



COMPREHENSIVE ANNUAL CATCH LIMIT (ACL) AMENDMENT FOR THE SOUTH ATLANTIC REGION

AMENDMENT 1 TO THE FISHERY MANAGEMENT PLAN FOR THE DOLPHIN WAHOO FISHERY OF
THE ATLANTIC

AMENDMENT 1 TO THE FISHERY MANAGEMENT PLAN FOR SARGASSUM OF THE SOUTH
ATLANTIC REGION

AMENDMENT 4 TO THE FISHERY MANAGEMENT PLAN FOR THE GOLDEN CRAB FISHERY OF THE
SOUTH ATLANTIC REGION

AMENDMENT 23 TO THE FISHERY MANAGEMENT PLAN FOR THE SNAPPER GROUPER FISHERY OF
THE SOUTH ATLANTIC REGION

(INCLUDING A DEIS, IRFA, RIR & SIA/FIS)

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ABBREVIATIONS AND ACRONYMS

ABC	Acceptable biological catch
ACCSP	Atlantic Coastal Cooperative Statistics Program
ACL	Annual Catch Limits
AM	Accountability Measure
ACT	Annual Catch Target
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
MRIP	Marine Recreational Improvement Program
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
OFL	Overfishing Limit
OY	Optimum Yield
PQBM	Post Quota Bycatch Mortality
PSE	Percent Standard Error
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
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

COMPREHENSIVE ACL AMENDMENT FOR 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:	Remove some species from South Atlantic Snapper Grouper FMU. Consider multi-species groupings for specifying ACLs, ACTs, and AMs. Establish ABC control rules, ABCs, ACLs, ACTs, and AMs for species not undergoing overfishing. Consider designating some snapper grouper species as ecosystem component species. Specify allocations among the commercial, recreational, and for-hire sectors for species not undergoing overfishing. Modify management measures to limit total mortality to the ACL.
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ABSTRACT

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SUMMARY

1 Introduction

1.1 Background

Management of the Federal snapper grouper, dolphin/wahoo, golden crab, and *Sargassum* fisheries located off the South Atlantic in the 3-200 nautical mile (nm) U.S. Exclusive Economic Zone is conducted under the Fishery Management Plan for the snapper grouper, dolphin wahoo, golden crab, and *Sargassum* Fishery (SAFMC 1983) (Figure 1-1). The fishery management plans (FMPs) and their amendments are developed under the Magnuson-Stevens Fishery Conservation and Management Act, other applicable Federal laws, and executive orders (E.O.s) and affect the management of 73 species of snapper grouper, dolphin and wahoo, golden crab, and two species of *Sargassum* (Table 1-1; Appendix XXXX. Other Applicable Laws).

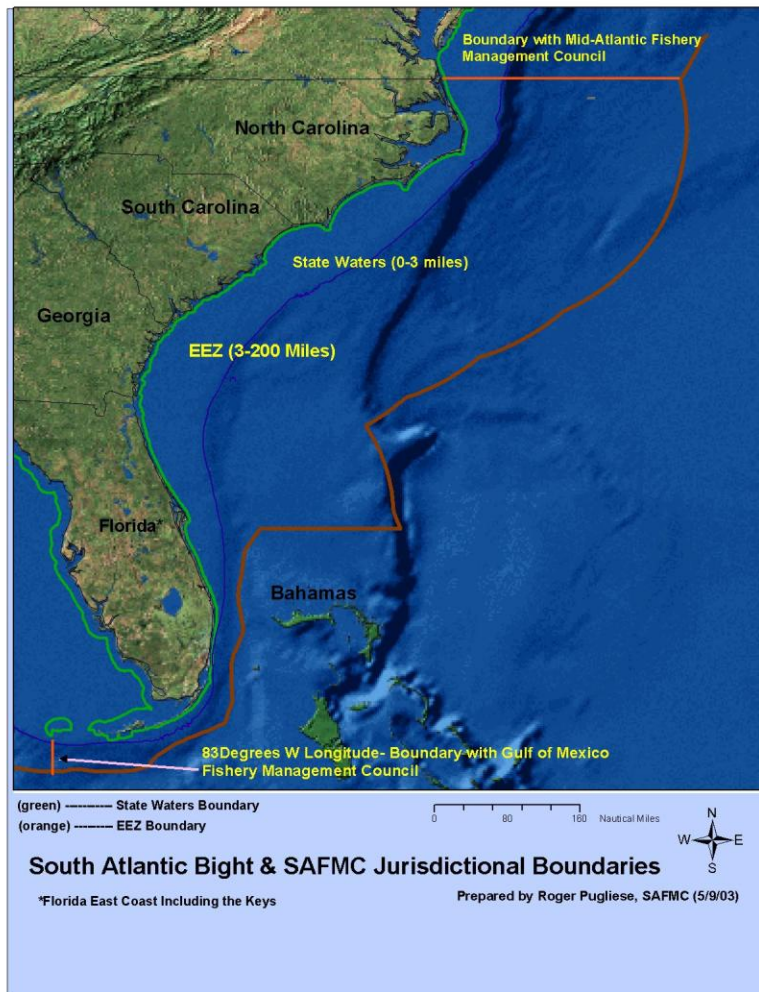


Figure 1-1. Jurisdictional boundaries of the South Atlantic Fishery Management Council.

Table 1. Species in the FMUs for Snapper Grouper, Dolphin Wahoo, and Sargassum.

Snapper Grouper FMU

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

Dolphin Wahoo FMU

Dolphinfish *Coryphaena hippurus*

Wahoo *Acanthocybium solandri*

Golden Crab FMU

Chaceon fenneri

***Sargassum* FMU**

Sargassum fluitans

Sargassum natans

1.2 Purpose of the Proposed Action

The *purpose* of the Comprehensive ACL Amendment for the South Atlantic Region is to implement long-term management measures expected to achieve optimum yield while minimizing to the extent practicable adverse social and economic effects.

Long-term management measures include the implementation of the following items: (1) changes to the snapper grouper fishery management unit, including the removal of some species and the development of species groups; (2) annual stock mortality limits and targets, (3) percent allocation to all sectors; (4) actions to occur if limits and targets are projected to be exceeded or have been exceeded (otherwise known as accountability measures); and (5) regulations necessary to ensure mortality is at or below the annual limits.

1.3 Need for the Proposed Action

The *need* of the action is to allow the stocks to increase in biomass, when necessary, in order to maximize its reproductive potential so that the population may produce the optimum yield (OY). OY, the ultimate goal of any fishery management plan, is the portion of the fish stock that provides the greatest economic, social, and ecological benefit to the nation.

The effects of fishing pressure have been well documented (e.g. PDT 1990). As fishing pressure intensifies, individuals with a genetic makeup for achieving large sizes may be selectively removed from the population because of gear selectivity or economic value, leaving behind fishes with a genetic disposition for smaller size and slower growth. The overall effect of this heavy, sustained fishing pressure on a fish population may be as follows: (1) a change in the growth rate; (2) a change in size at age; (3) a change in the percentage of males for species that change sex or are sexually dimorphic; (4) a decline in the size and age at maturity and first reproduction; (5) a decrease in the size and age structure of the population; (6) a decrease in population fecundity; and (7) a decline in the number of spawning events. Continued overfishing may ultimately disrupt the natural community structure of the reef ecosystems that support red snapper and co-occurring species.

In a fishery where OY is not being achieved on a consistent basis, the full extent of social and economic benefits is not realized. For example, in the snapper grouper fishery, low stock levels translate into a loss of catch possibilities for commercial and recreational fishermen. Revenues are reduced when fishermen have to fish longer and harder, which may eventually cause participants to exit the fishery. Ending overfishing and rebuilding overfished stocks would allow fishermen to catch more fish with less effort, resulting in higher economic returns in the long-term, as long as effort in the fishery is limited.

1.4 Background

1.4.1 Process for Defining Limits and Targets

The Council is utilizing several tools to achieve optimum yield (OY) and rebuild the stocks addressed in this amendment (Table 1-2 where is this table?). These include a determination from the Council's Scientific and Statistical Committee (SSC) for the overfishing limit (OFL). The SSC also works with the Council to determine acceptable biological catch (ABC) based on an ABC control rule. The OFL is an estimate of the catch level above which overfishing is occurring. This value may stem from the outcome of a stock assessment and is equivalent to the yield at the maximum fishing mortality threshold. The ABC is defined as the level of a stock or stock complex's annual catch that accounts for the scientific uncertainty in the estimate of OFL and any other scientific uncertainty, and should be specified based on the ABC control rule. Using the ABC as a start, the Council is proposing an annual catch limit (ACL) for the stocks in the South Atlantic. The ACL is the annual catch limit expressed in pounds or numbers of fish that serves as the basis for invoking accountability measures (AMs). AMs are designed to provoke an action once the ACL is reached during the course of a fishing season to reduce the risk overfishing will occur. The Council is considering the implementation of AMs in this amendment. While AMs act to *prevent overfishing* in a fishery, the Council must specify regulations in order to *ensure that overfishing does not occur and the stocks rebuild* (through the implementation of management measures). Figure 1-3 summarizes the generalized process to specify tools to achieve OY and rebuild the stocks where necessary.

Table 1-1. A summary of the tools being used to achieve OY and rebuild the stocks (Where Necessary) in this amendment. Source: National Standard 1 Guidelines (Appendix K) and NMFS Glossary (Appendix B).

Tool	Acronym	Who sets?	Definition
Overfishing Limit	OFL	SSC	An estimate of the catch level above which overfishing is occurring and is expressed in terms of numbers or weight of fish.
Acceptable Biological Catch	ABC	Council with advice of SSC	A level of a stock or stock complex's annual catch that accounts for the scientific uncertainty in the estimate of OFL and any other scientific uncertainty and should be specified based on the ABC control rule.
Annual Catch Limit	ACL	Council	The level of annual catch of a stock or stock complex that serves as the basis for invoking AMs. ACL cannot exceed the ABC, but may be divided into sector-ACLs.
Annual Catch Target	ACT	Council	The amount of annual catch of a stock or stock complex that is the management target of the fishery, and accounts for management uncertainty in controlling the actual catch at or below the ACL.
Accountability Measures	AM	Council	Management controls to prevent ACLs, including sector-ACLs, from being exceeded, and to correct or mitigate overages of the ACL if they occur.
Allocations	n/a	Council	Distribution of the quantity of catch, effort, or biomass among user groups or individuals.
Management measures	n/a	Council	Actions that affect a resource and its exploitation with a view to achieve certain objectives, such as maximizing the production of that resource. Examples include catch quotas, bag limits, size limits, seasonal closures, and area closures.

- Step 1.** Council considers removing species from FMU and designating EC species
- Step 2.** SSC specifies OFL and recommends ABC
- Step 3.** Council implements ABC Control Rule
- Step 4.** Council specifies ACL.
- Step 5.** Council divides ACL into sectors. Sector ACLs determined using allocations.
- Step 6.** Council specifies Sector ACTs and may sub-divide within a sector.
- Step 7.** Council determines management measures to keep total mortality (landings + release/discard mortality) less than or equal to sector ACTs.
- Step 8.** Council determines sector accountability measures to keep total mortality below ACL and respond to overages of the ACL.
- Step 9.** Council determines necessary data to implement and monitor ACLs, AMs, and management measures.

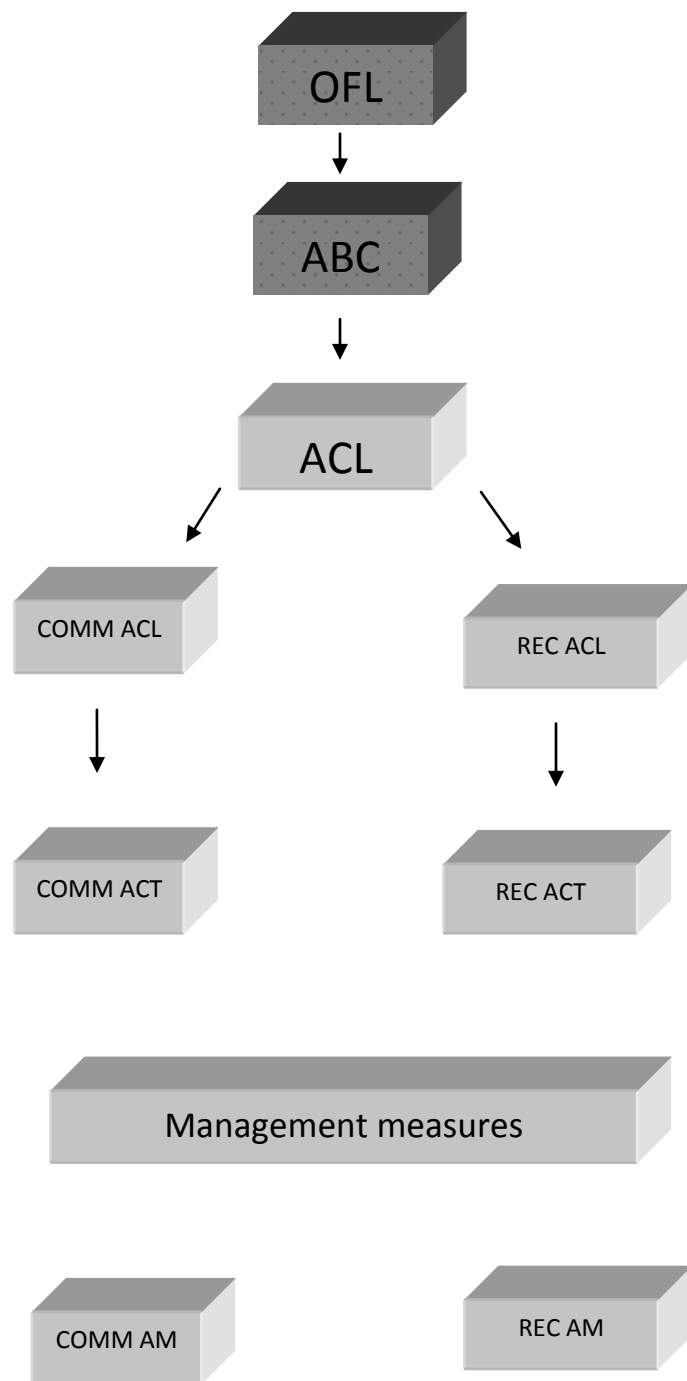


Figure 1-3. The process employed in the Comprehensive ACL Amendment. The Council is considering allocating to three sectors in this amendment.

1.4.2 SSC Designation of OFL and ABC

Acceptable Biological Catch (ABC) and ABC Control Rule

The Magnuson-Stevens Reauthorization Act (MSRA) in 2006 required specification of additional management criteria in federal fisheries management plans. These criteria include an Overfishing Limit (OFL), an Annual Catch Limit (ACL), an Annual Catch Target (ACT), and appropriate Accountability Measures (AM). The Act also stated that Council Scientific and Statistical Committees (SSCs) should specify an Acceptable Biological Catch (ABC) that is reduced from the OFL to address assessment uncertainty. Guidance in National Standard 1 (NS1) of the MSRA suggest that the Council should establish a process for developing ABC control rules and to establish ABC control rules based on scientific advice from the SSC. ABC control rules should specify a level of separation between OFL and ABC that is based on scientific uncertainty in the estimate of OFL and the level of scientific knowledge about the stock. The SSC is charged with recommending an ABC to the Council based on the control rule while also having a role in advising the Council on establishing the initial control rule.

The following NS1 excerpts describe the process:

Specification of ABC. ABC may not exceed OFL. Councils should develop a process for receiving scientific information and advice used to establish ABC. This process should: Identify the body that will apply the ABC control rule (i.e., calculates the ABC), and identify the review process that will evaluate the resulting ABC. The SSC must recommend the ABC to the Council. An SSC may recommend an ABC that differs from the result of the ABC control rule calculation, based on factors such as data uncertainty, recruitment variability, declining trends in population variables, and other factors, but must explain why. While the ABC is allowed to equal OFL, NMFS expects that in most cases ABC will be reduced from OFL to reduce the probability that overfishing might occur in a year.

Expression of ABC. ABC should be expressed in terms of catch, but may be expressed in terms of landings as long as estimates of bycatch and any other fishing mortality not accounted for in the landings are incorporated into the determination of ABC.

ABC for overfished stocks. For overfished stocks and stock complexes, a rebuilding ABC must be set to reflect the annual catch that is consistent with the schedule of fishing mortality rates in the rebuilding plan.

ABC control rule. For stocks and stock complexes required to have an ABC, each Council must establish an ABC control rule based on scientific advice from its SSC. The determination of ABC should be based, when possible, on the probability that an actual catch equal to the stock's ABC would result in overfishing. This probability that overfishing will occur cannot exceed 50 percent and should be a lower value. The ABC control rule should consider reducing fishing mortality as stock size declines and may establish a stock abundance level below which fishing would not be allowed. The

process of establishing an ABC control rule could also involve science advisors or the peer review process established under Magnuson Stevens Act section 302(g)(1)(E). The ABC control rule must articulate how ABC will be set compared to the OFL based on the scientific knowledge about the stock or stock complex and the scientific uncertainty in the estimate of OFL and any other scientific uncertainty. The ABC control rule should consider uncertainty in factors such as stock assessment results, time lags in updating assessments, the degree of retrospective revision of assessment results, and projections. The control rule may be used in a tiered approach to address different levels of scientific uncertainty.

The SAMFC SSC first discussed ABC control rules in June 2008. An issue paper outlining various alternative approaches to establishing ABC was provided to the Council in September 2008. The intent was to obtain initial feedback on control rules and the level of overfishing risk that the Council considered appropriate for various likely stock information levels. Control rule options were therefore presented in general terms rather than as specific alternatives and sub-alternatives. The Council supported further developing a control rule approach which specified ABC as a function of yield at maximum sustainable yield (MSY) and assessment uncertainty. The Council further specified that ABC should be set at a level providing a 25% chance of overfishing, with a range of values corresponding to 10 to 40% chance of overfishing.

While the approach suggested in September 2008 provided general guidance for assessed stocks for which the probability of overfishing can be provided in terms of yield, it did not address those stocks that lack assessments and it did not explicitly account for varying levels of uncertainty in assessments. Therefore, the SSC requested a special meeting for March 2009 devoted solely to developing an ABC control rule that could be applied to all managed stocks and which would provide an objective means to evaluate levels of uncertainty. During that meeting the SSC decided on general characteristics and components of the rule and developed a framework of dimensions and tiers. The SSC agreed that the ABC control rule should provide an objective means of determining the buffer between the overfishing level (typically MSY) and the ABC. The resulting approach, however, was only applicable when the OFL could be stated in fish weight and some measure of statistical uncertainty about the OFL could be estimated. Adjustments to the level of buffer are based on the probability of overfishing, which can be reflected in yield through frequency distributions or a “P*” analysis.

Discussion of the general concept and approach led to creation of a system of dimensions composed of multiple tiers that are scored to provide a value that can be used to select the appropriate probability of overfishing for each stock. Each stock evaluated receives a single “adjustment factor”, which is the sum of tier scores across dimensions and which ultimately determines the amount of buffer or separation between OFL and ABC. Adjustment factors are subtracted from the “base probability of overfishing” to provide the “critical probability”. The base probability of overfishing is the value used to determine OFL. The critical probability is a probability of overfishing that is used to determine ABC in the same manner that the base probability is used to determine MSY and OFL. Through this process, tier scores equate to an adjustment in the probability of

overfishing occurring, and do not represent, or necessarily correspond to, a specific poundage or percentage of the OFL. Recommended ABC values are derived from probability density functions that provide the probability of overfishing occurring for any particular yield.

The SSC met again in April 2010 to further develop the ABC control rule for stocks which are unassessed and for which no P* analyses are available. An alternative control rule was developed and presented to the Council in June 2010. However, some aspects of the proposed rule and its criteria were considered inappropriate considering guidance that the rule should account for scientific uncertainty. The Council ultimately rejected the unassessed stocks control rule as put forth by the SSC, and provided specific recommendations and guidance for further consideration. The SSC met again in August 2010 to reconsider the control rule for unassessed stocks. During this meeting they developed a rule incorporating several tiers reflecting varying levels of data availability for the unassessed stocks. This approach was presented to the Council in September 2010. The final proposed ABC Control rule is included as **Alternative X in Action 4** of this amendment and included below: **NOTE: Should control rule be included here or just under Action 4?**

Level 1: Assessed Stocks

- Apply the assessed stocks control rule to determine ABC.
The SSC recommended assessed stocks control rule. The rule provides a hierarchy of dimensions and tiers within dimensions used to characterize uncertainty associated with stock assessments in the South Atlantic. Parenthetical values indicate (1) the maximum adjustment value for a dimension; and (2) the adjustment values for each tier within a dimension.

I. Assessment Information (10%)

1. Quantitative assessment provides estimates of exploitation and biomass; includes MSY-derived benchmarks. (0%)
2. Reliable measures of exploitation or biomass; no MSY benchmarks, proxy reference points. (2.5%)
3. Relative measures of exploitation or biomass, absolute measures of status unavailable. Proxy reference points. (5%)
4. Reliable catch history. (7.5%)
5. Scarce or unreliable catch records. (10%)

II. Uncertainty Characterization (10%)

1. **Complete.** Key Determinant – uncertainty in both assessment inputs and environmental conditions are included. (0%)
2. **High.** Key Determinant – reflects more than just uncertainty in future recruitment. (2.5%)
3. **Medium.** Uncertainties are addressed via statistical techniques and sensitivities, but full uncertainty is not carried forward in projections. (5%)
4. **Low.** Distributions of Fmsy and MSY are lacking. (7.5%)
5. **None.** Only single point estimates; no sensitivities or uncertainty evaluations. (10%)

III. Stock Status (10%)

1. Neither overfished nor overfishing. Stock is at high biomass and low exploitation relative to benchmark values. (0%)
 2. Neither overfished nor overfishing. Stock may be in close proximity to benchmark values. (2.5%)
 3. Stock is either overfished or overfishing. (5%)
 4. Stock is both overfished and overfishing. (7.5%)
 5. Either status criterion is unknown. (10%)
- IV. Productivity and Susceptibility – Risk Analysis (10%)
1. **Low risk.** High productivity, low vulnerability, low susceptibility. (0%)
 2. **Medium risk.** Moderate productivity, moderate vulnerability, moderate susceptibility. (5%)
 3. **High risk.** Low productivity, high vulnerability, high susceptibility. (10%)

Level 2: Unassessed Stocks. Reliable landings and life history information available.

- OFL derived from "Depletion-Based Stock Reduction Analysis" (DBSRA).
- ABC derived from applying the assessed stocks rule to determine adjustment factor if possible, or from expert judgment if not possible.

Level 3: Unassessed Stocks. Inadequate data to support DBSRA.

- ABC derived directly, from "Depletion-Corrected Average Catch" (DCAC).

Level 4: Unassessed Stocks. Inadequate data to support DCAC or DBSRA.

- OFL and ABC derived on a case by case basis.

The SSC is still in the process of evaluating alternative approaches for stocks in the fourth level. For the time being, the SSC recommends using the Methot framework for stocks whose catch fits into Methot's categories of "nil" or "small" ([Table X](#)).

Table X. Dr. Rick Methot's approach for incorporating information on historical catch in ABC decisions for species where only catch data exist.

Historical Catch	Expert Judgment	Possible Action
Nil, not targeted	Inconceivable that catch could be affecting stock	Not in fishery; Ecosystem Component; SDC not required
Small	Catch is enough to warrant including stock in the fishery and tracking, but not enough to be of concern	Set ABC and ACL above historical catch; Set ACT at historical catch level. Allow increase in ACT if accompanied by cooperative research and close monitoring.

Moderate	Possible that any increase in catch could be overfishing	$ABC/ACL = f(\text{catch, vulnerability})$ So caps current fishery
Moderately high	Overfishing or overfished may already be occurring, but no assessment to quantify	Set provisional OFL = $f(\text{catch, vulnerability})$; Set ABC/ACL below OFL to begin stock rebuilding

Annual Catch Limits (ACLs) , Annual Catch Targets (ACTs), and Accountability Measures (AMs)

The MSRA also required that by 2010, Fishery Management Plans (FMPs) for fisheries determined by the Secretary to be subject to overfishing must establish a mechanism for specifying ACLs at a level that prevents overfishing and does not exceed the recommendations of the respective fishery management council's SSC or other established peer review processes. These FMPs also are required to establish within this time frame measures to ensure accountability. Accountability measures (AMs) are management controls that ensure that the ACLs are not exceeded; examples include corrective measures if overages occur and implementation of an in-season monitoring program. By 2011, FMPs for all other fisheries, except fisheries for species with annual life cycles, must meet these requirements.

The Council is employing a step-wise decision-making process in setting ACLs, annual catch targets (ACTs), and management measures to ensure harvest is at or below the ACL. The ACL is expressed in pounds or numbers of fish that serves as the basis for invoking AMs. Setting the ACL provides an opportunity to divide the total ACL into sector-specific ACLs but is not required. The ACT is the target specified in pounds or numbers of fish. Specifying an ACT is optional and up to the discretion of the Council. Catch includes fish that are retained for any purpose, as well dead discards. For fisheries where bycatch estimates are not available in a timely enough manner to manage annual catch, targets may be specified for landings, so long as an estimate of bycatch is accounted for such that total of landings and bycatch will not exceed the stock's ACL.

The final NS1 guidelines recognizes that existing FMPs may use terms and values that are similar to, associated with, or may be equivalent to OFL, ABC, ACL, ACT, and AM in many fisheries for which annual specifications are set for different stocks or stock complexes. In these situations, the guidelines suggest that, as Councils revise their FMPs, they use the same terms as set forth in the NS1 guidelines. Therefore, the Comprehensive ACL Amendment includes a discussion of existing harvest level designations, which could be used by the Council to specify OFLs, ACLs, ACTs, ABCs, and AMs.

AMs are designed to provoke an action once either the ACL or ACT is reached during the course of a fishing season to reduce the risk overfishing will occur. However,

depending on how timely the data are, it might not be realized that either the ACL and/or ACT has been reached until after a season has ended. Such AMs include prohibited retention of species once the sector ACT is met, shortening the length of the subsequent fishing season to account for overages of the ACL, and reducing the ACT in the subsequent fishing season to account for overages of the ACL.

Modify management measures as needed to limit harvest to the ACL or ACT

The Council is responsible for implementing regulations that ensure annual catches do not exceed the ACL to ensure overfishing does not occur. The Council will consider alternatives that could adjust management measures for species in this amendment.

Removing Species From the Snapper Grouper FMU and Designating Others As Ecosystem Component Species

The Council is considering the removal of some species from the snapper grouper fishery management unit (FMU) and designating others as ecosystem component species. There are currently 73 species in the snapper grouper FMU. Some of these species are taken predominantly in state waters or are rarely landed. The Council will evaluate in the Comprehensive ACL Amendment why the 73 were originally included in the FMU, need for Federal management for species that are predominantly in state waters, and if infrequently taken species meet the criteria for removal from the FMU according to established NS1 Guidelines.

1.5 History of Management

The South Atlantic fisheries are highly regulated; some of the species included in this amendment have been regulated since 1983. A detailed history of management for all species in the amendment may be found in **Appendix E**.

2 Actions and Alternatives

Section 2.1 outlines alternatives considered by the Council in this amendment and compares their environmental consequences (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 Committees and Advisory Panels for Snapper Grouper, Dolphin/Wahoo, Golden crab, and the Scientific and Statistical Committee. Species affected by the proposed actions and alternatives below include: 63 species in the snapper grouper complex, dolphin, wahoo, golden crab, and 2 species of sargassum. Alternatives the Council considered but eliminated from detailed study during the development of this amendment are described in **Appendix A**.

2.1 Actions under the Snapper Grouper Fishery Management Plan (except wreckfish)

2.1.1 Action 1: Removal of Species from Snapper Grouper Fishery Management Unit (FMU)

Alternative 1 (No Action). Do not remove any species from the Snapper Grouper FMU.

Alternative 2. Remove species from the Snapper Grouper FMU with 95% (or greater) of landings in state waters

French grunt	Spanish grunt	Margate	Yellow jack	Grass porgy
Bluestriped grunt	Sheepshead	Crevalle jack	Black margate	Porkfish

Alternative 3. Remove species from the Snapper Grouper FMU with 90% (or greater) of landings in state waters

French grunt	Spanish grunt	Margate	Yellow jack	Grass porgy	Sailors Choice
Bluestriped grunt	Sheepshead	Crevalle jack	Black margate	Porkfish	Lesser amberjack

Alternative 4 (Preferred). Remove species from the Snapper Grouper FMU with 80% (or greater) of landings in state waters, **except mutton snapper and hogfish.**

French grunt	Spanish grunt	Margate	Yellow jack	Grass porgy	Sailors Choice
Bluestriped grunt	Sheepshead	Crevalle jack	Black margate	Porkfish	Lesser amberjack
Graysby		Schoolmaster	Cubera snapper	Atlantic spadefish	Saucereye porgy
Blue runner					

Alternative 5 (Preferred). Remove all the species under the Florida Marine Life Species Rule from the Snapper Grouper FMU.

Queen triggerfish	Porkfish	Puddingwife
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In summary, the two preferred alternatives 4 and 5 result in a total of 20 species to be removed from the Snapper Grouper FMU (Porkfish falls under both preferred alternatives).

NOTE: Alternatives for Action 2 and subsequent actions do NOT include species that have been designated for removal except mutton snapper and hogfish.

Table 1. 10 snapper-grouper species with $\geq 95\%$ estimated landings (lbs, whole weight) from MRFSS (2005-2008) from state waters (SEFSC ACL dataset).*

	2005		2006		2007		2008		TOTAL		% State	TOP STATE	
COMMON NAME	EEZ	State	EEZ	State	EEZ	State	EEZ	State	EEZ	State		MRFSS	HB
French grunt	0	0	0	270	0	2,965	0	1,703	0	4,938	100%	FL	FL
Spanish grunt	0	0	0	688	0	0	0	0	0	688	100%	FL	GA
Margate	47	28,480	843	16,763	0	17,554	0	4,199	889	66,995	99%	FL	FL
Yellow jack	0	29,556	0	12,067	261	22,060	1,916	95,342	2,176	159,025	99%	FL	FL
Grass porgy	0	1,686	0	0	0	393	42	460	42	2,540	98%	FL	FL
Bluestriped grunt	811	24,500	0	70,320	1,346	62,742	1,235	37,759	3,392	195,322	98%	FL	FL
Sheepshead	34,113	1,589,612	44,124	1,405,536	55,851	1,949,463	30,409	2,251,209	164,498	7,195,821	98%	FL	SC
Crevalle jack	16,072	724,534	11,228	399,058	11,046	529,392	13,425	514,265	51,771	2,167,249	98%	FL	FL
Black margate	1,834	63,478	4,303	39,035	25	66,304	1,559	51,386	7,722	220,203	97%	FL	FL
Porkfish	1,748	17,046	373	1,890	900	47,479	309	10,533	3,330	76,948	96%	FL	FL

Table 2. 12 snapper-grouper species with $\geq 90\%$ estimated landings (lbs, whole weight) from MRFSS (2005-2008) from state waters (SEFSC ACL dataset).*

COMMON NAME	2005		2006		2007		2008		TOTAL		% State	TOP STATE	
	EEZ	State	EEZ	State	EEZ	State	EEZ	State	EEZ	State		MRFSS	HB
French grunt	0	0	0	270	0	2,965	0	1,703	0	4,938	100%	FL	FL
Spanish grunt	0	0	0	688	0	0	0	0	0	688	100%	FL	GA
Margate	47	28,480	843	16,763	0	17,554	0	4,199	889	66,995	99%	FL	FL
Yellow jack	0	29,556	0	12,067	261	22,060	1,916	95,342	2,176	159,025	99%	FL	FL
Grass porgy	0	1,686	0	0	0	393	42	460	42	2,540	98%	FL	FL
Bluestriped grunt	811	24,500	0	70,320	1,346	62,742	1,235	37,759	3,392	195,322	98%	FL	FL
Sheepshead	34,113	1,589,612	44,124	1,405,536	55,851	1,949,463	30,409	2,251,209	164,498	7,195,821	98%	FL	SC
Creville jack	16,072	724,534	11,228	399,058	11,046	529,392	13,425	514,265	51,771	2,167,249	98%	FL	FL
Black margate	1,834	63,478	4,303	39,035	25	66,304	1,559	51,386	7,722	220,203	97%	FL	FL
Porkfish	1,748	17,046	373	1,890	900	47,479	309	10,533	3,330	76,948	96%	FL	FL
Sailors choice	1,868	35,153	863	2,951	1,752	19,491	894	15,299	5,377	72,895	93%	FL	FL
Lesser amberjack	0	2,339	957	1,213	0	0	0	4,878	957	8,430	90%	FL	SC

Table 3. 18 snapper-grouper species with $\geq 80\%$ estimated landings (lbs, whole weight) from MRFSS (2005-2008) from state waters (SEFSC ACL dataset).*

COMMON NAME	2005		2006		2007		2008		TOTAL		% State	TOP STATE	
	EEZ	State	EEZ	State	EEZ	State	EEZ	State	EEZ	State		MRFSS	HB
French grunt	0	0	0	270	0	2,965	0	1,703	0	4,938	100%	FL	FL
Spanish grunt	0	0	0	688	0	0	0	0	0	688	100%	FL	GA
Margate	47	28,480	843	16,763	0	17,554	0	4,199	889	66,995	99%	FL	FL
Yellow jack	0	29,556	0	12,067	261	22,060	1,916	95,342	2,176	159,025	99%	FL	FL
Grass porgy	0	1,686	0	0	0	393	42	460	42	2,540	98%	FL	FL
Bluestriped grunt	811	24,500	0	70,320	1,346	62,742	1,235	37,759	3,392	195,322	98%	FL	FL
Sheepshead	34,113	1,589,612	44,124	1,405,536	55,851	1,949,463	30,409	2,251,209	164,498	7,195,821	98%	FL	SC
Creville jack	16,072	724,534	11,228	399,058	11,046	529,392	13,425	514,265	51,771	2,167,249	98%	FL	FL
Black margate	1,834	63,478	4,303	39,035	25	66,304	1,559	51,386	7,722	220,203	97%	FL	FL
Porkfish	1,748	17,046	373	1,890	900	47,479	309	10,533	3,330	76,948	96%	FL	FL
Sailors choice	1,868	35,153	863	2,951	1,752	19,491	894	15,299	5,377	72,895	93%	FL	FL
Lesser amberjack	0	2,339	957	1,213	0	0	0	4,878	957	8,430	90%	FL	SC
Graysby	1,166	8,722	2,601	7,266	259	4,408	756	8,081	4,781	28,478	86%	FL	SC
Schoolmaster	115	865	0	5,623	1,690	4,722	803	3,836	2,608	15,046	85%	FL	FL
Cubera snapper	0	2,529	646	714	0	0	4,197	22,346	4,843	25,588	84%	FL	FL
Atlantic spadefish	0	97,844	31,335	244,004	0	181,740	100,081	153,343	131,416	676,931	84%	FL	SC
Saucereye porgy	139	4,453	591	769	325	0	0	0	1,055	5,223	83%	FL	FL
Blue runner	98,584	400,169	134,699	1,025,723	256,572	639,436	135,371	717,349	625,225	2,782,677	82%	FL	FL

Source: SEFSC ACL Database, May 2010

*Note: Note ACL recreational dataset landings estimates may differ from MRFSS website queries because 'For Hire' includes headboat and charter, and SEFSC has used improved weight substitution and charter boat estimation procedures that differ from those on the MRFSS website. Note 'Atlantic' for recreational data includes MRFSS: SE Atl. states (NC-FLE) and Headboat: Atlantic (NC-FL Keys areas 1-17). Note gag and black grouper landings have been adjusted for misidentification prior to 1990.

Tiger grouper, black snapper, smallmouth grunt, misty grouper, and cottonwick did not have any reported landings. Goliath grouper and Nassau grouper are excluded since harvest is prohibited for these species. Speckled hind and warsaw grouper are also excluded since harvest is restricted to one fish per vessel per trip and sale is prohibited.

Commercial data from state trip tickets will be looked at in the near future to explore similar data trends.

2.1.2 Action 2: Designate Snapper Grouper Species as Ecosystem Component (EC) Species

Alternative 1 (No action). Retain a fishery management unit of 73 species. Do not designate ecosystem component species.

Alternative 2 (Preferred). Designate snapper grouper species with state and federal (combined) landings that are less than, or equal to 10,000 lbs, as EC species. Under this scenario, 16 species would be designated as Ecosystem Components (Table 4-x3).

Alternative 3. Designate snapper grouper species with state and federal (combined) landings that are less than, or equal to 1,000 lbs, as EC species. Under this scenario, six species would be designated as Ecosystem Components (Table 4-x4).

Alternative 4. Designate snapper grouper species with state and federal (combined) landings that are less than, or equal to 2,500 lbs, as EC species. Under this scenario, nine species would be designated as Ecosystem Components (Table 4-x5).

Alternative 5. Designate snapper grouper species with state and federal (combined) landings that are less than, or equal to 5,000 lbs, as EC species. Under this scenario, 11 species would be designated as Ecosystem Components (Table 4-x6).

Alternative 6. Designate snapper grouper species that meet three out of four NS 1 criteria, as EC species. Under this scenario, seven species would be designated as Ecosystem Components (Table 4-x7).

NOTE: Some species that might qualify as ecosystem component species are removed through Preferred Alternatives 4 & 5 under Action 1 and are not presented here.

Table 4-x1. Number of ecosystem component species identified in Alternatives 1-6.

Alternatives	Number removed from FMU per preferred alternatives in Action 1	Number ecosystem component species
1 (No action)	0	0
2 (Preferred)	20 (≥80% & Marine Life Spp.)	16 (≥10,000 lbs)
3	20 (≥80% & Marine Life Spp.)	6 (≥1,000 lbs)
4	20 (≥80% & Marine Life Spp.)	9 (≥2,500 lbs)

5	20 (≥80% & Marine Life Spp.)	11 (≥5,000 lbs)
6	20 (≥80% & Marine Life Spp.)	7 NS1 analysis

2.1.3 Action 3: Establish Species Groupings for Snapper Grouper Species

Alternative 1 (No Action). Do not establish multi-species groupings for fish in the Snapper Grouper FMU.

Alternative 2 (Preferred). Establish species groups for fish under the Snapper Grouper FMU following methodology used for the Gulf of Mexico and Caribbean ACL Amendments.

NOTE: The wording that follows was not part of the alternative when the Council chose it as their preferred. Get approval for changes to the wording at December meeting.

Establish species complexes using associations based on life history, catch statistics from commercial logbook and observer data, recreational headboat logbook and private/charter survey, and fishery-independent MARMAP data. Establish sub-complexes within species complexes. When a complex ACL is exceeded, all species in that complex, as well as those in sub-complexes will be subject to AMs. When a sub-complex ACL is exceeded, but is below the combined ACL of the complex, only the species in that particular sub-complex will be subject to AMs. Complex and/or sub-complex ACLs will be a sum of the individual ACLs included in that complex (all sectors combined) and/or sub-complex.

Table 5: Species complexes and sub-complexes for Snapper-Grouper species. DW = Deep-water; SWG = Shallow-water grouper; SWS = Shallow-water snapper; PGH = Porgies, grunts, and hinds. 1 = Assessed species; 2 = Most vulnerable species (PSA analysis).

COMPLEX ID	SUB-COMPLEX ID
2a. DW Complex	DW Sub-Complex
Warsaw grouper ₂	2a(i)
Yellowedge grouper	
Snowy grouper ₁	
Blueline tilefish	2a(ii)
Sand tilefish	
Golden tilefish ₁	
Silk snapper	2a(iii)
2b. SWG Complex	SWG Sub-Complex
Gag _{1,2}	2b(i)
Red grouper ₁	2b(ii)
Scamp	
Black grouper ₁	2b(iii)
Yellowfin grouper	2b(iv)
2c. Jacks Complex	Jacks Sub-Complex
Greater amberjack ₁	2c(i)

Almaco jack ₂	
Banded rudderfish	2c(ii)
2d. SWS Complex	SWS Sub-Complex
Yellowtail snapper ₁	2d(i)
Gray snapper ₂	
Lane snapper	2d(ii)
Mutton snapper ₁	2d(iii)
2e. PGH Complex	PGH Sub-Complex
Whitebone porgy ₂	
Knobbed porgy	
Jolthead porgy	2e(i)
Red hind	
Rock hind	2e(ii)
Tomtate	
White grunt	2e(iii)
2f. Individual ACLs	
Red snapper ₁	
Vermilion snapper ₁	
Red porgy ₁	
Goliath grouper ₁	
Black sea bass ₁	
Wreckfish ₁	
Gray triggerfish	
Bar jack	
Nassau grouper	
Hogfish	

Alternative 3. Snapper grouper species groupings based on similar life histories. Composition and division of Snapper Grouper FMU (indicator species in bold).

SHALLOW WATER GROUPEr

UNIT 1

Gag

Red grouper

Red hind

Rock hind

Black grouper

Yellowfin grouper

Scamp

UNIT 2

Goliath grouper

UNIT 3

Nassau grouper

DEEP WATER GROUPEr AND TILEFISH UNIT

Snowy grouper

Yellowedge grouper

Warsaw grouper

Speckled hind

Tilefish (golden)

Blueline tilefish

WRECKFISH

Wreckfish

SHALLOW WATER SNAPPER, TILEFISH, AND WRASSE UNIT

Yellowtail snapper

Mutton snapper

Gray (mangrove) snapper

Lane snapper

Dog snapper

Sand tilefish

Hogfish

MID-SHELF SNAPPER UNIT

Vermilion snapper

Silk snapper

Red snapper

JACK UNIT

Greater amberjack

Almaco jack

Banded rudderfish

Bar jack

GRUNT AND PORGY

UNIT 1

Red porgy

UNIT 2

White grunt

Tomtate

Jolthead porgy

Whitebone porgy

Knobbed porgy

SEA BASS UNIT

Black sea bass

National Standard 3 (Section 301 of the Magnuson-Stevens Fishery Conservation and Management Act) states that, “to the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.” A stock complex, as defined by the recently amended National Standard 1 guidance, is “a group of stocks that are sufficiently similar in geographic distribution, life history, and vulnerabilities to the fishery such that the impact of management actions on the stocks is similar” (74 FR 3178). Stocks may be grouped into complexes if: 1) they cannot be targeted independently of one another in a multispecies fishery; 2) there is not sufficient data to measure their status relative to established status determination criteria; or 3) when it is feasible for fishermen to distinguish individual stocks among their catch (50 CFR 600.310 (b) (8) in 74 FR 3178). Guidelines at 50 CFR 600.320 (d) define a management unit as “a fishery or that portion of a fishery identified in a FMP as relevant to the FMP’s management objectives.” Management units may be organized based on biological, geographic, economic, technical, social, or ecological considerations (50 CFR 600.320 (d) (1)).

2.1.4 Action 4: Establish an Acceptable Biological Catch (ABC) Control Rule for Snapper Grouper Species That Have Not Been Assessed

Alternative 1 (No Action). Do not establish an ABC Control Rule for species in the Snapper Grouper FMU that have not been assessed through the Southeast Data Assessment and Review (SEDAR) program and do not have a P* analysis.

List species

Alternative 2. Establish an ABC Control Rule where ABC equals OFL.

Alternative 3. Establish an ABC Control Rule where ABC equals a percentage of OFL.

Subalternative 3a. ABC=65% OFL

Subalternative 3b (Preferred). ABC=75% OFL

Subalternative 3c. ABC=85% OFL

Alternative 4. Establish an ABC Control Rule where ABC equals a percentage of the yield at MFMT.

Subalternative 4a. ABC=yield at 65%MFMT

Subalternative 4b. ABC=yield at 75%MFMT

Subalternative 4c. ABC=yield at 85%MFMT

Table 1. OFL and ABC Values for Species Not Assessed for the ABC Control Rule Alternatives. Table excludes species that would be removed from the FMU (Action 1). Denoted in green are those species that would be designated as EC species (Action 2). Mutton snapper?

Species Common Name	OFL (lbs ww) Median 99-08 landings	ABC Control Rule Alternatives for Species Not Assessed						
		ABC Alt. 2 ABC=OFL	ABC Alt. 3a ABC=65%OFL	ABC Alt. 3b ABC=75% OFL (Preferred)	ABC Alt. 3c ABC=85%OFL	ABC Alt. 4a ABC=65%MFMT (equals 93%OFL)	ABC Alt. 4b ABC=75%MFMT (equals 97%OFL)	ABC Alt. 4c ABC=85%MFMT (equals 99%OFL)
almaco jack	229,237	229,237	149,004	171,927	194,851	213,190	222,359	226,944
amberjack	222,934	222,934	144,907	167,201	189,494	207,329	216,246	220,705
banded rudderfish	119,915	119,915	77,945	89,936	101,928	111,521	116,318	118,716
bank sea bass	6,240	6,240	4,056	4,680	5,304	5,803	6,053	6,178
bar jack	10,010	10,010	6,507	7,508	8,509	9,309	9,710	9,910
black snapper	229	229	149	171	194	213	222	226
blackfin snapper	2,154	2,154	1,400	1,615	1,830	2,003	2,089	2,132
blueline tilefish	146,134	146,134	94,987	109,601	124,214	135,905	141,750	144,673
coney	1,975	1,975	1,283	1,481	1,678	1,836	1,915	1,955
cottonwick	111	111	72	83	94	103	107	109
dog snapper	2,587	2,587	1,681	1,940	2,199	2,405	2,509	2,561
gray snapper	769,328	769,328	500,063	576,996	653,928	715,475	746,248	761,634
gray triggerfish	275,215	275,215	178,890	206,411	233,933	255,950	266,959	272,463
graysby	16,261	16,261	10,570	12,196	13,822	15,123	15,773	16,098
hogfish	133,139	133,139	86,540	99,854	113,168	123,819	129,144	131,807
jolthead porgy	32,818	32,818	21,332	24,614	27,895	30,521	31,833	32,490
knobbed porgy	45,910	45,910	29,842	34,433	39,024	42,696	44,533	45,451
lane snapper	114,396	114,396	74,357	85,797	97,236	106,388	110,964	113,252
longspine porgy	14	14	9	10	11	13	13	13
mahogany snapper	53	53	34	40	45	49	51	52
misty grouper	2,347	2,347	1,525	1,760	1,995	2,182	2,276	2,323
nassau grouper	39	39	25	29	33	36	37	38
ocean triggerfish	10,088	10,088	6,557	7,566	8,575	9,382	9,785	9,987
porkfish	14,771	14,771	9,601	11,078	12,555	13,737	14,328	14,623
queen snapper	7,584	7,584	4,930	5,688	6,446	7,053	7,356	7,508

Species Common Name	OFL (lbs ww) Median 99-08 landings	ABC Control Rule Alternatives for Species Not Assessed						
		ABC Alt. 2 ABC=OFL	ABC Alt. 3a ABC=65%OFL	ABC Alt. 3b ABC=75% OFL (Preferred)	ABC Alt. 3c ABC=85%OFL	ABC Alt. 4a ABC=65%MFMT (equals 93%OFL)	ABC Alt. 4b ABC=75%MFMT (equals 97%OFL)	ABC Alt. 4c ABC=85%MFMT (equals 99%OFL)
queen triggerfish	6,585	6,585	4,280	4,939	5,597	6,124	6,387	6,519
red hind	24,406	24,406	15,864	18,305	20,745	22,698	23,674	24,162
rock hind	32,792	32,792	21,315	24,594	27,873	30,497	31,808	32,464
rock sea bass	2,779	2,779	1,806	2,084	2,362	2,584	2,695	2,751
sand tilefish	6,341	6,341	4,121	4,755	5,389	5,897	6,150	6,277
scamp	492,573	492,573	320,172	369,429	418,687	458,092	477,795	487,647
scup	6,579	6,579	4,276	4,934	5,592	6,118	6,382	6,513
silk snapper	27,519	27,519	17,887	20,639	23,391	25,592	26,693	27,243
smallmouth grunt	0	0	0	0	0	0	0	0
spadefish	44,058	44,058	28,637	33,043	37,449	40,973	42,736	43,617
tiger grouper	0	0	0	0	0	0	0	0
tomtate	64,228	64,228	41,748	48,171	54,593	59,732	62,301	63,585
white grunt	363,013	363,013	235,958	272,260	308,561	337,602	352,123	359,383
whitebone porgy	24,660	24,660	16,029	18,495	20,961	22,934	23,920	24,413
yellowedge grouper	30,221	30,221	19,643	22,665	25,687	28,105	29,314	29,918
yellowfin grouper	4,414	4,414	2,869	3,311	3,752	4,105	4,282	4,370
yellowmouth grouper	2,144	2,144	1,394	1,608	1,822	1,994	2,080	2,123

2.1.5 Action 5: Establish an Acceptable Biological Catch (ABC) Control Rule for Assessed Species in the Snapper Grouper FMU

Alternative 1 (No Action). Do not establish an ABC Control Rule for species in the Snapper Grouper FMU that have been assessed through the Southeast Data Assessment and Review (SEDAR) program and have a P* analysis.

List species

Alternative 2. Establish an ABC Control Rule where ABC equals OFL.

Alternative 3. Establish an ABC Control Rule where ABC equals a percentage of OFL.

Subalternative 3a. ABC=65%OFL

Subalternative 3b. ABC=75%OFL

Subalternative 3c. ABC=85%OFL

Alternative 4. Establish an ABC Control Rule where ABC equals a percentage of the yield at MFMT.

Subalternative 4a. ABC=yield at 65%MFMT

Subalternative 4b. ABC=yield at 75%MFMT

Subalternative 4c. ABC=yield at 85%MFMT

Alternative 5 (Preferred). Establish ABCs based on the SSC's ABC control rule for assessed species that have a P* analysis (**list species**).

Alternative 6. Establish an ABC Control Rule where ABC is a percentage of OFL. The percentage is based upon the level of risk of overfishing (P*).

Subalternative 6a. ABC=X% of OFL. The X% is based upon P* equals .20.

Subalternative 6b. ABC=X% of OFL. The X% is based upon P* equals .30.

Subalternative 6c. ABC=X% of OFL. The X% is based upon P* equals .40.

Subalternative 6d. ABC=X% of OFL. The X% is based upon P* equals .50.

Table 2. OFL and ABC Values for Assessed Species for the ABC Control Rule Alternatives.

Species Common Name	OFL	ABC Control Rule Alternatives for Assessed Species							ABC Alt. 5 SSC Control Rule	ABC Alt. 6a-6d (P*=.20 to .50)
		ABC Alt. 2 ABC=OFL	ABC Alt. 3a ABC=65%OFL	ABC Alt. 3b ABC=75% OFL	ABC Alt. 3c ABC=85% OF	ABC Alt. 4a ABC=65%MF MT	ABC Alt. 4b ABC=75%MF MT	ABC Alt. 4c ABC=85%MF MT		
black grouper	384,911	384,911							610,482	
black sea bass	Yield at MFMT								847,000	
gag										
goliath grouper										
greater amberjack	2,005,000	2,005,000							1,968,000	
mutton snapper										
red grouper	669,000	669,000							665,000	
red porgy									395,281	
red snapper										
snowy grouper	Yield at MFMT								102,960	
tilefish	336,400	336,400							311,000	
vermillion snapper									1,109,000	
yellowtail snapper									2,898,500	

Update table above

IPT recommends combining actions 4 and 5 above into a single action:

Alternative 1 (No Action). Do not establish an ABC Control Rule for species in the Snapper Grouper FMU

Alternative 2. Establish an ABC Control Rule where ABC equals OFL.

Alternative 3. Establish an ABC Control Rule where ABC equals a percentage of OFL

Subalternative 3a. ABC=65% OFL

Subalternative 3b. ABC=75% OFL

Subalternative 3c. ABC=85% OFL

Alternative 4. Establish an ABC Control Rule where ABC equals a percentage of the yield at MFMT.

Subalternative 4a. ABC=yield at 65% MFMT

Subalternative 4b. ABC=yield at 75% MFMT

Subalternative 4c. ABC=yield at 85% MFMT

Alternative 5 (Preferred). **Where applicable,** establish ABCs based on the SSC's ABC control rule ~~for assessed species that have a P* analysis.~~ **Until such time as the SSC's Control Rule can be fully applied, establish ABC = 75% OFL.**

Alternative 6. Establish an ABC Control Rule where ABC is a percentage of OFL. The percentage is based upon the level of risk of overfishing (P*).

Subalternative 6a. ABC=X% of OFL. The X% is based upon P* equals .20.

Subalternative 6b. ABC=X% of OFL. The X% is based upon P* equals .30.

Subalternative 6c. ABC=X% of OFL. The X% is based upon P* equals .40.

Subalternative 6d. ABC=X% of OFL. The X% is based upon P* equals .50.

2.1.6 Action 6: Specify Allocations for the Snapper Grouper Fishery

IPT recommends removing reference to poundage from alternatives 4-7 below to allow for future changes to the ABC.

Alternative 1 (No Action). Retain the current allocations. Do not specify allocations for those species where no allocations have been specified. **NOTE: will new alternatives have to be developed based on species groupings????? Or will allocation alternatives apply to individual species to determine ACLs and then added up to determine group ACL. Also, is the Council's intent to consider new allocations for species that already have ACLs (identified in Alternative 1) or just identify allocations for species that do not have them. Further, red grouper has an allocation action in Amendment 24.**

Table 4-x. Allocations for snapper grouper species established in other amendments

	Allocations	
	Commercial	Recreational
black sea bass	43%	57%
gag	51%	49%
golden tilefish (proposed in 17B)	97%	3%
red porgy	50%	50%
snowy grouper	95%	5%
vermilion snapper	68%	32%
Red grouper (proposed in 24)	47%	53%

Alternative 2 (Preferred). Divide allocations among two sectors, commercial and recreational, using the following equation:

Allocation by sector = $(0.5 * \text{catch history}) + (0.5 * \text{current trend})$ whereby, catch history = 1986 onward, current trend = 2006-2008 for this amendment.

Alternative 3. Divide allocations among three sectors, commercial, recreational, and for-hire, using the following equation:

Allocation by sector = $(0.5 * \text{catch history}) + (0.5 * \text{current trend})$ whereby, catch history = 1986 onward, current trend = 2006-2008 for this amendment.

Alternative 4. Commercial = X% of ABC and recreational = X% of ABC (Established by using catch history from 1986-2008). This alternative would establish a commercial annual catch limit of X pounds whole weight and a recreational annual catch limit of X pounds whole weight. The commercial and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 5. Commercial = X% of ABC and recreational = X% of ABC (Established by using catch history from 1986-1998). This alternative would establish a commercial annual catch limit of X pounds whole weight and a recreational annual catch limit of X pounds whole weight. The commercial and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 6. Commercial = X% of ABC and recreational = X% of ABC (Established by using catch history from 1999-2008). This alternative would establish a commercial annual catch limit of X pounds whole weight and a recreational annual catch limit of X pounds whole weight. The commercial and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 7. Commercial = X% of ABC and recreational = X% of ABC (Established by using catch history from 2006-2008). This alternative would establish a commercial annual catch limit of X pounds whole weight and a recreational annual catch limit of X pounds whole weight. The commercial and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

2.1.7 Action 7: Establish Annual Catch Limits (ACLs) for the Snapper Grouper Fishery

Alternative 1 (No Action). Retain existing ACLs for snapper grouper species or species groups. Do not specify ACLs for species that do not have them.

Alternative 2. Establish ACLs for species as needed where $ACL = OY = ABC$.

Subalternative 2a. Establish a single ACL (commercial and recreational) based on the current TAC.

Subalternative 2b. Establish commercial and recreational ACLs based on preferred allocation alternative.

Alternative 3. Establish ACLs for species as needed where $ACL = OY = 90\%$ of the ABC.

Subalternative 3a. Establish a single ACL (commercial and recreational) based on the current TAC.

Subalternative 3b. Establish commercial and recreational ACLs based on preferred allocation alternative.

Alternative 4. Establish ACLs for species as needed where $ACL = OY = 80\%$ of the ABC.

Subalternative 4a. Establish a single ACL (commercial and recreational) based on the current TAC.

Subalternative 4b. Establish commercial and recreational ACLs based on preferred allocation alternative.

Shaded are represents edits made by IPT.

2.1.8 Action 8: Specify Accountability Measures (AMs)/ Annual Catch Targets (ACTs) for species in the Snapper Grouper FMU

Alternative 1 (No Action). Do not specify AMs for species or species groups in the Snapper Grouper FMU.

Commercial

Alternative 2. After the commercial ACL is met, all purchase and sale of X is prohibited and harvest and/or possession is limited to the bag limit.

Alternative 3. If the commercial sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the commercial sector ACL in the following season by the amount of the overage.

Alternative 4. Specify Annual Catch Targets (ACT) for the commercial sector.

Subalternative 4a. The commercial sector ACT equals the commercial sector ACL.

Subalternative 4b. The commercial sector ACT equals 90% of the commercial sector ACL.

Subalternative 4c. The commercial sector ACT equals 80% of the commercial sector ACL.

Recreational

Alternative 5. For in-season and post-season accountability measures, compare recreational ACL with recreational landings over a range of years. For 2011, use only 2011 landings. For 2012, use the average landings of 2011 and 2012. For 2013 and beyond, use the most recent three-year running average.

Alternative 6. The Regional Administrator shall publish a notice to close the recreational fishery when the ACL is projected to be met.

Alternative 7. Take corrective action if the recreational ACL has been exceeded.

Subalternative 7a. If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the recreational sector ACL in the following season by the amount of the overage.

Subalternative 7b. If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the length of the following fishing year by the amount necessary to ensure landings do not exceed the recreational sector ACL for the following fishing year.

Alternative 8. Specify Annual Catch Targets (ACT) for the recreational sector.

Subalternative 8a. The recreational sector ACT equals 85% of the private recreational sector ACL.

Subalternative 8b. The recreational sector ACT equals 75% of the private recreational sector ACL.

Subalternative 8c (Preferred). The recreational sector ACT equals sector ACL [(1-PSE) or 0.5, whichever is greater].

2.2 Snapper Grouper Fishery Management Plan (wreckfish)

ABC Control Rule for Wreckfish

NOTE: Council voted to remove action and replace with discussion. Text below is IPT suggestion:

The SSC met in April 2010 to discuss ABC Control Rules for unassessed species. After extensive discussion of wreckfish issues, the SSC established that ABC was unknown and that the Council should consider an ACL that did not exceed 200,000 pounds. One of the issues discussed was that the management system of individual quotas tied to portions of the allowable harvest level potentially alters the relation between the recommended harvest and the realized harvest. Effort is reduced in the fishery, to the extent that recent landings are confidential because fewer than 3 harvesters are in operation in recent years. Landings are reduced and recent trends in landings, even if such landings could be publicly disseminated, are possibly not representative of fishery productivity.

The SSC discussed setting an ABC for wreckfish during their August 2010 meeting. The SSC stated that the 2001 assessment ([citation](#)) indicated depletion at higher historical levels of effort and that the catch reductions appeared to have come mainly from gear restrictions, spawning season closure and ITQ implementation and historical catch levels have been influenced by regulation. Since stock size cannot be projected, an estimate of OFL from the 2001 assessment could not be produced. A DBSRA or DCAC estimate ([see section 1.4.2](#)) could be calculated, but recent landings are confidential, therefore the SSC was not be able to perform the calculations to produce these estimates. The SSC agreed the 2001 assessment was dated and did not apply to current landings and conditions. The SSC concluded that a control rule based on catch-only data should be used even though a stock assessment exists for wreckfish.

In the absence of a current assessment, using a catch-only scenario at “moderate” historical catch ([Table X in Section 1.4.2](#)), it is possible that increasing catch will result in overfishing. The SSC reached consensus that catch-only analysis was appropriate because it was inappropriate to use an old assessment applied to new catch data for catches coming from potentially different fishing conditions than at the time of the assessment. Although an estimate of F_{msy} exists, it cannot be applied to current stock biomass. A recent estimate of F is close to F_{msy} , so increasing F could lead to overfishing if there were increases in catch. Even though B_{msy} is unknown, fishing at F_{msy} on a stock that is below B_{msy} is acceptable for a stock that is not overfished and this will allow rebuilding. Therefore, the SSC recommended setting the ABC at the average historical catch (1997-recent) of 250,000 lbs. Due to confidentiality of data, a more precise level could not be set. This level of harvest would cap fishery where it is, consistent with the “moderate” level of historical catch in Methot’s table for catch-only scenarios ([Table X in Section 1.4.2](#)). The SSC also recommended conducting DCAC or DBSRA analysis in the next year to compare with the current catch-only recommendation.

2.2.1 Action 9: Specify Allocations for the Wreckfish Fishery

Alternative 1 (No action). Do not specify allocation.

In this scenario, the TAC is essentially allocated 100% to the commercial sector.

Alternative 2. Divide allocations as 90% Commercial and 10% Recreational.

Alternative 3. Divide allocations as 95% Commercial and 5% Recreational.

Alternative 4. Allocate 100% of the allowable catch to the commercial sector.

2.2.2 Action 10: Establish an Annual Catch Limit (ACL) for Wreckfish

Alternative 1 (No Action). Do not establish an Annual Catch Limit (ACL) for Wreckfish

Alternative 2 (Preferred). $ACL = OY = ABC$.

Subalternative 2a. Establish a single ACL (commercial and recreational) based on the current TAC.

Subalternative 2b. Establish commercial and recreational ACLs based on preferred allocation alternative.

Alternative 3. $ACL = OY = 90\%$ of the ABC.

Subalternative 3a. Establish a single ACL (commercial and recreational) based on the current TAC.

Subalternative 3b. Establish commercial and recreational ACLs based on preferred allocation alternative.

Alternative 4. $ACL = OY = 80\%$ of the ABC.

Subalternative 4a. Establish a single ACL (commercial and recreational) based on the current TAC.

Subalternative 4b. Establish commercial and recreational ACLs based on preferred allocation alternative.

2.2.3 Action 11: Specify Accountability Measures for the Wreckfish Fishery

Alternative 1 (No Action). Do not specify AMs for wreckfish. ITQ program currently in place is the AM for this fishery.

Commercial

ITQ program currently in place is the AM for this fishery.

Recreational

Alternative 2. For in-season and post-season accountability measures, compare recreational ACL with recreational landings over a range of years. For 2011, use only 2011 landings. For 2012, use the average landings of 2011 and 2012. For 2013 and beyond, use the most recent three-year running average.

Alternative 3. Take corrective action if the recreational ACL has been exceeded.

Subalternative 3a. If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the recreational sector ACL in the following season by the amount of the overage.

Subalternative 3b. If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the length of the following fishing year by the amount necessary to ensure landings do not exceed the recreational sector ACL for the following fishing year.

2.2.4 Action 12: Management Measures for Wreckfish

Alternative 1 (No action). Retain the January 15-April 15 spawning season closure. Wreckfish is included in the 20-fish aggregate bag limit. The TAC for wreckfish is 2 million pounds.

Alternative 2. Eliminate the January 15-April 15 spawning season closure in the:

Subalternative 2a: Commercial sector.

Subalternative 2b: Recreational sector.

Note: This action was suggested by the IPT for Council consideration since many catch share programs eliminate seasonal closures upon implementation of a catch share program.

Recreational Sector

Alternative 3. Remove wreckfish from the 20 fish aggregate snapper grouper bag limit.

Alternative 4. Implement a one wreckfish per vessel per day bag limit for the recreational fishery.

Alternative 5. Implement a one wreckfish per angler per day bag limit for the recreational fishery.

Alternative 6. Implement a 5 wreckfish per vessel per day bag limit for the recreational fishery.

Per IPT discussion, OY and ABC actions pertaining to black grouper are now folded into action 4, etc.

2.3 Snapper Grouper Fishery Management Plan (black grouper)

2.3.1 Action 13: Jurisdictional Allocations for Black Grouper

Alternative 1 (No action). Do not establish jurisdictional allocation of the black grouper acceptable biological catch (ABC) between the Gulf and South Atlantic Councils.

Alternative 2. Establish a jurisdictional allocation based on the Florida Keys (Monroe County) jurisdictional boundary between the Gulf and South Atlantic Councils for black grouper acceptable biological catch (ABC) based on one of the following methods:

Subalternative 2a. South Atlantic = 46% of ABC and Gulf = 54% of ABC (Established by using catch history from 1991-2008).

Subalternative 2b (Preferred). South Atlantic = 47% of ABC and Gulf = 53% of ABC (Established by using 50% of catch history from 1986-2008 + 50% of catch history from 2006-2008).

Subalternative 2c. South Atlantic = 48% of ABC and Gulf = 52% of ABC (Established by using 50% of catch history from 1991-2008 + 50% of catch history from 2006-2008).

Subalternative 2d. South Atlantic = 50% of ABC and Gulf = 50% of ABC (Divide the ABC evenly between the two Councils).

Discussion:

At the June Council meeting a motion was made for Gulf and South Atlantic staff to work together to develop alternative methods for allocating the black grouper catch between the two Council's jurisdictional areas. The stock assessment for black grouper treated the Gulf and South Atlantic management unit as a single stock rather than providing separate assessments. The Gulf Council received a letter dated June 10, 2010 from the South Atlantic Council accepting the Gulf Council's acceptable biological catch (ABC) control rule and the ABC recommendation developed by the Gulf Scientific and Statistical Committee (SSC).

The Gulf SSC recommends that a five-year time stream from 2011-2015, to include landings and dead discards in whole weight as the ABC for black grouper, for a P* of 0.33 (Source: OFL projections Table A3.3.4.17 of the final SEDAR 19 stock assessment report and ABC projections, R. Muller, FL FWC, FWRI, person communication).

	OFL		
Year	Landings	Discards	Total
2011	695,007	123,952	818,959
2012	652,810	127,396	780,206
2013	627,552	130,213	757,765
2014	619,665	130,237	749,902
2015	615,801	130,207	746,008

	ABC		
Year	Landings	Discards	Total
2011	523,000	126,761	649,761
2012	522,543	132,399	654,942
2013	545,595	130,978	676,574
2014	558,711	130,314	689,025
2015	564,737	130,018	694,755

Currently, the ABC applies across Council jurisdictions; therefore, the Councils would have to agree to a jurisdictional allocation between the Gulf and South Atlantic. Since black grouper are primarily landed off the state of Florida especially off southern Florida and in the Florida Keys (Monroe County), jurisdictional allocation of this stock presents some issues. These issues primarily revolve around dividing the recreational landings in Monroe County, because the current Gulf and South Atlantic Council jurisdictional boundary line is the Florida Keys.

After discussions with the SEDAR 19 analysts regarding recreational landings (MRFSS-charterboat, private, and shore mode) the recommendation was made to remove all Florida Keys landings from the Gulf Council landings including discards and place them into the South Atlantic landings. Legal sized black grouper caught in the Florida Keys, are more likely to have been caught from South Atlantic jurisdictional waters; however, based on the current system of MRFSS landings for Monroe County they were previously grouped into the Gulf landings. Black grouper are probably caught in the back reef area of the Florida Keys (Gulf Council jurisdiction), but are probably not legal size (B. Muller, FL FWC, FWRI, personal communication). The headboat fishery already accounts for Florida Keys (Monroe County) by including those landings in the South Atlantic jurisdiction (SEDAR 19 2010). The commercial data set used to derive the jurisdictional allocations are from the Florida trip ticket program so that “area fished” could be stratified, which is particularly important for the Florida Keys. Due to using this commercial data set so that Florida Keys (Monroe County) landings could be split between Council jurisdictions resulted in higher landings than were used in the stock assessment. This is because additional adjustments were not completed (SEDAR 19 2010).

NOTE: Should the sections below be moved under their respective alternative above?

Option a would establish a jurisdictional allocation of ABC for the South Atlantic = 46% of ABC and Gulf = 54% of ABC. These percentages were derived from using catch history from 1991-2008. Recreational data collection and fish species identification were notably improved in 1991 so the time series was started in that year.

Preferred Option b would establish a jurisdictional allocation of ABC for the South Atlantic = 47% of ABC and Gulf = 53% of ABC. These percentages were derived from using the formula presented in the letter from the South Atlantic Council to the Gulf Council as the following: use 50% of catch history from 1986-2008 + 50% of catch history from 2006-2008.

Option c would establish a jurisdictional allocation of ABC for the South Atlantic = 48% of ABC and Gulf = 52% of ABC. These percentages were derived from using the same formula presented in the letter, but starting the catch history in 1991 when recreational data collection and fish species identification were notably improved (use 50% of catch history from 1991-2008 + 50% of catch history from 2006-2008).

Option d would establish a jurisdictional allocation of ABC for the South Atlantic = 50% of ABC and Gulf = 50% of ABC, dividing the ABC evenly between the two Councils. In recent years, commercial landings of black grouper have been similar in each Council’s jurisdiction and using catch history results in percentages that are close to a 50:50 split of the ABC. For example, using catch history in 2001-2008 resulted in a jurisdictional allocation of ABC for the South Atlantic = 49% and Gulf = 51% of the ABC. This time series was started in 2001 when the first full year in the Gulf of Mexico EEZ that different minimum size limits were adopted for both the commercial (24 inches total length) and recreational (22 inches total length) sectors. The South Atlantic Fishery Management Council increased the minimum size limit from 20 inches total length to 24 inches total length in 1999 for both sectors. Using catch history in 1999-2008 resulted in a jurisdictional allocation of ABC for the South Atlantic = 46% of the ABC and Gulf = 54% of the ABC, the same percentages that are listed under **Option a**.

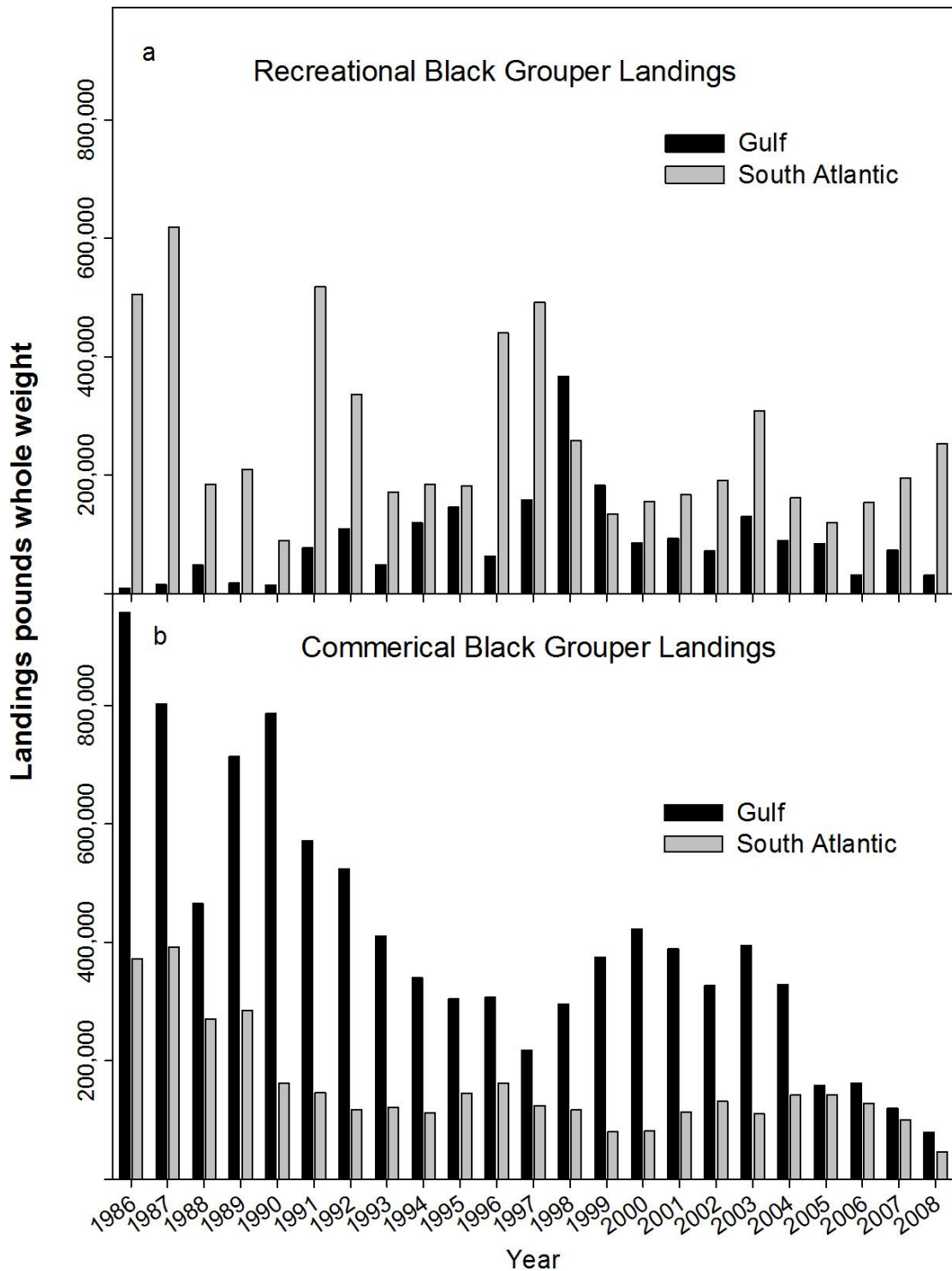


Figure 1. Landings of black grouper in whole weight (WW) in the Gulf and South Atlantic jurisdictions A) recreational landings (MRFSS and headboat data combined) and B) commercial black grouper landings. Sources: MRFSS data from T. Sminkey, NOAA Fisheries, personal communication and headboat data from SEDAR 19 Final Data Workshop Report. Commercial data from Florida's trip ticket program, B. Muller, FL FWC, FWRI, personal communication.

2.3.2 Action 14: Sector Allocations for Black Grouper

Remove language specifying pounds, and just use percentage as with other FMPs in this amendment?

Alternative 1 (No action). Do not establish a sector allocation of the black grouper acceptable biological catch (ABC).

Alternative 2 (Preferred). Divide the acceptable biological catch (ABC) into commercial and recreational sector components based on criteria as outlined in one of the following options below.

Subalternative 2a. Commercial = X% of ABC and recreational = X% of ABC (Established by using catch history from 1986-2008). This alternative would establish a commercial annual catch limit of X pounds whole weight and a recreational annual catch limit of X pounds whole weight. The commercial and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

Subalternative 2b. Commercial = X% of ABC and recreational = X% of ABC (Established by using catch history from 1986-1998). This alternative would establish a commercial annual catch limit of X pounds whole weight and a recreational annual catch limit of X pounds whole weight. The commercial and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

Subalternative 2c. Commercial = X% of ABC and recreational = X% of ABC (Established by using catch history from 1999-2008). This alternative would establish a commercial annual catch limit of X pounds whole weight and a recreational annual catch limit of X pounds whole weight. The commercial and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

Subalternative 2d. Commercial = X% of ABC and recreational = X% of ABC (Established by using catch history from 2006-2008). This alternative would establish a commercial annual catch limit of X pounds whole weight and a recreational annual catch limit of X pounds whole weight. The commercial and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

Subalternative 2e (Preferred). Commercial = 47% of ABC and recreational = 53% of ABC (Established by using 50% of catch history from 1991-2008 + 50% of catch history from 2006-2008). This alternative would establish a commercial annual catch limit of X pounds whole weight and a recreational annual catch limit of X pounds whole weight. The commercial and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 3. Divide the acceptable biological catch (ABC) into commercial, recreational, and for-hire sector components based on criteria as outlined in one of the following options below.

Subalternative 3a. Commercial = X% of ABC, for-hire = X%, and recreational = X% of ABC (Established by using catch history from 1986-2008). This alternative would establish a commercial annual catch limit of X pounds whole weight, a for-hire annual catch limit of X pounds whole weight, and a recreational annual catch limit of X pounds whole weight.

The commercial, for-hire, and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

Subalternative 3b. Commercial = X% of ABC, for-hire = X%, and recreational = X% of ABC (Established by using catch history from 1986-1998). This alternative would establish a commercial annual catch limit of X pounds whole weight, a for-hire annual catch limit of X pounds whole weight, and a recreational annual catch limit of X pounds whole weight. The commercial, for-hire, and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

Subalternative 3c. Commercial = X% of ABC, for-hire = X%, and recreational = X% of ABC (Established by using catch history from 1999-2008). This alternative would establish a commercial annual catch limit of X pounds whole weight, a for-hire annual catch limit of X pounds whole weight, and a recreational annual catch limit of X pounds whole weight. The commercial, for-hire, and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

Subalternative 3d. Commercial = X% of ABC, for-hire = X%, and recreational = X% of ABC (Established by using catch history from 2006-2008). This alternative would establish a commercial annual catch limit of X pounds whole weight, a for-hire annual catch limit of X pounds whole weight, and a recreational annual catch limit of X pounds whole weight. The commercial, for-hire, and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

Subalternative 3e. Commercial = X% of ABC, for-hire = X%, and recreational = X% of ABC (Established by using 50% of catch history from 1991-2008 + 50% of catch history from 2006-2008). This alternative would establish a commercial annual catch limit of X pounds whole weight, a for-hire annual catch limit of X pounds whole weight, and a recreational annual catch limit of X pounds whole weight. The commercial, for-hire, and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

2.3.3 Action 15: Black Grouper Annual Catch Limits

Commercial

Alternative 1 (No action). Do not specify a commercial sector ACL for black grouper.

Alternative 2. ACL = OY = ABC.

Alternative 3. ACL = OY = 90% of the ABC.

Alternative 4. ACL = OY = 80% of the ABC.

Recreational

Alternative 1 (No action). Do not specify a recreational sector ACL for black grouper.

Alternative 2. The recreational sector ACL = OY = 85% of the recreational sector ABC.

Alternative 3. The recreational sector ACL = OY = 75% of the recreational sector ABC.

Alternative 4. The recreational sector ACL = OY = sector ACL[(1-PSE) or 0.5, whichever is greater].

2.3.4 Action 16: Accountability Measures/Management Measures for Black Grouper

Alternative 1 (No Action). Retain the existing regulations for black grouper (Table X).

Table 2-7. Existing regulations and those proposed in Amendment 17B for black grouper.

Current Regulations		
	Commercial	Recreational
Bag limit		Three grouper aggregate bag limit per person per day. Exclude the captain and crew on for-hire vessels from possessing a bag limit for groupers
In-season closures	Gag commercial ACL of 352,940 lbs gutted weight. After the commercial ACL is met, all purchase and sale of the following species is prohibited and harvest and/or possession is limited to the bag limit: gag; black grouper; red grouper; scamp; red hind; rock hind; yellowmouth grouper; tiger grouper; yellowfin grouper; graysby; and coney.	
Minimum size limit	20 inch	
Seasonal closure	No fishing for and/or possession of the following species is allowed January through April: black grouper; red grouper; scamp; red hind; rock hind; yellowmouth grouper; tiger grouper; yellowfin grouper; graysby, and coney.	
Regulations proposed by Amendment 17B		
	Commercial	Recreational
	In addition to the gag sector-ACLs, establish an ACL for gag, black grouper, and red grouper of 662,403 lbs gutted weight (commercial) and 648,663 lbs gutted weight (recreational). The table below shows how the aggregate ACL was calculated. Prohibit the commercial	Establish a recreational ACL for gag, black grouper, and red grouper of 648,663 lbs gutted weight. If at least one of the species (gag, red grouper, or black grouper) <i>is overfished</i> and the sector ACL is projected to be met, prohibit the harvest and retention of the species or species group. If the ACL is exceeded, independent of stock status, the Regional

	possession of shallow water groupers when the gag or the gag, black grouper, and red grouper when the ACL is projected to be met.	Administrator shall publish a notice to reduce the sector ACL in the following year by the amount of the overage. For black grouper, black sea bass, gag, red grouper, and vermillion snapper, compare the recreational ACL with recreational landings over a range of years. For 2010, use only 2010 landings. For 2011, use the average landings of 2010 and 2011. For 2012 and beyond, use the most recent three-year running average.
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Commercial

Alternative 2 (Preferred). After the commercial ACL is met, all purchase and sale of black grouper is prohibited and harvest and/or possession is limited to the bag limit.

Alternative 3 (Preferred). If the commercial sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the commercial sector ACL in the following season by the amount of the overage.

Recreational

Alternative 4 (Preferred). For in-season and post-season accountability measures, compare recreational ACL with recreational landings over a range of years. For 2011, use only 2011 landings. For 2012, use the average landings of 2011 and 2012. For 2013 and beyond, use the most recent three-year running average.

Alternative 5 (Preferred). The Regional Administrator shall publish a notice to close the recreational fishery when the ACL is projected to be met.

Alternative 6 (Preferred). Take corrective action if the recreational ACL has been exceeded.

Subalternative 6a (Preferred). If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the recreational sector ACL in the following season by the amount of the overage.

Subalternative 6b. If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the length of the following fishing year by the amount necessary to ensure landings do not exceed the recreational sector ACL for the following fishing year.

	Commercial (lbs gw)	Recreational (lbs gw)	Total (lbs gw)
Gag ACL	352,940	340,060	693,000

<i>(Amend 16)</i>			
Projected black grouper landings (2010) ¹	86,886	31,863	118,749
Projected red grouper landings (2010) ²	221,557	276,740	498,297
Gag, black, red aggregate ACL <i>(proposed in Amend 17B)</i>	662,403	648,663	1,311,006

¹The commercial projected landings for 2010 was computed by using the annual average from 04-06. The landings from Jan through April were zero to account for the 4 month closure implemented on July 29, 2009. The landings from December were zero to account for the projected shallow water grouper closure when the gag commercial ACL would be met.

²The recreational projected landings for 2010 was computed by using the annual average from 04-06. The landings from Jan through April were zero to account for the 4 month closure implemented on July 29, 2009. In addition, harvest was reduced by 2.5% to account for the change in aggregate bag limit from 5 to 3.

2.4 Dolphin Wahoo Fishery Management Plan

2.4.1 Dolphin

2.4.1.1. Action 17: Acceptable Biological Catch Control Rule and ABC for Dolphin

Alternative 1. No action. Do not establish an ABC Control Rule for dolphin.

Alternative 2. Establish an ABC Control Rule where ABC equals OFL. This 10,679,395 lbs whole weight.

Alternative 3. Establish an ABC Control Rule where ABC equals a percentage of OFL.

Subalternative 3a. ABC = 65%OFL = 7,723,884 lbs gutted weight. (New value = 6,941,407 lbs whole weight.)

Subalternative 3b. ABC = 75%OFL = 8,912,174 lbs gutted weight. (New value = 8,009,546 lbs whole weight.)

Subalternative 3c (Preferred). ABC = 85%OFL = 10,100,463 lbs gutted weight. (New value = 9,077,486 lbs whole weight.)

Alternative 4. Establish an ABC Control Rule where ABC equals a percentage of the yield at MFMT.

Subalternative 4a. ABC = yield at 65%MFMT

Subalternative 4b. ABC = yield at 75%MFMT

Subalternative 4c. ABC = yield at 85%MFMT

2.4.1.2 Action 18: Allocations for Dolphin

Alternative 1 (No Action). Continue to use the allocations for dolphin specified in the Dolphin/Wahoo FMP (13% commercial/87% recreational).

Discussion

The Dolphin/Wahoo FMP (SAFMC 2004) established what is called a “soft cap” on the commercial sector. This soft cap does not trigger a closure of the commercial sector; however, it does trigger a review of the data and a determination whether action is necessary. The wording is as follows:

ACTION 12. Establish a cap of 1.5 million pounds or 13% of total landings, whichever is greater, for the commercial fishery for dolphin. Should the catch exceed this level, the Council will review the data and evaluate the need for additional regulations which may be established through the framework.

The commercial and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 2. Define allocations for dolphin based upon landings from the ALS, MRFSS, and headboat databases. The allocation would be based on landings from the years 1999-2008. The allocation would be 7% commercial and 93% recreational. The commercial and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 3 (Preferred). Define allocations for dolphin based upon landings from the ALS, MRFSS, and headboat databases. The allocation would be based on the following formula for each sector:

Sector apportionment = (50% * average of long catch range (lbs) 1999-2008) + (50% * average of recent catch trend (lbs) 2006-2008). The allocation would be 8% commercial and 92% recreational. The commercial and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 4. Define allocations for dolphin based upon landings from the ALS, MRFSS, and headboat databases. The allocation would be based on the following formula for each sector: Sector apportionment = (50% * average of long catch range (lbs) 1999-2008) + (50% * average of recent catch trend (lbs) 2006-2008). The allocation would be 7.7% commercial, 0.3% for-hire, and 92% private recreational. The commercial, for-hire, and private recreational allocations specified for 2011 would remain in effect beyond 2011 until modified. (Note: The for-hire percentage only includes headboats because the charter boat catches are included in MRFSS.)

Table 1. Annual landings of dolphin by region, 1999-2009.

Year	Commercial			Recreational					
	NE and Mid Atl	South Atl	Total Comm	MRFSS NE	MRFSS Mid-Atl	MRFSS South Atl	MRFSS Total	*Headboat	Total Rec
1999	105,495	944,183	1,049,678	1,442	294,477	9,780,115	10,076,034	49,796	10,125,830
2000	42,596	948,127	990,723	0	656,349	12,411,764	13,068,113	69,888	13,138,001
2001	81,030	698,239	779,269	0	181,604	13,425,454	13,607,058	72,524	13,679,582
2002	136,047	610,411	746,458	123,339	573,785	10,616,966	11,314,090	39,236	11,353,326
2003	68,713	679,482	748,195	0	308,110	8,640,423	8,948,533	16,546	8,965,079
2004	66,543	755,222	821,765	0	388,188	6,915,222	7,303,410	26,973	7,330,383
2005	42,732	541,321	584,053	0	143,815	9,245,951	9,389,766	23,658	9,413,424
2006	47,399	598,216	645,615	0	518,597	8,999,462	9,518,059	25,903	9,543,962
2007	134,532	844,976	979,508	5,853	229,933	10,186,705	10,422,491	47,494	10,469,985
2008	74,336	761,070	835,406	0	254,157	7,980,409	8,234,566	12,825	8,247,391
2009	118,481	685,091	803,572	0	42,811	4,485,448	4,528,259	0	4,528,259
Total	917,904	8,066,338	8,984,242	130,634	3,591,826	102,687,919	106,410,379	384,843	106,795,222
Average	83,446	733,303	816,749	11,876	326,530	9,335,265	9,673,671	34,986	9,708,657
%	10.22	89.78	100.00	0.12	3.36	96.15	99.64	0.36	100.00

Source: Commercial dolphin landings for VA north are from SEFSC. Commercial landings for NC to FL are from ALS (except 2009). Data for 2009 are incomplete. *Headboat data are from South Atlantic only.

2.4.1.3 Action 19: Annual Catch Limits for Dolphin

Alternative 1 (No action). There is no ACL specified for dolphin. OY for dolphin is the amount of harvest that can be taken by fishermen while not exceeding 75% of MSY (between 14.1 and 34.9 million pounds).

Discussion

The Dolphin/Wahoo FMP (SAFMC 2004) established what is called a “soft cap” on the commercial sector. This soft cap does not trigger a closure of the commercial sector; however, it does trigger a review of the data and a determination whether action is necessary. The wording is as follows:

ACTION 12. Establish a cap of 1.5 million pounds or 13% of total landings, whichever is greater, for the commercial fishery for dolphin. Should the catch exceed this level, the Council will review the data and evaluate the need for additional regulations which may be established through the framework.

Alternative 2. $ACL = OY = ABC$.

Note: The preferred alternative for the OY Action (deleted as per Council’s direction in September 2010, Motion #47) was $OY = ABC = 10,100,463$ pounds (New number = $OY = ABC = 9,077,486$ lbs whole weight)

Subalternative 2a. Establish a single ACL (commercial and recreational).

Subalternative 2b. Establish commercial and recreational ACLs based on preferred allocation alternative.

Alternative 3. $ACL = OY = 85\%$ of the ABC.

Subalternative 3a. Establish a single ACL (commercial and recreational).

Subalternative 3b. Establish commercial and recreational ACLs based on preferred allocation alternative.

Alternative 4. $ACL = OY = 75\%$ of the ABC.

Subalternative 4a. Establish a single ACL (commercial and recreational).

Subalternative 4b. Establish commercial and recreational ACLs based on preferred allocation alternative.

Alternative 5. $ACL = OY = 65\%$ of the ABC.

Subalternative 5a. Establish a single ACL (commercial and recreational).

Subalternative 5b. Establish commercial and recreational ACLs based on preferred allocation alternative.

Discussion

The AP discussed adding an alternative that would set ACL equal to 65%, 75%, or 85% of 46.5 million pounds (the top end of the current MSY range). The AP could not provide an ACL

recommendation at this time given the problems with the landings data. The AP did recommend the Council examine a regional approach to allocating the quotas.

2.4.1.4 Action 20: Accountability Measures for Dolphin

NOTE: Per Council guidance for snapper grouper species, the ACT action was included as additional alternatives under the AM action

Alternative 1 (No Action). There is no hard quota for dolphin and there are no AMs in place for dolphin.

Commercial

Alternative 2 (Preferred). After the commercial ACL **is projected to be** met, all purchase and sale of dolphin is prohibited and harvest and/or possession is limited to the bag limit.

Alternative 3. If the commercial sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the commercial sector ACL in the following season by the amount of the overage.

Alternative 4. Specify commercial sector ACTs for dolphin. **(NOTE: Council chose no action alternative as preferred in September 2010: do not specify commercial sector ACTs for dolphin)**

Subalternative 4a. The commercial sector ACT equals the commercial sector ACL.

Subalternative 4b. The commercial sector ACT equals 90% of the commercial sector ACL.

Subalternative 4c. The commercial sector ACT equals 80% of the commercial sector ACL.

Table 2. The commercial sector ACT for each of the alternatives. Values are in lbs gutted weight.

Species	Preferred Commercial ACL	Commercial Sector ACT		
		ACT Alt. 2; ACT=ACL	ACT Alt. 3; ACT=90%(ACL)	ACT Alt. 4; ACT=80%(ACL)
Dolphin	712,974	712,974	641,677	570,379

ABC = 75% OFL = 8,912,174. The values above are examples, once the Council chooses a preferred for ACL, the final numbers will be added.

Recreational

Alternative 5. For in-season and post-season accountability measures, compare recreational ACL with recreational landings over a range of years. For 2011, use only 2011 landings. For 2012, use the average landings of 2011 and 2012. For 2013 and beyond, use the most recent three-year running average.

Alternative 6. The Regional Administrator shall publish a notice to close the recreational fishery when the ACL is projected to be met.

Alternative 7. Take corrective action if the recreational ACL has been exceeded.

Subalternative 7a. If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the recreational sector ACL in the following season by the amount of the overage.

Subalternative 7b. If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the length of the following fishing year by the amount necessary to ensure landings do not exceed the recreational sector ACL for the following fishing year.

Subalternative 7c (Preferred). If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the bag limit by the amount necessary to ensure landings do not exceed the recreational sector ACL for the following fishing year.

Alternative 8. Specify recreational sector ACTs for dolphin.

Subalternative 8a. The recreational sector ACT equals 85% of the recreational sector ACL.

Subalternative 8b. The recreational sector ACT equals 75% of the recreational sector ACL.

Subalternative 8c (Preferred). The recreational sector ACT equals sector ACL[(1-PSE) or 0.5, whichever is greater] *based on the 5 year average PSE (2005-09). The recreational sector ACT = 7,584,260 lbs gutted weight.*

The 5 year average PSE = 7.5. The recreational sector ACT = 8,199,200(1-0.075) = 7,584,260 lbs gutted weight.

Table 3. Proportional Standard Errors (PSEs) for dolphin from numbers estimates (A+B1) for all modes. Obtained from <http://www.st.nmfs.noaa.gov> on May 13, 2010.

Species	2003	2004	2005	2006	2007	2008	2009	3 year average (2007-09)	5 year average (2005-09)
Dolphin	7.2	6.4	10.2	6.3	6.7	7.1	7.1	7.0	7.5

Table 4. The recreational ACT for each of the alternatives. Values are in lbs whole weight.

Species	Preferred Recreational Sector ACL	Recreational Sector ACT		
		ACT Alt. 2; ACT=85%(ACL)	ACT Alt. 3; ACT=75%(ACL)	ACT Alt. 4; ACT equals sector ACL[(1-PSE) or 0.5, whichever is greater]
Dolphin	8,199,200	6,969,320	6,149,400	7,584,260

Discussion

The AP does not want to see a closure of the recreational fishery and recommended that Alternative 3 be modified to provide that the bag limit may be reduced the following fishing year if required.

2.4.1.5 Action 21: Management Measures for Dolphin

Alternative 1 (No action). Continue to prohibit sale of recreationally caught dolphin in or from the Atlantic EEZ except for allowing for-hire vessels that possess the necessary state and Federal commercial permits to sell dolphin harvested under the bag limit in or from the Atlantic EEZ. Continue with a cap of 1.5 million pounds or 13% of total landings, whichever is greater, for the commercial fishery for dolphin. Should the catch exceed this level, the Council will review the data and evaluate the need for additional regulations which may be established through the framework. Continue with the recreational daily bag limit of 10 dolphin per person per day in or from the EEZ not to exceed 60 dolphin per boat per day whichever is less. Headboats (with a valid certificate of inspection) will be allowed a bag limit of 10 dolphin per paying passenger. Continue the minimum size limit for dolphin of 20 inches fork length off Florida and Georgia and no minimum size limit north of Georgia. Continue to specify allowable gear for dolphin in the Atlantic EEZ as longline; hook and line gear including manual, electric, or hydraulic rod and reels; bandit gear; handline; and spearfishing gear (including powerheads). **NOTE: Need to add Florida regs.**

Present the current regulations in a table.

Alternative 2. Prohibit bag limit sales of dolphin from for-hire vessels.

Alternative 3. Establish a minimum size limit of 20 inches fork length off South Carolina.

Alternative 4. Increase the minimum size limit to 22 inches or 24 inches *fork length*.

Alternative 5. Reduce the boat limit (e.g. reduce by 1/3). **Note: this applies only to charterboats and recreational vessels, not headboats.**

Sub-Alternative 5a. Reduce the boat limit by 25%.

Sub-Alternative 5b. Reduce the boat limit by 33%.

Sub-Alternative 5c. Reduce the boat limit by 50%.

Alternative 6. Consider a series of trip limits on the commercial fishery (e.g., 4,000 pounds with alternatives higher and lower).

Sub-Alternative 6a. Establish a 3,000 pound trip limit for dolphin north of 31° N. Latitude and a 1,000 pound trip limit for dolphin south of 31° N. Latitude (between Jekyll Island and Little Cumberland Island, Georgia) in the EEZ southward through the SAFMC's area of jurisdiction for dolphin (landed head and tail intact) with no transfer at sea allowed.

Sub-Alternative 6b. Establish a 5,000 pound trip limit.

Sub-Alternative 6c. Establish a 4,000 pound trip limit.

Sub-Alternative 6d. Establish a 3,000 pound trip limit.

Sub-Alternative 6e. Establish a 2,000 pound trip limit.

Sub-Alternative 6f. Establish a 1,000 pound trip limit.

Discussion

The AP Chair asked Don Hammond to provide some input on dolphin life history. Mr. Hammond provided the following input:

1. Dolphin annual mortality is very high; about 99.7% of fish spawned die each year.
2. Growth is very rapid reaching 40 pounds within 12 months.
3. Longevity is short with most fish caught being 1-2 years old and the largest/oldest being about 4 years old.
4. Maturity is reached very quickly beginning at 14" fork length and 100% mature at 22" fork length.
5. Dolphins are reproductively active year round and are in a constant state of gonadal development.

The AP recommended **Alternative 1 (No action)** at this time because there is no problem identified that needs to be addressed. The AP recognized that this will need to be revisited once the Scientific and Statistical Committee presents their Overfishing Level (OFL) and Acceptable Biological Catch (ABC) recommendations. The AP also added Options 6 (now Alternative 5) and 7 (now in Appendix A) and requested that the impacts be examined state by state. NOTE: Make sure this matches the current numbering of alternatives.

2.4.2 Wahoo

2.4.2.1 Action 22: Acceptable Biological Catch (ABC) Control Rule and ABC for Wahoo

ABC is recommended by the Scientific and Statistical Committee and specified by the Council. The SSC provided an ABC Control Rule and value at their April 2010 meeting. Insert further discussion with the SSC's rationale for their ABC recommendation.

Alternative 1 (No action). Do not establish an ABC Control Rule for wahoo.

Alternative 2. Establish an ABC Control Rule where ABC equals OFL. OFL = 1,226,716 lbs whole weight.

Alternative 3. Establish an ABC Control Rule where ABC equals a percentage of OFL.

Subalternative 3a. ABC=65%OFL = 715,000 lbs gutted weight. NEW VALUE = ABC=65%OFL = 784,154 lbs whole weight.

Subalternative 3b. ABC=75%OFL = 825,000 lbs gutted weight. NEW VALUE = ABC=75%OFL = 904,793 lbs whole weight.

Subalternative 3c (Preferred). ABC=85%OFL = 935,000 lbs gutted weight. NEW VALUE = ABC=85%OFL = 1,025,432 lbs whole weight.

Alternative 4. Establish an ABC Control Rule where ABC equals a percentage of the yield at MFMT.

Subalternative 4a. ABC=yield at 65%MFMT

Subalternative 4b. ABC=yield at 75%MFMT

Subalternative 4c. ABC=yield at 85%MFMT

2.4.2.2 Action 23: Allocations for Wahoo

Alternative 1 (No action). Do not define allocations for wahoo.

Alternative 2. Define allocations for wahoo based upon landings from the ALS, MRFSS, and headboat databases. The allocation would be based on landings from the years 2006-2008. The allocation would be 4% commercial and 96% recreational. The commercial and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 3 (Preferred). Define allocations for wahoo based upon landings from the ALS, MRFSS, and headboat databases. The allocation would be based on the following formula for each sector:

Sector apportionment = (50% * average of long catch range (lbs) 1986(or 1999)-2008) + (50% * average of recent catch trend (lbs) 2006-2008). The allocation would be 5% commercial and 95% recreational. The commercial and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 4. Define allocations for dolphin based upon landings from the ALS, MRFSS, and headboat databases. The allocation would be based on the following formula for each sector:
Sector apportionment = (50% * average of long catch range (lbs) 1986(or 1999)-2008) + (50% * average of recent catch trend (lbs) 2006-2008). The allocation would be 4.65% commercial, 0.42% for-hire, and 94.93% private recreational. The commercial, for-hire, and private recreational allocations specified for 2011 would remain in effect beyond 2011 until modified. (Note: The for-hire percentage only includes headboats because the charter boat catches are included in MRFSS.)

Table 5. Annual landings of wahoo by region, 1999-2009.

Year	Commercial			Recreational (MRFSS & Headboat)					
	NE and Mid Atl	South Atl	Total Comm	MRFSS NE	MRFSS Mid-Atl	MRFSS South Atl	MRFSS Total	*Headboat	Total Rec
1999	4,504	94,655	99,159	0	232,779	1,167,516	1,400,295	5,358	1,405,653
2000	3,514	61,769	65,283	0	44,275	1,033,979	1,078,254	5,467	1,083,721
2001	2,231	58,842	61,073	0	0	1,049,762	1,049,762	863	1,050,625
2002	2,344	58,359	60,703	0	0	1,239,973	1,239,973	4,881	1,244,854
2003	1,316	59,404	60,720	0	0	1,098,636	1,098,636	623	1,099,259
2004	3,575	61,910	65,485	0	21,665	923,231	944,896	5,216	950,112
2005	4,102	43,642	47,744	0	1,689	808,367	810,056	5,790	815,846
2006	2,120	39,419	41,539	0	3,448	756,696	760,144	3,001	763,145
2007	5,428	54,130	59,558	0	94,163	1,819,904	1,914,067	10,425	1,924,492
2008	3,588	37,998	41,586	0	1,889	626,869	628,758	2,767	631,525
2009	0	12,296	12,296	0	0	297,090	297,090	0	297,090
Total	32,722	582,424	615,146	0	399,908	10,822,023	11,221,931	44,392	11,266,323
Average	2,975	52,948	55,922	0	36,355	983,820	1,020,176	4,036	1,024,211
%	5.32	94.68	100.00	0.00	3.55	96.06	99.61	0.39	100.00

Source: Commercial dolphin landings for VA north are from SEFSC. Commercial landings for NC to FL are from ALS (except 2009). Data for 2009 are incomplete. *Headboat data are from South Atlantic only.

2.4.2.3 Action 24: Annual Catch Limits for Wahoo

Alternative 1 (No action). There is no ACL specified for wahoo. Currently OY for wahoo is the amount of harvest that can be taken by fishermen while not exceeding 100% of MSY (between 1.41 and 1.63 million pounds).

Alternative 2. ACL = OY = ABC. The preferred alternative for the OY Action (deleted as per Council's direction in September 2010, Motion #57) OY = ABC = 935,000 lbs gutted weight. NEW VALUE = OY = ABC = 1,206,391 lbs whole weight

Subalternative 2a. Establish a single ACL (commercial and recreational).

Subalternative 2b. Establish commercial and recreational ACLs based on preferred allocation alternative.

Alternative 3. ACL = OY = 85% of the ABC.

Subalternative 3a. Establish a single ACL (commercial and recreational).

Subalternative 3b. Establish commercial and recreational ACLs based on preferred allocation alternative.

Alternative 4. ACL = OY = 75% of the ABC.

Subalternative 4a. Establish a single ACL (commercial and recreational).

Subalternative 4b. Establish commercial and recreational ACLs based on preferred allocation alternative.

Alternative 5. ACL = OY = 65% of the ABC.

Subalternative 5a. Establish a single ACL (commercial and recreational).

Subalternative 5b. Establish commercial and recreational ACLs based on preferred allocation alternative.

Table 2-x. ACL (pounds whole weight) described in Alternatives 2-5 for wahoo.

	Alternative 2		Alternative 3		Alternative 4		Alternative 5	
Sub-alt a	ABC	1,206,391	85%ABC	1,025,432	75% ABC	904,793	65%ABC	784,154
	Comm	Rec	Comm	Rec	Comm	Rec	Comm	Rec
Sub-alt b	60,320	1,146,071	51,272	974,160	45,240	859,553	39,208	744,946

2.4.2.4 Action 25: Accountability Measures for Wahoo

Alternative 1 (No Action). There is no hard quota for wahoo and there are no AMs in place for wahoo.

Commercial

Alternative 2 (Preferred). After the commercial ACL is **projected to be** met, all purchase and sale of wahoo is prohibited and harvest and/or possession is limited to the bag limit.

Alternative 3. If the commercial sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the commercial sector ACL in the following season by the amount of the overage.

Alternative 4. Establish commercial sector ACT for wahoo.

Subalternative 4a. The commercial sector ACT equals the commercial sector ACL.

Subalternative 4b. The commercial sector ACT equals 90% of the commercial sector ACL.

Subalternative 4c. The commercial sector ACT equals 80% of the commercial sector ACL.

Table 6. The commercial sector ACT for each of the alternatives. Values are in lbs whole weight.
Note: This table will be completed once the Council chooses the preferred ACL alternative.

Species	Preferred Commercial ACL	Commercial Sector ACT		
		ACT Alt. 2; ACT=ACL	ACT Alt. 3; ACT=90%(ACL)	ACT Alt. 4; ACT=80%(ACL)
Wahoo	41,250	41,250	37,125	33,000

ABC = 75% OFL. The values above are examples, once the Council chooses a preferred for ACL, the final numbers will be added.

Recreational

Alternative 4 (Preferred). For in-season and post-season accountability measures, compare recreational ACL with recreational landings over a range of years. For 2011, use only 2011 landings. For 2012, use the average landings of 2011 and 2012. For 2013 and beyond, use the most recent three-year running average.

Alternative 5. The Regional Administrator shall publish a notice to close the recreational fishery when the ACL is projected to be met.

Alternative 6. Take corrective action if the recreational ACL has been exceeded.

Subalternative 6a. If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the recreational sector ACL in the following season by the amount of the overage.

Subalternative 6b. If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the length of the following fishing year by the amount necessary to ensure landings do not exceed the recreational sector ACL for the following fishing year.

Subalternative 6c (Preferred). If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the bag limit by the amount necessary to ensure landings do not exceed the recreational sector ACL for the following fishing year.

Alternative 7. Establish recreational sector ACT for wahoo

Subalternative 7a. The recreational sector ACT equals 85% of the recreational sector ACL.

Subalternative 7b. The recreational sector ACT equals 75% of the recreational sector ACL.

Subalternative 7c (Preferred). The recreational sector ACT equals sector ACL[(1-PSE) or 0.5, whichever is greater] *based on the 5 year average PSE (2005-09). The recreational sector ACT = 674,809 lbs gutted weight.*

Discussion

The AP does not want to see a closure of the recreational fishery and recommended that Alternative 3 be modified to provide that the bag limit may be reduced the following fishing year if required.

The 5 year PSE = 13.9. The recreational sector ACT = $825,000(1-13.9) = 674,809$ lbs gutted weight.

Table 7. Proportional Standard Errors (PSEs) for wahoo from numbers estimates (A+B1) for all modes. Obtained from <http://www.st.nmfs.noaa.gov> on May 13, 2010.

Species	2003	2004	2005	2006	2007	2008	2009	3 year average (2007-09)	5 year average (2005-09)
Wahoo	17.3	17.7	14.4	11.1	13.3	15.5	15.4	14.7	13.9

Table 8. The recreational ACT for each of the alternatives. Values are in lbs gutted weight.

Species	Preferred Recreational Sector ACL	Recreational Sector ACT		
		ACT Alt. 2; ACT=85%(ACL)	ACT Alt. 3; ACT=75%(ACL)	ACT Alt. 4; ACT equals sector ACL[(1-PSE) or 0.5, whichever is greater]
Wahoo	783,750	666,188	587,813	674,809

2.4.2.5 Action 26: Management Measures for Wahoo

Alternative 1 (No action). Continue to prohibit sale of recreationally caught wahoo in or from the Atlantic EEZ. Continue the 500 pound commercial trip limit for wahoo (landed head and tail intact) with no transfer at sea allowed. Continue the recreational bag limit of 2 wahoo per person per day in the Atlantic EEZ. Continue to specify allowable gear for wahoo in the Atlantic EEZ as longline; hook and line gear including manual, electric, or hydraulic rod and reels; bandit gear; handline; and spearfishing gear (including powerheads).

Put no action in a table.

Alternative 2. Establish a boat limit of 2-12 wahoo per boat/vessel per day in the recreational fishery.

Discussion

The AP recommended Alternative 1. No Action at this time because there is no problem identified that needs to be addressed. The AP recognized that this will need to be revisited once the Scientific and Statistical Committee (SSC) presents their Overfishing Level (OFL) and Acceptable Biological Catch (ABC) recommendations

2.4.3 Action 27: Designate Sargassum as Ecosystem Component Species and withdraw the Sargassum FMP

(IPT recommends that this action be considered in another amendment. Withdrawing an FMP can be its own amendment, and would cause an enormous delay in fulfilling the 2011 deadline for this amendment.)

Alternative 1. No Action. Do not designate *Sargassum* species as Ecosystem Component species, and do not withdraw the Sargassum FMP.

Alternative 2. Designate *Sargassum* species as ecosystem component species and withdraw the Sargassum FMP.

2.4.4 Action 28: Modify the Dolphin/Wahoo Framework Procedure

(IPT recommends that this action be considered in another amendment.)

Alternative 1. No Action. Do not modify the dolphin/wahoo framework procedure. Retain the framework established in the dolphin wahoo FMP effective 2004.

Alternative 2. Modify the dolphin/wahoo framework to allow the Regional Administrator to publish a Notice in the Federal Register to reduce the commercial sector ACL in the following season by the amount of the overage, if the commercial sector ACL is exceeded.

Alternative 3. Modify the dolphin/wahoo framework to allow the Regional Administrator to publish a Notice in the Federal Register to close the recreational fishery when the ACL is projected to be met.

Alternative 4. Modify the dolphin/wahoo framework to allow the Regional Administrator to publish a Notice in the Federal Register to take corrective action if the recreational ACL has been exceeded.

Option a. If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the recreational sector ACL in the following season by the amount of the overage.

Option b. If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the length of the following fishing year by the amount

necessary to ensure landings do not exceed the recreational sector ACL for the following fishing year.

2.5 Sargassum Fishery Management Plan

IPT recommends that Sargassum be covered in a different amendment, since there is no fishery for this species, and existing regulations and SSC guidance (see below), act as an AM.

IPT requests that all actions under this FMP be removed.

2.5.1 Acceptable Biological Catch Control Rule and ABC for Sargassum

IPTs suggestion for ABC discussion:

There has not been a fishery for *Sargassum* in the past twelve years. *Sargassum* is not a significant bycatch in any fishery. It is a critical component of the ecosystem providing essential habitat to numerous harvest fish species and protected resources. Because of this, the SSC believes *Sargassum* should be labeled and treated as an “ecosystem component species.” However, because *Sargassum* currently is placed within an FMP, an ABC is required. An MSY exists that could be the basis for an ABC, but SSC stock assessment scientists determined that the MSY was not developed through a traditional stock assessment method but was based on informal methods involving aerial photography and estimates of doubling time. As a result, the SSC considered the MSY value to be extremely uncertain and unreliable. Based upon the recommendation of its stock assessment experts, the SSC chose not to use the MSY value previously reported for ABC calculations.

At the Second National SSC Meeting, Dr. Rick Methot (NMFS/SFD) presented a framework for dealing with data-poor stocks (see Section 1.4.1). Under this framework, a stock is categorized based the status of the stock relative to its fishery. Methot has one category labeling the catch “nil,” where the stock is not caught in any significant amounts. Methot recommends that stocks in this category be treated as ecosystem component stocks. Methot also has a category labeling the catch “small,” where there is no risk of overfishing and the catch is not significant enough to be a concern. In these cases, Methot suggests setting the ABC greater than or equal to the historical average catch.

Historically the *Sargassum* fishery can be classified as “small,” where overfishing has not been a concern. The average catch from 1976 to 2009 equaled 12,800 pounds wet weight. The SSC therefore recommended an ABC for *Sargassum* of 12,800 pounds wet weight. Furthermore, the previous OY set by the Council in the FMP was 5,000 pounds. The SSC understood that the OY was set at that level out of concern for the ecosystem services provided by *Sargassum*. For this reason, the SSC recommended that the Council establish an ACL/ACT equal to the previous OY value of 5,000 pounds.

However, given that there have been no landings over the past twelve years, the *Sargassum* fishery would be placed in the “nil” category using Methot’s framework adopted by the SSC. Under this framework, *Sargassum* would be labeled an “ecosystem component species” and would not require an ABC. As stated at the beginning of this section, the SSC recommended that the Council take the actions necessary to reclassify *Sargassum* as such.

The following restrictions are in place for *Sargassum* in the South Atlantic: (1) harvest and possession of *Sargassum* is prohibited south of the latitude line representing the North Carolina/South Carolina border (34 degrees North latitude), (2) all harvest is prohibited within 100 miles of shore between the 34 degrees North latitude line and the line representing the North Carolina/Virginia border, (3) harvest is limited to the months of November through June, (4) official observers are required on any harvesting trip, (5) an annual quota of 5,000 pounds landed wet weight, and (6) nets used to harvest *Sargassum* must be constructed of 4” stretch mesh or larger fitted to a frame no larger than 4 X 6 feet.

2.6 Golden Crab Fishery Management Plan

2.6.1 Acceptable Biological Catch Control Rule and ABC

Below is IPTs suggestion for discussion with SSC’s rationale for their ABC recommendation:

It is widely argued that the golden crab is an underutilized resource and that the fishery exploits only a portion of the species’ range.

The SSC recommended ABC for golden crab in April 2010 based on the control rule derived at that meeting. At their June 2010 meeting the Council rejected that control rule and removed ABC recommendations based on that control rule.

The Council agreed with the SSC comments from April 2010 that there was likely additional information that could be compiled for golden crab that could better support fishing level recommendations. One of the concerns was that there was a wide range of prior estimates of productivity and acceptable yield.

At their August 2010 meeting, the SSC considered additional information on golden crab. These data included additional landings, CPUE, mean sizes, and history and background of past MSY values.

At the Second National SSC Meeting, Dr. Rick Methot (NMFS/SFD) presented a framework for dealing with data-poor stocks ([see Section 1.4.1](#)). Under this framework, a stock is categorized based the status of the stock relative to its fishery. The “small” category applies to situations where there is no risk of overfishing and the catch is not significant enough to be a concern. In these cases, Methot suggests setting the ABC greater than or equal to the historical average catch. Therefore the SSC discussed comments provided by industry representatives regarding the fishery, and how this fishery might fit into Methot’s range of unassessed stock categories. The SSC concluded that the golden crab fishery is small; the catch is large enough to warrant including it in the fishery but not enough to be of concern. Based on the rationale from earlier discussions, it was suggested that ABC and ACL could be set above historical catch levels. The SSC recommended that ABC be set at 2 million pounds with a precautionary note that more data are needed. Issues such as an updated, possibly a benchmark assessment, with other models

including the surplus production model were suggested, along with improvements in data collection.

2.6.2 Action 29: Annual Catch Limit for Golden Crab

Alternative 1. No action. THERE IS NO ACL SPECIFIED FOR GOLDEN CRAB.

Alternative 2 (Preferred). $ACL = OY = ABC$

Alternative 3. $ACL = OY = 85\%$ of the ABC.

Alternative 4. $ACL = OY = 75\%$ of the ABC

Alternative 5. $ACL = OY = 65\%$ of the ABC

2.6.3 Action 30: Accountability Measures for Golden Crab

Alternative 1 (No Action). Do not establish accountability measures for Golden Crab.

Alternative 2 (Preferred). After the ACL is projected to be met, all harvest, purchase, and sale of golden crab is prohibited.

Alternative 3 (Preferred). If the ACL is exceeded, the Regional Administrator shall publish a notice to reduce the ACL or ACT in the following season by the amount of the overage.

2.6.4 Action 31: Modify the Golden Crab Framework Procedure

(IPT recommends that this action be considered in another amendment.)

Alternative 1 (No Action). Do not establish accountability measures for Golden Crab.

Alternative 2 (Preferred). After the ACL is projected to be met, all harvest, purchase, and sale of golden crab is prohibited.

Alternative 3 (Preferred). If the ACL is exceeded, the Regional Administrator shall publish a notice to reduce the ACL or ACT in the following season by the amount of the overage.

3.0 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° to 81° F) due to the proximity of the Gulf Stream, with lower shelf habitat temperatures varying from 11° to 14° C (52° to 57° 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 km²) 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.

3.1.4 Habitat Areas of Particular Concern

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

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

In addition to protecting habitat from fishing related degradation through 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 the Comprehensive ACL Amendment are black listed below in Table XX. A complete description of the life history characteristics of these species can be found in the South Atlantic Fishery Ecosystem Plan, Section XX.

3.3 Science Underlying the Management of Species Most Impacted by this FMP Amendment

Table XX identifies the species addressed in this amendment and includes a summary of the assessment process of these species.

Many of the species in the South Atlantic region are assessed through the Southeast Data, Assessment, and Review (SEDAR) process. However, many of the species in this amendment are lower priority species and have not been addressed through this 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.

3.4 Other Affected Council-Managed Species

3.5 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). 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*]). Designated critical habitat for the *Acropora* corals also occurs within the South Atlantic region. The species potentially affected by the fishery are discussed below.

3.5.1 ESA-Listed Sea Turtles

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

Green sea turtle hatchlings are thought to occupy pelagic areas of the open ocean and are often associated with Sargassum rafts (Carr 1987, Walker 1994). Pelagic stage green sea turtles are thought to be carnivorous. Stomach samples of these animals found ctenophores and pelagic

snails (Frick 1976, Hughes 1974). At approximately 20 to 25 cm carapace length, juveniles migrate from pelagic habitats to benthic foraging areas (Bjorndal 1997). As juveniles move into benthic foraging areas a diet shift towards herbivory occurs. They consume primarily seagrasses and algae, but are also known 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 routine 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).

3.5.2 ESA-Listed Marine Fish

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

3.5.3 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 (26°3'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).

3.5.4 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. 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 3-1).

The SDDP does not provide data on recreational fishing interactions with ESA-listed sea turtle species. However, anecdotal information indicates that recreational fishermen occasionally take sea turtles with hook-and-line gear. The biological opinion also used the extrapolated data from the SDDP to estimate the magnitude of recreational fishing on sea turtles (Table 3-1).

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 3-1).

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.

Subsequent to the completion of the opinion, two species of *Acropora* corals (*Acropora palmata* and *A. cervicornis*) were listed as threatened and critical habitat for these species has been designated. NOAA Fisheries analyzed the likely affects of the South Atlantic snapper-grouper fishery on the newly listed *Acropora* corals and their designated critical habitat in two memos dated July 9, 2007, and December 2, 2008. Each memo determined the fishery was not likely to interact with either species or critical habitat.

Table 3-1. Three year South Atlantic anticipated takes of ESA-Listed species by the snapper-grouper fishery

Species	Amount of Take	Total
Green	Total Take	39
	Lethal Take	14
Hawksbill	Total Take	4
	Lethal Take	3
Kemp's ridley	Total Take	19
	Lethal Take	8
Leatherback	Total Take	25
	Lethal Take	15
Loggerhead	Total Take	202
	Lethal Take	67
Smalltooth sawfish	Total Take	8
	Lethal Take	0

Source: NMFS 2006

3.5.5 Dolphin/Wahoo Fishery Interactions with ESA-Listed Species

The dolphin-wahoo fishery primarily uses hook-and-line gears (i.e., handline, rod and reel, and longline). On August 27, 2003, an ESA biological opinion was completed on the continued authorization of the Atlantic dolphin-wahoo fishery. The opinion concluded the fishery would not affect ESA-listed marine mammals or smalltooth sawfish, citing a very low likelihood of interactions between these species and the fishery. The opinion also concluded that interactions between the fishery and sea turtles were likely, but those interactions were not likely to jeopardize the continued existence of any listed sea turtle species.

The opinion authorized the annual incidental take of up to 12 loggerhead sea turtles, up to 12 leatherback sea turtles, and up to 2 hawksbill, green, or Kemp's ridley sea turtles (in combination), but not more than 16 individual sea turtles of all species in combination (i.e., the relative species composition may vary, but the total annual take is not anticipated to exceed 16). The opinion also authorized the lethal taking of up to 2 loggerhead sea turtles, up to 1 leatherback sea turtles, and up to 1 hawksbill, green, or Kemp's ridley sea turtle (in combination), but not more than 2 individual sea turtles of all species in combination (i.e., the relative species composition may vary, but the total annual lethal take is not anticipated to exceed 2). To date, no interactions between ESA-listed species and the fishery have been reported.

Subsequent to the completion of the opinion, two species of *Acropora* corals (*Acropora palmata* and *A. cervicornis*) were listed as threatened and critical habitat for these species has been designated. NOAA Fisheries Service analyzed the likely affects of the dolphin-wahoo fishery on the newly listed *Acropora* corals and their designated critical habitat in a May 18, 2010 memorandum and determined the fishery was not likely to interact with either species or their critical habitat.

3.5.6 *Sargassum* Fishery Interactions with ESA-Listed Species

Sargassum is collected using trawl gear. Sea turtles hatchlings are especially vulnerable to capture during *sargassum* harvest because of their close association with vegetative mats in the offshore environment. On March 21, 2003, an ESA biological opinion was completed on *sargassum* habitat fishery management plan. The opinion concluded the collection of *sargassum* would not affect ESA-listed marine mammals, citing the very low likelihood of interactions occurring between these species and harvest gear. The opinion also concluded that interactions between the fishery and sea turtles hatchlings and pelagic immature sea turtles were likely, but those interactions were not likely to jeopardize the continued existence of any listed sea turtle species. The opinion authorized the incidental take of up to 15 neonatal or pelagic immature loggerhead sea turtles over consecutive 5-year periods. Additionally, the incidental take of one neonatal or pelagic immature green, hawksbill, Kemp's ridley, or leatherback sea turtle, in combination (i.e., only one of any of those species, not one of each) was also authorized. NOAA Fisheries Service anticipated all of these takes would be lethal. To date, no interactions between any ESA-listed species and the fishery has been reported.

3.5.7 Golden Crab Fishery Interactions with ESA-Listed Species

The golden crab fishery operates at depths exceeding 800 feet and non-buoyed traps are used exclusively. Since the fishery operates at depths where *Acropora* and smalltooth sawfish do not occur and *Acropora* critical habitat is not designated, the fishery will not affect them. ESA-listed sea turtles could be injured by a trap as it is deployed, but these species are highly mobile and the likelihood of injury occurring is extremely low. No interactions between this fishery and ESA-listed sea turtles or marine mammals have ever been documented.

3.6 Administrative Environment

3.6.1 The Federal Fishery Management and Applicable Laws

3.6.1.1 Federal Fishery Management

Federal fishery management is conducted under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) (16 U.S.C. 1801 et seq.), originally enacted in 1976 as the Fishery Conservation and Management Act. The Magnuson-Stevens Act claims sovereign rights and exclusive fishery management authority over most fishery resources within the 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 M-Magnuson-Stevens Act and with other applicable laws summarized in **Appendix ___**. 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.

3.6.1.2 State Fishery Management

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

3.7 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.

3.8 Human Environment

3.8.1 Economic Description of the Commercial Fishery

3.8.1.1 Gear and Fishing Behavior

3.8.1.2 Landings, Revenue, and Economic Impact

3.8.1.3 Landings, Ex-vessel Value, Price, and Effort

3.8.1.4 Fisheries by State

3.8.1.5 Fisheries by Gear

3.8.1.6 Commercial Fishery by Species

3.8.1.7 Imports

3.8.2 Economic Description of the Recreational Fishery

3.8.2.1 Harvest

3.8.2.2 Effort

3.8.2.3 Permits

3.8.2.4 Economic Value, Expenditures, and Economic Impacts

3.8.2.5 Financial Operations of the Charter and Headboat Sectors

3.8.3 Social and Cultural Environment

The demographic description of the social environment is presented primarily at the county level and will include a brief discussion of the communities within in those counties that are most reliant upon the various species included, both commercially and recreationally. Utilizing demographic data at the county level will allow for updated statistics from the Census Bureau which produces estimates for geographies (counties; minor civil divisions; census designated places, etc.) that are larger than 20,000 prior to the decennial census.¹ Estimates for smaller geographies are not available at this time. Because employment opportunities often occur within a wider geographic boundary than just the community level, a discussion of various demographics within the county is appropriate and will be used to address environmental justice concerns. A more detailed description of environmental justice concerns will be included under Other Applicable Law Section 7.0, E.O. 12898. The county descriptions will correspond with recent research that was also conducted at the county level concerning social vulnerability and is described below.

The county-level description will focus primarily on the demographic character while fishing activity at the community level be described where possible. Here a brief discussion of coastal growth and development that seems to affect many coastal communities, especially those with either or both commercial and recreational working waterfronts that might be reflected in those demographic statistics. The rapid disappearance of these types of waterfronts has important implications as the disruption of various types of fishing-related businesses and employment. The process of “gentrification,” which tends to push those of a lower socio-economic class out of traditional communities as property values and taxes rise has become common along coastal areas of the U.S. and around the world. Working waterfronts tend to be displaced with development that is often stated as the “highest and best” use of waterfront property, but often is not associated with water-dependent occupations. However, with the continued removal of these types of businesses over time the local economy becomes less diverse and more reliant on the service sector and recreational tourism. As home values increase, people within lower socio-economic strata find it difficult to live within these communities and eventually must move. Consequently they spend more time and expense commuting to work, if jobs continue to be available. Newer residents often have no association with the water-dependent employment and

¹ American Community Survey estimates are based on data collected over a three year time period. The estimates represent the average characteristics of population and housing between January 2006 and December 2008 and do not represent a single point in time. Because these data are collected over three years, they include estimates for geographic areas with populations of 20,000 or more.

may see that type of work and its associated infrastructure as unappealing. They often do not see the linkage between those occupations and the aesthetics of the community that produced the initial appeal for many migrants. The demographic trends within counties can provide some indication as to whether these types of coastal change may be occurring if an unusually high rate of growth or change in the demographic character of the population is present. A rise in education levels, property values, fewer owner occupied properties and an increase in the median age can at times indicate a growing process of gentrification.

Although the most recent estimates of census data have been used here, many of the statistics related to the economic condition of counties or communities do not capture the recent downturn in the economy which may have significant impacts on current employment opportunities and business operations. Therefore, in the descriptions of both counties and communities, it should be understood that in terms of unemployment, the current conditions could be worse than indicated by the estimates used here. To be consistent, census data are used for the various demographic characteristics and as noted earlier are limited to the most recent estimates which are an average for 2006 - 2008. Other aspects of trade and market forces as a result of the economic downturn could also affect the business operations of vessels, dealers, wholesalers and retail seafood businesses for the commercial sector and charter services and other support services for the recreational fishery. These may not be reflected in the demographic profile provided here.

Marine Related Employment

The following tables provide summaries of marine related employment within the coastal counties of the South Atlantic states. These estimates provide the number of sole proprietors (# Prop) and the number of employed persons (# Emp) for various sectors associated with employment in the marine environment. These categories were chosen because the occupations that are represented within each sector often include fishing related activities or fishing related support activities. For instance, the sector entitled Scenic Water includes charter fishermen within its estimate. The sector Shipping includes various shipping containers that would be used by fish houses and others to handle seafood. While these estimates do not encompass all employment related to fishing and its support activities, it does provide some approximation of the amount of activity associated with employment related to both recreational and commercial fishing.

Florida Counties

Table 3.7.1 Marine Related Employment for 2007 in Florida East Coast Counties (Census Bureau 2010)

Florida County	Brevard		Broward		Duval		Flagler		Indian River		Martin	
Sector	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp
Boat Dealers	26	.	253	.	19	.	7	.	11	.	60	.
Seafood Dealers	.	75	.	406	.	92	.	14	.	1	.	9
Seafood Harvesters	282	.	228	.	199	.	17	.	70	.	128	.

Seafood Retail	0	7	28	291	20	60	0	2	0	.	0	93
Marinas	.	223	.	707	.	216	.	21	.	17	.	113
Processors	0	27	0	142	12	210	0	.	.	.	0	.
Scenic Water	.	22	.	313	.	27	.	1	.	13	.	42
Ship Boat Builders	.	846	.	776	.	827	.	692	.	76	.	340
Shipping Support	.	193	.	1557	.	1598	.	1	.	8	.	13
Shipping	.	137	.	995	.	1522	.	1	.	15	.	2

**Table 3.7.1 cont. Marine Related Employment for 2007 in Florida East Coastal Counties
(Census Bureau 2010)**

Florida County	Miami-Dade		Monroe		Nassau		Palm Beach		St. Johns		St. Lucie	
Sector	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp
Boat Dealers	108	.	23	.	0	.	108	.	19	.	16	.
Seafood Dealers	.	.	.	112	.	14	.	46	.	6	136	.
Seafood Harvesters	396	.	934	.	59	.	287	.	103	.	0	.
Seafood Retail	79	.	7	7	.	4	18	57	0	5	.	2
Marinas	34	.	.	191	.	18	10	887	.	19	.	49
Processors	.	.	0	.	0	.	.	176	0	.	.	.
Scenic Water	.	.	.	315	.	8	.	94	.	6	.	9
Ship Boat Builders	.	.	.	17	.	.	.	100	.	333	.	502
Shipping Support	.	.	.	67	.	82	.	756	.	6	.	7
Shipping	.	.	.	35	.	8	.	69	.	.	.	38

Florida County	Volusia	
Sector	# Prop	# Emp
Boat Dealers	11	.
Seafood Dealers	.	16
Seafood Harvesters	183	.
Seafood Retail	.	.
Marinas	.	137
Processors	.	.
Scenic Water	.	50
Ship Boat Builders	.	758
Shipping Support	.	38

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Shipping	.	15
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Georgia Counties

Table 3.7.2. Marine Related Employment for 2007 in Georgia Coastal Counties (Census Bureau 2010)

Georgia County	Bryan		Camden		Chatham		Glynn		Liberty		McIntosh	
Sector	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp
Boat Dealers	0	.	.	.	5	.	.	.	.	.	.	.
Seafood Dealers	6	.	183	.	.	.	1
Seafood Harvesters	13	.	13	.	73	.	60	.	10	.	100	.
Seafood Retail	6	49	.	.	.	9	.	.
Marinas	.	2	.	13	.	110	.	85	.	.	.	.
Processors	846	.	.	.	13
Scenic Water	62	.	15	.	.	.	.
Ship Boat Builders	297	.	.	.	.	.	9
Shipping Support	2515	.	299	.	9	.	27
Shipping	43	.	7	.	.	.	27

South Carolina Counties

Table 3.7.3. Marine Related Employment for 2007 in South Carolina Coastal Counties (Census Bureau 2010)

South Carolina County	Beaufort		Charleston		Colleton		Georgetown		Horry	
Sector	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp
Boat Dealers	7	.	18	.	.	.	.	.	7	.
Seafood Dealers	.	.	.	115	.	.	.	.	.	21
Seafood Harvesters	99	.	168	.	18	.	91	.	.	.
Seafood Retail	7	13	8	76	.	.	.	14	5	25
Marinas	.	62	.	115	.	5	.	39	.	59
Processors	.	12	4	4	.	.	.	.	.	.
Scenic Water	.	36	.	137	.	.	.	18	.	15
Ship Boat Builders	.	2	.	640	.	.	.	2	.	2
Shipping Support	.	4	.	1101	.	.	.	25	.	.
Shipping	.	11	.	121	.	.	.	.	.	2

North Carolina Counties

Table 3.7.4. Marine Related Employment for 2007 in North Carolina Coastal Counties (Census Bureau 2010)

North Carolina County	Beaufort		Bertie		Brunswick		Camden		Carteret		Chowan	
Sector	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp
Boat Dealers	4	.	.	.	7	.	.	.	17	.	.	.
Seafood Dealers	.	60	.	.	.	28	.	5	.	29	.	38
Seafood Harvesters	167	.	6	.	240	.	37	.	440	.	26	.
Seafood Retail	4	.	.	.	12	12	.	.	17	22	.	.
Marinas	.	11	.	.	.	24	.	2	.	153	.	.
Processors	.	30	.	11	.	29	.	.	0	3	.	.
Scenic Water	.	.	.	.	.	13	.	.	.	10	.	.
Ship Boat Builders	.	326	.	.	.	295	.	.	.	343	.	349
Shipping Support	.	.	.	2	.	11	.	.	.	54	.	.
Shipping	.	.	.	2	.	67	.	.	.	10	.	.

Table 3.7.4. cont. Marine Related Employment for 2007 in North Carolina Coastal Counties (Census Bureau 2010)

North Carolina County	Craven		Currituck		Dare		Hertford		Hyde		New Hanover	
Sector	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp
Boat Dealers	3	.	.	.	.	.	19	.
Seafood Dealers	.	.	.	33	.	41	.	.	.	.	.	5
Seafood Harvesters	45	.	66	.	488	.	6	.	136	.	151	.
Seafood Retail	.	2	.	2	9	14	.	6	.	5	4	34
Marinas	.	18	.	37	.	37	.	.	.	3	.	74
Processors	.	7	.	.	.	.	.	.	.	56	3	.
Scenic Water	31	.	.	.	2	.	28
Ship Boat Builders	.	1369	.	3	.	392	.	.	.	.	.	43
Shipping Support	2	.	27	.	.	.	367
Shipping	27	.	.	.	6

Table 3.7.4. cont. Marine Related Employment for 2007 in North Carolina Coastal Counties (Census Bureau 2010)

North Carolina County	Onslow		Pamlico		Pasquotank		Pender		Perquimann		Tyrrell	
Sector	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp	# Prop	# Emp
Boat Dealers	6	.	.	.	.	.	.	.	.	.	.	.
Seafood Dealers	.	4	.	.	.	67	.	47	.	2	.	.

Seafood Harvesters	237	.	130	.	31	.	67	.	28	.	61	.
Seafood Retail	6	9	.	.	.	29	3	3	.	.	.	.
Marinas	.	6	.	12	.	.	.	4	.	.	.	.
Processors	.	.	.	55	.	.	.	.	.	.	.	.
Scenic Water	.	2	.	.	.	.	.	.	.	.	.	36
Ship Boat Builders	.	153	.	14	.	.	.	16	.	.	.	.
Shipping Support	.	.	.	.	.	.	.	15	.	.	.	.
Shipping	.	.	.	.	.	12	.	.	.	.	.	.

North Carolina County	Washington	
Sector	# Prop	# Emp
Boat Dealers	.	.
Seafood Dealers	.	.
Seafood Harvesters	8	.
Seafood Retail	.	.
Marinas	.	.
Processors	.	.
Scenic Water	.	.
Ship Boat Builders	.	.
Shipping Support	.	.
Shipping	.	.

Vulnerability

Recent research has identified counties along the South Atlantic Coast that may be vulnerable to a variety of coastal hazards through the use of what has been called the Social Vulnerability Index (SoVI). The Index was created by the Hazards Research Lab at the University of South Carolina to understand how places that are susceptible to coastal hazards might also exhibit vulnerabilities to social change or disruptions (<http://webra.cas.sc.edu/hvri/products/sovi.aspx#>). These vulnerabilities may come in the form of high unemployment, high poverty rates, low education and other demographic characteristics. In fact, the SoVI is an index that consists of 32 different variables combined into one comprehensive index to measure social vulnerability (Fig.3.7.1).

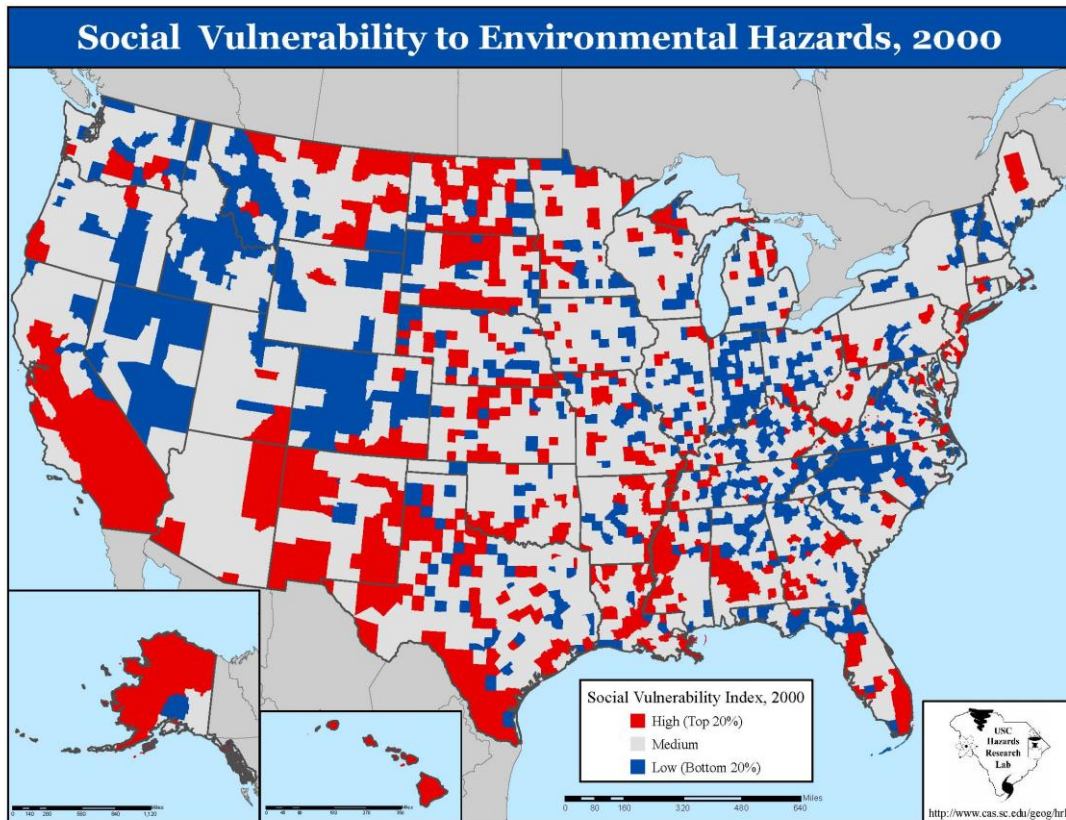


Figure 3.7.1. The Social Vulnerability Index applied to all US Counties (Source <http://webra.cas.sc.edu/hvri/products/sovi.aspx#>).

Those counties in the South Atlantic region which were categorized as having high social vulnerability using the SoVI are: Florida – Miami-Dade, Palm Beach, Martin, St. Lucie, and Duval; North Carolina – Onslow, Washington, Bertie, Chowan, Perquimans, Camden. The states of Georgia and South Carolina had no counties categorized as having high social vulnerability. Although the SoVI was created to understand social vulnerability to coastal environmental hazards, it can also be interpreted as a general measure of vulnerability to other social disruptions, such as adverse regulatory change or manmade hazards. This does not mean that there will be adverse affects, only that there may be a potential for adverse affects under the right circumstances. Fishing communities in these counties may have more difficulty adjusting to regulatory changes if those impacts affect employment or other critical social capital.

Fishing Communities

The communities listed in Table 3.7.1 represent a categorization of communities based upon their overall value of local commercial landings divided by the overall value of South Atlantic commercial landings. These data were assembled from the accumulated landings system which includes all species from both state and federal waters. All communities were ranked on this “local quotient” and divided by those who were above the mean and those below. Those above the mean were then divided into thirds with the top tier classified as Primarily Involved in fishing; the second tier classified as Secondly Involved; and the third classified as being Tangentially Involved. The communities listed under each subcategory are not ranked in terms of their involvement. This breakdown of fisheries involvement is similar to the how

communities were categorized in the community profiling of South Atlantic fishing communities (Jepson et al. 2005). However, the categorization within the community profiles included other aspects associated with fishing such as infrastructure and other measures to determine a community's status with regard to reliance upon fishing.

Table 3.7.5. South Atlantic Communities Categorized by Involvement in Commercial Fisheries (Source: ALS 2008)

Primarily Involved		Secondarily Involved		Tangentially Involved	
State	City	State	City	State	City
FL	Mayport	FL	Stuart	FL	North Miami
FL	Miami	FL	Oak Hill	FL	Hastings
FL	Cocoa	FL	Grant	FL	Jupiter
FL	Cape Canaveral	FL	Palatka	FL	Hollywood
FL	Jacksonville	FL	Boca Raton	FL	Vero Beach
FL	Fort Pierce	FL	Homestead	FL	Sebastian
FL	Palm Beach Gardens	FL	Pompano Beach	FL	Crescent City
FL	Key Largo	FL	Pierson	FL	Tequesta
FL	Fernandina Beach	FL	Palm Harbor	FL	Lake Monroe
FL	Saint Augustine	FL	Ormond Beach	FL	Orlando
FL	Port Orange	FL	Green Cove Springs	FL	North Miami Beach
FL	New Smyrna Beach	FL	West Palm Beach	FL	South Miami
FL	Margate	FL	Rockledge	FL	Merritt Island
FL	Fort Lauderdale	FL	Opa-Locka	FL	Miami Gardens
FL	Melbourne	FL	Atlantic Beach	FL	Deerfield Beach
GA	Darien	FL	Edgewater	FL	Port Saint Lucie
GA	Savannah	FL	Hialeah	FL	Pembroke Pines
GA	Brunswick	FL	Jensen Beach	FL	Fellsmere
GA	Townsend	FL	Sharpes	FL	Lake Worth
GA	Tybee Island	GA	Crescent	FL	Orange Park
NC	Wanchese	GA	Valona	FL	Lake Mary
NC	Engelhard	GA	Midway	FL	Pomona Park
NC	Beaufort	GA	Richmond Hill	FL	Middleburg
NC	Shiloh	NC	Davis	FL	Boynton Beach
NC	Oriental	NC	Hampstead	FL	Titusville
NC	Sneads Ferry	NC	Newport	GA	Waynesville
NC	Columbia	NC	Carolina Beach	GA	Woodbine
NC	Swan Quarter	NC	Moyock	GA	Port Wentworth
NC	Kill Devil Hill	NC	New Bern	GA	Kingsland
NC	Hatteras	NC	Nags Head	GA	Thunderbolt
NC	Hertford	NC	Currituck	GA	Saint Marys
NC	Wilmington	NC	Washington	GA	Valdosta

NC	Elizabeth City	NC	Manns Harbor	GA	Jekyll Island
NC	Belhaven	NC	Ocracoke	NC	Jacksonville
NC	Supply	NC	Avon	NC	Atlantic Beach
NC	Bath	NC	Barco	NC	Hubert
NC	Lowland	NC	Shallotte	NC	Wrightsville Beach
NC	Swansboro	NC	Surf City	NC	Lake Waccamaw
NC	Roper	NC	Hobucken	NC	Emerald Isle
NC	Southport	NC	Grantsboro	NC	Holly Ridge
NC	Cedar Island	NC	Jarvisburg	NC	Manteo
NC	Morehead City	NC	Merritt	NC	Salter Path
NC	Atlantic	NC	Vandemere	NC	Smyrna
NC	Knotts Island	NC	Bolivia	NC	Varnamtown
NC	Edenton	NC	Arapahoe	NC	Leland
NC	Sea Level	NC	Powells Point	NC	Gloucester
NC	Aurora	SC	North Charleston	NC	Oak Island
SC	Mcclellanville	SC	Wadmalaw Island	NC	Pantego
SC	Murrells Inlet	SC	Bluffton	NC	Rocky Point
SC	Georgetown	SC	Johns Island	NC	Calabash
SC	Little River	SC	Frogmore	SC	North Myrtle Beach
SC	Charleston	SC	Ridgeland	SC	Hilton Head
SC	Beaufort	SC	Green Pond	SC	Hanahan
SC	Saint Helena	SC	Walterboro	SC	Awendaw
SC	Mount Pleasant	SC	Edisto Beach	SC	Ravenel
		SC	Burton	SC	Columbia

3.7.3.1 Snapper Grouper Fishery Social Environment

Permit requirements for the commercial snapper grouper fishery were established in 1998 by Amendment 8 (SAFMC 1997). The amendment created a limited entry system for the fishery and established two types of permits based on the historic landings associated with a particular permit. Those who could demonstrate a certain amount of landings over a certain time period received transferable permits that did not limit the number of pounds of snapper grouper that could be landed from federal waters (hereafter referred to as “unlimited commercial permits”). Vessels with verified landings, but did not meet the threshold were issued permits that allowed them to land 225 pounds of snapper grouper species from federal waters each trip (hereafter referred to as “limited commercial permits”). These permits were not transferable. New entry into the fishery required the purchase of two unlimited permits from existing permit holders for exchange for a new permit. This “two for one” system was intended to gradually decrease the number of permits in the fishery. These restrictions only applied to the commercial snapper grouper permit.

Over time the limited entry system has reduced capacity in the commercial fishery as evidenced by the reduction in the number of permits over the eight year period beginning in 2001 through 2008 (Figure ??). There was a 34% decrease in the number of unlimited permits and a 54%

decrease in the number of limited permits during that time period. This downward trend in permits is also reflected in other measures of effort that also show a steady decline, i.e. number of trips, landings, etc. (See SAFMC Amendment 16). While the limited entry program has contributed to the reduced capacity, other factors have also contributed to this downward trend. Economic factors like increased imports, decreasing prices and rising prices for diesel fuel have had a widespread affect on commercial fishing throughout many regions of the U.S. In addition, the loss of working waterfronts has contributed to a growing loss of fishing infrastructure that may play a role in the decline in many different fisheries.

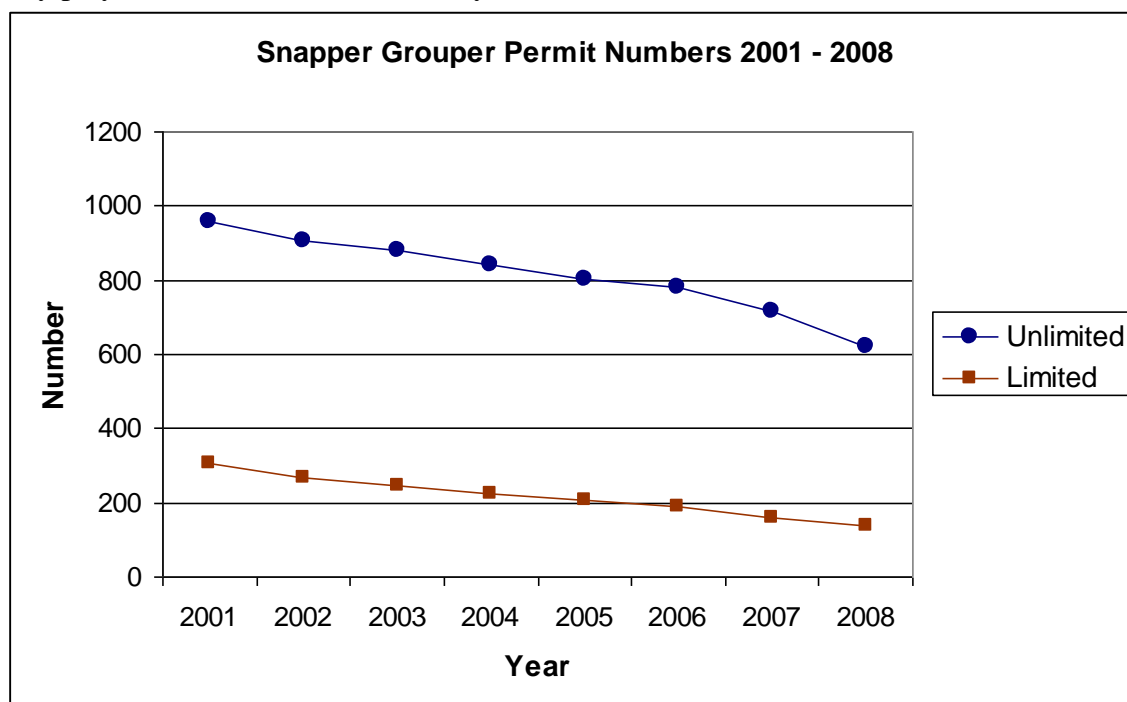


Figure 3.7.2. Snapper Grouper Permits from 2001 -2008 (SERO Permits)

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

While studies on the general identification of fishing communities have been undertaken in the past few years, little social or cultural investigation into the nature of the snapper grouper fishery itself has occurred. A socioeconomic study by Waters et al. (1997) covered the general characteristics of the fishery in the South Atlantic, but those data are now over 10 years old and do not capture more recent important changes in the fishery. Cheuvront and Neal (2004) conducted survey work of the North Carolina commercial snapper grouper fishery south of Cape Hatteras, but did not include ethnographic examination of communities dependent upon fishing.

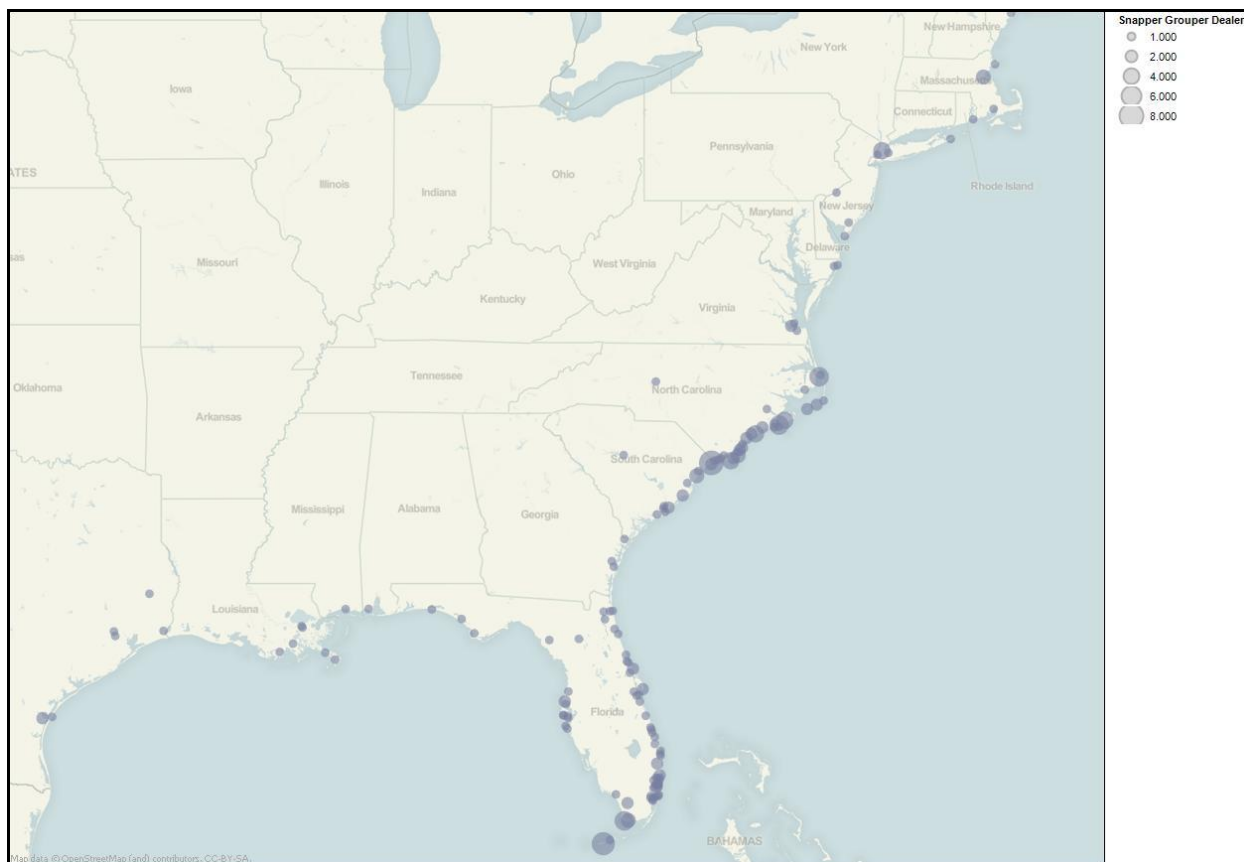


Figure 3.7.3. Snapper Grouper Dealers by Zipcode of Permit Holder (SERO 2010). Snapper Grouper dealers range the entire US east coast with the heaviest concentration in North and South Carolina and Florida. There are also scattered dealers with permits in the Gulf of Mexico (Figure 3.7.3)

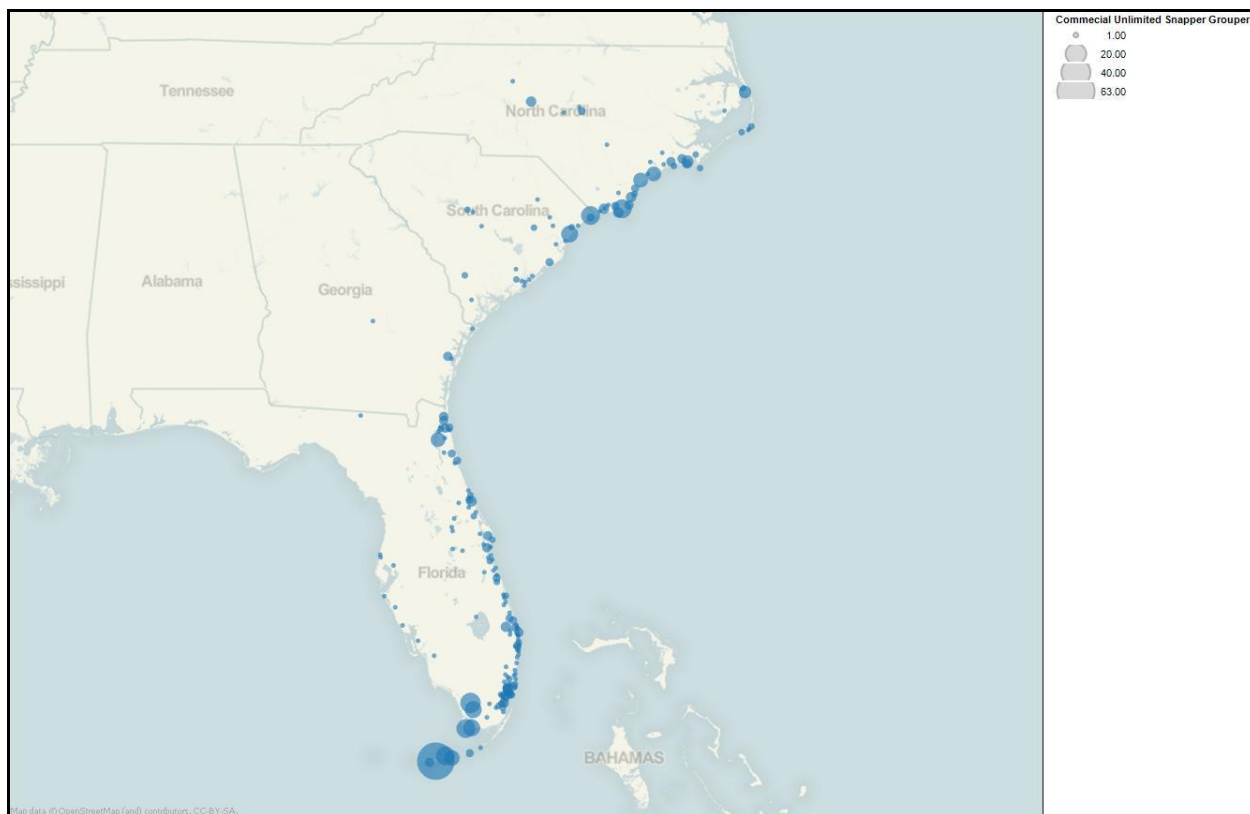


Figure 3.7.4. Snapper Grouper Commercial Limited Permits by Zipcode of Permit Holder (SERO 2010).

Like dealer permits, snapper grouper commercial permits also are located throughout the US east coast, with a heavier concentration in the South Atlantic states. The largest concentration of permits is in Monroe County and the Florida Keys (Fig. 3.7.4)

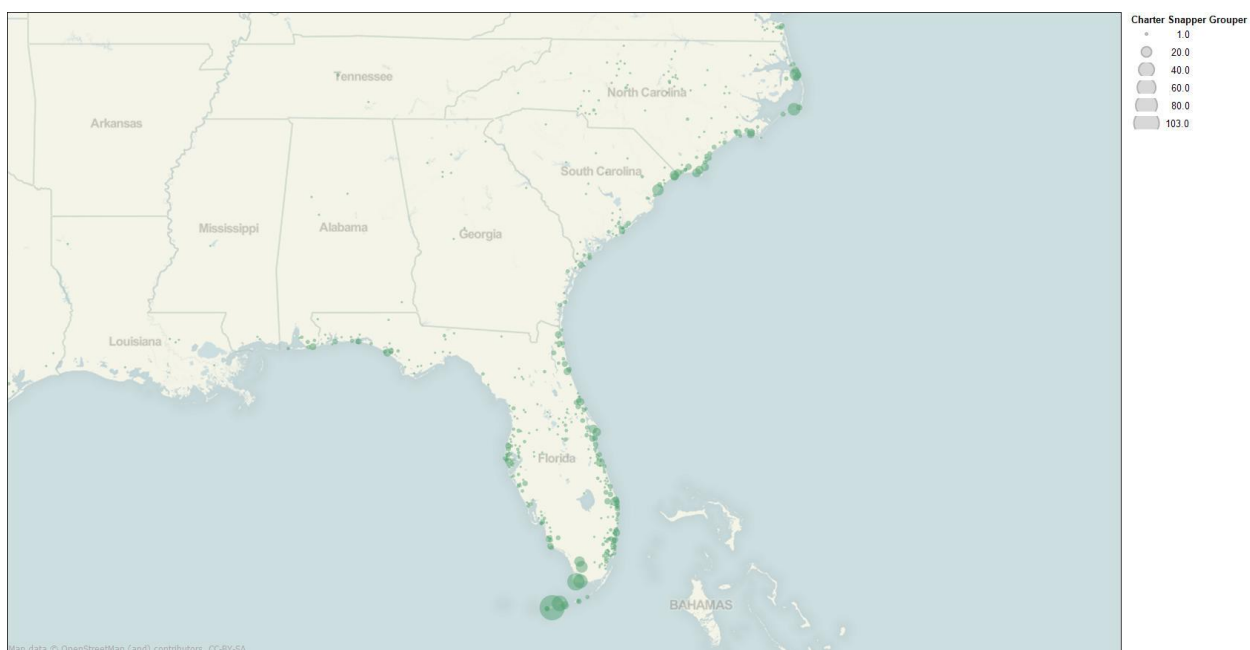


Figure 3.7.5. Snapper Grouper Charter Permits by Zipcode of Permit Holder (SERO 2010).

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3.7.3.2 Dolphin Wahoo Fishery Social Environment

The South Atlantic Fishery Ecosystem Plan contains a complete description of the fishing communities and fisheries of the South Atlantic, including the dolphin-wahoo fishery. These descriptions are summarized here and incorporated by reference.

There are little data available that are directly applicable to dolphin and wahoo recreational and commercial fishing communities in the U.S. Atlantic. The data that are available are only partial for some communities and then, in many cases, only some sectors in those communities (commercial, charter, and/or recreational).

The dolphin-wahoo fishery is primarily a recreational fishery with some commercial catch. In the mid 1990s there was considerable concern about the possibility of an increased commercial catch and its impact upon the recreational fishery. That concern spawned the fishery management plan that is in effect today with the South Atlantic Council as lead council (SAFMC 1995). The commercial sector has remained a steady but small part of the fishery.

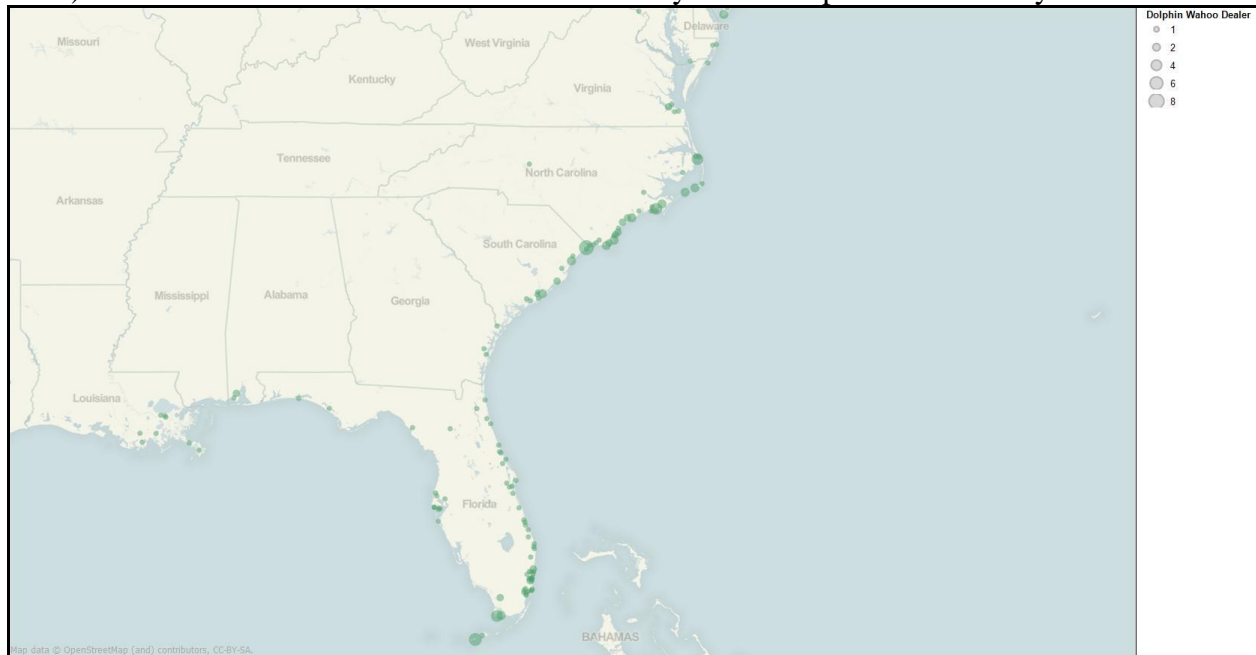


Figure 3.7.6. Dolphin Wahoo Dealers by Zipcode of Permit Holder (SERO 2010).

Dolphin Wahoo dealers are located throughout the east coast of the US as far north as Maine. Permit holders are concentrated in the Florida Keys and both North and South Carolina., although the Florida east coast has a significant number from the central coast to Miami (Fig. 3.7.6).

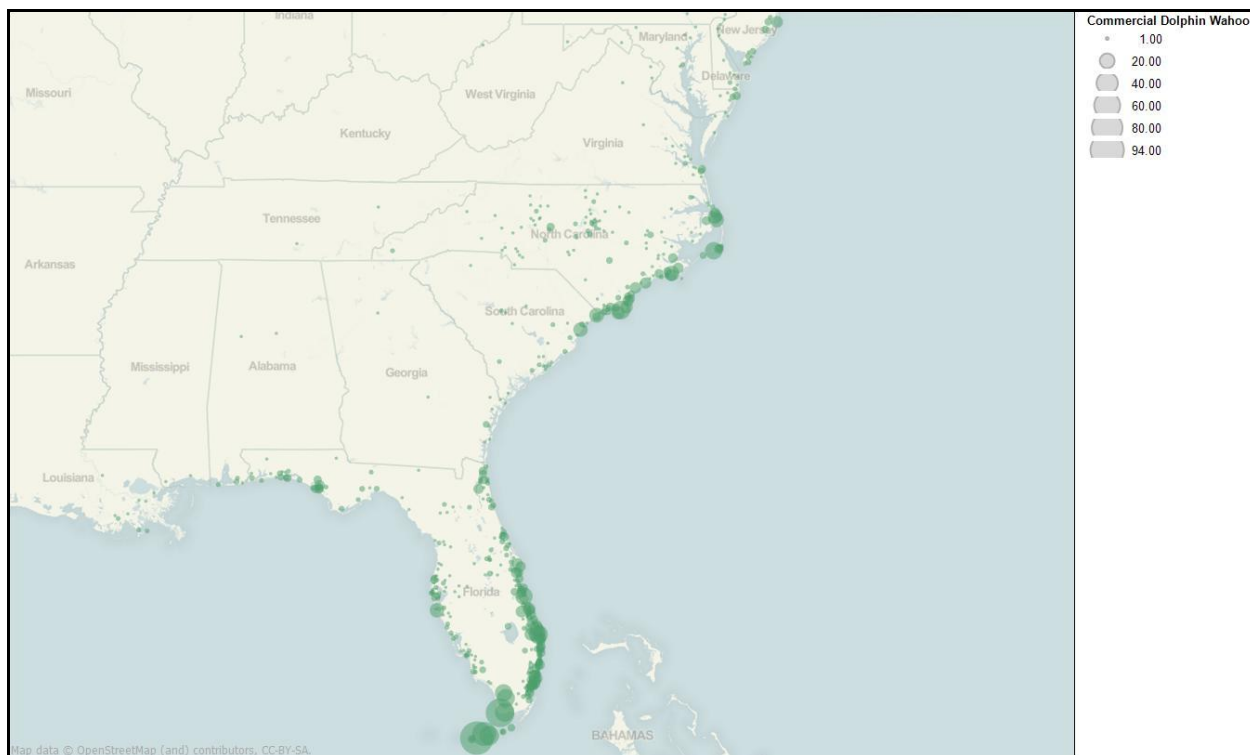


Figure 3.7.7. Dolphin Wahoo Commercial Permits by Zipcode of Permit Holder (SERO 2010).

Dolphin Wahoo commercial fishermen are also located throughout the east coast of the US. Permit holders are concentrated in the Florida Keys and both North and South Carolina., although the Florida east coast has a significant number from the central coast to Miami (Fig. 3.7.7). This is true for Charter permits also according to Fig. 3.7.8.

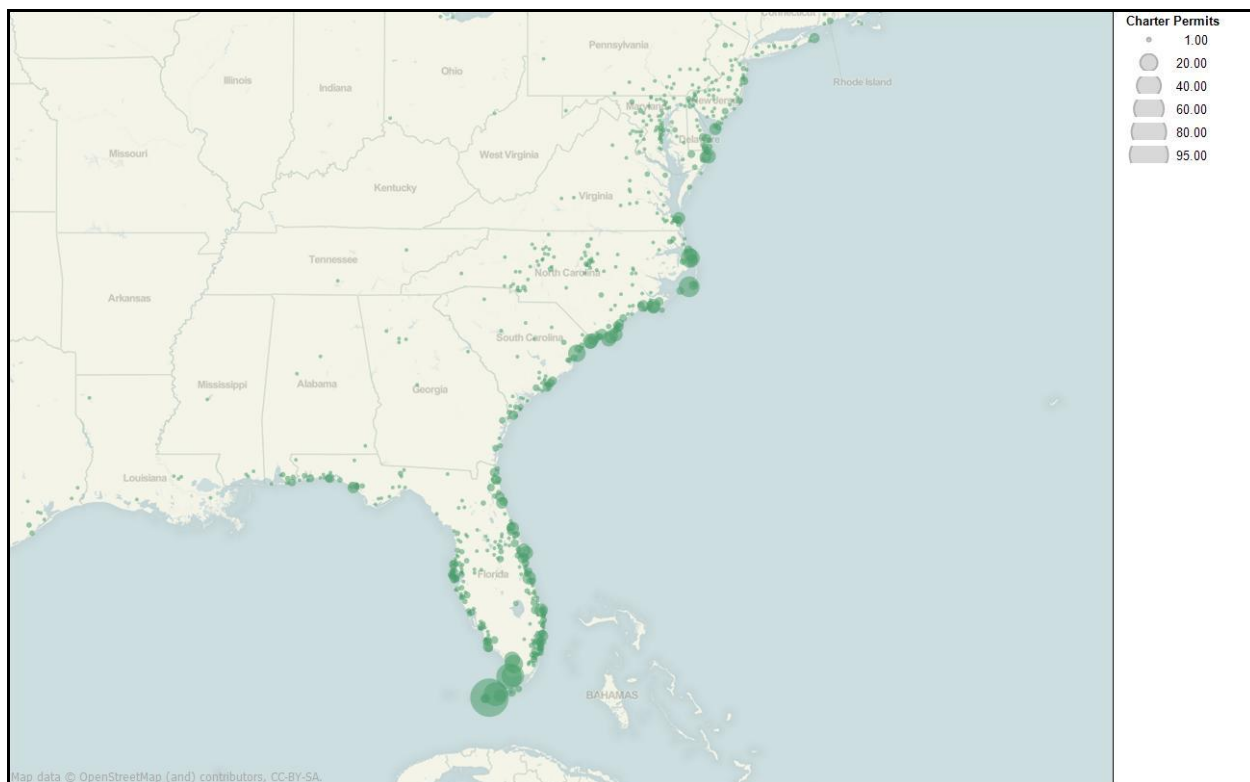


Figure 3.7.8. Dolphin Wahoo Charter Permits by Zipcode of Permit Holder (SERO 2010).

3.7.3.3 Sargassum Fishery Social Environment

At this time there is little information on the social environment of the Sargassum fishery. In the past there had been one vessel that was harvesting sargassum for the purposes of utilizing it in the manufacturing of pharmaceuticals.

3.7.3.4 Golden Crab Fishery Social Environment

The golden crab FMP was initiated in the mid 1990s and provided a management framework for a small fishery which harvested a deep water crab. The fishery has remained small and is prosecuted primarily off the southeastern coast of Florida, while golden crab dealers range the entire east coast of the US with the majority in Florida. (Fig. 3.7.9)

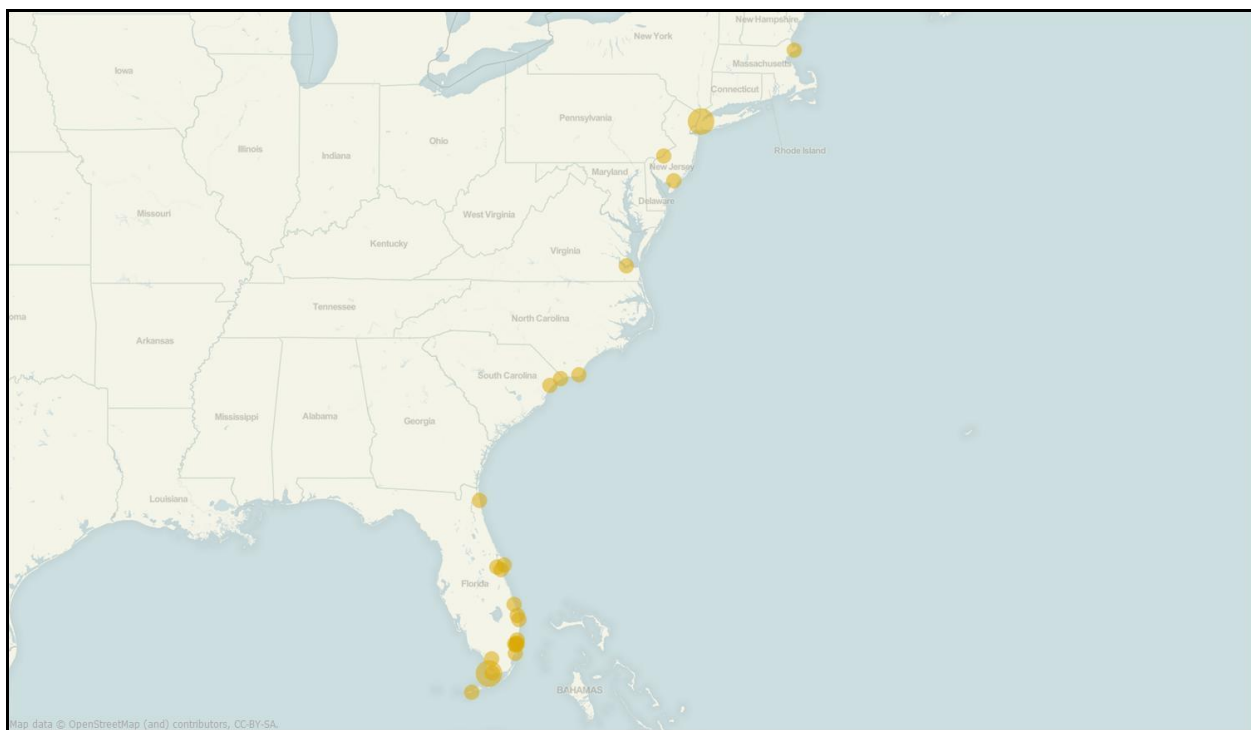


Figure 3.7.9. Golden Crab Dealer Permits by Zipcode of Permit Holder (SERO 2010).

4.0 Environmental Effects

4.1 Actions under the Snapper Grouper Fishery Management Plan (except wreckfish)

4.1.1 Action 1: Removal of Species from Snapper Grouper from Fishery Management Unit (FMU)

Alternative 1 (No Action). Do not remove any species from the Snapper Grouper FMU.

Alternative 2. Remove species from the Snapper Grouper FMU with 95% (or greater) of landings in state waters

French grunt	Spanish grunt	Margate	Yellow jack	Grass porgy
Bluestriped grunt	Sheepshead	Crevalle jack	Black margate	Porkfish

Alternative 3. Remove species from the Snapper Grouper FMU with 90% (or greater) of landings in state waters

French grunt	Spanish grunt	Margate	Yellow jack	Grass porgy	Sailors Choice
Bluestriped grunt	Sheepshead	Crevalle jack	Black margate	Porkfish	Lesser amberjack

Alternative 4 (Preferred). Remove species from the Snapper Grouper FMU with 80% (or greater) of landings in state waters, **except mutton snapper and hogfish.**

French grunt	Spanish grunt	Margate	Yellow jack	Grass porgy	Sailors Choice
Bluestriped grunt	Sheepshead	Crevalle jack	Black margate	Porkfish	Lesser amberjack
Graysby		Schoolmaster	Cubera snapper	Atlantic spadefish	Saucereye porgy
Blue runner					

Alternative 5 (Preferred). Remove all the species under the Florida Marine Life Species Rule from the Snapper Grouper FMU.

Queen triggerfish	Porkfish	Puddingwife
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4.1.1.1 Biological Effects

No Action **Alternative 1** would retain all 73 species within the snapper grouper management unit (FMU). The original Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (FMP) listed 69 species in the FMU (SAFMC 1983). Wreckfish was added to the FMU through Amendment 3 to the FMP, and Atlantic spadefish, lesser amberjack, and banded rudderfish were added in Amendment 4 to the FMP. The Council included these

species in the FMU because: They are considered to be subtropical/tropical in distribution and therefore limited to south of Cape Hatteras on the eastern coast of the U.S; comprise overlapping ranges; and are part of a large multi-species fishery where co-occurring species are taken together with the same gear in the same area (SAFMC 1983). Furthermore, the Council was concerned (in the early 1980s) about 13 species in the FMU experiencing growth overfishing. The Council felt that many of the species listed in the FMU would undergo overfishing in the future if corrective action was not taken (SAFMC 1983).

Alternatives 2-4 would remove species based on the proportion of recreational landings that occurred in state waters during 2005-2008. **Alternative 2** would remove 10 species from the FMU where 95% of the recreational landings are taken in state waters, and **Alternative 3**, would remove 12 species from the FMU that have at least 90% of their recreational landings in state waters (Tables 4-1 and 4-2). Most of the species in **Alternatives 2 and 3**, with the exception of sheepshead and crevalle jack, are infrequently taken by recreational or commercial fishermen (Tables 4-1 and 4-2). In **Alternative 4 (preferred)**, species which have at least 80% of their recreational landings in state waters would be removed from the FMU (Table 4-3). In addition, to sheepshead and crevalle jack, other commonly taken species that would be removed from the FMU by **Alternative 4** include Atlantic spadefish, blue runner, and mutton snapper. Landings of sheepshead, crevalle jack, Atlantic spadefish, blue runner, and mutton snapper are not as large as recreational landings but are of some commercial importance (Table 4-4).

Part of the Council's rationale for including species identified in **Alternative 2-4** in the FMU was they are part of a multi-species fishery and there are overlapping ranges of many species. Therefore, while a species may predominantly occur in state waters, some interaction with species that occur mostly in Federal waters would not be unexpected. Examination of logbook data from fishermen who possess a Federal commercial snapper grouper permit reveals species, which occur commonly in Federal waters, are taken on the same trips as species which are predominant in state recreational landings. For example, examination of logbook data shows sheepshead are taken on trips with other snapper grouper species including gag, red snapper, gray triggerfish, and red grouper, which commonly occur in Federal waters (Table 4-5). Furthermore, mutton snapper are taken on trips with yellowtail snapper, red grouper, mangrove snapper, black grouper, vermilion snapper, and others snapper grouper species commonly occurring in Federal waters (Table 4-6).

Dealer reported commercial landings for the species with the highest recreational landings in **Alternatives 2-4** are much higher than those reported by commercial logbooks. Since logbooks are required for fishermen who possess a Federal commercial snapper grouper permit, the difference in commercial landings between those reported by dealers and by commercial logbooks may represent sales by fishermen who possessed a state license but not a Federal commercial snapper grouper permit. Prior to the implementation of Amendment 15B to the FMP in December 2009, a fisherman with a state issued license but without a Federal commercial snapper grouper permit could sell up to the bag limit of snapper grouper species. By removing species from the FMU in **Alternatives 2-4**, species such as sheepshead, crevalle jack, mutton snapper, etc. could once again be targeted by fishermen with state licenses but no Federal snapper grouper commercial permit, which would likely result in some increased bycatch of species such as gag, yellowtail snapper, and red grouper. Since fishing would likely occur in

shallow state waters, survival of released fish would be expected to be fairly high; however, some mortality would occur due handling and hooking injuries. Therefore, **Alternatives 2-4** would be expected to have negative biological effects relative to **No Action Alternative 1** with **Alternative 4 (Preferred)** having the greatest negative biological effect.

Table 4-1. 10 snapper-grouper species with $\geq 95\%$ estimated landings (lbs, whole weight) from MRFSS (2005-2008) from state waters (SEFSC ACL dataset).*

	2005		2006		2007		2008		TOTAL		% State	TOP STATE	
COMMON NAME	EEZ	State	EEZ	State	EEZ	State	EEZ	State	EEZ	State		MRFSS	HB
French grunt	0	0	0	270	0	2,965	0	1,703	0	4,938	100%	FL	FL
Spanish grunt	0	0	0	688	0	0	0	0	0	688	100%	FL	GA
Margate	47	28,480	843	16,763	0	17,554	0	4,199	889	66,995	99%	FL	FL
Yellow jack	0	29,556	0	12,067	261	22,060	1,916	95,342	2,176	159,025	99%	FL	FL
Grass porgy	0	1,686	0	0	0	393	42	460	42	2,540	98%	FL	FL
Bluestriped grunt	811	24,500	0	70,320	1,346	62,742	1,235	37,759	3,392	195,322	98%	FL	FL
Sheepshead	34,113	1,589,612	44,124	1,405,536	55,851	1,949,463	30,409	2,251,209	164,498	7,195,821	98%	FL	SC
Creville jack	16,072	724,534	11,228	399,058	11,046	529,392	13,425	514,265	51,771	2,167,249	98%	FL	FL
Black margate	1,834	63,478	4,303	39,035	25	66,304	1,559	51,386	7,722	220,203	97%	FL	FL
Porkfish	1,748	17,046	373	1,890	900	47,479	309	10,533	3,330	76,948	96%	FL	FL

*Note: Note recreational dataset landings estimates may differ from MRFSS website queries because 'For Hire' includes headboat and charter, and SEFSC has used improved weight substitution and charter boat estimation procedures that differ from those on the MRFSS website. 'Atlantic' for recreational data includes MRFSS: SE Atl. states (NC-FL east coast) and Headboat: Atlantic (NC-FL Keys areas 1-17). Gag and black grouper landings have been adjusted for misidentification prior to 1990. Tiger grouper, black snapper, smallmouth grunt, misty grouper, and cottonwick did not have any reported landings. Goliath grouper and Nassau grouper are excluded since harvest is prohibited for these species. Speckled hind and warsaw grouper are also excluded since harvest is restricted to one fish per vessel per trip and sale is prohibited. Commercial data from state trip tickets will be examined to explore similar data trends.

Table 4-2. 12 snapper-grouper species with $\geq 90\%$ estimated landings (lbs, whole weight) from MRFSS (2005-2008) from state waters (SEFSC ACL dataset).*

	2005		2006		2007		2008		TOTAL		% State	TOP STATE	
COMMON NAME	EEZ	State	EEZ	State	EEZ	State	EEZ	State	EEZ	State		MRFSS	HB
French grunt	0	0	0	270	0	2,965	0	1,703	0	4,938	100%	FL	FL
Spanish grunt	0	0	0	688	0	0	0	0	0	688	100%	FL	GA
Margate	47	28,480	843	16,763	0	17,554	0	4,199	889	66,995	99%	FL	FL
Yellow jack	0	29,556	0	12,067	261	22,060	1,916	95,342	2,176	159,025	99%	FL	FL
Grass porgy	0	1,686	0	0	0	393	42	460	42	2,540	98%	FL	FL
Bluestriped grunt	811	24,500	0	70,320	1,346	62,742	1,235	37,759	3,392	195,322	98%	FL	FL
Sheepshead	34,113	1,589,612	44,124	1,405,536	55,851	1,949,463	30,409	2,251,209	164,498	7,195,821	98%	FL	SC
Crevale jack	16,072	724,534	11,228	399,058	11,046	529,392	13,425	514,265	51,771	2,167,249	98%	FL	FL
Black margate	1,834	63,478	4,303	39,035	25	66,304	1,559	51,386	7,722	220,203	97%	FL	FL
Porkfish	1,748	17,046	373	1,890	900	47,479	309	10,533	3,330	76,948	96%	FL	FL
Sailors choice	1,868	35,153	863	2,951	1,752	19,491	894	15,299	5,377	72,895	93%	FL	FL
Lesser amberjack	0	2,339	957	1,213	0	0	0	4,878	957	8,430	90%	FL	SC

Table 4-3. 18 snapper-grouper species with $\geq 80\%$ estimated landings (lbs, whole weight) from MRFSS (2005-2008) from state waters (SEFSC ACL dataset).*

	2005		2006		2007		2008		TOTAL		% State	TOP STATE	
COMMON NAME	EEZ	State	EEZ	State	EEZ	State	EEZ	State	EEZ	State		MRFSS	HB
French grunt	0	0	0	270	0	2,965	0	1,703	0	4,938	100%	FL	FL
Spanish grunt	0	0	0	688	0	0	0	0	0	688	100%	FL	GA
Margate	47	28,480	843	16,763	0	17,554	0	4,199	889	66,995	99%	FL	FL
Yellow jack	0	29,556	0	12,067	261	22,060	1,916	95,342	2,176	159,025	99%	FL	FL
Grass porgy	0	1,686	0	0	0	393	42	460	42	2,540	98%	FL	FL
Bluestriped grunt	811	24,500	0	70,320	1,346	62,742	1,235	37,759	3,392	195,322	98%	FL	FL
Sheepshead	34,113	1,589,612	44,124	1,405,536	55,851	1,949,463	30,409	2,251,209	164,498	7,195,821	98%	FL	SC
Crevalle jack	16,072	724,534	11,228	399,058	11,046	529,392	13,425	514,265	51,771	2,167,249	98%	FL	FL
Black margate	1,834	63,478	4,303	39,035	25	66,304	1,559	51,386	7,722	220,203	97%	FL	FL
Porkfish	1,748	17,046	373	1,890	900	47,479	309	10,533	3,330	76,948	96%	FL	FL
Sailors choice	1,868	35,153	863	2,951	1,752	19,491	894	15,299	5,377	72,895	93%	FL	FL
Lesser amberjack	0	2,339	957	1,213	0	0	0	4,878	957	8,430	90%	FL	SC
Graysby	1,166	8,722	2,601	7,266	259	4,408	756	8,081	4,781	28,478	86%	FL	SC
Schoolmaster	115	865	0	5,623	1,690	4,722	803	3,836	2,608	15,046	85%	FL	FL
Cubera snapper	0	2,529	646	714	0	0	4,197	22,346	4,843	25,588	84%	FL	FL
Atlantic spadefish	0	97,844	31,335	244,004	0	181,740	100,081	153,343	131,416	676,931	84%	FL	SC
Saucereye porgy	139	4,453	591	769	325	0	0	0	1,055	5,223	83%	FL	FL
Blue runner	98,584	400,169	134,699	1,025,723	256,572	639,436	135,371	717,349	625,225	2,782,677	82%	FL	FL

Source: SEFSC ACL Database, May 2010

Table 4-4. Average dealer reported, commercial fishermen reported, and recreational landings (lbs whole weight) during 2005-2008 for species with largest recreational landings in Alternatives 2-4.

Species	Dealer	Logbook	Recreational
blue runner	151,939	93,864	514,003
mutton snapper	84,098	53,813	447,488
Atlantic spadefish	33,254	116	202,087
crevalle jack	196,514	37,435	554,755
Sheepshead	237,634	1,047	1,840,080

Table 4-5. Taxa taken on trips during 2005-2008 when at least 1 pound of sheepshead was landed.

COMMON NAME	% trips	% total
SHEEPSHEAD, ATLANTIC	100.00%	2.14%
SPANISH MACKEREL	41.48%	40.37%
FLOUNDER, ATLANTIC & GULF, UNC	22.83%	4.49%
BLUEFISH	22.19%	2.32%
KING MACKEREL	22.19%	19.66%
BLUE RUNNER	14.15%	0.36%
SNAPPER, MANGROVE	13.18%	0.73%
BUTTERFISH, UNC	12.86%	0.77%
GROUPE, GAG	12.86%	3.67%
SNAPPER, RED	12.86%	0.86%
COBIA	10.93%	0.87%
TUNA, LITTLE (TUNNY)	10.29%	1.59%
MULLET	9.97%	2.95%
CREVALLE	8.36%	0.26%
TRIGGERFISH, GRAY	8.04%	0.25%
BARRACUDA	6.75%	0.50%
SAND PERCH	6.75%	0.21%
GROUPE, RED	6.43%	0.19%
LOBSTER, SPINY	6.43%	1.43%
GOATFISHES	5.47%	2.12%

COMMON NAME	% trips	% total
CROAKER,ATLANTIC,UNC	5.14%	0.10%
POMPAÑO	5.14%	0.18%
DRUM,BLACK	4.82%	0.08%
MOONFISH,ATLANTIC	4.82%	0.09%
AMBERJACK,GREATER	4.18%	0.51%
BONITO,ATLANTIC	4.18%	0.67%
SHARK,DOGFISH,SMOOTH	4.18%	3.16%
TUNA,ALBACORE	4.18%	1.53%
FINFISHES,UNC FOR FOOD	2.57%	0.22%
HOGFISH	2.57%	0.06%
KING WHITING	2.57%	0.05%
SHARK,ATLANTIC SHARPNOSE	2.57%	1.91%
SPOT	2.57%	0.01%
PORGY,WHITEBONE	2.25%	0.02%
SNAPPER,MUTTON	2.25%	0.05%
59 additional taxa		7.62%

Table 4-6. Taxa taken on trips during 2005-2008 when at least 1 pound of mutton snapper was landed.

COMMON NAME	% trips	% total
SNAPPER,MUTTON	100.00%	4.29%
SNAPPER,YELLOWTAIL	42.79%	11.76%
GROUPE,RED	31.51%	4.98%
KING MACKEREL	28.00%	4.72%
SNAPPER,MANGROVE	25.89%	1.29%
GROUPE,BLACK	24.81%	3.84%
SNAPPER,VERMILION	21.02%	20.37%
SCAMP	20.21%	6.32%
TRIGGERFISH,GRAY	19.98%	5.35%

COMMON NAME	% trips	% total
AMBERJACK, GREATER	18.18%	7.08%
GROUPE, GAG	16.90%	8.57%
HOGFISH	15.20%	0.65%
JACK, ALMACO	15.06%	3.95%
DOLPHINFISH	14.33%	1.56%
SNAPPER, RED	13.16%	2.33%
BLUE RUNNER	12.83%	0.49%
PORGY, RED, UNC	12.60%	1.26%
GRUNTS	11.73%	1.27%
HIND, ROCK	9.34%	0.63%
PORGY, JOLTHEAD	9.24%	0.72%
COBIA	7.78%	0.48%
SEA BASSE, ATLANTIC, BLACK, UNC	7.41%	0.32%
GRUNT, WHITE	7.19%	0.78%
GROUPE, SNOWY	5.34%	0.61%
SPANISH MACKEREL	5.21%	0.29%
HIND, RED	4.91%	0.18%
MARGATE	4.27%	0.15%
BARRACUDA	4.21%	0.17%
SNAPPER, LANE	3.96%	0.11%
FINFISHES, UNC FOR FOOD	3.88%	0.17%
TUNA, LITTLE (TUNNY)	3.60%	0.30%
WAHOO	3.15%	0.18%
BANDED RUDDERFISH	3.05%	0.36%
PORGY, KNOBBED	3.03%	0.17%
TILEFISH, BLUELINE	2.55%	0.17%
99 additional taxa		4.14%

Preferred Alternative 5 would remove queen triggerfish, porkfish, and puddingwife from the FMU and allow them to be managed by the Florida Marine Life Species Rule.

Preferred Alternatives 4 and 5 would remove 20 species from the Snapper Grouper FMU (porkfish falls under both preferred alternatives). The Florida Marine Life Species Rule requires use of nonlethal methods of harvest and that the fish, invertebrates, and plants so harvested be maintained alive for the maximum possible conservation and economic benefits. Landings of porkfish, queen triggerfish, and puddingwife are small. It is unlikely these species are targeted by commercial or recreational fishermen. They are probably taken incidentally when targeting co-occurring species. These species are taken predominantly off of Florida; although, queen triggerfish is occasionally caught off other South Atlantic states. As landings are very small, some positive biological benefit would be expected for these species by removing them from the FMU if harvest was prohibited by the Florida Marine Life Species Rule.

Table 4-7. Average commercial and recreational landings (lbs whole weight) during 2005-2008.

Species	Commercial	Recreational
porkfish	0	20,070
queen triggerfish	5,531	2,653
puddingwife	0	0

4.1.1.2 Economic Effects

As stated above, **Alternatives 2-4** would be expected to have negative biological effects relative to **No Action Alternative 1** with **Alternative 4 (Preferred)** having the greatest negative biological effect. **Alternative 5** would have positive biological effects if harvest was prohibited by the Florida Marine Life Species Rule. While **Alternatives 2-4** would enable fishermen to catch these species unrestricted and thereby could result in positive short-term economic impacts, these alternatives could also be expected to have negative long-term economic impacts in that they might be caught in volumes that endanger the sustainability of the stock.

4.1.1.3 Social Effects

4.1.1.4 Administrative Effects

Alternative 1 would result in increased administrative impacts associated with establishing ACLs and AMs. Under **Alternative 1**, all 73 snapper grouper species in the FMU would remain in the FMU and ACLs and AMs would be required (see Action XX-XX).

Alternatives 2-5 would remove some species from the FMU based on frequency of landings in state waters. **Preferred Alternative 4** would result in the highest number (18) of species being removed from the FMU and would result in the lowest administrative burden associated with establishing ACLs, ACTs and AMs. **Preferred Alternative 5** would further remove three species that are managed under the Florida Marine Life Species Rule. The combination of **Preferred Alternative 4** and **Preferred Alternative 5** would result in 52 species in the snapper grouper FMU requiring the establishment of ACLs, ACTs, and AMs. These alternatives will lessen the administrative burden on the agency.

4.1.1.5 Council's Conclusions

4.1.2 Action 2: Designate Snapper Grouper Species as Ecosystem Component (EC) Species

Alternative 1 (No action). Retain a fishery management unit of 73 species. Do not designate ecosystem component species.

Alternative 2 (Preferred). Designate snapper grouper species with state and federal (combined) landings that are less than, or equal to 10,000 lbs, as EC species. Under this scenario, 16 species would be designated as Ecosystem Components (Table 4-x3).

Alternative 3. Designate snapper grouper species with state and federal (combined) landings that are less than, or equal to 1,000 lbs, as EC species. Under this scenario, six species would be designated as Ecosystem Components (Table 4-x4).

Alternative 4. Designate snapper grouper species with state and federal (combined) landings that are less than, or equal to 2,500 lbs, as EC species. Under this scenario, nine species would be designated as Ecosystem Components (Table 4-x5).

Alternative 5. Designate snapper grouper species with state and federal (combined) landings that are less than, or equal to 5,000 lbs, as EC species. Under this scenario, 11 species would be designated as Ecosystem Components (Table 4-x6).

Alternative 6. Designate snapper grouper species that meet three out of four NS 1 criteria, as EC species. Under this scenario, seven species would be designated as Ecosystem Components (Table 4-x7).

NOTE: Some species that might qualify as ecosystem component species are removed through Preferred Alternatives 4 & 5 under **Action 1** and are not presented here.

Table 4-x1. Number of ecosystem component species identified in Alternatives 1-6.

Alternatives	Number removed from FMU per preferred alternatives in Action 1	Number ecosystem component species
1 (No action)	0	0
2 (Preferred)	20 (≥80% & Marine Life Spp.)	16 (≥10,000 lbs)
3	20 (≥80% & Marine Life Spp.)	6 (≥1,000 lbs)
4	20 (≥80% & Marine Life Spp.)	9 (≥2,500 lbs)
5	20 (≥80% & Marine Life Spp.)	11 (≥5,000 lbs)
6	20 (≥80% & Marine Life Spp.)	7 NS1 analysis

4.1.2.1 Biological Effects

No Action **Alternative 1** would not designate any species in the snapper grouper FMU as ecosystem component species. The original Fishery Management Plan for the Snapper-Grouper Fishery of the South Atlantic Region (FMP) listed 69 species in the FMU (SAFMC 1983). Wreckfish was added to the FMU through Amendment 3 to the FMP, and Atlantic spadefish, lesser amberjack, and banded rudderfish were added in Amendment 4 to the FMP. The Council included these species in the FMU because they are considered to be subtropical/tropical in distribution and therefore limited to south of Cape Hatteras on the eastern coast of the U.S, comprise overlapping ranges, and are part of a large multi-species fishery where co-occurring species are taken together with the same gear in the same area (SAFMC 1983). Furthermore, rationale for establishing the FMU was that the Council was concerned (in the early 1980s) about 13

species in the FMU experiencing growth overfishing. The Council felt many of the species listed in the FMU would undergo overfishing in the future if corrective action was not taken (SAFMC 1983).

The national standard 1 (NS 1) guidelines pertaining to ecosystem component species (74 FR 3178; Section 50 CFR 600.310 (d) (5) (i)) indicates a species should meet four criteria to be considered for possible classification as an EC species: (1) Be a non-target species or non-target stock; (2) not be determined to be subject to overfishing, approaching overfished, or overfished; (3) not be likely to become subject to overfishing or overfished, according to the best available information, in the absence of conservation and management measures; and (4) not generally be retained for sale or personal use.

To determine if a species could be considered as an ecosystem component species, the four criteria identified in the NS 1 guidelines were scored a 1 (does not meet criteria) or 0 (meets criteria) for each of the four components (Table 4-x2). Scoring of non-target species or stock was based on landings (commercial and recreational). If landings met the current preferred alternative under the action of removal of species ($\leq 10,000$ lbs), a score of 0 was provided. Species with landings $> 10,000$ lbs were scored 1.

If a species had a stock assessment, and the assessment indicated a status of overfishing/overfished, a score of 1 was provided. If a species had no stock assessment, and if there was a stock assessment, but the assessment indicated that the species was not overfished/overfishing, a score of 0 was provided.

The likelihood of becoming overfishing or overfished was based on a productivity, susceptibility, and analysis (PSA) score provided by MRAG Americas, which suggests vulnerability to overfishing or becoming overfished (MRAG 2009). A score ranges from 1 to 3 for high to low productivity, respectively; and 1-3 for low to high susceptibility, respectively. Productivity factors includes life-history features of the species such as age at maturity, size at maturity, and its role in the food web. Examples susceptibility factors include release mortality, availability, and encounterability (MRAG 2009). If the total PSA score for a species provided by MRAG (2009) is less than 3, a stock is considered in Table 4-x2 to have a low probability of overfishing or becoming overfished.

Not generally retained for sale of personal use was based on landings, magnitude of discards not affected by regulations in relation to landings, and desirability. Assigning a score to this category is subjective. For example, it was assumed a grouper or snapper species, which occur in South Atlantic landings, would be retained even if landings were low because they are generally sought after by most commercial and recreational fishermen. Level of desirability depends on individuals fishing and availability of species for the fisher. Some species like bank sea bass are generally not retained because of their small size and availability of a higher quality co-occurring species. However, if regulations restrict harvest of all species except one species that was formerly discarded, that species would likely be retained. Further, it is likely all species in the snapper grouper FMU are retained to some degree by some segments of the fishing population. In addition, part of the Council's rationale for including all 73 species in the snapper grouper FMU was that they are part of a

multispecies fishery where species occur together, suggesting an ecosystem reason for originally including rarely taken species in the FMU.

Table 4-x2 shows that only one species, French grunt, meets all four criteria for ecosystem component species. Another 12 species attained a score of 1 out of 4 criteria suggesting they were stronger candidates for consideration as ecosystem component species than the other species in Table 4-x1.

Table 4-x2. Evaluation of snapper grouper species in fishery management unit for four criteria for consideration as EC species. A score of 0 indicates ecosystem criteria are met for the category. A total score of less than 2 suggests the species could be considered as an EC species. Thirteen EC candidate species are highlighted in yellow.

Common Name	Non-target species or non-target stock	Not be determined to be subject to overfishing, approaching overfished, or overfished	Not likely to become subject to overfishing or overfished	Not generally be retained for sale or personal use	Total
Almaco jack	1	0	1	1	3
Atlantic spadefish	1	0	1	1	3
Banded rudderfish	1	0	1	1	3
Bank sea bass	0	0	1	0	1
Bar jack	1	0	1	0	2
Black grouper	1	0	1	1	3
Black margate	1	0	1	1	3
Black sea bass	1	1	1	1	4
Black snapper	0	0	1	1	2
Blackfin snapper	0	0	1	1	2
Blue runner	1	0	1	1	3
Blueline tilefish	1	0	1	1	3
Bluestriped grunt	1	0	0	0	1
Coney	0	0	1	1	2
Cottonwick	0	0	0	1	1
Crevalle jack	1	0	1	1	3
Cubera snapper	1	0	1	1	3

Common Name	Non-target species or non-target stock	Not be determined to be subject to overfishing, approaching overfished, or overfished	Not likely to become subject to overfishing or overfished	Not generally be retained for sale or personal use	Total
Dog snapper	0	0	1	1	2
French grunt	0	0	0	0	0
Gag	1	1	1	1	4
Goliath grouper	0	0	1	1	2
Grass porgy	0	0	1	0	1
Gray snapper	1	0	1	1	3
Gray triggerfish	1	0	0	1	2
Graysby	1	0	0	1	2
Greater amberjack	1	0	1	1	3
Hogfish	1	0	1	1	3
Jolthead porgy	1	0	1	1	3
Knobbed porgy	1	0	1	1	3
Lane snapper	1	0	0	1	2
Lesser amberjack	1	0	1	1	3
Longspine porgy	0	0	1	0	1
Mahogany snapper	0	0	1	1	2
Margate	1	0	1	0	2
Misty grouper	0	0	1	1	2
Mutton snapper	1	0	1	1	3
Nassau grouper	0	1	1	0	2
Ocean triggerfish	0	0	1	0	1
Porkfish	1	0	1	0	2
Puddingwife	0	0	1	0	1
Queen snapper	0	0	1	1	2
Queen triggerfish	0	0	1	0	1
Red grouper	1	1	1	1	4
Red hind	1	0	1	1	3

Common Name	Non-target species or non-target stock	Not be determined to be subject to overfishing, approaching overfished, or overfished	Not likely to become subject to overfishing or overfished	Not generally be retained for sale or personal use	Total
Red porgy	1	1	1	1	4
Red snapper	1	1	1	1	4
Rock hind	1	0	1	1	3
Rock sea bass	0	0	1	0	1
Sailors choice	1	0	1	0	2
Sand tilefish	1	0	1	0	2
Saucereye porgy	0	0	1	1	2
Scamp	1	0	1	0	2
Schoolmaster	0	0	1	0	1
Scup	1	0	0	1	2
Sheepshead	1	0	1	1	3
Silk snapper	1	0	1	1	3
Smallmouth grunt	0	0	0	1	1
Snowy grouper	1	1	1	1	4
Spanish grunt	0	0	1	1	2
Speckled hind	0	1	1	1	3
Tiger grouper	0	0	1	0	1
Tilefish (Golden)	1	1	1	1	4
Tomtate	1	0	0	1	2
Vermilion snapper	1	1	1	1	4
Warsaw grouper	1	1	1	0	3
White grunt	1	0	0	1	2
Whitebone porgy	1	0	1	1	3
Yellow jack	1	0	1	0	2
Yellowedge grouper	1	0	1	1	3
Yellowfin grouper	1	0	1	1	3
Yellowmouth grouper	0	0	1	1	2

Common Name	Non-target species or non-target stock	Not be determined to be subject to overfishing, approaching overfished, or overfished	Not likely to become subject to overfishing or overfished	Not generally be retained for sale or personal use	Total
Yellowtail snapper	1	0	1	1	3
Wreckfish	1	0	1	1	3

In cases where no data were recorded for a species, charter boat and/or other recreational landings were assumed to be zero. Goliath grouper and Nassau grouper are excluded since harvest is prohibited for these species. Speckled hind and warsaw grouper are also excluded since harvest is restricted to one fish per vessel per trip and sale is prohibited.

Alternative 2 (Preferred) would designate 16 snapper grouper species with state and federal (combined) landings that are less than, or equal to 10,000 lbs, as ecosystem component species (Table 4-x3). Based on evaluation of the four ecosystem component criteria in Table 4-x2, seven species scored less than two. Landings of the snapper species are small, but they are all likely to be retained by fishermen due to their quality as a food fish. Coney, misty grouper, and yellowmouth grouper are retained by commercial fishermen and are also vulnerable to overfishing because they change sex and are relatively long lived. Scup in the South Atlantic are often very small and discarded as “trash fish”. However, in the mid-Atlantic there is a FMP for this species and they are very important to commercial and recreational fishermen. Furthermore, Table 4-x3 does show some tendency for scup to be retained by fishermen on headboats. As a result, it was not clear if scup should be considered as a species that is generally not retained as it is important to fishermen in other parts of its range.

Table 4-x3. Snapper grouper species with average state and federal (combined) landings from all sectors, from 2005-2008, that are less than or equal to 10,000 lbs as specified in Preferred Alternative 2.***

COMMON NAME	TOTAL ≤ 10000 LBS
Tiger grouper	0
Black snapper	0
Smallmouth grunt	0
Cottonwick	8
Mahogany snapper	438
Longspine porgy	471
Misty grouper	1,705
Blackfin snapper	2,436
Coney	2,460
Rock sea bass	2,585

COMMON NAME	TOTAL ≤ 10000 LBS
Yellowmouth grouper	4,356
Queen snapper	5,883
Bank sea bass	6,034
Dog snapper	6,082
Scup	8,500
Ocean triggerfish	8,708

Source: SEFSC ACL Database, May 2010

***Note: In cases where no data were recorded for a species, charter boat and/or other recreational landings were assumed to be zero. Goliath grouper, Nassau grouper are excluded since harvest is prohibited for these species. Speckled hind and warsaw grouper are also excluded since harvest is restricted to one fish per vessel per trip and sale is prohibited.

Alternative 3 would designate six snapper grouper species with state and federal (combined) landings that are less than, or equal to 1,000 lbs, as EC species (4-x4). Three of the species considered in this alternative had no landings during 2005-2008. Four species scored less than 2 when the four criteria were evaluated in Table 4-x2. Although mahogany snapper is extremely rare in landings, they would be expected to be retained if caught by a fisher due to their quality as a food fish. While it is likely that tiger grouper would be retained if caught by a fisher, there were no landings of this species during 2005-2008. Tiger grouper is commonly found in the Caribbean and there are reports of this species in the Tortugas; however, this species is rare to absent in the South Atlantic. Black snapper and smallmouth grunt have no discards, but there are no reported landings as well. While the criteria may be met for smallmouth grunt, black snapper is probably retained. Spanish grunt has very few landings and no discards, but a high PSA score.

Table 4-x4. Snapper grouper species with average state and federal (combined) landings from all sectors, from 2005 to 2008, that are less than or equal to 1,000 lbs as specified in Alternative 3.***

COMMON NAME	TOTAL ≤ 1000 LBS
Tiger grouper	0
Black snapper	0
Smallmouth grunt	0
Cottonwick	8
Mahogany snapper	438
Longspine porgy	471

Alternative 4 would designate nine snapper grouper species with state and federal (combined) landings less than, or equal to 2,500 lbs as ecosystem component species (Table 4-x5). Based on evaluation of the four ecosystem component criteria in Table 4-x2, seven species specified within this alternative scored less than two. Coney is a small grouper that would be expected to be retained by commercial and recreational fishermen due to its high quality relative to other species as a food fish.

Table 4-x5. Snapper grouper species with average state and federal (combined) landings from all sectors, from 2005-2008, that are less than or equal to 2,500 lbs as specied in Alternative 4.***

COMMON NAME	TOTAL ≤ 2500 LBS
Tiger grouper	0
Black snapper	0
Smallmouth grunt	0
Cottonwick	8
Mahogany snapper	438
Longspine porgy	471
Misty grouper	1,705
Blackfin snapper	2,436
Coney	2,460

Alternative 5 would designate 11 snapper grouper species with state and federal (combined) landings less than, or equal to 5,000 lbs as ecosystem component species (Table 4-x4). Based on evaluation of the four ecosystem component criteria in Table 4-x2, five species specified within this alternative scored less than two. Although landings of coney, misty grouper, and yellowmouth grouper are small, they are retained and sold by commercial fishermen. They are also vulnerable to overfishing because they change sex and are relatively long lived. Black snapper are not commonly caught but are likely to be retained by commercial and recreational fishermen because, like mahogany snapper, they would be desired above many other species as a food fish. Thus, these species may not qualify as ecosystem component species.

Table 4-x6. Snapper grouper species with average state and federal (combined) landings from all sectors, from 2005 to 2008, that are less than or equal to 5,000 lbs as specified in Alternative 5.***

COMMON NAME	TOTAL ≤ 5000 LBS
Tiger grouper	0

Black snapper	0
Smallmouth grunt	0
Cottonwick	8
Mahogany snapper	438
Longspine porgy	471
Misty grouper	1,705
Blackfin snapper	2,436
Coney	2,460
Rock sea bass	2,585
Yellowmouth grouper	4,356

Alternative 6 would designate seven snapper grouper species that meet three out of four NS 1 criteria, as ecosystem component species (Table 4-x7). Most of these species are generally not retained because of their small size and availability of a higher quality co-occurring species. While it is likely that tiger grouper would be retained if caught by a fisher, there were no landings of this species during 2005-2008. Tiger grouper is commonly found in the Caribbean; however, this species is rare to absent in the South Atlantic.

Table 4-x7. Snapper grouper species that meet three out of four NS 1 criteria, as EC species as specified in Alternative 6.

COMMON NAME
Tiger grouper
Smallmouth grunt
Cottonwick
Longspine porgy
Bank sea bass
Rock sea bass
Ocean triggerfish

Most of the species in **Alternatives 2-6** are subject to little management and are infrequently landed. Exceptions include the grouper (coney, misty grouper, yellowmouth grouper) and snapper species (dog snapper, mahogany snapper, blackfin snapper, and black snapper), which have limits on the number of individuals that can be retained by recreational fishermen. Furthermore, coney and

yellowmouth grouper are included in the four month spawning season closure for shallow water grouper species. Therefore, removing grouper (coney, misty grouper, and yellowmouth grouper) and snapper (mahogany snapper, blackfin snapper, dog snapper, and black snapper) species from the FMU through proposed actions in **Alternatives 2 (Preferred)-5** could result in increased harvest (albeit small) of the species by commercial and recreational fishermen since they would no longer be subject to management. Therefore the biological effects for these species would be greatest for no-action **Alternative 1** and would be least for **Alternative 2 (Preferred)**.

4.1.2.2 Economic Effects

Alternatives 2-5 designate proposed ecosystem component species groupings. Removal of these species from the fishery management unit could result in positive short-term economic impacts for commercial fishermen if catches of these species increase. However, the fishery would experience negative long-term economic impacts if they are caught in volumes that endanger the sustainability of the stock. **Alternative 2** identifies 9 species as EC species while **Alternatives 3, 4, and 5** identify 14, 17, and 23 species as EC species. Therefore, **Alternative 5** has the potential to result in the greatest negative long-term economic impacts compared to **Alternative 1**.

4.1.2.3 Social Effects

4.1.2.4 Administrative Effects

Species that are designated as EC species are not required to have an ACL or AMs. **Alternative 1** would not designate species as EC species and would not reduce the administrative impacts on the agency of establishing an ACL, ACTs and AMs (Action XX-XX). **Alternative 2-Preferred Alternative 5** would all reduce the number of species in the FMU by increasing amounts. **Preferred Alternative 5** results in the largest reduction of species from the FMU and will reduce the administrative burden the most. However, **Preferred Alternative 5** may not meet the definition of an EC species and could be subject to legal action, which would increase the administrative burden on the agency.

4.1.2.5 Council’s Conclusions

4.1.3 Action 3: Establish Species Groupings for Snapper Grouper Species

Alternative 1 (No Action). Do not establish multi-species groupings for fish in the Snapper Grouper FMU.

Alternative 2 (Preferred). Establish species groups for fish under the Snapper Grouper FMU following methodology used for the Gulf of Mexico and Caribbean ACL Amendments.

NOTE: The wording that follows was not part of the alternative when the Council chose it as their preferred. Get approval for changes to the wording at December meeting.

Establish species complexes using associations based on life history, catch statistics from commercial logbook and observer data, recreational headboat logbook and private/charter survey, and fishery-independent MARMAP data. Establish sub-complexes within species complexes. When a complex ACL is exceeded, all species in that complex, as well as those in sub-complexes will be subject to AMs. When a sub-complex ACL is exceeded, but is below the combined ACL of the complex, only the species in that particular sub-complex will be subject to AMs. Complex and/or sub-complex ACLs will be a sum of the individual ACLs included in that complex (all sectors combined) and/or sub-complex.

Table 5: Species complexes and sub-complexes for Snapper-Grouper species. DW = Deep-water; SWG = Shallow-water grouper; SWS = Shallow-water snapper; PGH = Porgies, grunts, and hinds. 1 = Assessed species; 2 = Most vulnerable species (PSA analysis).

COMPLEX ID	SUB-COMPLEX ID
2a. DW Complex	DW Sub-Complex
Warsaw grouper ₂	
Yellowedge grouper	
Snowy grouper ₁	
Blueline tilefish	
	2a(i)
	2a(ii)

Sand tilefish	
Golden tilefish ₁	
Silk snapper	2a(iii)
2b. SWG Complex	SWG Sub-Complex
Gag _{1,2}	2b(i)
Red grouper ₁	
Scamp	2b(ii)
Black grouper ₁	2b(iii)
Yellowfin grouper	2b(iv)
2c. Jacks Complex	Jacks Sub-Complex
Greater amberjack ₁	2c(i)
Almaco jack ₂	
Banded rudderfish	2c(ii)
2d. SWS Complex	SWS Sub-Complex
Yellowtail snapper ₁	2d(i)
Gray snapper ₂	
Lane snapper	2d(ii)
Mutton snapper ₁	2d(iii)
2e. PGH Complex	PGH Sub-Complex
Whitebone porgy ₂	
Knobbed porgy	
Jolthead porgy	2e(i)
Red hind	
Rock hind	2e(ii)
Tomtate	
White grunt	2e(iii)
2f. Individual ACLs	
Red snapper ₁	
Vermilion snapper ₁	

Red porgy ₁
Goliath grouper ₁
Black sea bass ₁
Wreckfish ₁
Gray triggerfish
Bar jack
Nassau grouper
Hogfish

Alternative 3. Snapper grouper species groupings based on similar life histories. Composition and division of Snapper Grouper FMU (indicator species in bold).

SHALLOW WATER

GROUPE

UNIT 1

Gag

Red grouper

Red hind

Rock hind

Black grouper

Yellowfin grouper

Scamp

UNIT 2

Goliath grouper

UNIT 3

Nassau grouper

DEEP WATER

GROUPE

TILEFISH UNIT

Snowy grouper

Yellowedge grouper

Warsaw grouper

Speckled hind

Tilefish (golden)

Blueline tilefish

WRECKFISH

Wreckfish

SHALLOW WATER

SNAPPER, TILEFISH,

AND WRASSE UNIT

Yellowtail snapper

Mutton snapper

Gray (mangrove) snapper

Lane snapper

Dog snapper

Sand tilefish

Hogfish

MID-SHELF SNAPPER

UNIT

Vermilion snapper

Silk snapper

Red snapper

JACK UNIT

Greater amberjack

Almaco jack

Banded rudderfish

Bar jack

GRUNT AND PORGY

UNIT 1

Red porgy

UNIT 2

White grunt

Tomtate

Jolthead porgy

Whitebone porgy

Knobbed porgy

SEA BASS UNIT

Black sea bass

4.1.3.1 Biological Effects

Alternative 1 (No Action) would not establish species groups in the Snapper Grouper FMU, and would hence require individual ACLs for 37 species. Stock assessments are currently available for only 14 of these species, with no status determination criteria for the remaining species. Many of these stocks suffer from issues with species identification and/or extreme fluctuations in relative landings through time due to rarity, or lack of targeted fishing effort. Thus, specifying individual ACLs based on average catch for these stocks might result in periodic overages that would require AM implementation, creating additional burdens on science and enforcement. Grouping unassessed stocks into complexes may help avoid implementing AMs for species whose landings fluctuate due to rarity or species identification issues.

National Standard 3 (Section 301 of the Magnuson-Stevens Fishery Conservation and Management Act) states that, “to the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.” A stock complex, as defined by the recently amended National Standard 1 guidance, is “a group of stocks that are sufficiently similar in geographic distribution, life history, and vulnerabilities to the fishery such that the impact of management actions on the stocks is similar” (74 FR 3178). Stocks may be grouped into complexes if: 1) they cannot be targeted independently of one another in a multispecies fishery; 2) there is not sufficient data to measure their status relative to established status determination criteria; or 3) when it is feasible for fishermen to distinguish individual stocks among their catch (50 CFR 600.310 (b) (8) in 74 FR 3178). Guidelines at 50 CFR 600.320 (d) define a management unit as “a fishery or that portion of a fishery identified in a FMP as relevant to the FMP’s management objectives.” Management units may be organized based on biological, geographic, economic, technical, social, or ecological considerations (50 CFR 600.320 (d) (1)).

Alternative 2 (Preferred) meets the above guidelines and establishes species groups using fishery-dependent and independent data for all 37 species. Detailed quantitative analyses included Productivity-Susceptibility Analysis and life history characteristics, in addition to examining differences in vulnerability and other population dynamic parameters (see report in Appendix xxx for complete details on methodology). Multivariate statistical analyses revealed several consistent assemblages which are incorporated into complexes and sub-complexes (Table 5). Individual ACLs are included for species that do not relate closely to the species groups and/or already have an established ACL through assessments. Sub-complexes comprising of single-species are not included in the list of species with individual ACLs, because they are more closely related to the complex, and some do not have an assessment yet. When a complex ACL is exceeded, all species in that complex, as well as those in sub-complexes will be subject to AMs. When a sub-complex ACL is exceeded, but is below the combined ACL of the complex, only the species in that particular sub-complex will be subject to AMs. Complex and/or sub-complex ACLs will be a sum of the individual ACLs included in that complex (all sectors combined) and/or sub-complex.

A deep-water complex (DWG, Table 5, 2a) would be established consisting of Warsaw grouper, Yellowedge grouper, Snowy grouper, Blueline tilefish, Sand tilefish, Golden tilefish, and Silk

snapper. Separate deep-water sub-complexes would be established comprising of groupers, tilefish, and Silk snapper (Table 5, 2a(i), 2a(ii), and 2a(iii), respectively). Golden tilefish and Snowy grouper have SEDAR assessments, while Warsaw grouper is the most vulnerable species (PSA analysis).

A shallow-water grouper complex (SWG, Table 5, 2b) would be established comprising of Gag, Red grouper, Scamp, Black grouper, and Yellowfin grouper. Shallow-water grouper sub-complexes would be established for Gag; Red grouper and Scamp; Black grouper; and Yellowfin grouper (Table 5, 2b(i)), 2b(ii), 2b(iii), and 2b(iv), respectively). Gag, Red grouper, and Black grouper have SEDAR assessments. Gag is also the most vulnerable species (PSA analysis).

The Jacks complex (Table 5, 2c) would consist of Greater amberjack, Almaco jack, and Banded rudderfish. Two sub-complexes would be established, comprising of an assessed species, Greater amberjack (Table 5, 2c(i)); and Almaco jack (most vulnerable species, PSA) and Banded rudderfish (Table 5, 2c(ii)).

The shallow-water snapper complex (SWS, Table 5, 2d) would consist of Yellowtail snapper, Gray snapper, Lane snapper, and Mutton snapper. Sub-complexes would consist of Yellowtail snapper (Table 5, 2d(i)), Gray snapper and Lane snapper (Table 5, 2d(ii)), and Mutton snapper, 2d(iii). Yellowtail snapper and Mutton snapper have SEDAR assessments, and Gray snapper is the most vulnerable species (PSA analysis).

A complex comprising of Whitebone porgy, Knobbed porgy, Jolthead porgy, Red hind, Rock hind, Tomtate, and White grunt would be established (PGH, Table 5, 2e). There are no SEDAR assessments for the species in this complex. Whitebone porgy is the most vulnerable species (PSA analysis). Sub-complexes would consist of Whitebone porgy, Knobbed porgy, and Jolthead porgy (Table 5, 2e(i)), Red hind and Rock hind (Table 5, 2e(ii)), and Tomtate and White grunt (Table 5, 2e(iii)).

Finally, individual ACLs would be utilized for Red snapper, Vermilion snapper, Red porgy, Goliath grouper, Black sea bass, Wreckfish, Gray Triggerfish, Bar jack, Nassau grouper, and Hogfish (Table 5, 2f). All have SEDAR stock assessments and established ACLs. Goliath grouper and Nassau grouper are prohibited species.

Alternative 3 represents an approach towards species groupings that was explored during the development of Snapper Grouper Amendment 13B. The SSC did not endorse this approach (date?) because it felt that there was insufficient quantitative analyses conducted. While life-history parameters were considered in drafting the groups, they were more qualitative in nature. Comparing the species groups between **Alternative 2 (Preferred)** and **Alternative 3**, we see differences such as: Speckled hind is included in the deep-water species group in **Alternative 3**, whereas it is included in the porgies, grunts, and hinds group in **Alternative 2 (Preferred)**.

The approach in **Alternative 2 (Preferred)** would provide multiple handles of control in the AMs that would help prevent overfishing of all species in the complex. If the single-species ACLs were slightly exceeded, AMs would be implemented for that stock without necessarily impacting the stocks in the sub-complex, allowing the fishery to obtain optimum yield (OY) for the productive

stock. If the sub-complex ACLs were exceeded, AMs would be implemented for that sub-complex without necessarily impacting the most productive stock. Finally, if the ACL for the targeted stock were grossly exceeded (exceeding the complex ACL) AMs would be implemented for the whole complex. This multi-faceted approach promotes attaining OY for the productive stocks while providing two mechanisms to prevent overfishing of the less productive—often more vulnerable—stocks. Grouping less productive, vulnerable, and/or data-poor stocks into sub-complexes helps mitigate uncertainty in individual landings histories, mitigates issues with species identification, and provides buffers against the unnecessary implementation of AMs. The use of an ACL for an overall complex containing one or more productive stocks plus other less productive stocks from the sub-complex helps protect the sub-complex stocks from overfishing because even if their sub-complex ACL is not exceeded according to the existent data collection program, undetected overfishing of these stocks may be taking place during overharvesting of a productive stock with which they are often incidentally or deliberately harvested.

The Magnuson-Stevens Fishery Conservation and Management Act of 2006 requires regional fishery management councils to implement ACLs and AMs for all stocks under Federal management by 2011, to ensure overfishing does not occur. **Alternative 1** would not accomplish this. **Alternatives 2 (Preferred) and 3** would help in accomplishing this goal, with **Alternative 2 (Preferred)** having the highest potential of yielding the best biological effect.

4.1.3.2 Economic Effects

4.1.3.3 Social Effects

4.1.3.4 Administrative Effects

The establishment of species groupings will aid in the establishment of ACLs, ACTs, and AMs for species in which there is not a lot of information. The development of species groupings requires complex data analysis and manipulation which requires staff time. However, if the number of species in the snapper grouper FMU can be reduced by incorporating species complexes and groupings, the administrative impacts of establishing, monitoring and implementing ACLs, ACTs and AMs (through Actions XX-XX) will be reduced.

4.1.3.5 Council's Conclusions

4.1.4 Action 4: Establish an Acceptable Biological Catch (ABC) Control Rule for Snapper Grouper Species That Have Not Been Assessed

Alternative 1 (No Action). Do not establish an ABC Control Rule for species in the Snapper Grouper FMU that have not been assessed through the Southeast Data Assessment and Review (SEDAR) program and do not have a P* analysis.

List species

Alternative 2. Establish an ABC Control Rule where ABC equals OFL.

Alternative 3. Establish an ABC Control Rule where ABC equals a percentage of OFL.

Subalternative 3a. ABC=65%OFL

Subalternative 3b (Preferred). ABC=75%OFL

Subalternative 3c. ABC=85%OFL

Alternative 4. Establish an ABC Control Rule where ABC equals a percentage of the yield at MFMT.

Subalternative 4a. ABC=yield at 65%MFMT

Subalternative 4b. ABC=yield at 75%MFMT

Subalternative 4c. ABC=yield at 85%MFMT

Table 1. OFL and ABC Values for Species Not Assessed for the ABC Control Rule Alternatives. Table excludes species that would be removed from the FMU (Action 1). Denoted in green are those species that would be designated as EC species (Action 2).

Species Common Name	OFL (lbs ww) Median 99-08 landings	ABC Control Rule Alternatives for Species Not Assessed						
		ABC Alt. 2 ABC=OF L	ABC Alt. 3a ABC=65 %OFL	ABC Alt. 3b ABC=75% OFL (Preferred)	ABC Alt. 3c ABC=85 %OFL	ABC Alt. 4a ABC=65%MFMT (equals 93%OFL)	ABC Alt. 4b ABC=75%MF MT (equals 97%OFL)	ABC Alt. 4c ABC=85%MF MT (equals 99%OFL)
almaco jack	229,237	229,237	149,004	171,927	194,851	213,190	222,359	226,944
amberjack	222,934	222,934	144,907	167,201	189,494	207,329	216,246	220,705
banded rudderfish	119,915	119,915	77,945	89,936	101,928	111,521	116,318	118,716
bank sea bass	6,240	6,240	4,056	4,680	5,304	5,803	6,053	6,178
bar jack	10,010	10,010	6,507	7,508	8,509	9,309	9,710	9,910
black snapper	229	229	149	171	194	213	222	226
blackfin snapper	2,154	2,154	1,400	1,615	1,830	2,003	2,089	2,132
blueline tilefish	146,134	146,134	94,987	109,601	124,214	135,905	141,750	144,673
coney	1,975	1,975	1,283	1,481	1,678	1,836	1,915	1,955
cottonwick	111	111	72	83	94	103	107	109
dog snapper	2,587	2,587	1,681	1,940	2,199	2,405	2,509	2,561
gray snapper	769,328	769,328	500,063	576,996	653,928	715,475	746,248	761,634
gray triggerfish	275,215	275,215	178,890	206,411	233,933	255,950	266,959	272,463
graysby	16,261	16,261	10,570	12,196	13,822	15,123	15,773	16,098
hogfish	133,139	133,139	86,540	99,854	113,168	123,819	129,144	131,807
jolthead porgy	32,818	32,818	21,332	24,614	27,895	30,521	31,833	32,490
knobbed	45,910	45,910	29,842	34,433	39,024	42,696	44,533	45,451

Species Common Name	OFL (lbs ww) Median 99-08 landings	ABC Control Rule Alternatives for Species Not Assessed						
		ABC Alt. 2 ABC=OFL	ABC Alt. 3a ABC=65 %OFL	ABC Alt. 3b ABC=75% OFL (Preferred)	ABC Alt. 3c ABC=85 %OFL	ABC Alt. 4a ABC=65%MFMT (equals 93%OFL)	ABC Alt. 4b ABC=75%MF MT (equals 97%OFL)	ABC Alt. 4c ABC=85%MF MT (equals 99%OFL)
porgy								
lane snapper	114,396	114,396	74,357	85,797	97,236	106,388	110,964	113,252
longspine porgy	14	14	9	10	11	13	13	13
mahogany snapper	53	53	34	40	45	49	51	52
misty grouper	2,347	2,347	1,525	1,760	1,995	2,182	2,276	2,323
nassau grouper	39	39	25	29	33	36	37	38
ocean triggerfish	10,088	10,088	6,557	7,566	8,575	9,382	9,785	9,987
porkfish	14,771	14,771	9,601	11,078	12,555	13,737	14,328	14,623
queen snapper	7,584	7,584	4,930	5,688	6,446	7,053	7,356	7,508
queen triggerfish	6,585	6,585	4,280	4,939	5,597	6,124	6,387	6,519
red hind	24,406	24,406	15,864	18,305	20,745	22,698	23,674	24,162
rock hind	32,792	32,792	21,315	24,594	27,873	30,497	31,808	32,464
rock sea bass	2,779	2,779	1,806	2,084	2,362	2,584	2,695	2,751
sand tilefish	6,341	6,341	4,121	4,755	5,389	5,897	6,150	6,277
scamp	492,573	492,573	320,172	369,429	418,687	458,092	477,795	487,647
scup	6,579	6,579	4,276	4,934	5,592	6,118	6,382	6,513
silk snapper	27,519	27,519	17,887	20,639	23,391	25,592	26,693	27,243
smallmouth grunt	0	0	0	0	0	0	0	0
spadefish	44,058	44,058	28,637	33,043	37,449	40,973	42,736	43,617

Species Common Name	OFL (lbs ww) Median 99-08 landings	ABC Control Rule Alternatives for Species Not Assessed						
		ABC Alt. 2 ABC=OF L	ABC Alt. 3a ABC=65 %OFL	ABC Alt. 3b ABC=75% OFL (Preferred)	ABC Alt. 3c ABC=85 %OFL	ABC Alt. 4a ABC=65%MFMT (equals 93%OFL)	ABC Alt. 4b ABC=75%MF MT (equals 97%OFL)	ABC Alt. 4c ABC=85%MF MT (equals 99%OFL)
tiger grouper	0	0	0	0	0	0	0	0
tomtate	64,228	64,228	41,748	48,171	54,593	59,732	62,301	63,585
white grunt	363,013	363,013	235,958	272,260	308,561	337,602	352,123	359,383
whitebone porgy	24,660	24,660	16,029	18,495	20,961	22,934	23,920	24,413
yellowedge grouper	30,221	30,221	19,643	22,665	25,687	28,105	29,314	29,918
yellowfin grouper	4,414	4,414	2,869	3,311	3,752	4,105	4,282	4,370
yellowmouth grouper	2,144	2,144	1,394	1,608	1,822	1,994	2,080	2,123

4.1.4.1 Biological Effects

Alternative 1 (No Action) would not establish an acceptable biological catch (ABC) control rule for species in the snapper grouper fishery management unit (FMU) that have not been assessed. Although there are currently no ABC control rules, there are status quo ABC values of 0 lbs landed catch for speckled hind and warsaw grouper, neither of which has had a recent assessment. These ABC values are contained in Amendment 17B to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region, and are based on recommendations from the Council's Scientific and Statistical Committee (SSC). However, for stock and stock complexes required to have an ABC, the national standard 1 guidelines for the Reauthorized Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) state the ABC will be set on the basis of the ABC control rule. Therefore, **Alternative 1** would not meet the requirements of the Magnuson-Stevens Act.

Alternatives 2-4 would specify an ABC control rule for non-assessed species or species groups. Under **Alternative 2**, ABC would be equal to OFL. The national standard 1 guidelines recommend OFL be the upper bound of ABC, but ABC should usually be reduced from the OFL to account for scientific uncertainty in the estimate of OFL. Since there would be no buffer between ABC and OFL, the biological effect of **Alternative 2** would be less than **Alternatives 3 and 4**. In contrast to **Alternative 2**, **Alternatives 3 and 4** would account for scientific uncertainty by providing a buffer between ABC and OFL.

Alternative 3 would set the ABC as a percentage of the OFL where Alternative 3a would be the most conservative sub-alternative where $ABC = 65\%OFL$ and Alternative 3c would be the least conservative sub-alternative where $ABC = 85\%OFL$. Alternative 3b (Preferred) would set ABC at $75\%OFL$. Alternative 3 and its sub-alternatives would provide a greater buffer between OFL and ABC than Alternative 4 and its sub-alternatives. Alternative 4a, the most conservative alternative under Alternative 4, would set $ABC = \text{yield at } 65\%MFMT$, which is equivalent to about $93.6\%OFL$. Alternative 4B would set $ABC = \text{yield at } 75\%MFMT$, which is equivalent to $97.1\%OFL$. Alternative 4c would be the least conservative alternative under Alternative 4 and would set $ABC = \text{yield at } 85\%MFMT$, which is equivalent to about $98.9\%OFL$. Therefore, Alternative 3 would be expected to have a greater biological benefit among Alternatives 1-4.

4.1.4.2 Economic Effects

In general, the more conservative the ABC control rule, the greater the short-term positive economic impacts and the greater the long-term negative economic impacts. While **Alternative 1** would provide the commercial fishery the largest short-term economic benefits and the smallest long-term economic benefits, **Alternative 3** would result in the smallest short-term economic benefits and the largest long-term economic benefits.

4.1.4.3 Social Effects

4.1.4.4 Administrative Effects

The establishment of an ABC Control Rule is a purely administrative process. The rule is established by the Council's SSC for consideration by the Council. The administrative impacts of establishing a control rule are minimal and would not differ much between the proposed alternatives.

4.1.4.5 Council's Conclusions

4.1.5 Action 5: Establish an Acceptable Biological Catch (ABC) Control Rule for Assessed Species in the Snapper Grouper FMU

Alternative 1 (No Action). Do not establish an ABC Control Rule for species in the Snapper Grouper FMU that have been assessed through the Southeast Data Assessment and Review (SEDAR) program and have a P* analysis.

List species

Alternative 2. Establish an ABC Control Rule where ABC equals OFL.

Alternative 3. Establish an ABC Control Rule where ABC equals a percentage of OFL.

Subalternative 3a. ABC=65% OFL

Subalternative 3b. ABC=75% OFL

Subalternative 3c. ABC=85% OFL

Alternative 4. Establish an ABC Control Rule where ABC equals a percentage of the yield at MFMT.

Subalternative 4a. ABC=yield at 65% MFMT

Subalternative 4b. ABC=yield at 75% MFMT

Subalternative 4c. ABC=yield at 85% MFMT

Alternative 5 (Preferred). Establish ABCs based on the SSC's ABC control rule for assessed species that have a P* analysis (**list species**).

Alternative 6. Establish an ABC Control Rule where ABC is a percentage of OFL. The percentage is based upon the level of risk of overfishing (P*).

Subalternative 6a. ABC=X% of OFL. The X% is based upon P* equals .20.

Subalternative 6b. ABC=X% of OFL. The X% is based upon P* equals .30.

Subalternative 6c. ABC=X% of OFL. The X% is based upon P* equals .40.

Subalternative 6d. ABC=X% of OFL. The X% is based upon P* equals .50.

Table 2. OFL and ABC Values for Assessed Species for the ABC Control Rule Alternatives.

Species Common Name	OFL	ABC Control Rule Alternatives for Assessed Species							ABC Alt. 5 SSC Control Rule	ABC Alt. 6a-6d (P*=.20 to .50)
		ABC Alt. 2 ABC=OFL	ABC Alt. 3a ABC=65%OFL	ABC Alt. 3b ABC=75% OFL	ABC Alt. 3c ABC=85% OF	ABC Alt. 4a ABC=65%MF MT	ABC Alt. 4b ABC=75%MF MT	ABC Alt. 4c ABC=85%MF MT		
black grouper	818,959	818,959							610,482	
black sea bass	Yield at MFMT								847,000	
gag										
goliath grouper										
greater amberjack	2,005,000	2,005,000							1,968,000	
mutton snapper										
red grouper	669,000	669,000							665,000	
red porgy									395,281	
red snapper										
snowy grouper	Yield at MFMT								102,960	
tilefish	336,400	336,400							311,000	
vermillion snapper									1,109,000	
yellowtail snapper									2,898,500	

Update table above

IPT recommends combining actions 4 and 5 above into a single action:

Alternative 1 (No Action). Do not establish an ABC Control Rule for species in the Snapper Grouper FMU

For species that have been assessed

Alternative 2. Establish an ABC Control Rule where ABC equals OFL.

Alternative 3. Establish an ABC Control Rule where ABC equals a percentage of OFL

Subalternative 3a. ABC=65%OFL

Subalternative 3b. ABC=75%OFL

Subalternative 3c. ABC=85%OFL

Alternative 4. Establish an ABC Control Rule where ABC equals a percentage of the yield at MFMT.

Subalternative 4a. ABC=yield at 65%MFMT

Subalternative 4b. ABC=yield at 75%MFMT

Subalternative 4c. ABC=yield at 85%MFMT

Alternative 5 (Preferred). Establish ABCs based on the SSC's ABC control rule for assessed species that have a P* analysis

Alternative 6. Establish an ABC Control Rule where ABC is a percentage of OFL. The percentage is based upon the level of risk of overfishing (P*).

Subalternative 6a. ABC=X% of OFL. The X% is based upon P* equals .20.

Subalternative 6b. ABC=X% of OFL. The X% is based upon P* equals .30.

Subalternative 6c. ABC=X% of OFL. The X% is based upon P* equals .40.

Subalternative 6d. ABC=X% of OFL. The X% is based upon P* equals .50.

For species that have NOT been assessed

Alternative 7. Establish an ABC Control Rule where ABC equals OFL.

Alternative 8. Establish an ABC Control Rule where ABC equals a percentage of OFL

Subalternative 8a. ABC=65%OFL

Subalternative 8b (Preferred). ABC=75%OFL (IPT's suggested change: ABC = 75%OFL until such time as the SSC's Control Rule for unassessed stocks can be applied)

Subalternative 8c. ABC=85%OFL

Alternative 9. Establish an ABC Control Rule where ABC equals a percentage of the yield at MFMT.

Subalternative 9a. ABC=yield at 65%MFMT

Subalternative 9b. ABC=yield at 75%MFMT

Subalternative 9c. ABC=yield at 85%MFMT

Alternative 10. Adopt the SSC's control rule for unassessed species and implement ABCs based on that rule in a future amendment. NOTE: The Council would have to pick this alternative as a Preferred along with Subalt 8b above)

4.1.5.1 Biological Effects

Alternative 1 (No Action) would not establish an acceptable biological catch (ABC) control rule for species in the snapper grouper fishery management unit (FMU) that have been assessed. Recently assessed snapper grouper species include: Golden tilefish; snowy grouper; gag; red snapper; vermilion snapper; black sea bass; red porgy; yellowtail snapper; hogfish; goliath grouper; mutton snapper; greater amberjack; red grouper; and black grouper. Although there are currently no ABC control rules, there are status quo ABC values for some snapper grouper species based on recommendations for the Council's Scientific and Statistical Committee (SSC). For overfished species, the SSC previously recommended ABCs equal to the value specified in the rebuilding plan, which are included in Amendments 17A and 17B to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (FMP) (Table 4-x). However, for stock and stock complexes required to have an ABC, the national standard 1 guidelines for the Reauthorized Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) state the ABC will be set on the basis of the ABC control rule. Therefore, **Alternative 1** would not meet the requirements of the Magnuson-Stevens Act.

Table 4-x. ABCs for assessed snapper grouper species specified in Amendments 17B and 17A based on recommendation from the Council's SSC.

Species	ABC
Black sea bass	717,797 lbs gw
Gag	805,000 lbs gw
Snowy grouper	87,254 lbs gw
Vermilion snapper	1,109,000 lbs gw
Red snapper	0 lbs

Alternatives 2-6 would specify an ABC control rule for assessed species or species groups. Under **Alternative 2**, ABC would be equal to OFL. The national standard 1 guidelines recommend OFL be the upper bound of ABC, but ABC should usually be reduced from the OFL to account for scientific uncertainty in the estimate of OFL. For overfished stocks, ABC must also be set to reflect the annual catch that is consistent with the rebuilding plan for that stock. Therefore, if a stock is being managed under a rebuilding program, its ABC should be lower during some or all stages of rebuilding than when the stock is rebuilt. Since there would be no buffer between ABC and OFL, the biological effect of **Alternative 2** would be less than **Alternatives 3-6**. In contrast to **Alternative 2**, **Alternatives 3-6** would account for scientific uncertainty by providing a buffer between ABC and OFL.

Alternative 3 would set the ABC as a percentage of the OFL where **Alternative 3a** would be the most conservative sub-alternative where $ABC = 65\%OFL$ and **Alternative 3b** would be the least conservative sub-alternative where $ABC = 85\%OFL$. **Alternative 3** would provide a greater buffer between OFL and ABC than **Alternative 4** and its sub-alternatives. **Alternative 4a**, the most conservative alternative under **Alternative 4**, would set $ABC = \text{yield at } 65\%OFL$, which is

equivalent to about 93%OFL. **Alternative 4c** would be the least conservative alternative under **Alternative 4** and would set ABC = yield at 95%OFL, which is equivalent to about 98%OFL. Therefore, **Alternative 3** would be expected to have a greater biological benefit among **Alternatives 1-4**.

Rather than setting ABC as a proportion of OFL, **Preferred Alternative 5** and **Alternative 6** would consider the probability of overfishing in determining ABC. **Preferred Alternative 5** would establish ABCs based on the SSC's ABC control rule for assessed species that have four dimensions included in the control rule framework: Assessment information; characterization of uncertainty; stock status; and productivity/susceptibility of the stock. Each dimension would contain tiers that can be evaluated for each stock to determine a numerical score. The uncertainty buffer, or difference between OFL and ABC, would be expressed in terms of a reduction in the "probability of overfishing", or "P*". The adjustment score provided by the tiers and dimensions represents the amount by which P* is reduced to obtain the critical value for P*. Therefore, the key product of the control rule is the sum of scores for all dimensions that is used as an adjustment factor calculate the critical value for P*. The scoring provides a maximum P* adjustment of 40% and a minimum of 0% that results in critical values for P* ranging from 10% to 50%. These critical values are then used to determine the actual ABC from projection tables that provide the level of annual yield that corresponds to a particular P*.

Setting ABC equal to OFL implies a P* equal to 50%, where 50% represents the chance of overfishing occurring. Reducing P* will reduce ABC and provide a reduction in the probability of overfishing occurring. The relationship between the amount of reduction in P* and the resulting reduction in ABC is determined by the shape of the distribution of yield about the management parameters. For a given reduction in P*, broad distributions (suggesting higher uncertainty) will result in larger reductions in ABC whereas narrower distributions (suggesting lower uncertainty) will result in smaller reductions in ABC.

A probability of overfishing approach (P*) would also be used in **Alternative 6** except rather than using dimensions associated with a stock to calculate a P*, the Council would decide upon a probability of overfishing that could be applied to stocks. The P* in the sub-alternatives would range for a 50% chance of overfishing in **Alternative 6d** to a 20% chance of overfishing in **Alternative 6a**. **Preferred Alternative 5** would differ from **Alternative 6** in that different probability of overfishing would be calculated for each stock based on various attributes. In contrast, an acceptable probability of overfishing would be determined by the Council in **Alternative 6** upon which the ABC would be based. The biological effects of **Preferred Alternative 5** and **Alternative 6** could be greater or less than **Alternatives 2-4** because ABC would be based on shape of the distribution of yield describing assessment uncertainty rather than a set proportion of OFL. However, **Preferred Alternative 5** and **Alternative 6** could be more appropriate in determining ABC since uncertainty in estimating OFL will vary in every assessment. Setting ABC based on a proportion of OFL could result in an ABC that was lower than needed or does not provide enough buffer to account for scientific uncertainty.

4.1.5.2 Economic Effects

In general, the more conservative the ABC control rule, the greater the short-term positive economic impacts and the greater the long-term negative economic impacts. While **Alternative 1** would provide the commercial fishery the largest short-term economic benefits and the smallest long-term economic benefits, **Alternative 3** would result in the smallest short-term economic benefits and the largest long-term economic benefits compared to **Alternatives 2-4**. **Preferred Alternatives 5 and 6** could have positive or negative economic impacts on the commercial fishery depending on the fish stock, compared to **Alternatives 2-4**.

4.1.5.3 Social Effects

4.1.5.4 Administrative Effects

The establishment of an ABC Control Rule is a purely academic exercise. Although the control rule guides management, no specific ACL designation is given through the specification of the control rule. The rule is established by the Council's SSC for consideration by the Council. The administrative impacts of establishing a control rule are minimal and would not differ much between the proposed alternatives.

4.1.5.5 Council's Conclusions

4.1.6 Action 6: Specify Allocations for Snapper Grouper Fishery

IPT recommends removing reference to poundage from alternatives 4-7 below to allow for future changes to the ABC.

Alternative 1 (No Action). Retain the current allocations. Do not specify allocations for those species where no allocations have been specified. NOTE: will new alternatives have to be developed based on species groupings?????. Or will allocation alternatives apply to individual species to determine ACLs and then added up to determine group ACL. Also, is the Council's intent to consider new allocations for species that already have ACLs (identified in Alternative 1) or just identify allocations for species that do not have them. Further, red grouper has an allocation action in Amendment 24.

Table 4-x. Allocations for snapper grouper species established in other amendments

	Allocations	
	Commercial	Recreational
black sea bass	43%	57%
gag	51%	49%
golden tilefish (proposed in 17B)	97%	3%
red porgy	50%	50%
snowy grouper	95%	5%

vermilion snapper	68%	32%
Red grouper (proposed in 24)	47%	53%

Alternative 2 (Preferred). Divide allocations among two sectors, commercial and recreational, using the following equation:

Allocation by sector = $(0.5 * \text{catch history}) + (0.5 * \text{current trend})$ whereby, catch history = 1986 onward, current trend = 2006-2008 for this amendment.

Alternative 3. Divide allocations among three sectors, commercial, recreational, and for-hire, using the following equation:

Allocation by sector = $(0.5 * \text{catch history}) + (0.5 * \text{current trend})$ whereby, catch history = 1986 onward, current trend = 2006-2008 for this amendment.

Alternative 4. Commercial = X% of ABC and recreational = X% of ABC (Established by using catch history from 1986-2008). This alternative would establish a commercial annual catch limit of X pounds whole weight and a recreational annual catch limit of X pounds whole weight. The commercial and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 5. Commercial = X% of ABC and recreational = X% of ABC (Established by using catch history from 1986-1998). This alternative would establish a commercial annual catch limit of X pounds whole weight and a recreational annual catch limit of X pounds whole weight. The commercial and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 6. Commercial = X% of ABC and recreational = X% of ABC (Established by using catch history from 1999-2008). This alternative would establish a commercial annual catch limit of X pounds whole weight and a recreational annual catch limit of X pounds whole weight. The commercial and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 7. Commercial = X% of ABC and recreational = X% of ABC (Established by using catch history from 2006-2008). This alternative would establish a commercial annual catch limit of X pounds whole weight and a recreational annual catch limit of X pounds whole weight. The commercial and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

4.1.6.1 Biological Effects

(Need to discuss Alternatives 4-7)

Alternative 1 (No Action) would retain the allocations that are currently in place for black sea bass, gag, golden tilefish, red porgy, snowy grouper, and vermilion snapper but would not specify commercial or recreational allocations for the remaining species or species groups in the Snapper Grouper Fishery Management Plan. If an allocation is not specified then it would not be possible to identify the annual catch limit (ACL) in the recreational sector. Only a single ACL could be established for both sectors and options for an accountability measure (AM) would be limited.

Table 4-x. Percentage of ABC that would be allocated to the commercial and recreational sectors under Alternatives 2, 4, 5, 6, and 7 as well as commercial, private, and for-hire sectors under Alternative 3. Shaded species indicate allocations already established under previous amendments. Allocations will be established for red grouper in Amendment 24. Allocations for wreckfish and black grouper are addressed in Actions 9 and 14, respectively.

Species or Species Groups	Alternative 2		Alternative 3			Alternative 4		Alternative 5		Alternative 6		Alternative 7	
	Comm	Rec	Comm	Private	For-Hire	Comm	Rec	Comm	Rec	Comm	Rec	Comm	Rec
Individuals Species													
Red snapper	32%	68%	32%	36%	32%	33%	67%	40%	60%	47%	53%	24%	76%
Vermilion snapper	65%	35%	65%	5%	30%	65%	35%	66%	34%	65%	35%	61%	39%
Red porgy	62%	38%	62%	8%	30%	63%	37%	66%	34%	44%	56%	49%	51%
Goliath grouper	51%	49%	51%	36%	14%	52%	48%	53%	47%	0%	100%	0%	100%
Black sea bass	50%	50%	50%	26%	25%	51%	49%	53%	47%	45%	55%	39%	61%
Wreckfish													
Gray triggerfish	47%	53%	47%	24%	29%	47%	53%	49%	51%	46%	54%	44%	56%
Bar jack	20%	80%	20%	26%	54%	17%	83%	7%	93%	36%	64%	59%	41%
Nassau grouper	10%	90%	10%	69%	22%	10%	90%	10%	90%	0%	100%		
Hogfish	37%	63%	37%	58%	6%	38%	62%	42%	58%	30%	70%	28%	72%
Deep-water complex													
Warsaw grouper	21%	79%	21%	50%	29%	21%	79%	24%	76%	11%	89%	6%	94%
Yellowedge grouper	94%	6%	93%	5%	2%	94%	6%	98%	2%	88%	12%	100%	0%
Snowy grouper	87%	13%	87%	6%	7%	89%	11%	93%	7%	81%	19%	66%	34%
Blueline tilefish	64%	36%	64%	11%	25%	73%	27%	95%	5%	57%	43%	38%	62%
Sand tilefish	17%	83%	17%	47%	37%	17%	83%	9%	91%	24%	76%	16%	84%
Golden tilefish	97%	3%	97%	1%	2%	100%	0%	99%	1%	91%	9%	95%	5%
Silk snapper	74%	26%	74%	3%	23%	74%	26%	67%	33%	85%	15%	71%	29%
2b. SWG Complex													
Gag	58%	42%	58%	25%	16%	59%	41%	65%	35%	51%	49%	52%	48%
Red grouper	56%	44%	56%	33%	11%	60%	40%	67%	33%	55%	45%	43%	57%
Scamp	71%	29%	71%	7%	21%	72%	28%	77%	23%	66%	34%	67%	33%
Yellowfin grouper	45%	55%	43%	49%	8%	48%	52%	43%	57%	53%	47%	38%	62%
Speckled hind	73%	27%	73%	7%	21%	74%	26%	77%	23%	60%	40%	41%	59%
Jacks complex													
Greater amberjack*	52%	48%	52%	19%	29%	53%	47%	54%	46%	49%	51%	43%	57%
Almaco jack	46%	54%	46%	12%	42%	44%	56%	27%	73%	47%	53%	52%	48%
Banded rudderfish	23%	77%	23%	11%	66%	22%	78%	15%	85%	26%	74%	23%	77%
Shallow-water snapper complex													
Yellowtail snapper	72%	28%	72%	12%	16%	73%	27%	70%	30%	77%	23%	65%	35%
Gray snapper	27%	73%	27%	42%	31%	30%	70%	40%	60%	19%	81%	12%	88%
Lane snapper	16%	84%	16%	48%	36%	17%	83%	22%	78%	10%	90%	6%	94%
Mutton snapper	32%	68%	32%	44%	24%	34%	66%	42%	58%	24%	76%	13%	87%
Porgies, grunts, & hinds complex													
Whitebone porgy	2%	98%	2%	42%	57%	2%	98%	3%	97%	0%	100%	0%	100%
Knobbed porgy	52%	48%	52%	5%	43%	52%	48%	50%	50%	55%	45%	59%	41%
Jolthead porgy	4%	96%	4%	54%	42%	4%	96%	2%	98%	6%	94%	4%	96%
Red hind	75%	25%	75%	15%	10%	76%	24%	78%	22%	74%	26%	70%	30%
Rock hind	57%	43%	57%	11%	31%	55%	45%	40%	60%	65%	35%	67%	33%
Tomtate	0%	100%	0%	20%	80%	0%	100%	0%	100%	0%	100%	0%	100%
White grunt*	37%	63%	37%	22%	41%	38%	62%	38%	62%	37%	63%	32%	68%

*Includes unclassified amberjacks and grunts as they are not identified to species in commercial landings.

Preferred Alternative 2 would divide allocations among the recreational and commercial sectors based on historical landings information from 1986-2008 and 2006-2008. **Alternative 3** would be similar to **Alternative 2** with the exception that the allocations for the recreational sector would be divided into MRFSS and Headboat components. The commercial allocation under **Alternatives 2 and 3** would be identical. Sector specific ACLs would be based on allocations. Therefore, there is a greater chance that the ACLs would be exceeded for headboat and MRFSS sectors under **Alternative 3** than for headboat and MRFSS combined under **Alternative 2**. Furthermore, estimates of recreational landings could be less certain for rarely encountered species or species groups when recreational data are divided into sectors.

Alternative 4, which would set allocations based on data from 1986 to 2008, is almost identical to **Preferred Alternative 2**, which uses landings data from 1986-2008 and 2006-2008. **Alternative 5**, which is based on data from 1986-1998, would generally allocate a larger portion of the ABC to the commercial sector than allocation alternatives that include more recent landings information. Allocation **Alternative 6 and 7**, which use landings data from 1999-2008, and 2006-2008, respectively, would allocate a greater proportion of the ABC to the recreational sector than alternatives that include data from earlier years.

Alternative 1 (No Action) would perpetuate the existing level of risk for interactions between Endangered Species Act (ESA)-listed species and the fishery. **Alternatives 2-7** are unlikely to have adverse effects on ESA-listed species, including recently listed *Acropora*. Previous ESA consultations determined the snapper grouper fishery was not likely to adversely affect *Acropora* species. These alternatives are unlikely to alter fishing behavior in a way that would cause new adverse effects to these species. The impacts from **Alternatives 2-7** on sea turtles and smalltooth sawfish are unclear. If these allocations perpetuate the existing amount of fishing effort, but cause 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.

4.1.6.2 Economic Effects

(Need to discuss Alternatives 4-7)

Alternative 1 maintains current caps on landings between commercial and recreational sectors. **Alternative 2 (Preferred)** allows for allocations to increase for whichever sector is expanding during the most recent years. Eventually, this could result in a 100% allocation of a species to one sector. Any future allocations calculations would simply result in 100% allocation to the one sector in perpetuity, regardless of the ability or desire by the sector with 0% to participate. In recent years, recreational participation has increased while commercial vessel participation has decreased. If this trend continues, **Alternative 2 (Preferred)** will result in significantly diminished commercial sector economic revenues and an expanded recreational sector, with resulting increased economic

revenues. The economic impacts resulting from **Alternative 3** are similar to those discussed for **Alternative 2**. However, under **Alternative 3**, the for-hire sector could benefit from their own allocation which would allow them greater financial stability through an increased ability to predict future availability of landings. One drawback of **Alternative 3** compared to **Alternatives 1 and 2 (Preferred)** is the potential loss in available landings if the aggregate quota is low.

4.1.6.3 Social Effects

4.1.6.4 Administrative Effects

Alternative 1, no action, would retain the current allocations and would result in the least administrative burden. **Alternatives 2 through 7** could increase the administrative impacts to NOAA Fisheries Service as landings would need to be monitored in relation to the commercial, recreational, and for-hire portion of the allocation for overage and commercial quota purposes.

4.1.6.5 Council's Conclusions

4.1.7 Action 7: Establish Annual Catch Limits (ACLs) for the Snapper Grouper Fishery

Alternative 1 (No Action). Retain existing ACLs for snapper grouper species or species groups. Do not specify ACLs for species that do not have them.

Alternative 2. Establish ACLs for species as needed where $ACL = OY = ABC$.

Subalternative 2a. Establish a single ACL (commercial and recreational) based on the current TAC.

Subalternative 2b. Establish commercial and recreational ACLs based on preferred allocation alternative.

Alternative 3. Establish ACLs for species as needed where $ACL = OY = 90\%$ of the ABC.

Subalternative 3a. Establish a single ACL (commercial and recreational) based on the current TAC.

Subalternative 3b. Establish commercial and recreational ACLs based on preferred allocation alternative.

Alternative 4. Establish ACLs for species as needed where $ACL = OY = 80\%$ of the ABC.

Subalternative 4a. Establish a single ACL (commercial and recreational) based on the current TAC.

Subalternative 4b. Establish commercial and recreational ACLs based on preferred allocation alternative.

Shaded are represents edits made by IPT.

4.1.7.1 Biological Effects

Revisions to the Reauthorized Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) in 2006 require that by 2010, Fishery Management Plans (FMPs) for fisheries determined by the Secretary to be subject to overfishing must establish a mechanism for specifying Annual Catch Limits (ACLs) at a level that prevents overfishing and does not exceed the recommendations of the respective Council's Scientific and Statistical Committee (SSC) or other established peer review processes. These FMPs must also establish, within this timeframe, measures to ensure accountability. By 2011, FMPs for all other fisheries, except fisheries for species with annual life cycles, must meet these requirements. Amendments 17A and 17B (under Secretarial review) specified ACLs for species subject to overfishing (Table 4-x1). NMFS guidelines define the following terms:

- Overfishing limit (OFL) means “the annual amount of catch that corresponds to the estimate of MFMT applied to a stock or stock complex’s abundance and is expressed in terms of numbers or weight of fish.
- Acceptable biological catch (ABC) means “a level of a stock or stock complex’s annual catch that accounts for the scientific uncertainty in the estimate of OFL and should be specified based on the ABC control rule.
- ACL means “the level of annual catch of a stock or stock complex that serves as the basis for invoking accountability measures.” Setting the ACL provides an opportunity to divide the total ACL into sector-specific ACLs.
- Annual catch target (ACT) means “an amount of annual catch of a stock or stock complex that is the management target of the fishery. NMFS guidelines indicate that specifying an ACT is optional and up to the discretion of the Council. A stock or stock complex’s ACT should usually be less than its ACL and results from the application of the ACT control rule. If sector-ACLs have been established, each one should have a corresponding sector-ACT.”
- Catch is the total quantity of fish, measured in weight or numbers of fish, taken in commercial, recreational, subsistence, tribal, and other fisheries. Catch includes fish that are retained for any purpose, as well as mortality of fish that are discarded.
- Accountability measures (AMs) means “management controls that prevent ACLs or sector-ACLs from being exceeded (in-season AMs), where possible, and correct or mitigate overages if they occur.”

Alternative 1 (No Action), would retain the current regulations established and proposed for snapper grouper species, which include ACLs for species experiencing overfishing (Table 4-x). The final national standard 1 (NS1) guidelines recognize that existing FMPs may use terms and values that are similar to, associated with, or may be equivalent to OFL, ABC, ACL, ACT, and AM in many fisheries for which annual specifications are set for different stocks or stock complexes. In these situations the guidelines suggest that, as Fishery Management Councils revise their FMPs, they use the same terms as set forth in the NS1 guidelines. The ACL serves as a catch

limit for a species which triggers some sort of AM to ensure overfishing of a species does not occur. Therefore commercial ACLs are in place for red porgy and greater amberjack in the form of commercial quotas along with ACLs for species experiencing overfishing (Table 4-x1). However, ACLs are not specified for other species or species groups in the snapper grouper fishery management unit. Since the Reauthorized Magnuson-Stevens Act requires ACLs for all fisheries in FMPs by 2011, except fisheries for species with annual life cycles, **Alternative 1** would not meet these requirements.

Table 4-x1. Annual Catch Limits in place and proposed in Amendments 17B and 17A.

Species	ACLs In Place	ACLs In Preferred Alternatives in 17A (red snapper) or 17B
Black grouper	None in place	Comm Aggregate ACL (black, red, gag) = 662,403 lbs gw Rec Aggregate ACL = 648,663 lbs gw
Black sea bass	309,000 lbs gw (comm.) 409,000 lbs gw (rec.)	No change proposed
Gag	353,940 lbs gw (comm.) 340,060 lbs gw (rec.)	<u>KEEP</u> 353,940 lbs gw (comm.) 340,060 lbs gw (rec.) <u>IN ADDITION</u> Comm Aggregate ACL (black, red, gag) = 662,403 lbs gw Rec Aggregate ACL = 648,663 lbs gw
Golden tilefish	331,000 lbs gw (comm.) (F _{MSY} level)	282,819 lbs (comm.) 1,578 fish (rec)
Red grouper	None in place. Recommendation of 573,000 lbs ww (485,593 lbs gw) for comm. and rec. from Amendment 24	Comm Aggregate ACL (black, red, gag) = 662,403 lbs gw Rec Aggregate ACL = 648,663 lbs gutted weight
Snowy grouper	82,900 lbs gw (comm.) 523 fish (rec.)	No change proposed
Speckled hind	None in place	0 (landings only) comm. and rec.
Vermilion snapper	315,523 lb gw (Jan-June) (comm.) 302,523 lbs gw (July-Dec) (comm.) 307,315 lbs gw (rec.)=TOTAL 925,361 lbs gw	No change proposed
Warsaw grouper	None in place	0 (landings only) comm. and rec.
Red Snapper	None in place	0 (landings only) comm. and rec.
Red porgy	190,050 lbs gw (comm.) 190,050 lbs gw (rec.)	Not in Amendment 17A or 17B
Greater amberjack	1,169,931 lbs gw (comm.)	Not in Amendment 17A or 17B

Alternatives 2-4 would set the ACL for species not previously considered in Amendments 17A and 17B (Table 4-x2). Amendment 24 is considering an ACL for red grouper. Based on recommendations from the Council’s SSC and preferred allocation alternative in Amendment 24, the ACLs for red grouper would be 269,310 lbs gw and 303,690 lbs gw for the commercial and recreational sectors, respectively. ACLs for wreckfish are addressed in Actions 10 and 15, respectively.

Alternative 2 would set the ACL equal to the ABC. The NS1 guidelines indicate the ACL may typically be equal to the ABC. **Alternatives 2a** and **2b** provide an opportunity to retain a total ACL or divide into sector-specific ACLs based on the Council’s preferred alternative in Action 6. A Fishery Management Council may decide, but is not required, to divide the ACL into sector ACLs. “Sector” for purposes of the NS1 guidelines means a distinct user group to which separate management strategies and catch quotas apply. The NS1 guidelines states it is up to each Fishery Management Council to decide how to designate sectors, if any. If sector-ACLs are established, sector AMs must be developed for each sector ACL. Sector specific ACLs and AMs could have a greater biological benefit than one ACL because both sectors would be required to have AMs, and the chance of exceeding the OFL would be less. However, in some fisheries, one sector dominates the catch. In situations where a fishery is largely taken by the commercial fishery, estimates of recreational catch may be very uncertain because of rare encounters by the Marine Recreational Fisheries Statistics Survey. In these situations it may be more appropriate to have one ACL for all sectors combined.

Alternatives 3 and **4** would have a greater positive biological effect than **Alternative 2** because they would create a buffer between the ACL and ABC, with **Alternative 4** setting the most conservative ACL at 80% of the ABC. Creating a buffer between the ACL and ABC would provide greater assurance overfishing. Setting a buffer between the ACL and ABC would be appropriate in situations where there is uncertainty in whether or not management measures are constraining fishing mortality to target levels. ACTs, which are not required, can also be set below the ACLs to account for management uncertainty and provide greater assurance overfishing does not occur. Similar to **Alternative 2**, sub-alternatives to **Alternatives 3** and **4** provide the opportunity to set sector specific ACLs for species or species groups.

Table 4-x2. ACLs for species not addressed by previous amendments based on three action alternatives in Action 7 and preferred allocation alternative identified in Action 6. ACLs for wreckfish and black grouper are addressed in Actions 10 and 15, respectively.

Common Name	Alternative 2		Alternative 3		Alternative 4	
	Comm	Rec	Comm	Rec	Comm	Rec
Yellowedge grouper	21,403	1,262	19,263	1,136	17,123	1,009
Blueline tilefish	70,018	39,583	63,016	35,625	56,014	31,667
Sand tilefish	792	3,963	712	3,568	633	3,171
Silk snapper	15,267	5,372	13,740	4,835	12,213	4,298
Scamp	263,051	106,378	236,746	95,740	210,441	85,102
Yellowfin grouper	1,477	1,834	1,330	1,650	1,182	1,467

Common Name	Alternative 2		Alternative 3		Alternative 4	
	Comm	Rec	Comm	Rec	Comm	Rec
Greater amberjack	1,022,053	945,947	919,847	851,353	817,642	756,758
Almaco jack	78,282	93,645	70,454	84,280	62,626	74,916
Banded rudderfish	20,266	69,670	18,239	62,703	16,213	55,736
Gray snapper	157,119	419,877	141,407	377,889	125,695	335,902
Lane snapper	13,686	72,111	12,317	64,900	10,949	57,689
Mutton snapper	364,718	790,504	328,247	711,453	291,775	632,403
Whitebone porgy	286	18,209	257	16,389	229	14,567
Knobbed porgy	17,923	16,510	16,131	14,859	14,338	13,208
Jolthead porgy	945	23,669	850	21,303	756	18,935
Red hind	13,805	4,500	12,424	4,051	11,044	3,600
Rock hind	14,078	10,516	12,671	9,464	11,263	8,412
Tomtate	0	48,171	0	43,354	0	38,537
White grunt	101,602	170,658	91,441	153,593	81,281	136,527
Goliath grouper	0	0	0	0	0	0
Gray triggerfish	96,915	109,496	87,223	98,547	77,532	87,597
Bar jack	1,524	5,984	1,372	5,385	1,219	4,787
Nassau grouper	0	0	0	0	0	0
Hogfish	36,479	63,375	32,831	57,038	29,183	50,700

After preferred ACL alternative selected, show ACLs for species groups.

Table 4-x3 illustrates ACLs for species group complexes and subcomplexes based on **Alternative 2** and the preferred allocation alternative proposed in Action 6. Action 3 would establish complex and/or sub-complex ACLs, which would be based on the sum of the individual ACLs included in that complex and/or sub-complex. When a complex ACL is exceeded, all species in that complex, as well as those in sub-complexes, would be subject to AMs. However, when a sub-complex ACL is exceeded, but is below the combined ACL of the complex, only the species in that particular sub-complex would be subject to AMs.

4.1.7.2 Economic Effects

Alternative 1 is expected to result in the greatest short-term economic benefits to the commercial fishery. **Alternative 4**, being the most biologically conservative alternative, is expected to result in the smallest short-term economic benefits and the largest long-term economic benefits.

4.1.7.3 Social Effects

4.1.7.4 Administrative Effects

Specifying an ACL or sector ACLs alone would not increase the administrative burden over the status-quo. However, the monitoring and documentation needed to track the ACL can potentially result in a need for additional cost and personnel resources if a monitoring mechanism is not already in place. **Alternative 1**, would not meet the requirements of the Magnuson-Stevens Act for some species, and could be subject to litigation, which would result in a significant administrative burden on the agency. The administrative impacts of specifying an ACL through **Alternatives 2- 4** are minimal and would not differ much between the three action alternatives. However, once the ACL is specified, the administrative burden associated with monitoring and enforcement, implementing management measures, and accountability measures would increase. Other administrative burdens that may result from all of the alternatives considered would take the form of development and dissemination of outreach and education materials for fishery participants.

4.1.7.5 Council's Conclusions

4.1.8 Action 8: Specify Accountability Measures (AMs)/ Annual Catch Targets (ACTs) for Species in the Snapper Grouper FMU

Alternative 1 (No Action). Do not specify AMs for species or species groups in the Snapper Grouper FMU.

Commercial

Alternative 2. After the commercial ACL is met, all purchase and sale of X is prohibited and harvest and/or possession is limited to the bag limit.

Alternative 3. If the commercial sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the commercial sector ACL in the following season by the amount of the overage.

Alternative 4. Specify Annual Catch Targets (ACT) for the commercial sector.

Subalternative 4a. The commercial sector ACT equals the commercial sector ACL.

Subalternative 4b. The commercial sector ACT equals 90% of the commercial sector ACL.

Subalternative 4c. The commercial sector ACT equals 80% of the commercial sector ACL.

Recreational

Alternative 5. For in-season and post-season accountability measures, compare recreational ACL with recreational landings over a range of years. For 2011, use only 2011 landings. For 2012, use

the average landings of 2011 and 2012. For 2013 and beyond, use the most recent three-year running average.

Alternative 6. The Regional Administrator shall publish a notice to close the recreational fishery when the ACL is projected to be met.

Alternative 7. Take corrective action if the recreational ACL has been exceeded.

Subalternative 7a. If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the recreational sector ACL in the following season by the amount of the overage.

Subalternative 7b. If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the length of the following fishing year by the amount necessary to ensure landings do not exceed the recreational sector ACL for the following fishing year.

Alternative 8. Specify Annual Catch Targets (ACT) for the recreational sector.

Subalternative 8a. The recreational sector ACT equals 85% of the private recreational sector ACL.

Subalternative 8b. The recreational sector ACT equals 75% of the private recreational sector ACL.

Subalternative 8c (Preferred). The recreational sector ACT equals sector ACL [(1-PSE) or 0.5, whichever is greater].

4.1.8.1 Biological Effects

The National Standard 1 guidelines recognize that existing FMPs may use terms and values that are similar to, associated with, or may be equivalent to AMs in many fisheries for which annual specifications are set for different stocks or stock complexes. In these situations the guidelines suggest that, as Councils revise their FMPs they use the same terms as set forth in the National Standard 1 guidelines. Current snapper grouper regulations include some species-specific size limits, seasonal closures, bag limits, and certain prohibited gear types. However, for the species and species groups included in this amendment, there are no previously specified measure that would be considered AMs. Therefore, AMs for the snapper grouper species and/or species groups outlined in previous actions must be specified pursuant to Magnuson-Stevens Act requirements.

There are several types of AMs that may be applied in the snapper grouper fishery. In-season AMs are those that are triggered during the fishing season, typically before an ACL is exceeded or when it is projected to be met. Some examples of in-season AMs include quota closures, trip or bag limit changes, gear restrictions, or catch shares. Post-season AMs would be triggered if the ACL is exceeded and would typically be implemented the following fishing season. Post-season AMs could include seasonal closures, reduced trip or bag limits, or shortening of the fishing season implemented in the subsequent year. Ideally, a combination of in-season and post-season AMs would be used to first prevent the ACL or ACT from being exceeded, and then provide a mechanism to correct for an overage if one should occur. Implementing a post season AM in addition to an in-season AM would reduce the risk of overfishing since there would be two layers

of protection against unsustainable harvest rates. It is important to note that the new framework procedure for setting total allowable catch in the snapper grouper fishery, currently under Secretarial review in Amendment 17B, would allow for timely adjustments to be made to AMs if the Council and NOAA Fisheries Service determine a change is needed.

The efficacy of in-season AMs is largely reliant upon in-season monitoring of landings, which may be especially difficult for the recreational sector. The Marine Recreational Fishing Statistics Survey (MRFSS) and the newly implemented Marine Recreational Information Program (MRIP) uses random survey methods and may not capture data on species that infrequently encountered. Therefore, in-season tracking of snapper grouper landings in the recreational sector would be based on the MRFSS program and state landings reports. An additional obstacle to tracking recreational harvest in-season is that there is a lag time between when the fish are landed and when those landings are reported in the landings database. This lag time means that projections of when the ACL is expected to be met would need to be employed. Landings projections are not always 100% accurate, thus using such estimates could lead to an in-season AM being triggered prematurely, or not soon enough causing an ACL overage.

The Council may choose one or more post-season AMs to supplement any of the in-season AMs. This would be the most administratively burdensome scenario; however, if an ACL overage were to occur after an in-season AM has been implemented, a post-season AM would be available to the Regional Administrator as a means to correct an overage and prevent overfishing. Post-season AMs would allow all landings for a particular season to be reported before any harvest restricting measures would take effect. This method of accountability alone may correct for one year's or several year's overages; however, it does little to prevent an overage from occurring again unless it is chosen in conjunction with an in-season AMs.

(Need to discuss Preferred Alternative 3b)

National Standard 1 guidelines recommend the use of ACTs in systems of AMs so that an ACL is not exceeded. For fisheries without in-season management control to prevent the ACL from being exceeded, AMs may utilize ACTs that are set below ACLs so that catches do not exceed the ACLs. If an ACT is specified as part of the AMs for spiny lobster, an ACT control rule may be utilized for setting the ACT. The ACT control rule should clearly articulate how management uncertainty in the amount of catch in the fishery is accounted for in setting the ACT. The objective for establishing an ACT and related AMs is that the ACL not be exceeded. AMs are designed to provoke an action once either the ACL or ACT is reached during the course of a fishing season to reduce the risk overfishing will occur. However, depending on how timely the data are, it might not be realized that either the ACL and/or ACT has been reached until after a season has ended. Such AMs include prohibited retention of species once the sector annual catch target is met, shortening the length of the subsequent fishing season to account for overages of the ACL, and reducing the ACL in the subsequent fishing season to account for overages.

Since the ACT is typically set lower and would be reached sooner than the ACL for any given species, using an ACT rather than the ACL as a trigger for AMs in the recreational sector may prevent an ACL overage before it occurs. This more conservative approach,

would likely help to ensure that recreational data uncertainties do not cause or contribute to excessive ACL overages for vulnerable species. Using recreational ACTs rather than the ACLs to trigger recreational AMs may not eliminate ACL overages completely; however, using such a strategy for the recreational sector may reduce the need to make up for very large overages, which could benefit the biological and socioeconomic environments.

The updated framework procedure included in Amendment 17B to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Amendment 17B), currently under Secretarial review, allows for the timely establishment and adjustment of ACTs if the Council and NOAA Fisheries Service determine they are necessary. Therefore, if the Council chooses not to implement ACTs for snapper grouper species through this Comprehensive ACT Amendment, ACTs may be easily established and modified in the future if needed.

4.1.8.2 Economic Effects

Alternative 1 would benefit the commercial fishery the most in the short-term but the least in the long-term. **Alternative 2** would provide greater short-term economic benefits to the commercial fishery compared to **Alternative 3** but less than **Alternative 1**. **Alternative 3** would provide the greatest long-term economic benefits to the commercial fishery compared to **Alternatives 1 and 2**.

(Need to discuss Preferred Alternative 3b)

Alternative 2 is expected to result in greater short-term and long-term economic benefits than **Alternative 1** because while it does limit the commercial sector from the opportunity to land a greater number of fish, it reserves a specific amount of fish for commercial vessels only and in that way, protects future landings. This stability could benefit the commercial fishery in a financial way by paving the way for more confident business planning with more predictable landings that could result in improvements in marketing and reliability of landings to dealers.

4.1.8.3 Social Effects

(Need to discuss Preferred Alternative 3b for ACT)

4.1.8.4 Administrative Effects

Alternative 1 (No Action) would not produce near-term administrative impacts. However, this alternative would not comply with Reauthorized Magnuson-Stevens Act requirements and therefore, may trigger some type of legal action for not doing so. If this scenario were to occur, the burden on the administrative environment could be significant in the future. Administrative impacts of **Alternatives 4-6** would be greatest relative to the commercial AMs proposed since

recreational landings would need to be monitored on a continuing basis. Tracking recreational landings is difficult because there is a delay in the availability of recreational data, and the data can be highly variable. Therefore, tracking recreational landings, using the proposed multiple year landings averages, and subsequent AM implementation coordination would create a moderate burden on the administrative environment.

(Need to discuss Preferred Alternative 3b for ACT)

Specifying an ACT or sector ACTs alone would not increase the administrative burden over the status-quo. However, the monitoring and documentation needed to track how much of the ACT has been harvested throughout a particular fishing season can potentially result in a need for additional cost and personnel resources if a monitoring mechanism is not already in place. **Alternative 3** would require tracking the commercial and recreational landings every year, which would be averaged over three years on a continuous basis. The tracking of recreational landings can be challenging and would likely impose a burden on the administrative environment. Other administrative burdens that may result from all of the alternatives considered would take the form of development and dissemination of outreach and education materials for fishery participants.

4.1.8.5 Council's Conclusions

4.2 Snapper Grouper Fishery Management Plan (wreckfish)

Acceptable Biological Catch (ABC) Control Rule and ABC for Wreckfish

NOTE: Council voted to remove action and replace with discussion. Need to add to the text below with rationale from minutes.

In August, 2010, the SSC decided not to support the June 2010 Council motions regarding setting OFL and ABC for wreckfish.

SSC's rationale: "In the absence of a current assessment, using a catch-only scenario at moderate historical catch, it is possible that increasing catch will result in overfishing. The SSC reached consensus that catch-only analysis is appropriate because it is inappropriate to use an old assessment applied to new catch data for catches coming from potentially different fishing conditions than at the time of the assessment. Although an estimate of F_{msy} exists, it cannot be applied to current stock biomass. However, we do have moderate historical catch based on what the 2001 assessment reported, so that increase in catch could cause overfishing. A recent estimate of F is close to F_{msy} , so increasing F could lead to overfishing if there were increases in catch. We don't know the biomass or B_{msy} but fishing at F_{msy} at a stock $< B_{msy}$ is acceptable for a stock that is not overfished and this will allow rebuilding."

Recommendations from the SSC included:

- "For average catch, start the time series at 1997 and carry through recent years, resulting in an average of 250,000 lbs.

- Set ABC at 250,000 lbs."

4.2.1 Action 9: Specify Allocations Allocations for Wreckfish Fishery

Alternative 1 (No action). Do not specify allocation.

In this scenario, the TAC is essentially allocated 100% to the commercial sector.

Alternative 2. Divide allocations as 90% Commercial and 10% Recreational.

Alternative 3. Divide allocations as 95% Commercial and 5% Recreational.

Alternative 4. Allocate 100% of the allowable catch to the commercial sector.

4.2.1.1 Biological Effects

Alternative 1 (No Action) would not establish allocations for wreckfish. If an allocation is not specified then it would not be possible to identify the annual catch limit (ACL) in the recreational sector. Only a single ACL could be established for both sectors and options for an accountability measure (AM) would be limited.

There has been recent interest in some recreational fishing for wreckfish, particularly by the for-hire sector. Currently, regulations to fish for, possess, and sell wreckfish require a person be a

shareholder under the wreckfish individual transferable quota program with coupons allocating annual pounds, have a wreckfish vessel permit, and possess a federal commercial South Atlantic snapper grouper permit. If a shareholder has a wreckfish permit, but no federal commercial permit for South Atlantic snapper grouper species, that person cannot sell wreckfish and must adhere to the aggregate snapper grouper bag limit, which includes wreckfish.

Due to the nature of the fishery, wreckfish are taken by commercial fishermen. Wreckfish usually occur in very deep water (400-600 m) and far offshore. The wreckfish is fished over the Blake Plateau in areas of moderate to strong current using heavy-duty hydraulic reels spooled with 1/8 inch thick cable (Sedberry 2003). The fishing end of the cable is weighted with 50-200 lbs and 3 to 20 large circle hooks baited with squid are attached. The hooks are paid out until they reach the bottom, they are then reeled up a few feet to prevent snagging. The boat maintains low speed headed into the current during fishing. The fishery off the southeastern United States occurs over a complex bottom feature that has over 100 m of topographic relief, known as the Charleston Bump, that is located 130-160 km southeast of Charleston, South Carolina, at 31°30'N and 79°00'W on the Blake Plateau (Sedberry *et al.* 2001).

Alternative 2 would provide 90% of the allowable biological catch (ABC) to the commercial sector and 10% to the recreational sector. **Alternative 3** would be similar to **Alternative 2** with the exception that the allocations would be 95% for the commercial sector and 5% to the recreational sector. Under **Alternative 4**, 100% of the ABC would be allocated to the commercial sector.

ACLs would be based on allocations. Estimates of recreational landings are generally less certain for rarely encountered species in a survey based system like MRFSS. Therefore, there is a greater chance that ACLs would be exceeded for recreational sector under allocations specified in **Alternatives 2 and 3** than for the commercial sector. In this situation, alternatives that allocate a greater portion of the catch to the commercial sector could have a greater biological benefit. However, if all landings (commercial and recreational) are tracked closely, with mandatory reporting of wreckfish in both sectors, then the biological effects of **Alternatives 2-4** would be very similar.

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 species, including recently listed *Acropora*. Previous ESA consultations determined the snapper grouper fishery was not likely to adversely affect *Acropora* species. These alternatives are unlikely to alter fishing behavior in a way that would cause new adverse effects to these species. The impacts from **Alternatives 2-3** on sea turtles and smalltooth sawfish are unclear. If these allocations perpetuate the existing amount of fishing effort, but cause 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.

4.2.1.2 Economic Effects

4.2.1.3 Social Effects

4.2.1.4 Administrative Effects

Alternative 1, no action, would retain the current allocations and would result in the least administrative burden. **Alternatives 2** through **4** could increase the administrative impacts to NOAA Fisheries Service as landings would need to be monitored and enforced for the commercial and recreational portion to ensure that the sectors do not exceed their allocation and if so, appropriate overages are accounted for.

4.2.1.5 Council's Conclusions

4.2.2 Action 10: Establish an Annual Catch Limit (ACL) for Wreckfish

Alternative 1 (No Action). Do not establish an Annual Catch Limit (ACL) for Wreckfish

Alternative 2 (Preferred). $ACL = OY = ABC$.

Subalternative 2a. Establish a single ACL (commercial and recreational) based on the current TAC.

Subalternative 2b. Establish commercial and recreational ACLs based on preferred allocation alternative.

Alternative 3. $ACL = OY = 90\%$ of the ABC.

Subalternative 3a. Establish a single ACL (commercial and recreational) based on the current TAC.

Subalternative 3b. Establish commercial and recreational ACLs based on preferred allocation alternative.

Alternative 4. $ACL = OY = 80\%$ of the ABC.

Subalternative 4a. Establish a single ACL (commercial and recreational) based on the current TAC.

Subalternative 4b. Establish commercial and recreational ACLs based on preferred allocation alternative.

4.2.2.1 Biological Effects

Revisions to the Reauthorized Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) in 2006 require that by 2010, Fishery Management Plans (FMPs) for fisheries determined by the Secretary to be subject to overfishing must establish a mechanism for specifying Annual Catch Limits (ACLs) at a level that prevents overfishing and does not exceed the recommendations of the respective Council's Scientific and Statistical Committee (SSC) or other established peer review processes. These FMPs must also establish, within this time frame, measures to ensure accountability. By 2011, FMPs for all other fisheries, except fisheries for

species with annual life cycles, must meet these requirements. Amendments 17A and 17B, under Secretarial review, would specify ACLs for species subject to overfishing.

Alternative 1 (No Action), would retain the current regulations established for wreckfish, which includes an ACL equal to 2 million pounds. The final national standard 1 (NS1) guidelines recognize that existing FMPs may use terms and values that are similar to, associated with, or may be equivalent to overfishing limits (OFL), acceptable biological catch, annual catch limit (ACL), annual catch target, and accountability measure (AM) in many fisheries for which annual specifications are set for different stocks or stock complexes. In these situations the guidelines suggest that, as Fishery Management Councils revise their FMPs, they use the same terms as set forth in the NS1 guidelines. The ACL serves as a catch limit for a species which triggers some sort of AM to ensure overfishing of a species does not occur. Therefore ACLs are in place for wreckfish in the form of a TAC. However, the Council's Scientific and Statistical Committee (SSC) will specify OFL. Further, a value for ABC will be specified as a portion of the OFL based on an ABC control selected by the Council. Thus it is possible that the OFL and/or ABC could be less than the current ACL. The NS1 guidelines state the ACL must be less than OFL. Therefore, retention of the status quo ACL may not be a viable option.

Alternative 2 would set the ACL equal to the ABC. The NS1 guidelines indicate the ACL may typically be equal to the ABC. **Alternatives 2a** and **2b** provides an opportunity to retain a total ACL or divide into sector-specific ACLs. A Fishery Management Council may decide, but is not required, to divide the ACL into sector ACLs. "Sector" for purposes of the NS1 guidelines means a distinct user group to which separate management strategies and catch quotas apply. The NS1 guidelines states it is up to each Fishery Management Council to decide how to designate sectors, if any. If sector-ACLs are established, sector AMs must be developed for each sector ACL. Sector specific ACLs and AMs could have a greater biological benefit than one ACL because both sectors would be required to have AMs, and the chance of exceeding the OFL would be less. However, in some fisheries like wreckfish, one sector dominates the catch. In situations where a fishery is largely taken by the commercial fishery, estimates of recreational catch may be very uncertain because of rare encounters by the Marine Recreational Statistics Survey. Unless all wreckfish landings can be tracked by the recreational sector, it may be more appropriate to have one ACL for all sectors combined.

Alternatives 3 and **4** would have a greater positive biological effect than **Alternative 2** because they would create a buffer between the ACL and ABC, with **Alternative 4** setting the most conservative ACL at 80% of the ABC. Creating a buffer between the ACL and ABC would provide greater assurance overfishing. Setting a buffer between the ACL and ABC would be appropriate in situations where there is uncertainty in whether or not management measures are constraining fishing mortality to target levels. ACTs, which are not required, can also be set below the ACLs to account for management uncertainty and provide greater assurance overfishing does not occur. Similar to **Alternative 2**, sub-alternatives to **Alternatives 3** and **4** provide the opportunity to set sector specific ACLs for species or species groups.

4.2.2.2 Economic Effects

4.2.2.3 Social Effects

4.2.2.4 Administrative Effects

Specifying an ACL or sector ACLs alone would not increase the administrative burden over the status-quo. However, the monitoring and documentation needed to track the ACL can potentially result in a need for additional cost and personnel resources if a monitoring mechanism is not already in place. **Alternative 1**, would not meet the requirements of the Magnuson-Stevens Act for some species, and could be subject to litigation, which would result in a significant administrative burden on the agency. The administrative impacts of specifying an ACL through **Alternatives 2- 4** are minimal and would not differ much between the three action alternatives. However, once the ACL is specified, the administrative burden associated with monitoring and enforcement, implementing management measures, and accountability measures would likely increase. Other administrative burdens that may result from all of the alternatives considered would take the form of development and dissemination of outreach and education materials for fishery participants. The sub-alternatives associated with the action alternatives consider allocations between sectors similar to the allocation action for wreckfish (Action XX).

4.2.2.5 Council's Conclusions

4.2.3 Action 11: Specify Accountability Measures for the Wreckfish Fishery

Alternative 1 (No Action). Do not specify AMs for wreckfish. ITQ program currently in place is the AM for this fishery.

Commercial

ITQ program currently in place is the AM for this fishery.

Recreational

Alternative 2. For in-season and post-season accountability measures, compare recreational ACL with recreational landings over a range of years. For 2011, use only 2011 landings. For 2012, use the average landings of 2011 and 2012. For 2013 and beyond, use the most recent three-year running average.

Alternative 3. Take corrective action if the recreational ACL has been exceeded.

Subalternative 3a. If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the recreational sector ACL in the following season by the amount of the overage.

Subalternative 3b. If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the length of the following fishing year by the amount necessary to ensure landings do not exceed the recreational sector ACL for the following fishing year.

4.2.3.1 Biological Effects

The wreckfish fishery is currently managed under a quota system. Theoretically, when the quota is reached the fishery would be closed. However, the quota is very high when compared to actual annual landings. The fishery has never harvested their full quota and therefore has never undergone a quota closure. In essence, there is no actively utilized AM in place that would restrict harvest to a level given the current undercapitalization of the fishery and the high quota of 2 million pounds. As discussed under the wreckfish ACT action, the type of AM specified and how it would be applied depends on the Council's choice of whether or not to allocate some portion of the ACL to the recreational sector. If the Council does allow some portion of the ACL to be harvested by the recreational sector, they may also choose to apply sector-specific AMs in order to hold each sector accountable for maintaining harvest levels at or below the ACL or ACT separately. Applying sector-specific AMs prevents both sectors from being penalized when only one sector has exceeded their assigned ACL.

As is the case for many fisheries, accurate in-season monitoring of ACTs and ACLs can be very difficult for the recreational sector. Currently, wreckfish landings data are not gathered through MRFSS. Therefore, if the Council chooses to allow some recreational harvest and establishes sector ACLs or ACTs for wreckfish, it would need to be added to the list of species reported under recreational landings. The challenges associated with monitoring in-season harvest in recreational fisheries often leads to the utilization of projections that estimate the level of harvest at any given time; however, projections are not 100 percent accurate and can be highly variable if anomalous harvest events are recorded. To account for such variations created by environmental, biological, and human factors, without extreme reactive AMs the Council is considering using a three year running average of recreational landings that would be compared to the specified recreational ACL.

The most biologically conservative approach to specifying AMs for wreckfish, would be to establish in-season and post-season AMs (on a sector-specific basis if the Council chooses to allocate some portion of the ACL to the recreational sector). By establishing both types of AMs exceeding the ACL or ACT could be avoided, provided adequate in-season monitoring is possible, and an additional backstop would exist if the ACL or ACT should be exceeded despite the in-season controls.

4.2.3.2 Economic Effects

4.2.3.3 Social Effects

4.2.3.4 Administrative Effects

Alternative 1 (No Action) would not produce near-term administrative impacts. However, this alternative would not comply with Reauthorized Magnuson-Stevens Act requirements and therefore, may trigger some type of legal action for not doing so. If this scenario were to occur, the burden on the administrative environment could be significant in the future. Administrative impacts of **Alternatives 2 and 3** would be greatest relative to the commercial AMs proposed since recreational landings would need to be monitored on a continuing basis. Tracking recreational landings is difficult because there is a delay in the availability of recreational data, and the data can be highly variable. Therefore, tracking recreational landings, using the proposed multiple year

landings averages, and subsequent AM implementation coordination would create a moderate burden on the administrative environment.

4.2.3.5 Council's Conclusions

4.2.4 Action 12: Management Measures for Wreckfish

Alternative 1 (No action). Retain the January 15-April 15 spawning season closure. Wreckfish is included in the 20-fish aggregate bag limit. The TAC for wreckfish is 2 million pounds.

Alternative 2. Eliminate the January 15-April 15 spawning season closure in the:

Subalternative 2a: Commercial sector.

Subalternative 2b: Recreational sector.

Note: This action was suggested by the IPT for Council consideration since many catch share programs eliminate seasonal closures upon implementation of a catch share program.

Recreational Sector

Alternative 3. Remove wreckfish from the 20 fish aggregate snapper grouper bag limit.

Alternative 4. Implement a one wreckfish per vessel per day bag limit for the recreational fishery.

Alternative 5. Implement a one wreckfish per angler per day bag limit for the recreational fishery.

Alternative 6. Implement a 5 wreckfish per vessel per day bag limit for the recreational fishery.

Per IPT discussion, OY and ABC actions pertaining to black grouper are now folded into action 4, etc.

4.2.4.1 Biological Effects

Alternative 1 would retain the January 15-April 15 spawning season closure for wreckfish in the commercial sector. Wreckfish spawn from December through May, with a peak during February and March (Wyanski and Meister 2002). Larvae develop into pelagic juveniles as they drift in a northeasterly direction with the Gulf Stream and approach eastern North Atlantic islands Azores and Madeira (Sedberry et al. 1996; Sedberry 2003). This migration may probably takes 4 to 7 months, and a complete circuit of the North Atlantic (from Blake Plateau to eastern Atlantic and back) could be completed in approximately 9 to 11 months (Sedberry 2003). Juveniles are pelagic and remain in surface waters for 2 to 3 years (~ 60 cm) before settling to the bottom (Sedberry et al. 1999).

Alternative 2 would remove the spawning season closure, and **Alternatives 2a** and **2b** would allow for removal of the spawning season closure in either the commercial and/or recreational sector. The wreckfish is a relatively long-lived species inhabiting deep waters (40 to 1,000 m) on both sides of the North Atlantic Ocean (including the Mid-Atlantic Ridge), the Mediterranean, western South Pacific, and southern Indian Oceans (Carpenter 2002). However, the Blake Plateau/Charleston Bump area off the U.S. Atlantic coast is the only documented spawning area for wreckfish in the North Atlantic (Sedberry 2003); however, unpublished observations from fish caught on the mid-Atlantic ridge indicate that wreckfish may spawn there as well (Sedberry 2003). Since wreckfish are long-lived, reside throughout

the North Atlantic, and appear to have a limited spawning area, removal of the spawning season closure could have negative biological impacts on wreckfish.

Alternative 1 would retain wreckfish in the list of species included in the 20-fish aggregate bag limit, which includes all species in the snapper grouper fishery management unit, with the exception of tomtate and blue runner. Currently, regulations to fish for, possess, and sell wreckfish require a person be a shareholder under the wreckfish individual transferable quota program with coupons allocating annual pounds, have a wreckfish vessel permit, and possess a federal commercial South Atlantic snapper grouper permit. If a shareholder has a wreckfish permit, but no federal commercial permit for South Atlantic snapper grouper species, that person cannot sell wreckfish and must adhere to the 20 fish aggregate snapper grouper bag limit.

Wreckfish has been targeted by primarily commercial fishermen because they occur in very deep water (400-600 m) and far offshore. The wreckfish is fished over the Blake Plateau in areas of moderate to strong current using heavy-duty hydraulic reels spooled with 1/8 inch thick cable (Sedberry 2003). Although, wreckfish have historically only been caught by commercial fishermen, there has been recent interest in some recreational fishing for wreckfish, particularly by the for-hire sector.

Alternatives 3-6 would modify the bag limit for wreckfish. **Alternative 3** would remove wreckfish from the 20 fish aggregate bag limit and would be consistent with an alternative in Section 4.2.6, which would allocate 100% of the allowable catch to the commercial sector.

Alternative 4-6 would reduce the maximum amount of wreckfish that can be taken in the 20 fish aggregate. Action 4.2.6 includes alternatives that would allocate up to 10% of the allowable catch to recreational fishermen; therefore, the recreational ACL would be expected to be small. If all wreckfish caught by recreational fishermen are reported then the biological effects of **Alternatives 1, 3, 4, 5, and 6** could be similar. However, if recreational landings of wreckfish are tracked through MRFSS then large uncertainty would be expected in estimates of recreational landings. In this situation, **Alternative 3**, which would remove wreckfish from the 20-fish aggregate with no allowable recreational bag limit could have the greatest biological effect.

4.2.4.2 Economic Effects

Alternative 2a proposes eliminating the spawning season closure in the commercial sector. However, the spawning season closure has been in place for some time and marketing strategies have worked around this closure. In addition, fishermen have participated in other fisheries or taken on other activities during the spawning season closure. It is unknown whether elimination of the spawning season closure would result in higher ex-vessel prices for wreckfish. According to wreckfish fishermen, the marketing has been adjusted to account for the spawning season closure and the active fishermen feel the spawning season closure benefits the resource. The general feeling from active fishermen is that the long-term economic benefits from **Action 1 (No Action)** would outweigh the uncertain but possible short-term economic benefits from market improvements as a result of elimination of the spawning season closure.

4.2.4.3 Social Effects

4.2.4.4 Administrative Effects

Alternative 1 (No Action) would maintain the status quo and would not increase the administrative burden on the agency. This action requires enforcement of a spawning season closure and bag limit. **Alternative 2**, would have the least administrative burden of the proposed alternatives. Removal of the spawning season closure would reduce the need for enforcement during this period. If one sub-alternative was selected over the other, the administrative burden would increase as it would make enforcement more difficult. **Alternatives 3-6** would result in administrative impacts in the form of rule making, outreach and enforcement but the impacts would not differ much between the alternatives.

4.2.4.5 Council's Conclusions

4.3 Snapper-Grouper Fishery Management Plan (black grouper)

4.3.1 Action 13: Jurisdictional Allocations for Black Grouper

Alternative 1 (No action). Do not establish jurisdictional allocation of the black grouper acceptable biological catch (ABC) between the Gulf and South Atlantic Councils.

Alternative 2. Establish a jurisdictional allocation based on the Florida Keys (Monroe County) jurisdictional boundary between the Gulf and South Atlantic Councils for black grouper acceptable biological catch (ABC) based on one of the following methods:

Subalternative 2a. South Atlantic = 46% of ABC and Gulf = 54% of ABC (Established by using catch history from 1991-2008).

Subalternative 2b (Preferred). South Atlantic = 47% of ABC and Gulf = 53% of ABC (Established by using 50% of catch history from 1986-2008 + 50% of catch history from 2006-2008).

Subalternative 2c. South Atlantic = 48% of ABC and Gulf = 52% of ABC (Established by using 50% of catch history from 1991-2008 + 50% of catch history from 2006-2008).

Subalternative 2d. South Atlantic = 50% of ABC and Gulf = 50% of ABC (Divide the ABC evenly between the two Councils).

Discussion:

At the June Council meeting a motion was made for Gulf and South Atlantic staff to work together to develop alternative methods for allocating the black grouper catch between the two Council's jurisdictional areas. The stock assessment for black grouper treated the Gulf and South Atlantic management unit as a single stock rather than providing separate assessments. The Gulf Council received a letter dated June 10, 2010 from the South Atlantic Council accepting the Gulf Council's

acceptable biological catch (ABC) control rule and the ABC recommendation developed by the Gulf Scientific and Statistical Committee (SSC).

The Gulf SSC recommends that a five-year time stream from 2011-2015, to include landings and dead discards in whole weight as the ABC for black grouper, for a P* of 0.33 (Source: OFL projections Table A3.3.4.17 of the final SEDAR 19 stock assessment report and ABC projections, R. Muller, FL FWC, FWRI, person communication).

	OFL		
Year	Landings	Discards	Total
2011	695,007	123,952	818,959
2012	652,810	127,396	780,206
2013	627,552	130,213	757,765
2014	619,665	130,237	749,902
2015	615,801	130,207	746,008

	ABC		
Year	Landings	Discards	Total
2011	523,000	126,761	649,761
2012	522,543	132,399	654,942
2013	545,595	130,978	676,574
2014	558,711	130,314	689,025
2015	564,737	130,018	694,755

Currently, the ABC applies across Council jurisdictions; therefore, the Councils would have to agree to a jurisdictional allocation between the Gulf and South Atlantic. Since black grouper are primarily landed off the state of Florida especially off southern Florida and in the Florida Keys (Monroe County), jurisdictional allocation of this stock presents some issues. These issues primarily revolve around dividing the recreational landings in Monroe County, because the current Gulf and South Atlantic Council jurisdictional boundary line is the Florida Keys.

After discussions with the SEDAR 19 analysts regarding recreational landings (MRFSS-charterboat, private, and shore mode) the recommendation was made to remove all Florida Keys landings from the Gulf Council landings including discards and place them into the South Atlantic landings. Legal sized black grouper caught in the Florida Keys, are more likely to have been caught from South Atlantic jurisdictional waters; however, based on the current system of MRFSS landings for Monroe County they were previously grouped into the Gulf landings. Black grouper are probably caught in the back reef area of the Florida Keys (Gulf Council jurisdiction), but are probably not legal size (B. Muller, FL FWC, FWRI, personal communication). The headboat fishery already accounts for Florida Keys (Monroe County) by including those landings in the South Atlantic jurisdiction (SEDAR 19 2010). The commercial data set used to derive the jurisdictional allocations are from the Florida trip ticket program so that “area fished” could be stratified, which is particularly important for the Florida Keys. Due to using this commercial data set so that Florida Keys (Monroe County) landings could be split between Council jurisdictions resulted in higher landings than were used in the stock assessment. This is because additional adjustments were not completed (SEDAR 19 2010).

NOTE: Should the sections below be moved under their respective alternative above?

Option a would establish a jurisdictional allocation of ABC for the South Atlantic = 46% of ABC and Gulf = 54% of ABC. These percentages were derived from using catch history from 1991-2008. Recreational data collection and fish species identification were notably improved in 1991 so the time series was started in that year.

Preferred Option b would establish a jurisdictional allocation of ABC for the South Atlantic = 47% of ABC and Gulf = 53% of ABC. These percentages were derived from using the formula presented in the letter from the South Atlantic Council to the Gulf Council as the following: use 50% of catch history from 1986-2008 + 50% of catch history from 2006-2008.

Option c would establish a jurisdictional allocation of ABC for the South Atlantic = 48% of ABC and Gulf = 52% of ABC. These percentages were derived from using the same formula presented in the letter, but starting the catch history in 1991 when recreational data collection and fish species identification were notably improved (use 50% of catch history from 1991-2008 + 50% of catch history from 2006-2008).

Option d would establish a jurisdictional allocation of ABC for the South Atlantic = 50% of ABC and Gulf = 50% of ABC, dividing the ABC evenly between the two Councils. In recent years, commercial landings of black grouper have been similar in each Council's jurisdiction and using catch history results in percentages that are close to a 50:50 split of the ABC. For example, using catch history in 2001-2008 resulted in a jurisdictional allocation of ABC for the South Atlantic = 49% and Gulf = 51% of the ABC. This time series was started in 2001 when the first full year in the Gulf of Mexico EEZ that different minimum size limits were adopted for both the commercial (24 inches total length) and recreational (22 inches total length) sectors. The South Atlantic Fishery Management Council increased the minimum size limit from 20 inches total length to 24 inches total length in 1999 for both sectors. Using catch history in 1999-2008 resulted in a jurisdictional allocation of ABC for the South Atlantic = 46% of the ABC and Gulf = 54% of the ABC, the same percentages that are listed under **Option a**.

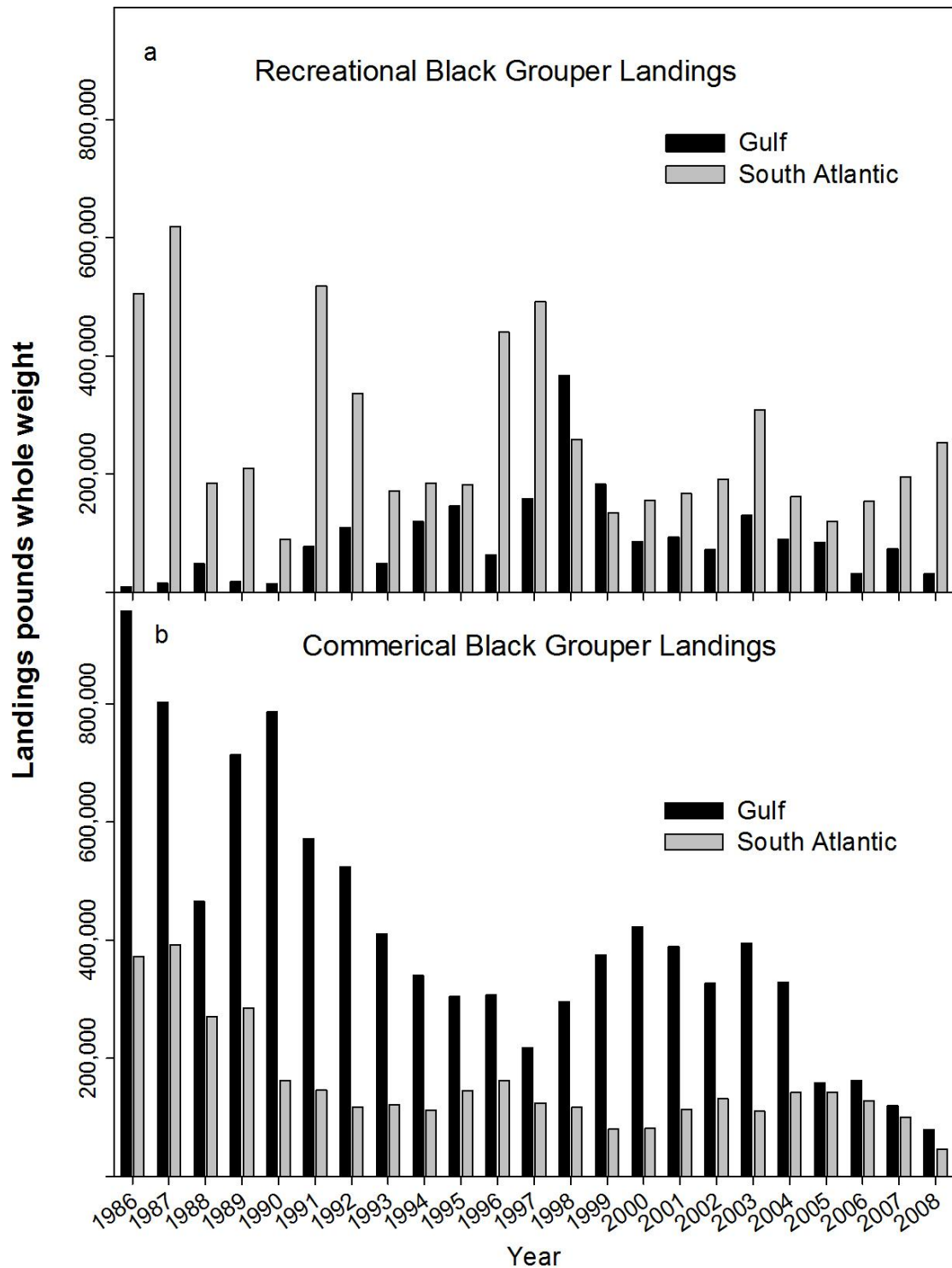


Figure 1. Landings of black grouper in whole weight (WW) in the Gulf and South Atlantic jurisdictions A) recreational landings (MRFSS and headboat data combined) and B) commercial black grouper landings. Sources: MRFSS data from T. Sminkey, NOAA Fisheries, personal communication and headboat data from SEDAR 19 Final Data Workshop Report. Commercial data from Florida's trip ticket program, B. Muller, FL FWC, FWRI, personal communication.

4.3.1.1 Biological Effects

4.3.1.2 Economic Effects

4.3.1.3 Social Effects

4.3.1.4 Administrative Effects

4.3.1.5 Council's Conclusions

4.3.2 Action 14: Sector Allocations for Black Grouper

Remove language specifying pounds, and just use percentage as with other FMPs in this amendment?

Alternative 1 (No action). Do not establish a sector allocation of the black grouper acceptable biological catch (ABC).

Alternative 2 (Preferred). Divide the acceptable biological catch (ABC) into commercial and recreational sector components based on criteria as outlined in one of the following options below.

Subalternative 2a. Commercial = X% of ABC and recreational = X% of ABC (Established by using catch history from 1986-2008). This alternative would establish a commercial annual catch limit of X pounds whole weight and a recreational annual catch limit of X pounds whole weight. The commercial and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

Subalternative 2b. Commercial = X% of ABC and recreational = X% of ABC (Established by using catch history from 1986-1998). This alternative would establish a commercial annual catch limit of X pounds whole weight and a recreational annual catch limit of X pounds whole weight. The commercial and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

Subalternative 2c. Commercial = X% of ABC and recreational = X% of ABC (Established by using catch history from 1999-2008). This alternative would establish a commercial annual catch limit of X pounds whole weight and a recreational annual catch limit of X pounds whole weight. The commercial and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

Subalternative 2d. Commercial = X% of ABC and recreational = X% of ABC (Established by using catch history from 2006-2008). This alternative would establish a commercial annual catch limit of X pounds whole weight and a recreational annual catch limit of X pounds whole weight. The commercial and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

Subalternative 2e (Preferred). Commercial = 47% of ABC and recreational = 53% of ABC (Established by using 50% of catch history from 1991-2008 + 50% of catch history from 2006-2008). This alternative would establish a commercial annual catch limit of X pounds whole weight and a recreational annual catch limit of X pounds whole weight. The commercial and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 3. Divide the acceptable biological catch (ABC) into commercial, recreational, and for-hire sector components based on criteria as outlined in one of the following options below.

Subalternative 3a. Commercial = X% of ABC, for-hire = X%, and recreational = X% of ABC (Established by using catch history from 1986-2008). This alternative would establish a commercial annual catch limit of X pounds whole weight, a for-hire annual catch limit of X pounds whole weight, and a recreational annual catch limit of X pounds whole weight. The commercial, for-hire, and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

Subalternative 3b. Commercial = X% of ABC, for-hire = X%, and recreational = X% of ABC (Established by using catch history from 1986-1998). This alternative would establish a commercial annual catch limit of X pounds whole weight, a for-hire annual catch limit of X pounds whole weight, and a recreational annual catch limit of X pounds whole weight. The commercial, for-hire, and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

Subalternative 3c. Commercial = X% of ABC, for-hire = X%, and recreational = X% of ABC (Established by using catch history from 1999-2008). This alternative would establish a commercial annual catch limit of X pounds whole weight, a for-hire annual catch limit of X pounds whole weight, and a recreational annual catch limit of X pounds whole weight. The commercial, for-hire, and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

Subalternative 3d. Commercial = X% of ABC, for-hire = X%, and recreational = X% of ABC (Established by using catch history from 2006-2008). This alternative would establish a commercial annual catch limit of X pounds whole weight, a for-hire annual catch limit of X pounds whole weight, and a recreational annual catch limit of X pounds whole weight. The commercial, for-hire, and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

Subalternative 3e. Commercial = X% of ABC, for-hire = X%, and recreational = X% of ABC (Established by using 50% of catch history from 1991-2008 + 50% of catch history from 2006-2008). This alternative would establish a commercial annual catch limit of X pounds whole weight, a for-hire annual catch limit of X pounds whole weight, and a recreational annual catch limit of X pounds whole weight. The commercial, for-hire, and recreational ACLs specified for 2011 would remain in effect beyond 2011 until modified.

4.3.2.1 Biological Effects

4.3.2.2 Economic Effects

4.3.2.3 Social Effects

4.3.2.4 Administrative Effects

4.3.2.5 Council's Conclusions

4.3.3 Action 15. Black Grouper Annual Catch Limits

Commercial

Alternative 1 (No action). Do not specify a commercial sector ACL for black grouper.

Alternative 2. $ACL = OY = ABC$.

Alternative 3. $ACL = OY = 90\%$ of the ABC.

Alternative 4. $ACL = OY = 80\%$ of the ABC.

Recreational

Alternative 1 (No action). Do not specify a recreational sector ACL for black grouper.

Alternative 2. The recreational sector $ACL = OY = 85\%$ of the recreational sector ABC.

Alternative 3. The recreational sector $ACL = OY = 75\%$ of the recreational sector ABC.

Alternative 4. The recreational sector $ACL = OY = \text{sector ACL}[(1-PSE) \text{ or } 0.5, \text{ whichever is greater}]$.

4.3.3.1 Biological Effects

4.3.3.2 Economic Effects

4.3.3.3 Social Effects

4.3.3.4 Administrative Effects

4.3.3.5 Council's Conclusions

4.3.4 Action 16: Accountability Measures/Management Measures for Black Grouper

Alternative 1 (No Action). Retain the existing regulations for black grouper (Table X).

Table 2-7. Existing regulations and those proposed in Amendment 17B for black grouper.

Current Regulations		
	Commercial	Recreational
Bag limit		Three grouper aggregate bag limit per person per day. Exclude the captain and crew on for-hire vessels from possessing a bag limit for groupers
In-season closures	Gag commercial ACL of 352,940 lbs gutted weight. After the commercial ACL is met, all purchase and sale of the following species is prohibited and harvest and/or possession is limited to the bag limit: gag; black grouper; red grouper; scamp; red hind; rock hind; yellowmouth grouper; tiger grouper; yellowfin grouper; graysby; and coney.	
Minimum size limit	20 inch	
Seasonal closure	No fishing for and/or possession of the following species is allowed January through April: black grouper; red grouper; scamp; red hind; rock hind; yellowmouth grouper; tiger grouper; yellowfin grouper; graysby, and coney.	
Regulations proposed by Amendment 17B		
	Commercial	Recreational
	In addition to the gag sector-ACLs, establish an ACL for gag, black grouper, and red grouper of 662,403 lbs gutted weight (commercial) and 648,663 lbs gutted weight (recreational). The table below shows how the aggregate ACL was calculated. Prohibit the commercial possession of shallow water groupers when the gag or the gag, black grouper, and red grouper when the ACL is projected to be	Establish a recreational ACL for gag, black grouper, and red grouper of 648,663 lbs gutted weight. If at least one of the species (gag, red grouper, or black grouper) <i>is overfished</i> and the sector ACL is projected to be met, prohibit the harvest and retention of the species or species group. If the ACL is exceeded, independent of stock status, the Regional Administrator shall publish a notice to reduce the sector ACL in the following year by the amount of the overage. For black grouper, black sea bass, gag, red

	met.	grouper, and vermilion snapper, compare the recreational ACL with recreational landings over a range of years. For 2010, use only 2010 landings. For 2011, use the average landings of 2010 and 2011. For 2012 and beyond, use the most recent three-year running average.
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Commercial

Alternative 2 (Preferred). After the commercial ACL is met, all purchase and sale of black grouper is prohibited and harvest and/or possession is limited to the bag limit.

Alternative 3 (Preferred). If the commercial sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the commercial sector ACL in the following season by the amount of the overage.

Recreational

Alternative 4 (Preferred). For in-season and post-season accountability measures, compare recreational ACL with recreational landings over a range of years. For 2011, use only 2011 landings. For 2012, use the average landings of 2011 and 2012. For 2013 and beyond, use the most recent three-year running average.

Alternative 5 (Preferred). The Regional Administrator shall publish a notice to close the recreational fishery when the ACL is projected to be met.

Alternative 6 (Preferred). Take corrective action if the recreational ACL has been exceeded.

Subalternative 6a (Preferred). If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the recreational sector ACL in the following season by the amount of the overage.

Subalternative 6b. If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the length of the following fishing year by the amount necessary to ensure landings do not exceed the recreational sector ACL for the following fishing year.

	Commercial (lbs gw)	Recreational (lbs gw)	Total (lbs gw)
Gag ACL (Amend 16)	352,940	340,060	693,000
Projected black grouper landings (2010) ¹	86,886	31,863	118,749
Projected red grouper landings (2010) ²	221,557	276,740	498,297
Gag, black, red aggregate	662,403	648,663	1,311,006

ACL (proposed in Amend 17B)			
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¹The commercial projected landings for 2010 was computed by using the annual average from 04-06. The landings from Jan through April were zero to account for the 4 month closure implemented on July 29, 2009. The landings from December were zero to account for the projected shallow water grouper closure when the gag commercial ACL would be met.

²The recreational projected landings for 2010 was computed by using the annual average from 04-06. The landings from Jan through April were zero to account for the 4 month closure implemented on July 29, 2009. In addition, harvest was reduced by 2.5% to account for the change in aggregate bag limit from 5 to 3.

4.3.4.1 Biological Effects

4.3.4.2 Economic Effects

4.3.4.3 Social Effects

4.3.4.4 Administrative Effects

4.3.4.5 Council's Conclusions

4.4 Dolphin Wahoo FMP

4.4.1 Dolphin

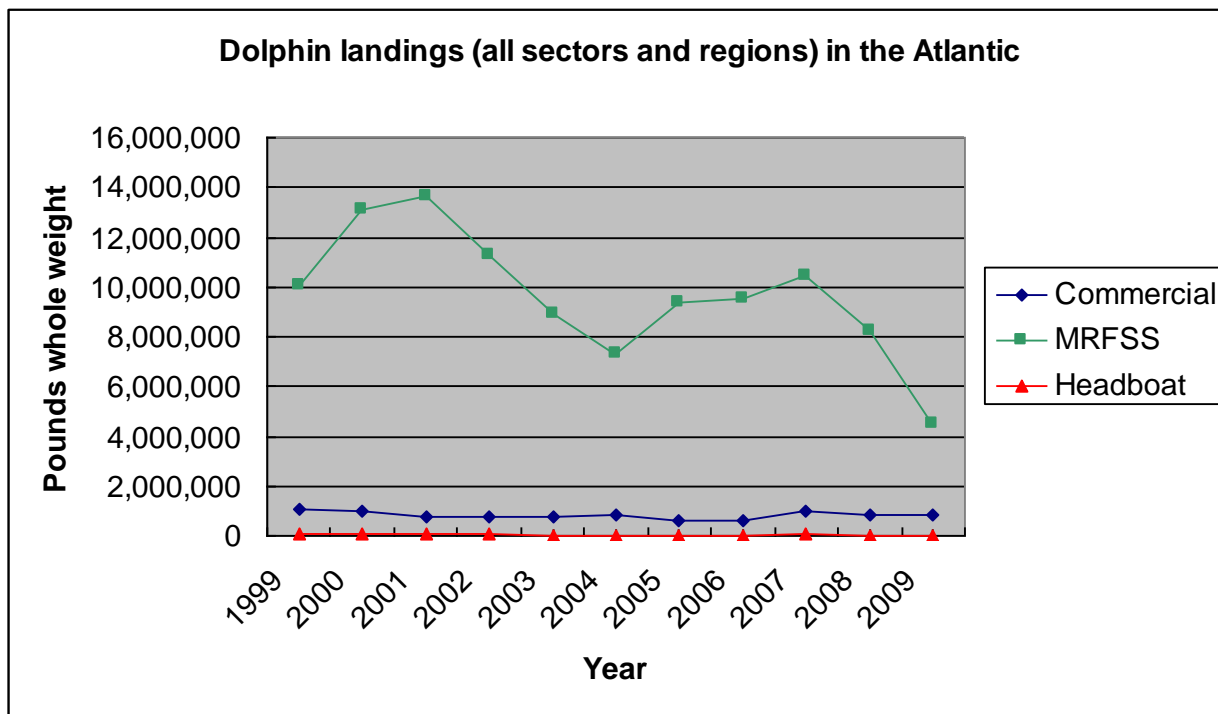
NOTE: Sections below moved from Section 2. Need editing.

Fishery Management Unit

Common dolphin, *Coryphaena hippurus*, and pompano dolphin, *Coryphaena equiselis*, are in the fishery management unit. Pompano dolphin are rarely landed and are included in the landings data for common dolphin.

At the September 2009 meeting, the Council directed staff to drop pompano dolphin (designate as ecosystem component species) or consider them a part of a multispecies group for MSY, OFL, and ABC values.

History of management, landings data from 1999-2009, and a summary of dolphin size data and reductions from changes to the minimum size limit are included in Attachment 1. The following figure presents dolphin landings (all sectors and regions) in the Atlantic:



Source: Commercial dolphin landings for VA north are from SEFSC. Commercial landings for NC to FL are from ALS (except 2009). MRFSS data are from the MRFSS web site. Headboat data are from NMFS Beaufort Lab.

Figure 4. Annual commercial, MRFSS, and headboat landings (lbs whole weight) of dolphin in the Atlantic, 1999 – 2009. Data are inclusive of all the states within the jurisdiction of the New England, Mid-Atlantic, and South Atlantic Fishery Management Councils. Data are not reported by state due to confidentiality concerns. Data for 2009 are incomplete. Headboat data are from the South Atlantic region.

The following is taken directly from Appendix B. Exploratory Dolphin Stock Assessment (Prager 2000) contained in the Dolphin Wahoo FMP:

Table 4. Benchmark estimates from production model of dolphinfish in north Atlantic Ocean. Bias-corrected (BC) estimates shown, along with upper and lower bounds of nonparametric 80% confidence interval; all derived from bootstrapping.

Benchmark	BC estimate	80% LCB	80% UCB
MSY, mt/yr	12,241	8,506	21,110
F_{MSY} , proportion/yr	0.49	0.34	0.85
B_{1998}/B_{MSY}	1.56	1.22	1.77
F_{1997}/F_{MSY}	0.51	0.26	0.92

6 Reference Points and Proxies

It has been recommended that limit reference points be specified as part of the information supplied for fishery management (FAO 1995; Restrepo et al 1998), and this approach has become increasingly important. The production model estimates above provide one set of estimates of limit reference points: $MSY = 12,241$ mt/yr and $F_{MSY} = 0.49$ /yr (Table 4). Because of uncertainty in those estimates, it seems desirable to seek another set of reference points for comparative purposes.

In data-limited situations, the use of proxies for MSY and F_{MSY} has been suggested, along with the necessity of “bringing the knowledge base at least up to data-moderate standards” (Restrepo et al 1998). The same document suggests that suitable proxies for F_{MSY} can lie between $F = 0.75M$ and $F = M$. Given the range of estimates of M developed in §3.3 ($0.68 \leq \hat{M} \leq .80$), the corresponding range of proxies would be $0.51 \leq F \leq 0.80$.

Restrepo et al (1998) also suggest that “if there is no reliable information to estimate fishing mortality or biomass reference points, it may be reasonable to use the historical average catch as a proxy for MSY , taking care to select a period when there is no evidence that abundance was declining.” Using that approach, one could take an average of the last ten years’ catch and arrive at a proxy for MSY of $Y = 7,204$ mt/yr. The choice of ten years is somewhat arbitrary, but the suggestion is to use a recent time period. If the last five years’ catch are averaged, the proxy for MSY becomes $Y = 8,089$ mt/yr.

The benchmark estimates from the surplus production model and their proxy counterparts are comparable, but the production model estimates that a larger sustainable yield might be possible through application of a lower rate of fishing mortality. Unfortunately, current knowledge does not allow a scientific statement about which set of benchmarks is closer to the truth.

Maximum Sustainable Yield (MSY), Minimum Stock Size Threshold (MSST) and Maximum Fishing Mortality Threshold (MFMT)/Overfishing Level (OFL)

Maximum Sustainable Yield (MSY)

The Councils have determined that the Maximum Sustainable Yield (**MSY**) for dolphin in the Atlantic, U.S. Caribbean, and Gulf of Mexico is between 18.8 and 46.5 million pounds. There is no updated MSY estimate, and the SSC did not provide any new guidance on MSY. Therefore, the existing MSY will remain until a SEDAR assessment is conducted.

Minimum Stock Size Threshold (MSST)

The Councils have determined that the Minimum Stock Size Threshold (MSST) for dolphin in the Atlantic, U.S. Caribbean, and Gulf of Mexico is defined as a ratio of current biomass (B_{current}) to biomass at MSY or $(1-M)*B_{\text{MSY}}$, where $1-M$ should never be less than 0.5. Using the best available estimates of natural mortality ($M = 0.68-0.80$) in the formula results in a MSST of 50% BMSY. The stock would be overfished if current biomass (B_{current}) was less than MSST and would be recovered when current biomass was equal or greater than the biomass at MSY. There is no updated MSST estimate, and the SSC did not provide any new guidance on MSST. Therefore, the existing MSST will remain until a SEDAR assessment is conducted.

Overfishing Level (OFL)

The Scientific and Statistical Committee (SSC) provided the following OFL at their April 2010 meeting: “The existing MSY estimate for dolphin (Prager 2000) applies to the Gulf of Mexico, South Atlantic, and Caribbean regions (i.e., no MSY value specific for the Atlantic stock exists). Therefore, the SSC decided to use landings data to estimate OFL. However, given dolphin’s distribution and stock structure the OFL should be based on landings data for the entire Atlantic stock (i.e., not just South Atlantic). The SSC also discussed the decline in recreational landings (the bulk of total dolphin landings) during 2008-2009, which the group thought was strongly influenced by the economic downturn and associated reduction in recreational effort (number of fishing trips). The SSC decided not to use these years for developing the OFL estimate. Other points were also brought up regarding regulations that probably have kept dolphin landings down since 2004. The committee decided to use the period 1994-1997 (Atlantic coast landings data obtained from the Dolphin-Wahoo FMP) to calculate average landings as the OFL estimate ($\text{OFL} = 11,882,898$ pounds; the mean was used instead of the median because of the short landings time series).”

Currently, the Councils (South Atlantic, Mid-Atlantic and New England Councils) specified the following value for MFMT through the original Dolphin/Wahoo FMP:

A maximum fishing mortality threshold (MFMT) - In the Atlantic, U.S. Caribbean, and Gulf of Mexico overfishing for dolphin is defined as a fishing mortality rate (F) in excess of FMSY (F30% Static SPR).

The SSC has provided a new value for MFMT which is now called the Overfishing Level (OFL). The South Atlantic Council is withdrawing the MFMT for the Atlantic and replacing the value with the OFL = 11,882,898 pounds.

Alternative 1. No action. Do not establish an ABC Control Rule for dolphin.

Alternative 2. Establish an ABC Control Rule where ABC equals OFL. This 10,679,395 lbs whole weight.

Alternative 3. Establish an ABC Control Rule where ABC equals a percentage of OFL.

Subalternative 3a. ABC = 65% OFL = 7,723,884 lbs gutted weight. (New value = 6,941,407 lbs whole weight.)

Subalternative 3b. ABC = 75% OFL = 8,912,174 lbs gutted weight. (New value = 8,009,546 lbs whole weight.)

Subalternative 3c (Preferred). ABC = 85% OFL = 10,100,463 lbs gutted weight. (New value = 9,077,486 lbs whole weight.)

Alternative 4. Establish an ABC Control Rule where ABC equals a percentage of the yield at MFMT.

Subalternative 4a. ABC = yield at 65% MFMT

Subalternative 4b. ABC = yield at 75% MFMT

Subalternative 4c. ABC = yield at 85% MFMT

4.4.1.1 Action 17: Acceptable Biological Catch Control Rule and ABC for dolphin

Alternative 1. No action. Do not establish an ABC Control Rule for dolphin.

Alternative 2. Establish an ABC Control Rule where ABC equals OFL. This 10,679,395 lbs whole weight.

Alternative 3. Establish an ABC Control Rule where ABC equals a percentage of OFL.

Subalternative 3a. ABC = 65% OFL = 7,723,884 lbs gutted weight. (New value = 6,941,407 lbs whole weight.)

Subalternative 3b. ABC = 75% OFL = 8,912,174 lbs gutted weight. (New value = 8,009,546 lbs whole weight.)

Subalternative 3c (Preferred). ABC = 85% OFL = 10,100,463 lbs gutted weight. (New value = 9,077,486 lbs whole weight.)

Alternative 4. Establish an ABC Control Rule where ABC equals a percentage of the yield at MFMT.

Subalternative 4a. ABC = yield at 65%MFMT

Subalternative 4b. ABC = yield at 75%MFMT

Subalternative 4c. ABC = yield at 85%MFMT

4.4.1.1.1 Biological Effects

Alternative 1 (No action) would not establish an acceptable biological catch (ABC) control rule for dolphin. For stock and stock complexes required to have an ABC, the national standard 1 (NS 1) guidelines for the Reauthorized Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) state the ABC will be set on the basis of the ABC control rule. Therefore, **Alternative 1** would not meet the requirements of the Magnuson-Stevens Act.

Alternatives 2-4 would specify an ABC control rule for dolphin. Under **Alternative 2**, the ABC would be 10,679,395 lbs gutted weight would be equal to the OFL specified by the Council's Scientific and Statistical Committee (SSC) at their April 2010 meeting. The NS 1 guidelines recommend OFL be the upper bound of ABC, but ABC should usually be reduced from the OFL to account for scientific uncertainty in the estimate of OFL. Since there would be no buffer between ABC and OFL, the biological effect of **Alternative 2** would be less than **Alternatives 3 and 4**. In contrast to **Alternative 2**, **Alternatives 3 and 4** would account for scientific uncertainty by providing a buffer between ABC and OFL.

Alternative 3 would set the ABC as a percentage of the OFL where **Alternative 3a** would be the most conservative sub-alternative where ABC = 65%OFL and would equal 6,941,407 lbs whole weight. **Alternative 3c (Preferred)** would be the least conservative sub-alternative where ABC = 85%OFL and would equal 9,077,486 lbs gutted weight. However, **Alternative 3** and its sub-alternatives would provide a greater buffer between OFL and ABC than **Alternative 4** and its sub-alternatives. **Alternative 4a**, the most conservative alternative under **Alternative 4**, would set ABC = yield at 65%MFMT, which is equivalent to about 93.6%OFL. **Alternative 4b** would set ABC = yield at 75%MFMT, which is equivalent to 97.1%OFL. **Preferred Alternative 3c** would be the least conservative alternative under **Alternative 3** and would set ABC = yield at 85%OFL, which is equivalent to about 98.9%OFL. Therefore, **Alternative 3** would be expected to have a greater biological benefit among **Alternatives 2-4**.

4.4.1.1.2 Economic Effects

4.4.1.1.3 Social Effects

4.4.1.1.4 Administrative Effects

The establishment of an ABC Control Rule is a procedural exercise. The rule is established by the Council's SSC for consideration by the Council. Although the control rule can have implications on management actions, no specific management actions are required through the specification of

the control rule. The administrative impacts of establishing a control rule are minimal and would not differ much between the proposed alternatives.

4.4.1.1.5 Council Conclusions

4.4.1.2 Action 18: Allocations for Dolphin

Alternative 1 (No Action). Continue to use the allocations for dolphin specified in the Dolphin/Wahoo FMP (13% commercial/87% recreational).

Discussion

The Dolphin/Wahoo FMP (SAFMC 2004) established what is called a “soft cap” on the commercial sector. This soft cap does not trigger a closure of the commercial sector; however, it does trigger a review of the data and a determination whether action is necessary. The wording is as follows:

ACTION 12. Establish a cap of 1.5 million pounds or 13% of total landings, whichever is greater, for the commercial fishery for dolphin. Should the catch exceed this level, the Council will review the data and evaluate the need for additional regulations which may be established through the framework.

The commercial and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 2. Define allocations for dolphin based upon landings from the ALS, MRFSS, and headboat databases. The allocation would be based on landings from the years 1999-2008. The allocation would be 7% commercial and 93% recreational. The commercial and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 3 (Preferred). Define allocations for dolphin based upon landings from the ALS, MRFSS, and headboat databases. The allocation would be based on the following formula for each sector:

Sector apportionment = (50% * average of long catch range (lbs) 1999-2008) + (50% * average of recent catch trend (lbs) 2006-2008). The allocation would be 8% commercial and 92% recreational. The commercial and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 4. Define allocations for dolphin based upon landings from the ALS, MRFSS, and headboat databases. The allocation would be based on the following formula for each sector: Sector apportionment = (50% * average of long catch range (lbs) 1999-2008) + (50% * average of recent catch trend (lbs) 2006-2008). The allocation would be 7.7% commercial, 0.3% for-hire, and 92% private recreational. The commercial, for-hire, and private recreational allocations specified for 2011 would remain in effect beyond 2011 until modified. (Note: The for-hire percentage only includes headboats because the charter boat catches are included in MRFSS.)

Table 1. Annual landings of dolphin by region, 1999-2009.

Year	Commercial			Recreational					
	NE and Mid Atl	South Atl	Total Comm	MRFSS NE	MRFSS Mid-Atl	MRFSS South Atl	MRFSS Total	*Headboat	Total Rec
1999	105,495	944,183	1,049,678	1,442	294,477	9,780,115	10,076,034	49,796	10,125,830
2000	42,596	948,127	990,723	0	656,349	12,411,764	13,068,113	69,888	13,138,001
2001	81,030	698,239	779,269	0	181,604	13,425,454	13,607,058	72,524	13,679,582
2002	136,047	610,411	746,458	123,339	573,785	10,616,966	11,314,090	39,236	11,353,326
2003	68,713	679,482	748,195	0	308,110	8,640,423	8,948,533	16,546	8,965,079
2004	66,543	755,222	821,765	0	388,188	6,915,222	7,303,410	26,973	7,330,383
2005	42,732	541,321	584,053	0	143,815	9,245,951	9,389,766	23,658	9,413,424
2006	47,399	598,216	645,615	0	518,597	8,999,462	9,518,059	25,903	9,543,962
2007	134,532	844,976	979,508	5,853	229,933	10,186,705	10,422,491	47,494	10,469,985
2008	74,336	761,070	835,406	0	254,157	7,980,409	8,234,566	12,825	8,247,391
2009	118,481	685,091	803,572	0	42,811	4,485,448	4,528,259	0	4,528,259
Total	917,904	8,066,338	8,984,242	130,634	3,591,826	102,687,919	106,410,379	384,843	106,795,222
Average	83,446	733,303	816,749	11,876	326,530	9,335,265	9,673,671	34,986	9,708,657
%	10.22	89.78	100.00	0.12	3.36	96.15	99.64	0.36	100.00

Source: Commercial dolphin landings for VA north are from SEFSC. Commercial landings for NC to FL are from ALS (except 2009). Data for 2009 are incomplete. *Headboat data are from South Atlantic only.

4.4.1.2.1 Biological Effects

No Action **Alternative 1** was implemented through The Fishery Management Plan for the Dolphin and Wahoo Fishery of the South Atlantic (FMP), which established a non-binding allocation of 13% on the commercial harvest and 87% for the recreational harvest in the Atlantic exclusive economic zone (SAFMC 2003). The Councils' intent was to monitor the fishery and if commercial landings exceeded the non-binding allocation, determine if additional regulations are necessary. Although the recreational landings have historically greatly exceeded the commercial, this action was taken to prevent the potential future expansion of the commercial fishery. Dolphin is predominantly a recreational fishery and the Council wanted to maintain this structure.

Alternatives 2-4 would modify the allocations specified in the FMP in favor of the recreational sector. The allocations in **Alternatives 2-4** would be extremely similar. **Alternatives 2** and **3** would use a different time series of years resulting in allocations of 7% commercial/93% recreational and 8% commercial/92% recreational, respectively. **Preferred Alternative 3** would result in identical allocations for the recreational sector, but through the use of a different formula that would equal $50\% * \text{average of long catch range (lbs) 1999-2008} + 50\% * \text{average of recent catch trend (lbs) 2006-2008}$. **Alternative 4**, which uses a similar formula as **Preferred Alternative 3** would divide the recreational component of the catch into for-hire and private recreational sectors.

Generally, there is greater uncertainty with estimating recreational catches through survey based systems such as the Marine Recreational Statistics Survey. Alternatives that shift a greater proportion of landings from the commercial to the recreational sector would be expected to have a negative biological effect because there would be greater certainty that the recreational ACL would not be exceeded. Therefore, no-action **Alternative 1**, which would maintain the allocation of 10% commercial/80% recreational would have the greatest positive biological effect. There is a slight reduction in the allocations to the commercial sector under **Alternatives 2-4** with a commercial allocation of 7% in **Alternative 2** and 8% in **Alternatives 3** and **4**. The biological benefits of **Alternatives 2** and **3** would be slightly less than **Alternative 1**. The biological benefit of **Alternative 4** would be less than all other alternatives since dividing landings in the recreational sector could increase the uncertainty associated with the estimates.

4.4.1.2.2 Economic Effects

4.4.1.2.3 Social Effects

4.4.1.2.4 Administrative Effects

Alternative 1, no action, would retain the current allocations of 13% recreational and 78% commercial. Under any of the proposed alternatives, administrative impacts will occur as allocations will need to be monitored and enforced to ensure that the sectors do not exceed their allocation and if so, appropriate overages are accounted for. The administrative impacts associated with the proposed alternatives is expected to be similar to the administrative impacts under **Alternative 1**. None of the action alternatives are expected to increase the administrative impacts more than the others.

4.4.1.2.5 Council Conclusions

4.4.1.3 Action 19: Annual Catch Limits for Dolphin

Alternative 1 (No action). There is no ACL specified for dolphin. OY for dolphin is the amount of harvest that can be taken by fishermen while not exceeding 75% of MSY (between 14.1 and 34.9 million pounds).

Discussion

The Dolphin/Wahoo FMP (SAFMC 2004) established what is called a “soft cap” on the commercial sector. This soft cap does not trigger a closure of the commercial sector; however, it does trigger a review of the data and a determination whether action is necessary. The wording is as follows:

ACTION 12. Establish a cap of 1.5 million pounds or 13% of total landings, whichever is greater, for the commercial fishery for dolphin. Should the catch exceed this level, the Council will review the data and evaluate the need for additional regulations which may be established through the framework.

Alternative 2. $ACL = OY = ABC$.

Note: The preferred alternative for the OY Action (deleted as per Council’s direction in September 2010, Motion #47) was $OY = ABC = 10,100,463$ pounds (New number = $OY = ABC = 9,077,486$ lbs whole weight)

Subalternative 2a. Establish a single ACL (commercial and recreational).

Subalternative 2b. Establish commercial and recreational ACLs based on preferred allocation alternative.

Alternative 3. $ACL = OY = 85\%$ of the ABC.

Subalternative 3a. Establish a single ACL (commercial and recreational).

Subalternative 3b. Establish commercial and recreational ACLs based on preferred allocation alternative.

Alternative 4. $ACL = OY = 75\%$ of the ABC.

Subalternative 4a. Establish a single ACL (commercial and recreational).

Subalternative 4b. Establish commercial and recreational ACLs based on preferred allocation alternative.

Alternative 5. $ACL = OY = 65\%$ of the ABC.

Subalternative 5a. Establish a single ACL (commercial and recreational).

Subalternative 5b. Establish commercial and recreational ACLs based on preferred allocation alternative.

Discussion

The AP discussed adding an alternative that would set ACL equal to 65%, 75%, or 85% of 46.5 million pounds (the top end of the current MSY range). The AP could not provide an ACL

recommendation at this time given the problems with the landings data. The AP did recommend the Council examine a regional approach to allocating the quotas.

4.4.1.3.1 Biological Effects

Revisions to the Reauthorized Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) in 2006 require that by 2010, Fishery Management Plans (FMPs) for fisheries determined by the Secretary to be subject to overfishing must establish a mechanism for specifying Annual Catch Limits (ACLs) at a level that prevents overfishing and does not exceed the recommendations of the respective Council's Scientific and Statistical Committee (SSC) or other established peer review processes. These FMPs must also establish, within this timeframe, measures to ensure accountability. By 2011, FMPs for all other fisheries, except fisheries for species with annual life cycles, must meet these requirements. Amendments 17A and 17B, under Secretarial review, would specify ACLs for species subject to overfishing.

The OY in **Alternative 2** would represent the management area specified in the FMP for Dolphin and Wahoo and would be based on the ABC specified through the Council's preferred ABC control rule alternative. **Alternative 2** would set OY equivalent to the ABC and therefore take into consideration scientific uncertainty in the specification of OFL. Setting OY equal to ABC would provide greater insurance that overfishing is prevented, the long term average biomass is near or above B_{MSY} , and overfished stocks are rebuilt in as short a time as possible.

Alternative 1 (No action), would retain the current regulations established for dolphin, which includes a "soft cap" for the commercial sector of 1.5 million pounds or 13% of total landings, whichever is greater. The final national standard 1 (NS1) guidelines recognize that existing FMPs may use terms and values that are similar to, associated with, or may be equivalent to overfishing limits (OFL), acceptable biological catch, annual catch limit (ACL), annual catch target, and accountability measure (AM) in many fisheries for which annual specifications are set for different stocks or stock complexes. In these situations the guidelines suggest that, as Fishery Management Councils revise their FMPs, they use the same terms as set forth in the NS1 guidelines. The ACL serves as a catch limit for a species which triggers some sort of AM to ensure overfishing of a species does not occur. Therefore ACLs are in place for dolphin in the form of a soft TAC. However, the Council's Scientific and Statistical Committee (SSC) has specified an OFL of 10,679,395 lbs whole weight for dolphin and this document provides alternatives for ABC specified as a portion of the OFL based on an ABC control selected by the Council. **Alternatives 2-5** would set the ACL based on the Council's choice of ABC. Therefore, retention of the status quo ACL may not be an appropriate option.

Alternative 2 would set the ACL equal to the ABC. Under **Alternative 2a**, the total ACL would be 9,077,486 pounds whole weight and under **Alternative 2b**, the ACLs for the commercial and recreational sector would be 726,199 pounds whole weight and 8,351,287 pounds whole weight, respectively based on the Council's preferred ABC control rule. **Alternatives 2a and 2b** provide an opportunity to retain a total ACL or divide into sector-specific ACLs. A Fishery Management Council may decide, but is not required, to divide the ACL into sector ACLs. "Sector" for purposes of the NS1 guidelines means a distinct user group to which separate management strategies and catch quotas apply. The NS1 guidelines states it is up to each Fishery Management Council to decide how to designate sectors, if any. If sector-ACLs are established, sector AMs must be

developed for each sector ACL. Sector specific ACLs and AMs could have a greater biological benefit than one ACL because both sectors would be required to have AMs, and the chance of exceeding the OFL would be less. However, recreational landings of dolphin dominates the catch and are very large. Therefore there is greater certainty with recreational landing estimates than for species, which are rarely encountered by the Marine Recreational Statistics Survey.

Alternatives 3-5 would have a greater positive biological effect than **Alternative 2** because they would create a buffer between the ACL and ABC, with **Alternative 5** setting the most conservative ACL at 65% of the ABC. The ACLs under each alternative, based on the Council's preferred ABC control rule are provided in Table 4-x. Creating a buffer between the ACL and ABC would provide greater assurance overfishing. Setting a buffer between the ACL and ABC would be appropriate in situations where there is uncertainty in whether or not management measures are constraining fishing mortality to target levels. ACTs, which are not required, can also be set below the ACLs to account for management uncertainty and provide greater assurance overfishing does not occur. Similar to **Alternative 2**, sub-alternatives to **Alternatives 3-5** provide the opportunity to set sector specific ACLs for species or species groups.

4.4.1.3.2 Economic Effects

4.4.1.3.3 Social Effects

4.4.1.3.4 Administrative Effects

The specification of OY is a procedural exercise. Although OY can have implications on management actions, no specific management actions are required through the specification of OY. The administrative impacts of specifying OY are minimal and would not differ much between the proposed alternatives.

Specifying an ACL or sector ACLs alone would not increase the administrative burden over the status-quo. However, the monitoring and documentation needed to track the ACL can potentially result in a need for additional cost and personnel resources if a monitoring mechanism is not already in place. **Alternative 1**, would not meet the requirements of the Magnuson-Stevens Act for some species, and could be subject to litigation, which would result in a significant administrative burden on the agency. The administrative impacts of specifying an ACL through **Alternatives 2- 5** are minimal and would not differ much between the three action alternatives. However, once the ACL is specified, the administrative burden associated with monitoring and enforcement, implementing management measures, and accountability measures would likely increase. Other administrative burdens that may result from all of the alternatives considered would take the form of development and dissemination of outreach and education materials for fishery participants. The sub-alternatives associated with the action alternatives consider allocations between sectors similar to the previous allocation action for dolphin (Action XX).

4.4.1.3.5 Council Conclusions

4.4.1.4 Action 20: Accountability Measures for Dolphin

NOTE: Per Council guidance for snapper grouper species, the ACT action was included as additional alternatives under the AM action

Alternative 1 (No Action). There is no hard quota for dolphin and there are no AMs in place for dolphin.

Commercial

Alternative 2 (Preferred). After the commercial ACL is projected to be met, all purchase and sale of dolphin is prohibited and harvest and/or possession is limited to the bag limit.

Alternative 3. If the commercial sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the commercial sector ACL in the following season by the amount of the overage.

Alternative 4. Specify commercial sector ACTs for dolphin. (NOTE: Council chose no action alternative as preferred in September 2010: do not specify commercial sector ACTs for dolphin)

Subalternative 4a. The commercial sector ACT equals the commercial sector ACL.

Subalternative 4b. The commercial sector ACT equals 90% of the commercial sector ACL.

Subalternative 4c. The commercial sector ACT equals 80% of the commercial sector ACL.

Table 2. The commercial sector ACT for each of the alternatives. Values are in lbs gutted weight.

Species	Preferred Commercial ACL	Commercial Sector ACT		
		ACT Alt. 2; ACT=ACL	ACT Alt. 3; ACT=90%(ACL)	ACT Alt. 4; ACT=80%(ACL)
Dolphin	712,974	712,974	641,677	570,379

ABC = 75% OFL = 8,912,174. The values above are examples, once the Council chooses a preferred for ACL, the final numbers will be added.

Recreational

Alternative 5. For in-season and post-season accountability measures, compare recreational ACL with recreational landings over a range of years. For 2011, use only 2011 landings. For 2012, use the average landings of 2011 and 2012. For 2013 and beyond, use the most recent three-year running average.

Alternative 6. The Regional Administrator shall publish a notice to close the recreational fishery when the ACL is projected to be met.

Alternative 7. Take corrective action if the recreational ACL has been exceeded.

Subalternative 7a. If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the recreational sector ACL in the following season by the amount of the overage.

Subalternative 7b. If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the length of the following fishing year by the amount necessary to ensure landings do not exceed the recreational sector ACL for the following fishing year.

Subalternative 7c (Preferred). If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the bag limit by the amount necessary to ensure landings do not exceed the recreational sector ACL for the following fishing year.

Alternative 8. Specify recreational sector ACTs for dolphin.

Subalternative 8a. The recreational sector ACT equals 85% of the recreational sector ACL.

Subalternative 8b. The recreational sector ACT equals 75% of the recreational sector ACL.

Subalternative 8c (Preferred). The recreational sector ACT equals sector ACL[(1-PSE) or 0.5, whichever is greater] *based on the 5 year average PSE (2005-09). The recreational sector ACT = 7,584,260 lbs gutted weight.*

The 5 year average PSE = 7.5. The recreational sector ACT = $8,199,200(1-0.075) = 7,584,260$ lbs gutted weight.

Table 3. Proportional Standard Errors (PSEs) for dolphin from numbers estimates (A+B1) for all modes. Obtained from <http://www.st.nmfs.noaa.gov> on May 13, 2010.

Species	2003	2004	2005	2006	2007	2008	2009	3 year average (2007-09)	year average (2005-09)
Dolphin	7.2	6.4	10.2	6.3	6.7	7.1	7.1	7.0	7.5

Table 4. The recreational ACT for each of the alternatives. Values are in lbs whole weight.

Species	Preferred Recreational Sector ACL	Recreational Sector ACT		
		ACT Alt. 2; ACT=85%(ACL)	ACT Alt. 3; ACT=75%(ACL)	ACT Alt. 4; ACT equals sector ACL[(1-PSE) or 0.5, whichever is greater]
Dolphin	8,199,200	6,969,320	6,149,400	7,584,260

Discussion

The AP does not want to see a closure of the recreational fishery and recommended that Alternative 3 be modified to provide that the bag limit may be reduced the following fishing year if required.

4.4.1.4.1 Biological Effects

Discussion for AMs

Currently, there are only size limits, trip limits and bag limits in place to restrict harvest of dolphin in the South Atlantic. There is no hard quota that would trigger the fishery to be closed once a certain level of harvest is reached. Implementing AMs would provide a mechanism to maintain harvest levels at or below the Council's choice of ACL or ACT for the fishery. As is the case for many fisheries, accurate in-season monitoring of ACTs and ACLs for the purposes of triggering AMs when needed can be very difficult for the recreational sector. The challenges associated with monitoring in-season harvest in recreational fisheries often leads to the utilization of projections that estimate the level of harvest at any given time; however, projections are not 100 percent accurate and can be highly variable if anomalous harvest events are recorded. To account for such variations created by environmental, biological, and human factors, without extreme reactive AMs the Council is considering using a three year running average of recreational landings that would be compared to the specified recreational ACL.

The most biologically conservative approach to specifying AMs for dolphin, would be to establish in-season and post-season AMs. By establishing both types of AMs, exceeding the ACL or ACT could be avoided, provided adequate in-season monitoring is possible, and an additional backstop would exist if the ACL or ACT should be exceeded despite the in-season controls.

Discussion for ACTs

As noted in previous sections, ACTs set lower than the ACL can be used at part of an AM mechanism to create a buffer between actual harvest levels and the level at which unsustainable harvest would occur. Therefore, ACTs set lower than the ACL and that would trigger some form of accountability should they be projected to be met or exceeded, would intrinsically be biologically beneficial. The same challenges with monitoring in-season harvest of snapper grouper, and wreckfish, for the recreational sector would be true for dolphin. The challenges associated with monitoring in-season harvest in recreational fisheries often leads to the utilization of projections that estimate the level of harvest at any given time; however, projections are not 100 percent accurate and can be highly variable if anomalous harvest events are recorded. In order to account for these variations, without allowing them to incur extreme consequences of overages, the Council is considering establishing a recreational sector ACT that would be based on the average of several years' landings, which would then be compared to the specified ACT.

Establishing an ACT for the commercial sector would be somewhat more straight-forward than for the recreational sector since all commercial landings of dolphin are reported through dealer logbooks, which can be used to monitor in-season harvest. Therefore, projections of when the ACT would likely be met, or estimates of by how much an ACT is exceeded would be more reliable than for the recreational sector. A higher degree of harvest projection accuracy would reduce the risk of AMs being triggered too soon or too late. Under this action the most biologically beneficial ACT alternative for the commercial sector would be **Alternative 4**, which would create the largest buffer between the ACT and ACL. Alternately, the least biologically beneficial ACT alternative would be **Alternative 1 (No Action)** since it would create no level of harvest lower than that of the ACL in order to trigger an AM to prevent ACL overages. For the commercial sector the most biologically beneficial alternatives could either be **Alternative 6** or **Alternative 7** depending on which comes out to a lower percentage of the ACL. As noted previously; however, **Alternative 7** may be the more advantageous alternative of the two alternatives because it does include the use of landings averages over a number of years rather than yearly landings for which data can be highly variable.

4.4.1.4.2 Economic Effects

4.4.1.4.3 Social Effects

4.4.1.4.4 Administrative Effects

Discussion for AMs

Alternative 1 (No Action) would not produce near-term administrative impacts. However, this alternative would not comply with Reauthorized Magnuson-Stevens Act requirements and therefore, may trigger some type of legal action for not doing so. If this scenario were to occur, the burden on the administrative environment could be significant in the future. Administrative impacts of **Alternatives 4 and 5** would be greatest relative to the commercial AMs proposed since recreational landings would need to be monitored on a continuing basis. Tracking recreational landings is difficult because there is a delay in the availability of recreational data, and the data can be highly variable. Therefore, tracking recreational landings, using the proposed multiple year landings averages, and subsequent AM implementation coordination would create a moderate burden on the administrative environment.

Discussion for ACTs

Specifying an ACT or sector ACTs alone would not increase the administrative burden over the status-quo. However, the monitoring and documentation needed to track how much of the ACT has been harvested throughout a particular fishing season can potentially result in a need for additional cost and personnel resources if a monitoring mechanism is not already in place. **Alternatives 5-7** would require tracking the commercial and recreational landings every year, which would be averaged over three years on a continuous basis. The tracking of recreational landings can be challenging and would likely impose a burden on the administrative environment. Other administrative burdens that may result from all of the alternatives considered would take the form of development and dissemination of outreach and education materials for fishery participants.

4.4.1.4.5 Council Conclusions

4.4.1.5 Action 21: Management Measures for Dolphin

Alternative 1 (No action). Continue to prohibit sale of recreationally caught dolphin in or from the Atlantic EEZ except for allowing for-hire vessels that possess the necessary state and Federal commercial permits to sell dolphin harvested under the bag limit in or from the Atlantic EEZ. Continue with a cap of 1.5 million pounds or 13% of total landings, whichever is greater, for the commercial fishery for dolphin. Should the catch exceed this level, the Council will review the data and evaluate the need for additional regulations which may be established through the framework. Continue with the recreational daily bag limit of 10 dolphin per person per day in or from the EEZ not to exceed 60 dolphin per boat per day whichever is less. Headboats (with a valid certificate of inspection) will be allowed a bag limit of 10 dolphin per paying passenger. Continue the minimum size limit for dolphin of 20 inches fork length off Florida and Georgia and no minimum size limit north of Georgia. Continue to specify allowable gear for dolphin in the Atlantic EEZ as longline;

hook and line gear including manual, electric, or hydraulic rod and reels; bandit gear; handline; and spearfishing gear (including powerheads). **NOTE: Need to add Florida regs.**

Present the current regulations in a table.

Alternative 2. Prohibit bag limit sales of dolphin from for-hire vessels.

Alternative 3. Establish a minimum size limit of 20 inches fork length off South Carolina.

Alternative 4. Increase the minimum size limit to 22 inches or 24 inches *fork length*.

Alternative 5. Reduce the boat limit (e.g. reduce by 1/3). **Note: this applies only to charterboats and recreational vessels, not headboats.**

Sub-Alternative 5a. Reduce the boat limit by 25%.

Sub-Alternative 5b. Reduce the boat limit by 33%.

Sub-Alternative 5c. Reduce the boat limit by 50%.

Alternative 6. Consider a series of trip limits on the commercial fishery (e.g., 4,000 pounds with alternatives higher and lower).

Sub-Alternative 6a. Establish a 3,000 pound trip limit for dolphin north of 31° N. Latitude and a 1,000 pound trip limit for dolphin south of 31° N. Latitude (between Jekyll Island and Little Cumberland Island, Georgia) in the EEZ southward through the SAFMC's area of jurisdiction

for dolphin (landed head and tail intact) with no transfer at sea allowed.

Sub-Alternative 6b. Establish a 5,000 pound trip limit.

Sub-Alternative 6c. Establish a 4,000 pound trip limit.

Sub-Alternative 6d. Establish a 3,000 pound trip limit.

Sub-Alternative 6e. Establish a 2,000 pound trip limit.

Sub-Alternative 6f. Establish a 1,000 pound trip limit.

Discussion

The AP Chair asked Don Hammond to provide some input on dolphin life history. Mr. Hammond provided the following input:

1. Dolphin annual mortality is very high; about 99.7% of fish spawned die each year.
2. Growth is very rapid reaching 40 pounds within 12 months.
3. Longevity is short with most fish caught being 1-2 years old and the largest/oldest being about 4 years old.
4. Maturity is reached very quickly beginning at 14" fork length and 100% mature at 22" fork length.
5. Dolphins are reproductively active year round and are in a constant state of gonadal development.

The AP recommended **Alternative 1 (No action)** at this time because there is no problem identified that needs to be addressed. The AP recognized that this will need to be revisited once the Scientific and Statistical Committee presents their Overfishing Level (OFL) and Acceptable

Biological Catch (ABC) recommendations. The AP also added Options 6 (now Alternative 5) and 7 (now in Appendix A) and requested that the impacts be examined state by state. NOTE: Make sure this matches the current numbering of alternatives.

4.4.1.5.1 Biological Effects

Alternative 1 would retain the current regulations for dolphin. These regulations include: A “soft cap” on the commercial sector, which requires a review of the data and a determination whether action is necessary but does not close the fishery; a prohibition on the sale of recreationally caught dolphin in or from the Atlantic exclusive economic zone (EEZ) except for for-hire vessels that possess the necessary state and Federal commercial permits; a 10 fish per day bag limit for dolphin, which cannot to exceed 60 dolphin per boat per day, except on headboats; and a 20 inch minimum size limit off Florida and Georgia. There is no minimum size limit north of Georgia.

Prager (2000) conducted the first comprehensive exploratory stock assessment for dolphin based on landings from the U.S. Atlantic and Gulf of Mexico. In the South Atlantic, dolphin is not overfished and is not experiencing overfishing. Dolphin grow very rapidly attaining 40 pounds in 12 months and reach sexual maturity by 3 to 4 months of age. They spawn intermittently year-round throughout their 4 year life span. The life history of dolphin and estimates generated by Prager (2000) suggest the species may be able to withstand a relatively high rate of exploitation.

Although dolphin is neither overfished nor experiencing overfishing, reductions in harvest of dolphin may be needed to ensure the OFL is not exceeded. The Council’s Scientific and Statistical Committee has specified an overfishing limit (OFL) of 10,679,395 lbs whole weight. This value is slightly greater than the average commercial and recreational catch during 1999-2008 (Table 4-y). The Council’s preferred ABC control rule would set ABC = 85%OFL and would equal 9,077,486 lbs whole weight. Using the Council’s preferred ABC control rule, alternatives for ACLs would range from 472,029 to 726,199 pounds whole weight for the commercial sector and 5,428,337 to 8,351,287 pounds whole weight for the recreational sector (Table 4-x, Section 4.1.1.1).

Table 4-y. Commercial and recreational landings of dolphin in the Atlantic (New England to east Florida during 1999-2008.

Year	comm	For-hire	Rec	tot rec
1999	1,045,941	5,127,645	5,940,146	11,067,791
2000	986,501	6,017,277	7,806,814	13,824,091
2001	763,075	4,365,019	9,873,591	14,238,610
2002	665,358	7,214,118	6,014,560	13,228,678
2003	715,844	2,723,177	6,755,478	9,478,655
2004	840,972	3,688,651	4,138,897	7,827,548
2005	575,108	4,734,829	4,532,986	9,267,815
2006	636,906	3,939,097	5,039,414	8,978,511
2007	963,419	4,055,352	6,145,520	10,200,872
2008	780,771	3,169,848	4,799,709	7,969,557
avg 1999-2008	797,390	4,503,501	6,104,712	10,608,213

Year	comm	For-hire	Rec	tot rec
Percent	6.99%	39.48%	53.52%	93.01%

Accountability measures in Section 4.1.1.2 include alternatives such as closing the fishery when landings approach an ACL to ensure overfishing does not occur. The Council is considering additional management measures in this section that would reduce the chance ACLs are exceeded and perhaps prevent seasonal closures of the fishery.

Alternative 2 would prohibit bag limit sales of dolphin from for-hire vessels. Currently, for-hire fishermen who possess the necessary state and Federal permits can sell bag limit quantities of dolphin. With the possibility of more restrictive catch limits for dolphin being imposed on recreational and commercial fishermen, the Council is concerned that when for-hire fishermen sell their catch to dealers, catch will be counted toward the commercial quota resulting in early filling of commercial ACL. In addition, sales of bag limit fish may result in double counting if catches are reported through the Marine Recreational Fisheries Statistics Survey and through commercial dealers. Therefore, the Council is considering alternatives to prohibit the sale of bag limit caught snapper grouper species. The intent of this action is to ensure regulations are fair and equitable, fish harvested by the recreational sector are not counted toward commercial quotas, and total landings data are accurate.

Alternative 3 would establish a minimum size limit of 20 inches FL off South Carolina. The current minimum size limit is 20 inches fork length off of Florida and Georgia but there is not a minimum size limit north of Georgia. Among sectors, the average size of dolphin landed by state is smallest for headboat fishermen. Among states, the average size of dolphin landed is largest for South Carolina. Length data are not available for all sectors north of North Carolina.

Table 4-x. Average size (inches FL) of dolphin landed by state during 2004-2008.

State	Comm	HB	Private	Charter
FL	28.2	23.4	26.6	26.8
GA*	28.9	28.2	-	26.6
SC	33.7	27.5	31.0	32.0
NC	27.9	24.1	28.4	29.1
VA	-	-	-	25.4
MD	-	-	33.2	22.5
DE	-	-	21.7	26.3
NJ	-	-	18.4	22.5
NY	-	-	22.8	-

*GA data are confidential for HB. GA are expressed as GA and North Florida for headboat.

Table 4-x reveals a small percentage of dolphin less than 20 inches FL are landed in SC. Based on the proportion of landings in the different sectors, a 20 inch FL minimum size limit for dolphin landing in South Carolina would be expected to reduce total harvest of dolphin by 1.4%. The overall reduction in total kill would be less when release mortality is considered. There are currently no estimates of release mortality for dolphin. However, since dolphin are caught at the surface release mortality would likely be low and a function of hooking injuries and effects of handling when removing the hook.

Table 4-x. Percentage of dolphin less than 20 inches FL for Florida, Georgia, South Carolina, and North Carolina during 2004-2008. Length data are not available for areas north of North Carolina.

State	Comm	HB	Private	Charter
FL	3.06%	14.04%	7.24%	6.33%
GA*	0.00%	0.00%	-	5.00%
SC	1.07%	8.70%	0.00%	4.21%
NC	10.87%	16.07%	3.96%	3.14%

*GA data are confidential for HB. GA are expressed as GA and North Florida for headboat.

Alternative 4 increase the minimum size limit in Florida and Georgia to 22 inches or 24 inches fork length. Among all sectors combined, an increase in the minimum size limit from 20 inches FL to 22 inches FL would be expected to reduce harvest by almost 17% (Table 4-x). This value assumes the same amount of non-compliance with the size limit would continue with a change in the minimum size limit. Increasing the minimum size limit to 24 inches FL would be expected to provide a 35% reduction in harvest among all sectors off of FL and GA and therefore would have a greater biological effect than increasing the size limit to 22 inches FL.

Table 4-x. Reduction in harvest provided by increasing the minimum size limit in Florida and Georgia from 20 inches FL. Analyses takes into consideration non-compliance with the 20 inch FL minimum size limit.

Sector	21 inch limit	22 inch limit	23 inch limit	24 inch limit
Comm	5.43	12.05	18.83	24.74
Headboat	9.88	19.73	28.38	36.31
Private	7.94	17.24	26.37	35.97
Charter	7.83	16.66	26.52	36.22
All sectors	7.71	16.72	25.70	34.97

Alternative 5 would reduce the boat limit for private and charter recreational fishermen from a maximum of 60 fish per vessel to a maximum of 45 fish per vessel in **Sub-Alternative 5a**, 40 fish per vessel in **Sub-Alternative 5b**, and 30 fish in **Sub-Alternative 5c**. Proposed reductions in the vessel limit would reduce harvest of dolphin by 9 to 18%.

Table 4-x. Reduction in harvest of dolphin for Atlantic states provided by a reduction in the vessel limit.

	Charter	Private	All
Vessel limit	Reduction	Reduction	Reduction
50	3.88	0	3.14
45	7.39	0	5.99
40	10.85	0	8.80
35	16.91	0.12	13.74
30	22.4	0.4	18.24
25	29.67	1.06	24.27
20	37.4	2.29	30.77
15	46.94	4.57	38.94
10	57.73	9.29	48.58

9	60.54	11.24	51.23
8	63.29	13.41	53.87
7	66.31	16.2	56.84
6	69.5	19.68	60.09
5	72.99	24.09	63.76
4	76.78	29.68	67.88
3	81.07	37.06	72.76
2	86.04	48	78.86
1	92.01	65.68	87.03

Alternative 6 would establish a commercial trip limit for dolphin. **Sub-Alternative 6a** would establish a 3,000 pound trip limit for dolphin north of 31° N. latitude and a 1,000 pound trip limit for dolphin south of 31° N. Latitude (between Jekyll Island and Little Cumberland Island, Georgia). A 3,000 pound gutted weight trip limit would be expected to reduce harvest north of 31° N. latitude by about 3.6% (Table 4-x1), and a 1,000 pound gutted weight trip limit would reduce harvest of dolphin by about 30% for areas south of 31° N. latitude (Table 4-x2). **Sub-Alternatives 6b to 6e** would establish a trip limit for dolphin throughout the South Atlantic ranging from 5,000 pounds gutted weight (**Sub-Alternative 6b**) to 1,000 pounds (**Sub-Alternative 6e**). Table 4-x3 reveals that the trip limit of 5,000 pounds gutted weight proposed in **Sub-Alternative 6b** would do little to reduce harvest of dolphin. The greatest biological effect among the trip limit sub-alternatives would be provided by **Sub-Alternative 6e**, which would be expected to provide a 25% reduction in dolphin harvest for all areas.

Table 4-x2. Estimated reduction in commercial harvest from trip limit. Based on data from Georgia, South Carolina, and North Carolina (North of 31°N) for 2005-2008.

Trip Limit (lbs gutted weight)	Avg no. trips	Avg pounds over limit	Expected catch	% trips over limit	% reduction in catch from limit
0	848.0	85,522	0	100.0%	100.0%
23	463.5	69,152	16,370	54.7%	80.9%
45	299.0	59,948	25,574	35.3%	70.1%
68	223.8	53,516	32,006	26.4%	62.6%
90	171.0	48,614	36,908	20.2%	56.8%
104	147.0	46,235	39,286	17.3%	54.1%
135	109.0	41,730	43,791	12.9%	48.8%
158	98.3	39,140	46,382	11.6%	45.8%
180	82.3	36,899	48,623	9.7%	43.1%
225	61.5	33,389	52,133	7.3%	39.0%
270	46.5	30,780	54,742	5.5%	36.0%
450	21.0	24,192	61,330	2.5%	28.3%
541	17.3	22,275	63,246	2.0%	26.0%
631	13.8	20,736	64,786	1.6%	24.2%
721	13.3	19,382	66,139	1.6%	22.7%
811	11.5	18,136	67,386	1.4%	21.2%
901	11.0	17,029	68,492	1.3%	19.9%
991	10.5	15,968	69,554	1.2%	18.7%
1,081	9.5	14,967	70,554	1.1%	17.5%
1,171	9.3	14,040	71,482	1.1%	16.4%
1,261	9.0	13,127	72,395	1.1%	15.3%
1,351	8.8	12,249	73,273	1.0%	14.3%
1,441	8.3	11,389	74,133	1.0%	13.3%
1,532	7.5	10,618	74,904	0.9%	12.4%
1,622	7.3	9,884	75,638	0.9%	11.6%
1,712	6.3	9,227	76,295	0.7%	10.8%
1,802	6.0	8,623	76,899	0.7%	10.1%
2,027	5.3	7,173	78,349	0.6%	8.4%
2,252	4.5	5,985	79,537	0.5%	7.0%
2,477	4.0	4,921	80,601	0.5%	5.8%
2,703	3.8	3,928	81,594	0.4%	4.6%
2,928	3.5	3,049	82,472	0.4%	3.6%
3,153	1.8	2,319	83,202	0.2%	2.7%
3,378	1.8	1,882	83,640	0.2%	2.2%
3,604	1.3	1,510	84,012	0.1%	1.8%
3,829	1.3	1,197	84,325	0.1%	1.4%
4,054	1.0	892	84,630	0.1%	1.0%
4,279	1.0	642	84,880	0.1%	0.8%
4,505	0.8	412	85,110	0.1%	0.5%
4,730	0.5	250	85,272	0.1%	0.3%
4,955	0.5	125	85,397	0.1%	0.1%

Table 4-x1. Estimated reduction in commercial harvest from trip limit. Based on data from east Florida (South of 31°N) for 2005-2008.

Trip Limit (lbs gutted weight)	Avg no. trips	Avg pounds over limit	Expected catch	% trips over limit	% reduction in catch from limit
0	1,308.3	137,484	0	100.0%	100.0%
23	681.3	112,830	24,654	52.1%	82.1%
45	453.5	99,069	38,415	34.7%	72.1%
68	337.3	89,253	48,231	25.8%	64.9%
90	261.3	81,811	55,673	20.0%	59.5%
104	225.8	78,160	59,324	17.3%	56.9%
135	161.5	71,555	65,929	12.3%	52.0%
158	138.5	67,785	69,699	10.6%	49.3%
180	110.8	64,691	72,793	8.5%	47.1%
225	79.3	59,947	77,537	6.1%	43.6%
270	60.8	56,504	80,980	4.6%	41.1%
450	20.0	49,172	88,312	1.5%	35.8%
541	15.0	47,439	90,046	1.1%	34.5%
631	12.5	46,088	91,396	1.0%	33.5%
721	10.8	44,921	92,563	0.8%	32.7%
811	9.8	43,900	93,584	0.7%	31.9%
901	8.0	43,011	94,474	0.6%	31.3%
991	8.0	42,211	95,274	0.6%	30.7%
1,081	7.5	41,417	96,068	0.6%	30.1%
1,171	7.5	40,667	96,818	0.6%	29.6%
1,261	7.5	39,917	97,568	0.6%	29.0%
1,351	7.3	39,191	98,294	0.6%	28.5%
1,441	7.0	38,475	99,010	0.5%	28.0%
1,532	6.8	37,780	99,705	0.5%	27.5%
1,622	6.8	37,105	100,380	0.5%	27.0%
1,712	6.5	36,450	101,034	0.5%	26.5%
1,802	6.3	35,820	101,664	0.5%	26.1%
2,027	5.8	34,363	103,121	0.4%	25.0%
2,252	5.5	32,947	104,537	0.4%	24.0%
2,477	5.0	31,627	105,857	0.4%	23.0%
2,703	5.0	30,377	107,107	0.4%	22.1%
2,928	4.8	29,128	108,356	0.4%	21.2%
3,153	4.5	27,991	109,493	0.3%	20.4%
3,378	4.3	26,914	110,570	0.3%	19.6%
3,604	4.0	25,889	111,595	0.3%	18.8%
3,829	4.0	24,889	112,595	0.3%	18.1%
4,054	4.0	23,889	113,595	0.3%	17.4%
4,279	4.0	22,889	114,595	0.3%	16.6%
4,505	4.0	21,889	115,595	0.3%	15.9%
4,730	4.0	20,889	116,595	0.3%	15.2%
4,955	4.0	19,889	117,595	0.3%	14.5%

Table 4-x3. Estimated reduction in commercial harvest from trip limit. Based on data from east FL to NC during 2005-2008.

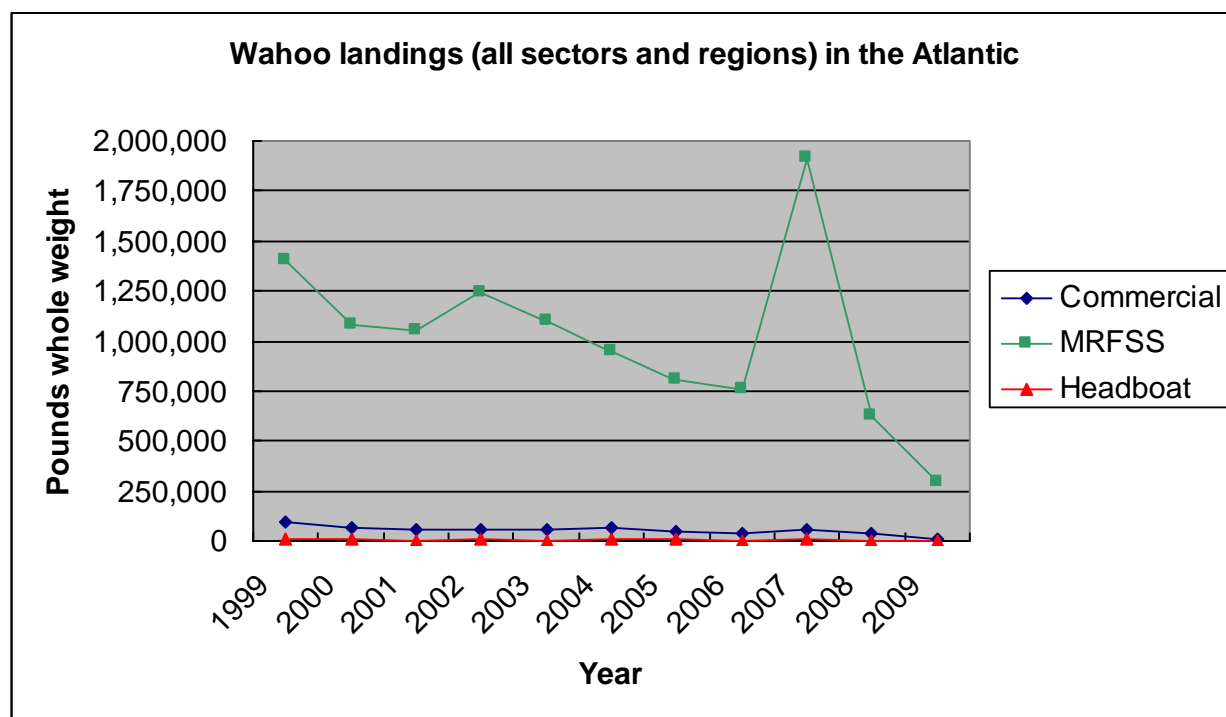
Trip Limit (lbs gutted weight)	Avg no. trips	Avg pounds over limit	Expected catch	% trips over limit	% reduction in catch from limit
0	2,183.0	226,587	0	100.0%	100.0%
23	1,164.8	184,987	41,600	53.4%	81.6%
45	767.0	161,592	64,996	35.1%	71.3%
68	574.3	144,985	81,602	26.3%	64.0%
90	442.3	132,349	94,238	20.3%	58.4%
104	382.5	126,173	100,414	17.5%	55.7%
135	278.8	114,729	111,858	12.8%	50.6%
158	243.3	108,188	118,399	11.1%	47.7%
180	198.3	102,704	123,883	9.1%	45.3%
225	144.5	94,213	132,375	6.6%	41.6%
270	110.5	87,983	138,604	5.1%	38.8%
450	42.5	73,627	152,961	1.9%	32.5%
541	33.0	69,854	156,733	1.5%	30.8%
631	26.8	66,895	159,692	1.2%	29.5%
721	24.3	64,335	162,252	1.1%	28.4%
811	21.5	62,044	164,543	1.0%	27.4%
901	19.0	60,040	166,547	0.9%	26.5%
991	18.5	58,179	168,409	0.8%	25.7%
1,081	17.0	56,384	170,203	0.8%	24.9%
1,171	16.8	54,706	171,881	0.8%	24.1%
1,261	16.5	53,043	173,544	0.8%	23.4%
1,351	16.0	51,440	175,148	0.7%	22.7%
1,441	15.3	49,864	176,724	0.7%	22.0%
1,532	14.3	48,398	178,190	0.7%	21.4%
1,622	14.0	46,989	179,599	0.6%	20.7%
1,712	12.8	45,677	180,911	0.6%	20.2%
1,802	12.3	44,443	182,145	0.6%	19.6%
2,027	11.0	41,536	185,052	0.5%	18.3%
2,252	10.0	38,932	187,655	0.5%	17.2%
2,477	9.0	36,548	190,039	0.4%	16.1%
2,703	8.8	34,304	192,283	0.4%	15.1%
2,928	8.3	32,178	194,410	0.4%	14.2%
3,153	6.3	30,310	196,277	0.3%	13.4%
3,378	6.0	28,796	197,791	0.3%	12.7%
3,604	5.3	27,398	199,189	0.2%	12.1%
3,829	5.3	26,086	200,501	0.2%	11.5%
4,054	5.0	24,780	201,807	0.2%	10.9%
4,279	5.0	23,530	203,057	0.2%	10.4%
4,505	4.8	22,300	204,287	0.2%	9.8%
4,730	4.5	21,138	205,449	0.2%	9.3%
4,955	4.5	20,013	206,574	0.2%	8.8%

- 4.4.1.5.2 **Economic Effects**
- 4.4.1.5.3 **Social Effects**
- 4.4.1.5.4 **Administrative Effects**
- 4.4.1.5.5 **Council Conclusions**

4.4.2 Wahoo

NOTE: This section moved from Section 2. Needs editing.

History of management and landings data from 1999-2009 are included in Attachment 2. The following figure presents wahoo landings (all sectors and regions) in the Atlantic:



Source: Commercial dolphin landings for VA north are from SEFSC. Commercial landings for NC to FL are from ALS (except 2009). MRFSS data are from the MRFSS web site. Headboat data are from NMFS Headboat Survey.

Figure 4. Annual commercial, MRFSS, and headboat landings (lbs whole weight) of wahoo in the Atlantic, 1999 – 2009. Data are inclusive of all the states within the jurisdiction of the New England, Mid-Atlantic, and South Atlantic Fishery Management Councils. Data are not reported by state due to confidentiality concerns. Data for 2009 are incomplete. Headboat data are from the South Atlantic region.

Maximum Sustainable Yield (MSY), Minimum Stock Size Threshold (MSST) and Maximum Fishing Mortality Threshold (MFMT)/Overfishing Level (OFL)

Maximum Sustainable Yield

The Councils have determined that the Maximum Sustainable Yield (MSY) proxy for wahoo in the Atlantic, U.S. Caribbean, and Gulf of Mexico is between 1.41 and 1.63 million pounds. There is no updated MSY estimate, and the SSC did not provide any new guidance on MSY. Therefore, the existing MSY will remain until a SEDAR assessment is conducted.

Minimum Stock Size Threshold (MSST)

The Councils have determined that the Minimum Stock Size Threshold (MSST) for wahoo in the Atlantic, U.S. Caribbean, and Gulf of Mexico is defined as a ratio of current biomass (B_{current}) to biomass at MSY or $(1-M)*B_{\text{MSY}}$, where $1-M$ should never be less than 0.5. The stock would be overfished if current biomass (B_{current}) was less than MSST and would be recovered when current biomass was equal or greater than the biomass at MSY. There is no updated MSST estimate, and the SSC did not provide any new guidance on MSST. Therefore, the existing MSST will remain until a SEDAR assessment is conducted.

Overfishing Level (OFL)

The Scientific and Statistical Committee provided the following OFL at their April 2010 meeting: Since no MSY estimate is available for wahoo OFL was estimated from landings data (Atlantic coast landings data also obtained from the Dolphin-Wahoo FMP). Similar to dolphin, wahoo landings were thought to be impacted by economic trends as well as the 2004 regulations (for wahoo, 2-fish bag limit and a 500 lb trip limit). OFL (1.1 million pounds) was determined as the median of landings for the period 1994-2003 (used the median instead of the mean since this was a longer time series than used for dolphin).

Currently, the Councils (South Atlantic, Mid-Atlantic and New England Councils) specified the following value for MFMT through the original Dolphin/Wahoo FMP:

A maximum fishing mortality threshold (MFMT) - In the Atlantic, U.S. Caribbean, and Gulf of Mexico overfishing for wahoo is defined as a fishing mortality rate (F) in excess of F_{MSY} ($F_{30\% \text{ Static SPR}}$).

The SSC has provided a new value for MFMT which is now called the Overfishing Level (OFL). The South Atlantic Council is withdrawing the MFMT for the Atlantic and replacing the value with the OFL = 1.1 million lbs gutted weight.

4.4.2.1 Action 22: Acceptable Biological Catch (ABC) Control Rule and ABC for Wahoo

ABC is recommended by the Scientific and Statistical Committee and specified by the Council. The SSC provided an ABC Control Rule and value at their April 2010 meeting. **Insert further discussion with the SSC's rationale for their ABC recommendation.**

Alternative 1 (No action). Do not establish an ABC Control Rule for wahoo.

Alternative 2. Establish an ABC Control Rule where ABC equals OFL. OFL = 1,226,716 lbs whole weight.

Alternative 3. Establish an ABC Control Rule where ABC equals a percentage of OFL.

Subalternative 3a. ABC=65%OFL = 715,000 lbs gutted weight. NEW VALUE = ABC=65%OFL = 784,154 lbs whole weight.

Subalternative 3b. ABC=75%OFL = 825,000 lbs gutted weight. NEW VALUE = ABC=75%OFL = 904,793 lbs whole weight.

Subalternative 3c (Preferred). ABC=85%OFL = 935,000 lbs gutted weight. NEW VALUE = ABC=85%OFL = 1,025,432 lbs whole weight.

Alternative 4. Establish an ABC Control Rule where ABC equals a percentage of the yield at MFMT.

Subalternative 4a. ABC=yield at 65%MFMT

Subalternative 4b. ABC=yield at 75%MFMT

Subalternative 4c. ABC=yield at 85%MFMT

4.4.2.1.1 Biological Effects

Alternative 1 (No Action) would not establish an acceptable biological catch (ABC) control rule for wahoo. For stock and stock complexes required to have an ABC, the national standard 1 (NS 1) guidelines for the Reauthorized Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) state the ABC will be set on the basis of the ABC control rule. Therefore, Alternative 1 would not meet the requirements of the Magnuson-Stevens Act.

Alternatives 2-4 would specify an ABC control rule for wahoo. Under **Alternative 2**, the ABC would be 1,206,391 lbs gutted weight would be equal to the OFL specified by the Council's Scientific and Statistical Committee (SSC) at their April 2010 meeting. The NS 1 guidelines recommend OFL be the upper bound of ABC, but ABC should usually be reduced from the OFL to account for scientific uncertainty in the estimate of OFL. Since there would be no buffer between ABC and OFL, the biological effect of **Alternative 2** would be less than **Alternatives 3-4**. In contrast to **Alternative 2**, **Alternatives 3-4** would account for scientific uncertainty by providing a buffer between ABC and OFL.

Alternative 3 would set the ABC as a percentage of the OFL where *Alternative 3a* would be the most conservative sub-alternative where ABC = 65%OFL and would equal 784,154 lbs whole weight. **Alternative 3c (Preferred)** would be the least conservative sub-alternative where ABC = 85%OFL and would equal 1,025,432 lbs gutted weight. However, **Alternative 3** and its sub-alternatives would provide a greater buffer between OFL and ABC than **Alternative 4** and its sub-alternatives.

Alternative 4a, the most conservative alternative under **Alternative 4**, would set ABC = yield at 65%MFMT, which is equivalent to about 93.6%OFL. **Alternative 4b** would set ABC = yield at 75%MFMT, which is equivalent to 97.1%OFL. **Alternative 4c** would be the least conservative alternative under **Alternative 4** and would set ABC = yield at 95%OFL, which is equivalent to about 98%OFL. Therefore, **Alternative 3** would be expected to have a greater biological benefit among **Alternatives 2-4**.

4.4.2.1.2 Economic Effects

4.4.2.1.3 Social Effects

4.4.2.1.4 Administrative Effects

The establishment of an ABC Control Rule is a procedural exercise. The rule is established by the Council's SSC for consideration by the Council. Although the control rule can have implications on management actions, no specific management actions are required through the specification of the control rule. The administrative impacts of establishing a control rule are minimal and would not differ much between the proposed alternatives.

4.4.2.1.5 Council Conclusions

4.4.2.2 Action 23: Allocations for Wahoo

Alternative 1 (No action). Do not define allocations for wahoo.

Alternative 2. Define allocations for wahoo based upon landings from the ALS, MRFSS, and headboat databases. The allocation would be based on landings from the years 2006-2008. The allocation would be 4% commercial and 96% recreational. The commercial and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 3 (Preferred). Define allocations for wahoo based upon landings from the ALS, MRFSS, and headboat databases. The allocation would be based on the following formula for each sector:

Sector apportionment = (50% * average of long catch range (lbs) 1986(or 1999)-2008) + (50% * average of recent catch trend (lbs) 2006-2008). The allocation would be 5% commercial and 95% recreational. The commercial and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 4. Define allocations for dolphin based upon landings from the ALS, MRFSS, and headboat databases. The allocation would be based on the following formula for each sector:
Sector apportionment = (50% * average of long catch range (lbs) 1986(or 1999)-2008) + (50% * average of recent catch trend (lbs) 2006-2008). The allocation would be 4.65% commercial, 0.42% for-hire, and 94.93% private recreational. The commercial, for-hire, and private recreational allocations specified for 2011 would remain in effect beyond 2011 until modified. (Note: The for-hire percentage only includes headboats because the charter boat catches are included in MRFSS.)

Table 5. Annual landings of wahoo by region, 1999-2009.

Year	Commercial			Recreational (MRFSS & Headboat)					
	NE and Mid Atl	South Atl	Total Comm	MRFSS NE	MRFSS Mid-Atl	MRFSS South Atl	MRFSS Total	*Headboat	Total Rec
1999	4,504	94,655	99,159	0	232,779	1,167,516	1,400,295	5,358	1,405,653
2000	3,514	61,769	65,283	0	44,275	1,033,979	1,078,254	5,467	1,083,721
2001	2,231	58,842	61,073	0	0	1,049,762	1,049,762	863	1,050,625
2002	2,344	58,359	60,703	0	0	1,239,973	1,239,973	4,881	1,244,854
2003	1,316	59,404	60,720	0	0	1,098,636	1,098,636	623	1,099,259
2004	3,575	61,910	65,485	0	21,665	923,231	944,896	5,216	950,112
2005	4,102	43,642	47,744	0	1,689	808,367	810,056	5,790	815,846
2006	2,120	39,419	41,539	0	3,448	756,696	760,144	3,001	763,145
2007	5,428	54,130	59,558	0	94,163	1,819,904	1,914,067	10,425	1,924,492
2008	3,588	37,998	41,586	0	1,889	626,869	628,758	2,767	631,525
2009	0	12,296	12,296	0	0	297,090	297,090	0	297,090
Total	32,722	582,424	615,146	0	399,908	10,822,023	11,221,931	44,392	11,266,323
Average	2,975	52,948	55,922	0	36,355	983,820	1,020,176	4,036	1,024,211
%	5.32	94.68	100.00	0.00	3.55	96.06	99.61	0.39	100.00

Source: Commercial dolphin landings for VA north are from SEFSC. Commercial landings for NC to FL are from ALS (except 2009). Data for 2009 are incomplete. *Headboat data are from South Atlantic only.

4.4.2.2.1 Biological Effects

Alternative 1 (No Action) would not establish allocations for wahoo. If an allocation is not specified then it would not be possible to identify the annual catch limit (ACL) in the recreational sector. Only a single ACL could be established for both sectors and options for an accountability measure (AM) would be limited.

Alternatives 2-4 would modify the allocations specified in the FMP in favor of the recreational sector. The allocations in **Alternatives 2-4** would be extremely similar. **Alternatives 2 and 4** would use a different time series of years resulting in allocations of 4% commercial/96% recreational and 4% commercial/96% recreational, respectively. **Preferred Alternative 3** would result in 5% commercial/95% recreational, respectively, through the use of a formula that would equal $50\% \times \text{average of long catch range (lbs) 1999-2008} + 50\% \times \text{average of recent catch trend (lbs) 2006-2008}$. **Alternative 4**, which uses a similar formula as **Preferred Alternative 3** would divide the recreational component of the catch into for-hire and private recreational sectors.

Generally, there is greater uncertainty with estimating recreational catches through survey based systems such as the Marine Recreational Fisheries Statistics Survey. Alternatives that shift a greater proportion of landings from the commercial to the recreational sector would be expected to have a negative biological effect because there would be greater certainty that the recreational ACL would not be exceeded. There is a slight difference in the allocations under **Alternatives 2-4** and very little difference in biological effects. The biological benefit of **Alternative 4** would be less than all other alternatives since dividing landings in the recreational sector could increase the uncertainty associated with the estimates.

4.4.2.2.2 Economic Effects

4.4.2.2.3 Social Effects

4.4.2.2.4 Administrative Effects

Alternative 1, no action, would retain the current allocations and would result in the least administrative burden. **Alternatives 2 through 5** could increase the administrative impacts to NOAA Fisheries Service as landings would need to be monitored and enforced for the commercial and recreational portion to ensure that the sectors do not exceed their allocation and if so, appropriate overages are accounted for.

4.4.2.2.5 Council Conclusions

4.4.2.3 Action 24: Annual Catch Limits for Wahoo

Alternative 1 (No action). There is no ACL specified for wahoo. Currently OY for wahoo is the amount of harvest that can be taken by fishermen while not exceeding 100% of MSY (between 1.41 and 1.63 million pounds).

Alternative 2. ACL = OY = ABC. The preferred alternative for the OY Action (deleted as per Council's direction in September 2010, Motion #57) OY = ABC = 935,000 lbs gutted weight.
NEW VALUE = OY = ABC = 1,206,391 lbs whole weight

Subalternative 2a. Establish a single ACL (commercial and recreational).

Subalternative 2b. Establish commercial and recreational ACLs based on preferred allocation alternative.

Alternative 3. ACL = OY = 85% of the ABC.

Subalternative 3a. Establish a single ACL (commercial and recreational).

Subalternative 3b. Establish commercial and recreational ACLs based on preferred allocation alternative.

Alternative 4. ACL = OY = 75% of the ABC.

Subalternative 4a. Establish a single ACL (commercial and recreational).

Subalternative 4b. Establish commercial and recreational ACLs based on preferred allocation alternative.

Alternative 5. ACL = OY = 65% of the ABC.

Subalternative 5a. Establish a single ACL (commercial and recreational).

Subalternative 5b. Establish commercial and recreational ACLs based on preferred allocation alternative.

Table 2-x. ACL (pounds whole weight) described in Alternatives 2-5 for wahoo.

	Alternative 2		Alternative 3		Alternative 4		Alternative 5	
Sub-alt a	ABC	1,206,391	85%ABC	1,025,432	75% ABC	904,793	65%ABC	784,154
	Comm	Rec	Comm	Rec	Comm	Rec	Comm	Rec
Sub-alt b	60,320	1,146,071	51,272	974,160	45,240	859,553	39,208	744,946

4.4.2.3.1 Biological Effects

Revisions to the Reauthorized Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) in 2006 require that by 2010, Fishery Management Plans (FMPs) for fisheries determined by the Secretary to be subject to overfishing must establish a mechanism for specifying Annual Catch Limits (ACLs) at a level that prevents overfishing and does not exceed the recommendations of the respective Council's Scientific and Statistical Committee (SSC) or other established peer review processes. These FMPs must also establish, within this timeframe, measures to ensure accountability. By 2011, FMPs for all other fisheries, except fisheries for

species with annual life cycles, must meet these requirements. Amendments 17A and 17B, under Secretarial review, would specify ACLs for species subject to overfishing.

Similar to the relationship between OFL and ABC, OY is prescribed on the basis of the MSY from the fishery, as reduced by relevant economic, social or ecological factors. In the case of an overfished fishery, OY provides for rebuilding to a level consistent with producing MSY in such a fishery. For overfished stocks, ABC must also be set to reflect the annual catch that is consistent with the rebuilding plan for that stock. In national standard 1, use of the phrase, “achieving, on a continuing basis, the optimum yield from each fishery” means producing, from each stock, stock complex or fishery a long-term series of catches such that the average catch is equal to OY, overfishing is prevented, the long term average biomass is near or above B_{MSY} , and overfished stocks are rebuilt in as short a time as possible.

Preferred Alternative 2 would set OY equivalent to the ABC and therefore take into consideration scientific uncertainty in the specification of OFL. Taking no action on specifying OY could have negative biological effects as it could allow OY to be greater than the ABC. Setting OY equal to ABC would provide greater insurance that overfishing is prevented, the long term average biomass is near or above B_{MSY} , and overfished stocks are rebuilt in as short a time as possible.

Alternative 1 (No Action), would retain the current regulations established for wahoo, which includes a recreational bag limit of 2 fish per person per day, a prohibition on recreational sale of dolphin and wahoo caught under a bag limit unless the seller holds the necessary commercial permits, and a commercial trip limit of 500 pounds for wahoo. The final national standard 1 (NS1) guidelines recognize that existing FMPs may use terms and values that are similar to, associated with, or may be equivalent to overfishing limits (OFL), acceptable biological catch, annual catch limit (ACL), annual catch target, and accountability measure (AM) in many fisheries for which annual specifications are set for different stocks or stock complexes. In these situations the guidelines suggest that, as Fishery Management Councils revise their FMPs, they use the same terms as set forth in the NS1 guidelines. The ACL serves as a catch limit for a species which triggers some sort of AM to ensure overfishing of a species does not occur. Currently, there are no quotas in place that could serve as ACLs for either the commercial or recreational sector. Therefore, Alternative 1 would not meet the requirements specified in the Magnuson-Stevens Act.

Alternative 2 would set the ACL equal to the ABC. Under **Alternative 2a**, the total ACL would be 1,206,391 pounds whole weight and under **Alternative 2b**, the ACLs for the commercial and recreational sector would be 60,320 pounds whole weight and 1,146,071 pounds whole weight, respectively based on the Council’s preferred ABC control rule. **Alternatives 2a and 2b** provides an opportunity to retain a total ACL or divide into sector-specific ACLs. A Fishery Management Council may decide, but is not required, to divide the ACL into sector ACLs. “Sector” for purposes of the NS1 guidelines means a distinct user group to which separate management strategies and catch quotas apply. The NS1 guidelines states it is up to each Fishery Management Council to decide how to designate sectors, if any. If sector-ACLs are established, sector AMs must be developed for each sector ACL. Sector specific ACLs and AMs

could have a greater biological benefit than one ACL because both sectors would be required to have AMs, and the chance of exceeding the OFL would be less. However, recreational landings of dolphin dominates the catch and are very large. Therefore there is greater certainty with recreational landing estimates than for species, which are rarely encountered by the Marine Recreational Statistics Survey.

Alternatives 3 - 5 would have a greater positive biological effect than **Alternative 2** because they would create a buffer between the ACL and ABC, with **Alternative 5** setting the most conservative ACL at 65% of the ABC. The ACLs under each alternative, based on the Council's preferred ABC control rule is provided in Table 4-x. Creating a buffer between the ACL and ABC would provide greater assurance overfishing. Setting a buffer between the ACL and ABC would be appropriate in situations where there is uncertainty in whether or not management measures are constraining fishing mortality to target levels. ACTs, which are not required, can also be set below the ACLs to account for management uncertainty and provide greater assurance overfishing does not occur. Similar to **Alternative 2**, sub-alternatives to **Alternatives 3 - 5** provide the opportunity to set sector specific ACLs for species or species groups.

4.4.2.3.2 Economic Effects

4.4.2.3.3 Social Effects

4.4.2.3.4 Administrative Effects

Specifying an ACL or sector ACLs alone would not increase the administrative burden over the status-quo. However, the monitoring and documentation needed to track the ACL can potentially result in a need for additional cost and personnel resources if a monitoring mechanism is not already in place. **Alternative 1**, would not meet the requirements of the Magnuson-Stevens Act for some species, and could be subject to litigation, which would result in a significant administrative burden on the agency. The administrative impacts of specifying an ACL through **Alternatives 2- 5** are minimal and would not differ much between the three action alternatives. However, once the ACL is specified, the administrative burden associated with monitoring and enforcement, implementing management measures, and accountability measures, will increase. Other administrative burdens that may result from all of the alternatives considered would take the form of development and dissemination of outreach and education materials for fishery participants. The sub-alternatives associated with the action alternatives consider allocations between sectors similar to the allocation action for wahoo (see Action XX).

4.4.2.3.5 Council Conclusions

4.4.2.4 Action 25: Accountability Measures for Wahoo

Alternative 1 (No Action). There is no hard quota for wahoo and there are no AMs in place for wahoo.

Commercial

Alternative 2 (Preferred). After the commercial ACL is **projected to be** met, all purchase and sale of wahoo is prohibited and harvest and/or possession is limited to the bag limit.

Alternative 3. If the commercial sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the commercial sector ACL in the following season by the amount of the overage.

Alternative 4. Establish commercial sector ACT for wahoo.

Subalternative 4a. The commercial sector ACT equals the commercial sector ACL.

Subalternative 4b. The commercial sector ACT equals 90% of the commercial sector ACL.

Subalternative 4c. The commercial sector ACT equals 80% of the commercial sector ACL.

Table 6. The commercial sector ACT for each of the alternatives. Values are in lbs whole weight.

Note: This table will be completed once the Council chooses the preferred ACL alternative.

Species	Preferred Commercial ACL	Commercial Sector ACT		
		ACT Alt. 2; ACT=ACL	ACT Alt. 3; ACT=90%(ACL)	ACT Alt. 4; ACT=80%(ACL)
Wahoo	41,250	41,250	37,125	33,000

ABC = 75% OFL. The values above are examples, once the Council chooses a preferred for ACL, the final numbers will be added.

Recreational

Alternative 4 (Preferred). For in-season and post-season accountability measures, compare recreational ACL with recreational landings over a range of years. For 2011, use only 2011 landings. For 2012, use the average landings of 2011 and 2012. For 2013 and beyond, use the most recent three-year running average.

Alternative 5. The Regional Administrator shall publish a notice to close the recreational fishery when the ACL is projected to be met.

Alternative 6. Take corrective action if the recreational ACL has been exceeded.

Subalternative 6a. If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the recreational sector ACL in the following season by the amount of the overage.

Subalternative 6b. If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the length of the following fishing year by the amount necessary to ensure landings do not exceed the recreational sector ACL for the following fishing year.

Subalternative 6c (Preferred). If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the bag limit by the amount necessary to ensure landings do not exceed the recreational sector ACL for the following fishing year.

Alternative 7. Establish recreational sector ACT for wahoo

Subalternative 7a. The recreational sector ACT equals 85% of the recreational sector ACL.

Subalternative 7b. The recreational sector ACT equals 75% of the recreational sector ACL.

Subalternative 7c (Preferred). The recreational sector ACT equals sector ACL[(1-PSE) or 0.5, whichever is greater] *based on the 5 year average PSE (2005-09). The recreational sector ACT = 674,809 lbs gutted weight.*

4.4.2.4.1 Biological Effects

AM Discussion

Currently, there are only size limits, trip limits and bag limits in place to restrict harvest of wahoo in the South Atlantic. There is no hard quota that would trigger the fishery to be closed once a certain level of harvest is reached. Implementing AMs would provide a mechanism to maintain harvest levels at or below the Council's choice of ACL or ACT for the fishery. As is the case for many fisheries, accurate in-season monitoring of ACTs and ACLs for the purposes of triggering AMs when needed can be very difficult for the recreational sector. The challenges associated with monitoring in-season harvest in recreational fisheries often leads to the utilization of projections that estimate the level of harvest at any given time; however, projections are not 100 percent accurate and can be highly variable if anomalous harvest events are recorded. To account for such variations created by environmental, biological, and human factors, without extreme reactive AMs the Council is considering using a three year running average of recreational landings that would be compared to the specified recreational ACL.

The most biologically conservative approach to specifying AMs for wahoo, would be to establish in-season and post-season AMs. By establishing both types of AMs, exceeding the ACL or ACT could be avoided, provided adequate in-season monitoring is possible, and an additional backstop would exist if the ACL or ACT should be exceeded despite the in-season controls. The least biologically beneficial alternative would be **Alternative 1 (No Action)** since it would not implement any measures designed to maintain harvest at or below the ACL. It is important to note that if the Council should determine some modification to the NS1 harvest parameters is

necessary in the future, such action would be taken via an FMP amendment since the current dolphin wahoo framework procedure does not include adjustments to ACLs, ACT, or AMs.

ACT Discussion

As noted in previous sections, ACTs set lower than the ACL can be used at part of an AM mechanism to create a buffer between actual harvest levels and the level at which unsustainable harvest would occur. Therefore, ACTs set lower than the ACL and that would trigger some form of accountability should they be projected to be met or exceeded, would intrinsically be biologically beneficial. The same challenges with monitoring in-season harvest of snapper grouper, wreckfish, and dolphin, for the recreational sector would be true for wahoo. The challenges associated with monitoring in-season harvest in recreational fisheries often leads to the utilization of projections that estimate the level of harvest at any given time; however, projections are not 100 percent accurate and can be highly variable if anomalous harvest events are recorded. In order to account for these variations, without allowing them to incur extreme consequences of overages, the Council is considering establishing a recreational sector ACT that would be based on the average of several years' landings, which would then be compared to the specified ACT.

Establishing an ACT for the commercial sector would be somewhat more straight-forward than for the recreational sector since, if selected all commercial reports must be provided, which can be used to monitor in-season harvest. This requirement could be extended to require that all commercial vessels report all their landings of wahoo not just those landings that go through permitted dealers, for monitoring purposes. Therefore, projections of when the ACT would likely be met, or estimates of by how much an ACT is exceeded could be more reliable than for the recreational sector. A higher degree of harvest projection accuracy would reduce the risk of AMs being triggered too soon or too late. Under this action the most biologically beneficial ACT alternative for the commercial sector would be **Alternative 4**, which would create the largest buffer between the ACT and ACL. Alternately, the least biologically beneficial ACT alternative would be **Alternative 1 (No Action)** since it would create no level of harvest lower than that of the ACL in order to trigger an AM to prevent ACL overages. For the commercial sector the most biologically beneficial alternatives could either be **Alternative 6** or **Alternative 7** depending on which comes out to a lower percentage of the ACL. As noted previously; however, **Alternative 7** may be the more advantageous alternative of the two alternatives because it does include the use of landings averages over a number of years rather than yearly landings for which data can be highly variable

4.4.2.4.2 Economic Effects

4.4.2.4.3 Social Effects

4.4.2.4.4 Administrative Effects

AM Discussion

Alternative 1 (No Action) would not produce near-term administrative impacts. However, this alternative would not comply with Reauthorized Magnuson-Stevens Act requirements and therefore, may trigger some type of legal action for not doing so. If this scenario were to occur, the burden on the administrative environment could be significant in the future. Administrative impacts of **Alternatives 4** and **6** would be greatest relative to the commercial AMs proposed

since recreational landings would need to be monitored on a continuing basis. Tracking recreational landings is difficult because there is a delay in the availability of recreational data, and the data can be highly variable. Therefore, tracking recreational landings, using the proposed multiple year landings averages, and subsequent AM implementation coordination would create a moderate burden on the administrative environment.

ACT Discussion

Specifying an ACT or sector ACTs alone would not increase the administrative burden over the status-quo. However, the monitoring and documentation needed to track how much of the ACT has been harvested throughout a particular fishing season can potentially result in a need for additional cost and personnel resources if a monitoring mechanism is not already in place.

Alternatives 5-7 would require tracking the commercial and recreational landings every year, which would be averaged over three years on a continuous basis. The tracking of recreational landings can be challenging and would likely impose a burden on the administrative environment. Other administrative burdens that may result from all of the alternatives considered would take the form of development and dissemination of outreach and education materials for fishery participants.

4.4.2.4.5 Council Conclusions

4.4.2.5 Action 26: Management Measures for Wahoo

Alternative 1 (No action). Continue to prohibit sale of recreationally caught wahoo in or from the Atlantic EEZ. Continue the 500 pound commercial trip limit for wahoo (landed head and tail intact) with no transfer at sea allowed. Continue the recreational bag limit of 2 wahoo per person per day in the Atlantic EEZ. Continue to specify allowable gear for wahoo in the Atlantic EEZ as longline; hook and line gear including manual, electric, or hydraulic rod and reels; bandit gear; handline; and spearfishing gear (including powerheads).

Put no action in a table.

Alternative 2. Establish a boat limit of 2-12 wahoo per boat/vessel per day in the recreational fishery.

Discussion

The AP recommended Alternative 1. No Action at this time because there is no problem identified that needs to be addressed. The AP recognized that this will need to be revisited once the Scientific and Statistical Committee (SSC) presents their Overfishing Level (OFL) and Acceptable Biological Catch (ABC) recommendations.

4.4.2.5.1 Biological Effects

Alternative 1 would retain the management measures currently in place including a: Prohibition on sale of recreationally caught wahoo in or from the Atlantic exclusive

economic zone; 500 pound commercial trip limit for wahoo (landed head and tail intact); and recreational bag limit of 2 wahoo per person per day.

The overfishing and overfished status of wahoo is unknown. The Council's Scientific and Statistical Committee has specified an overfishing limit (OFL) of 1,026,391 lbs whole weight to ensure overfishing does not occur. This value is slightly greater than the average commercial and recreational catch during 1999-2008 (Table 4-y). The Council's preferred ABC control rule would set $ABC = 85\%OFL$ and would equal 1,025,432 lbs whole weight. Using the Council's preferred ABC control rule, alternatives for ACLs would range from 39,208 to 60,320 pounds whole weight for the commercial sector and 744,946 to 1,146,071 pounds whole weight for the recreational sector (Table 4-x, Section 4.1.1.1).

Table 4-y. Commercial and recreational landings of wahoo in the Atlantic (New England to east Florida during 1999-2008.

Year	comm	rec	total
1999	99,245	1,565,032	1,664,277
2000	65,834	1,128,106	1,193,940
2001	58,594	1,160,247	1,218,841
2002	58,510	1,438,106	1,496,616
2003	58,495	1,251,787	1,310,282
2004	65,118	1,105,953	1,171,071
2005	44,496	858,461	902,957
2006	39,824	768,655	808,479
2007	57,290	2,051,433	2,108,723
2008	40,525	666,499	707,024
Avg 99-08	58,793	1,199,428	1,258,221

Accountability measures in Section 4.1.1.2 include alternatives such as closing the fishery when landings approach an ACL to ensure overfishing does not occur. The Council is considering additional management measures in this section that would reduce the chance ACLs are exceeded and perhaps prevent seasonal closures of the fishery.

Alternative 2 would establish a boat limit for private and charter recreational fishermen ranging from 2 to 12. Proposed reductions in the vessel limit would reduce harvest of wahoo in the private and recreational sectors from 0.75% for a 12 vessel limit to 26% for a 2 fish per vessel limit.

Table 4-x. Reduction in harvest of wahoo for Atlantic states provided by a reduction in the vessel limit.

	Charter	Private	All
Vessel limit	Reduction	Reduction	Reduction
12	1.00	0.00	0.75
10	1.45	0.00	1.09
9	1.90	0.00	1.42

8	2.56	0.68	2.10
7	3.79	1.69	3.27
6	5.80	3.38	5.20
5	8.47	5.41	7.71
4	12.15	7.43	10.98
3	17.28	11.49	15.84
2	28.43	17.23	25.65
1	48.72	42.23	47.11

4.4.2.5.2 Economic Effects

4.4.2.5.3 Social Effects

4.4.2.5.4 Administrative Effects

Under the Alternative 1 (no action), no new administrative impacts are expected. Under the status quo, there are currently administrative impacts associated with monitoring and enforcing the commercial trip limit and the recreational bag limit. Alternative 2 proposes to change the recreational bag limit but this is not expected to have an impact on monitoring or enforcement. Alternative 2 would require rulemaking, education and outreach which would result in minor administrative impacts.

4.4.2.5.5 Council Conclusions

4.4.3 Action 27: Designate Sargassum as Ecosystem Component Species and withdraw the Sargassum FMP

(IPT needs to decide if this action should be split into two actions, one dealing with EC and the other withdrawing the FMP)

Alternative 1. No Action. Do not designate *Sargassum* species as Ecosystem Component species, and do not withdraw the Sargassum FMP.

Alternative 2. Designate *Sargassum* species as ecosystem component species and withdraw the Sargassum FMP.

4.4.3.1 Biological Effects

(Need to add more language for withdrawing the FMP)

Sargassum natans and *S. fluitans* are pelagic brown algae, which occur in warm waters of the western North Atlantic. *Sargassum natans* is much more abundant than *S. fluitans*, comprising up to 90% of the total drift macroalgae in the Sargasso Sea. Large quantities of *Sargassum* frequently occur on the continental shelf off the southeastern United States. Depending on prevailing surface currents, this material may remain on the shelf for extended periods, be entrained into the Gulf Stream, or be cast ashore (Hoyt 1918, Humm 1951, Howard and Menzies 1969, Carr and Meylen 1980, Winston 1982, Haney 1986, Baugh 1991).

No Action **Alternative 1** would not designate *Sargassum* as an ecosystem component species. The intent of the original Fishery Management Plan for Pelagic *Sargassum* Habitat of the South Atlantic Region (FMP) was to establish a management program for the pelagic *Sargassum* habitat, reduce the impact of fishing on essential fish habitat, and reduce the potential for conflict among various stakeholder groups. The Council felt that management was needed for *Sargassum* because: No management structure existed to protect pelagic *Sargassum* habitat; harvest represented removal of essential fish habitat for other federally managed species including threatened and endangered sea turtles; potential conflicts could arise if harvest occurs where recreational fishing is occurring; and information was limited on the distribution, production, and ecology of pelagic *Sargassum* habitat.

Alternative 2 would designate *Sargassum* as an ecosystem component (EC) species. Because EC species are not considered to be “in the fishery” specification of reference points, annual catch limits (ACL), and accountability measures (AM) are not required. EC species would include non-target fish species that are not considered part of the “fishery” but rather species with which the fishery may occasionally interact. All stocks listed in an FMP or FMP amendment are considered to be “in the fishery” unless they are identified as EC species through an FMP amendment process. Stocks in a fishery include: target stocks; non-target stocks that are retained for sale or personal use; and non-target stocks that are not retained for sale or personal use and that are either determined to be subject to overfishing, approaching overfished, or overfished, or could become so, according to the best available information, without conservation and management measures.

Currently, there is no fishery for *Sargassum*; however, at the time of the development of the FMP, *Sargassum* was targeted and retained for sale, which is one of the four criteria for a species to be considered “in the fishery”. A total of 52 trips were made between 1976 and 1997 resulting in the harvest of 44,800 pounds (dry weight) of pelagic *Sargassum*. This is equivalent to 448,000 pounds wet weight using a conversion factor of 10 to convert from dry weight to wet weight. Thus, the average harvest per trip was 8,615 pounds wet weight. Harvesting took place about 160 miles offshore of the North Carolina coast, at the edge of the continental shelf in 1,000 fathoms of water. During 1995 to 1997 *Sargassum* harvest did not exceed 20,000 pounds wet weight annually.

Not generally retained for sale or personal use was based on landings, magnitude of discards not affected by regulations in relation to landings, and desirability. Assigning a score to this category is subjective. For example, it was assumed a grouper or snapper species, which occur in South Atlantic landings, would be retained even if landings were low because they are generally sought after by most commercial and recreational fishermen. Level of desirability

depends on individuals fishing and availability of species for the fisher. Some species like bank sea bass are generally not retained because of their small size and availability of a higher quality co-occurring species. However, if regulations restrict harvest of all species except one species that was formerly discarded, that species would likely be retained. Further, it is likely all species in the snapper grouper FMU are retained to some degree by some segments of the fishing population. In addition, part of the Council's rationale for including all 73 species in the snapper grouper FMU was that they are part of a multispecies fishery where species occur together, suggesting an ecosystem reason for originally including rarely taken species the FMU.

4.4.3.2 Economic Effects

4.4.3.3 Social Effects

4.4.3.4 Administrative Effects

Alternative 1 would not designate *Sargassum* as an ecosystem component species which would require the specification of an ACL. The alternative itself would not result in any administrative impacts however, the specification, monitoring and enforcement of an ACL designation would (see Action XX). **Alternative 2** would designate *Sargassum* as an ecosystem component species and would not reduce the administrative impacts on the agency.

4.4.3.5 Council's Conclusions

4.4.4 Action 28: Modify the Dolphin Wahoo Framework Procedure

(IPT recommends that this action be considered in another amendment.)

Alternative 1. No Action. Do not modify the dolphin/wahoo framework procedure. Retain the framework established in the dolphin wahoo FMP effective 2004.

Alternative 2. Modify the dolphin/wahoo framework to allow the Regional Administrator to publish a Notice in the Federal Register to reduce the commercial sector ACL in the following season by the amount of the overage, if the commercial sector ACL is exceeded.

Alternative 3. Modify the dolphin/wahoo framework to allow the Regional Administrator to publish a Notice in the Federal Register to close the recreational fishery when the ACL is projected to be met.

Alternative 4. Modify the dolphin/wahoo framework to allow the Regional Administrator to publish a Notice in the Federal Register to take corrective action if the recreational ACL has been exceeded.

Option a. If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the recreational sector ACL in the following season by the amount of the overage.

Option b. If the recreational sector ACL is exceeded, the Regional Administrator shall publish a notice to reduce the length of the following fishing year by the amount necessary to ensure landings do not exceed the recreational sector ACL for the following fishing year.

4.4.4.1 Biological Effects

4.4.4.2 Economic Effects

4.4.4.3 Social Effects

4.4.4.4 Administrative Effects

4.4.4.5 Council's Conclusions

4.5 Sargassum FMP

IPT recommends that Sargassum be covered in a different amendment, since there is no fishery for this species, and existing regulations and SSC guidance (see below), act as an AM.

IPT requests that all actions under this FMP be removed.

4.5.1 Acceptable Biological Catch Control Rule and ABC for Sargassum

There is no OFL recommendation (SSC's August, 2010 meeting).
ABC=12,800 pounds (as per SSC's recommendation in August, 2010).
ACL = 5,000 pounds

The following restrictions are in place for *Sargassum* in the South Atlantic: (1) harvest and possession of Sargassum is prohibited south of the latitude line representing the North

Carolina/South Carolina border (34 degrees North latitude), (2) all harvest is prohibited within 100 miles of shore between the 34 degrees North latitude line and the line representing the North Carolina/Virginia border, (3) harvest is limited to the months of November through June, (4) official observers are required on any harvesting trip, (5) an annual quota of 5,000 pounds landed wet weight, and (6) nets used to harvest *Sargassum* must be constructed of 4" stretch mesh or larger fitted to a frame no larger than 4 X 6 feet.

4.6 Golden Crab FMP

4.6.1 Action 29: Annual Catch Limits for Golden Crab

Alternative 1. No action. THERE IS NO ACL SPECIFIED FOR GOLDEN CRAB.

Alternative 2 (Preferred). ACL= OY=ABC

Alternative 3. ACL = OY = 85% of the ABC.

Alternative 4. ACL = OY =75% of the ABC

Alternative 5. ACL = OY =65% of the ABC

4.6.1.1 Biological Effects

Revisions to the Reauthorized Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) in 2006 require that by 2010, Fishery Management Plans (FMPs) for fisheries determined by the Secretary to be subject to overfishing must establish a mechanism for specifying Annual Catch Limits (ACLs) at a level that prevents overfishing and does not exceed the recommendations of the respective Council's Scientific and Statistical Committee (SSC) or other established peer review processes. These FMPs must also establish, within this timeframe, measures to ensure accountability. By 2011, FMPs for all other fisheries, except fisheries for species with annual life cycles, must meet these requirements. Amendments 17A and 17B, under Secretarial review, would specify ACLs for species subject to overfishing.

Alternative 1 (No action), would retain the current regulations established for golden crab, which includes restrictions associated with trapping gear and a requirement that retention of females be limited to 0.5% of the catch by number. The final national standard 1 (NS1) guidelines recognize that existing FMPs may use terms and values that are similar to, associated with, or may be equivalent to overfishing limits (OFL), acceptable biological catch, annual catch limit (ACL), annual catch target, and accountability measure (AM) in many fisheries for which annual specifications are set for different stocks or stock complexes. In these situations the guidelines suggest that, as Fishery Management Councils revise their FMPs, they use the same terms as set forth in the NS1 guidelines. The ACL serves as a catch limit for a species which triggers some sort of AM to ensure overfishing of a species does not occur. Currently, there are no quotas in place that could serve as ACLs. Therefore, **Alternative 1** would not meet the requirements specified in the Magnuson-Stevens Act.

Preferred Alternative 2 would set the ACL equal to the ABC. **Alternatives 3 - 5** would have a greater positive biological effect than **Alternative 2** because they would create a buffer between the ACL and ABC, with **Alternative 5** setting the most conservative ACL at 65% of the ABC. Creating a buffer between the ACL and ABC would provide greater assurance overfishing.

Setting a buffer between the ACL and ABC would be appropriate in situations where there is uncertainty in whether or not management measures are constraining fishing mortality to target levels. ACTs, which are not required, can also be set below the ACLs to account for management uncertainty and provide greater assurance overfishing does not occur.

4.6.1.2 Economic Effects

4.6.1.3 Social Effects

4.6.1.4 Administrative Effects

Specifying an ACL or sector ACLs alone would not increase the administrative burden over the status-quo. However, the monitoring and documentation needed to track the ACL can potentially result in a need for additional cost and personnel resources if a monitoring mechanism is not already in place. **Alternative 1**, would not meet the requirements of the Magnuson-Stevens Act, and could be subject to litigation, which would result in a significant administrative burden on the agency. The administrative impacts of specifying an ACL through **Alternatives 2- 5** are minimal and would not differ much between the three action alternatives. However, once the ACL is specified, the administrative burden associated with monitoring and enforcement, implementing management measures, and accountability measures would increase. Other administrative burdens that may result from all of action alternatives considered would take the form of development and dissemination of outreach and education materials for fishery participants.

4.6.1.5 Council's Conclusions

4.6.2 Action 30: Accountability Measures for Golden Crab

Alternative 1 (No Action). Do not establish accountability measures for Golden Crab.

Alternative 2 (Preferred). After the ACL is projected to be met, all harvest, purchase, and sale of golden crab is prohibited.

Alternative 3 (Preferred). If the ACL is exceeded, the Regional Administrator shall publish a notice to reduce the ACL or ACT in the following season by the amount of the overage.

4.6.2.1 Biological Effects

Alternative 1 (No Action) is the least biologically beneficial AM alternative for golden crab, and it not legally feasible since no AM would be established for the species as required under the Magnuson-Stevens Act. The most biologically beneficial of the alternatives would be **Alternative 2** and **3** combined. Using both AM alternatives would establish a mechanism to

prevent an ACL or ACT overage in-season, and if that fail to prevent such overages, Alternative 3 would establish a mechanism that would allow for a correction of an overage during the following years' fishing season. **Alternative 3** alone would be biologically beneficial and would not rely on in-season monitoring; however, if the fishery constantly exceeds the ACT or ACL and only way to account for those overages is on a reactive basis, the risk of overfishing may increase. Furthermore, constant fluctuations in how much golden crab can be harvested each year could lead to market disruption and ecological instability. **Alternative 2** would be slightly more biologically beneficial than **Alternative 3** since it would attempt to prevent unsustainable harvest rates before they occur rather than correcting for them after the fact. However, **Alternative 2** would require very accurate and timely in-season monitoring, which could be difficult.

4.6.2.2 Economic Effects

4.6.2.3 Social Effects

4.6.2.4 Administrative Effects

Alternative 1 (No Action) would not produce near-term administrative impacts. However, this alternative would not comply with Reauthorized Magnuson-Stevens Act requirements and therefore, may trigger some type of legal action for not doing so. If this scenario were to occur, the burden on the administrative environment could be significant in the future. The primary burden on the administrative environment would result from the need to track landings during the fishing season and orchestrate the subsequent implementation of AMs when needed. This administrative burden is likely to be minimal.

4.6.2.5 Council's Conclusions

4.6.3 Action 31: Modify the Golden Crab Framework Procedure

Alternative 1 (No Action). Do not establish accountability measures for Golden Crab.

Alternative 2 (Preferred). After the ACL is projected to be met, all harvest, purchase, and sale of golden crab is prohibited.

Alternative 3 (Preferred). If the ACL is exceeded, the Regional Administrator shall publish a notice to reduce the ACL or ACT in the following season by the amount of the overage.

4.6.3.1 Biological Effects

4.6.3.2 Economic Effects

4.6.3.3 Social Effects

4.6.3.4 Administrative Effects

4.6.3.5 Council's Conclusions

5.0 Cumulative Effects

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

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

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

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

5.1 Biological

SCOPING FOR CUMULATIVE EFFECTS

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

The Council on Environmental Quality (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. In light of the available information, the extent of the boundaries would depend upon the degree of fish immigration/emigration and larval transport, whichever has the greatest geographical range. Therefore, the proper geographical boundary to consider effects on the biophysical environment is larger than the entire South Atlantic exclusive economic zone. The ranges of affected species are described in **Section 3.2.1**. The most measurable and substantial effects would be limited to the South Atlantic region.

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. Long-term evaluation is needed to determine if management measures have the intended effect of improving stock status. Monitoring should continue indefinitely for all species to ensure that management measures are adequate for preventing overfishing in the future. A complete description of monitoring methods that would be employed under this amendment appears in **Sections 4.5** of this document.

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 speckled hind, warsaw grouper, golden tilefish, snowy grouper, and red snapper.

A. Past

The reader is referred to **Section 1.3 History of Management** for past regulatory activity for the fish species. These include bag and size limits, spawning season closures, commercial quotas, gear prohibitions and limitations, area closures, and a commercial limited access system.

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 13C 2006 is hereby incorporated by reference

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) (see Figure 5-1) 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 17A would occur. Therefore, biological effects of the MPAs would not significantly add to or reduce the anticipated biological benefits of management actions in Amendment 17A.

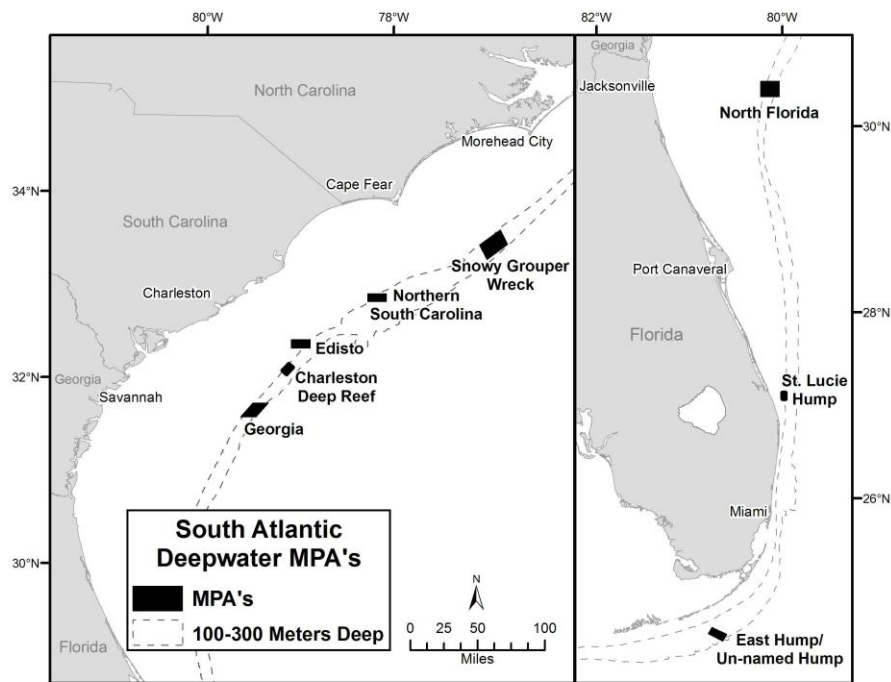


Figure 5-1. Marine protected areas implemented under Snapper Grouper Amendment 14 (SAFMC 2007).

B. Present

In addition to snapper grouper fishery management issues being addressed in this amendment, several other snapper grouper amendments have been developed concurrently and are in the process of approval and implementation. Current closures, including quota closures, seasonal closures, and area closures are outlined in **Appendix I** of this document.

Most recently, Amendment 16 to the FMP for the Snapper Grouper Fishery of the South Atlantic Region (SAFMC 2008c) was partially approved by the Secretary of Commerce. Amendment 16 includes provisions to extend the shallow water grouper spawning season closure, create a five month seasonal closure for vermilion snapper, require the use of dehooking gear if needed, reduce the aggregate bag limit from five to three grouper, and reduce the bag limit for black grouper and gag to one gag or black grouper combined within the aggregate bag limit. The expected effects of these measures include significant reductions in landings and overall mortality of several shallow water snapper grouper species including, gag, black grouper, red grouper, and vermilion snapper. Specifically, the use of dehooking tools may reduce the release mortality of red snapper that are incidentally caught while fishing for other snapper grouper species. Model output in **Appendix E** shows that Amendment 16 could contribute up to a 16% reduction in commercial red snapper harvest, which has been included in the

baseline conditions upon which the needed red snapper reductions have been derived.

On September 1, 2009, Amendment 15B to the FMP for the Snapper Grouper Fishery of the South Atlantic Region was approved by the Secretary. Management measures in Amendment 15B that affect red snapper in Amendment 17A 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 (ACCSP) 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 17A.

This Comprehensive Ecosystem-Based Amendment 1 (CE-BA 1) consists of regulatory actions that focus on deepwater coral ecosystem conservation and non-regulatory actions that update existing EFH information. Management actions proposed in the CE-BA 1 include the establishment of deepwater Coral HAPCs (CHAPCs) to protect what is currently thought to be the largest contiguous distribution (>23,000 square miles) of pristine deepwater coral ecosystems in the world. Actions in the amendment would prohibit the use of bottom damaging fishing gear and allow for the creation of allowable fishing zones within the CHAPCs in the historical fishing grounds of the golden crab and deepwater shrimp fisheries. The CE-BA 1 would also provide spatial information on designated essential fish habitat (EFH) in the SAFMC Habitat Plan (SAFMC 1998a). Actions in CE-BA 1 would: 1) Amend the Fishery Management Plan (FMP) for Coral, Coral Reefs, Live/Hard Bottom Habitats of the South Atlantic Region (Coral FMP) to establish Deepwater Coral Habitat Areas of Particular Concern (CHAPCs) and prohibit the use of bottom damaging fishing gear; 2) create a —Shrimp Fishery Access Area|| (SFAA) within the proposed Stetson Reefs, Savannah and East Florida Lithoherms, and Miami Terrace (Stetson-Miami Terrace) CHAPC boundaries; 3) create —Allowable Golden Crab Fishing Areas|| within the proposed Stetson Reefs, Savannah and East Florida Lithoherms, and Miami Terrace (Stetson-Miami Terrace) CHAPC and Pourtales Terrace CHAPC boundaries; 4) amend the Golden Crab FMP to require vessel monitoring; and 5) amend the following FMPs to present spatial information of Council-designated Essential Fish Habitat and Essential Fish Habitat-Habitat Areas of Particular Concern: Coral FMP; FMP for the Golden Crab Fishery of the South Atlantic Region (Golden Crab FMP), FMP for the Shrimp Fishery of the South

Atlantic Region (Shrimp FMP), FMP Coastal Migratory Pelagics Resources in the Atlantic and Gulf of Mexico (Coastal Migratory Pelagics FMP), FMP for Spiny Lobster in the Gulf of Mexico and South Atlantic (Spiny Lobster FMP), FMP for the Dolphin Wahoo Fishery of the Atlantic (Dolphin Wahoo FMP), and FMP for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP).

Amendment 17B to the FMP for the Snapper Grouper Fishery of the South Atlantic Region is currently under development and is expected to include a deepwater snapper grouper closure seaward of 240 ft in addition to establishing annual catch limits (ACLs) and accountability measures (AMs) for species experiencing overfishing. 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. It is possible that a snapper grouper closure proposed in Amendment 17A could overlap, to some degree, the deepwater closure proposed in Amendment 17B, and would therefore, enhance the biological benefit to red snapper and other deepwater species. Even greater biological benefit may accrue in the proposed Amendment 17A areas that would extend into the proposed 17B deepwater closure area (**Alternative 4 (Preferred)**) since no snapper grouper fishing would be allowed, rather than only prohibiting the harvest of deepwater species.

The map below represents the closed areas, MPAs, and CHAPCs, established and proposed in various amendments already implemented or currently under development.

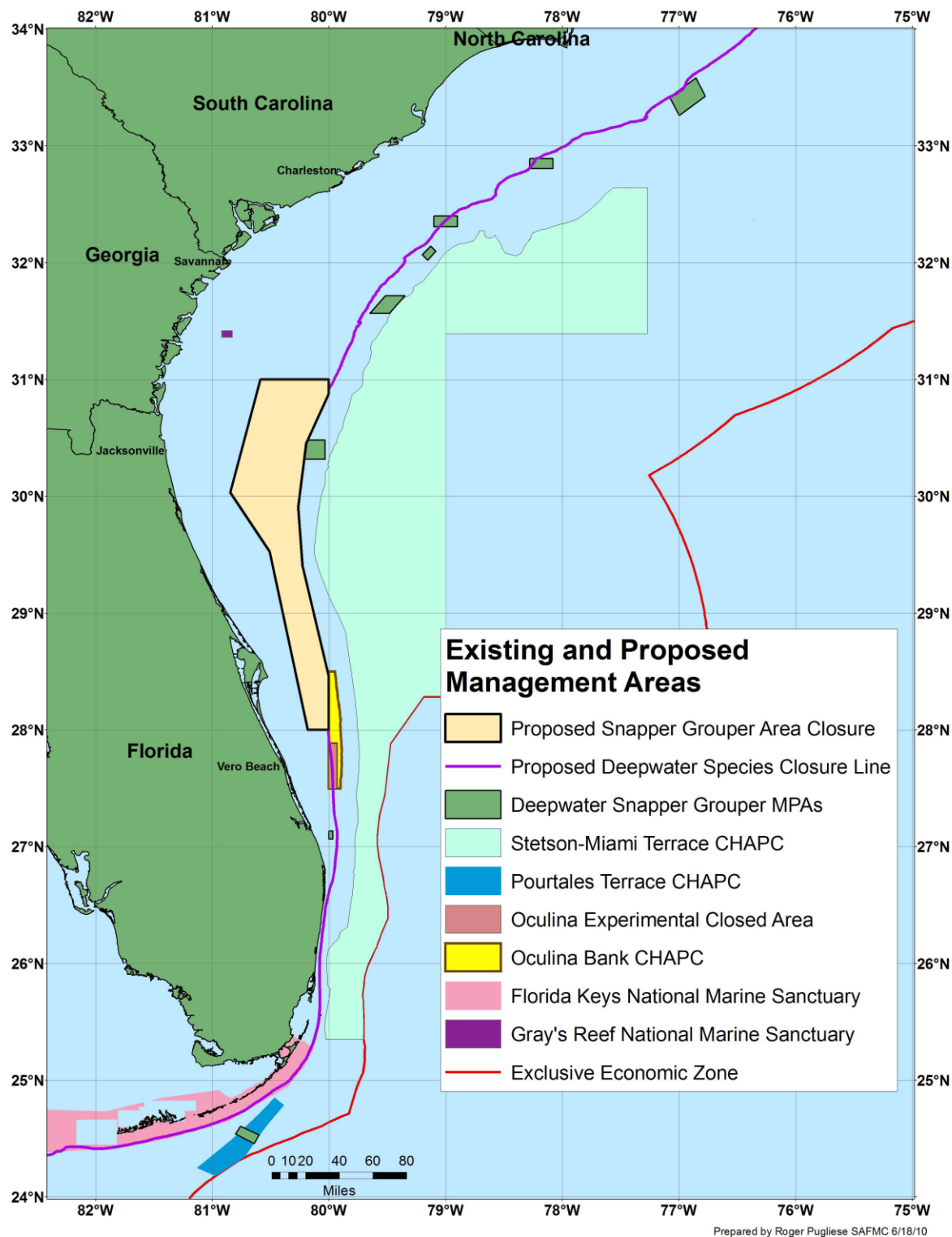


Figure 5-2. South Atlantic closed areas, CHAPCs, National Marine Sanctuaries, and MPAs currently in effect and proposed.

C. Reasonably Foreseeable Future

Amendment 18 to the FMP for the Snapper Grouper Fishery of the South Atlantic Region is currently under development. Measures in Amendment 18 would extend the snapper grouper FMP northward, limit effort in the black sea bass and golden tilefish fisheries, change the golden tilefish fishing year, improve the accuracy and timing of fisheries statistics, and designate essential fish habitat in the proposed snapper grouper northern area. The actions currently contained in Amendment 18, which affect red snapper, are intended to prevent overcapitalization while allowing fishery participants to achieve optimum yield benefits for those species. The actions to limit participation in the black sea bass and golden tilefish fisheries in Amendment 18 could hedge against any foreseeable effort shifts to those fisheries that might result from an area closure in Amendment 17A.

The Comprehensive Annual Catch Limit (ACL) Amendment would consider ACLs and Annual Catch Targets (ACTs) for other Federally managed South Atlantic species not experiencing overfishing in other FMPs including Snapper Grouper. Other actions contained within the ACL Amendment may include: (1) choosing ecosystem component species; (2) allocations; (3) management measures to limit recreational and commercial sectors to their ACLs and ACTs; (4) AMs; and (5) any necessary modifications to the range of regulations. It is unlikely any of the management measures for the species being addressed in the Comprehensive ACL Amendment would directly affect red snapper in Amendment 17A. However, several species are co-occurring, and are included in species groupings 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.

At their March 2010 meeting, the Council requested the development of an FMP amendment to establish a catch share program for several snapper grouper species. This would be Amendment 21 to the FMP for the Snapper Grouper Fishery of the South Atlantic Region. The establishment of a catch share program may eliminate derby style fisheries that have formed for some snapper grouper species, but could also eliminate some small vessel operators from the fishery depending upon the initial share allocation criteria chosen by the Council. Additionally, the Council has requested an amendment to explore alternate management methods specifically for red snapper for long-term implementation. This would be Amendment 22 to the FMP for the Snapper Grouper Fishery of the South Atlantic Region, and could include management options such as a tagging program or some form of a catch share program.

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.

II. Non-Council and other non-fishery related actions, including natural events affecting red snapper.

- 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, red snapper co-occur with vermilion snapper, tomtate, scup, red porgy, white grunt, black sea bass, red grouper, scamp, gag, and others. Therefore, red snapper are likely to be caught and suffer some mortality when regulated since they will be incidentally caught when fishermen target other co-occurring species. Red snapper recruitment has been measured from the 1950's to the present time and shows a decline from the earliest years to a low in the mid-1900s. Since then there have been several moderately good year classes in 1998, 1999, and 2000, and then another decline through 2003, with an apparent strong year class occurring in 2006. These moderately good year classes have grown and entered the fishery over the past couple years and are likely responsible for the higher catches being reported by recreational and commercial fishermen. 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 is 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.

The trends in condition of gag, vermilion snapper, black sea bass, snowy grouper, golden tilefish, and red snapper are documented through the Southeast Data, Assessment and Review (SEDAR) process. Warsaw grouper, and speckled hind have not been recently assessed. Assessments for red grouper and black grouper will be completed in 2010. However, given the best available science, each of these stocks has been determined to be undergoing overfishing, meaning that fishing related mortality is greater than the maximum fishing mortality threshold. The status of each of these stocks is described in detail in **Section 3.3** of this document.

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

Numeric values of overfishing and overfished thresholds are being updated in this amendment for red snapper. 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).

Definitions of overfishing and overfished for species addressed in this amendment can be found in the most recent stock assessment sources included in **Table 1-2** of this document. Applicable stock assessment sources include SEDAR 4 (2004) for golden tilefish and snowy grouper; Potts and Brennan (2001) for speckled hind, black grouper, and red grouper; Huntsman *et al.* (1993) for warsaw grouper; SEDAR Update 1 (2005) for black sea bass; SEDAR 10 (2006) for gag; SEDAR Update #3 (2007) for vermilion snapper; and SEDAR 15 (2008) for red snapper. Of these species, snowy grouper, black sea bass, and red snapper have been declared overfished. All others have been determined to be undergoing overfishing according to their respective overfishing and overfished definitions. Detailed discussions of the science and processes used to determine the stock status of these species is contained in the previously mentioned information sources and are hereby incorporated by reference.

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).

Actions from this amendment could decrease the carbon footprint from fishing if some fishermen stop or reduce their number and duration of trips due to the proposed area closure. 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. Actions in this amendment are expected to reduce harvest of red snapper and may also decrease fishing mortality of other co-occurring species; thus these actions may partially mitigate the negative impacts of global climate change on snapper grouper species.

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 gag and snowy grouper, assessments reflect initial periods when the stocks were above B_{MSY} and fishing mortality was fairly low. However, some species such as vermilion snapper and 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 red snapper, estimates of annual biomass have been well below the biomass at maximum sustainable yield (B_{MSY}) since the mid-1960s, with possibly some small amount of recovery since implementation of current size limits in 1992 (Figure 5-2).

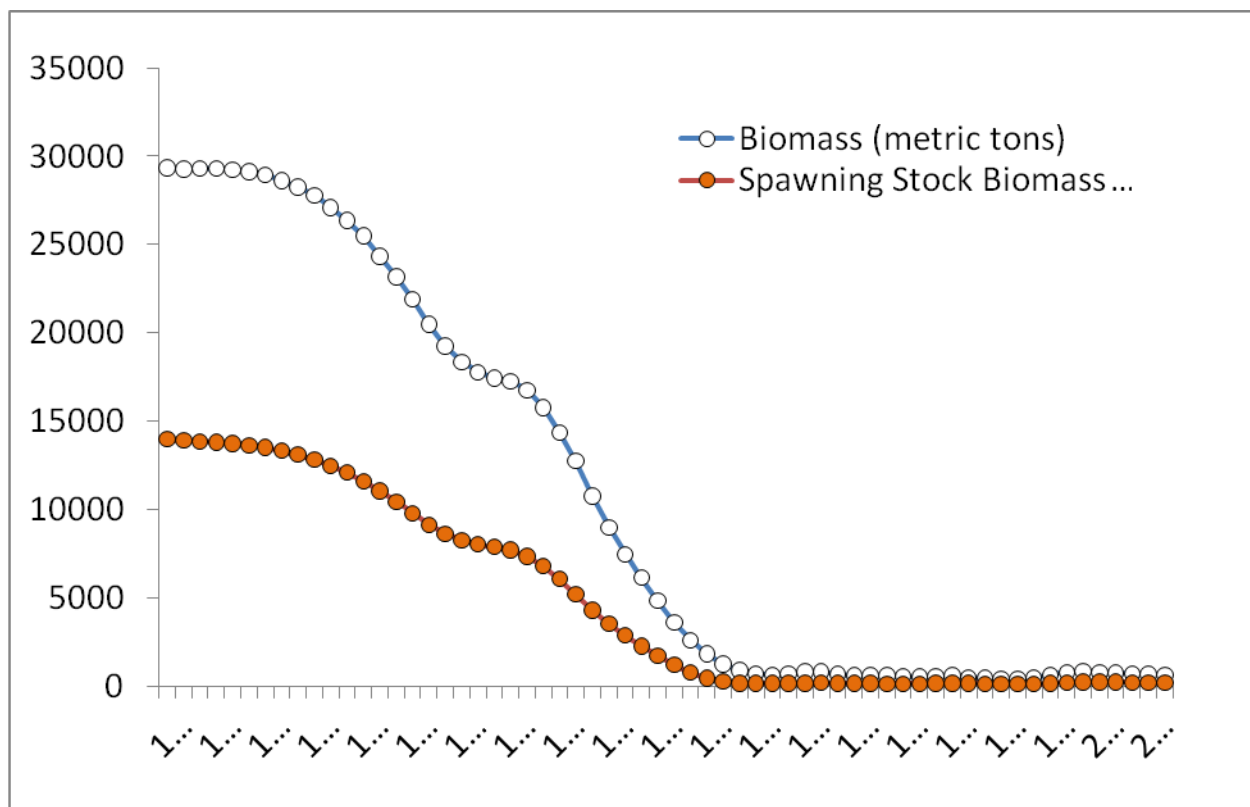


Figure 5-2. Biomass and Spawning Stock Biomass (pounds).

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

Time period/dates	Cause	Observed and/or Expected Effects
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.
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	<u>Prohibited gear</u> : fish traps south of Cape Canaveral, FL; entanglement nets; longline gear inside of 50 fathoms; powerheads and bangsticks in designated SMZs off SC. <u>Size/Bag limits</u> : 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 <i>Oculina</i> habitat.	Noticeable decrease in numbers and species diversity in areas of <i>Oculina</i> off FL
July 1994	Prohibition of fishing for and retention of snapper grouper species (HAPC renamed OECA; SAFMC 1993)	Initiated the recovery of snapper grouper species in OECA.
1992-1999	Declining trends in biomass and overfishing continue for a number of	Spawning potential ratio for vermilion snapper and gag is less than 30% indicating that they are overfished.

Time period/dates	Cause	Observed and/or Expected Effects
	snapper grouper species including vermillion snapper and gag.	
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). Aggregate bag limit of no more than 20 fish/person/day for all snapper grouper species without a bag limit (1998c).	F for gag vermillion snapper remains declines but is still above F_{MSY} .
October 23, 2006	Snapper grouper FMP Amendment 13C (SAFMC 2006)	Commercial vermillion snapper quota set at 1.1 million lbs gutted weight; recreational vermillion snapper size limit increased to 12" TL to prevent vermillion 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 vermillion 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 vermillion 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

Time period/dates	Cause	Observed and/or Expected Effects
		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.
Target 2010	Snapper Grouper Amendment 17B	ACLs and ACTs; management measures to limit recreational and commercial sectors to their ACTs; AMs, for species undergoing overfishing.
Target 2010	Snapper Grouper FMP Amendment 18	Extend the snapper grouper FMU northward, review and update wreckfish ITQ system, prevent overexploitation in the black sea bass and golden tilefish fisheries, improve data collection timeliness and data quality.
July 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 January 1, 2011	Comprehensive ACL Amendment.	ACLs, ACTs, and AMs for species not experiencing overfishing; accountability measures; an action to remove species from the fishery management unit as appropriate; and management measures to limit recreational and commercial sectors to their ACTs.
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 establish ACLs and AMs and establish management measures to end red snapper overfishing and are expected to have a beneficial, cumulative effect on the biophysical environment. These management actions are expected to protect and increase stock biomass, which may affect other stocks. 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 fishery management unit (FMU) and the ecosystem.

The red snapper rebuilding plan and management measures in this amendment would result in a slow rebuilding of the stock over the course of many years. One ancillary benefit of restricting red snapper harvest are reductions in fishing related mortality of other species associated with red snapper. It is not possible to eliminate incidental mortality of red snapper, since it is part of a multi-species complex, without prohibiting fishermen from targeting all associated species wherever red snapper occur. Therefore, biological benefits are expected for all species associated with red snapper, especially in the specific areas of regulatory implementation.

When viewed in totality, the actions in this amendment would benefit shallow water species currently undergoing overfishing as well as the ecosystem in which they reside. Since the snapper grouper FMU and species complexes therein include a host of co-occurring species, proposed management measures may also benefit those associated species in addition to the ten addressed here. Predator prey relationships would likely approach balanced conditions over time, and the protections put in place under this amendment may enhance the natural sex ratio and protect easily targeted fish that may aggregate to spawn. Although it is difficult to quantify the cumulative effects of the proposed actions, 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 NOAA Fisheries Service, states, stock assessments and stock assessment updates, life history studies, and other scientific observations. **Section 4.5** of this document contains a full discussion and analysis of monitoring program alternatives for red snapper.

5.2 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**. A description of the history of management of the snapper grouper fishery is contained in **Section 1.3**. Participation in and the economic performance of the fishery have been effected 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. For each regulatory action, expected effects are projected. However, these projections typically only minimally, if at all, are capable of incorporating the variety of external factors, and evaluation in hindsight is similarly incapable of isolating regulatory effects from other factors, as in, what portion of a change was due to the regulation versus due to input cost changes, random variability of species availability, the sale of a fish house or docking space for condominium development, or even simply fishermen behavioral changes unrelated to the regulation.

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**. 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 would eliminate 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 would have more pronounced effects on the for-hire sector which often uses the sale of bag-limit caught fish to pay crew members. The cumulative impacts of eliminating the ability to sell bag limit caught snapper grouper and the restrictions on red snapper specifically in this amendment could be perceived as being significant to this sector.

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; however, the stocks from

becoming overfished, which would require recovery plans, further harvest restrictions, and additional social and economic losses. A red snapper interim rule was put in place from January 4, 2010, to June 2, 2010, to reduce overfishing of red snapper while Amendment 17A is developed and can be extended for an additional 186 days.

Snapper Grouper Amendment 17B will establish ACLs, AMs, and ACTs for a number of snapper grouper species, and specify golden tilefish allocations. Some of these actions are expected to result in additional harvest restrictions on the snapper grouper fishery, and additional short-term adverse social and economic effects. Alternatives for the management of red snapper could interact with additional alternatives proposed in Amendment 17B that are not considered in the present analyses (above). In particular, the proposed alternatives considered in Amendment 17A do not include any commercial quotas for red grouper or black grouper, while Amendment 17B proposes to limit the aggregate harvest of gag, red grouper and black grouper. To account for these inconsistencies, **Appendix O contains** a complete description of the economic analysis methodology used to evaluate the simultaneous effects of the preferred alternatives in Amendment 17B and the proposed alternatives in Amendment 17A. The following text and Table X shows a summary of these results.

If Amendment 17B is implemented, annual catch limits will be set to zero for speckled hind and warsaw grouper. In addition, the harvest, possession and sale of snowy grouper, yellowedge grouper, misty grouper, blueline tilefish, queen snapper, and silk snapper will be prohibited in waters deeper than 240 feet as a means of minimizing the incidental catch and discard of speckled hind and warsaw grouper.

If implemented, the total allowable catch for golden tilefish will be redefined in terms of Foy rather than F_{MSY} . Furthermore, the commercial allocation will be formally established as 97 percent of total allowable catch. The result will be a reduction in the commercial ACL from 295,000 pounds to 282,819 pounds. Furthermore, an aggregate catch limit of 662,403 pounds will be established for gag, red grouper, and black grouper. The commercial fishery for shallow water groupers will be closed when either the individual ACL for gag (353,940 pounds) or the aggregate ACL for gag, red grouper, and black grouper is reached.

Table 5-2. Predicted economic effects of proposed management measures for red snapper in Amendment 17A given Preferred Alternatives for Amendment 17B. Economic effects are measured in terms of net operating revenues for commercial trips reported to the SEFSC fishery logbook system.

	Amendment 17A and Preferred Alternatives for Amendment 17B (thousands of constant 2008 \$)		Additional Reductions in Net Operating Revenues due to the Preferred Alternatives for Amendment 17B	
BASELINE (simulated conditions with Amendment 16)	\$9,017	100%	\$9,017	100%

Proposed alternative in Amendment 17A	Change from baseline	Percentage change from baseline	Change from baseline	Percentage change from baseline
Alternative 2	-\$859	-9.5%	-\$469	-5.2%
Alternatives 3A, 5, and 7	-\$978	-10.9%	-\$489	-5.4%
Alternatives 3B, 5, and 7	-\$947	-10.5%	-\$503	-5.6%
Alternatives 3C, 5, and 7	-\$943	-10.5%	-\$505	-5.6%
Alternatives 3D, 5, and 7	-\$947	-10.5%	-\$502	-5.6%
Alternatives 3E (Preferred), 5, and 7	-\$931	-10.3%	-\$501	-5.6%
Alternatives 4A, 5, and 7	-\$1,626	-18.0%	-\$391	-4.3%
Alternatives 4B, 5, and 7	-\$1,547	-17.2%	-\$422	-4.7%
Alternatives 4C, 5, and 7	-\$1,511	-16.8%	-\$430	-4.8%
Alternatives 4D, 5, and 7	-\$1,521	-16.9%	-\$426	-4.7%

Columns 1 and 2 in Table 5-4 show the cumulative changes to commercial net operating revenues as a result of the alternatives in Amendment 17A and the preferred alternatives for Amendment 17B. Columns 3 and 4 show the dollar and percentage reductions in net operating revenues compared to the impacts from Amendment 17A alone. These are the *additional* reductions in net operating revenues due to the preferred alternatives for Amendment 17B. They range from approximately \$391,000 (an extra 4.3 percent) for **Alternative 4A** in combination with **Preferred Alternatives 5 and 7** to \$501,000 (an extra 5.6 percent) for **Preferred Alternative 3E** in combination with **Preferred Alternatives 5 and 7 (Preferred)**. The baseline was defined by average conditions from 2006-2008, given the expected effects of Amendment 16.

Amendment 17B is not expected to have a large effect on commercial landings of red snapper. If Amendment 17A were never implemented, Amendment 17B would be expected to reduce landings of red snapper by an extra 1 percent compared to regulatory conditions with Amendment 16. However, the preferred alternatives in Amendment 17B would affect landings of other species in the snapper-grouper management unit, especially the shallow water groupers.

The aggregate ACL on the harvest of gag, red grouper and black grouper in Amendment 17B would dampen the prediction in the analysis of Amendment 17A of a longer season for shallow water groupers, and would limit the ability of fishermen to benefit from a longer open season by harvesting larger quantities of red grouper, black grouper and other shallow water groupers given the alternatives proposed in Amendment 17A. When Amendments 17A and 17B are considered jointly, the open season for shallow water groupers still is predicted to last longer than with Amendment 16, but would close sooner than if the ACL had not been specified in Amendment 17B. Therefore, the expected increase in net operating revenues during the fourth quarter will not be as large as was predicted in the analysis of Amendment 17A given the no-action

alternative for Amendment 17B, and the overall losses due to the alternatives in Amendment 17A will be larger than originally predicted.

The consideration of preferred alternatives in Amendment 17B was predicted to have the greatest extra economic effects on fishermen in regions that were predicted to benefit from a longer open season for shallow water groupers and/or where significant numbers of trips occur with bottom longlines for species other than golden tilefish. These regions include North Carolina and the Florida Keys for all proposed alternatives in Amendment 17A, and South Carolina for proposed **Alternatives 2, 3A, 3B, 3C, 3D, and Preferred Alternative 3E** in combination with **Preferred Alternatives 5 and 7**. Trips in regions that were predicted to be the most adversely affected by the proposed alternatives in Amendment 17A were predicted to be the least affected by the simultaneous consideration of preferred alternatives in Amendment 17B. These regions include South Carolina for proposed **Alternatives 4A, 4B, 4C, and 4D**, in combination with **Preferred Alternatives 5 and 7**, and Georgia and along the east coast of Florida from Nassau through Miami-Dade Counties for all proposed alternatives in Amendment 17A.

Based on the prediction of a longer open season for shallow water groupers, net operating revenues for fishermen in North Carolina were predicted to increase by approximately 11.2 percent for **Alternatives 3A, 3B, 3C, and 3D** in combination with **Preferred Alternatives 5 and 7**, by 9.9 percent for **Preferred Alternative 3E** in combination with **Preferred Alternatives 5 and 7**, and by 7.2 percent for **Alternatives 4A, 4B, 4C and 4D** in combination with **Preferred Alternatives 5 and 7** given no action for Amendment 17B. However, after accounting for the effects of preferred alternatives for Amendment 17B, net operating revenues for fishermen in North Carolina are expected to increase by approximately 1.5 percent for **Alternatives 3A, 3B, 3C, and 3D** in combination with **Preferred Alternatives 5 and 7**, and are expected to decline by slightly more than 2 percent with **Alternatives 4A, 4B, 4C and 4D** in combination with **Preferred Alternatives 5 and 7**. Net operating revenues for North Carolina are not expected to change with **Preferred Alternative 3E** in combination with **Preferred Alternatives 5 and 7** because the losses from the preferred alternatives in Amendment 17B are expected to be about equal to the potential gains from Amendment 17A that could accrue from a longer open season for shallow water groupers.

The snapper-grouper fishery would not be closed off the coast of South Carolina with **Alternatives 3A, 3B, 3C, 3D, and 3E** in combination with **Preferred Alternatives 5 and 7**, but would be closed with **Alternatives 4A, 4B, 4C, and 4D** in combination with **Preferred Alternatives 5 and 7**. Consequently, net operating revenues for fishermen in South Carolina were expected to increase by between 7.0 and 7.9 percent with **Alternatives 3A, 3B, 3C, and 3D** in combination with **Preferred Alternatives 5 and 7** given no action for Amendment 17B, and were expected to decline by between 29.6 and 34.5 percent with **Alternatives 4A, 4B, 4C** in combination with **Preferred Alternatives 5 and 7**, and **4D**. After accounting for the effects of the preferred alternatives for Amendment 17B, the predicted increases in net operating revenues for **Alternatives 3A, 3B, 3C, and 3D** in combination with **Preferred Alternatives 5 and 7** are no longer expected. Net operating revenues are expected to decline by between 32.5 and 36.4 percent with **Alternatives 4A, 4B, 4C, and 4D** in combination with **Preferred Alternatives 5 and 7**. Net operating revenues for **Preferred Alternative 3E** were expected to increase by

approximately 5.4 percent without Amendment 17B, but are expected to decline by approximately 1.3 percent after accounting for the effects of Amendment 17B.

Fishermen in the Florida Keys were predicted to be relatively unaffected by proposed regulations in Amendment 17A. However, the proposed restrictions on the use of bottom longlines and the aggregate ACL for shallow water groupers in Amendment 17B would result in a reduction in net operating revenues of slightly less than 5 percent for **Alternatives 3A, 3B, 3C, and 3D** in combination with **Preferred Alternatives 5 and 7** and approximately 4.1 percent for **Alternatives 4A, 4B, 4C, and 4D** in combination with **Preferred Alternatives 5 and 7**. Net operating revenues for **Preferred Alternative 3E** in combination with **Preferred Alternatives 5 and 7** are expected to decline in the Florida Keys by approximately 4.9 percent after accounting for the preferred alternatives in Amendment 17B.

Without accounting for the effects of Amendment 17B, net operating revenues for fishermen in Georgia and northeast Florida were predicted to decline by approximately 68 percent due to **Alternatives 3A, 3B, 3C, and 3D** in combination with **Preferred Alternatives 5 and 7**, by 61 percent for **Preferred Alternative 3E** in combination with **Preferred Alternatives 5 and 7**, and by approximately 70 percent with **Alternatives 4A, 4B, 4C, and 4D** in combination with **Preferred Alternatives 5 and 7**. The preferred alternatives in Amendment 17B are expected to add approximately 2 percent to these losses. After accounting for the effects of Amendment 17B, net operating revenues are expected to decline by approximately 70 percent for **Alternatives 3A, 3B, 3C, and 3D** in combination with **Preferred Alternatives 5 and 7**, by 63 percent for **Preferred Alternative 3E** in combination with **Preferred Alternatives 5 and 7**, and by approximately 72 percent with **Alternatives 4A, 4B, 4C, and 4D** in combination with **Preferred Alternatives 5 and 7**. Similarly, the preferred alternatives in Amendment 17B are expected to add approximately 2 percent to the losses that were predicted for Amendment 17A.

Amendment 17B would prohibit the harvest of snowy grouper, other deep water groupers and blueline tilefish in waters deeper than 240 feet, and would have overridden the effects of an exemption for longlines in waters deeper than 300 feet (except for golden tilefish) had it been a preferred alternative for Amendment 17A. The preponderance of economic losses due to Amendments 17A and 17B still would be incurred by fishermen that use vertical line gear because that is the most widely used gear in the fishery. However, the losses expected for fishermen with bottom longline gear are greater both in dollar and percentage terms than when the expected effects of Amendment 17B are not considered.

Further detail on the analysis of simultaneous effects of Amendments 17A and 17B can be found in **Appendix O**. The appendix contains some detailed analyses not discussed here.

6.0 Other Things to Consider

6.1 Unavoidable Adverse Impacts

There are several unavoidable adverse effects on the socioeconomic environment that may result from the implementation of the Comprehensive ACL Amendment. A brief summary of those effects follows.

Need to fill in after analysis is complete.

6.2 Effects of the Fishery on Essential Fish Habitat

The biological impacts of the proposed actions are described in Section 4.0, including impacts on habitat. No actions proposed in this document are anticipated to have any adverse impact on EFH or EFH- Habitat of Particular Concern (HAPC) for managed species including species in the snapper grouper complex. No additional impacts of fishing on EFH were identified during the public hearing process. Therefore the Council has determined no new measures to address impacts on EFH are necessary at this time. The Council's adopted habitat policies, which may directly affect the area of concern, are available for download through the Habitat/Ecosystem section of the Council's website: <http://www.safmc.net/EcosystemManagement/HabitatProtection/HabitatPolicies/tabid/245/Default.aspx>.

NOTE: The Final EFH Rule, published on January 17, 2002, (67 FR 2343) replaced the interim Final Rule of December 19, 1997 on which the original EFH and EFH-HAPC designations were made. The Final Rule directs the Councils to periodically update EFH and EFH-HAPC information and designations within fishery management plans. As was done with the original Habitat Plan, a series of technical workshops were conducted by Council habitat staff and a draft plan that includes new information has been completed pursuant to the Final EFH Rule.

6.3 Damage 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 essential fish habitat (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 exclusive economic zone; banning use of bottom trawls on live/hard bottom habitat north of Cape Canaveral, Florida; restricting use of bottom longline 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 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 Amendment 9 (SAFMC 1998b), that include further restricting longlines to retention of only deepwater species and requiring that black sea bass pot have escape panels with degradable fasteners, reduce the catch of undersized fish and bycatch and ensure that the pot, if lost, will not continue to “ghost” fish. Amendment 13C (SAFMC 2006) increased mesh size in the back panel of pots, which has reduced bycatch and retention of undersized fish. Amendment 15B (SAFMC 2008b) implemented 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.

Amendment 16 (SAFMC 2008c), implemented an action to reduce bycatch by requiring fishermen use dehooking devices. 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 1998b) contains measures that expanded the *Oculina* Bank Habitat of Particular Concern (HAPC) and added two additional satellite HAPCs. Amendment 14 (SAFMC 2007), established marine protected areas where fishing for or retention of snapper grouper species would be prohibited. Furthermore, the Comprehensive Ecosystem Based Amendment 1 (CE-BA 1) established deepwater coral habitat of particular concern to protect what is believed to be the largest distribution (>23,000 square miles) of pristine deepwater coral ecosystems in the world. CE-BA 1 also created allowable gear areas for the golden crab fishery and shrimp fishery access areas for the deepwater shrimp fishery. The establishment of these areas allows for the continuation of these fisheries in their historical fishing grounds with little or no negative impacts to protected deepwater coral habitat.

6.4 Relationship of Short-Term Uses and Short-Term Productivity

The relationship between short-term uses and long-term productivity will be affected by the Comprehensive ACL Amendment. The proposed actions could significantly restrict the harvest of dolphin, wahoo, and snapper grouper species in the short-term for both the commercial and recreational sectors of the fishery. However, reductions in harvest are expected to benefit the long-term productivity of these species.

6.5 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. While the proposed actions would result in irretrievable losses in consumer surplus and angler expenditures, failing to take action would compromise the long-term sustainability of the South Atlantic red snapper stock.

Since the Snapper Grouper FMP and its implementing regulations are always subject to future changes, proceeding with the development of the Comprehensive ACL Amendment 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.

6.6 Unavailable or Incomplete Information

The Council on Environmental Quality, in its implementing regulations for the National Environmental Policy Act (NEPA), addressed incomplete or unavailable information at 40 CFR 1502.22 (a) and (b). That regulations 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...”.

A stock assessments have been conducted for gag, red grouper, black grouper, golden tilefish, red snapper, vermilion snapper, black sea bass, greater amberjack, and mutton snapper using the best available data available. Status determinations for these species were derived from the Southeast Data Assessment and Review (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 advisory committees, the Council, and NOAA Fisheries Service staff reviewed and considered any concerns about the adequacy of the data. **Appendix** lists data needs that resulted from the most recent snapper grouper assessments. The Council’s SSC determined that these assessments are based on the best available data.

The Council’s Snapper Grouper Committee acknowledged, while stock assessment findings can be associated with different degrees of uncertainty, there is no reason to assume such uncertainty leads to unrealistically optimistic conclusions about stock status. Rather, the stocks could be in worse shape than indicated by the stock assessment. Uncertainty due to unavailable or incomplete information should not be used as a reason to avoid taking action. Therefore, there are reasonable foreseeable significant adverse effects of not taking action to end overfishing. Failure to take action could result in a worsening of stock status, persistent foregone economic benefits, and more severe corrective actions to end overfishing in the future.

Where information is unavailable or incomplete, acceptable biological catch control rules and annual catch limits are designed to adopt a conservative approach to increase the probability overfishing does not occur. None of the impacts of decisions made despite the above mentioned

unavailable and incomplete information would be catastrophic in nature as described in Section 1502.22(4) of implementing regulations for the NEPA.

7.0 List of Preparers

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Gregg Waugh	Deputy Director	SAFMC	N/A	SAFMC

NMFS = National Marine Fisheries Service, SAFMC = South Atlantic Fishery Management Council, SF = Sustainable Fisheries Division, PR = Protected Resources Division, SERO = Southeast Regional Office, HC = Habitat Conservation Division, GC = General Counsel

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8.0 List of Agencies, Organizations, and Persons To Whom Copies of the Statement Are Sent

Responsible Agency

Comprehensive ACL Amendment:

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Environmental Impact Statement:

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List of Agencies, Organizations, and Persons Consulted

SAFMC Law Enforcement Advisory Panel
SAFMC Snapper Grouper Advisory Panel
SAFMC Marine Protected Areas Advisory Panel
SAFMC Coral Advisory Panel
SAFMC Habitat and Environmental Protection 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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10.0 Index

Will be added prior to public hearings.