



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 9 TO THE FISHERY MANAGEMENT PLAN FOR THE SHRIMP 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, establish 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. Investigate changing the current commercial trip limit of 1,000 lbs for greater amberjack. Modify management measures to limit total mortality to the ACL.
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ABSTRACT

TABLE OF CONTENTS

ABSTRACT.....	V
SUMMARY	1
1 Introduction.....	2
1.1 Background.....	2
1.2 Purpose of the Proposed Action.....	2
1.3 Need for the Proposed Action.....	2
1.4 Background.....	2
1.4.1 Process for Defining Limits and Targets	3
1.4.2 SSC Designation of OFL and ABC	6
2 Actions and Alternatives.....	8
2.1 Snapper Grouper Fishery Management Plan (non red grouper and wreckfish) .	8
2.1.1 Removal from Fishery Management Unit	8
2.1.2 Ecosystem Component Species	13
2.1.3 Species Groupings	20
2.1.4 Acceptable Biological Catch Control Rule.....	23
2.1.5 Allocations & Sector ACLs	24
2.1.6 Annual Catch Limits.....	24
2.1.7 Annual Catch Targets	25
2.1.8 Accountability Measures	25
2.1.9 Management Measures	25
2.1.9.1 Greater Amberjack.....	25
2.2 Snapper Grouper Fishery Management Plan (red grouper).....	26
2.2.1 Maximum Sustainable Yield.....	26
2.2.2 Rebuilding Schedule	27
2.2.3 Rebuilding Strategy (Including Annual Catch Limits and Optimum Yield)....	27
2.2.4 Allocations & Sector ACLs	32
2.2.5 Accountability Measures/Management Measures	33
2.3 Snapper Grouper Fishery Management Plan (wreckfish).....	36
2.3.1 Maximum Sustainable Yield.....	36
2.3.2 Optimum Yield	36
2.3.3 Overfishing Limits	36
2.3.4 Overfished Threshold.....	37
2.3.5 ABC Control Rule.....	37
2.3.6 Annual Catch Limit.....	38
2.3.7 Allocations	38
2.3.8 Management Measures	38
2.4 Dolphin Wahoo Fishery Management Plan.....	40
2.4.1 Acceptable Biological Catch Control Rule.....	Error! Bookmark not defined.
2.4.2 Allocations (allocations).....	Error! Bookmark not defined.
2.4.3 Annual Catch Limits (dolphin).....	Error! Bookmark not defined.
2.4.4 Annual Catch Targets (dolphin).....	Error! Bookmark not defined.
2.4.5 Accountability Measures (dolphin).....	Error! Bookmark not defined.
2.4.6 Management Measures (dolphin)	Error! Bookmark not defined.
2.4.7 Acceptable Biological Catch Control Rule (wahoo)	Error! Bookmark not defined.

2.4.8	Allocations (wahoo).....	Error! Bookmark not defined.
2.4.9	Annual Catch Limits (wahoo).....	Error! Bookmark not defined.
2.4.10	Annual Catch Targets (wahoo).....	Error! Bookmark not defined.
2.4.11	Accountability Measures (wahoo).....	Error! Bookmark not defined.
2.4.12	Management Measures (wahoo).....	Error! Bookmark not defined.
2.5	Sargassum Fishery Management Plan	67
2.5.1	Ecosystem Component Species	67
2.5.2	Acceptable Biological Catch Control Rule.....	67
2.5.3	Allocations	68
2.5.4	Annual Catch Limits.....	68
2.5.5	Annual Catch Targets	69
2.5.6	Accountability Measures	69
2.5.7	Management Measures	69
2.6	Shrimp Fishery Management Plan.....	70
2.7	Golden Crab Fishery Management Plan.....	72
3	Affected Environment.....	73
4	Environmental Effects	74
4.1	Snapper Grouper FMP	74
4.1.1	Remove some species from the Snapper Grouper FMU	74
4.1.1.1	Biological Effects.....	74
4.1.1.2	Economic Effects	74
4.1.1.3	Social Effects	74
4.1.1.4	Administrative Effects	74
4.1.1.5	Council’s Conclusions	74
4.1.2	Designate some species in the Snapper Grouper FMU as ecosystem component (EC) species	74
4.1.2.1	Biological Effects.....	74
4.1.2.2	Economic Effects	74
4.1.2.3	Social Effects	74
4.1.2.4	Administrative Effects	74
4.1.2.5	Council’s Conclusions	75
4.1.3	Specify an ABC control rule for species in the Snapper Grouper FMU ..	75
4.1.3.1	Biological Effects.....	75
4.1.3.2	Economic Effects	75
4.1.3.3	Social Effects	75
4.1.3.4	Administrative Effects	75
4.1.3.5	Council’s Conclusions	75
4.1.4	Specify allocations among sectors for 63 snapper grouper species or species groups	75
4.1.4.1	Biological Effects.....	75
4.1.4.2	Economic Effects	75
4.1.4.3	Social Effects	75
4.1.4.4	Administrative Effects	75
4.1.4.5	Council’s Conclusions	76
4.1.5	Specify ACLs for 63 snapper grouper species or species groups.....	76
4.1.5.1	Biological Effects.....	76

4.1.5.2	Economic Effects	76
4.1.5.3	Social Effects	76
4.1.5.4	Administrative Effects	76
4.1.5.5	Council’s Conclusions	76
4.1.6	Specify ACTs for 63 snapper grouper species or species groups	76
4.1.6.1	Biological Effects.....	76
4.1.6.2	Economic Effects	76
4.1.6.3	Social Effects	76
4.1.6.4	Administrative Effects	76
4.1.6.5	Council’s Conclusions	76
4.1.7	Specify AMs for 63 snapper grouper species or species groups	77
4.1.7.1	Biological Effects.....	77
4.1.7.2	Economic Effects	77
4.1.7.3	Social Effects	77
4.1.7.4	Administrative Effects	77
4.1.7.5	Council’s Conclusions	77
4.1.8	Modify management measures for species in the Snapper Grouper FMU	77
4.1.8.1	Greater amberjack.....	77
4.1.8.2	Red grouper.....	78
4.1.8.3	Wreckfish.....	78
4.2	Dolphin Wahoo FMP	78
4.2.1	Specify an ABC control rule for species in the Dolphin Wahoo FMU	78
4.2.1.1	Biological Effects.....	79
4.2.1.2	Economic Effects	79
4.2.1.3	Social Effects	79
4.2.1.4	Administrative Effects	79
4.2.1.5	Council’s Conclusions	79
4.2.2	Specify allocations among sectors for dolphin	79
4.2.2.1	Biological Effects.....	79
4.2.2.2	Economic Effects	79
4.2.2.3	Social Effects	79
4.2.2.4	Administrative Effects	79
4.2.2.5	Council’s Conclusions	79
4.2.3	Specify ACLs for dolphin.....	79
4.2.3.1	Biological Effects.....	80
4.2.3.2	Economic Effects	80
4.2.3.3	Social Effects	80
4.2.3.4	Administrative Effects	80
4.2.3.5	Council’s Conclusions	80
4.2.4	Specify ACTs for dolphin.....	80
4.2.4.1	Biological Effects.....	80
4.2.4.2	Economic Effects	80
4.2.4.3	Social Effects	80
4.2.4.4	Administrative Effects	80
4.2.4.5	Council’s Conclusions	80
4.2.5	Specify AMs for dolphin	80

4.2.5.1	Biological Effects.....	80
4.2.5.2	Economic Effects	81
4.2.5.3	Social Effects	81
4.2.5.4	Administrative Effects	81
4.2.5.5	Council’s Conclusions	81
4.2.6	Modify management measures for dolphin	81
4.2.6.1	Biological Effects.....	81
4.2.6.2	Economic Effects	81
4.2.6.3	Social Effects	81
4.2.6.4	Administrative Effects	81
4.2.6.5	Council’s Conclusions	81
4.2.7	Specify allocations among sectors for wahoo.....	81
4.2.7.1	Biological Effects.....	81
4.2.7.2	Economic Effects	82
4.2.7.3	Social Effects	82
4.2.7.4	Administrative Effects	82
4.2.7.5	Council’s Conclusions	82
4.2.8	Specify ACLs for wahoo	82
4.2.8.1	Biological Effects.....	82
4.2.8.2	Economic Effects	82
4.2.8.3	Social Effects	82
4.2.8.4	Administrative Effects	82
4.2.8.5	Council’s Conclusions	82
4.2.9	Specify ACTs for wahoo	82
4.2.9.1	Biological Effects.....	82
4.2.9.2	Economic Effects	82
4.2.9.3	Social Effects	83
4.2.9.4	Administrative Effects	83
4.2.9.5	Council’s Conclusions	83
4.2.10	Specify AMs for wahoo	83
4.2.10.1	Biological Effects.....	83
4.2.10.2	Economic Effects	83
4.2.10.3	Social Effects	83
4.2.10.4	Administrative Effects	83
4.2.10.5	Council’s Conclusions	83
4.2.11	Modify management measures for wahoo.....	83
4.2.11.1	Biological Effects.....	83
4.2.11.2	Economic Effects	83
4.2.11.3	Social Effects	83
4.2.11.4	Administrative Effects	84
4.2.11.5	Council’s Conclusions	84
4.3	Sargassum FMP	84
4.3.1	Consider designating Sargassum seaweed as ecosystem component species ..	84
4.3.1.1	Biological Effects.....	84
4.3.1.2	Economic Effects	84
4.3.1.3	Social Effects	84

4.3.1.4	Administrative Effects	84
4.3.1.5	Council’s Conclusions	84
4.3.2	Specify an ABC control rule for Sargassum seaweed	84
4.3.2.1	Biological Effects.....	84
4.3.2.2	Economic Effects	84
4.3.2.3	Social Effects	84
4.3.2.4	Administrative Effects	84
4.3.2.5	Council’s Conclusions	85
4.3.3	Specify allocations among sectors for Sargassum seaweed	85
4.3.3.1	Biological Effects.....	85
4.3.3.2	Economic Effects	85
4.3.3.3	Social Effects	85
4.3.3.4	Administrative Effects	85
4.3.3.5	Council’s Conclusions	85
4.3.4	Specify ACLs for Sargassum seaweed	85
4.3.4.1	Biological Effects.....	85
4.3.4.2	Economic Effects	85
4.3.4.3	Social Effects	85
4.3.4.4	Administrative Effects	85
4.3.4.5	Council’s Conclusions	86
4.3.5	Specify ACTs for Sargassum seaweed	86
4.3.5.1	Biological Effects.....	86
4.3.5.2	Economic Effects	86
4.3.5.3	Social Effects	86
4.3.5.4	Administrative Effects	86
4.3.5.5	Council’s Conclusions	86
4.3.6	Specify AMs for Sargassum seaweed.....	86
4.3.6.1	Biological Effects.....	86
4.3.6.2	Economic Effects	86
4.3.6.3	Social Effects	86
4.3.6.4	Administrative Effects	86
4.3.6.5	Council’s Conclusions	86
4.3.7	Modify management measures for Sargassum seaweed.....	87
4.3.7.1	Biological Effects.....	87
4.3.7.2	Economic Effects	87
4.3.7.3	Social Effects	87
4.3.7.4	Administrative Effects	87
4.3.7.5	Council’s Conclusions	87
4.4	Shrimp FMP.....	87
4.4.1	Specify an ABC control rule for four species of shrimp in the shrimp FMU...	87
4.4.1.1	Biological Effects.....	87
4.4.1.2	Economic Effects	87
4.4.1.3	Social Effects	87
4.4.1.4	Administrative Effects	87
4.4.1.5	Council’s Conclusions	87
4.5	Golden Crab FMP	88

5	Cumulative Effects.....	89
6	List of Preparers.....	90
7	List of Agencies, Organizations, and Persons To Whom Copies of the Statement Are Sent	92
8	References.....	93
9	Index	94

LIST OF APPENDICES

- Appendix A.** Alternatives the Council considered but eliminated from detailed study and a brief discussion of the reasons for their elimination
- Appendix B.** Glossary
- Appendix C.** Essential fish habitat and movement towards ecosystem-based management

LIST OF FIGURES

Figure 1-1. Jurisdictional boundaries of the South Atlantic Fishery Management Council.
..... 2

Figure 1-3. The process employed in the Comprehensive ACL Amendment. The
Council is considering allocating to three sectors in this amendment. 5

LIST OF TABLES

Table 1. Species in the FMUs for Snapper Grouper, Dolphin Wahoo, Shrimp, and <i>Sargassum</i> (SHOULD HAVE ALL 73 SPP).....	3
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).	4
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	7

TABLE OF CONTENTS FOR THE ENVIRONMENTAL IMPACT STATEMENT

Abstract.....

Summary.....

Purpose and need.....

Alternatives.....

Affected environment.....

Environmental consequences.....

List of preparers.....

List of agencies, organizations, and persons
to whom copies of the statement are sent.....

Index.....

SUMMARY

1 Introduction

1.1 Background

Management of the Federal snapper grouper, dolphin/wahoo, shrimp and *Sargassum* fisheries located off the South Atlantic in the 3-200 nautical mile (nm) U.S. Exclusive Economic Zone (EEZ) is conducted under the Fishery Management Plan for the snapper grouper, dolphin/wahoo, shrimp, 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 (Magnuson-Stevens Act), other applicable Federal laws, and executive orders (E.O.s) and affect the management of 73 species of snapper grouper, dolphin and wahoo, five species of shrimp, and two species of *Sargassum* (Table 1-1; Appendix XXXX. Other Applicable Laws).

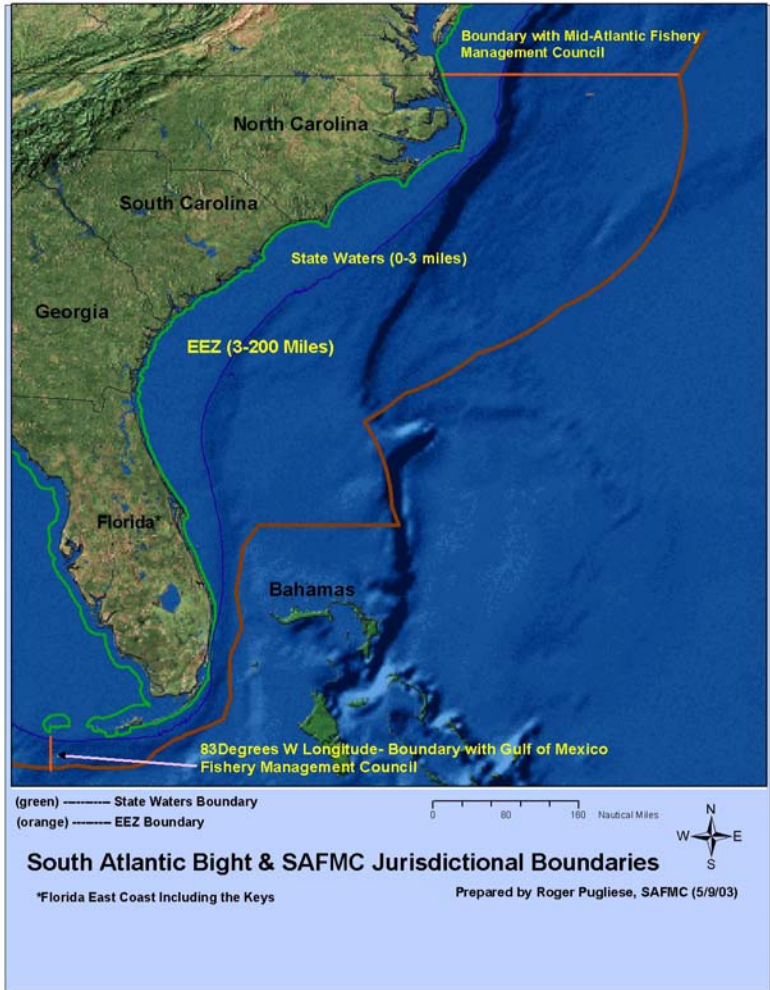


Figure 1-1. Jurisdictional boundaries of the South Atlantic Fishery Management Council.

Table 1. Species in the FMUs for Snapper Grouper, Dolphin Wahoo, Shrimp, and *Sargassu*.

Snapper Grouper FMU

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

Dolphin Wahoo FMU

Dolphinfish *Coryphaena hippurus*

Wahoo *Acanthocybium solandri*

Shrimp FMU

White shrimp *Litopenaeus setiferus*

Pink shrimp *Farfantepenaeus duorarum*

Brown shrimp *Farfantepenaeus aztecus*

Rock shrimp *Sicyonia brevirostris*

***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 (OY) while minimizing to the extent practicable adverse social and economic effects. Long-term management measures include the implementation of the following items: (1) annual stock mortality limits and targets, (2) percent allocation of mortality to all sectors; (3) actions to occur if limits and targets are estimated to be exceeded or have been exceeded; and (4) 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 FMP, 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 reduction 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 OY and rebuild the stocks addressed in this amendment (Table 1-2). These include utilizing two determinations from the Council's Scientific and Statistical Committee (SSC). These determinations are the overfishing limit (OFL) and acceptable biological catch (ABC). 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. 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 proposing 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	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 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.

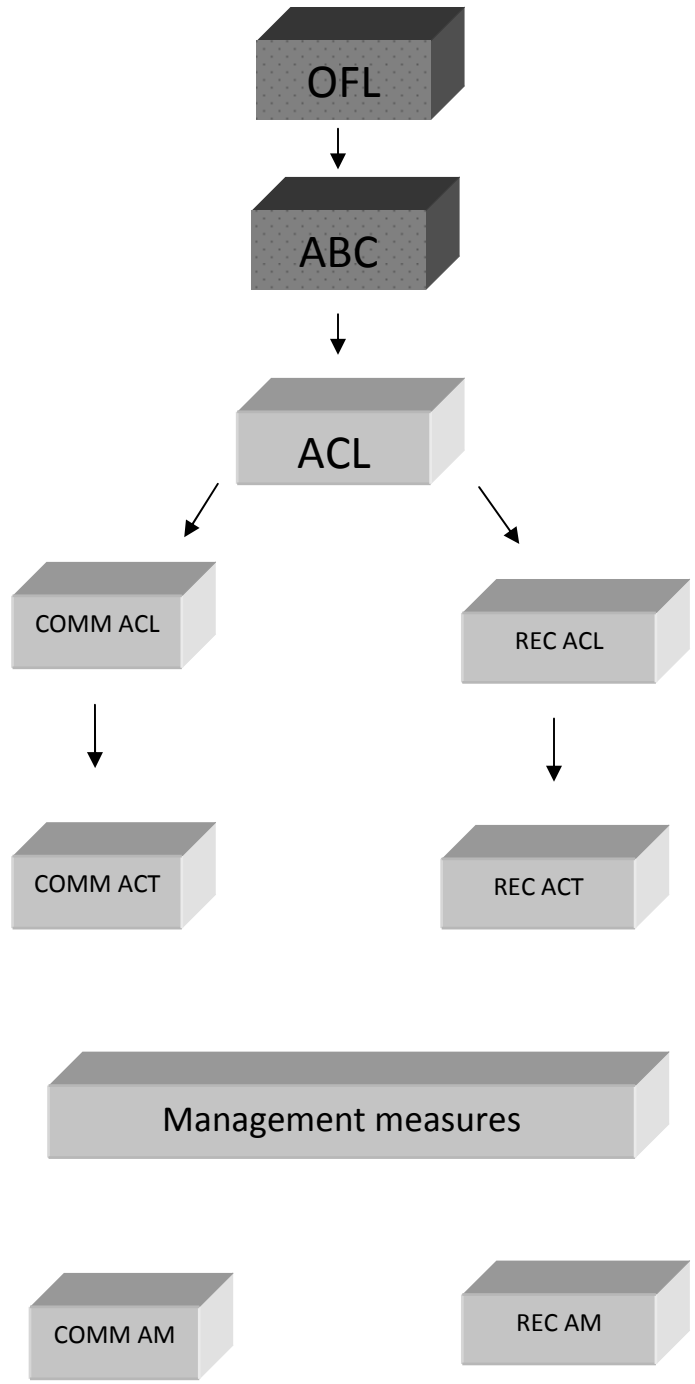


Figure 1-3. The process employed in the Comprehensive ACL Amendment. The Council is considering allocating to three sectors in this amendment.

1.4.2 SSC Designation of OFL and ABC

See Appendix X for ABCs.

ACLs , ACTs, and AMs

Revisions to the 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 ACLs at a level that prevents overfishing and does not exceed the recommendations of the respective Council's SSC or other established peer review processes. These FMPs also are required to establish within this time frame measures to ensure accountability. 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, ACTs, and management measures to ensure harvest is at or below the ACL. The SSC is expected to specify OFLs and ABC recommendations in the future based on criteria specific to levels of data availability. The ACL is the annual catch limit expressed in pounds or numbers of fish that serves as the basis for invoking accountability measures. 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, Amendment 17B will include 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 FMU and Designating Others As Ecosystem Component Species

1.3 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, Shrimp, 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, 5 species of shrimp, 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 Snapper Grouper Fishery Management Plan (non red grouper and wreckfish)

2.1.1 Removal from Fishery Management Unit

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

Alternative 2. Remove snapper-grouper species with 95% (or greater) of landings in state waters.

Table 1. 10 snapper-grouper species with >95% 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	TOTAL		MRFSS	HB
YELLOW JACK	0	29,556	0	12,062	261	21,980	1,905	94,807	2,166	158,404	160,570	99%	EFL	EFL
CREVALLE JACK	16,072	724,534	11,228	399,058	11,046	529,392	13,425	514,265	51,771	2,167,249	2,219,020	98%	EFL	EFL
SPANISH GRUNT	0	0	0	688	0	0	0	0	0	688	688	100%	EFL	EFL
FRENCH GRUNT	0	0	0	270	0	2,965	0	1,703	0	4,938	4,938	100%	EFL	EFL
MARGATE	47	28,480	843	16,763	0	17,554	0	4,210	889	67,007	67,896	99%	EFL	NC
PORKFISH	1748	17,046	373	1,891	900	47,481	309	10,533	3,330	76,950	80,280	96%	EFL	EFL
BLUESTRIPED GRUNT	811	24,500	0	70,320	1,346	62,742	1,234	37,755	3,391	195,318	198,709	98%	EFL	EFL
BLACK MARGATE	1,832	63,437	4,296	38,968	25	66,304	1,559	51,386	7,713	220,096	227,809	97%	EFL	EFL
GRASS PORGY	0	1,673	0	0	0	389	42	456	42	2,518	2,560	98%	EFL	EFL
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	7,360,319	98%	EFL	SC

Alternative 3. Remove snapper-grouper species with 90% (or greater) of landings in state waters.

Table 2. 11 snapper-grouper species with >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	TOTAL		MRFSS	HB
YELLOW JACK	0	29,556	0	12,062	261	21,980	1,905	94,807	2,166	158,404	160,570	99%	EFL	EFL
CREVALLE JACK	16,072	724,534	11,228	399,058	11,046	529,392	13,425	514,265	51,771	2,167,249	2,219,020	98%	EFL	EFL
SPANISH GRUNT	0	0	0	688	0	0	0	0	0	688	688	100%	EFL	EFL
FRENCH GRUNT	0	0	0	270	0	2,965	0	1,703	0	4,938	4,938	100%	EFL	EFL
MARGATE	47	28,480	843	16,763	0	17,554	0	4,210	889	67,007	67,896	99%	EFL	NC
PORKFISH	1748	17,046	373	1,891	900	47,481	309	10,533	3,330	76,950	80,280	96%	EFL	EFL
BLUESTRIPED GRUNT	811	24,500	0	70,320	1,346	62,742	1,234	37,755	3,391	195,318	198,709	98%	EFL	EFL
BLACK MARGATE	1,832	63,437	4,296	38,968	25	66,304	1,559	51,386	7,713	220,096	227,809	97%	EFL	EFL
SAILORS CHOICE	1868	35,152	863	2,934	1,752	19,417	892	15,285	5,374	72,788	78,162	93%	EFL	EFL
GRASS PORGY	0	1,673	0	0	0	389	42	456	42	2,518	2,560	98%	EFL	EFL
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	7,360,319	98%	EFL	SC

Alternative 4. Remove snapper-grouper species with 80% (or greater) of landings in state waters.

Table 3. 19 snapper-grouper species with >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	TOTAL		MRFSS	HB
GRAYSBY	1,166	8,722	2,601	7,266	259	4,410	756	8,086	4,781	28,484	33,265	86%	EFL	SC
CUBERA SNAPPER	0	2,529	646	714	0	0	4,234	22,543	4,880	25,786	30,666	84%	EFL	SC
YELLOW JACK	0	29,556	0	12,062	261	21,980	1,905	94,807	2,166	158,404	160,570	99%	EFL	EFL
CREVALLE JACK	16,072	724,534	11,228	399,058	11,046	529,392	13,425	514,265	51,771	2,167,249	2,219,020	98%	EFL	EFL
LESSER AMBERJACK	0	2,339	957	1,213	0	0	0	4,878	957	8,430	9,387	90%	EFL	SC
SCHOOLMASTER	115	863	0	5,623	1,682	4,718	803	3,824	2,599	15,028	17,627	85%	EFL	EFL
SPANISH GRUNT	0	0	0	688	0	0	0	0	0	688	688	100%	EFL	EFL
FRENCH GRUNT	0	0	0	270	0	2,965	0	1,703	0	4,938	4,938	100%	EFL	EFL
MARGATE	47	28,480	843	16,763	0	17,554	0	4,210	889	67,007	67,896	99%	EFL	NC
PORKFISH	1,748	17,046	373	1,891	900	47,481	309	10,533	3,330	76,950	80,280	96%	EFL	EFL
BLUESTRIPED GRUNT	811	24,500	0	70,320	1,346	62,742	1,234	37,755	3,391	195,318	198,709	98%	EFL	EFL
BLACK MARGATE	1,832	63,437	4,296	38,968	25	66,304	1,559	51,386	7,713	220,096	227,809	97%	EFL	EFL
SAILORS CHOICE	1,868	35,152	863	2,934	1,752	19,417	892	15,285	5,374	72,788	78,162	93%	EFL	EFL
GRASS PORGY	0	1,673	0	0	0	389	42	456	42	2,518	2,560	98%	EFL	EFL
SAUCEREYE PORGY	139	4,511	591	781	326	0	0	0	1,056	5,293	6,349	83%	EFL	EFL
HOGFISH	15,220	122,442	28,431	31,261	8,451	166,472	10,212	48,043	62,314	368,218	430,532	86%	EFL	SC
ATLANTIC SPADEFISH	0	97,844	31,335	244,004	0	181,740	100,081	153,343	131,416	676,931	808,347	84%	EFL	SC
BLUE RUNNER	98,584	400,169	1,34,699	1,025,723	256,572	639,436	135,371	717,349	625,225	2,782,677	3,407,902	82%	EFL	EFL
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	7,360,319	98%	EFL	SC

*Note: Recreational data from 2005-2008 were examined (LAPP/DMB, October 2009) to determine the species predominantly caught in state waters, and hence consider removing them from the Snapper-Grouper FMU. Tables 1, 2, and 3, represent data from the SEFSC ACL Recreational Landings dataset, which contains monthly estimates of MRFSS and headboat landings by species. Species were categorized according to their total landings level and the percent of state vs. federal landings. Note this analysis could only be performed for MRFSS from this dataset due to the lack of spatial information for headboat and commercial data relative to EEZ. Species have been sorted in ascending order by cumulative landings. The state reporting the highest landings in MRFSS and headboat ('HB') is also listed.

Tiger grouper, black snapper, and smallmouth grunt 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.

Alternative 5. Remove all of the following snapper-grouper species under the Florida Marine Life Species Rule:

1. Queen triggerfish
2. Porkfish
3. Puddingwife.

Source: Florida FWCC Rule No. 68-42.001, accessed at:

<https://www.flrules.org/gateway/chapterhome.asp?chapter=68B-42>

Species codes can be viewed at: http://myfwc.com/License/Saltwater_Licenses_RS_MLList.htm#

2.1.2 Ecosystem Component Species

National Standard 1 guidelines pertaining to EC species (74 FR 3178; Section 50 CFR 600.310 (d) (5) (i))

To be considered for possible classification as an EC species, the species should:

- (A) Be a non-target species or non-target stock;
- (B) Not be determined to be subject to overfishing, approaching overfished, or overfished;
- (C) 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
- (D) Not generally be retained for sale or personal use.

Table 4. Commercial and recreational landings from the snapper-grouper complex (state and federal combined) from 2005-2008 (lbs whole weight). Com = commercial; HB = headboat; CB = charter boat; OR = other recreational.***

	2005				2006				2007				2008			
	COM	HB	CB	OR	COM	HB	CB	OR	COM	HB	CB	OR	COM	HB	CB	OR
GAG	671,043	84,649	143,449	375,188	614,572	54,914	110,863	370,390	713,197	78,859	105,946	420,479	539,700	39,105	64,679	567,565
RED GROUPE	424,193	75,452	27,546	181,115	469,238	33,244	53,071	430,062	606,358	44,569	91,758	510,777	534,171	20,786	69,372	1,020,082
RED HIND	14,915	462	207	101	89,684	718	1,140	1,168	534,171	3,905	106	4,804	173,333	707	29	6,845
ROCK HIND	17,369	7,713	783	7,184	30,615	4,539	1,373	1,918	20,519	12,402	342	12,190	22,114	3,773	218	2,705
YELLOWMOU GROUPE	46	2,047	403	2,923	86	1,019	0	0	0	2,030	1,944	7,061	169	341	0	0
TIGER GROUPE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BLACK GROUPE	208,225	22,912	3,236	60,007	183,047	16,471	0	19,484	153,038	17,404	2,888	44,149	76,107	3,164	2,892	34,500
YELLOWFIN GROUPE	3,104	712	0	0	9,312	892	0	33,287	7,336	1,629	0	0	3,858	191	0	0
GRAYSBY	1,332	8,321	1,102	12,959	525	7,179	1,728	10,494	292	12,877	313	2,083	448	3,214	910	906
CONY	9	185	445	0	7	95	0	417	11	121	84	1098	2	90	51	2555
SCAMP	309,131	57,689	32,588	31,786	356,302	64,301	59,842	67,619	364,106	100,016	31,208	98,720	280,381	28,729	15,022	58,166
GOLIATH GROUPE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NASSAU GROUPE	0	62	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SNOWY GROUPE	263,378	1,617	31,656	0	274,181	669	166,901	0	142,547	308	25,093	1,881	95,742	91	14,919	0
YELLOWEDGE GROUPE	59,949	66	1,561	0	51,495	53	0	0	40,074	0	0	0	56,733	0	152	0
WARSAW GROUPE	3,695	1,588	0	0	2,242	607	6,616	0	1,607	791	2,522	17,732	1,522	1,151	0	13,955
SPECKLED HIND	25,094	826	0	40	16,209	1,126	5,064	1,005	13,339	1,220	68	362	8,418	1,657	0	474
MISTY GROUPE	651	0	0	0	367	0	0	0	4,027	4	0	0	1,744	0	0	0
TILEFISH (GOLDEN)	315,812	0	195,808	44,432	447,772	0	33,909	10,152	342,755	0	0	4,782	374,040	0	0	0
BLUELINE TILEFISH	133,856	838	35,983	0	190,620	957	105,755	155,034	77,292	192	323,602	65,353	426,908	65	253,234	134,154
QUEEN SNAPPER	8,860	0	0	1,409	4,448	0	0	0	7,563	0	0	0	4,904	0	0	0
YELLOWTAIL SNAPPER	1,321,563	147,469	47,200	261,634	1,231,049	83,328	35,948	254,087	952,792	85,184	51,255	314,298	1,362,324	91,142	18,922	242,970
MUTTON SNAPPER	167,600	61,505	68,250	311,525	166,604	70,026	24,914	322,278	134,816	57,073	35,435	490,212	108,104	42,220	14,325	523,426
GRAY (MANGROVE) SNAPPER	161,184	74,928	63,054	453,744	134,084	74,894	13,832	603,124	133,729	78,420	14,733	850,588	117,142	48,028	135,235	417,765

	2005				2006				2007				2008			
	COM	HB	CB	OR	COM	HB	CB	OR	COM	HB	CB	OR	COM	HB	CB	OR
LANE SNAPPER	9,765	24,064	17,337	62,860	9,327	21,052	4,667	46,046	6,597	13,732	4,998	79,676	6,899	21,566	5,212	82,031
MAHOGANY SNAPPER	2	0	0	0	0	0	0	0	0	0	0	0	38	43	0	0
DOG SNAPPER	148	21	57	428	499	314	0	556	253	50	602	15,900	559	673	0	0
SCHOOL-MASTER	4	671	0	399	14	657	0	5,622	1	160	0	3,935	689	523	0	2,379
CUBERA SNAPPER	1,633	705	0	3,162	3,801	4,263	1,360	0	4,719	11,789	0	0	7,263	3,870	0	0
SAND TILEFISH	5,697	963	0	317	2,709	436	0	414	1,881	799	498	395	405	2,607	739	13,208
PUDDINGWIFE	0	8	0	0	0	0	0	829	0	0	0	0	0	8		
HOGFISH	35,755	1,043	551	110,743	37,353	1,259	0	57,137	36,422	4,156	0	149,353	49,632	1,078	1,265	53,642
VERMILION SNAPPER	1,120,323	311,975	105,356	165,912	849,390	402,349	115,250	175,931	1,074,968	613,792	107,097	240,744	1,158,518	301,173	76,672	299,294
SILK SNAPPER	34,980	2,217	0	866	23,534	1,497	0	185	18,262	3,765	1,027	0	20,051	1,044	567	0
RED SNAPPER	132,006	58,695	116,716	145,572	89,910	41,431	100,444	139,752	116,934	38,448	57,150	245,006	233,267	115,308	151,987	544,768
BLACK SNAPPER	0	0	0	0	228	0	0	0	16	0	0	0	382	0	0	0
BLACKFIN SNAPPER	934	7	0	0	774	20	0	0	197	64	472	712	52	86	20	0
GRAY TRIGGERFISH	0	74,928	42,414	238,122	0	82,523	35,280	173,213	0	133,343	109,207	267,656	0	90,624	37,734	365,966
OCEAN TRIGGERFISH	0	1,133	1,202	4,378	0	1,266	1,448	51	0	270	871	6,254	0	468	205	7,690
QUEEN TRIGGERFISH	0	1,183	0	49	0	1,179	86	0	0	3,405	1,484	198	0	644	146	0
ATLANTIC SPADEFISH	46,134	370	0	94,057	34,209	430	3,488	257,086	29,527	82	0	182,205	22,954	164	0	253,347
GREATER AMBERJACK	813,044	33,442	303,551	108,010	473,621	39,782	226,055	385,203	498,798	115,209	432,249	446,119	622,059	75,026	614,991	655,126
LESSER AMBERJACK	8,132	98	2,339	77	3,745	386	0	2,169	4,268	14,949	0	185	1,151	82	0	4,879
ALMACO JACK	91,003	23,797	29,729	13,055	111,763	31,445	67,888	65,212	155,738	45,336	25,867	107,589	173,161	26,692	51,722	45,922
BANDED RUDDERFISH	35,776	44,220	12,668	6,902	31,775	99,624	5,009	45,530	29,956	48,228	6,709	52,290	27,196	52,109	12,599	95,730
YELLOW JACK	0	168	0	29,491	0	55	0	11,082	0	59	602	7,485	0	59	0	0
BLUE RUNNER	143,254	20,510	21,142	477,611	164,525	12,359	23,585	1,136,987	136,058	5,866	22,919	873,090	199,128	16,336	15,487	810,056
BAR JACK	3,982	595	756	3,783	4,439	419	0	355	7,036	263	0	0	4,275	71	5,994	5714
CREVALLE JACK	183,737	3,204	3,399	737,207	191,250	3,976	2,769	407,161	163,687	2,431	10,187	530,251	245,868	515	1,986	525,705
RED PORGY	47,870	42,142	10,386	36,942	83,276	67,678	19,050	25,027	141,521	117,334	41,784	33,629	165,327	52,598	34,220	72,234
WHITE GRUNT	18,469	163,780	46,047	147,915	35,219	160,199	73,058	174,683	0	262,320	82,232	232,703	0	119,113	47,110	312,918

	2005				2006				2007				2008			
	COM	HB	CB	OR	COM	HB	CB	OR	COM	HB	CB	OR	COM	HB	CB	OR
PORKFISH	0	2,086	295	7,716	0	2,111	0	0	0	765	0	20,249	0	507	0	10,309
MARGATE	2,624	3,566	82	27,443	4,144	6,053	157	17,663	2,715	7,689	0	17,555	2,916	1,253	84	626
BLACK MARGATE	0	217	917	60,640	0	1,340	97	36,539	0	17	0	62,363	0	569	185	52,758
TOMTATE	0	19,180	2,211	21,714	0	26,273	4,032	27,840	0	18,372	957	43,737	0	15,879	60	29,797
BLUESTRIPED GRUNT	0	4,732	53	25,258	0	4,564	0	70,320	0	3,244	97	63,990	0	3,495	0	34,015
FRENCH GRUNT	0	0	0	0	0	0	0	0	0	66	0	0	0	0	0	1,704
SPANISH GRUNT	0	0	0	0	0	0	0	688	0	0	0	0	0	0	0	0
SMALLMOUTH GRUNT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COTTONWICK	0	0	0	0	0	0	0	0	0	20	0	0	0	20	0	0
SAILORS CHOICE	0	0	1,312	4,359	0	0	818	728	0	0	362	11,193	0	106	40	14,167
GRASS PORGY	0	0	0	273	0	0	0	0	0	2	0	0	0	7	42	0
JOLTHEAD PORGY	6,367	13,116	12,888	13,571	2,513	10,842	3,596	11,592	3,505	19,783	1,440	14,542	6,609	10,023	2,482	46,458
SAUCEREYE PORGY	0	207	540	1,803	0	1,509	77	591	0	892	267	0	0	685	0	0
WHITEBONE PORGY	0	4,834	567	18,188	0	5,681	844	7,086	0	8,036	4,971	21,790	0	4,244	342	26,860
KNOBBED PORGY	14,421	6,765	8,622	11,274	22,517	11,324	1,008	5,130	19,386	14,643	2,630	2,815	23,883	6,182	2,178	5,511
LONGSPINE PORGY	32	0	0	0	16	0	0	0	13	17	0	0	0	0	0	0
SHEEPSHEAD	227,153	66	18,241	1,605,486	222,004	3	2,121	1,447,423	235,731	6	6,768	1,998,488	262,333	19	18,245	2,263,372
SCUP	352,715	10,412	0	2,617	232,707	8,797	31	8,532	66,979	6,764	18	3,889	203,064	5,716	0	18,508
BLACK SEA BASS	468,487	179,657	100,446	629,322	559,928	174,064	92,979	643,619	379,512	162,067	86,546	582,545	405,088	99,309	49,096	406,550
ROCK SEA BASS	166	1	0	360	583	0	18	922	1,413	0	0	1,631	272	0	0	4,447
BANK SEA BASS	492	6,043		2,206	901	6,215	227	4,853	126	2,197	192	3,627	195	2,532	64	2,581
**WRECKFISH																

**Wreckfish landings are confidential

Alternative 1. No Action. Do not designate any species in the Snapper Grouper FMU as EC species.

Alternative 2. Designate snapper-grouper species with state and federal (combined) landings that are less than, or equal to 1,000 lbs, as EC species.

Table 5. 11 species from Snapper-Grouper FMU with total state and federal (combined) landings from all sectors, that are less than or equal to 1,000 lbs, from 2005-2008.***

COMMON NAME	AVERAGE LBS (whole weight); 2005-2008				
	COMM	HEAD-BOAT	CHARTER BOAT	OTHER REC	≤ 1000 LBS
TIGER GROUPE	0	0	0	0	0
MAHOGANY SNAPPER	10	11	0	0	21
BLACK SNAPPER	157	0	0	0	157
BLACKFIN SNAPPER	489	44	123	178	834
FRENCH GRUNT	0	17	0	426	443
SPANISH GRUNT	0	0	0	172	172
SMALLMOUTH GRUNT	0	0	0	0	0
COTTONWICK	0	10	0	0	10
GRASS PORGY	0	2	11	68	81
LONGSPINE PORGY	15	4	0	0	19
PUDDINGWIFE	0	4	0	207	211

Alternative 3. Designate snapper-grouper species with state and federal (combined) landings that are less than, or equal to 2,500 lbs, as EC species.

Table 6. 16 species from Snapper-Grouper FMU with total state and federal (combined) landings from all sectors, that are less than or equal to 2,500 lbs, from 2005-2008.***

COMMON NAME	AVERAGE LBS (whole weight); 2005-2008				
	COMM	HEAD-BOAT	CHARTER BOAT	OTHER REC	≤ 2500 LBS
TIGER GROUPE	0	0	0	0	0
CONEY	7	123	145	1,018	1,292
ROCK SEA BASS	609	0	5	1,840	2,453
MISTY GROUPE	1,697	1	0	0	1,698
MAHOGANY SNAPPER	10	11	0	0	21
BLACK SNAPPER	157	0	0	0	157
BLACKFIN SNAPPER	489	44	123	178	834
QUEEN TRIGGERFISH	0	1,603	429	62	2,093
FRENCH GRUNT	0	17	0	426	443
SPANISH GRUNT	0	0	0	172	172
SMALLMOUTH GRUNT	0	0	0	0	0
COTTONWICK	0	10	0	0	10
GRASS PORGY	0	2	11	68	81
SAUCEREYE PORGY	0	823	221	599	1,643
LONGSPINE PORGY	15	4	0	0	19
PUDDINGWIFE	0	4	0	207	211

Alternative 4. Designate snapper-grouper species with state and federal (combined) landings that are less than, or equal to 5,000 lbs, as EC species.

Table 7. 18 species from Snapper-Grouper FMU with total state and federal (combined) landings from all sectors, that are less than or equal to 5,000 lbs, from 2005-2008.***

COMMON NAME	AVERAGE LBS (whole weight); 2005-2008				
	COMM	HEAD-BOAT	CHARTER BOAT	OTHER REC	≤ 5000 LBS
YELLOWMOUTH GROUPER	75	1,359	587	2,496	4,517
TIGER GROUPER	0	0	0	0	0
CONEY	7	123	145	1,018	1,292
ROCK SEA BASS	609	0	5	1,840	2,453
MISTY GROUPER	1,697	1	0	0	1,698
MAHOGANY SNAPPER	10	11	0	0	21
SCHOOLMASTER	177	503	0	3,084	3,764
BLACK SNAPPER	157	0	0	0	157
BLACKFIN SNAPPER	489	44	123	178	834
QUEEN TRIGGERFISH	0	1,603	429	62	2,093
FRENCH GRUNT	0	17	0	426	443
SPANISH GRUNT	0	0	0	172	172
SMALLMOUTH GRUNT	0	0	0	0	0
COTTONWICK	0	10	0	0	10
GRASS PORGY	0	2	11	68	81
SAUCEREYE PORGY	0	823	221	599	1,643
LONGSPINE PORGY	15	4	0	0	19
PUDDINGWIFE	0	4	0	207	211

Alternative 5. Designate snapper-grouper species with state and federal (combined) landings that are less than, or equal to 10,000 lbs, as EC species.

Table 8. 25 species from Snapper-Grouper FMU with total state and federal (combined) landings from all sectors, that are less than or equal to 10,000 lbs, from 2005-2008.***

COMMON NAME	AVERAGE LBS (whole weight); 2005-2008				
	COMM	HEAD-BOAT	CHARTER BOAT	OTHER REC	≤ 10000 LBS
YELLOWMOUTH GROUPE	75	1,359	587	2,496	4,517
TIGER GROUPE	0	0	0	0	0
CONEY	7	123	145	1,018	1,292
MISTY GROUPE	1,697	1	0	0	1,698
QUEEN SNAPPER	6,444	0	0	352	6,796
MAHOGANY SNAPPER	10	11	0	0	21
DOG SNAPPER	365	265	165	4,221	5,015
SCHOOLMASTER	177	503	0	3,084	3,764
SAND TILEFISH	2,673	1,201	309	3,584	7,767
PUDDINGWIFE	0	4	0	207	211
BLACK SNAPPER	157	0	0	0	157
BLACKFIN SNAPPER	489	44	123	178	834
OCEAN TRIGGERFISH	0	784	932	4,593	6,309
QUEEN TRIGGERFISH	0	1,603	429	62	2,093
BAR JACK	4,933	337	1,688	2,463	9,420
FRENCH GRUNT	0	17	0	426	443
SPANISH GRUNT	0	0	0	172	172
SMALLMOUTH GRUNT	0	0	0	0	0
COTTONWICK	0	10	0	0	10
SAILORS CHOICE	0	26	633	7,612	8,271
GRASS PORGY	0	2	11	68	81
SAUCEREYE PORGY	0	823	221	599	1,643
LONGSPINE PORGY	15	4	0	0	19
ROCK SEA BASS	609	0	5	1,840	2,453
BANK SEA BASS	429	4,247	121	3,317	8,113

***Note: Commercial and recreational data from 2005-2008 were examined (Tables 4-8). Data are based on general canvas data summarized by Linda Hardy Bernstein (4-25-03) and Jack McGovern (May 2009). These represent landings for the South Atlantic including all of Monroe County. Headboat data were summarized by Jennifer Potts (4-28-03) and Jack McGovern. These represent landing for the South Atlantic to the Dry Tortugas. Charter boat and other recreational data were obtained using MRFSS' online custom query feature and summarized by Heather Blough (May 2003) and Jack McGovern (May 2009). These represent data (weight not numbers) for the South Atlantic and do not include Monroe County. Data represent observed and reported harvest only; not fish released alive. 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.

Note: Council needs to clarify guidelines designating preferred approach of removing species that meet more than one criterion in Actions 1 and 2. For example, alternatives in Action 1 would remove French grunt from the FMU based on majority of its landings in state waters. Alternatives in Action 2 would also designate French grunt as an EC species.

2.1.3 Species Groupings

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

Alternative 2. Establish three species groups based on results from Shertzer and Williams (2008). For snapper-grouper species in Table 11 not covered by the assemblages, ACLs, ACTs, and AMs would be specified on an individual basis.

1. Deepwater assemblage: Blueline tilefish, snowy grouper, speckled hind, and yellowedge grouper.
2. Southern assemblage: Blue runner, gray snapper, lane snapper, mutton snapper, and yellowtail snapper.
3. Northern assemblage: Bank sea bass, black sea bass, knobbed porgy, gag, gray triggerfish, greater amberjack, red porgy, red snapper, scamp, tomtate, vermilion snapper, white grunt, and whitebone porgy.

Alternative 3. Use spatial and temporal patterns from Shertzer *et al.* (2009) to establish three species groups. For snapper-grouper species in Table 11 not covered by the assemblages, ACLs, ACTs, and AMs would be specified on an individual basis.

1. North Carolina and South Carolina.
2. Georgia and N. Florida (north of Cape Canaveral).
3. South Florida (south of Cape Canaveral, including the Keys).

Note: Shertzer *et al.* (2009) do not provide list of species for three different geographic areas. Would have to request information from SEFSC.

Alternative 4. Use information from Shertzer *et al.* (2009), to establish two species groups for snapper-grouper species, north and south of the Cape Canaveral zoogeographic boundary (Table 9).

Table 9. Table 3 from Shertzer *et al.* (2009).

Table 3

Contributions of reef fishes toward the distinction of zoogeographic regions in recreational and commercial data sets.

Species	\bar{x}_{north}	\bar{x}_{south}	$\bar{\delta}_k$	$SD(\delta_k)$	$\bar{\delta}_k/SD(\delta_k)$	$\sum \bar{\delta}_k\%$
Recreational data set						
Black sea bass	17.52	0.90	4.81	1.30	3.68	11.26
Yellowtail snapper	0.57	15.77	4.53	0.93	4.88	21.87
Mutton snapper	0.45	12.13	4.01	0.71	5.61	31.26
Blue runner	0.39	6.98	2.65	0.60	4.44	37.47
Lane snapper	2.21	6.75	2.44	1.22	2.01	43.20
Gray snapper	3.37	8.77	2.26	1.35	1.68	48.50
Red snapper	6.62	0.92	2.15	1.16	1.86	53.55
Tomtate	8.59	2.56	2.01	1.20	1.68	58.27
Whitebone porgy	5.30	0.78	2.00	0.78	2.56	62.96
Gag	9.05	2.40	1.93	0.83	2.31	67.48
Vermilion snapper	11.37	4.26	1.87	0.96	1.95	71.87
Scamp	5.75	2.61	1.76	1.07	1.64	75.99
Bluestriped grunt	0.16	2.77	1.70	0.59	2.90	79.98
White grunt	7.25	8.28	1.68	1.11	1.51	83.91
Knobbed porgy	2.78	5.43	1.55	1.03	1.51	87.54
Gray triggerfish	9.70	5.35	1.44	0.84	1.72	90.92
Red grouper	3.04	6.75	1.37	0.93	1.47	94.13
Greater amberjack	5.02	3.44	1.26	0.61	2.05	97.08
Jolthead porgy	0.87	3.16	1.25	0.75	1.66	100.00
Commercial data set						
Yellowtail snapper	1.08	30.24	8.35	3.14	2.66	17.71
Black sea bass	20.36	0.63	6.69	2.53	2.65	31.90
Blue runner	0.33	13.46	5.46	1.68	3.25	43.48
Gag	22.49	4.91	5.08	2.32	2.19	54.26
Vermilion snapper	17.26	2.43	4.60	2.44	1.88	64.01
Mutton snapper	1.06	12.47	4.48	1.22	3.68	73.51
Gray snapper	5.37	11.30	3.26	1.91	1.71	80.41
White grunt	6.84	2.56	2.4	1.52	1.58	85.51
Red grouper	9.01	3.70	1.88	1.34	1.40	89.50
Greater amberjack	11.06	8.81	1.77	1.37	1.29	93.25
Black grouper	3.67	5.64	1.76	1.19	1.48	96.98
Snowy grouper	1.48	3.86	1.42	0.85	1.68	100.00

Data are summarized by the average proportion of trips (\bar{x} , prior to transformation) that caught species in each region, north or south, with separation near Cape Canaveral, Florida. Species are ordered by their contribution ($\bar{\delta}_k$) to the average dissimilarity ($\bar{\delta}$) between the two zoogeographic regions, reflected in the cumulative contribution ($\sum \bar{\delta}_k\%$) to $\bar{\delta}$. Consistency of contribution is quantified by the standard deviation (SD). Values in first four columns were multiplied by 100.

Alternative 5. Establish species groups for fish under the Snapper-Grouper FMU following methodology used for the Gulf of Mexico and Caribbean ACL Amendments.

(In progress)

Alternative 6. Snapper-grouper species groupings based on similar life histories (Table 10). Table 10. Composition and division of Snapper Grouper FMU (indicator species in bold).

SHALLOW WATER GROUPE UNIT 1 Gag Red grouper Red hind Rock hind Yellowmouth grouper Tiger grouper Black grouper Yellowfin grouper Graysby Coney Scamp UNIT 2 Goliath grouper UNIT 3 Nassau grouper DEEP WATER GROUPE AND TILEFISH UNIT Snowy grouper Yellowedge grouper Warsaw grouper Speckled hind Misty grouper Tilefish (golden) Blueline tilefish Queen snapper WRECKFISH Wreckfish SHALLOW WATER SNAPPER, TILEFISH, AND WRASSE UNIT Yellowtail snapper Mutton snapper Gray (mangrove) snapper Lane snapper	Mahogany snapper Dog snapper Schoolmaster Cubera snapper Sand tilefish Puddingwife Hogfish MID-SHELF SNAPPER UNIT Vermilion snapper Silk snapper Red snapper Black snapper Blackfin snapper TRIGGERFISH AND SPADEFISH UNIT Gray triggerfish Ocean triggerfish Queen triggerfish Atlantic Spadefish JACK UNIT Greater amberjack Lesser amberjack Almaco jack Banded rudderfish Yellow jack Blue runner Bar jack Crevalle jack GRUNT AND PORGY UNIT 1 Red porgy UNIT 2 White grunt Porkfish Margate Black margate	Tomtate Bluestriped grunt French grunt Spanish grunt Smallmouth grunt Cottonwick Sailors choice Grass porgy Jolthead porgy Saucereye porgy Whitebone porgy Knobbed porgy Longspine porgy Sheepshead Scup SEA BASS UNIT Black sea bass Rock sea bass Bank sea bas
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2.1.4 Acceptable Biological Catch Control Rule

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.

Alternative 3a. ABC=65%OFL

Alternative 3b. ABC=75%OFL

Alternative 3c. ABC=85%OFL

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

Alternative 4a. ABC=yield at 65%MFMT

Alternative 4b. ABC=yield at 75%MFMT

Alternative 4c. ABC=yield at 85%MFMT

Alternative 5. Establish ABCs based on the SSC's ABC control rule.

(see SSC Report for the ABC Values)

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*).

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

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

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

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

2.1.5 Allocations & Sector ACLs

Alternative 1. No Action. Retain the current allocations. Do not specify allocations for those species where no allocations have been specified.

	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%

Alternative 2. Divide allocations among two sectors, commercial and recreational.

Use the following equation:

Allocation by sector = (0.5 * catch history) + (0.5 * current trend) whereby, catch history = 1986 onward, current trend = 2006-2008 for this amendment, and 3 years rolling forward for future amendments. (As per Council motion from September, 2008).

Alternative 3. Divide allocations among three sectors, commercial, recreational, and for-hire.

Use the following equation:

Allocation by sector = (0.5 * catch history) + (0.5 * current trend) whereby, catch history = 1986 onward, current trend = 2006-2008 for this amendment, and 3 years rolling forward for future amendments. (As per Council motion from September, 2008).

2.1.6 Annual Catch Limits

Alternative 1 (No Action). Do not specify ACLs for species in the Snapper Grouper FMU where needed.

Alternative 2.

Alternative 3.

2.1.7 Annual Catch Targets

Alternative 1 (No Action). Do not specify ACTs for species in the Snapper Grouper FMU that are currently not undergoing overfishing, or with unknown status.

Alternative 2.

Alternative 3.

2.1.8 Accountability Measures

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

Alternative 2.

Alternative 3.

2.1.9 Management Measures

2.1.9.1 Greater Amberjack

Alternative 1 (No Action). Retain the current commercial regulations for greater amberjack in the South Atlantic:

Commercial Regulations

36" FL size limit; commercial season closed April 1-30; 1,169,931 lb quota (gutted weight). No sale after quota is reached. After the commercial quota is met, all purchase and sale is prohibited and harvest and/or possession is limited to the recreational bag limit. This prohibition does not apply to fish harvested, landed, and sold prior to the quota being reached and held in cold storage by a dealer. No sale in April. Possession limited to 1/person/day or 1/person/trip, which is more restrictive. 1,000 lb trip limit until the quota is reached.

Alternative 2. Change the commercial trip limit for greater amberjack.

Alternative 2a. Increase the greater amberjack commercial trip limit to 2,000 lbs.

Alternative 2b. Increase the greater amberjack commercial trip limit to 1,500 lbs.

2.2 Snapper Grouper Fishery Management Plan (red grouper)

Background

The SSC approved the recent SEDAR 19 Red Grouper assessment as based on the best available science and advises that management measures be formulated in accordance with the base assessment model run. The SSC supports the conclusion of the review panel that the South Atlantic red grouper stock is undergoing overfishing ($F_{CURRENT}/F_{MSY} = 1.35$) and is overfished ($SSB_{2008}/MSST = 0.92$). The SSC's recommendations for the overfishing limit (OFL) and acceptable biological catch (ABC) are 669,000 and 665,000 lbs whole weight, respectively.

The Council must implement actions to end overfishing of red grouper and specify a rebuilding plan to rebuild the stock. However, the assessment used landings through 2008. Regulations pertaining to red grouper were implemented on July 29, 2009.

2.2.1 Maximum Sustainable Yield

Table 1. MSY alternatives for red grouper.

Alternatives	Equation	F_{MSY}	MSY Values (lbs whole weight)
Alternative 1 (No Action)	MSY equals the yield produced by F_{MSY} . $F_{30\%SPR}$ is used as the F_{MSY} proxy.	$F_{30\%SPR} = 0.28^1$	not specified
Alternative 2	MSY equals the yield produced by F_{MSY} or the F_{MSY} proxy. MSY and F_{MSY} are recommended by the most recent SEDAR/SSC.	0.221^2	$1,110,000^3$

¹Potts and Brennan (2001)

^{2,3}SEDAR 19 (2010)

2.2.2 Rebuilding Schedule

Alternative 1 (No Action). There currently is not a rebuilding plan for red grouper. Snapper Grouper Amendment 4 (regulations effective January 1992) implemented a 15-year rebuilding plan beginning in 1991 which expired in 2006.

Alternative 2. Define a rebuilding schedule as the shortest possible period to rebuild in the absence of fishing mortality (T_{MIN}). This would equal 3 years with the rebuilding time period ending in 2013. 2011 is Year 1.

Alternative 3. Define a rebuilding schedule as the mid-point between the shortest possible and maximum recommended period to rebuild. This would equal 6.5 years with the rebuilding time period ending in 2016. 2011 is Year 1.

Alternative 4. Define a rebuilding schedule as the maximum period allowed to rebuild (T_{MAX}). This would equal 10 years with the rebuilding time period ending in 2020. 2011 is Year 1.

2.2.3 Rebuilding Strategy (Including Annual Catch Limits and Optimum Yield)

Alternatives	Rebuilding strategy (F _{OY} Equal To)	ACL in Year 1 of Rebuilding (2011) ¹ (lbs whole weight) <i>Landings and Discards</i>	ACL in Year 1 of Rebuilding (2011) ¹ (lbs whole weight) <i>Just Landings</i>	OY Values at Equilibrium (lbs whole weight)
Alternative 1 (No Action)	F _{45%SPR}	Not specified	Not specified	Need projection
Alternative 2	F _{REBUILD}	665,000	622,000	1,126,000
Alternative 3	85%F _{40%SPR}	668,000	643,000	1,103,000
Alternative 4	75%F _{40%SPR}	613,000	573,000	1,089,000
Alternative 5	65%F _{30%SPR}	535,000	501,000	1,064,000

¹For alternative 2-5, the ACL specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 1 (No Action). Maintain a yield-based rebuilding strategy for red grouper where $F_{OY} = F_{45\%SPR}$. Under this strategy, the fishery would have a XX% chance of rebuilding to SSB_{MSY} by 20XX and a XX% chance of rebuilding to SSB_{MSY} by 20XX based on a $F_{40\%SPR}$ proxy for F_{MSY} . Optimum Yield and ACL are not specified.

Need to request this projection from the Science Center.

Alternative 2. Define a rebuilding strategy for red grouper that sets F_{OY} equal to $F_{REBUILD}$. $F_{REBUILD}$ is a fishing mortality rate that would have a 70% probability of rebuilding success to SSB_{MSY} in T_{MAX} (Ten years for red grouper). OY at equilibrium would be 1,126,000 lbs whole weight. Under this strategy, the fishery would have at least a 50% chance of rebuilding to SSB_{MSY} by 2017 and 70% chance of rebuilding to SSB_{MSY} by 2020.

OFL equals 669,000 lbs whole weight. The maximum landings and discards under this projection is 665,000,000 lbs whole weight; this is the SSC's recommendation for ABC.

ACL equals 665,000 lbs whole weight with dead discards and 622,000 lbs whole weight without dead discards.

Table X. Projection results if the fishing mortality rate is fixed at $F = \text{Rebuild}$.

Year	F(per year)	Probability of Rebuilt Stock	Maximum Allowable Kill		
			Landings	Discards	Total
2009	0.298	0	61,000	1,098,000	1,159,000
2010	0.298	0	70,000	985,000	1,055,000
2011 (Year 1)	0.181	0.01	43,000	622,000	665,000
2012	0.181	0.06	44,000	693,000	737,000
2013	0.181	0.15	44,000	762,000	806,000
2014	0.181	0.26	44,000	822,000	866,000
2015	0.181	0.36	45,000	873,000	918,000
2016	0.181	0.46	45,000	915,000	960,000
2017	0.181	0.54	45,000	951,000	996,000
2018	0.181	0.61	45,000	980,000	1,025,000
2019	0.181	0.66	46,000	1,004,000	1,050,000
2020	0.181	0.7	46,000	1,023,000	1,069,000

Alternative 3. Define a rebuilding strategy for red grouper that sets F_{OY} equal to 85% F_{MSY} . OY at equilibrium would be 1,103,000 lbs whole weight. Under this strategy, the fishery would have at least a 50% chance of rebuilding to SSB_{MSY} by 2018 and 64% chance of rebuilding to SSB_{MSY} by 2020.

OFL equals 669,000 lbs whole weight. The maximum landings and discards under this projection is 668,000 lbs whole weight.

ACL equals 668,000 lbs whole weight with dead discards and 643,000 lbs whole weight without dead discards.

Table X. Projection results if the fishing mortality rate is fixed at $F = 85\%F_{MSY}$.

Year	F(per year)	Probability of Rebuilt Stock	Maximum Allowable Kill		
			Landings	Discards	Total
2009	0.298	0	1,098,000	61,000	1,159,000
2010	0.298	0	985,000	70,000	1,055,000
2011 (Year 1)	0.188	0.01	643,000	45,000	688,000
2012	0.188	0.06	714,000	45,000	759,000
2013	0.188	0.14	781,000	46,000	827,000
2014	0.188	0.23	839,000	46,000	885,000
2015	0.188	0.33	888,000	46,000	934,000
2016	0.188	0.42	930,000	47,000	977,000
2017	0.188	0.49	964,000	47,000	1,011,000
2018	0.188	0.55	991,000	47,000	1,038,000
2019	0.188	0.6	1,014,000	47,000	1,061,000
2020	0.188	0.64	1,032,000	47,000	1,079,000

Alternative 4. Define a rebuilding strategy for red grouper that sets F_{OY} equal to 75% F_{MSY} . OY at equilibrium would be 1,089,000 lbs whole weight. Under this strategy, the fishery would have at least a 50% chance of rebuilding to SSB_{MSY} by 2016 and 81% chance of rebuilding to SSB_{MSY} by 2020.

OFL equals 669,000 lbs whole weight. The maximum landings and discards under this projection is 613,000 lbs whole weight.

ACL equals 613,000 lbs whole weight with dead discards and 573,000 lbs whole weight without dead discards.

Table X. Projection results if the fishing mortality rate is fixed at $F = 75\%F_{MSY}$.

Year	F(per year)	Probability of Rebuilt Stock	Maximum Allowable Kill		
			Landings	Discards	Total
2009	0.298	0	1,098,000	61,000	1,159,000
2010	0.298	0	985,000	70,000	1,055,000
2011 (Year 1)	0.166	0.01	573,000	40,000	613,000
2012	0.166	0.07	647,000	40,000	687,000
2013	0.166	0.18	718,000	41,000	759,000
2014	0.166	0.31	780,000	41,000	821,000
2015	0.166	0.44	834,000	41,000	875,000
2016	0.166	0.55	880,000	42,000	922,000
2017	0.166	0.64	919,000	42,000	961,000
2018	0.166	0.72	951,000	42,000	993,000
2019	0.166	0.77	977,000	42,000	1,019,000
2020	0.166	0.81	999,000	42,000	1,041,000

Alternative 5. Define a rebuilding strategy for red grouper that sets F_{OY} equal to 65% F_{MSY} . OY at equilibrium would be 1,064,000 lbs whole weight. Under this strategy, the fishery would have at least a 50% chance of rebuilding to SSB_{MSY} by 2016 and 81% chance of rebuilding to SSB_{MSY} by 2020.

OFL equals 669,000 lbs whole weight. The maximum landings and discards under this projection is 535,000 lbs whole weight.

ACL equals 535,000 lbs whole weight with dead discards and 501,000 lbs whole weight without dead discards.

Table X. Projection results if the fishing mortality rate is fixed at $F = 65\%F_{MSY}$.

Year	F(per year)	Probability of Rebuilt Stock	Maximum Allowable Kill		
			Landings	Discards	Total
2009	0.298	0	1,098,00	61,000	1,159,000
2010	0.298	0	985,00	70,000	1,055,000
2011 (Year 1)	0.144	0.01	501,000	34,000	535,000
2012	0.144	0.08	575,000	35,000	610,000
2013	0.144	0.23	648,000	35,000	683,000
2014	0.144	0.4	713,000	36,000	749,000
2015	0.144	0.56	770,000	36,000	806,000
2016	0.144	0.69	820,000	36,000	856,000
2017	0.144	0.78	863,000	37,000	900,000
2018	0.144	0.85	898,000	37,000	935,000
2019	0.144	0.89	928,000	37,000	965,000
2020	0.144	0.92	953,000	37,000	990,000

2.2.4 Allocations & Sector ACLs

Alternative 1 (No action). Do not specify allocations for red grouper.

Alternative 2. Divide allocations among two sectors, commercial and recreational.

Use the following equation:

Allocation by sector = (0.5 * catch history) + (0.5 * current trend) whereby, catch history = 1986 onward, current trend = 2006-2008 for this amendment, and 3 years rolling forward for future amendments. (As per Council motion from September, 2008).

The allocation would be 47% commercial and 53% recreational. The commercial ACL in 2011 would be XXXXX lbs gutted weight each year. The recreational ACL would be XXXXX lbs gutted weight each year. The commercial quota and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Based on landings in red grouper assessment.

Alternative 3. Divide allocations among three sectors, commercial, recreational, and for-hire.

Use the following equation:

Allocation by sector = (0.5 * catch history) + (0.5 * current trend) whereby, catch history = 1986 onward, current trend = 2006-2008 for this amendment, and 3 years rolling forward for future amendments. (As per Council motion from September, 2008).

The allocation would be 47% commercial, XX% recreational, and XX% for-hire. The commercial ACL in 2011 would be XXXXX lbs gutted weight each year. The recreational ACL would be XXXXX lbs gutted weight each year. The commercial quota and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Will have to request MRFSS landings from assessment be broken down into rec and for hire. It is not possible to get red grouper landings from Monroe County from MRFSS Web site. So landings in assessment are higher than Web site because of this factor.

2.2.5 Accountability Measures/Management Measures

Alternative 1 (No Action). Retain the following 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.	
Proposed Regulations (17B)		
	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 met.	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 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.

	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 ACL (proposed in Amend 17B)	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 from the change in aggregate bag limit from 5 to 3.

Commercial

Alternative 2. After the commercial ACL is met, all purchase and sale of red grouper 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.

Recreational

Alternative 4. 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. 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 6. 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.

Note: Will need to adjust alternatives if the recreational sector ACL is split between private and for-hire.

Discussion

The required reduction in red grouper removals to achieve ACL is depends on the selected rebuilding strategy. The current range for red grouper ACLs alternatives in the rebuilding strategy action ranges from 501,000 to 622,000 lbs whole weight (just landings) and 535,000 to 665,000 lbs whole weight (landings and discards). This is a range in harvest reduction (prior to Amendment 16 regulations) of 30% to 50% from projected 2010 landings levels.

The expected red grouper landings following the actions in Amendment 16 (4 month closure and change in aggregate bag limit from 5 to 3) is 498,317 lbs whole weight. This value is a component of the commercial and recreational ACLs for gag, black grouper, and red grouper proposed in Amendment 17B. As the red grouper ACL portion of the combined ACL for gag, red grouper, and black grouper is less (498,317 lbs whole weight) than the range ACLs specified in the different rebuilding strategies, it appears that sufficient action may have been taken to end overfishing in Amendment 16.

Amendment 16 and 17B analyzed the effects to red grouper from the actions in Amendment 16 (4 month closure and change in aggregate bag limit from 5 to 3). The expected landings following the actions in Amendment 16 was determined by removing January through April and December landings from recent landings (2004-2006) and applying a 2.5% reduction from the bag limit change. This would result in a 21% reduction from 2004-2006 red grouper landings.

2.3 Snapper Grouper Fishery Management Plan (wreckfish)

2.3.1 Maximum Sustainable Yield

Alternative 1 (No action). There is no MSY specified for wreckfish, and this is a requirement of the MSA.

Alternative 2. Maximum Sustainable Yield (MSY) equals the yield produced by F_{MSY} or $F_{MSY\text{ Proxy}}$. MSY and F_{MSY} or $F_{MSY\text{ Proxy}}$ are defined by the most recent SEDAR/SSC process.

Alternative 3. MSY = 1.946 million pounds. This figure is the average landings from 1988-1994 which represent the years of high landings.

Alternative 4. MSY = 0.835 million pounds. This figure is the average landings from 1988-2007 which represent all years of landings with the exception of 2001 and 2003 when landings are confidential. (INCLUDE 2001 AND 2003 IF CONFIDENTIALITY ISSUES ARE RESOLVED.)

2.3.2 Optimum Yield

Alternative 1 (No action).

Alternative 2: Optimum Yield (OY) equals the yield produced by F_{OY} . If wreckfish are overfished, F_{OY} equals the fishing mortality rate specified by the rebuilding plan designed to rebuild the stock to SSB_{MSY} within the approved schedule. After the stock is rebuilt, F_{OY} equals the yield produced by a fraction of F_{MSY} (e.g., 65%, 75% or 85% of F_{MSY} ; Councils to specify).

2.3.3 Overfishing Limits

Alternative 1 (No action).

Alternative 2: Specify the Maximum Fishing Mortality Threshold (MFMT) as F_{MSY} or $F_{MSY\text{ Proxy}}$. F_{MSY} or $F_{MSY\text{ Proxy}}$ are defined by the most recent SEDAR/SSC process. This should equal the Overfishing Level (OFL) provided by the Scientific and Statistical Committees. The Councils will compare the most recent value for the current fishing mortality rate (F) from the SEDAR/SSC process to the level of fishing mortality that would result in overfishing (maximum fishing mortality threshold or MFMT) and if the current F is greater than the MFMT, overfishing is occurring. Comparing these two numbers:

- $F_{CURRENT}/MFMT = X.XXX$

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

Alternative 3. $OFL = F_{MSY} = F_{30\%SPR} = 0.25$ based on $M = 0.10$ and combined indices (Vaughan et al., 2001; Table 6).

Alternative 4. $OFL = F_{MSY} = F_{40\%SPR} = 0.14$ based on $M = 0.07$ and combined indices (Vaughan et al., 2001; Table 6).

2.3.4 Overfished Threshold

Alternative 1: No Action – $MSST$ equals $SSB_{MSY}((1-M)$ or 0.5, whichever is greater).

Alternative 2: Specify the Minimum Stock Size Threshold ($MSST$) as XXX million pounds. $MSST$ is defined by the most recent SEDAR/SSC process. The Councils will compare the current spawning stock biomass (SSB) from the SEDAR/SSC process to the level of spawning stock biomass that could be rebuilt to the level to produce the MSY in 10 years. This is referred to as the minimum spawning stock biomass or $MSST$. Comparing these two numbers:

- $SSBCURRENT/MSST = Y.YYY$

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

2.3.5 ABC Control Rule

Alternative 1. No action. There is no ABC control rule and no ABC specified for wreckfish. The Total Allowable Catch (TAC) has been set at 2 million pounds since 1990 first through an emergency rule and then through Snapper Grouper Amendment 3 (1991).

Alternative 2. ABC is recommended by the Scientific and Statistical Committee and specified by the Council. The SSC will provide an ABC control rule and a value for ABC at their April 2010 meeting.

Alternative 3. $ABC = 1.75$ million pounds. This is 197,000 pounds less than MSY Alternative 2 (1.946 million pounds).

Alternative 4. $ABC = 1.5$ million pounds. This is 447,000 pounds less than MSY Alternative 2 (1.946 million pounds).

Alternative 5. $ABC =$ Amount equal to that calculated with the use of the ABC control rule developed by the SSC.

2.3.6 Annual Catch Limit

Alternative 1. No action. The ACL is equivalent to TAC as used in the past. Currently TAC or ACL =2.0 million pounds based on an ABC of _____million pounds.

Alternative 2. ACL = x.x million pounds which is the best point estimate of the ABC range; the SSC will provide their OFL and ABC recommendations at their April 2010 meeting.

Alternative 3. ACL = y.y million pounds which is the top end of the ABC range; the SSC will provide their OFL and ABC recommendations at their April 2010 meeting.

Alternative 4. ACL = z.z million pounds which is the low end of the ABC range; the SSC will provide their OFL and ABC recommendations at their April 2010 meeting.

Note: This action was suggested by the IPT for Council consideration.

2.3.7 Allocations

Alternative 1. No action. There is no specified allocation but the TAC is essentially allocated 100% to the commercial sector.

Alternative 2. 90% Commercial / 10% Recreational

Alternative 3. 95% Commercial / 5% Recreational

Alternative 4. 100% Commercial / 0% Recreational

Note: The IPT discussed whether the Council was interested in establishing some sort of trade of quota between the commercial and recreational sectors.

2.3.8 Management Measures

Spawning Season

Alternative 1. No action. Keep the January 15-April 15 spawning season closure.

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

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

Action . Wreckfish Management Measures for the Recreational Sector

Alternative 1. No action. Do not change management measures for the recreational fishery.

Alternative 2. Remove wreckfish from the 20 fish aggregate snapper grouper bag limit.

Alternative 3. Implement a one wreckfish per vessel per day bag limit for the recreational fishery.

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

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

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

Alternative 7. Implement a 10 wreckfish per vessel per day bag limit for the recreational fishery.

Alternative 8. Implement a 10 wreckfish per angler per day bag limit for the recreational fishery.

Alternative 9. Implement a 20 wreckfish per vessel per day bag limit for the recreational fishery.

Alternative 10. Implement a 20 wreckfish per angler per day bag limit for the recreational fishery.

Alternative 11. Implement a spawning season closure for the recreational fishery that is compatible with the current one for the commercial sector.

Note: This action was suggested by the IPT for Council consideration in the event that the Council chooses to allocate a portion of the TAC to the recreational sector.

2.4 Dolphin Wahoo Fishery Management Plan

DECISION DOCUMENT

SAFMC/MAFMC/NEFMC ITEMS FOR DOLPHIN WAHOO IN THE COMPREHENSIVE ACL AMENDMENT DOLPHIN WAHOO COUNCIL SESSION

June 10, 2010

Renaissance Orlando Airport Hotel
Orlando, Florida

This Decision Document includes actions by the following groups:

1. SAFMC Committee & Council actions from June 2009 meeting.
2. SAFMC AP actions from August 18-19, 2009 meeting.
3. SAFMC Council actions from September 2009 meeting.
4. SAFMC Council actions from December 2009 meeting.

MAY 2010

South Atlantic Fishery Management Council
Mid-Atlantic Fishery Management Council
New England Fishery Management Council
National Marine Fisheries Service

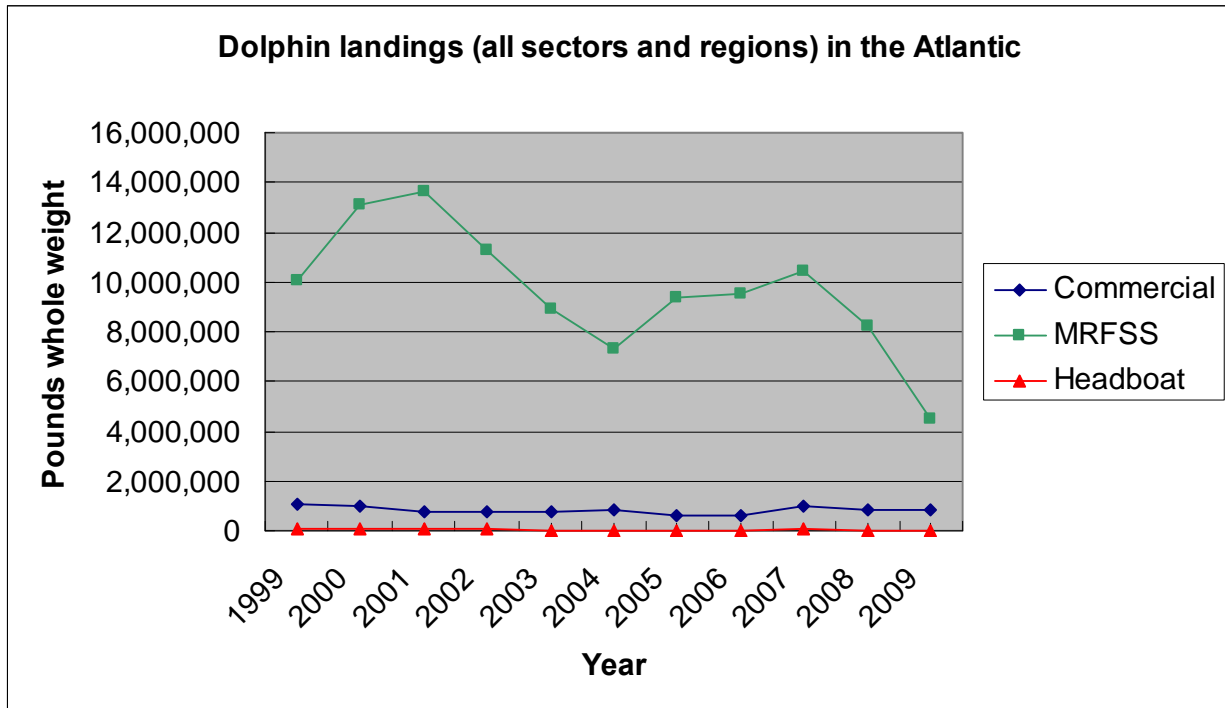
I. Dolphin

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.

1 Action 1. Specify MSY, MSST, MFMT/OFL, ABC, OY, ACL, ALLOCATIONS AND ACT levels for Dolphin

The MSY, MSST, OFL and ABC will come from each SEDAR assessment and the recommendations of the SSC as they review each assessment. The SSC has provided specific OFL and ABC recommendations.

1.1 Maximum Sustainable Yield (MSY), Minimum Stock Size Threshold (MSST) and Maximum Fishing Mortality Threshold (MFMT)

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.

Previously, the Councils (South Atlantic, Mid-Atlantic and New England Councils) were considering the following alternatives:

A. Maximum Sustainable Yield (MSY)

Option 1. No action. 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.

Option 2. MSY = 26,986,790 pounds (12,241 mt). This figure is from a production model by Prager (2000) and would apply for dolphin in the Atlantic, U.S. Caribbean, and Gulf of Mexico.

Option 4. Specify MSY separately for the Atlantic at _____ million pounds.

Option 5. Recommended MSY from the Scientific and Statistical Committee (SSC).

OPTION 6. SPECIFY MSY AS 46.5 MILLION POUNDS FOR THE ATLANTIC, U.S. CARIBBEAN, AND GULF OF MEXICO.

Dolphin Wahoo AP Discussion & Recommendations

One AP member supported Option 1. No action. There was no support for Options 2, 3, & 4. Nine AP members supported Option 5. The AP recommended adding Option 6 which is the top end of the current MSY range.

Committee/Council Discussion & Recommendations

The Council approved a motion moving the option for MSY = 15,882,100 – 17,833,190 pounds to Appendix A.

The Councils have determined that in the Atlantic, U.S. Caribbean, and Gulf of Mexico the minimum stock size threshold (**MSST**) for dolphin 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% B_{MSY} . 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.

The Councils have determined that the value for the maximum fishing mortality threshold (**MFMT**) for dolphin in the Atlantic, U.S. Caribbean, and Gulf of Mexico is defined as a fishing mortality rate (F) in excess of F_{MSY} ($F_{30\% \text{Static SPR}}$). There is no updated MFMT estimate, and the SSC did not provide any new guidance on MSST. Therefore, the existing MFMT will remain until a SEDAR assessment is conducted.

1.2 Overfishing Level (OFL)

The Scientific and Statistical Committee 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).”

Previously, the Councils (South Atlantic, Mid-Atlantic and New England Councils) were considering the following alternatives:

Option 1. No action.

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 F_{MSY} ($F_{30\% \text{Static SPR}}$).

A minimum stock size threshold (MSST) – In the Atlantic, U.S. Caribbean, and Gulf of Mexico the minimum stock size threshold for dolphin 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% B_{MSY} . 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.

Option 2. $OFL = F_{MSY} = 0.49$ based on a production model (Prager 2000; Table 4).

Option 3. Specify OFL separately for the Atlantic at _____.

Option 4. Value recommended by the SSC.

Dolphin Wahoo AP Discussion & Recommendations

The AP supported Option 4.

Committee/Council Discussion & Recommendations

The Council approved this range of alternatives.

1.3 Acceptable Biological Catch (ABC) Control Rule and ABC

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.

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

Option 2. A potential ABC range = 17,541,414 – 22,938,772 pounds based on 65% to 85% of MSY Option 2 and would apply for dolphin in the Atlantic, U.S. Caribbean, and Gulf of Mexico. This likely ABC range is presented for initial discussions; the SSC will provide their OFL and ABC recommendations at their June or December 2009 meeting.

Option 3. Specify ABC separately for the Atlantic at _____ pounds.

Option 4. Establish ABC based on the SSC's Data Poor ABC control rule. The SSC decided to develop OFL for each species based on median of landings for 1999 to 2008. From there, they will apply the ABC control rule for all the species together for each species grouping to develop the ABC reduction level. The results of the ABC control rule will be multiplied by the OFL to determine the reduction to the OFL for the grouping to each individual species. Each ABC would start at 35% (0% for unknown depletion, 15% because not forage or habitat, ___% the appropriate PSA score, 20% out of 25% for certainty of OFL level) of OFL. The variability in the ABC will be that they will have to use the PSA for each species and add the appropriate percent to the ABC that will come up with the appropriate level. The range of ABC for each data poor species will be 35% to 55% of OFL. This approach will be revisited species by species as more data become available. This is considered the "Triage Approach" for the snapper grouper data poor species. Current species exceptions are golden tilefish, yellow tail snapper, wreckfish, and amberjack. Since the Council is following the red porgy rebuilding plan, they won't be included in this data poor snapper grouper analysis.

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 (OFL = 11,882,898 pounds; the mean was used instead of the median because of the short landings time series). Application of the data-poor control rule generated the following adjustments (Tier 1: +15%, Tier 2: +15%, Tier 3: +20%, Tier 4: +25%) and determined an ABC value equal to 75% of OFL. Therefore, **ABC for dolphin = 8,912,174 lbs for the entire Atlantic stock.**

Dolphin Wahoo AP Discussion & Recommendations

The AP supported Option 4.

Committee/Council Discussion & Recommendations

The Council approved this range of alternatives.

The Council is also considering the following non-SSC Control Rules:

Alternative 5. Establish an ABC Control Rule where ABC equals OFL.

Alternative 6. Establish an ABC Control Rule where ABC equals a percentage of OFL.

Alternative 6a. ABC=65% OFL

Alternative 6b. ABC=75% OFL

Alternative 6c. ABC=85% OFL

Alternative 7. Establish an ABC Control Rule where ABC equals a percentage of the yield at MFMT.

Alternative 7a. ABC=yield at 65%MFMT

Alternative 7b. ABC=yield at 75%MFMT

Alternative 7c. ABC=yield at 85%MFMT

Alternative 8. Establish an ABC Control Rule where ABC is a percentage of OFL. The percentage is based upon the level of risk of overfishing (P*).

Alternative 8a. ABC=X% of OFL. The X% is based upon P* equals .20.

Alternative 8b. ABC=X% of OFL. The X% is based upon P* equals .30.

Alternative 8c. ABC=X% of OFL. The X% is based upon P* equals .40.

Alternative 8d. ABC=X% of OFL. The X% is based upon P* equals .50.

1.4 Optimum Yield (OY)

Currently 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).

Alternative 1. No action. Currently 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).

Alternative 2. OY = ABC.

Alternative 3. OY = ????

1.5 Allocations

Alternative 1 (Status Quo). Do not define allocations for dolphin.

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 xx% commercial and yy% recreational. Beginning in 2011, the commercial allocation would be _____ lbs gutted weight and the recreational allocation would be _____ fish (_____ lbs gutted weight). The commercial and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 3. Define allocations for dolphin 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 xx% commercial and yy% recreational. Beginning in 2011, the commercial allocation would be _____ lbs gutted weight and the recreational allocation would be _____ fish (_____ lbs gutted weight). 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 xx% commercial and yy% recreational. Beginning in 2011, the commercial allocation would be _____ lbs gutted weight and the recreational allocation would be _____ fish (_____ lbs gutted weight). The commercial and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 5. 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 xx% commercial, yy% for-hire, and zz% private recreational. Beginning in 2011, the commercial allocation would be _____ lbs gutted weight, the for-hire allocation would be _____ fish (_____ lbs gutted weight), and the private recreational allocation would be _____ fish (_____ lbs gutted weight). The commercial, for-hire, and private recreational allocations specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 6. Split the allocations for dolphin equally among the two sectors. The allocation would be 50% commercial and 50% recreational. Beginning in 2011, the commercial allocation would be _____ lbs gutted weight and the recreational allocation would be _____ fish (_____ lbs gutted weight). The commercial and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Committee/Council Discussion & Recommendations

The Council directed staff to include allocation alternatives with the formula. The Committee should provide guidance on:

1. Years of data to be used. NMFS has provided landings data from 1999 onwards. Previous allocation discussions looked at 1986 onwards.
2. Headboat data from New England and Mid-Atlantic – should this be included?

Are these alternatives sufficient?

1.6 Annual Catch Limit (ACL)

Option 1. No action. There is no ACL specified for dolphin.

Option 2. ACL = 17,541,414 pounds based on 65% of MSY Option 2 and would apply for dolphin in the Atlantic, U.S. Caribbean, and Gulf of Mexico.

Option 3. ACL = 20,240,093 pounds based on 75% of MSY Option 2 and would apply for dolphin in the Atlantic, U.S. Caribbean, and Gulf of Mexico.

Option 4. ACL = 22,938,772 pounds based on 85% of MSY Option 2 and would apply for dolphin in the Atlantic, U.S. Caribbean, and Gulf of Mexico.

Option 5. Specify ACL separately for the Atlantic at 8,912,174 pounds. This equals the ABC recommended by the SSC.

Option 6. ACL = X% of ABC = _____ pounds.

Dolphin Wahoo AP Discussion & Recommendations

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.

Committee/Council Discussion & Recommendations

The Council approved this range of alternatives.

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.

1.7 Annual Catch Target (ACT)

1.7.1 Commercial Sector ACT

Alternative 1. Do not specify commercial sector ACTs for dolphin.

Alternative 2. The commercial sector ACT equals the commercial sector ACL.

Alternative 3. The commercial sector ACT equals 90% of the commercial sector ACL.

Alternative 4. 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 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)
Dolphin				

1.7.2 Recreational Sector ACT

Alternative 1 (no action). Do not specify recreational sector ACTs for dolphin.

Alternative 2. The recreational sector ACT equals 85% of the recreational sector ACL.

Alternative 3. The recreational sector ACT equals 75% of the recreational sector ACL.

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

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		

Table 4. The recreational 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 Recreational Sector ACL	Recreational Sector ACT		
		ACT Alt. 2; ACT=75%(ACL)	ACT Alt. 3; ACT=75%(ACL)	ACT Alt. 4; ACT equals sector ACL[(1-PSE) or 0.5, whichever is greater]
Dolphin				

1.8 Action 2. Specify Accountability Measures (AMs) for Dolphin

Option 1 (Status Quo). There is no hard quota for dolphin and there are no AMs in place for dolphin.

Option 2. The commercial AM for this stock is to prohibit harvest, possession, and retention when the quota is met. All purchase and sale is prohibited when the quota is met. Implement Accountability Measures (AMs) for the recreational sector for this stock. If the 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 sector ACL for the following fishing year. 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 three-year running average.

Option 3. The commercial AM for this stock is to prohibit harvest, possession, and retention when the quota is met. All purchase and sale is prohibited when the quota is met. Implement Accountability Measures (AMs) for the recreational sector for this stock. If the 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 sector ACL for the following fishing year. 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 three-year running average.

Option 4. Pay back for commercial?

Option 5. Pay back for recreational?

Dolphin Wahoo AP Discussion & Recommendations

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

Committee/Council Discussion & Recommendations

The Council approved motions moving one alternative to Appendix A and adding an alternative with a reduction in the bag limit.

1.9 Action 3. Specify Management Measure Changes for Dolphin

Option 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).

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

Option 3. Establish minimum size limits off NC & SC.

Discussion

There is a seasonal fishery from fishing piers in North Carolina that harvests mostly smaller fish. Any size limit would have to account for this fishery.

Option 4. Establish minimum size limits in NEFMC and MAFMC.

Option 5. INCREASE THE MINIMUM SIZE LIMIT TO 22 INCHES OR 24 INCHES

OPTION 6. REDUCE THE BOAT LIMIT (e.g. reduce by 1/3)

Discussion

This option is being considered for the private recreational and charter boat sectors but not the headboat sector.

OPTION 7. EXAMINE HARVEST BY POWERHEADS AND EVALUATE WHETHER IT SHOULD CONTINUE TO BE ALLOWED.

Option 8. Consider a series of trip limits on the commercial fishery (e.g., 4,000 pounds with alternatives higher and lower).

Discussion

The intent would be to keep the fishery open all year and be high enough to be economically feasible. The Council is considering 4,000 pounds with alternatives higher and lower.

Dolphin Wahoo AP Discussion & Recommendations

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.

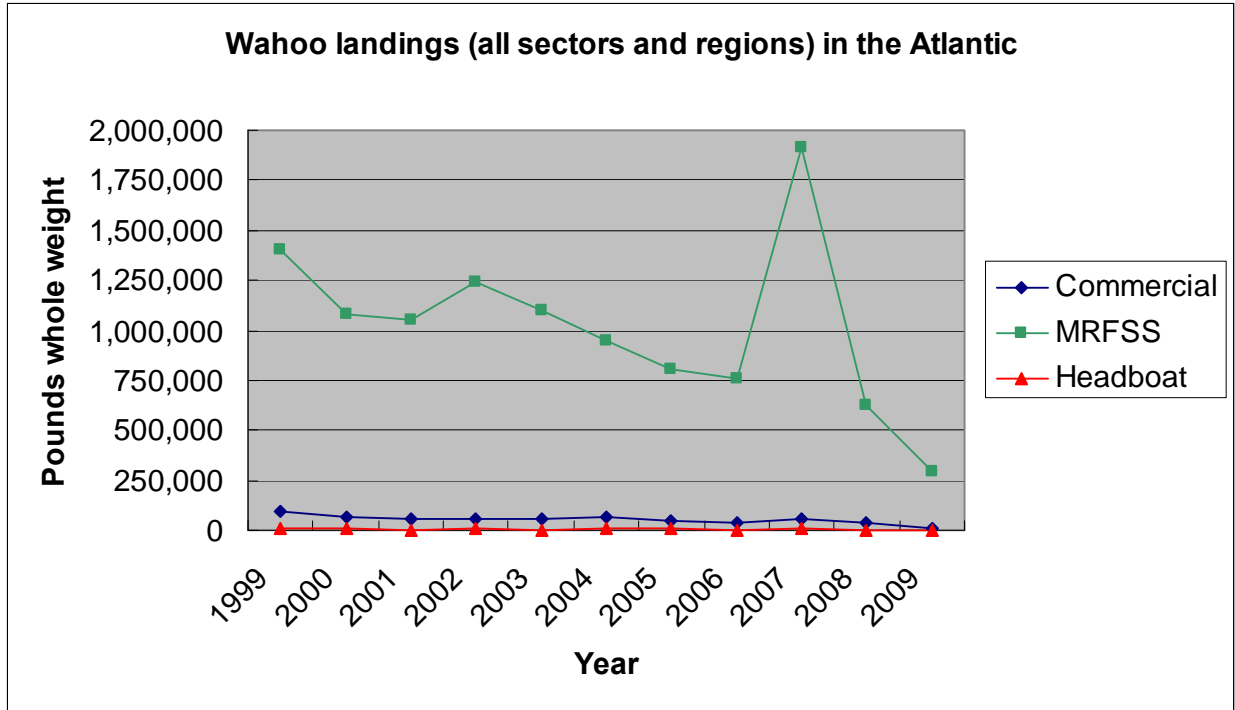
The AP recommended Option 1. No action at this time because there is no problem identified that needs to be addressed. The AP recognized that this will need to be revisited once the Scientific and Statistical Committee presents their Overfishing Level (OFL) and Acceptable Biological Catch (ABC) recommendations. The AP also added Options 6 and 7 and requested that the impacts be examined state by state.

Committee/Council Discussion & Recommendations

The Council approved a motion adding a series of commercial trip limits.

II. Wahoo

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.

Action 4. Specify MSY, MSST, MFMT/OFL, ABC, OY, ACL, ALLOCATIONS AND ACT levels for Wahoo

The MSY, MSST, OFL and ABC will come from each SEDAR assessment and the recommendations of the SSC as they review each assessment. The SSC has provided specific OFL and ABC recommendations.

2.1 Maximum Sustainable Yield (MSY), Minimum Stock Size Threshold (MSST) and Maximum Fishing Mortality Threshold (MFMT)

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.

Previously, the Councils (South Atlantic, Mid-Atlantic and New England Councils) were considering the following alternatives:

A. Maximum Sustainable Yield (MSY)

Option 1. No action. The MSY proxy in the Atlantic, U.S. Caribbean, and Gulf of Mexico is between 1.41 and 1.63 million pounds (NMFS SEFSC based on 5-10 year catch history; letter dated 1/8/01).

Option 2. MSY = x.xx – y.yy million pounds. These figures could be based on updated 5-10 year time periods using more recent data and would apply for wahoo in the Atlantic, U.S. Caribbean, and Gulf of Mexico.

Option 3. Specify MSY separately for the Atlantic at _____ million pounds.

Option 4. The recommendation from the Scientific and Statistical Committee (SSC).

Dolphin Wahoo AP Discussion & Recommendations

The AP supported Option 4.

Committee/Council Discussion & Recommendations

The Council approved this range of alternatives.

The Councils have determined that in the Atlantic, U.S. Caribbean, and Gulf of Mexico the minimum stock size threshold (MSST) for wahoo is defined as a ratio of current biomass ($B_{current}$) to biomass at MSY or $(1-M)*BMSY$, 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.

The Councils have determined that the value for the maximum fishing mortality threshold (**MFMT**) for wahoo in the Atlantic, U.S. Caribbean, and Gulf of Mexico is defined as a fishing mortality rate (F) in excess of FMSY ($F_{30\%Static SPR}$). There is no updated MFMT estimate, and the SSC did not provide any new guidance on MSST. Therefore, the existing MFMT will remain until a SEDAR assessment is conducted.

2.2 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).

Previously, the Councils (South Atlantic, Mid-Atlantic and New England Councils) were considering the following alternatives:

Option 1. No action.

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 FMSY ($F_{30\%Static SPR}$).

A minimum stock size threshold (MSST) – In the Atlantic, U.S. Caribbean, and Gulf of Mexico the minimum stock size threshold for wahoo is defined as a ratio of current biomass ($B_{current}$) to biomass at MSY or $(1-M)*B_{MSY}$, 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.

Option 2. Specify OFL and MSST separately for the Atlantic at _____ and _____ pounds.

Option 3. The values recommended by the SSC.

Dolphin Wahoo AP Discussion & Recommendations

The AP supported Option 3.

Committee/Council Discussion & Recommendations

The Council approved this range of alternatives.

2.3 Acceptable Biological Catch (ABC) Control Rule and ABC

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.

Option 1. No action. Do not establish an ABC Control Rule for wahoo.

Option 2. A potential ABC range = a.aa – b.bb million pounds based on 65% to 85% of MSY Option 1 or 2 and would apply for wahoo in the Atlantic, U.S. Caribbean, and Gulf of Mexico.

This likely ABC range is presented for initial discussions; the SSC will provide their OFL and ABC recommendations at their June or December 2009 meeting.

Option 3. Specify ABC separately for the Atlantic at _____ pounds.

Option 4. Establish ABC based on the SSC's Data Poor ABC control rule. The SSC decided to develop OFL for each species based on median of landings for 1999 to 2008. From there, they will apply the ABC control rule for all the species together for each species grouping to develop the ABC reduction level. The results of the ABC control rule will be multiplied by the OFL to determine the reduction to the OFL for the grouping to each individual species. Each ABC would start at 35% (0% for unknown depletion, 15% because not forage or habitat, ___% the appropriate PSA score, 20% out of 25% for certainty of OFL level) of OFL. The variability in the ABC will be that they will have to use the PSA for each species and add the appropriate percent to the ABC that will come up with the appropriate level. The range of ABC for each data poor species will be 35% to 55% of OFL. This approach will be revisited species by species as more data become available. This is considered the "Triage Approach" for the snapper grouper data poor species. Current species exceptions are golden tilefish, yellow tail snapper, wreckfish, and amberjack. Since the Council is following the red porgy rebuilding plan, they won't be included in this data poor snapper grouper analysis.

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). Application of the data-poor control rule generated the following adjustments (Tier 1: +15%, Tier 2: +15%, Tier 3: +20%, Tier 4: +25%) and determined an ABC value equal to 75% of OFL. Therefore, **ABC for wahoo = 826,000 pounds.**

Dolphin Wahoo AP Discussion & Recommendations

The AP supported Option 4.

Committee/Council Discussion & Recommendations

The Council approved this range of alternatives.

The Council is also considering the following non-SSC Control Rules:

Alternative 5. Establish an ABC Control Rule where ABC equals OFL.

Alternative 6. Establish an ABC Control Rule where ABC equals a percentage of OFL.

Alternative 6a. ABC=65%OFL

Alternative 6b. ABC=75%OFL

Alternative 6c. ABC=85%OFL

Alternative 7. Establish an ABC Control Rule where ABC equals a percentage of the yield at MFMT.

Alternative 7a. ABC=yield at 65%MFMT

Alternative 7b. ABC=yield at 75%MFMT

Alternative 7c. ABC=yield at 85%MFMT

Alternative 8. Establish an ABC Control Rule where ABC is a percentage of OFL. The percentage is based upon the level of risk of overfishing (P*).

- Alternative 8a.** ABC=X% of OFL. The X% is based upon P* equals .20.
- Alternative 8b.** ABC=X% of OFL. The X% is based upon P* equals .30.
- Alternative 8c.** ABC=X% of OFL. The X% is based upon P* equals .40.
- Alternative 8d.** ABC=X% of OFL. The X% is based upon P* equals .50.

2.4 Optimum Yield (OY)

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 1. No action. 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. OY = ABC.

Alternative 3. OY = ????

2.5 Allocation

Alternative 1 (Status Quo). 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 1999-2008. The allocation would be xx% commercial and yy% recreational. Beginning in 2011, the commercial allocation would be _____ lbs gutted weight and the recreational allocation would be _____ fish (_____ lbs gutted weight). The commercial and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 3. 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 xx% commercial and yy% recreational. Beginning in 2011, the commercial allocation would be _____ lbs gutted weight and the recreational allocation would be _____ fish (_____ lbs gutted weight). The commercial and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 4. 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 xx% commercial and yy% recreational. Beginning in 2011, the commercial allocation would be _____ lbs gutted weight and the recreational allocation would be _____ fish (_____ lbs gutted weight). The commercial and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 5. 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 xx% commercial, yy% for-hire, and zz% private recreational. Beginning in 2011, the commercial allocation would be _____ lbs gutted weight, the for-hire allocation would be _____ fish (_____ lbs gutted weight), and the private recreational allocation would be _____ fish (_____ lbs gutted weight).

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

Alternative 6. Split the allocations for wahoo equally among the two sectors. The allocation would be 50% commercial and 50% recreational. Beginning in 2011, the commercial allocation would be _____ lbs gutted weight and the recreational allocation would be _____ fish (_____ lbs gutted weight). The commercial and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Committee/Council Discussion & Recommendations

The Council directed staff to include allocation alternatives with the formula. The Committee should provide guidance on:

1. Years of data to be used. NMFS has provided landings data from 1999 onwards. Previous allocation discussions looked at 1986 onwards.
2. Headboat data from New England and Mid-Atlantic – should this be included?
3. Are these alternatives sufficient?

2.6 Annual Catch Limit (ACL)

Option 1. No action. There is no ACL specified for wahoo.

Option 2. ACL = c.cc million pounds based on 65% of MSY Option 1 or 2 and apply to wahoo in the Atlantic, U.S. Caribbean, and Gulf of Mexico.

Option 3. ACL = d.dd million pounds based on 75% of MSY Option 1 or 2 and apply to wahoo in the Atlantic, U.S. Caribbean, and Gulf of Mexico.

Option 4. ACL = e. ee million pounds based on 85% of MSY Option 1 or 2 and apply to wahoo in the Atlantic, U.S. Caribbean, and Gulf of Mexico.

Option 5. Specify ACL separately for the Atlantic at 826,000 pounds. This equals the ABC recommended by the SSC.

Option 6. ACL = X% of ABC = _____ pounds.

Dolphin Wahoo AP Discussion & Recommendations

The AP recommended keeping the ACL region-wide.

Committee/Council Discussion & Recommendations

The Council approved this range of alternatives.

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.

2.7 Annual Catch Target (ACT)

2.7.1 Commercial Sector ACT

Alternative 1. Do not specify commercial sector ACTs for wahoo.

Alternative 2. The commercial sector ACT equals the commercial sector ACL.

Alternative 3. The commercial sector ACT equals 90% of the commercial sector ACL.

Alternative 4. 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				

1.7.2 Recreational Sector ACT

Alternative 1 (no action). Do not specify recreational sector ACTs for wahoo.

Alternative 2. The recreational sector ACT equals 85% of the recreational sector ACL.

Alternative 3. The recreational sector ACT equals 75% of the recreational sector ACL.

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

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		

Table 8. The recreational 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 Recreational Sector ACL	Recreational Sector ACT		
		ACT Alt. 2; ACT=75%(ACL)	ACT Alt. 3; ACT=75%(ACL)	ACT Alt. 4; ACT equals sector ACL[(1-PSE) or 0.5, whichever is greater]
Wahoo				

2.8 Action 5. Specify Accountability Measures (AMs) for Wahoo

Option 1 (Status Quo). There is no hard quota for wahoo and there are no AMs in place for wahoo.

Option 2. The commercial AM for this stock is to prohibit harvest, possession, and retention when the quota is met. All purchase and sale is prohibited when the quota is met. Implement Accountability Measures (AMs) for the recreational sector for this stock. If the 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 sector ACL for the following fishing year. 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 three-year running average.

Option 3. The commercial AM for this stock is to prohibit harvest, possession, and retention when the quota is met. All purchase and sale is prohibited when the quota is met. Implement Accountability Measures (AMs) for the recreational sector for this stock. If the 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 sector ACL for the following fishing year. 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 three-year running average.

Option 4. Payback for commercial?

Option 5. Payback for recreational?

Dolphin Wahoo AP Discussion & Recommendations

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

Committee/Council Discussion & Recommendations

The Council approved motions moving one alternative to Appendix A and adding an alternative with a reduction in the bag limit.

2.9 Action 6. Specify Management Measure Changes for Wahoo

Option 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).

Option 2. Others???

Dolphin Wahoo AP Discussion & Recommendations

The AP recommended Option 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.

APPENDIX A. ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSES

1. Dolphin MSY: **Option 3. MSY = 15,882,100 – 17,833,190 pounds.** This range is based on average landings from a 10 year and 5 year period respectively (Prager 2000) and would apply for dolphin in the Atlantic, U.S. Caribbean, and Gulf of Mexico.
2. Dolphin Accountability Measures: **Option 2.** The commercial AM for this stock is to prohibit harvest, possession, and retention when the quota is met. All purchase and sale is prohibited when the quota is met. Do not implement AMs for the recreational sector.
3. Wahoo Accountability Measures: **Option 2.** The commercial AM for this stock is to prohibit harvest, possession, and retention when the quota is met. All purchase and sale is prohibited when the quota is met. Do not implement AMs for the recreational sector.

2.5 Sargassum Fishery Management Plan

2.5.1 Ecosystem Component Species

Alternative 1. No Action. Do not designate *Sargassum* species as Ecosystem Component species.

Alternative 2. Designate *Sargassum* species as ecosystem component species.

2.5.2 Acceptable Biological Catch Control Rule

Alternative 1. No Action. Do not establish an ABC Control Rule for *Sargassum* seaweed.

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.

Alternative 3a. ABC=65% OFL

Alternative 3b. ABC=75% OFL

Alternative 3c. ABC=85% OFL

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

Alternative 4a. ABC=yield at 65%MFMT

Alternative 4b. ABC=yield at 75%MFMT

Alternative 4c. ABC=yield at 85%MFMT

Alternative 5. Establish ABCs based on the SSC's ABC control rule (awaiting SSC input).

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*).

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

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

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

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

2.5.3 Allocations

Note: There has been no *Sargassum* harvest in the S. Atlantic waters since 1997 (SAFMC, 2002), and this action may not be relevant.

Alternative 1. No Action. Do not establish allocations for *Sargassum* seaweed.

Alternative 2. Divide allocations among two sectors, commercial and recreational.

Use the following equation:

Allocation by sector = (0.5 * catch history) + (0.5 * current trend) whereby, catch history =1986 onward, current trend = 2006-2008 for this amendment, and 3 years rolling forward for future amendments. (As per Council motion from September, 2008).

Alternative 3. Divide allocations among three sectors, commercial, recreational, and for-hire.

Use the following equation:

Allocation by sector = (0.5 * catch history) + (0.5 * current trend) whereby, catch history =1986 onward, current trend = 2006-2008 for this amendment, and 3 years rolling forward for future amendments. (As per Council motion from September, 2008).

Note: *Sargassum* may be classified as an annual crop and thus be exempt from the ACL and AM requirements (see MSRA section 303 (a) (15), as well as 50 CFR 600.310 (h) (2) for exemptions). Estimates of production of *S. natans* and *S. fluitans* in the western North Atlantic are typically around $1 \text{ mgC m}^{-2} \text{ d}^{-1}$ with slightly higher values reported from more nutrient rich shelf waters. Production has been shown to double under conditions of nitrogen and phosphorus enrichment (LaPointe, 1986 and 1995). Wong and Phang (2004) studied *S. baccularia* and *S. binderi* (found offshore similar to *S. natans*) in Malaysian waters, and found that both species attained two peaks and one low in standing crop over a 15-month period. Trono and Lluisma (1990) found intra-annual patterns of variation in the standing crop of four *Sargassum* species in Philippine waters.

2.5.4 Annual Catch Limits

Alternative 1. No Action. Do not specify an ACL for *Sargassum* seaweed.

Alternative 2. Specify an ACL = 0 for *Sargassum* seaweed.

Alternative 3.

2.5.5 Annual Catch Targets

Alternative 1. No Action. Do not specify an ACT for *Sargassum* seaweed.

Alternative 2.

Alternative 3.

2.5.6 Accountability Measures

Alternative 1. No Action. Do not specify AMs for *Sargassum* seaweed.

Alternative 2.

Alternative 3.

2.5.7 Management Measures

Alternative 1. No Action. Retain the current regulations for *Sargassum* seaweed. 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.

Alternative 2. Prohibit all harvest and possession of *Sargassum*.

Added by staff for the Council's consideration

2.6 Shrimp Fishery Management Plan

The four species of shrimp managed under the Shrimp FMP (White shrimp, *Litopenaeus setiferus*; Pink shrimp, *Farfantepenaeus duorarum*; Brown shrimp, *Farfantepenaeus aztecus*; and Rock shrimp, *Sycionia brevirostris*) are considered annual crops, and are hence exempt from requiring ACLs and AMs (see MSRA section 303 (a) (15), as well as 50 CFR 600.310(h)(2) (i) in the revised NS 1 guidelines (74 FR 3178)). However, MSY, OY, ABC, and an ABC control rule (to be specified by the SSC) still need to be established.

Shrimp Amendment 6 (SAFMC 2004) revised stock status determination criteria for brown, pink and white shrimp as follows:

Using the established MSY and OY values, revise or establish overfishing and overfished definitions for penaeid shrimp based on an MSY control rule. Overfishing (MFMT) for all penaeid species is a fishing mortality rate that diminishes the stock below the designated MSY stock abundance (B_{MSY}) for two consecutive years and MSST is established with two thresholds: (a) if the stock diminishes to $\frac{1}{2}$ MSY abundance ($\frac{1}{2} B_{MSY}$) in one year, or (b) if the stock is diminished below MSY abundance (B_{MSY}) for two consecutive years. In addition, white shrimp would be considered overfished when the overwintering white shrimp population within a state's waters declines by 80% or more following severe winter resulting in prolonged cold water temperatures. A proxy for B_{MSY} would be established for each species using CPUE information from the Southeast Area Monitoring, Assessment and Prediction (SEAMAP) survey data as the lowest values in the 1990-2003 time period that produced catches meeting MSY the following year (**Table 2-X**):

Brown shrimp = 2.000 individuals per hectare
Pink shrimp = 0.461 individuals per hectare
White shrimp = 5.868 individuals per hectare.

Table 2-X. Annual densities (number per hectare) of brown shrimp, pink shrimp and white shrimp taken by SEAMAP along the Southeast Coast of the United States compared to commercial landings (pounds) of brown shrimp, pink shrimp and white shrimp from North Carolina, South Carolina, Georgia and East Florida (not including Monroe County). Data from 1979-2000 are General Canvas from the Accumulated Landings System (ALS) at the Southeast Fisheries Science Center in Miami, FL. Pink shrimp and brown shrimp landings from 1993-2001 were adjusted for unclassified shrimp landings in proportion the average proportions of brown shrimp (78.5%) and pink shrimp (21.5%) landed during 1979-1991. Ten percent (recreational catch) added to all white shrimp landings, except SC.

Year	Brown Shrimp MSY = 9.2 million lb		Pink Shrimp MSY = 1.8 million lb.		White Shrimp MSY = 14.5 million lb.	
	#/ha	Landings	#/ha	Landings	#/ha	Landings
1990	4.022	8,782,156	0.568	1,648,182	9.028	12,113,579
1991	2.469	10,763,798	0.873	2,691,072	12.880	19,797,678
1992	2.000	5,002,502	0.511	2,157,005	5.868	16,404,798
1993	5.899	9,313,990	0.673	1,639,172	5.665	15,370,876
1994	5.568	8,987,076	0.594	1,874,057	10.606	13,320,088
1995	3.104	10,908,183	1.728	2,157,387	17.535	23,691,923
1996	10.277	8,290,098	0.461	1,897,802	12.913	11,260,847
1997	2.275	8,356,936	0.948	2,115,827	7.447	14,146,372
1998	1.975	5,934,817	0.853	1,545,877	18.256	14,883,054
1999	2.972	8,700,428	**0.450**	1,477,074	34.799	19,966,819
2000	7.697	9,627,576	**0.211**	738,443	13.060	15,793,579
2001	8.637	9,109,913	0.502	757,657	10.454	8,645,567
2002	3.347	9,178,658	0.867	1,386,480	9.186	14,599,972
2003	9.640		0.418		7.372	

Shrimp Amendment 6 (SAFMC 2004) established stock status determination criteria for rock shrimp as follows:

Establish stock status determination criteria consistent with those of penaeid shrimp, where MSY/OY for rock shrimp is the mean total landings for the South Atlantic during 1986 through 2000 (4,912,927 pounds heads on), where overfishing (MFMT) for rock shrimp would be a fishing mortality rate that led to annual landings larger than two standard deviations (9,774,848 pounds heads on) above MSY (4,912,927 + 9,774,848 = 14,687,775 pounds heads on) for two consecutive years, and MSST would be parent stock size less than ½ (BMSY) for two consecutive years.

Action X. Specify an Overfishing Level (OFL) for species in the shrimp FMU.

Alternative 1. No Action. Do not establish an OFL for species in the Shrimp FMU.

Alternative 2. Establish OFL for species in the Shrimp FMU based on SSC recommendation: OFL = maximum annual landings for 1990-2000.

White shrimp = 23.691 million pounds

Pink Shrimp = 2.7 million pounds

Brown Shrimp = 10.91 million pounds

Rock Shrimp = (no landings data available for specified time period)

Action X. Specify an ABC control rule for species in the Shrimp FMU.

Alternative 1. No Action. Do not establish an ABC Control Rule for species in the Shrimp FMU.

Alternative 2. Establish an ABC Control Rule based on the SSC's recommendation where ABC equals OFL for species in the Shrimp FMU.

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

~~Alternative 3a. ABC=65%OFL~~

~~Alternative 3b. ABC=75%OFL~~

~~Alternative 3c. ABC=85%OFL~~

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

~~Alternative 4a. ABC=yield at 65%MFMT~~

~~Alternative 4b. ABC=yield at 75%MFMT~~

~~Alternative 4c. ABC=yield at 85%MFMT~~

~~Alternative 5. Establish ABCs based on the SSC's ABC control rule (awaiting SSC input).~~

~~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*).~~

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

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

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

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

2.7 Golden Crab Fishery Management Plan

3 Affected Environment

4 Environmental Effects

4.1 Snapper Grouper FMP

4.1.1 Remove some species from the Snapper Grouper FMU

4.1.1.1 Biological Effects

4.1.1.2 Economic Effects

4.1.1.3 Social Effects

4.1.1.4 Administrative Effects

4.1.1.5 Council's Conclusions

4.1.2 Designate some species in the Snapper Grouper FMU as ecosystem component (EC) species

4.1.2.1 Biological Effects

4.1.2.2 Economic Effects

4.1.2.3 Social Effects

4.1.2.4 Administrative Effects

4.1.2.5 Council's Conclusions

4.1.3 Specify an ABC control rule for species in the Snapper Grouper FMU

4.1.3.1 Biological Effects

4.1.3.2 Economic Effects

4.1.3.3 Social Effects

4.1.3.4 Administrative Effects

4.1.3.5 Council's Conclusions

4.1.4 Specify allocations among sectors for 63 snapper grouper species or species groups

Allocations for 62 species in the Snapper Grouper FMU

4.1.4.1 Biological Effects

4.1.4.2 Economic Effects

4.1.4.3 Social Effects

4.1.4.4 Administrative Effects

4.1.4.5 Council's Conclusions

Allocations for wreckfish

4.1.5 Specify ACLs for 63 snapper grouper species or species groups

ACLs for 62 species in the Snapper Grouper FMU

4.1.5.1 Biological Effects

4.1.5.2 Economic Effects

4.1.5.3 Social Effects

4.1.5.4 Administrative Effects

4.1.5.5 Council's Conclusions

ACLs for wreckfish

4.1.6 Specify ACTs for 63 snapper grouper species or species groups

4.1.6.1 Biological Effects

4.1.6.2 Economic Effects

4.1.6.3 Social Effects

4.1.6.4 Administrative Effects

4.1.6.5 Council's Conclusions

4.1.7 Specify AMs for 63 snapper grouper species or species groups

4.1.7.1 Biological Effects

4.1.7.2 Economic Effects

4.1.7.3 Social Effects

4.1.7.4 Administrative Effects

4.1.7.5 Council's Conclusions

4.1.8 Modify management measures for species in the Snapper Grouper FMU

4.1.8.1 Greater amberjack

4.1.8.1.1 Biological Effects

4.1.8.1.2 Economic Effects

4.1.8.1.3 Social Effects

4.1.8.1.4 Administrative Effects

4.1.8.2 Red grouper

4.1.8.2.1.1 Biological Effects

4.1.8.2.1.2 Economic Effects

4.1.8.2.1.3 Social Effects

4.1.8.2.1.4 Administrative Effects

4.1.8.3 Wreckfish

4.1.8.3.1.1 Biological Effects

4.1.8.3.1.2 Economic Effects

4.1.8.3.1.3 Social Effects

4.1.8.3.1.4 Administrative Effects

4.2 Dolphin Wahoo FMP

4.2.1 Specify an ABC control rule for species in the Dolphin Wahoo FMU

4.2.1.1 Biological Effects

4.2.1.2 Economic Effects

4.2.1.3 Social Effects

4.2.1.4 Administrative Effects

4.2.1.5 Council's Conclusions

4.2.2 Specify allocations among sectors for dolphin

4.2.2.1 Biological Effects

4.2.2.2 Economic Effects

4.2.2.3 Social Effects

4.2.2.4 Administrative Effects

4.2.2.5 Council's Conclusions

4.2.3 Specify ACLs for dolphin

4.2.3.1 Biological Effects

4.2.3.2 Economic Effects

4.2.3.3 Social Effects

4.2.3.4 Administrative Effects

4.2.3.5 Council's Conclusions

4.2.4 Specify ACTs for dolphin

4.2.4.1 Biological Effects

4.2.4.2 Economic Effects

4.2.4.3 Social Effects

4.2.4.4 Administrative Effects

4.2.4.5 Council's Conclusions

4.2.5 Specify AMs for dolphin

4.2.5.1 Biological Effects

4.2.5.2 Economic Effects

4.2.5.3 Social Effects

4.2.5.4 Administrative Effects

4.2.5.5 Council's Conclusions

4.2.6 Modify management measures for dolphin

4.2.6.1 Biological Effects

4.2.6.2 Economic Effects

4.2.6.3 Social Effects

4.2.6.4 Administrative Effects

4.2.6.5 Council's Conclusions

4.2.7 Specify allocations among sectors for wahoo

4.2.7.1 Biological Effects

4.2.7.2 Economic Effects

4.2.7.3 Social Effects

4.2.7.4 Administrative Effects

4.2.7.5 Council's Conclusions

4.2.8 Specify ACLs for wahoo

4.2.8.1 Biological Effects

4.2.8.2 Economic Effects

4.2.8.3 Social Effects

4.2.8.4 Administrative Effects

4.2.8.5 Council's Conclusions

4.2.9 Specify ACTs for wahoo

4.2.9.1 Biological Effects

4.2.9.2 Economic Effects

4.2.9.3 Social Effects

4.2.9.4 Administrative Effects

4.2.9.5 Council's Conclusions

4.2.10 Specify AMs for wahoo

4.2.10.1 Biological Effects

4.2.10.2 Economic Effects

4.2.10.3 Social Effects

4.2.10.4 Administrative Effects

4.2.10.5 Council's Conclusions

4.2.11 Modify management measures for wahoo

4.2.11.1 Biological Effects

4.2.11.2 Economic Effects

4.2.11.3 Social Effects

4.2.11.4 Administrative Effects

4.2.11.5 Council's Conclusions

4.3 Sargassum FMP

4.3.1 Consider designating Sargassum seaweed as ecosystem component species

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 Specify an ABC control rule for Sargassum seaweed

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 Specify allocations among sectors for Sargassum seaweed

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 Specify ACLs for Sargassum seaweed

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

4.3.5 Specify ACTs for Sargassum seaweed

4.3.5.1 Biological Effects

4.3.5.2 Economic Effects

4.3.5.3 Social Effects

4.3.5.4 Administrative Effects

4.3.5.5 Council's Conclusions

4.3.6 Specify AMs for Sargassum seaweed

4.3.6.1 Biological Effects

4.3.6.2 Economic Effects

4.3.6.3 Social Effects

4.3.6.4 Administrative Effects

4.3.6.5 Council's Conclusions

4.3.7 Modify management measures for Sargassum seaweed

4.3.7.1 Biological Effects

4.3.7.2 Economic Effects

4.3.7.3 Social Effects

4.3.7.4 Administrative Effects

4.3.7.5 Council's Conclusions

4.4 Shrimp FMP

4.4.1 Specify an ABC control rule for four species of shrimp in the shrimp FMU

4.4.1.1 Biological Effects

4.4.1.2 Economic Effects

4.4.1.3 Social Effects

4.4.1.4 Administrative Effects

4.4.1.5 Council's Conclusions

4.5 Golden Crab FMP

5 Cumulative Effects

6 List of Preparers

Name	Title	Agency	Division	Location
David Dale	EFH Specialist	NMFS	HC	SERO
Rick DeVictor	Environmental Impact Scientist	SAFMC	N/A	SAFMC
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Andy Herndon	Biologist	NMFS	PR	SERO
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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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7 List of Agencies, Organizations, and Persons To Whom Copies of the Statement Are Sent

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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
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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

8 References

9 Index

Will be added prior to public hearings.