational ACLs; and lead to better decisions regarding additional measures that might be needed to reduce bycatch. Management measures that affect gear and effort for a target species can influence fishing mortality in other species. Therefore, enhanced catch and bycatch monitoring would provide better data that could be used in multi-species assessments.

Alternative 2 would require all vessels with a Federal for-hire permit to report landings electronically if selected. Amendment 15B also includes an alternative that would require commercial, for-hire, and private vessels to install an ELB and/or video monitoring equipment provided by NMFS, if selected. Therefore, **Alternative 2** only differs from what was implemented through Amendment 15B by not specifying the type of electronic equipment that would be used to report landings.

The Council tested the use of electronic logbook reporting using the Thistle Marine HMS-110 unit to examine the magnitude and spatial distribution of fishing effort and species composition (O'Malley 2003). The project was implemented on two commercial snapper/grouper vessels in South Carolina and North Carolina from May 2002 through November 2002. Over 4,000 high spatial and temporal resolution data points on commercial catch and effort representing 19 fishing trips were captured. The Thistle box allows fishermen to record all species encountered as well as the disposition of released specimens. A comparison of electronic versus paper reporting for a single trip indicates more than twice the number of species than recorded on the trip ticket (O'Malley 2003). Catch per unit of effort (CPUE) can be expressed in different ways for this fishery and the Thistle logbook device can be configured to record all of the parameters necessary to calculate different types of CPUE. These could include catch per trip/day/hour fished, catch per hook/line/reel fished, or catch per man-trip/man-day/man-hour. The Thistle electronic logbook is also setup to record fish lengths. Electronic logbooks have the potential to automatically collect information on date, time, location, and fishing times. Information (species, length, disposition) of released species can be manually entered into the system at the end of a fishing event. If the electronic format prompts a fisherman to record data as bycatch occurs, an electronic logbook may provide better estimates of bycatch than a paper logbook. However, for electronic logbooks, like paper logbooks, biases may result from inaccuracy in reporting of species that are caught in large numbers or are of little economic interest.

Alternative 3 would require vessels operating with a for-hire permit to maintain a logbook for discard characteristics (e.g., the size and reason for discarding), if selected. Harvest from

headboats has been monitored by NOAA Fisheries Service at SEFCS's Beaufort Laboratory since 2004. Daily catch records (trip records) are filled out by the headboat operators or in some cases by NOAA Fisheries Service approved headboat samplers based on personal communication with the captain or crew. Fish lengths and biological samples are also collected. **Alternative 3** would differ from the status quo **Alternative 1** by also requiring logbooks for the charter portion of the for-hire fishery. As landings from charter boat often dominate catches in the for-hire sector, **Alternatives 3** would provide a better understanding of the composition and magnitude of catch and bycatch, leading to better data for stock assessment and better decisions regarding measures needed manage fish resources and reduce bycatch.

Alternative 4 would require for-hire trip reports to be submitted in accordance with the ACCSP standards using the SAFIS system. **Alternative 4** would require selected vessels to report electronically (computer or fax) through the SAFIS and require weekly or daily reporting when it is anticipated a quota was going to be met. SAFIS is a real-time, web-based reporting system for commercial landings on the Atlantic coast. It is comprised of three applications:

- Electronic Dealer Reports (eDR) - A forms based application collecting information from the dealers (landings,condition and price).
- Electronic Trip Reports (eTRIPS) - A Web-based application collecting data from fisherman (catch and effort) including gear used, fishing areas, and catch disposition.
- SAFIS Management System (SMS) - A Web-based application providing administrative tools to SAFIS administrators for management of user accounts, participants, permits etc.

Data reported through SAFIS is fed into the ACCSP Data Warehouse. Beneficial biological impacts would be provided by **Alternative 4** as data are provided more quickly from the fishermen and dealers to NMFS and fishery managers. In addition to monitoring quotas in a more timely fashion than under the current quota monitoring system, the SAFIS has the potential to improve the quality of data and stock assessments.

The impacts on ESA-listed species from **Alternatives 1-4** for the for-hire sector will be the same as those noted in **Section 4.7.1.1.**

4.11.2 Economic Effects

Section 4.11.1 above provides, among others, a description of the data that would be generated under Alternative 1 (no action) and the additional data that could be generated under the other alternatives. In general, an increase in the quantity and/or quality of data offers the potential to increase economic benefits, particularly in the long term.

The various alternatives differ in the type and quality of information that can be collected. Generally, collecting more and better information may be associated with the more costly

alternative, regardless of who bears the actual cost burden, i.e., the government or the industry. **Alternative 1** requires many data, as described in Table 1-3, to be provided by for-hire vessels. Each of the other alternatives would require additional data or similar data of relatively higher quality. **Alternative 2** would require selected for-hire vessels to electronically report data on a weekly or daily basis. A weekly reporting frequency is likely to affect charterboats more than headboats as the latter are already subject to more frequent reporting requirement. It may be noted, though, that 10% of charter captains are in a way subjected to weekly reporting. A daily reporting requirement, however, would introduce additional burden on both charterboats and headboats. The electronic method of reporting would be an added requirement on both charterboats and headboats. Together, the electronic and the higher frequency reporting may be expected to generate data that are of higher quality than what is currently done. To the extent that headboats are already subject to paper logbook reporting, the incremental cost of electronic reporting, especially the weekly frequency option, would likely be minimal and would accrue only to a subset of headboats selected to report. On the other hand, the incremental cost to charterboats would likely be higher for those selected to report as there are currently no logbook reporting requirements on charterboats.

Alternative 3 would require selected for-hire vessels to maintain a logbook for discard characteristics. Understandably, this alternative cannot be considered as a stand-alone alternative in the sense of replacing **Alternative 1** because of the more limited information covered in this alternative. As a supplement to either **Alternative 1** or **Alternative 2, Alternative 3** can provide the necessary information regarding incidental mortality of stocks due to the operations of for-hire vessels. Such information would be vital as an input to stock assessments and as input to the development of better management measures. The incremental cost of this alternative would be relatively low to headboats, which are already subject to logbook reporting. On the other hand, this alternative could impose some real cost burden on charterboats, although the incremental cost may not be that much when taken relative to the reporting requirement under **Alternative 2**.

Alternative 4 is similar to **Alternative 2** in terms of the extent and quality of data that would be generated. The requirement under this alternative, however, would apply to all for-hire vessels and not just a subset of these vessels as in **Alternative 2**. Thus, the quality of data would likely be higher under **Alternative 4** than under **Alternative 1** or **Alternative 2**. On the other hand, **Alternative 4** would likely incur higher costs than either **Alternative 1** or **Alternative 2**. And the higher the frequency of data reporting, the higher would be the compliance and administration costs. Related to administration in general and administration cost in particular, it is to be noted that under **Alternative 4** the SAFIS system would have to be expanded to cover reporting by the for-hire sector. In addition, some administrative controls would have to be instituted so that the data collection objectives of ACCSP, NMFS and the Council would be met. These controls could potentially involve requiring strict adherence to SAFIS system reporting as a condition for renewals of federal for-hire permits.

Potentially affected by the various alternatives are 1,690 vessels with for-hire permits and 224 vessels with both commercial and for-hire permits. About 92% of these vessels have homeports in the four states under the jurisdiction of the South Atlantic Fishery Management Council. The rest are located in the Gulf States or other States on the east coast. Most of

these vessels (about 66%) are located in Florida. It is worth recalling that only a sample of these vessels would be directly affected by **Alternative 2** or **Alternative 3** in any one year. **Alternative 4**, on the other hand, would affect practically all these vessels.

Noting that the data generated by the various alternatives would specifically address the needed data about the stock and the way the for-hire sector impacts the stocks, economic benefits that can be expected from the various alternatives would be realized through improvement in the management of the stocks. Eventually, however, the data collection programs under any of the alternatives could be utilized to generate economic information about the for-hire sector. Such information would greatly aid in devising management measures that could achieve a better balance between the need to manage the recovery and sustainability of the stocks and the adverse economic effects on the for-hire sector they would entail. In addition, such information could be utilized to enhance the economic benefits the for-hire sector derives from the snapper-grouper fishery through the development of better management system. Given the description of the various alternatives, this economic information would unlikely be collected on a routine basis but can nevertheless be added to the required data the for-hire vessels have to provide on a periodic basis.

4.11.3 Social Effects

A discussion of the general direct and indirect social consequences of regulatory change is provided in Section 4.1.3.

The general effects of improved data reporting, as well as the expected effects of **Alternative 1 (No Action)**, are discussed in Section 4.10.3.

Alternative 2 would place an increased operational burden on entities selected and required to submit electronic reports. However, it is assumed that the individual burden would be minimal, as discussed in Section 4.10.3. It has not been determined who would pay for the necessary systems, though it might be assumed, similar to the alternatives for the commercial sector, that it is the intent of the Council that the responsibility for the financial burden of the cost and installation of the electronic logbook lie with grant or government funds. Long-term subscription or maintenance costs would still likely be the responsibility of the vessel. Because the headboat sector is currently required to submit paper logbooks, the incremental burden of an electronic logbook would not be as great for this sector compared to the charter sector, as any required electronic reporting would replace existing requirements. The data collected via electronic logbook may still, however, be more accurate and received more quickly, resulting in greater management benefits, with associated social benefits, than the current system.

Alternative 3 would limit the collection of new information to discard data. As a result, the burden associated with the documentation of this information would not be as great as under **Alternatives 2** and **4;** however, in general, the amount of information collected would be less than the information collected under **Alternatives 2** and **4**, even if all vessels are selected for

reporting. Specifically, **Alternative 3** would not result in improvement of harvest information relative to either alternative. While **Alternative 3** might adequately complement the existing mandatory data requirements for the headboat sector (logbook harvest and effort data), **Alternative 3** would only improve the collection of bycatch information for the charter sector. As a result, the social benefits of improved data collection and fishery management would be expected to be less under **Alternative 3** relative to **Alternative 2** (the ACCSP standards, which would apply under **Alternative 4**, include bycatch). While **Alternative 3** could be combined (adopted in tandem) with **Alternative 2**, **Alternative 2** deals with the form or manner and frequency of reporting and not content. As a result, bycatch information could be included in the data elements required to be reported under **Alternative 2** and the adoption of **Alternative 2** with **Alternative 3** should not be necessary to have both electronic reporting and the collection of bycatch data.

Alternative 4 would be expected to increase the reporting burden on for-hire vessels, while increasing the quality and utility of data. As such, the effects of **Alternative 4** would be expected to be similar to those of **Alternative 2,** while possibly imposing a greater burden because the requirements of **Alternative 2** would be imposed only on selected vessels. While the increased reporting burden would be expected to result in reduced social benefits to affected entities, the improved data quality and utility would be expected to result in improved management (better and more timely fishery and impact assessments resulting in improved regulations) relative to **Alternative 1 (No Action)**. Overall, the social benefits of improved management would be expected to exceed the reduced benefits associated with increased reporting burden. The actual magnitude of effects would, however, be dependent upon the as yet unspecified reporting frequency, with more frequent reporting increasing the reporting burden, while improving the quality and utility of the data, and subsequent management decisions.

It should also be noted that the adoption of **Alternative 4** could be viewed by some as inappropriate as it would require the use of a program over which neither the Council not NMFS has direct control and which currently lacks an interface designed for the for-hire sector. However, NMFS and the Councils are partners in ACCSP and sit as Coordinating Council members. While the adoption of **Alternative 2** would similarly require the development of an appropriate interface, the expected burden would fall on NMFS. Requiring the use of SAFIS for reporting by for-hire vessels would both expand its use to a sector not currently covered (and for which no SAFIS requirements or appropriate user interface exists), and would, essentially impose the burden of program expansion on the ACCSP. While both the Council and NMFS are participants in the ACCSP development process, due to its' cooperative design, direct control is lacking. As a result, the selection of **Alternative 4** could result in the adoption of a management requirement that cannot be implemented with any certainty. While this could be described as an administrative concern, adverse social effects accrue to management decisions viewed as inappropriate or impractical.

4.11.4 Administrative Effects

Alternative 1 would result in no new administrative impacts that were not considered in Amendment 15B. **Alternative 2** would selecte vessels to report electronically which would be administratively burdensome on the agency and fishermen. The agency could select 100% of the vessels for reporting which would be administratively burdensome on the fishermen and the agency. **Alternative 3** would require vessels to maintain a logbook for discard characteristics, (e.g., size and reason for discarding). As with the other reporting alternatives, **Alternative 3** would require compliance with the Paperwork Reduction Act. **Alternative 2** and **Alternative 3** would result in a significant administrative burden to the agency as it would require the development of an electronic reporting system and discard logbook. Under these alternatives**, t**he agency would develop the electronic reporting system and receive compliance from the Paperwork Reduction Act Office, which requires significant effort. **Alternative 4** is functionally the same as **Alternative 2**, in that the electronic reporting will be done through the SAFIS system which has been tested and used in other regions.

4.11.5 Council's Conclusions

The Council does not have a preferred Alternative. The Council is requesting public comment on these alternatives and the estimated impacts as presented. The Council will consider all comments in finalizing their preferred alternative.

4.12 Research Recommendations

4.12.1 Golden tilefish

- Develop standardized techniques for aging golden tilefish. Resolve discrepancies in aging from different institutions. Additional research is needed to verify and validate age determinations.
- Sampling programs are needed to quantify discard rates. Research is also needed to identify management measures that will reduce discard mortality.
- Expand fishery-independent sampling of tilefish.
- Representative age, length, and sex composition data are needed for all fisheries (commercial, MRFSS, headboat), gear, seasons, and areas.
- Additional life history and biological research is needed to cover the full geographic range of the species.
- Fecundity information by age and length.

4.12.2 Black sea bass

- Age sampling from commercial, headboat, and MRFSS.
- Increased fishery independent sampling.
- Update fecundity information by age and length.
- Age structured models that will take into consideration historical landings.
- Estimates of release mortality by depth and fishery.

- Determine if changes in fishing operations, including species composition of the landings, might reflect catch ability of black sea bass that has not been taken into account by the assessment.
- Index of recruitment.
- Estimate the magnitude, direction, geographic extent, timing, and management implications of mixing north and south of Cape Hatteras.
- Behavioral dynamics associated with reproduction should be investigated with respect to the effects of size selective harvesting.

4.13 Socio-Cultural Research Needs

Socio-cultural research needs that have been identified by the Council's Scientific and Statistical Committee are as follows:

1. Identification, definition and standardization of existing datasets to meet short-term social analysis needs (e.g. behavioral networks based on annual rounds). Centrally locate these datasets so they are accessible to researchers and managers (realizing the constraints imposed by confidentiality);

2. Development of new variables to meet long-term social analytical needs (e.g., community health, individual health, decision-making patterns, cumulative impacts of endogenous, exogenous, and regulatory factors);

3. Longitudinal Data – monitoring needs, including historical, ethnographic, and quantitative data over time;

4. Traditional ecological knowledge/local fisheries knowledge (TEK/LFK) constructions along with scientific ecological knowledge (SEK);

5. State data (license/permit data; social survey type data) and coordination between agencies/levels;

6. Better integration of social, biological and economic variables in modeling efforts; and

7. Better efforts to include humans and human behavior in the ecosystem-based framework (e.g., representation of humans as keystone predators in the system);

Economic research needs that have been identified by the Council's Scientific and Statistical Committee are as follows:

The following issues were identified as being impediments to conducting economic research:

- Confidentiality of state data and data collected through federal research projects.
- Data collected through certain agency grants cannot be distributed without dealing with confidentiality issues.
- The inability to display confidential data.

Commercial

1. Explore the feasibility of developing computable general equilibrium models, which can incorporate the entire economy and important ecosystem components (medium priority, high cost).
2. Develop an input output model for the South Atlantic commercial fisheries. This model should be similar to the NOAA Fisheries Service model for other regions on shore-based communities (medium priority, high cost).
3. Consider alternative ways to collect data on both a social and economic basis e.g. partnerships to develop projects (high priority, medium cost).
4. Ensure availability, improve upon and collect basic data: catch, employment, effort, price, cost/earnings (very high priority, high cost).
5. Opportunity costs - rely on the studies completed in the past on the next best jobs. Include collection of data to estimate worker satisfaction bonus.
6. Integrated biological, social and economic models including dynamic optimization models.
7. Demand analysis – include the effects of imports. Studies of value added product e.g. branding and marketing strategies.
8. Include data collection and analysis on the processing sector, retail sector.
9. Research on the economic and social effects of capacity reduction.
10. Employment in the primary and secondary sectors of the fishing industry that also includes research on household budgets.
11. Cumulative impacts – economic and social.
12. Models to predict fishing behavior in the face of fishing regulations. This would include description of fishing rounds on a seasonal basis and fishing behavioral networks.
13. Non-consumptive and non-use benefits of marine protected species and essential fish habitat/habitat areas of particular concern. Also, measure the socio-cultural benefits of these species.
14. Research on live product/whole weight conversion factors on a seasonal basis possibly through the TIP program or through other biological sampling programs.

Recreational

1. Assess the feasibility of developing benefits transfer models from existing data and the MRFSS. Complete recreational demand models that are more relevant for fisheries management. These models should focus on policy relevant variables (bag, size limits, individual species and species groups). (high priority, low/medium cost)
2. Develop random utility models for predicting participation changes, economic value and behavior of recreational fishermen. (high priority, high cost for data collection).
3. Develop targeted input-output model to estimate the effects of policy changes on the economic impacts of recreational fishing. Will provide information on jobs, wages, income on affected sectors such as lodging, restaurants, bait and tackle shops, marinas, boats (medium priority, high cost).
4. Include categories/motivations of recreational anglers in models outlined in items 1 and 2 (medium priority, high cost).
5. Collect data on motivations/behavioral patterns of recreational fishermen. (medium priority, high cost).

6. Characterize participants in subsistence fisheries. (low priority, high cost).
7. Develop Valuation models and I/O models for tournament fishing. (medium priority, high cost).
8. Develop cost-earnings model for the for-hire sector (charter and headboat). (high priority, high cost). NOAA Fisheries Service is currently conducting a study.

Ecosystem based management

1. Conduct analyses to facilitate the economic valuation of ecosystem services (very high priority, high cost).
2. Explore the use of Ecopath and Ecosim (very high priority, high cost).

4.14 Cumulative Effects

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

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

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

10. Modify or add alternatives to avoid, minimize, or mitigate significant cumulative effects.
11. Monitor the cumulative effects of the selected alternative and adapt management.

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

4.14.1 Biological

SCOPING FOR CUMULATIVE EFFECTS

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

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

I. The direct and indirect effects of the proposed actions **(Section 4.0)**;
II. Which resources, ecosystems, and human communities are affected **(Section 3.0)**; and
III. Which effects are important from a cumulative effects perspective **(information revealed in this cumulative Effects Analysis (CEA))**.

2. Establish the geographic scope of the analysis.

The immediate impact area would be the federal 200-mile limit of the Atlantic off the coasts of North Carolina, South Carolina, Georgia, and east Florida to Key West, which is also the South Atlantic Fishery Management Council's area of jurisdiction. The extent of boundaries also would depend upon the degree of fish immigration/emigration and larval transport, whichever has the greatest geographical range. The ranges of affected species are described in **Section 3.2.1**. **Section 3.1.3** describes the essential fish habitat designation and requirements for species affected by this amendment.

3. Establish the timeframe for the analysis.

Establishing a timeframe for the CEA is important when the past, present, and reasonably foreseeable future actions are discussed. It would be advantageous to go back to a time when there was a natural, or some modified (but ecologically sustainable) condition. However, data collection for many fisheries began when species were already fully exploited. Therefore, the timeframe for analyses should be initiated when data collection began for the various fisheries. In determining how far into the future to analyze cumulative effects, the length of the effects will depend on the species and the alternatives chosen.

4. Identify the other actions affecting the resources, ecosystems, and human communities of concern (the cumulative effects to the human communities are discussed in Section 4).

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

I. Fishery-related actions affecting snapper grouper species:

A. Past

The reader is referred to **Section 1.4: History of Management of the Snapper Grouper Fishery** for past regulatory activity for the fish species being impacted by this amendment. These include bag and size limits, spawning season closures, commercial quotas, gear prohibitions and limitations, area closures, and a commercial limited access system. A brief summary of the recent past amendments follows.

Amendment 13C to the FMP for the Snapper Grouper Fishery of the South Atlantic Region became effective October 23, 2006. The amendment addresses overfishing for snowy grouper, golden tilefish, black sea bass and vermilion snapper. The amendment also allows for a moderate increase in the harvest of red porgy as stocks continue to rebuild.

Amendment 14 to the FMP for the Snapper Grouper Fishery of the South Atlantic Region was implemented on February 12, 2009. Implementing regulations for Amendment 14 established eight Type 2 Marine Protected Areas (MPAs) within which, all fishing for snapper grouper species is prohibited as is the use of shark bottom longline gear. Within the MPAs trolling for pelagic species is permitted. The MPAs range in area from 50 to 506 square nautical miles and are located off of North Carolina, South Carolina, Georgia, and Florida. The MPAs are expected to enhance the optimum size, age, and genetic structure of slow-growing, long-lived, deepwater snapper grouper species. A Type 2 MPA is an area within which fishing for or retention of snapper grouper species is prohibited but other types of legal fishing, such as trolling, are allowed. The prohibition on possession does not apply to a person aboard a vessel that is in transit with fishing gear appropriately stowed. MPAs are being used as a management tool to promote the optimum size, age, and genetic structure of slow growing, long-lived deepwater snapper grouper species (speckled hind, snowy grouper, warsaw grouper, yellowedge grouper, misty grouper, golden tilefish, blueline tilefish, and sand tilefish). Because of the small sizes of the MPAs, it is unlikely that any significant reductions in overall mortality of species also affected by Amendment 18 would occur. Therefore, biological effects of the MPAs would not significantly add to or reduce the anticipated biological benefits of management actions in Amendment 18.

B. Present

Amendment 18A to the FMP for the Snapper Grouper Fishery of the South Atlantic Region is currently under development. Measures in Amendment 18A would limit participation and effort, and reduce bycatch in the black sea bass fishery, limit participation in the golden tilefish fishery through an endorsement program, change the golden tilefish fishing year, and improve the accuracy and timing of fisheries statistics for the commercial and for-hire sectors.

The actions currently contained in Amendment 18A, which affect snapper grouper species, specifically golden tilefish and black sea bass are intended to prevent overcapitalization while allowing fishery participants to achieve optimum yield benefits for those species. In addition to snapper grouper fishery management issues being addressed in Amendment 18A, several other snapper grouper amendments and interim measures have been developed concurrently and are in the process of approval and implementation. These include Amendment 17A and Amendment 17B to the FMP for the Snapper Grouper Fishery of the South Atlantic Region (Amendments 17A and 17B). The actions to limit participation in the black sea bass and golden tilefish fisheries in Amendment 18A could hedge against any foreseeable effort shifts to those fisheries that may result from the increased management in the snapper grouper fishery through those amendments.

Recently Implemented Amendments

Amendment 16 to the FMP for the Snapper Grouper Fishery of the South Atlantic Region was implemented on June 29, 2009. Amendment 16 implemented conservation and management measures to the commercial and recreational sectors of the snapper grouper fishery. These measures include: A four month spawning season closure of the recreational and commercial harvest of shallow water grouper species including gag, black grouper, red grouper, scamp, rock hind, red hind, coney, graysby, yellowfin grouper, yellowmouth grouper, and tiger grouper; directed commercial quotas for gag and vermilion snapper; a reduction in the recreational bag limits for shallow water grouper species and vermilion snapper; and a seasonal closure for the recreational vermilion snapper fishery. Management measures in Amendment 16 do not apply to black sea bass or golden tilefish therefore the management measures proposed by Amendment 18 will not add to the management burden for these species. However, the snapper grouper fishery as a whole has been subject to increased regulation and the measures proposed in Amendment 18 will add to the overall regulatory burden of the fishery.

On September 1, 2009, Amendment 15B to the FMP for the Snapper Grouper Fishery of the South Atlantic Region was approved by the Secretary and the final rule published on November 16, 2009. Management measures in Amendment 15B that affect red snapper in Amendment 18 include prohibition of the sale of bag limit caught snapper grouper species for fishermen not holding a federal commercial permit for South Atlantic snapper grouper, an action to adopt, when implemented, the Atlantic Coastal Cooperative Statistics Program release, discard and protected species module to assess and monitor bycatch, allocations for snowy grouper, and management reference points for golden tilefish.

Since some recreational fishermen may intentionally catch more fish than they can consume with the intent to sell, prohibiting the sale of those fish by recreational fishermen could decrease fishing effort; and therefore, may have small biological benefits. Adopting a bycatch monitoring method would not yield immediate biological benefits, but may help to inform future fishery management decisions with increased certainty using data collected from the ACCSP.

Biological benefits from Amendment 15B are not expected to result in a significant cumulative biological effect when added to anticipated biological impacts under Amendment 18A.

Amendments Developed Concurrently

Amendments 17A and Amendment 17B are being developed concurrently with Amendment 18A; both amendments are currently under review. Amendment 17A is includes a rebuilding plan and management measures that would end overfishing of red snapper. Amendment 17A would also specify an annual catch limit (ACL) and accountability measures (AMs) for red snapper as required by the Magunson-Stevens Act. One of several management measures in Amendment 17A is a total prohibition on all fishing for red snapper as well as a large area closure for all snapper grouper fishing off the coasts of Georgia and Northern Florida. Amendment 17B is also under development/review and includes ACLs and AMs for 9 species undergoing overfishing and is includes a deepwater snapper grouper closure seaward of 240 ft. The closures proposed in Amendment 17A, if implemented through rulemaking, would enhance the expected biological benefits of the spawning season closure for shallow water grouper in Amendment 16, and the proposed deepwater snapper grouper closure in Amendment 17B. Amendment 17B will directly impact the species addressed in Amendment 18A.

C. Reasonably Foreseeable Future

Amendment 20 to the FMP for the Snapper Grouper Fishery of the South Atlantic Region is currently under development. Amendment 20 will include a formal review of the current wreckfish individual transferable quota (ITQ) program, and will update/modify that program according to recommendations gleaned from the review. Amendment 20 will also update the wreckfish ITQ program to comply with Reauthorized Magnuson-Stevens requirements.

The Comprehensive Annual Catch Limit (ACL) Amendment would establish ACLs, AMs and possibly Annual Catch Targets for other federally managed South Atlantic species not experiencing overfishing in other FMPs including Snapper Grouper. Other actions contained within the ACL Amendment include: (1) choosing ecosystem component species; (2) allocations; (3) management measures to limit recreational and commercial sectors to their ACTs; (4) accountability measures; and (5) any necessary modifications to the range of regulations. ACLs and AMs for snapper grouper species being proposed for inclusion in the FMU will be specified in the Comprehensive ACL Amendment. It is unlikely any of the management measures for the species being addressed in the Comprehensive ACL Amendment would directly affect the species included in Amendment 18A. However, several species are co-occurring, and species in Amendment 17B could be included in species groupings in the Comprehensive ACL Amendment e.g., the shallow water snapper grouper complex and the deepwater snapper grouper complex. Therefore, if regulations are implemented in the future that may biologically benefit one species in a species complex, it is likely others in the same complex may also realize biological benefits.

II. Non-Council and other non-fishery related actions, including natural events affecting snapper grouper species.

A. Past
B. Present
C. Reasonably foreseeable future

In terms of natural disturbances, it is difficult to determine the effect of non-Council and non-fishery related actions on stocks of snapper grouper species. Annual variability in natural conditions such as water temperature, currents, food availability, predator abundance, etc. can affect the abundance of young fish, which survive the egg and larval stages each year to become juveniles (i.e., recruitment). This natural variability in year class strength is difficult to predict as it is a function of many interactive and synergistic factors that cannot all be measured (Rothschild 1986). Furthermore, natural factors such as storms, red tide, cold water upwelling, etc. can affect the survival of juvenile and adult fishes; however, it is very difficult to quantify the magnitude of mortality these factors may have on a stock. Alteration of preferred habitats for snapper grouper species could affect survival of fish at any stage in their life cycles. However, estimates of the abundance of fish, which utilize any number of preferred habitats, as well as, determining the impact habitat alteration may have on snapper grouper species, is problematic.

The snapper grouper ecosystem includes many species, which occupy the same habitat at the same time. For example, black sea bass co-occur with vermilion snapper, tomtate, scup, red porgy, white grunt, red snapper, red grouper, scamp, gag, and others. Therefore, many snapper grouper species are likely to be caught and suffer some mortality when regulated since they will be incidentally caught when fishermen target other co-occurring species. Other natural events such as spawning seasons, and aggregations of fish in spawning condition can make some species especially vulnerable to targeted fishing pressure. Such natural behaviors are discussed in further detail in **Section 3.2** of this document, and are hereby incorporated by reference.

AFFECTED ENVIRONMENT

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

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

Species most likely to be impacted by actions in Amendment 18A are black sea bass and golden tilefish. Actions in Amendment 18A could limit participation and effort in the black sea bass and golden tilefish fisheries.

The trends in condition of black sea bass and golden tilefish, is determined through the Southeast Data, Assessment and Review (SEDAR) process. As of 2004 (the last year of data used in stock assessments for these species), the black sea bass stock in the South Atlantic is undergoing **overfishing** and is **overfished** and golden tilefish is experiencing **overfishing**. Actions were taken in Amendment 13C to end overfishing of these species. More information on the SEDAR Assessments for these species can be found in Section 3.2.5.

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

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

Fish populations

Quantitative definitions of overfishing and overfished for golden tilefish and black sea bass are identified in Amendments 11 and 12 to the Snapper Grouper FMP (SAFMC 1998). Numeric values of thresholds overfishing and overfished for golden tilefish and black sea bass were updated/modified in Amendment 15A. These values includes maximum sustainable yield (MSY), the fishing mortality rate that produces MSY (F_{MSY}), the biomass or biomass proxy that supports MSY (B_{MSY}), the minimum stock size threshold below which a stock is considered to be overfished (MSST), the maximum fishing mortality threshold above which a stock is considered to be undergoing overfishing (MFMT), and optimum yield (OY). Amendment 15A also provided new definitions of MSST for golden tilefish.

Climate change

Global climate changes could have significant effects on South Atlantic fisheries. However, the extent of these effects is not known at this time. Possible impacts include temperature changes in coastal and marine ecosystems that can influence organism metabolism and alter ecological processes such as productivity and species interactions; changes in precipitation patterns and a rise in sea level which could change the water balance of coastal ecosystems; altering patterns of wind and water circulation in the ocean environment; and influencing the productivity of critical coastal ecosystems such as wetlands, estuaries, and coral reefs (Kennedy et al. 2002).

It is unclear how climate change would affect snapper grouper species in the South Atlantic. Climate change can affect factors such as migration, range, larval and juvenile survival, prey availability, and susceptibility to predators. In addition, the distribution of native and exotic species may change with increased water temperature, as may the prevalence of disease in keystone animals such as corals and the occurrence and intensity of toxic algae blooms.

Climate change may significantly impact snapper grouper species in the future, but the level of impacts cannot be quantified at this time, nor is the time frame known in which these impacts will occur.

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

The purpose of defining a baseline condition for the resource and ecosystems in the area of the proposed action is to establish a point of reference for evaluating the extent and significance of expected cumulative effects. The SEDAR assessments show trends in biomass, fishing mortality, fish weight, and fish length going back to the earliest periods of data collection. For some species such as snowy grouper, assessments reflect initial periods when the stock was above B_{MSY} and fishing mortality was fairly low. However, some species such as black sea bass were heavily exploited or possibly overfished when data were first collected. As a result, the assessment must make an assumption of the biomass at the start of the assessment period thus modeling the baseline reference points for the species.

For a detailed discussion of the baseline conditions of each of the species addressed in this amendment the reader is referred to those stock assessment and stock information sources referenced in **Item Number 6** of this CEA.

DETERMINING THE ENVIRONMENTAL CONSEQUENCES OF CUMULATIVE EFFECTS

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

Table 4-18. The cause and effect relationship of fishing and regulatory actions for the snapper grouper fishery in the South Atlantic, within the time period of the Cumulative Effects Analysis (CEA) is shown below.

Time period/dates	Cause	Observed and/or Expected Effects
1960s-1983	Growth overfishing of many reef fish species.	Declines in mean size and weight of many species including black sea bass.
August 1983	4" trawl mesh size to achieve a 12" TL commercial vermilion snapper minimum size limit (SAFMC 1983).	Protected youngest spawning age classes.
Pre-January 12, 1989	Habitat destruction, growth overfishing of vermilion snapper.	Damage to snapper grouper habitat, decreased yield per recruit of vermilion snapper.
January 1989	Trawl prohibition to harvest fish (SAFMC 1988).	Increase yield per recruit of vermilion snapper; eliminate trawl damage to live bottom habitat.

Time period/dates	Cause	Observed and/or Expected Effects
Pre-January 1, 1992	Overfishing of many reef species including vermilion snapper, and gag.	Spawning stock ratio of these species is estimated to be less than 30% indicating that they are overfished.
January 1992	Prohibited gear: fish traps south of Cape Canaveral, FL; entanglement nets; longline gear inside of 50 fathoms; powerheads and bangsticks in designated SMZs off SC. Size/Bag limits: 10" TL vermilion snapper (recreational only); 12" TL vermilion snapper (commercial only); 10 vermilion snapper/person/day; aggregate grouper bag limit of 5/person/day; and 20" TL gag, red, black, scamp, yellowfin, and yellowmouth grouper size limit (SAFMC 1991).	Protected smaller spawning age classes of vermilion snapper.
Pre-June 27, 1994	Damage to *Oculina* habitat.	Noticeable decrease in numbers and species diversity in areas of *Oculina* off FL
July 1994	Commercial quotas and trip limits for snowy grouper and golden tilefish. Prohibition of fishing for and retention of snapper grouper species (HAPC renamed OECA; SAFMC 1993)	Put limit on fishing mortality of snowy grouper and golden tilefish. Initiated the recovery of snapper grouper species in OECA.
1992-1999	Declining trends in biomass and overfishing continue for a number of snapper grouper species including vermilion snapper and gag.	Spawning potential ratio for vermilion snapper and gag is less than 30% indicating that they are overfished.
February 24, 1999	Gag and black: 24" total length (recreational and commercial); 2 gag or black grouper bag limit within 5 grouper aggregate; March-April commercial closure. Vermilion snapper: 11" total length (recreational).	F for gag vermilion snapper remains declines but is still above F_{MSY}.

Time period/dates	Cause	Observed and/or Expected Effects
	Aggregate bag limit of no more than 20 fish/person/day for all snapper grouper species without a bag limit (1998c).	
October 23, 2006	Snapper grouper FMP Amendment 13C (SAFMC 2006)	Commercial vermilion snapper quota set at 1.1 million lbs gutted weight; recreational vermilion snapper size limit increased to 12" TL to prevent vermilion snapper overfishing
Effective February 12, 2009	Snapper grouper FMP Amendment 14 (SAFMC 2007)	Use marine protected areas (MPAs) as a management tool to promote the optimum size, age, and genetic structure of slow growing, long-lived deepwater snapper grouper species (e.g., speckled hind, snowy grouper, warsaw grouper, yellowedge grouper, misty grouper, golden tilefish, blueline tilefish, and sand tilefish). Gag and vermilion snapper occur in some of these areas.
Effective March 20, 2008	Snapper grouper FMP Amendment 15A (SAFMC 2008a)	Establish rebuilding plans and SFA parameters for snowy grouper, black sea bass, and red porgy.
Effective Dates Dec 16, 2009, to Feb 16, 2010.	Snapper grouper FMP Amendment 15B (SAFMC 2008b)	End double counting in the commercial and recreational reporting systems by prohibiting the sale of bag-limit caught snapper grouper, and minimize impacts on sea turtles and smalltooth sawfish.
Effective Date July 29, 2009	Snapper grouper FMP Amendment 16 (SAFMC 2008c)	Protect spawning aggregations and snapper grouper in spawning condition by increasing the length of the spawning season closure, decrease discard mortality by requiring the use of dehooking tools, reduce overall harvest of gag and vermilion snapper to end overfishing.
Effective Date January 4, 2010	Red Snapper Interim Rule	Prohibit commercial and recreational harvest of red snapper from January 4, 2010, to June 2, 2010 with a possible 186-day extension. Reduce overfishing of red snapper while long-term measures to end overfishing are addressed in Amendment 17A.
Target 2010	Snapper Grouper FMP Amendment 17A.	SFA parameters for red snapper; ACLs and ACTs; management measures to limit recreational and commercial sectors to their ACTs; accountability measures. Establish rebuilding plan for red snapper.

Time period/dates	Cause	Observed and/or Expected Effects
Target 2010	Snapper Grouper Amendment 17B	ACLs and ACTs; management measures to limit recreational and commercial sectors to their ACTs; accountability measures, for species undergoing overfishing.
Target 2010	Snapper Grouper FMP Amendment 18A	Prevent overcapitalization in the black sea bass and golden tilefish fisheries, improve data collection timeliness and data quality.
Target 2010	Snapper Grouper FMP Amendment 19	Amend the FMP to present spatial information of Council-designated Essential Fish Habitat and Essential Fish Habitat-Habitat Areas of Particular Concern.
Target 2011	Comprehensive ACL Amendment.	ACLs, ACTs, and accountability measures for species not experiencing overfishing; accountability measures; an action to remove species from the fishery management unit as appropriate; and management measures to limit recreational and commercial sectors to their ACTs.
Target 2011	Amendment 20 (Wreckfish)	Review the current ITQ program and update the ITQ program as necessary to comply with MSA LAPP requirements.

9. Determine the magnitude and significance of cumulative effects.

Proposed management actions, as summarized in **Section 2** of this document, would extend the FMU northward to include the mid and North Atlantic, designate EFH in the extension area, limit participation, effort and reduce bycatch in the black sea bass fishery, limit participation and change the fishing year for the golden tilefish fishery, and improve fishery statistics and data collection in the commercial and for hire fisheries. These management actions in Amendment 18 are intended to address issues that have remained after the implementation of previous amendments. Species in the FMU are assessed on a routine basis and stock status may change as new information becomes available. In addition, changes in management regulations, fishing techniques, social/economic structure, etc. can result in shifts in the percentage of harvest between user groups over time. As such, the Council has determined that certain aspects of the current management system remain inappropriate and should be restructured. Detailed discussions of the magnitude and significance of the preferred alternatives appear in **Section 4** of this consolidated document. Below is a short summary of the biological significance and magnitude of each of the preferred alternatives chosen, and a brief discussion of their combined effect on the snapper grouper FMU and the ecosystem.

When viewed in totality, the actions in this amendment would benefit black sea bass and golden tilefish as participation is reduced through the development of pot tag limits and endorsement programs. Furthermore, unregulated species north of the Council's jurisdiction would benefit by geographic extension of the FMU.

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

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

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

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

9. Determine the magnitude and significance of cumulative effects.

Current management actions, as summarized in Section 2, should reduce fishing mortality and end overfishing of black sea bass and golden tilefishand are expected to have a beneficial, cumulative effect on the biophysical environment. These management actions are expected to increase stock biomass, which may affect other stocks. The shallow water grouper closure during the gag spawning closure and after the directed gag commercial quota is met will help a number of species particularly red and black grouper that are listed as undergoing overfishing in the Stock Status Report to Congress.

Because black sea bass and golden tilefish are upper level predators preying primarily on fish, benthic invertebrates, and squid, the degree of competition for food resources between these species and other co-occurring species may increase as stock abundance increases. In addition, gag, red porgy, vermilion snapper, , greater amberjack, red snapper, white grunt and other co-occurring species may begin to compete for habitat as they increase in abundance.

Restrictions in the catch of black sea bass and golden tilefish could result in fishermen shifting effort to other species. The snapper grouper ecosystem includes many species that occupy the same habitat at the same time. For example, vermilion snapper and gag co-occur with tomtate, scup, red porgy, white grunt, red grouper, scamp, and others. Therefore, restricted species are likely to still be caught since they will be incidentally caught when fishermen target other co-occurring species. Continued overexploitation of any snapper grouper species could disrupt the natural community structure of the reef ecosystems that support these species. However, some fishermen may choose to use different gear types and target species in different fisheries such as mackerel and dolphin.

Complex models are needed to better understand competition between resources and the effect of effort shifting of fishermen to other species and fisheries. The Council is working with a number of partners to develop an Ecopath model for the South Atlantic ecosystem. Full development of this model will assist in better understanding these linkages. The Council is also developing an Ecosystem FMP that will address the cumulative effects of management regulations, fishing effort, and biomass of all species in the marine ecosystem. Delaying implementation of proposed actions until these tools are completed could adversely affect gag and vermilion snapper. However, although the cumulative effects of proposed actions cannot be quantified, it is expected that the effects will be positive and synergistic.

10. Modify or add alternatives to avoid, minimize, or mitigate significant cumulative effects.
The cumulative effects on the biophysical environment are expected to be positive. Avoidance, minimization, and mitigation are not applicable.

11. Monitor the cumulative effects of the selected alternative and adopt management.
The effects of the proposed action are, and will continue to be, monitored through collection of data by NMFS, States, stock assessments and stock assessment updates, life history studies, and other scientific observations.

4.14.2 Socioeconomic

A description of the human environment, including a description of commercial and recreational snapper grouper fisheries and associated key fishing communities is contained in **Section 3.0** and incorporated herein by reference. A description of the history of management of the snapper grouper fishery is contained in **Section 1.4** and is incorporated herein by reference. Participation in and the economic performance of the fishery have been affected by a combination of regulatory, biological, social, and external economic factors. Regulatory measures have obviously affected the quantity and composition of harvests, through the various size limits, seasonal restrictions, trip or bag limits, and quotas. Gear restrictions, notably fish trap and longline restrictions, have also affected harvests and economic performance. The limited access program implemented in 1998/1999 substantially affected the number of participants in the fishery. Biological forces that either motivate certain regulations or simply influence the natural variability in fish stocks have played a role in determining the changing composition of the fishery. Additional factors, such as changing career or lifestyle preferences, stagnant to declining ex-vessel fish prices due to imports, increased operating costs (e.g., gas, ice, insurance, dockage fees, etc.), and increased waterfront/coastal value leading to development pressure for non-fishery uses have impacted both the commercial and recreational fishing sectors.

Given the variety of factors that affect fisheries, persistent data issues, and the complexity of trying to identify cause-and-effect relationships, it is not possible to differentiate actual or cumulative regulatory effects from external cause-induced effects. In general, it can be stated, however, that the regulatory environment for all fisheries has become progressively more complex and burdensome, increasing, in tandem with other adverse influences, the likelihood of economic losses, business failure, occupational changes, and associated adverse pressures on associated families, communities, and industries. Some reverse of this trend is possible and expected. The establishment of ACLs and AMs for species undergoing overfishing is expected to help protect and sustain harvest at the OY level. However, certain pressures would remain, such as total effort and total harvest considerations, increasing input costs, import induced price pressure, and competition for coastal access.

A detailed description of the expected social and economic impacts of the actions in this amendment are contained elsewhere in **Section 4**, and in **Sections 5** and **6**, which are incorporated herein by reference. Current and future amendments are expected to add to this cumulative effect. Snapper grouper Amendment 15B prohibited the sale of bag-limit caught

snapper grouper species for those who do not hold a federal commercial permit for snapper grouper. This eliminates the ability of the recreational angler to subsidize the cost of a fishing trip through the sales of snapper grouper, and may therefore, decrease recreational demand. This action has a more pronounced effect on the for-hire sector which often uses the sale of bag-limit caught fish to pay crew members.

Snapper grouper Amendment 16 addressed overfishing in the gag and vermilion snapper fisheries. The corrective action in response to overfishing always requires harvest reductions and more restrictive regulation. Thus, additional short-term adverse social and economic effects would be expected. These restrictions will hopefully prevent the stocks from becoming overfished, which would require recovery plans, further harvest restrictions, and additional social and economic losses.

Snapper grouper Amendment 17A will address the overfished status of red snapper. Because of red snapper bycatch in other snapper grouper fisheries, red snapper rebuilding is expected to require not only closure of the red snapper fishery for a protracted period of time, but also closure of other snapper grouper fisheries in certain areas. While red snapper is, in general and compared to other snapper grouper species, not a significant commercial species, it has greater importance as a target species to the recreational sector, especially the for-hire sector in certain areas of the South Atlantic. Thus, closure of the red snapper fishery alone may have substantive social and economic effects on some businesses and communities. Closure of additional snapper grouper fisheries to reduce red snapper bycatch in order to achieve red snapper rebuilding goals is expected to have additional and broader adverse short-term social and economic effects.

Snapper grouper Amendment 17B will specify harvest controls (ACLs and/or ACTs) and accountability measures (AMs) for several snapper grouper species, as well as a allocations for golden tilefish, and modify the framework to allow more efficient modification of these measures in the future, where necessary. While some final specifications of these measures may result in additional short-term reductions in social and economic benefits to participants in the fisheries, these measures would be expected to support more stable management and sustainable social and economic benefits from enhanced resource protection, larger and/or more consistent harvests, and long-term stable stocks.

The cumulative impact of Amendments 16, 17A, and 17B are expected to be significant for commercial and recreational fisheries participants and those indirectly impacted by the actions contained in those amendments. The cumulative impact of Amendments 17A and 17B have been estimated and are contained in Amendment 17A. The impacts from the three amendments will likely result in commercial and for-hire vessel exit and loss of fishery infrastructure as a result.

Finally, the space industry in Florida centered on Cape Canaveral is experiencing severe difficulties due to the ramping down and cancellation of the Space Shuttle Program. This program's loss coupled with additional fishery closures will negatively impact this region. However, declining economic conditions due to decline in the space industry may lessen the pace of waterfront development and associated adverse social and economic pressures on fishery infrastructure.

The Comprehensive ACL Amendment is expected to further reduce harvest for commercial and recreational fishermen through management measures now being developed in that document.

Snapper grouper Amendment 20, currently under development, will modify the Wreckfish ITQ program currently used to manage wreckfish. The actions in the amendment are not expected to reduce harvest levels for fishery participants but the actions may impose other restrictions on the Wreckfish fishery such as additional reporting requirements and restrictions on when Wreckfish can be landed.

4.15 Unavoidable Adverse Effects

There are several unavoidable adverse effects on the socioeconomic environment that may result from the implementation of Amendment 18A. A brief summary of those effects follows.

TO BE ADDED

4.16 Effects of the Fishery on the Environment

The biological impacts of the proposed actions are described in Section 4.0, including potential impacts on habitat. No actions proposed in this amendment are anticipated to have anyadverse impact on EFH or EFH-HAPCs for managed species.

4.17 Damage to Ocean and Coastal Habitats

The action proposed in Amendment 18A would not result in any adverse impacts to ocean and coastal habitats.

The alternatives and proposed actions are not expected to have any adverse effect on the ocean and coastal habitat. Management measures implemented in the original Snapper Grouper Fishery Management Plan through Amendment 7 combined have significantly reduced the impact of the snapper grouper fishery on EFH. The Council has reduced the impact of the fishery and protected EFH by prohibiting the use of poisons and explosives; prohibiting use of fish traps and entanglement nets in the EEZ; banning use of bottom trawls on live/hard bottom habitat north of Cape Canaveral, Florida; restricting use of bottomlongline to depths greater than 50 fathoms north of St. Lucie Inlet; and prohibiting use of
black sea bass pots south of Cape Canaveral, Florida. These gear restrictions have significantly reduced the impact of the fishery on coral and live/hard bottom habitat in the South Atlantic Region.

Additional management measures in Snapper Grouper Amendment 8 (SAFMC 1997), including specifying allowable bait nets and capping effort, have protected habitat by making existing regulations more enforceable. Establishing a controlled effort program limited overall fishing effort and to the extent there is damage to the habitat from the

fishery (e.g. black sea bass pots, anchors from fishing vessels, impacts of weights used on fishing lines and bottom longlines), limited such impacts.

In addition, measures in Snapper Grouper Amendment 9 (SAFMC 1998b), that include further restricting longlines to retention of only deepwater species and requiring that black sea bass pots have escape panels with degradable fasteners, reduce the catch of undersized fish and bycatch and ensure that the pot, if lost, will not continues to "ghost" fish. Snapper Grouper Amendment 13C (SAFMC 2006) increased mesh size in the back panel of pots, which has reduced bycatch and retention of undersized fish. Snapper Grouper Amendment 15B (SAFMC 2008b) includes an action that would implement sea turtle bycatch release equipment requirements and sea turtle and smalltooth sawfish handling protocols and/or guidelines in the permitted commercial and for-hire snapper grouper fishery effective February 15, 2010.

Snapper Grouper Amendment 16 (SAFMC 2008c) includes an action which is intended to reduce bycatch by requiring fishermen use dehooking devices effective July 29, 2009. Limiting the overall fishing mortality reduces the likelihood of over-harvesting of species with the resulting loss in genetic diversity, ecosystem diversity, and sustainability. Measures adopted in the Coral and Shrimp FMPs have further restricted access by fishermen that had potential adverse impacts on essential snapper grouper habitat. These measures include the designation of the *Oculina* Bank HAPC and the Rock Shrimp closed area (see the Shrimp and Coral FMP/Amendment documents for additional information).

The Council's Comprehensive Habitat Amendment (SAFMC 1998c) contains measures that expanded the *Oculina* Bank HAPC and added two additional satellite HAPCs. Snapper Grouper Amendment 14 (SAFMC 2007), established marine protected areas where fishing for or retention of snapper grouper species is prohibited.

4.18 Relationship of Short-Term Uses and Long-Term Productivity

The relationship between short-term uses and long-term productivity will be affected by this amendment. The proposed actions limit participation and effort in both the golden tilefish (Action 3) and black sea bass fisheries (Action 8) in the short-term and long-term for the commercial sectors of the fishery. Reductions in harvest are expected to benefit the long-term productivity of these species. The actions being proposed in this amendment would not have an impact on the short term uses and long term productivity.

4.19 Irreversible and Irretrievable Commitments of Resources

Irreversible commitments are defined as commitments that cannot be reversed, except perhaps in the extreme long-term, whereas irretrievable commitments are lost for a period of time. There are no irreversible commitments for this amendment.

Since the Snapper Grouper FMP and its implementing regulations are always subject to future changes, proceeding with the development of Amendment 18A does not represent an

irreversible or irretrievable commitment of resources. NOAA Fisheries Service always has discretion to amend its regulations and may do so at any time, subject to the Administrative Procedures Act.

4.20 Monitoring and Mitigation Measures

The proposed actions would adversely affect immediate, short-term net revenues of some commercial and for-hire fishermen in the South Atlantic. The proposed actions would also adversely affect short-term consumer surplus of some recreational anglers in the South Atlantic and may result in cancelled trips and reduced expenditures to the fishery and associated industries. However, it is anticipated reductions in fishing pressure, which will reduce the likelihood that these stocks will be declared overfished, will assist in restoring the size and age structure to more natural conditions and allow stock biomass to increase to more sustainable and productive levels. As a result, the amount of fish that can be harvested should increase as the stocks rebuild. Methods to monitor the progress of rebuilding efforts may be highly variable. Large scale research entities such as MARMAP and SEFSC research cruises may gather fishery-independent data while cooperative research programs with academic institutions and headboat surveys could be used to supplement fishery-dependant data along with the MRIP reporting system. Dependent upon funding, more monitoring efforts may be implemented in the future with special emphasis on large closed areas such as the proposed deepwater snapper grouper closure in this amendment.

The Council's preferred alternatives contain those measures that are believed to best mitigate the unavoidable, short-term, adverse effects of limiting participation in the black sea bass and golden tilefish fisheries.

4.21 Unavailable or Incomplete Information

The Council on Environmental Quality, in its implementing regulations for the National Environmental Policy Act, addressed incomplete or unavailable information at 40 CFR 1502.22 (a) and (b). That direction has been considered. There are two tests to be applied: 1) Does the incomplete or unavailable information involve "reasonable foreseeable adverse effects…;" and 2) is the information about these effects "essential to a reasoned choice among alternatives…".

Stock assessments have been conducted on black sea bass and golden tilefish using the best available data available. Status determinations for these species were derived from the SEDAR process, which involves a series of three workshops designed to ensure each stock assessment reflects the best available scientific information. The findings and conclusions of each SEDAR workshop are documented in a series of reports, which are ultimately reviewed and discussed by the Council and their Scientific and Statistical Committee (SSC). SEDAR participants, the Council's Advisory Panels, the Council, and NMFS staff reviewed and considered any concerns about the adequacy of the data. **Section 4.11** lists research needs that resulted from these assessments. The Council's SSC determined that the assessments were based on the best available data.

5 Regulatory Impact Review

6 Initial Regulatory Flexibility Analysis

7 Fishery Impact Statement

8 Other Applicable Laws

8.1 Administrative Procedure Act

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

8.2 Information Quality Act

The Information Quality Act (Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Public Law 106-443)) which took effect October 1, 2002, directed the Office of Management and Budget (OMB) to issue government-wide guidelines that "provide policy and procedural guidelines to federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information disseminated by federal agencies." OMB directed each federal agency to issue its own guidelines, establish administrative mechanisms allowing affected persons to seek and obtain correction of information that does not comply with OMB guidelines, and report periodically to OMB on the number and nature of complaints.

The NOAA Section 515 Information Quality Guidelines require a series of actions for each new information product subject to the Information Quality Act. This document has used the best available information and made a broad presentation thereof. The process of public review of this document provides an opportunity for comment and challenge to this information, as well as for the provision of additional information.

The information contained in this document was developed using best available scientific information. Therefore, this Amendment and EIS are in compliance with the IQA.

8.3 Coastal Zone Management Act

Section 307(c)(1) of the federal Coastal Zone Management Act (CZMA) of 1972 requires that all federal activities that directly affect the coastal zone be consistent with approved state coastal zone management programs to the maximum extent practicable. While it is the goal of the South Atlantic Council to have management measures that complement those of the states, Federal and state administrative procedures vary and regulatory changes are unlikely to be fully instituted at the same time. The Council believes this amendment 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.

8.4 Endangered Species Act

The Endangered Species Act (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 NOAA Fisheries Service 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.

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

8.6 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 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 RFA. A regulation is significant if it is likely to result in an annual effect on the economy of at least $100,000,000 or if it has other major economic effects.

In accordance with E.O. 12866, the following is set forth by the Council: (1) this rule is not likely to have an annual effect on the economy of more than $100 million or to adversely affect in a material way the economy, a sector of the economy, productivity, jobs, the

environment, public health or safety, or state, local, or tribal governments or communities; (2) this rule is not likely to create any serious inconsistencies or otherwise interfere with any action take or planned by another agency; (3) this rule is not likely to materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights or obligations of recipients thereof; (4) this rule is not likely to raise novel or policy issues arising out of legal mandates, or the principles set forth in the Executive Order; (5) this rule is not controversial.

8.7 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 amendment 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 black sea bass and golden tilefish fisheries regardless of race or income.

8.8 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 including, but not limited to, developing joint partnerships; promoting the restoration of recreational fishing areas that are limited by water quality and habitat degradation; fostering sound aquatic conservation and restoration endeavors; and evaluating the effects of Federally-funded, permitted, or authorized actions on aquatic systems and evaluating the effects of Federally-funded, permitted, or authorized actions on aquatic systems and recreational fisheries, and documenting those effects. Additionally, the order establishes a seven member National Recreational Fisheries Coordination Council responsible for, among other things, ensuring that social and economic values of healthy aquatic systems that support recreational fisheries are considered by Federal agencies in the course of their actions, sharing the latest resource information and management technologies, and reducing duplicative and cost-inefficient programs among Federal agencies involved in conserving or managing recreational fisheries. The 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 amendment are consistent with the directives of E.O. 12962.

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

8.10 Executive Order 13158: Marine Protected Areas

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

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

8.11 Marine Mammal Protection Act

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 NOAA Fisheries Service) is responsible for the conservation and management of cetaceans and pinnipeds (other than walruses). The Secretary of the Interior is responsible for walruses, sea otters, polar bears, manatees, and dugongs.

Part of the responsibility that NOAA Fisheries Service has under the MMPA involves monitoring populations of marine mammals to make sure that they stay at optimum levels. If a population falls below its optimum level, it is designated as "depleted." A conservation plan is then developed to guide research and management actions to restore the population to healthy levels.

In 1994, Congress amended the MMPA, to govern the taking of marine mammals incidental to commercial fishing operations. This amendment required the preparation of stock assessments for all marine mammal stocks in waters under U.S. jurisdiction; development and implementation of take-reduction plans for stocks that may be reduced or are being maintained below their optimum sustainable population levels due to interactions with commercial fisheries; and studies of pinniped-fishery interactions. The MMPA requires a commercial fishery to be placed in one of three categories, based on the relative frequency of incidental serious injuries and mortalities of marine mammals. Category I designates fisheries

with frequent serious injuries and mortalities incidental to commercial fishing; Category II designates fisheries with occasional serious injuries and mortalities; Category III designates fisheries with a remote likelihood or no known serious injuries or mortalities.

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

The golden tilefish fishery in the South Atlantic is listed as a Category III fishery in the 2009 Proposed List of Fisheries (LOF)(73 FR 33760; June 13, 2008). No incidentally killed or injured marine mammal species has been documented in this fishery.

The black sea bass fishery of the South Atlantic is listed as a Category III fishery in the 2009 Proposed List of Fisheries (LOF)(73 FR 33760; June 13, 2008). No incidentally killed or injured marine mammal species have been documented in these fisheries.

8.12 Migratory Bird Treaty Act and Executive Order 13186

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

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

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

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

8.13 National Environmental Policy Act

This amendment to the Councils Snapper Grouper FMP has been written and organized in a manner that meets NEPA requirements, and thus is a consolidated NEPA document, including a draft Environmental Impact Statement, as described in NOAA Administrative Order (NAO) 216-6, Section 6.03.a.2.

Purpose and Need for Action
The purpose and need for this action are described in **Section 1.1.**

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

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

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

8.14 National Marine Sanctuaries Act

Under the National Marine Sanctuaries Act (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 the NOAA. The Act provides authority for comprehensive and coordinated conservation and management of these marine areas. The National Marine Sanctuary Program currently comprises 13 sanctuaries around the country, including sites in American Samoa and Hawaii. These sites include significant coral reef and kelp forest habitats, and breeding and feeding grounds of whales, sea lions, sharks, and sea turtles. The two main sanctuaries in the South Atlantic EEZ are Gray's Reef and Florida Keys National Marine Sanctuaries.

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

8.15 Paperwork Reduction Act

The purpose of the Paperwork Reduction Act (PRA) is to minimize the burden on the public. The Act 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.

Action 10 contains alternatives requiring the establishment of an electronic logbook program. If this alternative is chosen as the preferred, they would be subject to PRA review and approval prior to implementation.

8.16 Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) of 1980 (5 U.S.C. 601 et seq.) requires Federal agencies to assess the impacts of regulatory actions implemented through notice and comment rulemaking procedures on small businesses, small organizations, and small governmental entities, with the goal of minimizing adverse impacts of burdensome regulations and record-keeping requirements on those entities. Under the RFA, 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 Act requires the agency to prepare an initial and final Regulatory Flexibility Analysis to accompany the proposed and final rule, respectively. These analyses, which describe the type and number of small businesses, affected, the nature and size of the impacts, and alternatives that minimize these impacts while accomplishing stated objectives, must be published in the Federal Register in full or in summary for public comment and submitted to the chief counsel for advocacy of the Small Business Administration. Changes to the RFA in June 1996 enable small entities to seek court review of an agency's compliance with the Act's provisions.

This amendment document includes an Initial Regulatory Flexibility Analysis (IRFA) in **Section 6.0**.

8.17 Small Business Act

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

8.18 Public Law 99-659: Vessel Safety

Public Law 99-659 amended the MSFCMA 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. Therefore, this amendment proposes neither procedures for making management adjustments due to vessel safety problems nor procedures to monitor, evaluate, or report on the effects of management measures on vessel or crew safety under adverse weather or ocean conditions.

9 List of Preparers

Name	Title	Agency	Division	Location
Myra Brouwer	Fishery Scientist	SAFMC	N/A	SAFMC
David Dale	EFH Specialist	NMFS	HC	SERO
Rick DeVictor	Environmental Impact Scientist	SAFMC	N/A	SAFMC
Otha Easley	Enforcement Specialist	NMFS	LE	SERO
Karla Gore	Natural Resource Management Specialist	NMFS	SF	SERO
David Keys	NEPA Specialist	NMFS	N/A	SERO
Andy Herndon	Biologist	NMFS	PR	SERO
Stephen Holiman	Economist	NMFS	SF	SERO
Tony Lamberte	Economist	NMFS	SF	SERO
Jennifer Lee	Council Liaison	NMFS	PR	SERO
Jack McGovern	Fishery Biologist	NMFS	SF	SERO
Janet Miller	Permits	NMFS	SF	SERO
Roger Pugliese	Senior Fishery Biologist	SAFMC	N/A	SAFMC
Kate Quigley	Economist	SAFMC	N/A	SAFMC
Monica Smit-Brunello	Attorney Advisor	NOAA	GC	SERO
Jim Waters	Economist	NMFS	Economics	SEFSC
Kate Michie	Plan Coordinator	NMFS	SF	SERO
Gregg Waugh	Deputy Director	SAFMC	N/A	SAFMC
Erik Williams	Stock Assessment Biologist	NMFS	SF	SEFSC

10 List of Agencies, Organizations, and Persons to Whom Copies of the Statement Are Sent

Responsible Agency

Amendment 18A:
South Atlantic Fishery Management Council
4055 Faber Place Drive, Suite 201
Charleston, South Carolina 29405
(843) 571-4366 (TEL)
Toll Free: 866-SAFMC-10
(843) 769-4520 (FAX)
safmc@safmc.net

Environmental Impact Statement:
NMFS, Southeast Region
263 13th Avenue South
St. Petersburg, Florida 33701
(727) 824-5301 (TEL)
(727) 824-5320 (FAX)

List of Agencies, Organizations, and Persons Consulted

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

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Needs to be edited once document is completed.

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