

# AMENDMENT 20 TO THE SNAPPER GROUPER FISHERY MANAGEMENT PLAN OF THE SOUTH ATLANTIC REGION

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

# February 2010

South Atlantic Fishery Management Council 4055 Faber Place, Suite 201 North Charleston, South Carolina 29405 (843) 571-4366 / FAX (843) 769-4520 Toll Free (866) SAFMC-10 email: @safmc.

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



This is a publication of the South Atlantic Fishery Management Council pursuant to National Oceanic and Atmospheric Administration Award No. NA05NMF4410004

#### 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

The stock biomass expected to exist under equilibrium conditions when

fishing at

The stock biomass expected to exist under equilibrium conditions when

fishing at

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 %SPR Fishing mortality that will produce a static SPR = 30%. Fishing mortality that will produce a static SPR = 45%.

The current instantaneous rate of fishing mortality

The rate of fishing mortality expected to achieve MSY under equilibrium

conditions and a corresponding biomass of

The rate of fishing mortality expected to achieve OY under equilibrium

conditions and a corresponding biomass of Final Environmental Impact Statement

FMP Fishery management plan FMU Fishery management unit

FEIS

FONSI Finding of No Significant Impact

GFMC Gulf of Mexico Fishery Management Council

IFQ Individual fishing quota ITQ Individual transferable quota

M Natural mortality rate
MARFIN Marine Fisheries Initiative

MARMAP Marine Resources Monitoring Assessment and Prediction Program

MBTA Migratory Bird Treaty Act

MFMT Maximum Fishing Mortality Threshold MMPA Marine Mammal Protection Act of 1972

MRFSS Marine Recreational Fisheries Statistics Survey

MSFCMA Magnuson-Stevens Fishery Conservation and Management Act

MSST Minimum Stock Size Threshold MSY Maximum Sustainable Yield

NEPA National Environmental Policy Act of 1969

NMFS National Marine Fisheries Service NMSA National Marine Sanctuary Act

NOAA National Oceanic and Atmospheric Administration

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

The length of time in which a stock could rebuild to in the absence of

fishing mortality

USCG U.S. Coast Guard

# AMENDMENT 20 TO THE SNAPPER GROUPER FISHERY MANAGEMENT PLAN OF THE SOUTH ATLANTIC REGION

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

**Lead agency:** FMP Amendments – South Atlantic Fishery

Management Council

EIS - NOAA Fisheries Service

For Further Information Contact: Robert K. Mahood

4055 Faber Place, Suite 201 North Charleston, SC 29405

843-571-4366 843-769-4520 (fax) 866-SAFMC-10 .Mahood@safmc.

Roy E. Crabtree, Ph.D.

NOAA Fisheries Service, Southeast Region

263 Avenue South St. Petersburg, FL 33701

727-824-5301 727-824-5320 (fax)

NOI:

Scoping meetings held:

DATE TO BE FILLED IN
DEIS filed:

DATE TO BE FILLED IN
DEIS Comments received by:

DATE TO BE FILLED IN
DATE TO BE FILLED IN
DATE TO BE FILLED IN
FEIS filed:

DATE TO BE FILLED IN
DATE TO BE FILLED IN
DATE TO BE FILLED IN

#### **ABSTRACT**

Amendment 20 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Amendment 20) consists of regulatory actions that focus on modifications to the wreckfish individual transferable quota (ITQ) program, bringing the program into compliance with the Reauthorized Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), and make other administrative, monitoring, and enforcement changes. Amendment 20 also specifies the maximum sustainable yield (MSY), acceptable biological catch (ABC), overfishing limit (OFL), annual catch limit (ACL), annual catch target (ACT), accountability measures (AM) for the wreckfish species, and management measures for the recreational sector. Species in the snapper grouper fishery management unit are assessed on a routine basis and stock status may change as new information regarding the wreckfish species becomes available.

Management actions proposed in this Amendment include:

The Draft Environmental Impact Statement (DEIS) analyzes the effects of implementing the proposed actions listed above. Comments on the DEIS will be accepted for 45 days from publication of the Notice of Availability (NOA) in the Federal Register.

# TABLE OF CONTENTS

AND ACRONYMS	
OF CONTENTS	
OF TABLES	
OF FIGURES	
OF APPENDICES	
	Error! Bookmark not defined.
Introduction	1-2
.1 Background	1-2
.2 Purpose and Need	1-2
.3 Management Objectives	1-5
.4 History of Management	1-6
Actions and Alternatives	2-1
.1 Action 1	
.1.1 Comparison of Alternatives	
.1.2 Conclusion	Error! Bookmark not defined.
.2 Action 2	Error! Bookmark not defined.
.2.1 Comparison of Alternatives	Error! Bookmark not defined.
.2.2 Conclusion	Error! Bookmark not defined.
.3 Action 3	
.3.1 Comparison of Alternatives	Error! Bookmark not defined.
.3.2 Conclusion	
.4 Action 4	
.4.1 Conclusion	Error! Bookmark not defined.
Affected Environment	
.1 Habitat	
.1.1 Description and distribution	
.1.1.1 Inshore/estuarine habitat	
.1.1.2 Offshore habitat	
.1.1.3 Spawning habitat	2-3
.1.2 Essential Fish Habitat	
.2 Biological/Ecological Environment	
.2.1 Species Most Impacted by this Amendmen	
.2.1.1 Wreckfish, Polyprion americanus	
.2.2 Other Affected Species	
.2.3 Endangered Species Act (ESA)-Listed Spe	cies Error! Bookmark not
defined.	
.2.4 South Atlantic Snapper Grouper Fishery In	
Species	
.3 Administrative Environment	
.3.1 The Fishery Management Process and App	
.3.1.1 Federal Fishery Management	
.3.1.2 State Fishery Management	
.3.2 Enforcement	
.4 Human Environment	2-16

	.4.1 W	reckfish Fishery	2-16
	.4.1.1	Description of Regulations, Harvest Methods and Gear	2-16
	.4.1.2	Landings, Ex-Vessel Value, Price, and Effort	
	.4.1.3	The Wreckfish Fishery by State	
	.4.1.4	Imports	
.5		al and Cultural Environment	
••		ental Consequences	
.1		on 1	
• •		conomic Effects	
		ocial Effects	
		dministrative Effects	
		onclusion	
2		on 2	
•-		ological Effects	
		conomic Effects	
		ocial Effects	
		Iministrative Effects	
		onclusion	
3		on 3	
		ological Effects	
		conomic Effects	
		ocial Effects	
		Iministrative Effects	
		onclusion	
4		on 4	
• •		ological Effects	
		conomic Effects	
		ocial Effects	
		Iministrative Effects	
		onclusion	
5		ulative Effects.	
		ological	
		Effects on protected species	
		ocioeconomic	
		dministrative	
.6		ttch Practicability Analysis	
.0	•	opulation Effects for the Bycatch Species	
	.6.1.1	Background	
	.6.1.2	Practicability of Management Measures in Directed Fisheries Re	
		Impact on Bycatch and Bycatch Mortality	
		cological Effects Due to Changes in the Bycatch of the Species	
		nanges in Bycatch of Other Fish Species and Resulting Population a	
		n Effects	
	-	fects on Marine Mammals and Birds	
		nanges in Fishing, Processing, Disposal, and Marketing Costs	
		nanges in Fishing Practices and Behavior of Fishermen	
	.0.0 CI	ianges in Fishing Fractices and Denavior of Fishermen	3-41

	.6.7	Changes in Research, Administration, and Enforcement Costs and	
	Man	agement Effectiveness3	3-27
	.6.8	Changes in the Economic, Social, or Cultural Value of Fishing Activities	and
	Non-	-Consumptive Uses of Fishery Resources	
	.6.9	<u> </u>	
	.6.10		
	.6.11		
7		Unavoidable Adverse Effects	
8		Effects of the Fishery on the Environment	-27
	.8.1	Effects on Ocean and Coastal Habitats	
	.8.2	Public Health and Safety3	
	.8.3	Endangered Species and Marine Mammals3	
9		Relationship of Short-Term Uses and Long-Term Productivity	
1(	)	Irreversible and Irretrievable Commitments of Resources	
1		Monitoring and Mitigation Measures	
	Regi	ılatory Impact Review	
1	υ	Introduction	
2		Problems and Objectives	
3		Methodology and Framework for Analysis	
4		Description of the Fishery	
5		Impacts of Management Measures	
6		Public and Private Costs of Regulations	
7		Summary of Economic Impacts	
8		Determination of Significant Regulatory Action	
	Initia	al Regulatory Flexibility Analysis	
1		Introduction	
2		Statement of Need for, Objectives of, and Legal Basis for the Rule	5-1
3		Identification of All Relevant Federal Rules Which May Duplicate, Overlap,	
Co	onflic	et with the Proposed Rule	
4		Description and Estimate of the Number of Small Entities to Which the	
Pr	opos	ed Rule will Apply	5-2
5	1	Description of the Projected Reporting, Record-keeping and Other Complian	
Re	equir	ements of the Proposed Rule, Including an Estimate of the Classes of Small	
		s Which will be Subject to the Requirement and the Type of Professional Ski	lls
		ary for the Preparation of the Report or Records	
6		Substantial Number of Small Entities Criterion	
7		Significant Economic Impact Criterion	5-2
8		Description of Significant Alternatives	
	Fish	ery Impact Statement – Social Impact Assessment	
1		Summary of Biological Effects	
2		Summary of Economic Effects	
3		Summary of Social Effects	
4		Summary of Administrative Effects	
5		Note for CEQ Guidance to Section 1502.22	
6		E.O. 12898: Environmental Justice	
	Othe	er Applicable I aw	1

.1	Administrative Procedures Act	1
.2	Information Quality Act	1
.3	Coastal Zone Management Act	1
.4	Endangered Species Act	2
.5	Executive Order 12612: Federalism	2
.6	Executive Order 12866: Regulatory Planning and Review	3
.7	Executive Order 12898: Environmental Justice	3
.8	Executive Order 12962: Recreational Fisheries	4
.9	Executive Order 13089: Coral Reef Protection	4
.10	Executive Order 13158: Marine Protected Areas	4
.11	Marine Mammal Protection Act	5
.12	Migratory Bird Treaty Act and Executive Order 13186	5
.13	National Environmental Policy Act	6
.14	National Marine Sanctuaries Act	7
.15	Paperwork Reduction Act	
.16	Regulatory Flexibility Act	
.17	Small Business Act	8
.18	Public Law 99-659: Vessel Safety	8
Lis	t of Preparers	9
Lis	t of Agencies, Organizations, and Persons to Whom Copies of the Statement a	ıre
Sent 10		
	ferences	
Ind	lex	11-0

# LIST OF TABLES

# LIST OF FIGURES

# LIST OF APPENDICES

# 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

### **Purpose and Need**

The purpose of this amendment is to: 1) modify the Wreckfish ITQ program; 2) update and bring it into compliance with the Reauthorized Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act); 3) specify management measures for the recreational sector; 4) specify the Maximum Sustainable Yield (MSY), Acceptable Biological Catch (ABC), Overfishing Limit (OFL), Annual Catch Limit (ACL) and Accountability Measures (AMs), if needed, including management measures to reduce the probability that catches will exceed the stocks' ACLs pursuant to Reauthorized Magnuson-Stevens Act requirements. The Council will also consider the specification of Annual Catch Targets (ACT) for the recreational sector. Previously implemented snapper grouper amendments may contain management measures for species undergoing overfishing that are comparable to ACLs and AMs. The Scientific and Statistical Committee (SSC) will meet in April 2010 to continue identifying a protocol for determining ABCs and make recommendations to the Council regarding a MSY, ABC, and OFL for the wreckfish fishery.

To summarize, actions proposed in Amendment 20 would:

- Modify the Wreckfish ITQ and bring it into compliance with the Reauthorized Magnuson-Stevens Act.
- Specify management measures for the recreational sector; and
- Specify a MSY, ABC, OFL, ACL, ACT (if necessary), and AMs (if necessary), for South Atlantic wreckfish.

#### **Definitions**

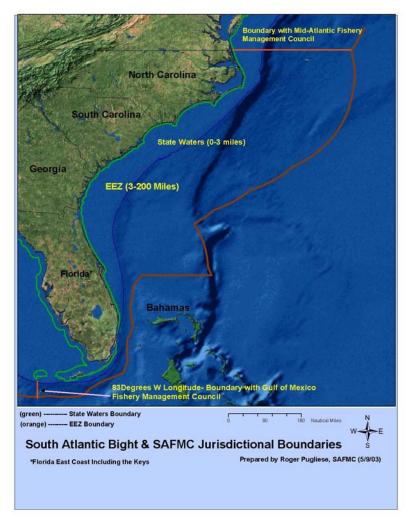
*Shares* – Shares are a **percentage of the commercial quota**. With limited exceptions, an individual's percent share of the quota does not change unless they buy or sell shares.

Annual Pounds – An individual's annual pounds is the **amount of pounds** (gutted weight) an individual is ensured the opportunity to possess, land, or sell in a calendar year. An individual receives annual pounds each year by April 16 when the season for wreckfish begins; any unused allocation expires on January 15 of the following year. An individual's allocation is determined at the beginning of each year by multiplying the share percentage they hold by the commercial quota for the year. Annual pounds will change if commercial quotas are increased or decreased - if a quota is increased, annual pounds will increase proportionately for all shareholders, and if a quota is reduced, annual pounds will decrease proportionately for all shareholders.

#### 1 Introduction

### 1.1 Background

Management of the Federal snapper grouper fishery located off the South Atlantic in the 3-200 nautical mile (nm) U.S. Exclusive Economic Zone (EEZ) is conducted under the Fishery Management Plan for the snapper grouper Fishery (SAFMC 1983) (**Figure 1-1**). The fishery management plan (FMP) and its 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 (**Table 1-1**). The purpose of the FMP, as amended, is to manage the snapper grouper fishery for optimum yield (OY) and specify ACLs, ACTs, and AMs as needed for species undergoing overfishing.



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

**Table 1-1.** The South Atlantic Snapper Grouper Complex

Almaco jack, Seriola rivoliana Atlantic spadefish, Chaetodipterus faber Banded rudderfish, Seriola zonata Bank sea bass, Centropristis ocyurus Bar jack, Carangoides ruber Black grouper, Mycteroperca bonaci Black margate, Anisotremus surinamensis Black sea bass, Centropristis striata Black snapper, Apsilus dentatus Blackfin snapper, Lutjanus buccanella Blue runner, Caranx crysos Blueline tilefish, Caulolatilus microps Bluestriped grunt, Haemulon sciurus Coney, Cephalopholis fulva Cottonwick, Haemulon melanurum Crevalle jack, Caranx hippos Cubera snapper, Lutjanus cyanopterus Dog snapper, Lutjanus jocu French grunt, Haemulon flavolineatum Gag, Mycteroperca microlepis Golden tilefish, Lopholatilus chamaeleonticeps Goliath grouper, Epinephelus itajara Grass porgy, Calamus arctifrons Gray (mangrove) snapper, Lutjanus griseus Gray triggerfish, Balistes capriscus Graysby, Cephalopholis cruentata Greater amberjack, Seriola dumerili Hogfish, Lachnolaimus maximus Jolthead porgy, Calamus bajonado Knobbed porgy, Calamus nodosus Lane snapper, *Lutjanus synagris* Lesser amberjack, Seriola fasciata Longspine porgy, Stenotomus caprinus Mahogany snapper, *Lutjanus mahogoni* Margate, Haemulon album Misty grouper, Epinephelus mystacinus Mutton snapper, *Lutjanus analis* Nassau grouper, Epinephelus striatus

Ocean triggerfish, Canthidermis sufflamen Porkfish, Anisotremus virginicus Puddingwife, Halichoeres radiatus Queen snapper, Etelis oculatus Queen triggerfish, Balistes vetula Red grouper, Epinephelus morio Red hind, Epinephelus guttatus Red porgy, Pagrus pagrus Red snapper, Lutjanus campechanus Rock hind, Epinephelus adscensionis Rock Sea Bass, Centropristis philadelphica Sailors choice, Haemulon parra Sand tilefish, *Malacanthus plumieri* Saucereye porgy, Calamus calamus Scamp, Mycteroperca phenax Schoolmaster, Lutjanus apodus Scup, Stenotomus chrysops Sheepshead, Archosargus probatocephalus Silk snapper, *Lutjanus vivanus* Smallmouth grunt, Haemulon chrysargyreum Snowy grouper, Epinephelus niveatus Spanish grunt, *Haemulon macrostomum* Speckled hind, Epinephelus drummondhayi Tiger grouper, Mycteroperca tigris Tomtate, Haemulon aurolineatum Yellow jack, Carangoides bartholomaei Yellowedge grouper, Epinephelus flavolimbatus Yellowfin grouper, Mycteroperca venenosa Yellowmouth grouper, Mycteroperca interstitialis Yellowtail snapper, Ocyurus chrysurus Vermilion snapper, Rhomboplites aurorubens Warsaw grouper, Epinephelus nigritus White grunt, Haemulon plumierii Whitebone porgy, Calamus leucosteus Wreckfish, Polyprion americanus

Stock assessments, through the evaluation of biological and statistical information, provide an evaluation of stock health and directionality of overall stock health under the current management regime and other potential future harvest conditions. More specifically, the assessments provide an estimation of the maximum sustainable yield (MSY) and a determination of the stock status (whether overfishing is occurring and whether the stock is overfished). Following the assessment, the Council's Scientific and Statistical Committee (SSC) reviews the stock assessment information and advises the

Council on whether the stock assessment was performed utilizing the best available data and whether the outcome of the assessment is suitable for management purposes.

A stock assessment can range from simple (evaluation of trends in catch, average fish length, and catch-per-unit-effort) to complex (statistical catch-at-age models). The type of assessment varies based on available data and available resources used to conduct an assessment. In 1998, 2001, and 2003, the Council evaluated annual reports on major snapper grouper species compiled by the NOAA/NMFS Laboratory in Beaufort, NC. These reports outlined trends in catch data and estimated spawning potential ratio (SPR) values for species in the snapper grouper fishery management unit (FMU). In addition, the Council received a report on stock status and control rule alternatives in 2001 (Powers 2001). More recent stock assessments have been performed through the Southeast Data, Assessment, and Review (SEDAR) program. Stock assessments have determined that 10 species in the snapper grouper fishery management unit (FMU) are undergoing overfishing (**Table 1-2**).

**Table 1-2.** Assessment information for 10 species in the snapper grouper fishery

management unit undergoing overfishing.

Species	Most Recent Stock	Data Thru	Date SSC	Overfishing?	Overfished?	Next
	Assessment Source &		Approved			Assessment
	Year Completed					Begins
Golden	SEDAR 4 (2004)	2002	10/04	Yes	No	2010
Snowy	SEDAR 4 (2004)	2002	10/04	Yes	Yes	2010
Speckled hind	Potts and Brennan (2001)	1999	n/a	Yes	Unknown	2010
Warsaw grouper Huntsman et al. (1992)		1990	n/a	Yes	Unknown	2012
Black grouper	ck grouper Potts and Brennan (2001)		10/21/05	Yes	Unknown	2009
Black sea	SEDAR Update 1 (2005)		5/12/05	Yes	Yes	2011
Gag	SEDAR 10 (2006)	2004	6/12/07	Yes	No	2011
Red grouper	Potts and Brennan (2001)	1999	10/21/05	Yes	Unknown	2009
Vermilion snapper	SEDAR Update #3	2006	6/12/07	Yes	Unknown	Not scheduled
	(2007)					
Red snapper	SEDAR 15 (2008)	2006	6/11/08	Yes	Yes	Not scheduled

were implemented to reduce fishing mortality to a level expected to end overfishing. These stocks will be declared undergoing overfishing until a stock assessment confirms otherwise.

#### 1.2 Purpose and Need

The purpose of this amendment is to: 1) modify the Wreckfish ITQ Program; 2) bring the Wreckfish ITQ into compliance with the Reauthorized Magnuson-Stevens Act; 3) implement management measures for the recreational fishery; and 4) establish a Maximum Sustainable Yield (MSY), Acceptable Biological Catch (ABC), Overfishing Limit (OFL), Annual Catch Limit (ACL) and, Accountability Measures (AMs), if needed, including management measures to reduce the probability that catches will exceed the stocks' ACLs pursuant to Reauthorized Magnuson-Stevens requirements. The Council will also consider the specification of Annual Catch Targets (ACT) for a recreational fishery if necessary. Previously implemented snapper grouper amendments may contain management measures for species undergoing overfishing that are comparable to ACLs and AMs. The SSC will meet in April 2010 to continue identifying

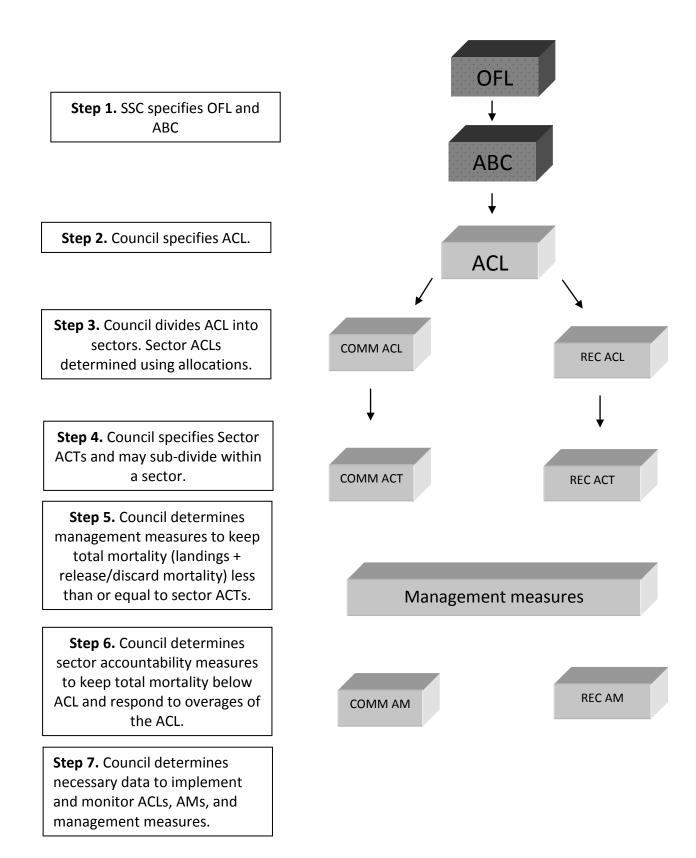
a protocol for determining ABCs and make recommendations to the Council regarding a MSY, ABC, and OFL for the wreckfish fishery.

# [insert info re ITQ program]

#### **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 timeframe 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 (**Figure 1-2**). 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, as long as an estimate of bycatch is accounted for such that total of landings and bycatch will not exceed the stock's ACL.



**Figure 1-2.** The tiering process employed in Snapper Grouper Amendment 20.

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 20 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.

To summarize, actions proposed in Amendment 20 would:

- Modify the Wreckfish ITQ to bring it into compliance with the Reauthorized Magnuson-Stevens Act.
- Specify a MSY, ABC, OFL, ACL, ACT, if necessary, and AMs, if necessary, for South Atlantic wreckfish.

#### 1.3 Management Objectives

Objectives of the Snapper Grouper FMP, as modified by Amendment 8 (SAFMC 1996), are shown below. In addition, two new objectives proposed in Amendment 17 are also provided.

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

# 1.4 History of Management

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

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
FMP (1983)	08/31/83	PR: 48 FR 26843 FR: 48 FR 39463	-12" limit – red snapper, yellowtail snapper, red grouper, Nassau grouper -8" limit – black sea bass -4" trawl mesh size -Gear limitations – poisons, explosives, fish traps, trawls -Designated modified habitats or artificial reefs as Special Management Zones (SMZs)
Regulatory Amendment #1 (1986)	03/27/87	PR: 51 FR 43937 FR: 52 FR 9864	-Prohibited fishing in SMZs except with hand-held hook-and-line and spearfishing gearProhibited harvest of goliath grouper in SMZs.
Amendment #1 (1988)	01/12/89	PR: 53 FR 42985 FR: 54 FR 1720	-Prohibited trawl gear to harvest fish south of Cape Hatteras, NC and north of Cape Canaveral, FLDirected fishery defined as vessel with trawl gear and ≥200 lbs s-g on boardEstablished rebuttable assumption that vessel with s-g on board had harvested such fish in EEZ.
Regulatory Amendment #2 (1988)	03/30/89	PR: 53 FR 32412 FR: 54 FR 8342	-Established 2 artificial reefs off Ft. Pierce, FL as SMZs.
Notice of Control Date	09/24/90	55 FR 39039	-Anyone entering federal wreckfish fishery in the EEZ off S. Atlantic states after 09/24/90 was not assured of future access if limited entry program developed.
Regulatory Amendment #3 (1989)	11/02/90	PR: 55 FR 28066 FR: 55 FR 40394	-Established artificial reef at Key Biscayne, FL as SMZ. Fish trapping, bottom longlining, spear fishing, and harvesting of Goliath grouper prohibited in SMZ.
Amendment #2 (1990)	10/30/90	PR: 55 FR 31406 FR: 55 FR 46213	-Prohibited harvest/possession of goliath grouper in or from the EEZ -Defined overfishing for goliath grouper and other species
Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
Emergency Rule	8/3/90	55 FR 32257	-Added wreckfish to the FMU -Fishing year beginning 4/16/90 -Commercial quota of 2 million pounds -Commercial trip limit of 10,000 pounds per trip
Fishery Closure Notice	8/8/90	55 FR 32635	- Fishery closed because the commercial quota of 2 million pounds was reached
Emergency Rule Extension	11/1/90	55 FR 40181	-extended the measures implemented via emergency rule on 8/3/90
Amendment #3 (1990)	01/31/91	PR: 55 FR 39023 FR: 56 FR 2443	-Added wreckfish to the FMU; -Defined optimum yield and overfishing

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
			-Required permit to fish for, land or sell wreckfish; -Required catch and effort reports from selected, permitted vessels; -Established control date of 03/28/90; -Established a fishing year for wreckfish starting April 16; -Established a process to set annual quota, with initial quota of 2 million pounds; provisions for closure; -Established 10,000 pound trip limit; -Established a spawning season closure for wreckfish from January 15 to April 15; and -Provided for annual adjustments of wreckfish management measures;
Notice of Control Date	07/30/91	56 FR 36052	-Anyone entering federal snapper grouper fishery (other than for wreckfish) in the EEZ off S. Atlantic states after 07/30/91 was not assured of future access if limited entry program developed.
Amendment #4 (1991)	01/01/92	PR: 56 FR 29922 FR: 56 FR 56016	-Prohibited gear: fish traps except black sea bass traps north of Cape Canaveral, FL; entanglement nets; longline gear inside 50 fathoms; bottom longlines to harvest wreckfish**; powerheads and bangsticks in designated SMZs off S. Carolina.  -defined overfishing/overfished and established rebuilding timeframe: red snapper and groupers ≤ 15 years (year 1 = 1991); other snappers, greater amberjack, black sea bass, red porgy ≤ 10 years (year 1 = 1991)  -Required permits (commercial & for-hire) and specified data collection regulations -Established an assessment group and annual adjustment procedure (framework) -Permit, gear, and vessel id requirements specified for black sea bass trapsNo retention of snapper grouper spp. caught in other fisheries with gear prohibited in snapper grouper fishery if captured snapper grouper had no bag limit or harvest was prohibited. If had a bag limit, could retain only the bag limit8" limit − lane snapper -10" limit − vermilion snapper (recreational only) -12" limit − red porgy, vermilion snapper (commercial only), gray, yellowtail, mutton, schoolmaster, queen, blackfin, cubera, dog, mahogany, and silk snappers -20" limit − red snapper, gag, and red, black, scamp, yellowfin, and yellowmouth groupers28" FL limit − greater amberjack (recreational only) -36" FL or 28" core length − greater amberjack (commercial only) -bag limits − 10 vermilion snapper, 3 greater amberjack (commercial only) -bag limits − 10 vermilion snapper, 3 greater amberjack -aggregate snapper bag limit − 10/person/day, excluding vermilion snapper and allowing no more than 2 red snappers

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
			-aggregate grouper bag limit – 5/person/day, excluding Nassau and goliath grouper, for which no retention (recreational & commercial) is allowed -spawning season closure – commercial harvest greater amberjack > 3 fish bag prohibited in April south of Cape Canaveral, FL -spawning season closure – commercial harvest mutton snapper >snapper aggregate prohibited during May and June -charter/headboats and excursion boat possession limits extended
Amendment #5 (1991)	04/06/92	PR: 56 FR 57302 FR: 57 FR 7886	-Wreckfish: established limited entry system with ITQs; required dealer to have permit; rescinded 10,000 lb. trip limit; required off-loading between 8 am and 5 pm; reduced occasions when 24-hour advance notice of offloading required for off-loading; established procedure for initial distribution of percentage shares of TAC
Emergency Rule	8/31/92	57 FR 39365	-Black Sea Bass (bsb): modified definition of bsb pot; allowed multi-gear trips for bsb; allowed retention of incidentally-caught fish on bsb trips
Emergency Rule Extension	11/30/92	57 FR 56522	-Black Sea Bass: modified definition of bsb pot; allowed multi-gear trips for bsb; allowed retention of incidentally-caught fish on bsb trips
Regulatory Amendment #4 (1992)	07/06/93	FR: 58 FR 36155	-Black Sea Bass: modified definition of bsb pot; allowed multi-gear trips for bsb; allowed retention of incidentally-caught fish on bsb trips
Regulatory Amendment #5 (1992)	07/31/93	PR: 58 FR 13732 FR: 58 FR 35895	-Established 8 SMZs off S. Carolina, where only handheld, hook-and-line gear and spearfishing (excluding powerheads) was allowed.
Amendment #6 (1993)	07/27/94	PR: 59 FR 9721 FR: 59 FR 27242	-commercial quotas for snowy grouper, golden tilefish -commercial trip limits for snowy grouper, golden tilefish, speckled hind, and warsaw grouper -include golden tilefish in grouper recreational aggregate bag limits -prohibited sale of warsaw grouper and speckled hind -100% logbook coverage upon renewal of permit -creation of the Oculina Experimental Closed Area -data collection needs specified for evaluation of possible future IFQ system
Amendment #7 (1994)	01/23/95	PR: 59 FR 47833 FR: 59 FR 66270	-12" FL – hogfish -16" TL – mutton snapper -required dealer, charter and headboat federal permits -allowed sale under specified conditions -specified allowable gear and made allowance for experimental gear -allowed multi-gear trips in N. Carolina -added localized overfishing to list of problems and objectives -adjusted bag limit and crew specs. for charter and

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
			head boats -modified management unit for scup to apply south of Cape Hatteras, NC -modified framework procedure
Regulatory Amendment #6 (1994)	05/22/95	PR: 60 FR 8620 FR: 60 FR 19683	Established actions which applied only to EEZ off Atlantic coast of FL: Bag limits – 5 hogfish/person/day (recreational only), 2 cubera snapper/person/day > 30" TL; 12" TL – gray triggerfish
Notice of Control Date	04/23/97	62 FR 22995	-Anyone entering federal bsb pot fishery off S. Atlantic states after 04/23/97 was not assured of future access if limited entry program developed.
Amendment #8 (1997)	12/14/98	PR: 63 FR 1813 FR: 63 FR 38298	-established program to limit initial eligibility for snapper grouper fishery: Must demonstrate landings of any species in SG FMU in 1993, 1994, 1995 or 1996; and have held valid SG permit between 02/11/96 and 02/11/97.  -granted transferable permit with unlimited landings if vessel landed ≥ 1,000 lbs. of snapper grouper spp. in any of the years  -granted non-transferable permit with 225 lb. trip limit to all other vessels  -modified problems, objectives, OY, and overfishing definitions  -expanded Council's habitat responsibility  -allowed retention of snapper grouper spp. in excess of bag limit on permitted vessel with a single bait net or cast nets on board  -allowed permitted vessels to possess filleted fish harvested in the Bahamas under certain conditions.
Regulatory Amendment #7 (1998)	01/29/99	PR: 63 FR 43656 FR: 63 FR 71793	-Established 10 SMZs at artificial reefs off South Carolina.
Interim Rule Request	1/16/98		-Council requested all Amendment 9 measures except black sea bass pot construction changes be implemented as an interim request under MSA
Action Suspended	5/14/98		-NMFS informed the Council that action on the interim rule request was suspended
Emergency Rule Request	9/24/98		-Council requested Amendment 9 be implemented via emergency rule
Request not Implemented	1/22/99		-NMFS informed the Council that the final rule for Amendment 9 would be effective 2/24/99; therefore they did not implement the emergency rule
Amendment #9 (1998)	2/24/99	PR: 63 FR 63276 FR: 64 FR 3624	-Red porgy: 14" length (recreational and commercial); 5 fish rec. bag limit; no harvest or possession > bag limit, and no purchase or sale, in March and AprilBlack sea bass: 10" length (recreational and commercial); 20 fish rec. bag limit; required escape vents and escape panels with degradable fasteners in bsb pots -Greater amberjack: 1 fish rec. bag limit; no harvest or

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
			possession > bag limit, and no purchase or sale, during April; quota = 1,169,931 lbs; began fishing year May 1; prohibited coring.  -Vermilion snapper: 11" length (recreational) Gag: 24" length (recreational); no commercial harvest or possession > bag limit, and no purchase or sale, during March and April  -Black grouper: 24" length (recreational and commercial); no harvest or possession > bag limit, and no purchase or sale, during March and April.  -Gag and Black grouper: within 5 fish aggregate grouper bag limit, no more than 2 fish may be gag or black grouper (individually or in combination)  -All SG without a bag limit: aggregate recreational bag limit 20 fish/person/day, excluding tomtate and blue runners  -Vessels with longline gear aboard may only possess snowy, warsaw, yellowedge, and misty grouper, and golden, blueline and sand tilefish.
Amendment #9 (1998) resubmitted	10/13/00	PR: 63 FR 63276 FR: 65 FR 55203	-Commercial trip limit for greater amberjack
Regulatory Amendment #8 (2000)	11/15/00	PR: 65 FR 41041 FR: 65 FR 61114	-Established 12 SMZs at artificial reefs off Georgia; revised boundaries of 7 existing SMZs off Georgia to meet CG permit specs; restricted fishing in new and revised SMZs
Emergency Interim Rule	09/08/99, expired 08/28/00	64 FR 48324 and 65 FR 10040	-Prohibited harvest or possession of red porgy.
Emergency Action	9/3/99	64 FR 48326	-Reopened the Amendment 8 permit application process
Amendment #10 (1998)	07/14/00	PR: 64 FR 37082 and 64 FR 59152 FR: 65 FR 37292	-Identified EFH and established HAPCs for species in the SG FMU.
Amendment #11 (1998d)	12/02/99	PR: 64 FR 27952 FR: 64 FR 59126	-MSY proxy: goliath and Nassau grouper = 40% static SPR; all other species = 30% static SPR -OY: hermaphroditic groupers = 45% static SPR; goliath and Nassau grouper = 50% static SPR; all other species = 40% static SPR -Overfished/overfishing evaluations: BSB: overfished (MSST=3.72 mp, 1995 biomass=1.33 mp); undergoing overfishing (MFMT=0.72, F1991-1995=0.95) Vermilion snapper: overfished (static SPR = 21-27%). Red porgy: overfished (static SPR = 14-19%). Red snapper: overfished (static SPR = 24-32%) Gag: overfished (static SPR = 27%) Scamp: no longer overfished (static SPR = 35%) Speckled hind: overfished (static SPR = 8-13%)

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
			Warsaw grouper: overfished (static SPR = 6-14%) Snowy grouper: overfished (static SPR = 5=15%) White grunt: no longer overfished (static SPR = 29- 39%) Golden tilefish: overfished (couldn't estimate static SPR) Nassau grouper: overfished (couldn't estimate static SPR) Goliath grouper: overfished (couldn't estimate static SPR) -overfishing level: goliath and Nassau grouper = F>F40% static SPR; all other species: = F>F30% static SPR Approved definitions for overfished and overfishing. MSST = [(1-M) or 0.5 whichever is greater]*BMSY. MFMT = FMSY
Amendment #12 (2000)	09/22/00	PR: 65 FR 35877 FR: 65 FR 51248	-Red porgy: MSY=4.38 mp; OY=45% static SPR; MFMT=0.43; MSST=7.34 mp; rebuilding timeframe=18 years (1999=year 1); no sale during Jan-April; 1 fish bag limit; 50 lb. bycatch comm. trip limit May-December; modified management options and list of possible framework actions.
Amendment #13A (2003)	04/26/04	PR: 68 FR 66069 FR: 69 FR 15731	-Extended for an indefinite period the regulation prohibiting fishing for and possessing snapper grouper spp. within the Oculina Experimental Closed Area.
Notice of Control Date	10/14/05	70 FR 60058	-The Council is considering management measures to further limit participation or effort in the commercial fishery for snapper grouper species (excluding Wreckfish).
			- End overfishing of snowy grouper, vermilion snapper,
Amendment #13C (2006)	10/23/06	PR: 71 FR 28841 FR: 71 FR 55096	black sea bass, and golden tilefish. Increase allowable catch of red porgy. Year 1 = 2006.  1. Snowy Grouper Commercial: Quota (gutted weight) = 151,000 lbs gw in year 1, 118,000 lbs gw in year 2, and 84,000 lbs gw in year 3 onwards. Trip limit = 275 lbs gw in year 1, 175 lbs gw in year 2, and 100 lbs gw in year 3 onwards.  Recreational: Limit possession to one snowy grouper in 5 grouper per person/day aggregate bag limit.  2. Golden Tilefish Commercial: Quota of 295,000 lbs gw, 4,000 lbs gw trip limit until 75% of the quota is taken when the trip limit is reduced to 300 lbs gw. Do not adjust the trip limit downwards unless 75% is captured on or before September 1.  Recreational: Limit possession to 1 golden tilefish in 5

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

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
Amendment #16 (SAFMC 2008c)	7/29/09	PR: 74 FR 6297 FR: 74 FR 30964	-Specify SFA parameters for gag and vermilion snapper -For gag grouper: Specify interim allocations 51%com & 49%rec; rec & com spawning closure January through April; directed com quota=348,440 pounds gutted weight; reduce 5-grouper aggregate to 3-grouper and 2 gag/black to 1 gag/black and exclude captain & crew from possessing bag limitFor vermilion snapper: Specify interim allocations 68%com & 32%rec; directed com quota split Jan-June=168,501 pounds gutted weight and 155,501 pounds July-Dec; reduce bag limit from 10 to 4 and a rec closed season October through May 15. In addition, the NMFS RA will set new regulations based on new stock assessmentRequire dehooking tools.
Amendment #17A (TBD)	TBD	TBD	-Specify an ACL and an AM for red snapper with management measures to reduce the probability that catches will exceed the stocks' ACL -Specify a rebuilding plan for red snapper -Specify status determination criteria for red snapper -Specify a monitoring program for red snapper
Amendment #17B (TBD)	TBD	TBD	-Specify ACLs, ACTs, and AMs, where necessary, for 9 species undergoing overfishingModify management measures as needed to limit harvest to the ACL or ACTUpdate the framework procedure for specification of total allowable catch.
Notice of Control Date	12/4/08	TBD	-Establishes a control date for the golden tilefish fishery of the South Atlantic
Notice of Control Date	12/4/08	TBD	-Establishes control date for black sea bass pot fishery of the South Atlantic
Amendment 18 (TBD)	TBD	TBD	-Extend the range of the snapper grouper FMP north and designate EFH in new areas; limit participation and effort in the golden tilefish fishery; limit participation and effort in the black sea bass pot fishery; separate snowy grouper quota into regions/states; separate the gag recreational allocation into regions/states; change the golden tilefish fishing year; improve the accuracy, timing, and quantity of fisheries statistics; and update wreckfish ITQ program
Amendment 19	TBD	TBD	-Establish deepwater coral HAPCs

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
Amendment 20	TBD	TBD	-Update wreckfish ITQ according to reauthorized MSFCMA -Establish ACLs, AMs, and management reference points for wreckfish fishery
Comprehensive ACL Amendment	TBD	TBD	Establish ABC control rules, establish ABCs, ACTs, and AMs for species not undergoing overfishing; remove some species from South Atlantic FMUs; specify allocations among the commercial, recreational, and for-hire sectors for species not undergoing overfishing; limit the total mortality for federally managed species in the South Atlantic to the ACTs, and address spiny lobster issues.

#### 2 Actions and Alternatives

This section outlines the proposed actions and alternatives considered by the Council. A complete analysis of these alternatives can be found in **Section 4.0.** 

Alternatives the Council considered during the development of this amendment and/or presented at the first round of public hearings but eliminated from further detailed study are described in **Appendix X**.

#### **Definitions**

*Shares* - Shares are a **percentage of the commercial quota**. With limited exceptions, an individual's percent share of the quota does not change unless they buy or sell shares.

Annual Pounds – An individual's annual pounds is the **amount of pounds** (gutted weight) an individual is ensured the opportunity to possess, land, or sell in a calendar year. An individual receives annual pounds each year by April 16 when the season for wreckfish begins; any unused allocation expires on January 15 of the following year. An individual's allocation is determined at the beginning of each year by multiplying the share percentage they hold by the commercial quota for the year. Annual pounds will change if the commercial quota is increased or decreased - if a quota is increased, annual pounds will increase proportionately for all shareholders, and if a quota is reduced, annual pounds will decrease proportionately for all shareholders.

#### Action 1. Changes to the Wreckfish ITQ

**Alternative 1.** No action. Maintain the current Wreckfish ITQ program. *Preferred by wreckfish shareholders who attended wreckfish shareholders meeting held March 2010 (unanimous).* 

**Alternative 2.** Eliminate the existing Wreckfish ITQ program.

**Alternative 3.** Eliminate the existing Wreckfish ITQ program and replace it with an alternate effort limitation system for participation.

**Preferred Alternative 4.** Redesign the existing Wreckfish ITQ program.

#### **Action 2. Substantial Participants**

**Alternative 1.** No action. Do not define substantial participants. (*Preferred by two wreckfish shareholders at the wreckfish shareholders meeting held March 2010.*)

**Alternative 2.** Wreckfish shareholders are considered substantial participants. (*Preferred by four wreckfish shareholders at the wreckfish shareholders meeting held March 2010.)* 

**Alternative 3.** Current shareholders who have landed 1 pound or more of wreckfish between 2001 and 2009 are considered substantial participants.

**Alternative 4.** Commercial snapper grouper permit holders are considered substantial participants.

**Alternative 5.** Commercial snapper grouper permit holders and snapper grouper captains and crew are considered substantial participants.

**Alternative 6.** Commercial snapper grouper permit holders and federally permitted snapper grouper fish dealers are considered substantial participants.

**Alternative 7.** Commercial snapper grouper permit holders, federally permitted snapper grouper fish dealers, and snapper grouper captains and crew are considered substantial participants.

#### Discussion and Rationale

Section 303A(c)(5)(E) of the reauthorized Magnuson Stevens Act indicates that "In developing a limited access privilege program to harvest fish the Council or the Secretary shall authorize limited access privileges to harvest fish to be held, acquired, used by, or issued under the system to persons who substantially participate in the fishery, including in a specific sector of such fishery, as specified by the Council."

This action determines which group(s) of individuals would be considered as substantial participants in the commercial Wreckfish fishery. Upon revision of the Wreckfish ITQ program, the universe of substantial participants identified by the Council would constitute the minimum number of individuals that would be eligible for the transfer of quota shares or annual pounds.

## Action 3. Eligibility for ITQ Shares under a Redesigned ITQ Program

**Alternative 1.** No action. Maintain eligibility for ownership of Wreckfish shares by current shareholders. *Preferred by wreckfish shareholders who attended wreckfish shareholders meeting held March 2010 (unanimous).* 

**Alternative 2.** Restrict eligibility to current shareholders who have made landings of 1 pound or greater between 2001 and 2009.

**Alternative 3.** Restrict eligibility to current shareholders who have made landings of 1 pound or greater between 2005 and 2009.

**Alternative 4.** Restrict eligibility to valid commercial snapper grouper permit holders. (-Monica would this eliminate deceased individuals?)

**Alternative 5.** Restrict eligibility to valid commercial snapper grouper permit holders and snapper grouper captains and crew.

**Alternative 6.** Restrict eligibility to valid commercial snapper grouper permit holders and federally permitted snapper grouper fish dealers.

**Alternative 7.** Restrict eligibility to valid commercial snapper grouper permit holders, federally permitted snapper grouper fish dealers, and snapper grouper captains and crew.

#### Discussion and Rationale

This action establishes qualifications necessary to receive shares under a redesigned ITQ program in the commercial Wreckfish ITQ program. Alternatives 2-6 assume that there will be some reissuance of quota share under a redesigned ITQ program. Eligibility requirements for the apportionment of IFQ shares are indispensible design features of an ITQ program. Without a decision on whom to allow into an ITQ program, the program could not be implemented.

Under the program proposed in this document, the program must at a minimum allow all such substantial participants identified by the council to hold, acquire, use, or be issued annual pounds, but the statutory provision does not require that all such participants receive shares under the program. Therefore, while Action 2 specifies who can hold, acquire, use or be issued annual pounds, Action 3 specifies what groups of people are eligible to own quota share. This would be the same or a more narrow group of individuals that those who are deemed to substantially participate. It is important to note that eligibility for ownership ITQ shares does not guarantee an individual will receive shares. In other terms, meeting eligibility criterion is a necessary but not sufficient condition to receive ITQ shares. The amount of ITQ shares granted, if any, will be determined by the apportionment method chosen in Action 4.

#### Action 4. Reapportionment of ITQ Shares

**Alternative 1.** No action. Maintain share ownership by current shareholders. Do not issue new shares under a redesigned Wreckfish ITQ program. (*Preferred by one shareholder at the wreckfish shareholders meeting held March 2010.*)

**Alternative 2.** Distribute ITQ shares under a redesigned Wreckfish ITQ program proportionally among eligible participants based on the average annual landings of wreckfish from logbooks associated with their permit(s) during the period 2001 through 2009.

**Alternative 3.** Distribute ITQ shares under a redesigned Wreckfish ITQ program proportionally among eligible participants based on the average annual landings of wreckfish from logbooks associated with their permit(s) during the period 2005 through 2009.

**Alternative 4.** Distribute ITQ shares under a redesigned Wreckfish ITQ program through an auction system. All eligible entities are allowed to place bids.

**Alternative 5.** Distribute X% of ITQ shares under a redesigned Wreckfish ITQ program proportionally among existing wreckfish shareholders based on the amount of ITQ shares they own just prior to implementation of the redesigned program. Distribute the remaining X percent of ITQ shares through an auction system.

**Alternative 6.** Equally redistribute shares belonging to deceased shareholders to remaining shareholders. (Suggested by three shareholders at the wreckfish shareholders meeting held March 2010.)

**Alternative 7.** Equally redistribute shares belonging to deceased shareholders and shareholders who cannot be contacted to remaining shareholders. (Suggested by two wreckfish shareholders at the wreckfish shareholders meeting held March 2010.)

# **Action 5. Transfer Eligibility Requirements**

**Alternative 1.** No action. Maintain current transfer eligibility requirement under the existing Wreckfish ITQ program which stipulate that ITQ shares can be transferred to anyone but that coupons can only be transferred to persons with quota share and a commercial wreckfish permit. *Preferred by wreckfish shareholders who attended wreckfish shareholders meeting held March 2010 (unanimous).* 

**Alternative 2.** ITQ shares or annual pounds can be transferred to commercial snapper grouper permit holders. Eligible individuals must be persons who are U.S. citizens or permanent resident aliens.

**Alternative 3.** ITQ shares or annual pounds can only be transferred to commercial snapper grouper permit holders during the first five years of the redesigned ITQ program and all U.S. citizens and permanent resident aliens thereafter. Eligible individuals must be persons who are U.S. citizens or permanent resident aliens.

#### Discussion and Rationale

This action defines to whom Wreckfish ITQ shares or annual pounds can be transferred after redesign of the Wreckfish ITQ program that includes a possible reapportionment of quota share. Transfer of shares would be permanent (i.e. they do not transfer back to the original owner at the end of the year) and the transferee would receive annual pounds the following year. Transfer of annual pounds would only be effective for the current year

and the permanent share holder would continue to receive annual pounds the following year. Transfer costs would be determined by the two parties involved.

A differentiation between management measures addressing ITQ share transfers and measures related to annual pound transfers is not warranted because ITQ participants would easily circumvent the most restrictive set of transfer requirements. Assuming that annual pound transfer requirements were more lenient than those corresponding to ITQ share transfers, participants could easily enter into private agreements ensuring the transfer of annual pounds for an extended number of years without transferring ITQ shares. If the converse were true, participants would simply enter into a succession of short term share transfers, bypassing the more restrictive annual pounds transfers.

# Action 6. Caps on ITQ Share Ownership

**Alternative 1.** No action. Maintain the current regulations on share ownership which do not identify any ownership caps. *Preferred by wreckfish shareholders who attended wreckfish shareholders meeting held March 2010 (unanimous)*.

**Alternative 2.** However, share holdings of persons receiving more than the specified ownership cap will be grandfathered in at the time of reapportionment (Action 4) of quota share. Anyone receiving shares in excess of the share cap would not be able to purchase additional shares. Anyone receiving shares that were less than the share cap could purchase additional shares up to the amount of the share cap.

The share cap shall be calculated as the total percentage of wreckfish quota owned by one entity:

Option a) 5 percent Option b) 10 percent Option c) 15 percent Option d) 20 percent

**Alternative 3.** No person shall own more ITQ shares than the maximum percentage issued to the recipient of the largest shares at the time of the reapportionment of the ITQ shares (Action 4, Alternative 2, 3, or 4) or more than the largest shareholder if shares are not reapportioned (Action 4, Alternative 1).

## Action 7. Caps on ITQ Annual Pounds Ownership

**Alternative 1.** No action. Maintain the current regulations on coupon (annual pounds) ownership which do not identify any ownership caps. *Preferred by wreckfish shareholders who attended wreckfish shareholders meeting held March 2010 (unanimous).* 

**Alternative 2.** Set the annual pounds cap equal to the corresponding share cap as defined in Action 15 times the annual quota. For any single fishing year, no person shall possess

annual pounds in an amount that exceeds the annual pounds cap. However, persons grandfathered in at the time of share cap reapportionment or under the no action alternative under Action 4 will also be grandfathered in for more than the annual pounds cap. Anyone receiving annual pounds in excess of the annual pounds ownership cap would not be able to purchase additional annual pounds. Anyone receiving annual pounds that were less than the annual pounds ownership cap could purchase additional annual pounds up to the amount of the annual pounds ownership cap.

#### **Alternative 3.** Set the annual pounds cap equal to:

Option a) The share cap specified in Action 6 plus 1 percent times the annual quota. Option b) The share cap specified in Action 6 plus 5 percent times the annual quota. Option c) The share cap specified in Action 6 plus 10 percent times the annual quota.

For any single fishing year, no person shall possess annual pounds in an amount that exceeds the annual pounds cap.

## Action 8. Adjustments in Annual Allocations of Commercial TACs

**Alternative 1.** No action. Maintain the process used under the current Wreckfish ITQ which annually allocates adjustments in the commercial quota proportionately among eligible ITQ shareholders (e.g., those eligible at the time of the adjustment) based on the percentage of the commercial quota each holds at the time of the adjustment. *Preferred by wreckfish shareholders who attended wreckfish shareholders meeting held March 2010 (unanimous)*.

**Alternative 2.** Allocate adjustments in the commercial quota through an auction system. All Wreckfish ITQ shareholders are allowed to place bids.

#### Action 9. Establishment and Structure of an Appeals Process

**Alternative 1.** No action. If reapportionment of quota share occurs (Action 4), do not specify provisions for an appeals process. *Preferred by wreckfish shareholders who attended wreckfish shareholders meeting held March 2010 (unanimous).* 

Alternative 2. The Regional Administrator (RA) will review, evaluate, and render final decision on appeals. Filing of an appeal based on landings data must be completed within 90 days of the effective date of the final regulations implementing the redesigned ITQ program. Hardship arguments will not be considered. The RA will determine the outcome of appeals based on NMFS' wreckfish logbooks. If NMFS' wreckfish logbooks are not available, the RA may use state landings records. Applicants must submit NMFS' wreckfish logbooks to support their appeal.

**Alternative 3.** A special board composed of state directors/designees will review, evaluate, and make individual recommendations to RA on appeals. Filing of an appeal

must be completed within 90 days of the effective date of the final regulations implementing the redesigned ITQ program. Hardship arguments will not be considered.

#### Action 10. Set Aside

**Alternative 1.** No action. No set aside. *Preferred by wreckfish shareholders who attended wreckfish shareholders meeting held March 2010 (unanimous).* 

**Alternative 2.** A total of three percent of the current commercial quota will be initially set aside to resolve appeals. Any amount remaining in the three percent set aside after the appeals process has been terminated will be proportionately distributed back to ITQ shareholders.

**Alternative 3.** A total of X percent of the current commercial quota will be initially set aside to resolve appeals. Any amount remaining in the three percent set aside after the appeals process has been terminated will be proportionately distributed back to ITQ shareholders.

#### Action 11. Use it or Lose it Policy for ITQ Shares

**Alternative 1.** No action. Do not specify a minimum landings requirement for retaining ITQ shares. The current Wreckfish ITQ program has no minimum landings requirement. *Preferred by wreckfish shareholders who attended wreckfish shareholders meeting held March 2010 (unanimous).* 

**Alternative 2.** ITQ shares that remain inactive for three years will be revoked and redistributed proportionately among the remaining shareholders. "Inactive" is defined as less than 30 percent of the aggregate annual average utilization of allotted ITQ shares over a three year moving average period.

**Alternative 3.** ITQ shares that remain inactive for three years will be revoked and redistributed proportionately among the remaining shareholders. "Inactive" is defined as less than 50 percent of the aggregate annual average utilization of allotted ITQ shares over a three year moving average period.

**Alternative 4.** If needed, set a control date if needed whereby fishermen would need landings to qualify. Preferred by a majority of wreckfish shareholders who attended wreckfish shareholders meeting held March 2010.

#### Action 12. Cost Recovery Plan

**Alternative 1.** No action. No ITQ cost recovery plan will be implemented. The current Wreckfish ITQ program does not have a cost recovery plan. *Preferred by some of the wreckfish shareholders who attended wreckfish shareholders meeting held March 2010.* 

**Alternative 2.** Implement an ITQ cost recovery plan. All ITQ cost recovery fees shall be the responsibility of the recognized IFQ shareholder. The cost recovery plan will have the following conditions:

Option a) ITQ cost recovery fees will be calculated at the time of sale of fish to the registered ITQ dealer based on (i) the actual 1 ex-vessel value of the wreckfish landings or (ii) the standard 2 ex-vessel price of the wreckfish landings as calculated by NMFS.

Option b) The fee collection and submission shall be the responsibility of (i) the ITQ shareholder or (ii) the ITQ dealer. *Preferred by a majority of wreckfish shareholders who attended wreckfish shareholders meeting held March 2010.* 

Option c) The collected fees would be submitted to NMFS (i) quarterly or (ii) monthly.

Note: Collected fees shall not exceed 3 percent of the ex-vessel value of wreckfish harvested (MSA Sec 304(d)(2)(B)).

## **Action 13. Guaranteed Loan Program**

**Alternative 1.** No action. Do not establish an ITQ loan program. *Preferred by wreckfish shareholders who attended wreckfish shareholders meeting held March 2010 (unanimous).* 

**Alternative 2.** Set aside 15% of cost recovery fees to establish a guaranteed loan program.

**Alternative 3.** Set aside 25% of cost recovery fees to establish a guaranteed loan program.

#### Discussion and Rationale

\_

Following the reapportionment of ITQ shares, individuals who want to participate in the ITQ program or add to their quota holdings have, if they are deemed eligible, to buy shares. It may be difficult, especially for small operations, to gather the funds necessary for the share purchase. This action considers management alternatives that could

<sup>&</sup>lt;sup>1</sup> Actual ex-vessel value is the total monetary sale amount fishermen receive for ITQ landings form registered ITQ dealers/processors.

<sup>&</sup>lt;sup>2</sup> Standard ex-vessel price is the ex-vessle price for the previous fishing year and any expected price changes for the current fishing year.

facilitate the acquisition of ITQ shares by establishing a guaranteed loan program financed with a portion of cost recovery funds.

## **Action 14. Approved Landing Sites**

**Alternative 1.** No action. Do not establish approved landing sites for the Wreckfish ITQ program. The current Wreckfish ITQ program does not specify approved landing sites. *Preferred by a majority of wreckfish shareholders who attended wreckfish shareholders meeting held March 2010.* 

**Alternative 2.** Establish approved landing sites for the Wreckfish ITQ program. All ITQ participants must land at one of these sites to participate in the ITQ program. *Preferred by some wreckfish shareholders who attended wreckfish shareholders meeting held March 2010.* 

Option a) Approved landing sites will be selected by fishermen but must be approved by NMFS Office of Law Enforcement (OLE) prior to use.

Option b) Approved landings sites will be selected by the Council and NMFS, based on industry recommendations and resource availability.

## **Action 15. Annual Pounds Overage**

**Alternative 1.** No action. Do not allow fishermen under the current or redesigned Wreckfish ITQ to exceed their annual pounds. *Preferred by wreckfish shareholders who attended wreckfish shareholders meeting held March 2010 (unanimous).* 

**Alternative 2.** A person on board a vessel with the shareholder's only remaining wreckfish allocation may exceed, by up to 5 percent, the shareholder's annual pounds remaining on the last fishing trip of the year.

**Alternative 3.** A person on board a vessel with the shareholder's only remaining wreckfish allocation may exceed, by up to 10 percent, the shareholder's annual pounds remaining on the last fishing trip of the year.

## **Action 16. Collection of Royalties from Resource Use**

**Alternative 1.** No action. Do not collect royalties from shareholders for use of the wreckfish fishery. *Preferred by wreckfish shareholders who attended wreckfish shareholders meeting held March 2010 (unanimous).* 

**Alternative 2.** Hold an annual auction of portions of the TAC to fishermen with a federal commercial snapper grouper permit. Place funds collected through the auction into an account where the funds help pay for wreckfish fishery management.

**Alternative 3.** Redefine wreckfish shares so that they expire every 5 years with a start date upon implementation of this amendment. The Council will determine if the share owner is re-issued the shares for another 5 years after the time has expired. An auction will be used to determine the next owner. Auction participants must own a federal commercial snapper grouper permit. Place funds collected through the auction into an account where the funds help pay for wreckfish fishery management.

**Alternative 4.** Redefine wreckfish shares so that they expire every 5 years with a start date upon implementation of this amendment. The Council will determine if the share owner is re-issued the shares for another 10 years after the time has expired. An auction will be used to determine the next owner. Auction participants must own a federal commercial snapper grouper permit. Place funds collected through the auction into an account where the funds help pay for wreckfish fishery management.

**Alternative 5.** Assess a tax on shareholders equal to an estimation of "super profits" (profits that exceed "normal profit") made in the fishery.

Note: The IPT noted that Alternative 3 and 4 would eliminate the likelihood that any participants would transfer shares. The IPT also noted that Alternative 5 would be complicated to estimate and that the MSA allows royalties to be collected only for initial or subsequent distributions not profits made from landings (which are covered by the cost recovery fee).

Note: The IPT has some concerns about Alternative 5 because it does not fit into the fee systems discussed in the reauthorized MSA. Section 303A of the MSA states:

- (d) AUCTION AND OTHER PROGRAMS.—In establishing a limited access privilege program, a Council shall consider, and may provide, if appropriate, an auction system or other program to collect royalties for the initial, or any subsequent, distribution of allocations in a limited access privilege program if—
- (1) the system or program is administered in such a way that the resulting distribution of limited access privilege shares meets the program requirements of this section; and
- (2) revenues generated through such a royalty program are deposited in the Limited Access System Administration Fund established by section 305(h)(5)(B) and available subject to annual appropriations.

Our initial interpretation is that royalties can only be collected for initial allocation distribution or subsequent allocation distributions. Alternative 5 seems to assess a royalty tax for participating in the fishery, which is unrelated to allocation distributions.

## **Action 17. New Entrants Program**

**Alternative 1.** No action. Do not create provisions that assist new entrants in entering the fishery. There is no such provision in the current Wreckfish ITQ program. *Preferred by wreckfish shareholders who attended wreckfish shareholders meeting held March 2010 (unanimous).* 

**Alternative 2.** Set aside 2% of the wreckfish TAC each year to be auctioned off to snapper grouper commercial permit holders that do not possess wreckfish shares.

**Alternative 3.** Set aside 5% of the wreckfish TAC each year to be auctioned off to snapper grouper commercial permit holders that do not possess wreckfish shares.

**Alternative 4.** Set aside 10% of the wreckfish TAC each year to be auctioned off to snapper grouper commercial permit holders that do not possess wreckfish shares.

#### Action 18. Incidental Catch Provisions

**Alternative 1.** No action. Do not establish incidental catch provisions for wreckfish landings for commercial snapper grouper permit holders that do not possess annual pounds. Under the current wreckfish ITQ, no one may possess wreckfish without wreckfish shares, coupons, a commercial wreckfish permit, and a commercial snapper grouper permit. *Preferred by wreckfish shareholders who attended wreckfish shareholders meeting held March 2010 (unanimous)*.

**Alternative 2.** Establish an incidental catch allowance of 50 pounds of wreckfish per trip for commercial snapper grouper permit holders who do not possess annual pounds.

**Alternative 3.** Establish an incidental catch allowance of 100 pounds of wreckfish per trip for commercial snapper grouper permit holders who do not possess annual pounds.

## **Action 19. VMS Requirement**

**Alternative 1.** No action. Do not require commercial wreckfish vessels to be equipped with VMS. *Preferred by wreckfish shareholders who attended wreckfish shareholders meeting held March 2010 (unanimous).* 

**Alternative 2.** Require all fishing vessels engaged in harvesting wreckfish under the ITQ program to be equipped with VMS. The purchase, installation, and maintenance of VMS equipment must conform to the protocol established by NMFS in the Federal Register.

Option a) the purchase, installation, and maintenance of the VMS equipment and communications costs will be paid for or arranged by the owner of the ITQ shares.

Option b) the purchase, installation, and maintenance of the VMS equipment and communications costs will be paid for or arranged by NMFS.

Option c) the purchase, installation, and maintenance of the VMS equipment and communications costs will be paid for jointly by the owner of the ITQ shares and NMFS.

Option d) the purchase, installation, and maintenance of the VMS equipment will be paid for by NMFS. Communications costs will be paid for or arranged by the owner of the ITQ shares.

## Administrative Changes to be Made Under a Catch Share Program

The changes outlined below are not actions in Amendment 20 because Council action is not needed to make these changes. Changes recommended and implied below include:

- 1) Elimination of the requirement for wreckfish vessel permits;
- 2) Elimination of the requirement for wreckfish dealer permits;
- 3) Implementation of an online electronic system for tracking annual pounds usage and share holdings.

The following text describes administrative program requirements that would be implemented under an ITQ program. These are not included as alternatives above. Provisions discussed herein apply to wreckfish in or from the S. Atlantic EEZ, to any person aboard a vessel with a S. Atlantic wreckfish ITQ vessel account. This implies that an online electronic system would be implemented and used to track annual pounds usage. Wreckfish ITQ allocations (annual pounds) and landings would be measured in terms of gutted weight. Wreckfish shares would be initially distributed at the onset of the redesigned program as a percentage. All annual pounds derived from shares will be rounded to the nearest pound gutted weight. All ITQ share/annual pounds holders would be required to possess a valid S. Atlantic Snapper-Grouper permit to harvest wreckfish under the ITQ program. Additionally, vessels harvesting wreckfish would be required to have an ITQ vessel account with sufficient annual pounds to cover wreckfish being landed. The need for a wreckfish permit would be no longer required. All dealers who purchase wreckfish from an ITQ share/allocation holder would be required to possess a valid federal dealer permit for S. Atlantic Snapper-Grouper and documentation verifying the dealer is an ITQ participant without which possessing, transporting, selling, purchasing, or processing wreckfish would be prohibited. A wreckfish dealer permit would no longer be required. The wreckfish ITQ dealer documentation would be available for download from the ITQ website at no cost to those individuals who possess a valid S. Atlantic snapper-grouper dealer permit and activate an ITQ dealer account.

Although S. Atlantic snapper-grouper permits and snapper-grouper dealer permits must be renewed annually at a cost in accordance with established permit fees, the wreckfish ITQ dealer documentation would remain valid as long as the individual possesses a valid S. Atlantic snapper-grouper dealer permit and abides by all reporting and cost recovery requirements of the ITQ program.

Possessing, transporting, selling, purchasing, or processing in intrastate or interstate commerce any wreckfish harvested under the commercial ITQ program in violation of the aforementioned restrictions would be prohibited. Possession beyond the harvesting vessel without a NMFS approval transaction code would be prohibited. The approval transaction code would verify the ITQ share/allocation holder had sufficient allocation in his/her account to conduct the sales transaction and that the sales transaction has taken place. Recipients of ITQ dealer permits, including all ITQ share/allocation holders who sell wreckfish directly from their vessel in lieu of a dealer, would be required to abide by all regulations, reporting requirements, and fishery cost recovery requirements specified in this section for the proposed program.

NMFS would require all ITQ share and allocation transfers be registered with the agency, and would prohibit the carryover transfer of unused portions of annual allocations for use in the next fishing year. Additionally, ITQ share transfers would need to be completed by 6:00 p.m. (eastern time), April 15 when the season opens (if the spawning season closure is retained) to allow NMFS the time necessary for end-of-year program management.

ITQ share and allocation debits and transfers would be tracked using an electronic accounting/reconciliation process developed by NMFS. The ITQ share/annual pounds holder, dealer, and vessel accounts would record ITQ share/annual pounds transactions. NMFS would monitor ITQ share/annual pounds transactions. If ITQ participants indicate an error occurred during completion of a landing transaction, NMFS may require participants to complete a landing transaction correction form.

NMFS will also monitor ITQ shares suspended prior to issuance and other legal actions taken against ITQ share/annual pounds holders. Only ITQ shares pursuant to sanctions or rule violations would revert to the management program. Any ITQ shares permanently revoked would be proportionally redistributed among the existing ITQ shareholders based on the ITQ shares held at the time of redistribution.

The electronic accounting/reconciliation process would be used to collect and monitor the following data and information:

- Landing transactions (i.e. when an ITQ share/allocation holder has sold wreckfish), including the following information:
  - o Date, time, and location of transaction;
  - o The actual ex-vessel value of wreckfish;
  - o The weight of the catch sold;

- o Information necessary to identify the fisherman, vessel, and dealer involved in the transaction; and
- Whether the seller has sufficient annual pounds to complete the sales transaction.
- Issuance of NMFS landing transaction approval codes.
- Reporting of landing notifications and issuance of landing notification confirmation codes.
- Annual pounds and share transfers between ITQ participants.

ITQ share/annual pounds holders could electronically purchase additional ITQ allocation and ITQ shares from other ITQ share/annual pounds holders.

For enforcement purposes, fishermen participating in the ITQ program would be required to offload their wreckfish landings at permitted ITQ dealers between 8:00 a.m. and 5:00 p.m. daily. All persons landing ITQ catch would be able to land 24 hours a day but would be required to notify NMFS enforcement agents three to twelve hours in advance of the time of landing. At sea or at dockage transfers of fish on board ITQ vessels also would be prohibited to facilitate law enforcement activities.

## **Affected Environment**

## 2.1 Habitat

## 2.1.1 Description and distribution

#### 2.1.1.1 Inshore/estuarine habitat

Snapper grouper species utilize both pelagic (open ocean) and benthic (bottom) habitats during their life cycle. Free-swimming larval stages live in the water column and feed on zooplankton. Juveniles and adults are typically bottom dwellers and usually associate with hard structures on the continental shelf that have moderate to high relief; i.e., coral reefs, artificial reefs, rocky hard-bottom substrates, ledges and caves, sloping soft-bottom areas, and limestone outcroppings. More detail on these habitat types is found in **Section 3.0** of Volume II of the Fishery Ecosystem Plan (SAFMC, in review). However, juveniles of some species, such as mutton snapper, gray snapper, dog snapper, lane snapper, yellowtail snapper, goliath grouper, red grouper, gag, snowy grouper, yellowfin grouper, black sea bass, Atlantic spadefish, and hogfish may occur in inshore seagrass beds, mangrove estuaries, lagoons, oyster reefs, and bay systems. In many species, various combinations of these habitats may be utilized during daily feeding migrations or seasonal shifts in cross-shelf distributions.

#### 2.1.1.2 Offshore habitat

The principal snapper grouper fishing areas are located in live bottom and shelf-edge habitats; depths range from 54 to 90 feet or greater for live-bottom habitats, 180 to 360 feet for the shelf-edge habitat, and 360 to 600 feet for the lower-shelf habitat. Temperatures range from 11° to 27°C over the continental shelf and shelf-edge due to the proximity of the Gulf Stream, with lower shelf habitat temperatures varying from 11° to 14°C. The SEAMAP Bottom Mapping Project using a variety of data sources has mapped the extent and distribution of productive snapper grouper habitat on the continental shelf north of Cape Canaveral. Current data suggest that from 3% to 30% of the shelf is suitable bottom. These hard, live-bottom habitats may be low relief areas supporting sparse to moderate growth of immobile invertebrates, moderate relief reefs from 1.6 to 6.6 feet, or high relief ridges at or near the shelf break consisting of outcrops of rock that are heavily encrusted with immobile invertebrates such as sponges and sea fans. Live-bottom habitat is scattered irregularly over most of the shelf north of Cape Canaveral, but is most abundant off northeastern Florida. South of Cape Canaveral, the continental shelf narrows from 35 to 10 miles and less off the southeast coast of Florida and the Florida Keys. The lack of a large shelf area, presence of extensive, rugged living fossil coral reefs, and dominance of a tropical Caribbean fauna are distinctive characteristics.

Rock outcroppings occur throughout the continental shelf from Cape Hatteras, NC to Key West, FL. Generally, the outcroppings are composed of eroded limestone and carbonate sandstone and exhibit vertical relief ranging from less than ½ meter to over 10 meters. Ledge systems formed by rock outcrops and piles of irregularly sized boulders are common. It has been estimated that 24% (9,443 square kilometers) of the area between the 27 and 101 meter depth contours from Cape Hatteras to Cape Canaveral is reef habitat. Although the area of bottom between 100 and 300 meter depths from Cape Hatteras to Key West is small relative

to the shelf as a whole, it constitutes prime reef fish habitat according to fishermen and probably contributes significantly to the total amount of reef habitat.

Man-made artificial reefs are also utilized to attract fish and increase fish harvests. Research on manmade reefs is limited and opinions differ as to whether or not artificial structures actually promote an increase of biomass or merely concentrate fishes by attracting them from nearby natural areas.

The distribution of coral and live hardbottom habitat as presented in the SEAMAP Bottom Mapping Project can be used as a proxy for the distribution of the species in the snapper grouper complex. These maps are available over the Council's Internet Mapping System under "Mapping/GIS" on the Habitat/Ecosystem section (<u>.safmc.</u>).

Additional information on use of offshore fish habitat by snapper grouper species has been obtained through the Marine Resources Monitoring, Assessment, and Prediction Program (MARMAP). This fishery-independent survey program has been collecting data in the South Atlantic Bight region since 1973. The program began as a larval fish and groundfish survey of shelf and upper slope waters from Cape Fear to Cape Canaveral. However, since 1978, efforts of the South Carolina MARMAP program have concentrated on fishery-independent assessments of reef fish abundance and life history. The spatial distribution of sampling effort has varied considerably by gear type. Maps portraying the distribution of offshore species were created with this temporal and spatial variability in fishing effort in mind (see the Council's Habitat Plan). Maps of the distribution of snapper grouper species by gear type based on MARMAP data can be generated through the Council's Internet Mapping System under "Mapping/GIS" on the Habitat/Ecosystem section (.safmc.).

## 2.1.1.3 Spawning habitat

Along with habitat settlement patterns, spawning locations are a key demographic attribute of reef fish species. Protection of spawning habitats is an unquestionably logical component of managing essential fish habitat. Specific information on the spawning sites and component habitats for many snapper grouper species has been provided by the MARMAP Program (Sedberry et al. 2006). Several seasonal patterns are present: a) spawning is concentrated over one or two winter months (as in many groupers); b) spawning occurs at low levels year-round with one or two peaks in warmer months; and c) spawning occurs year-round with more than two significant peaks. In addition, spawning can occur in pairs or in various types of aggregations. Many species of groupers and snappers can form sizeable spawning aggregations. However, this may not be the case among all species in the snapper grouper management unit. In fact, some species that spawn in aggregations may also pair-spawn under certain conditions.

Species in the snapper grouper complex may form spawning aggregations in the same spawning locales for decades. One explanation for the choice of spawning sites has to do with the avoidance of egg predation. This assumes that the upward rush culminating the spawning act takes place at structural features positioned in such a manner that eggs will be immediately carried offshore and away from predators on the reef. However, this hypothesis suffers from limited and sometimes contradictory experimental evaluation.

Spawning sites within Council's jurisdiction have been identified for many grouper and snapper species (Sedberry et al. 2006) and available information for other species suggests that shelf edge environments of moderate to high structural relief are sites of spawning for many species, perhaps throughout the entire South Atlantic region. In addition, shallow areas may also be spawning sites for some snapper grouper species such as goliath grouper. As new information becomes available, maps of all documented spawning areas will be created. In addition to pinpointing existing spawning information, this approach will allow the assessment of the spawning value of similar habitat types within Council's jurisdiction

#### 2.1.2 Essential Fish Habitat

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

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

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

## **Essential Fish Habitat-Habitat Areas of Particular Concern**

Areas which meet the criteria for essential fish habitat-habitat areas of particular concern (EFH-HAPCs) for species in the snapper grouper management unit include medium to high profile offshore hard bottoms where spawning normally occurs; localities of known or likely periodic spawning aggregations; near shore hard bottom areas; The Point, The Ten Fathom Ledge, and Big Rock (North Carolina); The Charleston Bump (South Carolina); mangrove habitat; seagrass habitat; oyster/shell habitat; all coastal inlets; all state-designated nursery habitats of particular importance to snapper grouper (e.g., Primary and Secondary Nursery

Areas designated in North Carolina); pelagic and benthic *Sargassum*; Hoyt Hills for wreckfish; the *Oculina* Bank Habitat Area of Particular Concern; all hermatypic coral habitats and reefs; Manganese outcroppings on the Blake Plateau; and Council-designated Artificial Reef Special Management Zones (SMZs). Areas that meet the criteria for designating essential fish habitat-habitat areas of particular concern include habitats required during each life stage (including egg, larval, postlarval, juvenile, and adult stages).

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

## 2.2 Biological/Ecological Environment

## 2.2.1 Species Most Impacted by this Amendment

## 2.2.1.1 Wreckfish, Polyprion americanus

The wreckfish, *Polyprion americanus*, is a large grouper-like fish that has a global antitropical distribution, but it was rarely captured in the western North Atlantic until the late 1980s, when a bottom hook-and-line fishery that targets wreckfish developed on the Blake Plateau (Vaughan et al. 2001). Wreckfish occur in the Eastern and Western Atlantic Ocean, on the Mid-Atlantic Ridge, on Atlantic islands and seamounts, and in the Mediterranean Sea, southern Indian Ocean, and southwestern Pacific Ocean (Heemstra 1986; Sedberry et al. 1994; Sedberry 1995). In the western Atlantic, they occur from Grand Banks (44°50' N) off Newfoundland (Scott and Scott 1988) to the Valdes Peninsula (43°30' S) in Argentina (Menni et al. 1981). Genetic evidence suggests that the stock encompasses the entire North Atlantic (Sedberry et al. 1996). Active adult migration is also possible as the frequent occurrence of European fishhooks in western North Atlantic wreckfish suggests migration across great distances (Sedberry et al. 2001).

Wreckfish have supported substantial fisheries in the eastern North Atlantic, Mediterranean, Bermuda, and the western South Atlantic, but concentrations of wreckfish adequate to support a fishery off the southeastern United States were not discovered until 1987. The fishery off the southeastern United States occurs over a complex bottom feature that has over 100 m of topographic relief, known as the Charleston Bump, that is located 130-160 km southeast of Charleston, South Carolina, at 31°30'N and 79°00'W on the Blake Plateau (Sedberry et al. 2001). Fishing occurs at water depths of 450-600 m. Primary fishing grounds comprise an area of approximately 175-260 , characterized by a rocky ridge and trough feature with a slope greater than 15° (Sedberry et al. 1994; Sedberry et al. 1999; Sedberry et al. 2001).

Adults are demersal and attain lengths of 200 cm TL (79 in; Heemstra 1986) and 100 kg (221 lbs; Roberts 1986). Wreckfish landed in the southeastern United States average 15 kg (33 lbs) and 100 cm TL (39 inches TL) (Sedberry et al. 1994). Juvenile wreckfish (< 60 cm TL) are pelagic, and often associate with floating debris, which accounts for their common name. The absence of small pelagic and demersal wreckfish on the Blake Plateau has led to speculation that young wreckfish drift for an extended period, up to four years, in surface currents until reaching the eastern Atlantic, or perhaps that they make a complete circuit of the North Atlantic (Sedberry et al. 2001).

Vaughan et al. (2001) reported maximum ages of 35 years, however, off Brazil ages as great as 76 years have been reported for wreckfish (Peres and Haimovici 2004). In a recent MARMAP report, mature gonads were present in 60% of females at 751-800 mm, 57% at 801-850 mm, and 100% at larger sizes. The smallest mature female was 692 mm, and immature females were 576-831 mm. The estimate of length at 50% maturity was 790 mm (Gomperz model; 95% CI = 733-820). Mature gonads were present in 40% of males at 651-800 mm and 100% at larger sizes. The smallest mature male was 661 mm, and immature males were 518-883 mm. L50 was not estimated because transition to maturity was abrupt.

Wreckfish spawn from December through May, with a peak during February and March. The highest percentages of ripe males occurred during December through May, which corresponded with the female spawning season; however, males in spawning condition were collected throughout the year. The male spawning peak was also during February and March.

## 2.2.2 Other Affected Species

## 3.2.3 Endangered Species Act (ESA)-Listed Species

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

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

that the snapper grouper fishery would adversely affect sea turtles and smalltooth sawfish. A discussion of these species is included below.

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

## List of Species and Designated Critical Habitat in the Action Area

## **Endangered**

Blue whale Balaenoptera musculus Humpback whale Megaptera novaeangliae Fin whale Balaenoptera physalus North Atlantic right whale Eubalaena glacialis Balaenoptera borealis Sei whale Physeter macrocephalus Sperm whale Leatherback sea turtle Dermochelys coriacea Eretmochelys imbricata Hawksbill sea turtle Kemp's Ridley turtle Lepidochelys kempii Green turtle\* Chelonia mydas Smalltooth sawfish\*\* Pristis pectinata

## Threatened

Loggerhead turtle Caretta caretta
Elkhorn coral Acropora palmata
Staghorn coral A. cervicornis

## **Proposed Species**

None

## Acropora sp. Critical Habitat

The physical feature essential to the conservation of elkhorn and staghorn corals is: substrate of suitable quality and availability to support larval settlement and recruitment, and re-attachment and recruitment of asexual fragments. "Substrate of suitable quality and availability" is defined as natural consolidated hard substrate or dead coral skeleton that is free from fleshy or turf macroalgae cover and sediment cover.

<sup>\*</sup>Green turtles in U.S. waters are listed as threatened except the Florida breeding population, which is listed as endangered.

<sup>\*\*</sup>U.S. distinct population segment.

Critical habitat includes one specific area of the Atlantic Ocean offshore of Palm Beach, Broward, Miami-Dade, and Monroe counties, Florida, and three specific areas of the Atlantic Ocean and Caribbean Sea offshore of the U.S. Territories of Puerto Rico and the U.S. Virgin Islands. The boundaries of the designated critical habitat in the South Atlantic regions is described below. Except as specified below, the seaward boundary is the 30-meter (98-foot) depth contour and the shoreward boundary is the line of mean low water (MLW; 33 CFR 2.20). Within these boundaries, discrete areas of water deeper than 30 meters (98 feet) are not included.

Florida Area: The Florida area contains three sub-areas.

- (i) The shoreward boundary for Florida sub-area A begins at the 1.8-meter (6-foot) contour at the south side of Boynton Inlet, Palm Beach County at 26° 32′ 42.5″ N; then runs due east to the point of intersection with the 30-meter (98-foot) contour; then follows the 30-meter (98-foot) contour to the point of intersection with latitude 25° 45′ 55″ N, Government Cut, Miami-Dade County; then runs due west to the point of intersection with the 6-foot (1.8-meter) contour, then follows the 1.8-meter (6-foot) contour to the beginning point.
- (ii) The shoreward boundary of Florida sub-area B begins at the MLW line at 25° 45′ 55″ N, Government Cut, Miami-Dade County; then runs due east to the point of intersection with the 30-meter (98-foot) contour; then follows the 30-meter (98-foot) contour to the point of intersection with longitude 82° W; then runs due north to the point of intersection with the South Atlantic Fishery Management Council boundary at 24° 31′ 35.75″ N; then follows this boundary to a point of intersection with the MLW line at Key West, Monroe County; then follows the MLW line, the Council boundary (see 50 CFR 600.105(c)), and the COLREGS line (see 33 CFR 80.727. 730, 735, and 740) to the beginning point.
- (iii) The seaward boundary of Florida sub-area C (the Dry Tortugas) begins at the northern intersection of the 30-meter (98-foot) contour and longitude 82° 45' W; then follows the 30-meter (98-foot) contour west around the Dry Tortugas, to the southern point of intersection with longitude 82° 45' W; then runs due north to the beginning point.

## Species under U.S. Fish and Wildlife Service (USFWS) Jurisdiction:

Endangered

Bermuda Petrel Pterodrama cahow Roseate Tern\*\*\* Sterna dougallii

\*\*\* North American populations federally listed under the ESA: endangered on Atlantic coast south to NC, threatened elsewhere.

## **ESA-Listed Sea Turtles**

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

**Green** sea turtle hatchlings are thought to occupy pelagic areas of the open ocean and are often associated with *Sargassum* rafts (Carr 1987, Walker 1994). Pelagic stage green sea

turtles are thought to be carnivorous. Stomach samples of these animals found ctenophores and pelagic snails (Frick 1976, Hughes 1974). At approximately 20 to 25 centimeters (8-10 inches) carapace length, juveniles migrate from pelagic habitats to benthic foraging areas (Bjorndal 1997). As juveniles move into benthic foraging areas a diet shift towards herbivory occurs. They consume primarily seagrasses and algae, but are also know to consume jellyfish, salps, and sponges (Bjorndal 1980, 1997; Paredes 1969; Mortimer 1981, 1982). The diving abilities of all sea turtles species vary by their life stages. The maximum diving range of green sea turtles is estimated at 110 meters (360 feet) (Frick 1976), but they are most frequently making dives of less than 20 meters (65 feet) (Walker 1994). The time of these dives also varies by life stage. The maximum dive length is estimated at 66 minutes with most dives lasting from 9 to 23 minutes (Walker 1994).

The **hawksbill's** pelagic stage lasts from the time they leave the nesting beach as hatchlings until they are approximately 22-25 centimeters (8-10 inches) in straight carapace length (Meylan 1988, Meylan and Donnelly 1999). The pelagic stage is followed by residency in developmental habitats (foraging areas where juveniles reside and grow) in coastal waters. Little is known about the diet of pelagic stage hawksbills. Adult foraging typically occurs over coral reefs, although other hard-bottom communities and mangrove-fringed areas are occupied occasionally. Hawksbills show fidelity to their foraging areas over several years (van Dam and Diéz 1998). The hawksbill's diet is highly specialized and consists primarily of sponges (Meylan 1988). Gravid females have been noted ingesting coralline substrate (Meylan 1984) and calcareous algae (Anderes Alvarez and Uchida 1994), which are believed to be possible sources of calcium to aid in eggshell production. The maximum diving depths of these animals are not known, but the maximum length of dives is estimated at 73.5 minutes. More routinely, dives last about 56 minutes (Hughes 1974).

Kemp's ridley hatchlings are also pelagic during the early stages of life and feed in surface waters (Carr 1987, Ogren 1989). Once the juveniles reach approximately 20 centimeters (8 inches) carapace length they move to relatively shallow (less than 50 meters; 164 feet.) benthic foraging habitat over unconsolidated substrates (Márquez-M. 1994). They have also been observed transiting long distances between foraging habitats (Ogren 1989). Kemp's ridleys feeding in these nearshore areas primarily prey on crabs, though they are also known to ingest mollusks, fish, marine vegetation, and shrimp (Shaver 1991). The fish and shrimp Kemp's ridleys ingest are not thought to be a primary prey item but instead may be scavenged opportunistically from bycatch discards or from discarded bait (Shaver 1991). Given their predilection for shallower water, Kemp's ridleys most routinely make dives of 50 m or less (Soma 1985, Byles 1988). Their maximum diving range is unknown. Depending on the life stage Kemp's ridleys may be able to stay submerged anywhere from 167 minutes to 300 minutes, though dives of 12.7 minutes to 16.7 minutes are much more common (Soma 1985, Mendonca and Pritchard 1986, Byles 1988). Kemp's ridleys may also spend as much as 96% of their time underwater (Soma 1985, Byles 1988).

**Leatherbacks** are the most pelagic of all ESA-listed sea turtles and spend most of their time in the open ocean although they will enter coastal waters and are seen over the continental shelf on a seasonal basis to feed in areas where jellyfish are concentrated. Leatherbacks feed primarily on cnidarians (medusae, siphonophores) and tunicates. Unlike other sea turtles,

leatherbacks' diets do not shift during their life cycles. Because leatherbacks' ability to capture and eat jellyfish is not constrained by size or age, they continue to feed on these species regardless of life stage (Bjorndal 1997). Leatherbacks are the deepest diving of all sea turtles. It is estimated that these species can dive in excess of 1000 meters (Eckert *et al.* 1989) but more frequently dive to depths of 50 to 84 meters (Eckert *et al.* 1986). Dive times range from a maximum of 37 minutes to more routines dives of 4 to 14.5 minutes (Standora *et al.* 1984, Eckert *et al.* 1986, Eckert *et al.* 1989, Keinath and Musick 1993). Leatherbacks may spend 74% to 91% of their time submerged (Standora *et al.* 1984).

Loggerhead hatchlings forage in the open ocean and are often associated with *Sargassum* rafts (Hughes 1974, Carr 1987, Walker 1994, Bolten and Balazs 1995). The pelagic stage of these sea turtles are known to eat a wide range of things including salps, jellyfish, amphipods, crabs, syngnathid fish, squid, and pelagic snails (Brongersma 1972). Stranding records indicate that when pelagic immature loggerheads reach 40-60 centimeters (16-23 inches) straight-line carapace length they begin to live in coastal inshore and nearshore waters of the continental shelf throughout the U.S. Atlantic (Witzell 2002). Here they forage over hard- and soft-bottom habitats (Carr 1986). Benthic foraging loggerheads eat a variety of invertebrates with crabs and mollusks being an important prey source (Burke *et al.* 1993). Estimates of the maximum diving depths of loggerheads range from 211 to 233 meters (692-764 feet.) (Thayer *et al.* 1984, Limpus and Nichols 1988). The lengths of loggerhead dives are frequently between 17 and 30 minutes (Thayer *et al.* 1984, Limpus and Nichols 1988, Limpus and Nichols 1994, Lanyan *et al.* 1989) and they may spend anywhere from 80 to 94% of their time submerged (Limpus and Nichols 1994, Lanyan *et al.* 1989).

## **ESA-Listed Marine Fish**

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

## **ESA-Listed Marine Invertebrates**

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

**Elkhorn** and **staghorn** corals are two of the major reef-building corals in the wider Caribbean. In the South Atlantic region, they are found most commonly in the Florida Keys; staghorn coral occurs the furthest north with colonies documented off Palm Beach, Florida (26°3'N). The depth range for these species ranges from <1 meter (3 feet) to 60 meters (197 feet). The optimal depth range for elkhorn is considered to be 1 to 5 meters (3-16 feet) depth (Goreau and Wells 1967), while staghorn corals are found slightly deeper, 5 to 15 meters (16-49 feet) (Goreau and Goreau 1973).

All Atlantic *Acropora* species (including elkhorn and staghorn coral) are considered to be environmentally sensitive, requiring relatively clear, well-circulated water (Jaap *et al.* 1989). Optimal water temperatures for elkhorn and staghorn coral range from 25° to 29°C (77-84°F) (Ghiold and Smith 1990, Williams and Bunkley-Williams 1990). Both species are almost entirely dependent upon sunlight for nourishment, contrasting the massive, boulder-shaped species in the region (Porter 1976, Lewis 1977) that are more dependent on zooplankton. Thus, Atlantic *Acropora* species are much more susceptible to increases in water turbidity than some other coral species.

Fertilization and development of elkhorn and staghorn corals is exclusively external. Embryonic development culminates with the development of planktonic larvae called planulae (Bak *et al.* 1977, Sammarco 1980, Rylaarsdam 1983). Unlike most other coral larvae, elkhorn and staghorn planulae appear to prefer to settle on upper, exposed surfaces, rather than in dark or cryptic ones (Szmant and Miller 2006), at least in a laboratory setting. Studies of elkhorn and staghorn corals indicated that larger colonies of both species<sup>3</sup> had higher fertility rates than smaller colonies (Soong and Lang 1992).

## **Species of Concern**

NOAA Fisheries Service has created a list of Species of Concern as a publicly available list identifying other species of concern. These are species about which NOAA Fisheries Service has some concerns regarding status and threats, but for which insufficient information is available to indicate a need to list the species under the ESA. NOAA Fisheries Service uses the list to draw proactive attention and conservation action to these species. No federal mandate protects species of concern under the ESA although voluntary protection of these species is urged.

## List of Marine Species of Concern in the Southeastern U.S.

Dusky sharkCarcharhinus obscurusSand tiger sharkOdontaspis taurusNight sharkCarcharhinus signatus

Atlantic sturgeon Acipenser oxyrhynchus oxyrhynchus

Mangrove rivulus Rivulus mamoratus

Oposum pipefish Microphis barchyurus lineatus

Key silversideMenidia conchorumGoliath grouperEpinephelus itajara

Speckled hind Epinephelus drummondhayi

Warsaw grouper Epinephelus nigritus Nassau grouper Epinephelus striatus

\_

<sup>&</sup>lt;sup>3</sup> As measured by surface area of the live colony

Atlantic white marlin Tetrapturus albidus Ivory Tree Coral Oculina varicosa

# 3.2.4 South Atlantic Snapper Grouper Fishery Interactions with ESA-Listed Species

Sea turtles are vulnerable to capture by bottom longline and vertical hook-and-line gear. The magnitude of the interactions between sea turtles and the South Atlantic snapper grouper fishery was evaluated in NMFS (2006) using data from the Supplementary Discard Data Program (SDDP). Three loggerheads and three unidentified sea turtles were caught on vertical lines; one leatherback and one loggerhead were caught on bottom longlines, all were released alive (Table 3-1). The effort reported program represented between approximately 5% and 14% of all South Atlantic snapper grouper fishing effort. These data were extrapolated in NMFS (2006) to better estimate the number of interactions between the entire snapper grouper fishery and ESA-listed sea turtles. The extrapolated estimate was used to project future interactions (Table 3-2).

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

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

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

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

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

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

Source: NMFS 2006

## 2.3 Administrative Environment

## 2.3.1 The Fishery Management Process and Applicable Laws

## **2.3.1.1** Federal Fishery Management

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

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

summarized in **Section 8.0**. In most cases, the Secretary has delegated this authority to NOAA Fisheries Service.

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

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

## 2.3.1.2 State Fishery Management

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

The South Atlantic states are also involved through the ASMFC in management of marine fisheries. This commission was created to coordinate state regulations and develop management plans for interstate fisheries. It has significant authority, through the Atlantic Striped Bass Conservation Act and the Atlantic Coastal Fisheries Cooperative Management Act, to compel adoption of consistent state regulations to conserve coastal species. The

ASFMC also is represented at the Council level, but does not have voting authority at the Council level.

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

## 2.3.2 Enforcement

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

Neither NOAA/OLE nor the USCG can provide a continuous law enforcement presence in all areas due to the limited resources of NOAA/OLE and the priority tasking of the USCG. To supplement at-sea and dockside inspections of fishing vessels, NOAA entered into Cooperative Enforcement Agreements with Florida, Georgia, and South Carolina which granted authority to state officers to enforce the laws for which NOAA/OLE has jurisdiction. In recent years, the level of involvement by the states has increased through Joint Enforcement Agreements, whereby states conduct patrols that focus on Federal priorities and, in some circumstances, prosecute resultant violators through the state when a state violation has occurred.

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

#### 2.4 Human Environment

- 2.4.1 Wreckfish Fishery
  - 2.4.1.1 Description of Regulations, Harvest Methods and Gear
  - 2.4.1.2 Landings, Ex-Vessel Value, Price, and Effort
  - 2.4.1.3 The Wreckfish Fishery by State
  - **2.4.1.4** Imports

#### 2.5 Social and Cultural Environment

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

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

Because so many communities in the South Atlantic benefit from Snapper Grouper fishing, the following discussion focuses on "indicator communities," defined as communities thought to be most heavily impacted by Snapper Grouper regulations.

## **North Carolina**

Of the four states in the South Atlantic region, North Carolina (Figure 3-14) is often recognized as possessing the most "intact" commercial fishing industry; that is, it is more robust in terms of viable fishing communities and fishing industry activity than the other three states. The state offers a wide variety of fishing opportunities, including sound fishing, trolling for tuna, bottom fishing, and shrimping. Perhaps because of the wide variety of fishing opportunities, fishermen have been better able to weather regulations and coastal development pressures, adjusting their annual fishing patterns as times have changed.

## Commercial Fishing

There has been a steady decline in the number of federal commercial snapper grouper permits North Carolina since 1999, with 194 unlimited commercial permits in 1999, but only 139 in 2004. Limited permits similarly declined from 36 to 16.

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

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

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

By looking at the commercial landings data on the snapper grouper complex it is possible to see which communities are involved with the commercial fisheries for these species (Table 3-62). Although rankings can fluctuate from year to year, this can give us a starting point for understanding some of the communities that would be impacted by more restrictive regulations.

**Table 3-59.** Top commercial cumulative landings for North Carolina for 2003-2007, listed

by species, impacted by this amendment. Logbook data, SEFSC 2009.

	Location	Pounds	Location	Pounds	Location	Pounds
Gag	New	675,714	Carteret	640,750	Brunswick	390,242
	Hanover		County		County	
	County					
Vermillion	Brunswick	2,317,534	Murrells	1,889,016	Carteret	1,483,802
Snapper	County		Inlet		County	
Black Sea	Onslow	2,100,034	Dare	1,552,624	New	1,165,877
Bass	County		County		Hanover	
					County	
Snowy	Dare	439,301	Carteret	387,333	New	211,988
Grouper	County		County		Hanover	
					County	
Golden	Murrells	154,082	Brunswick	117,658	Dare	13,526
tilefish	Inlet		County		County	
Red	Murrells	164,317	Carteret	60,491	Brunswick	31,007
snapper	Inlet		County		County	
Black	Murrells	642	Brunswick	518	Hyde	406
grouper	Inlet		County		County	
Red	Brunswick	636,262	New	602,521	Carteret	589,856
grouper	County		Hanover		County	
			County			
Warsaw	Onslow	15				
grouper	County					
Speckled	Dare	428	Hyde	174		
hind	County		County			

## Recreational Fishing

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

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

## [insert discussion for relevant NC communities]

#### South Carolina

South Carolina communities with substantial fishing activity are less developed than those in North Carolina and, over the past 20 to 30 years, the state has seen much more tourist-

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

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

## Commercial Fishing

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

## Recreational Fishing

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

## Little River, Georgetown County

A history of Little River detailing its settlement in the late 1600s, its popularity as a vacation destination in the 1920s, and the concurrent rise in charter fishing, can be found in SAFMC (2006). **Figure 3-20** shows Little River and the surrounding area. A detailed description of changes in land-use patterns in and near Little River can be found in SAFMC (2006). Nearby Murrells Inlet is gradually transforming into a residential community for Myrtle Beach, and SAFMC (2006) argues this is also true for Little River.

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

percentage of the population unemployed decreased from 6.6 percent to 3.4 percent. The percentage of residents employed in farming, fishing, and forestry decreased from 3.6 percent to 0.9 percent.

## Commercial Fishing

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

**Table 3-60** below shows the commercial cumulative landings by pounds and ranking in the South Atlantic for Little River for the years 2005-2007 for major species in this amendment. Little River had little or no landings of black grouper, speckled hind, or warsaw grouper.

Table 3-60. Commercial cumulative landings by pounds and ranking in the South Atlantic for Little River for the years 2005-2007.

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

## Recreational Fishing

As observed in other coastal communities described herein, the number of charter/headboat permits held by community residents increased from 9 in 1999 to 16 in 2004. Three headboats operated out of Little River, and this part of the for-hire industry has a long and storied past in the community. Recreational fishing, primarily as headboat effort, came about as a way for commercial fishermen to continue fishing in the summer months. A detailed account of how recreational fishing developed in Little River can be found in Burrell (2000). Most of the private recreational fishing effort in this area occurs out of marinas in North Myrtle Beach, Myrtle Beach, and Murrells Inlet.

# Insert info on Florida communities?

# 3 Environmental Consequences

## 3.1 Action 1.

Alternative 1. No action.

## Alternative 2.

- 3.1.1 Economic Effects
- 3.1.2 Social Effects
- 3.1.3 Administrative Effects
- 3.1.4 Conclusion
- 3.2 Action 2.
- 3.2.1 Biological Effects
- 3.2.2 Economic Effects
- 3.2.3 Social Effects
- 3.2.4 Administrative Effects
- 3.2.5 Conclusion
- 3.3 Action 3.
- 3.3.1 Biological Effects
- 3.3.2 Economic Effects
- 3.3.3 Social Effects
- 3.3.4 Administrative Effects
- 3.3.5 Conclusion

- 3.4 Action 4.
- 3.4.1 Biological Effects
- 3.4.2 Economic Effects
- 3.4.3 Social Effects
- 3.4.4 Administrative Effects
- 3.4.5 Conclusion

#### 3.5 Cumulative Effects

As directed by the National Environmental Policy Act (NEPA), federal agencies are mandated to assess not only the indirect and direct impacts, but the cumulative impacts of proposed actions as well. NEPA defines a cumulative impact as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7). Cumulative effects can either be additive or synergistic. A synergistic effect is when the combined effects are greater than the sum of the individual effects.

The Council on Environmental Quality (CEQ) offers guidance on conducting a Cumulative Effects Analysis (CEA) in a report titled "Considering Cumulative Effects under the National Environmental Policy Act" (CEQ 1997). The report outlines 11 items for consideration in drafting a CEA for a proposed action.

- 1. Identify the significant cumulative effects issues associated with the proposed action and define the assessment goals.
- 2. Establish the geographic scope of the analysis.
- 3. Establish the timeframe for the analysis.
- 4. Identify the other actions affecting the resources, ecosystems, and human communities of concern.
- 5. Characterize the resources, ecosystem, and human communities identified in scoping in terms of their response to change and capacity to withstand stresses.
- 6. Characterize the stresses affecting these resources, ecosystems, and human communities and their relation to regulatory thresholds.
- 7. Define a baseline condition for the resources, ecosystems, and human communities.
- 8. Identify the important cause-and-effect relationships between human activities and resources, ecosystems, and human communities.
- 9. Determine the magnitude and significance of cumulative effects.
- 10. Modify or add alternatives to avoid, minimize, or mitigate significant cumulative effects.
- 11. Monitor the cumulative effects of the selected alternative and adapt management.

## 3.5.1 Biological

## SCOPING FOR CUMULATIVE EFFECTS

# 1. Identify the significant cumulative effects issues associated with the proposed action and define the assessment goals.

The CEQ cumulative effects guidance states that this step is done through three activities. The three activities and the location in the document are as follows:

I. The direct and indirect effects of the proposed action (**Section 4.0**);

II. Which resources, ecosystems, and human communities are affected (**Section 3.0**). Which effects are important if from a cumulative effects perspective (information contained in this CEA).

## 2. Establish the geographic scope of the analysis.

The immediate impact area would be the federal 200-nautical mile limit of the Atlantic off the coasts of North Carolina, South Carolina, Georgia, and east Florida to Key West; specifically, deepwater ecosystems identified in **Section 3.0**.

## 3. Establish the timeframe for the analysis.

It would be advantageous to go back to a time when there was a natural, or some modified (but ecologically sustainable) condition. However, data collection for many fisheries began when species were already fully exploited. Therefore, the timeframe for any analysis should be initiated when data collection began for the subject fishery. In determining how far into the future to analyze cumulative effects, the length of the effects would depend on the species. This amendment would...

# 4. Identify the other actions affecting the resources, ecosystems, and human communities of concern

The cumulative effects to the human communities are discussed in **Section 4.0.**Listed are other past, present, and reasonably foreseeable actions occurring in the South Atlantic region. These actions, when added to the proposed management measures, may result in cumulative effects on the biophysical environment.

I. Fishery-related actions affecting South Atlantic wreckfish.

#### A. Past

The reader is referred to **Section 1.3** for past regulatory activity for snapper grouper.

## **B.** Present

In this amendment the Council has recommended:

## **B.** Reasonably Foreseeable Future

- II. Non-Council and other non-fishery related actions, including natural events affecting wreckfish.
  - A. Past
  - B. Present
  - C. Reasonably foreseeable future

## AFFECTED ENVIRONMENT

5. Characterize the resources, ecosystem, and human communities identified in scoping in terms of their response to change and capacity to withstand stresses.

This step should identify the trends, existing conditions, and the ability to withstand stresses of the environmental components.

6. Characterize the stresses affecting these resources, ecosystems, and human communities and their relation to regulatory thresholds.

## 7. Define a baseline condition for the resources, ecosystems, and human communities.

The purpose of defining a baseline condition for the resource and ecosystems in the area of the proposed action is to establish a point of reference for evaluating the extent and significance of expected cumulative effects.

DETERMINING THE ENVIRONMENTAL CONSEQUENCES OF CUMULATIVE EFFECTS

8. Identify the important cause-and-effect relationships between human activities and resources, ecosystems, and human communities.

The relationship between human activities and biophysical ecosystems within the context of this amendment is solely related to extractive activities and the installment of regulations as outlined in **Table 4-X**.

9. Determine the magnitude and significance of cumulative effects.

# 10. Modify or add alternatives to avoid, minimize, or mitigate significant cumulative effects.

The cumulative effects on the biophysical environment are expected to be negligible.

Therefore, avoidance, minimization, and mitigation are not necessary.

# 11. Monitor the cumulative effects of the selected alternative and adapt management.

The effects of the proposed action are, and will continue to be, monitored through collection of data by NOAA Fisheries Service, states, stock assessments, stock assessment updates, life history studies, and other scientific observations.

## 3.5.1.1 Effects on protected species

ESA-listed species that occur within areas where the action area would be located and that may be impacted by unrelated, future, non-federal activities reasonably certain to occur within the action area include:

Marine I	Viammais

Sea Turtles

<u>Fish</u>

#### 3.5.2 Socioeconomic

A description of the human environment and associated key fishing communities is contained in **Section 3.4** and incorporated herein by reference.

## 3.5.3 Administrative

## 3.6 Bycatch Practicability Analysis

The Council is required by MSFCMA §303(a)(11) to establish a standardized bycatch reporting methodology for federal fisheries and to identify and implement conservation and management measures that, to the extent practicable and in the following order: (A) minimize bycatch and (B) minimize the mortality of bycatch that cannot be avoided. The MSFCMA defines bycatch as "fish which are harvested in a fishery, but which are not sold or kept for personal use, and includes economic discards and regulatory discards. Such term does not include fish released alive under a recreational catch-and-release fishery management program" (MSFCMA §3(2)). Economic discards are species that are discarded because they are undesirable to the harvester. This category of discards generally includes certain species, sizes, and/or sexes with low or no market value. Regulatory discards are species required by regulation to be discarded, but also include fish that may be retained but not sold.

NMFS outlines at 50 CFR §600.350(d)(3)(i) ten factors that should be considered in determining whether a management measure minimizes bycatch or bycatch mortality to the extent practicable. These are:

- 1. Population effects for the bycatch species;
- 2. Ecological effects due to changes in the bycatch of that species (effects on other species in the ecosystem);
- 3. Changes in the bycatch of other species of fish and the resulting population and ecosystem effects:
- 4. Effects on marine mammals and birds;
- 5. Changes in fishing, processing, disposal, and marketing costs;
- 6. Changes in fishing practices and behavior of fishermen;
- 7. Changes in research, administration, enforcement costs and management effectiveness;
- 8. Changes in the economic, social, or cultural value of fishing activities and non-consumptive uses of fishery resources;
- 9. Changes in the distribution of benefits and costs; and
- 10. Social effects.

Agency guidance provided at 50 CFR §600.350(d)(3)(ii) suggests the Councils adhere to the precautionary approach found in the Food and Agriculture Organization of the United Nations (FAO) Code of Conduct for Responsible Fisheries (Article 6.5) when faced with uncertainty concerning these ten practicability factors. According to Article 6.5 of the FAO Code of Conduct for Responsible Fisheries, using the absence of adequate scientific information as a reason for postponing or failing to take measures to conserve target species, associated or dependent species, and non-target species and their environment, would not be consistent with a precautionary approach.

- 3.6.1 Population Effects for the Bycatch Species
  - 3.6.1.1 Background
  - 3.6.1.2 Practicability of Management Measures in Directed Fisheries Relative to their Impact on Bycatch and Bycatch Mortality
- 3.6.2 Ecological Effects Due to Changes in the Bycatch of the Species
- 3.6.3 Changes in Bycatch of Other Fish Species and Resulting Population and Ecosystem Effects
- 3.6.4 Effects on Marine Mammals and Birds
- 3.6.5 Changes in Fishing, Processing, Disposal, and Marketing Costs
- 3.6.6 Changes in Fishing Practices and Behavior of Fishermen
- 3.6.7 Changes in Research, Administration, and Enforcement Costs and Management Effectiveness
- 3.6.8 Changes in the Economic, Social, or Cultural Value of Fishing Activities and Non-Consumptive Uses of Fishery Resources
- 3.6.9 Changes in the Distribution of Benefits and Costs
- 3.6.10 Social Effects

The Social Effects of the proposed management measures are described in **Section 4.0**.

- 3.6.11 Conclusion
- 3.7 Unavoidable Adverse Effects
- 3.8 Effects of the Fishery on the Environment
- 3.8.1 Effects on Ocean and Coastal Habitats
- 3.8.2 Public Health and Safety

The proposed actions are not expected to have any substantial adverse impact on public health or safety.

- 3.8.3 Endangered Species and Marine Mammals
- 3.9 Relationship of Short-Term Uses and Long-Term Productivity
- 3.10 Irreversible and Irretrievable Commitments of Resources
- **3.11** Monitoring and Mitigation Measures

## 4 Regulatory Impact Review

## 4.1 Introduction

The NOAA Fisheries Service (NMFS) requires a Regulatory Impact Review (RIR) for all regulatory actions that are of public interest. The RIR does three things: (1) it provides a comprehensive review of the level and incidence of impacts associated with a proposed or final regulatory action; (2) it provides a review of the problems and policy objectives prompting the regulatory proposals and an evaluation of the major alternatives that could be used to solve the problem; and (3) it ensures that the regulatory agency systematically and comprehensively considers all available alternatives so that the public welfare can be enhanced in the most efficient and cost-effective way. The RIR also serves as the basis for determining whether the proposed regulations are a 'significant regulatory action' under the criteria provided in Executive Order (E.O.) 12866 and provides information that may be used in conducting an analysis of impacts on small business entities pursuant to the Regulatory Flexibility Act (RFA). This RIR analyzes the expected impacts of this action on the golden crab fishery. Additional details on the expected economic effects of the various alternatives in this action are included in **Section 4.0** and are incorporated herein by reference.

## 4.2 Problems and Objectives

The purpose and need, issues, problems, and objectives of the proposed amendment are presented in **Section 1.0** and are incorporated herein by reference. In summary, the purpose of this amendment includes

## 4.3 Methodology and Framework for Analysis

This RIR assesses management measures from the standpoint of determining the resulting changes in costs and benefits to society. To the extent practicable, the net effects of the proposed measures are stated in terms of producer and consumer surplus, changes in profits, and participation by for-hire vessel fishermen and private anglers. In addition, the public and private costs associated with the process of developing and enforcing regulations of this amendment are provided.

## 4.4 Description of the Fishery

## 4.5 Impacts of Management Measures

Details on the economic impacts of all alternatives are included in **Section 4.0** and are included herein by reference. The following discussion provides a summary of the expected effects of the preferred alternatives.

## 4.6 Public and Private Costs of Regulations

The preparation, implementation, enforcement, and monitoring of this or any Federal action involves the expenditure of public and private resources that can be expressed as costs associated with the regulations. Costs associated with this amendment include:

Council costs of document preparation, meetings, public hearings, and information	
dissemination	\$
NOAA Fisheries administrative costs of document preparation, meetings and review	\$
Annual law enforcement costs	unknown
TOTAL	\$

Law enforcement currently monitors regulatory compliance in these fisheries under routine operations and does not allocate specific budgetary outlays to these fisheries, nor are increased enforcement budgets expected to be requested to address any component of this action.

# **4.7** Summary of Economic Impacts

# 4.8 Determination of Significant Regulatory Action

# 5 Initial Regulatory Flexibility Analysis

#### 5.1 Introduction

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

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

In addition to the information provided in this section, additional information on the expected economic impacts of the proposed action was presented in **Sections 4.0** and **5.0** and is included herein by reference.

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

The purpose and need, issues, problems, and objectives of the proposed rule are presented in **Section 1.0** and are incorporated herein by reference. The purpose and need, issues, problems, and objectives of the proposed amendment are presented in **Section 1.0** and are incorporated herein by reference. In summary, the purpose of this amendment includes

# 5.3 Identification of All Relevant Federal Rules Which May Duplicate, Overlap, or Conflict with the Proposed Rule

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

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

This proposed action is expected to directly impact commercial fishermen. The SBA has established size criteria for all major industry sectors in the U.S. including fish harvesters. A business involved in fish harvesting is classified as a small business if it is independently owned and operated, is not dominant in its field of operation (including its affiliates), and has combined annual receipts not in excess of \$4.0 million (NAICS code 114111 and 114112, finfish and shellfish fishing) for all its affiliated operations worldwide.

# 5.5 Description of the Projected Reporting, Record-keeping and Other Compliance Requirements of the Proposed Rule, Including an Estimate of the Classes of Small Entities Which will be Subject to the Requirement and the Type of Professional Skills Necessary for the Preparation of the Report or Records

The proposed actions do not impose any new reporting, record-keeping or other compliance requirements.

#### 5.6 Substantial Number of Small Entities Criterion

# 5.7 Significant Economic Impact Criterion

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

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

All entities that are expected to be affected by the proposed rule are considered small entities so the issue of disproportionality does not arise in the present case.

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

#### **5.8** Description of Significant Alternatives

The Council's preferred alternatives are:

- **6** Fishery Impact Statement Social Impact Assessment
- **6.1** Summary of Biological Effects
- **6.2** Summary of Economic Effects
- 6.3 Summary of Social Effects
- **6.4** Summary of Administrative Effects

### 6.5 Note for CEQ Guidance to Section 1502.22

In accordance with the CEQ Guidance for 40 CFR Section 1502.22 of the NEPA (1986), the Council has made "reasonable efforts, in the light of overall costs and state of the art, to obtain missing information which, in its judgment, is important to evaluating significant adverse impacts on the human environment"...At this time, the Council has made reasonable efforts in light of the costs, to obtain additional social and community information in order to analyze the social impacts of the proposed actions and alternatives. However, additional sociologists or anthropologists and funding are needed to conduct community surveys and needed enthnographies that would allow a comprehensive analysis.

#### 6.6 E.O. 12898: Environmental Justice

This Executive Order mandates that each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions. Federal agency responsibilities under this Executive Order include conducting their programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons from participation in, denying persons the benefit of, or subjecting persons to discrimination under, such programs, policies and activities, because of their race, color, or national origin. Furthermore, each federal agency responsibility set forth under this Executive Order shall apply equally to Native American programs.

Specifically, federal agencies shall, to the maximum extent practicable: conduct human health and environmental research and analysis; collect human health and environmental data; collect, maintain, and analyze information on the consumption patterns of those who principally rely on fish and/or wildlife for subsistence; allow for public participation and access to information relating to the incorporation of environmental justice principals in Federal agency programs or policies; and share information and eliminate unnecessary duplication of efforts through the use of existing data systems and cooperative agreements among Federal agencies and with State, local, and tribal governments.

The Council conducted XX scoping meetings for this amendment in which the public was invited to provide input on actions contained therein. Comments received were considered during the development of this amendment, and no environmental justice issues were raised during the scoping process. No Native American programs would be affected by actions contained within this amendment; therefore no tribal consultation has been initiated.

# 7 Other Applicable Law

#### 7.1 Administrative Procedures Act

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

#### 7.2 Information Quality Act

The Information Quality Act (Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Public Law 106-443)) which took effect October 1, 2002, directed the Office of Management and Budget (OMB) to issue government-wide guidelines that "provide policy and procedural guidelines to federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information disseminated by federal agencies." OMB directed each federal agency to issue its own guidelines, establish administrative mechanisms allowing affected persons to seek and obtain correction of information that does not comply with OMB guidelines, and report periodically to OMB on the number and nature of complaints.

The NOAA Section 515 Information Quality Guidelines require a series of actions for each new information product subject to the Information Quality Act. This document has used the best available information and made a broad presentation thereof. The process of public review of this document provides an opportunity for comment and challenge to this information, as well as for the provision of additional information.

The information contained in this document was developed using best available scientific information. Therefore, this Amendment and EIS are in compliance with the IQA.

# 7.3 Coastal Zone Management Act

Section 307(c)(1) of the federal Coastal Zone Management Act (CZMA) of 1972 requires that all federal activities that directly affect the coastal zone be consistent with approved state coastal zone management programs to the maximum extent practicable. While it is the goal of the South Atlantic Council to have management measures that complement those of the states, Federal and state administrative procedures vary and regulatory changes are unlikely to be fully instituted at the same time. Based on the analysis of the environmental consequences of the proposed action in Section 4.0, the Council has concluded this amendment would improve Federal management of deepwater coral ecosystems.

The Council believes this amendment is consistent to the maximum extent practicable with the Coastal Zone Management Plans of Florida, Georgia, South Carolina, and North Carolina. This determination will be submitted to the responsible state agencies under Section 307 of the CZMA administering approved Coastal Zone Management Programs in the States of Florida, South Carolina, Georgia, and North Carolina.

# 7.4 Endangered Species Act

"The Endangered Species Act (ESA) of 1973 (16 U.S.C. Section 1531 et seq.) requires that federal agencies ensure actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or the habitat designated as critical to their survival and recovery. The ESA requires NOAA Fisheries Service to consult with the appropriate administrative agency (itself for most marine species and the U.S. Fish and Wildlife Service for all remaining species) when proposing an action that may affect threatened or endangered species or adversely modify critical habitat. Consultations are necessary to determine the potential impacts of the proposed action. They are concluded informally when proposed actions may affect but are "not likely to adversely affect" threatened or endangered species or designated critical habitat. Formal consultations, resulting in a biological opinion, are required when proposed actions may affect and are "likely to adversely affect" threatened or endangered species or adversely modify designated critical habitat.

NOAA Fisheries Service completed a biological opinion in 2006 evaluating the impacts of the continued authorization of the South Atlantic snapper grouper fishery under the snapper grouper FMP and Amendment 13C (NMFS 2006) on ESA-listed species (see Section 3.2.3). The opinion stated the fishery was not likely to adversely affect northern right whale critical habitat, seabirds, or marine mammals (see NMFS 2006 for discussion on these species). However, the opinion did state that the snapper grouper fishery would adversely affect sea turtles and smalltooth sawfish, but would not jeopardize their continued existence. An incidental take statement was issued for green, hawksbill, Kemp's ridley, leatherback, and loggerhead sea turtles, as well as smalltooth sawfish. Reasonable and prudent measures to minimize the impact of these incidental takes were specified, along with terms and conditions to implement them.

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

#### 8.5 Executive Order 12612: Federalism

E.O. 12612 requires agencies to be guided by the fundamental federalism principles when formulating and implementing policies that have federalism implications. The purpose of the

Order is to guarantee the division of governmental responsibilities between the Federal government and the States, as intended by the framers of the Constitution. No federalism issues have been identified relative to the actions proposed in this amendment and associated regulations. Therefore, preparation of a Federalism assessment under E.O. 13132 is not necessary.

# 8.6 Executive Order 12866: Regulatory Planning and Review

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

In accordance with E.O. 12866, the following is set forth by the Council: (1) this rule is not likely to have an annual effect on the economy of more than \$100 million or to adversely affect in a material way the economy, a sector of the economy, productivity, jobs, the environment, public health or safety, or state, local, or tribal governments or communities; (2) this rule is not likely to create any serious inconsistencies or otherwise interfere with any action take or planned by another agency; (3) this rule is not likely to materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights or obligations of recipients thereof; (4) this rule is not likely to raise novel or policy issues arising out of legal mandates, or the principles set forth in the Executive Order; (5) this rule is not controversial.

#### 7.7 Executive Order 12898: Environmental Justice

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

The alternatives being considered in this amendment are not expected to result in any disproportionate adverse human health or environmental effects to minority populations or low-income populations of Florida, North Carolina, South Carolina or Georgia, rather the impacts would be spread across all participants in the golden crab and shrimp fisheries participants regardless of race or income.

#### 7.8 Executive Order 12962: Recreational Fisheries

E.O. 12962 requires Federal agencies, in cooperation with States and Tribes, to improve the quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities through a variety of methods including, but not limited to, developing joint partnerships; promoting the restoration of recreational fishing areas that are limited by water quality and habitat degradation; fostering sound aquatic conservation and restoration endeavors; and evaluating the effects of Federally-funded, permitted, or authorized actions on aquatic systems and evaluating the effects of Federallyfunded, permitted, or authorized actions on aquatic systems and recreational fisheries, and documenting those effects. Additionally, the order establishes a seven member National Recreational Fisheries Coordination Council responsible for, among other things, ensuring that social and economic values of healthy aquatic systems that support recreational fisheries are considered by Federal agencies in the course of their actions, sharing the latest resource information and management technologies, and reducing duplicative and cost-inefficient programs among Federal agencies involved in conserving or managing recreational fisheries. The Council also is responsible for developing, in cooperation with Federal agencies, States and Tribes, a Recreational Fishery Resource Conservation Plan - to include a five-year agenda. Finally, the Order requires NMFS and the U.S. Fish and Wildlife Service to develop a joint agency policy for administering the ESA.

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

#### 7.9 Executive Order 13089: Coral Reef Protection

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

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

#### 7.10 Executive Order 13158: Marine Protected Areas

E. O. 13158 was signed on May 26, 2000 to strengthen the protection of U.S. ocean and coastal resources through the use of Marine Protected Areas (MPAs). The E.O. defined MPAs as "any area of the marine environment that has been reserved by Federal, State, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein." It directs federal agencies to work closely with state, local and non-governmental partners to create a comprehensive network of MPAs "representing diverse U.S. marine ecosystems, and the Nation's natural and cultural resources".

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

#### 7.11 Marine Mammal Protection Act

"The Marine Mammal Protection Act (MMPA) established a moratorium, with certain exceptions, on the taking of marine mammals in U.S. waters and by U.S. citizens on the high seas. It also prohibits the importing of marine mammals and marine mammal products into the United States. Under the MMPA, the Secretary of Commerce (authority delegated to NOAA Fisheries Service) is responsible for the conservation and management of cetaceans and pinnipeds (other than walruses). The Secretary of the Interior is responsible for walruses, sea otters, polar bears, manatees, and dugongs.

In 1994, Congress amended the MMPA, to govern the taking of marine mammals incidental to commercial fishing operations. This amendment required the preparation of stock assessments for all marine mammal stocks in waters under U.S. jurisdiction; development and implementation of take-reduction plans for stocks that may be reduced or are being maintained below their optimum sustainable population levels due to interactions with commercial fisheries; and studies of pinniped-fishery interactions. The MMPA requires a commercial fishery to be placed in one of three categories, based on the relative frequency of incidental serious injuries and mortalities of marine mammals. Category I designates fisheries with frequent serious injuries and mortalities incidental to commercial fishing; Category II designates fisheries with occasional serious injuries and mortalities; and Category III designates fisheries with a remote likelihood or no known serious injuries or mortalities. To legally fish in a Category I and/or II fishery, a fisherman must obtain a marine mammal authorization certificate by registering with the Marine Mammal Authorization Program (50 CFR 229.4), the must accommodate an observer if requested (50 CFR 229.7(c)) and comply with any applicable take reduction plans.

The commercial hook-and-line components of the South Atlantic snapper grouper fishery (i.e., bottom longline, bandit gear, and handline) are listed as part of a Category III fishery (74 FR 27739; June 11, 2009) because there have been no documented interactions between these gears and marine mammals. The black sea bass pot component of the South Atlantic snapper grouper fishery is part of the Atlantic mixed species trap/pot fishery, a Category II fishery, in the 2010 proposed LOF (74 FR 27739; June 11, 2009). The Atlantic mixed species trap/pot fishery designation was created in 2003 (68 FR 41725, July 15, 2003), by combining several separately listed trap/pot fisheries into a single group. This group was designated Category II as a precaution because of known interactions between marine mammals and gears similar to those included in this group. Prior to this consolidation, the black sea bass pot fishery in the South Atlantic was a part of the "U.S. Mid-Atlantic and Southeast U.S. Atlantic Black Sea Bass Trap/Pot" fishery (Category III). There has never been a documented interaction between marine mammals and black sea bass trap/pot gear in the South Atlantic. The actions in Amendment 20 are not expected to negatively impact the provisions of the MMPA."

#### 7.12 Migratory Bird Treaty Act and Executive Order 13186

The Migratory Bird Treaty Act (MBTA) implemented several bilateral treaties for bird conservation between the United States and Great Britain, the United States and Mexico, the United States and Japan, and the United States and the former Union of Soviet Socialists

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

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

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

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

#### 7.13 National Environmental Policy Act

This amendment to the Councils' Golden Crab FMP has been written and organized in a manner that meets NEPA requirements, and thus is a consolidated NEPA document, including a draft Environmental Impact Statement, as described in NOAA Administrative Order (NAO) 216-6, Section 6.03.a.2.

#### Purpose and Need for Action

The purpose and need for this action are described in **Section 1.1.** 

#### Alternatives

The alternatives for this action are described in **Section 2.0.** 

#### Affected Environment

The affected environment is described in **Section 3.0**.

#### Impacts of the Alternatives

The impacts of the alternatives on the environment are described in **Section 4.0.** 

#### 7.14 National Marine Sanctuaries Act

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

The alternatives considered by this document are not expected to have any adverse impacts on the resources managed by the Gray's Reef and Florida Keys National Marine Sanctuaries.

### 7.15 Paperwork Reduction Act

The purpose of the Paperwork Reduction Act (PRA) is to minimize the burden on the public. The Act is intended to ensure that the information collected under the proposed action is needed and is collected in an efficient manner (44 U.S.C. 3501 (1)). The authority to manage information collection and record keeping requirements is vested with the Director of the Office of Management and Budget (OMB). This authority encompasses establishment of guidelines and policies, approval of information collection requests, and reduction of paperwork burdens and duplications. The PRA requires NMFS to obtain approval from the OMB before requesting most types of fishery information from the public.

#### 7.16 Regulatory Flexibility Act

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

This amendment document includes an Initial Regulatory Flexibility Analysis (IRFA) in **Section 6.0**.

#### 7.17 Small Business Act

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

### 7.18 Public Law 99-659: Vessel Safety

Public Law 99-659 amended the MSFCMA to require that a FMP or FMP amendment must consider, and may provide for, temporary adjustments (after consultation with the U.S. Coast Guard and persons utilizing the fishery) regarding access to a fishery for vessels that would be otherwise prevented from participating in the fishery because of safety concerns related to weather or to other ocean conditions.

No vessel would be forced to participate in South Atlantic fisheries under adverse weather or ocean conditions as a result of the imposition of management regulations proposed in this amendment.

No concerns have been raised by South Atlantic fishermen or by the U.S. Coast Guard that the proposed management measures directly or indirectly pose a hazard to crew or vessel safety under adverse weather or ocean conditions. Therefore, this amendment proposes neither procedures for making management adjustments due to vessel safety problems nor procedures to monitor, evaluate, or report on the effects of management measures on vessel or crew safety under adverse weather or ocean conditions.

# 8 List of Preparers

_	
_	

**Interagency CE-BA 1 Planning Team/Reviewers** 

interagency CE-DA 1 Framming Team/Reviewers				

# 9 List of Agencies, Organizations, and Persons to Whom Copies of the Statement are Sent

# Responsible Agency

# **Amendment:**

South Atlantic Fishery Management Council 4055 Faber Place Drive, Suite 201

North Charleston, South Carolina 29405

(843) 571-4366 (TEL) Toll Free: 866-SAFMC-10 (843) 769-4520 (FAX) safmc@safmc.net

# **Environmental Impact Statement:**

NMFS, Southeast Region 263 Avenue South St. Petersburg, Florida 33701= (727) 824-5301 (TEL) (727) 824-5320 (FAX)

# List of Agencies, Organizations, and Persons Consulted

SAFMC Habitat and Environmental Protection Panel

SAFMC Coral Advisory Panel

SAFMC Scientific and Statistical Committee

SAFMC Law Enforcement Advisory Panel

SAFMC Snapper Grouper Advisory Panel

SAFMC Golden Crab Advisory Panel

SAFMC Shrimp Advisory Panel

SAFMC Deepwater Shrimp Advisory Panel

North Carolina Coastal Zone Management Program

South Carolina Coastal Zone Management Program

Georgia Coastal Zone Management Program

Florida Coastal Zone Management Program

Florida Fish and Wildlife Conservation Commission

Georgia Department of Natural Resources

South Carolina Department of Natural Resources

North Carolina Division of Marine Fisheries

North Carolina Sea Grant

South Carolina Sea Grant

Georgia Sea Grant

Florida Sea Grant

Atlantic States Marine Fisheries Commission

Gulf and South Atlantic Fisheries Development Foundation

Gulf of Mexico Fishery Management Council

National Marine Fisheries Service

- Washington Office
- Office of Ecology and Conservation
- Southeast Regional Office
- Southeast Fisheries Science Center

#### 10 References

- Acropora Biological Review Team. 2005. Atlantic Acropora Status Review Document.Report to National Marine Fisheries Service, Southeast Regional Office, March 3. 152 p+ App.
- GMFMC (Gulf of Mexico Fishery Management Council) and South Atlantic Fishery Management Council. 1982. Fishery Management Plan and Final Environmental Impact Statement for Coral and Coral Reefs of the Gulf of Mexico and South Atlantic. Gulf of Mexico Fishery Management Council, 5401 West Kennedy Boulevard, Suite 881, Tampa, Florida. 316 pp.
- GMFMC (Gulf of Mexico Fishery Management Council) and South Atlantic Fishery Management Council. 1990. Amendment 1 and Final Environmental Impact Statement for Coral and Coral Reefs of the Gulf of Mexico and South Atlantic. Gulf of Mexico Fishery Management Council, 5401 West Kennedy Boulevard, Suite 881, Tampa, Florida.
- GMFMC (Gulf of Mexico Fishery Management Council) and South Atlantic Fishery Management Council. 1994. Amendment 2 and Final Environmental Impact Statement for Coral and Coral Reefs of the Gulf of Mexico and South Atlantic. Gulf of Mexico Fishery Management Council, 5401 West Kennedy Boulevard, Suite 881, Tampa, Florida. 316 pp.
- GMFMC (Gulf of Mexico Fishery Management Council). 1995. Amendment 8 to the fishery management plan for the shrimp fishery of the Gulf of Mexico. Gulf of Mexico Fishery Management Council, 5401 West Kennedy Boulevard, Suite 881, Tampa, Florida.
- GMFMC (Gulf of Mexico Fishery Management Council). 2005a. Final Amendment Number 13 to the Fishery Management Plan for the Shrimp Fishery of the Gulf of Mexico, U.S. Waters. Available at:

  ://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/shrimp%20Amend%2013%20Fin al%.
- GMFMC (Gulf of Mexico Fishery Management Council). 2005b. Shrimp Amendment 13 FAQs. Available at: <a href="https://www.gulfcouncil.org/Beta/GMFMCWeb/Shrimp12FAQs">https://www.gulfcouncil.org/Beta/GMFMCWeb/Shrimp12FAQs</a>.
- Jaap, W. C., W. G. Lyons, P. Dustan, and J. C. Halas. 1989. Stony coral (Scleractinia and Milleporina) community structure at Bird Key Reef, Ft. Jefferson National Monument, Dry Tortugas, Florida. Florida Marine Research Publication 46: 31.
- Jensen, A. and R. Frederickson. 1992. The fauna associated with the bank-forming deepwater coral *Lophelia pertusa* (Scleractinia) on the Faroe Shelf. Sarsia 77: 53-69.
- Keinath, J. A. and J. A. Musick. 1993. Movements and diving behavior of a leatherback sea turtle, *Dermochelys coriacea*. Copeia, 1993:1010.
- Keiser, R. K. 1976. Distribution of the Rock Shrimp (*Sycionia brevirostris*) in coastal waters of the southeastern United States. South Carolina Marine Resources Research Institute, Charleston, SC. 19 p.

- Kendall, D. 1990. An Assessment of the Georgia golden crab fishery. Pages 18-19 *In*: Lindberg, W. J. and E. L. Wenner (eds.). 1990. Geryonid Crabs and Associated Continental Slope Fauna: A Research Workshop Report. S.C. Sea Grant Consortium and FL Sea Grant College Program. FL SG Technical Paper 58:61 pp.
- Kennedy F. S., J. J. Crane, R. A. Schlieder, and D. G. Barber. 1977. Studies of the rock shrimp, *Sycionia brevirostris*. A new fishery on Florida's Atlantic Shelf. Florida Department of Natural Resources, Marine Research Laboratory, St. Petersburg, FL. 69 p.
- Koenig, C. C. 2001. Oculina Banks: habitat, fish populations, restoration and enforcement. Report to the South Atlantic Fishery Management Council available at ://www.safmc.
- Koslow, J. A., G. W. Boehlert, J. D. M. Gordon, R. L. Haedrich, P. Lorance, and N. Parin. 2000. Continental slope and deep-sea fisheries: implications for a fragile ecosystem. ICES Journal of Marine Science 57: 548–557.
- Krieger, K. J. and B. L. Wing. 2002. Megafaunal associations with deepwater corals (*Primnoa* spp.) in the Gulf of Alaska. Hydrobiologia 471:83-90.
- Lanyon, J. M., C. J. Limpus, and H. Marsh. 1989. Dugongs and turtles: grazers in the seagrass system. *In*: Larkum, A.W.D, A. J. McComb and S. A. Shepard (eds.). Biology of Seagrasses. Elsevier, Amsterdam, 610p.
- Leeworthy, V. S., and P. C. Wiley. 2002. Socioeconomic impact analysis of marine reserve alternatives for the Channel Islands National Marine Sanctuary. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service, Special Projects, Silver Spring, MD.
- Lewis, J. B. 1977. Suspension feeding in Atlantic reef corals and the importance of suspended particulate matter as a food source. Proceedings of the 3rd International Coral Reef Symposium 1:405-408.
- Limpus, C. J. and N. Nichols. 1988. The southern oscillation regulates the annual numbers of green turtles (*Chelonia mydas*) breeding around northern Australia. Australian Journal of Wildlife Research, 15:157.
- Limpus, C. J. and N. Nichols. 1994. Progress report on the study of the interaction of El Niño Southern Oscillation on annual *Chelonia mydas* numbers at the southern Great Barrier Reef rookeries. *In*: Proceedings of the Australian Marine Turtle Conservation Workshop, Queensland, Australia.
- Lindberg, W. J., N. J. Blake, H. M. Perry, R. S. Waller, F. D. Lockhart, and R. B. Erdman. 1989. Fisheries development of the deep-sea golden crab, *Geryon fenneri*: Geographic and seasonal production potential in the Gulf of Mexico. Final Project Report. Marine Fisheries Initiation Program, National Marine Fisheries Service, 98pp.
- Lindberg, W. J. and F. D. Lockhart. 1993. Depth-stratified population structure of Geryonid crabs in the eastern Gulf of Mexico. Journal Crustacean Biology 13(4): 713-732.
- Low, R. N. and G. F. Ulrich. 1983. Deep-water demersal finfish resources and fisheries off South Carolina. S.C. Mar. Resour. Cent. Tech. Rep. No. 57, 24 p.

- Luckhurst, B. 1986. Discovery of deep-water crabs (Geryon spp.) at Bermuda A new potential fishery resource. Proceedings of the Gulf and Caribbean Fisheries Institute, 37th Meeting. P. 209-211.
- Lumsden S. E, T. F. Hourigan, A. W. Bruckner, G. Dorr (eds.). 2007. The State of Deep Coral Ecosystems of the United States. NOAA Technical Memorandum CRCP-3. Silver Spring, MD.
- Lutz, P. L. and J. A. Musick (eds.). 1997. The Biology of Sea Turtles. CRC Press, Boca Raton, Florida.
- Lutz, P. L., J. A. Musick, and J. Wyneken. 2002. The Biology of Sea Turtles, Volume II. CRC Press, Boca Raton, Florida.
- Lux, F. E., A. R. Ganz, and W. F. Rathjen. 1982. Marking studies on the red crab, *Geryon quinquedens* Smith off southern New England. J. Shellfish Res. 2(1): 71-80.
- Manning, R. B. and L. B. Holthuis. 1984. *Geryon fenneri*, a new deep-water crab from Florida (Crustacea: Decapoda: Geryonidae). Proceedings of the Biological Society of Washington 97:666-673.
- Manning, R. B. and L. B. Holthuis. 1986. Notes on the *Geryon* from the Bahamas, with the description of *Geryon inghami*, a new species (Crustacea: Decapoda: Geryonidae). Proceedings of the Biological Society of Washington 99: 366-373.
- Márquez -M, R. 1994. Synopsis of biological data on the Kemp's ridley turtles, *Lepidochelys kempii* (Garman, 1880). NOAA Technical Memorandum, NMFS-SEFSC-343. Miami, FL.
- Masson, D. G., B. J. Bett, and D. S. M. Billet. 2003. The origin of deep-water, coral topped mounds in the northern Rockall Trough, Northeast Atlantic. Marine Geology 194:159-180.
- McCosker, J. E. and S. W. Ross. In press. A new deepwater species of the snake eel genus *Ophichthus* (Anguilliformes: Ophichidae), from North Carolina. Copeia.
- McGoodwin, J. R. 1990. Crisis in the World's Fisheries, Stanford: Stanford University Press.
- Mendonca, M. T. and P. C. H. Pritchard. 1986. Offshore movements of post-nesting Kemp's ridley sea turtles (*Lepidochelys kempi*). Herpetologica, 42:373.
- Messing, C. G., A. C. Neuman, and J. C. Lang. 1990. Biozonations of deep-water lithoherms and associated hardgrounds in the northeastern Straits of Florida. Palaios 5:15-33.
- Meylan, A. 1984. Feeding Ecology of the Hawksbill turtle (*Eretmochelys imbricata*): Spongivory as a Feeding Niche in the Coral Reef Community. Ph.D., University of Florida, Gainesville, FL.
- Meylan, A. 1988. Spongivory in hawksbill turtles: a diet of glass. Science 239:393-395.
- Meylan, A. B. and M. Donnelly. 1999. Status justification for listing the hawksbill turtle (*Eretmochelys imbricata*) as critically endangered on the 1996 IUCN Red List of Threatened Animals. Chelonian Conservation and Biology 3(2): 200-204.

- Milliman, J. D. 1972. Atlantic Continental Shelf and Slope of the United States- Petrology of the sand fraction of sediments, northern New Jersey to southern Florida. U.S.G.S. Prof. Pap. 529-J. 40 pp.
- Morgan, L. E. and R. Chuenpagdee. 2003. Shifting gears: addressing the collateral impacts of fishing methods in U.S. waters. Island Press, Washington. 42 p.
- Mortensen, P. B. 2000. *Lophelia pertusa* in Norwegian waters: distribution, growth and associated fauna. Ph.D. Dissertation, University of Bergen, Department of Fisheries and Marine Biology.
- D. G. Fenton. 2005. Effects of fisheries on deepwater gorgonian corals in the Northeast Channel, Nova Scotia. *In* Barnes, P. W. and J. P. Thomas (eds.). Benthic habitats and the effects of fishing. American Fisheries Society Symposium 41. Bethesda, MD.
- \_\_\_\_\_\_, and J. H. Fosså. 2006. Species diversity and spatial distribution of invertebrates on *Lophelia* reefs in Norway. Pages 1849-1868 *In:* Proceedings of the International Coral Reef Symposium, Okinawa, Japan.
- \_\_\_\_\_\_\_, and H. T. Rapp. 1998. Oxygen and carbon isotope ratios related to growth line patterns in skeletons of *Lophelia pertusa* (L) (Anthozoa, Scleractinia): implications for determination of linear extension rates. Sarsia 83: 433-446.
- Mortimer, J. A. 1981. The feeding ecology of the West Caribbean green turtle (*Chelonia mydas*) in Nicaragua. Biotropica 13:49.
- Mortimer, J. A. 1982. Feeding ecology of sea turtles. *In*: Bjorndal, K. A. (ed.). Biology and Conservation of Sea Turtles. Smithsonian Institute Press, Washington, D.C.
- Myers, R. A. and G. Mertz. 1998. Reducing uncertainty in the biological basis of fisheries management by meta-analysis of data from many populations: A synthesis. Fish. Res. 37: 51-60.
- NOAA Fisheries Service. 2000. Smalltooth Sawfish Status Review. NOAA National Marine Fisheries Service, Southeast Regional Office. St. Petersburg, FL. 73 p.
- NOAA Fisheries Service. 2001. Stock assessments of loggerhead and leatherback sea turtles and an assessment of the impact of the pelagic longline fishery on the loggerhead and leatherback sea turtles of the Western North Atlantic. U.S. Department of Commerce, National Marine Fisheries Service, Miami, FL SEFSC Contribution PRD-00/01-08, Parts I-III and Appendices I-VI.
- NOAA Fisheries Service. 2004. Final programmatic supplemental groundfish environmental impact statement for Alaska groundfish fisheries. U.S. Department of Commerce, NOAA, NMFS, Alaska Region, Juneau.
- NOAA (National Oceanic and Atmospheric Administration). 2004a. Historical Highlights, 1950s. Available at: ://www.nefs.noaa.gov/history/timeline/1950.
- NOAA (National Oceanic and Atmospheric Administration). 2004b. Historical Highlights, 1960s. Avaiable at ://nefs.noaa.gov/history/timeline/1960.

- NOAA (National Oceanic and Atmospheric Administration). 2004c. Baird's Legacy; Progress and Change 1947-1971. Avaiable at ://www.nefsc.noaa.gov/history/stories/legacy/1947-71.
- Nance, J. M. (Editor). 1998. Report to Congress. Southeastern United States Shrimp Trawl Bycatch Program. NOAA National Marine Fisheries Service, Southeast Fisheries Science Center Galveston Laboratory, 154 p.
- NRC (National Research Council). 2002. Effects of Trawling and Dredging on Seafloor Habitat: Phase 1. National Research Council, National Research Council Committee on Ecosystem Effects of Fishing. National Academies Press, Washington, DC.
- National Shrimp Festival. 2004. Shrimp Info. Available at: ://www.gulf-shores-shrimp-festival.com/shrimp-info-recipies.
- Norman, J. R. and F. C. Fraser. 1938. Giant Fishes, Whales and Dolphins. W.W. Norton and Company, Inc, New York, NY. 361 pp.
- NPFMC (North Pacific Fishery Management Council). 2003. Stock assessment and fishery evaluation report for the groundfish resources of the Bering Sea/ Aleutian Islands region. North Pacific Fishery Management Council, Anchorage, AK.
- Ogren, L. H. 1989. Distribution of juvenile and subadult Kemp's ridley turtles: Preliminary results from the 1984-1987 surveys. *In*: C.W. Caillouet, Jr. and A. M. Landry, Jr. (eds.) Proceedings from the 1st Symposium on Kemp's ridley Sea Turtle Biology, Conservation, and Management. Sea Grant College Program, Galveston, TX. 116p.
- Otwell, W. S., J. Bellairs, and D. Sweat. 1984. Initial development of a deep sea crab fishery in the Gulf of Mexico. Fla. Sea Grant Coll. Rep. No. 61, 29p.
- Paredes, R. P. 1969. Introduccion al Estudio Biologico de *Chelonia mydas agassizi* en el Perfil de Pisco. M.S. Thesis, Universidad Nacional Federico Villareal, Lima, Peru.
- Paull, C. K., A. C. Neumann, B. A. am Ende, W. Ussler, III, and N. M. Rodriguez. 2000. Lithoherms on the Florida-Hatteras slope. Marine Geology 166: 83-101. Abstract.
- Perez-Farfante, I. 1977. American solenocerid shrimps of the genera *Hymenopenaeus*, *Halioporides*, *Pleoticus*, *Hadropenaeus* new genus, and *Mesopenaeus* new genus. U.S. Fish. Bull. 75:261-346.
- Perry, H. and K. Larsen. 2004. Picture Guide to Shelf Invertebrates of the Northern Gulf of Mexico. NOAA/NMFS. Avaiable at: <a href="https://www.gsmfc.org/seamap/picture\_guide/main.">//www.gsmfc.org/seamap/picture\_guide/main.</a>
- Popenoe, P. and F. T. Manheim. 2001. Origin and history of the Charleston Bump-geological formations, currents, bottom conditions, and their relationship to wreckfish habitats on the Blake Plateau. Pages 43-93 *In:* G. R. Sedberry (ed.). Island in the Stream: oceanography and fisheries of the Charleston Bump. American Fisheries Society Symposium 25. American Fisheries Society, Bethesda, MD.
- Porter, J. W. 1976. Autotrophy, heterotrophy, and resource partitioning in Caribbean reef corals. Amer Nat 110: 731-742.
- Puglise, K. A., R. J. Brock, and J. J. McDonough. 2005. Identifying critical information needs and developing institutional partnerships to further the understanding of Atlantic

- deep-sea coral ecosystems. *In* Freiwald, A. and J. M. Roberts (eds). Cold-water corals and ecosystems. Springer-Verlag, Berlin.
- Reed, J. K. 1983. Nearshore and shelf-edge *Oculina* coral reefs: the effects of upwelling on coral growth and on the associated faunal communities. NOAA Symposium Series Undersea research 1:119-124.
- \_\_\_\_\_. 2002b. Comparison of deep-water coral reefs and lithoherms off southeastern U.S.A. Hydrobiologia 471: 57–69.
- Reed, J. K., S. A. Pomponi, D. Weaver, C. K. Paull, and A. E. Wright. 2005a. Deep-water sinkholes and bioherms of south Florida and the Pourtales Terrace-habitat and fauna. Bulletin of Marine Science 77: 267-296.
- Reed, J. K., A. Shepard, C. Koenig, K. Scanlon, and G. Gilmore. 2005b. Mapping, habitat characterization, and fish surveys of the deep-water *Oculina* coral reef Marine Protected Area: a review of historical and current research. Pages 443-465 *In:* Freiwald, A., and J. M. Roberts (eds.). Cold-water Corals and Ecosystems, Proceedings of Second International Symposium on Deep Sea Corals, Sept. 9-12, 2003, Erlangen, Germany, Springer-Verlag, Berlin Heidelberg.
- Reed, J. K., D. C. Weaver, and S. A. Pomponi. 2006. Habitat and fauna of deep-water *Lophelia pertusa* coral reefs off the southeastern U.S.: Blake Plateau, Straits of Florida, and Gulf of Mexico. Bulletin of Marine Science 78: 343–375.
- Rezak, R., T. J. Bright, and D. W. McGrail. 1985. Reefs and Banks of the Northwestern Gulf of Mexico. New York: John Wiley and Sons.
- Richer de Forges, B., J. A. Koslow, and G. C. B. Poore. 2000. Diversity and endemism of the benthic seaount fauna in the southwest Pacific. Nature 405:944-947.
- Risk, M. J., J. M. Heikoop, M. G. Snow, and R. Beukens. 2002. Lifespans and growth patterns of two deep-sea corals: *Primnoa resedaeformis* and *Desmophyllum cristagalli*. Hydrobiologia 471 (1-3): 125-131.
- Rogers, A. D. 1999. The biology of *Lophelia pertusa* (Linnaeus 1758) and other deep-water reef-forming corals and impacts from human activities. International Review of Hydrobiology 84: 315-406.
- Rogers, A. D. 2004. The biology, ecology and vulnerability of seaount communities. International Union for the Conservation of Nature and Natural Resources :///www.iucn.org/themes/marine/pdf/AlexRogers-CBDCOP7-Seamounts-Complete.
- Ross, S. W. and M. S. Nizinski. 2007. State of the U.S. Deep Coral Ecosystems in the Southeastern United States Region: Cape Hatteras to the Florida Straits. NOAA Tech. Memo. NMFS-OPR-29. Silver Spring, MD.
- Ross, S. W. and A. M. Quattrini. 2007. The Fish Fauna Associated with Deep Coral Banks off the Southeastern United States. Deep-sea Research I 54:975-1007.
- Rothschild, B. J. 1986. Dynamics of marine fish populations. Harvard University Press, Cambridge, MA.

- Rylaarsdam, K.W. 1983. Life histories and abundance patterns of colonial corals on Jamaican reefs. Mar Ecol Prog Ser 13: 249-260.
- SAFMC (South Atlantic Fishery Management Council). 1988. Amendment 1 to the Snapper Grouper Fishery Management Plan. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699.
- SAFMC (South Atlantic Fishery Management Council). 1990. Amendment 1 to the Fishery Management Plan for Coral and Coral Reefs, (Including Environmental Assessment, Regulatory Impact Review, and Initial Regulatory Flexibility Analysis). Gulf of Mexico Fishery Management Council, 5401 West Kennedy Boulevard, Suite 881, Tampa, Florida. 18 pp.
- SAFMC (South Atlantic Fishery Management Council). 1991a. Fishery Management Plan for the Shrimp Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699. 184 p + appendices.
- SAFMC (South Atlantic Fishery Management Council). 1991b. Amendment 5 (Wreckfish) to the Snapper Grouper Fishery Management Plan. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699.
- SAFMC (South Atlantic Fishery Management Council). 1995. Fishery Management Plan for the Golden Crab Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407. 239 pp.
- SAFMC (South Atlantic Fishery Management Council). 1996a. Amendment 1 to the Fishery Management Plan for the Shrimp Fishery of the South Atlantic Region (Rock Shrimp). South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699. 118 p + appendices.
- SAFMC (South Atlantic Fishery Management Council). 1996b. Amendment 2 (Bycatch Reduction) to the Fishery Management Plan for the Shrimp Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699. 108p + appendices.
- SAFMC (South Atlantic Fishery Management Council). 1997. Framework Seasonal Adjustment #1. Fishery Management Plan for the Golden Crab Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699.
- SAFMC (South Atlantic Fishery Management Council). 1998a. Habitat Plan for the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Ste 306, Charleston, S.C. 29407-4699
- SAFMC (South Atlantic Fishery Management Council). 1998b. Comprehensive Amendment Addressing Essential Fish Habitat in Fishery Management Plans of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699.
- SAFMC (South Atlantic Fishery Management Council). 1998c. Comprehensive Amendment Addressing Sustainable Fishery Act Definitions and Other Required Provisions in Fishery Management Plans of the South Atlantic Region. South Atlantic

- Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699. 151 pp.
- SAFMC (South Atlantic Fishery Management Council). 2000. Amendment 3 to the Fishery Management Plan for the Golden Crab Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699.
- SAFMC (South Atlantic Fishery Management Council). 2002a. Amendment 5 to the Fishery Management Plan for the Shrimp Fishery of the South Atlantic Region (Rock Shrimp). South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699. 139 p + appendices.
- SAFMC (South Atlantic Fishery Management Council). 2002b. Fishery Management Plan for Pelagic *Sargassum* Habitat. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699. 228 p.
- SAFMC (South Atlantic Fishery Management Council). 2003a. Fishery Management Plan for the Dolphin and Wahoo Fishery of the Atlantic. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699.
- SAFMC (South Atlantic Fishery Management Council). 2003b. Fishery Management Plan for the Dolphin and Wahoo Fishery of the Atlantic. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699.
- SAFMC (South Atlantic Fishery Management Council). 2005. Amendment 6 to the Fishery Management Plan for the Shrimp Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 1 Southpark Cir., Suite 306, Charleston, S.C. 29407-4699. 256p + appendices.
- SAFMC (South Atlantic Fishery Management Council). 2007. Amendment 14 to the Snapper Grouper Fishery Management Plan. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Suite 201; North Charleston, SC 29405.
- SAFMC (South Atlantic Fishery Management Council). 2009. Snapper Grouper Amendment 16. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Suite 201, North Charleston, SC 29405.
- SAFMC (South Atlantic Fishery Management Council). In review. Amendment 7 to the Fishery Management Plan for the Shrimp Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, , 4055 Faber Place Drive, Suite 201, North Charleston, SC 29405. 186 pp.
- SAFMC (South Atlantic Fishery Management Council). In review. Snapper Grouper Amendment 15B. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Suite 201, North Charleston, SC 29405.
- SAFMC (South Atlantic Fishery Management Council). In prep. Fishery Ecosystem Plan For the South Atlantic Region, Volumes I-V. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Suite 201, North Charleston, SC 29405. 3,000 pp.

- SAFMC (South Atlantic Fishery Management Council). In prep. Snapper Grouper Amendment 17. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Suite 201, North Charleston, SC 29405.
- SAFMC (South Atlantic Fishery Management Council). In prep. Comprehensive Annual Catch Limits (ACL) Amendment. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Suite 201, North Charleston, SC 29405.
- Sammarco, P. W. 1980. *Diadema* and its relationship to coral spat mortality: grazing, competition, and biological disturbance. Journal of Experimental Marine Biology and Ecology 45:245-272.
- Sanchirico, J. N., K. A. Cochran, and P. M. Emerson. 2002. Marine protected areas: economic and social implications. Resources for the Future, Discussion Paper 02-26, Washington, D.C.
- Scelzo, M. A. and E. E. Boschi. 1975. Cultivo del langostino *Hymenopenaeus muelleri* (Crustacea, Decapoda, Penaeidae). Physis, Secc. A, 34: 193-197.
- Schroeder, W. C. 1959. The lobster *Homarus americanus*, and the red crab, *Geryon quinquedenes*, in the offshore waters of the western North Atlantic. Deep-Sea Research 5: 266-279.
- Schwartz, F. J. 2003. Bilateral asymmetry in the rostrum of the smalltooth sawfish, *Pristis pectinata* (pristiformes: family pristidae). Journal of North Carolina Academy of Science, 119:41-47.
- Sea Grant Louisiana. 2006. Rock Shrimp. Lagniappe Vol.30, No.9
- Shaver, D. J. 1991. Feeding ecology of wild and head-started Kemp's ridley sea turtles in south Texas waters. Journal of Herpetology, 25:327.
- Sherwood, O. A., D. B. Scott, M. J. Risk, and T. P. Guilderson. 2005. Radiocarbon evidence for annual growth rings in the deep-sea octocoral *Primnoa resedaeformis*. Marine Ecology Progress Series 301: 129-134.
- Shrimp Lady (Accessed 2007). Available at: ://www.shrimplady.com/default.
- Simpfendorfer, C. A. 2001. Essential habitat of the smalltooth sawfish, *Pristis pectinata*. Report to the National Fisheries Service's Protected Resources Division. Mote Marine Laboratory Technical Report (786) 21pp.
- Simpfendorfer, C. A. and T. R. Wiley. 2004. Determination of the distribution of Florida's remnant sawfish population, and identification of areas critical to their conservation. Mote Marine Laboratory Technical Report, July 2, 2004 37 pp.
- Soma, M. 1985. Radio biotelemetry system applied to migratory study of turtle. Journal of the Faculty of Marine Science and Technology, Tokai University, Japan, 21:47.
- Soong, K. and J. C. Lang. 1992. Reproductive integration in coral reefs. Biol. Bull. 183: 418-431.
- Squires, D. F. 1959. Deep sea corals collected by the Lamont Geological Observatory. I. Atlantic corals. American Museum Novitates No. 1965:1-42.

- Standora, E. A., J. R. Spotila, J. A. Keinath, and C. R. Shoop. 1984. Body temperatures, diving cycles, and movements of a subadult leatherback turtle, *Dermochelys coriacea*. Herpetologica, 40:169.
- Stiles, M. L., E. Harrould-Kolieb, P. Faure, H. Ylitalo-Ward and M. F. Hirshfield. 2007. Deep Sea Trawl Fisheries of the Southeast US and Gulf of Mexico: Rock shrimp, Royal red shrimp, Calico scallops. Oceana. Washington, DC.
- Szmant, A. M. and M. Miller. 2006. Settlement preferences and post-settlement mortality of laboratory cultured and settled larvae of the Caribbean hermatypic corals *Montastraea faveolata* and *Acropora palmata* in the Florida Keys, USA. Proceedings of the 10th International Coral Reef Symposium.
- Thayer, G. W., K. A. Bjorndal, J. C. Ogden, S. L. Williams, and J. C. Zieman. 1984. Role of large herbivores in seagrass communities. Estuaries, 7:351.
- Van Dam, R. and C. Diéz. 1998. Home range of immature hawksbill turtles (*Eretmochelys imbricata*) at two Caribbean islands. Journal of Experimental Marine Biology and Ecology 220(1):15-24.
- Van Dover, C.L., P. Aharonb, J. M. Bernhardc, E. Caylord, M. Doerriesa, W. Flickingera, W. Gilhoolyd, S. K. Goffredie, K. E. Knicka, S. A. Mackod, S. Rapoporta, E. C. Raulfsa, C. Ruppelf, J. L. Salernoa, R. D. Seitzg, B. K. Sen Guptah, T. Shanki, M. Turnipseeda and R. Vrijenhoeke. 2003. Blake Ridge methane seeps: characterization of a soft-sediment, chemosynthetically based ecosystem. Deep Sea Research Part I: Oceanographic Research Papers 50(2):281-300.
- Walker, T. A. 1994. Post-hatchling dispersal of sea turtles. p. 79. *In*: Proceedings of the Australian Marine Turtle Conservation Workshop, Queensland Australia.
- Waring, G. T., D. L. Palka, P. J. Clapham, S. Swartz, M. Rossman, T. Cole, K. D. Bisack, and L. J. Hansen. 1998. U.S. Atlantic Marine Mammal Stock Assessments. NOAA NOAA Technical Memorandum NMFS-NEFSC. Northeast Fisheries Science Center, Woods Hole, Massachusetts 02543-1026. December.
- Waring, G. T., J. M. Quintal, and C. P. Fairfield (eds). 2002. U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments - 2002. NOAA Technical Memorandum NMFS-NE-169. Northeast Fisheries Science Center, Woods Hole, Massachusetts 02543-1026. September.
- Weaver, D. C. and G. R. Sedberry. 2001. Trophic subsidies at the Charleston Bump: food web structure of reef fishes on the continental slope of the southeastern United States. P. 137-152 *In:* Sedberry, G.R. (ed.). Island in the Stream: oceanography and fisheries of the Charleston Bump. American Fisheries Society Symposium 25. American Fisheries Society, Bethesda, MD.
- Wenner, E. L., G. F. Ulrich, and J. B. Wise. 1987. Exploration for the golden crab, *Geryon fenneri*, in the south Atlantic Bight: distribution, population structure, and gear assessment. Fishery Bulletin 85: 547-560.
- Wenner, E. L. and C. A. Barans. 1990. *In situ* estimates of golden crab, *Chaceon fenneri*, from habitats on the continental slope, southeast U.S. Bulletin of Marine Science 46(3): 723-734.

- Wenner, E. L. and C. A. Barans. 2001. Benthic habitats and associated fauna of the upperand middle-continental slope near the Charleston Bump. Pages 161-178 *In:* Sedbery, G. R. (ed.). Island in the Stream: oceanography and fisheries of the Charleston Bump. American Fisheries Society Symposium 25. Bethesda, MD.
- Whitaker, D. L. 1982. Notes on biology of the rock shrimp off South Carolina. Presented at the joint Southeastern Estuarine Research Society/Gulf Estuarine Research Society meeting, Nov. 12, 1982. 14 p.
- White, D. B., D. M. Wyanski, and G. R. Sedberry. 1998. Age, growth, and reproductive biology of the blackbelly rosefish from the Carolinas, USA. J. Fish Biol. 53(6):1274-1291.
- Wigley, R. L., R. B. Theroux, and H. E. Murray. 1975. Deep sea red crab, *Geryon quinquedens*, survey off northeastern United States. Mar. Fish. Rev. 37(8):1-27.
- Williams, E. H. and L. Bunkley-Williams. 1990. The world-wide coral reef bleaching cycle and related sources of coral mortality. Atoll Research Bulletin 335: 1-71.
- Williams, B., M. J. Risk, S. W. Ross, and K. J. Sulak. 2006. Deep-water Antipatharians: proxies of environmental change. Geology 34(9): 773-776.
- Williams, B., M. J. Risk, S. W. Ross, K. J. Sulak. In press. Stable isotope records from deep-water antipatharians: 400-year records from the south-eastern coast of the United States of America. Bulletin of Marine Science.
- Wilson, J. B. 1979. "Patch" development of the deep-water coral *Lophelia pertusa* (L.) on Rockall Bank. Journal of the Marine Biological Association of the United Kingdom 59:165-177.
- Witzell, W. N. 2002. Immature Atlantic loggerhead turtles (*Caretta caretta*): suggested changes to the life history model. Herpetological Review 33(4):266-269.
- WWF (World Wildlife Fund). 2006. Policy proposals and operational guidance for ecosystem-based management of marine capture fisheries. WWF International, Gland, Switzerland, 80pp.

#### 11 Index

```
Acropora, 3-23, 3-27, 3-28, 4-19, 4-41, 4-
  51, 4-57, 2, 15
Actions and Alternatives, 2-1
Administrative Effects, viii, ix, xi, 4-36, 4-
  42, 4-54, 4-63, 7-4
Affected Environment, 3-1
Allowable Golden Crab Fishing Areas,
  xxvi, xxx, xxxi, xxxii, 1-4, 2-11, 2-15,
  2-16, 2-17, 2-19, 4-32, 4-51, 4-57, 5-5,
  6-4, 7-2
Anthomastus agassizi, 3-12
Biological Effects, viii, ix, xi, xxiv, xxviii,
  xxix, xxx, 4-2, 4-40, 4-49, 4-56, 7-1
Black corals, 3-10
BRD, 3-38, 3-42, 4-85
bycatch, 1-7, 1-9, 3-22, 3-26, 4-85, 4-95,
  4-97, 4-101, 4-102, 4-107, 4-108, 4-109,
  4-110, 4-111
Bycatch Practicability Analysis, 4-101
Chaceon fenneri, xv, 1-2, 3-5, 3-13, 3-14,
  3-15, 4-76, 7, 16
CHAPC, v, vii, viii, xiii, xv, xvi, xx, xxi,
  xxii, xxiii, xxiv, xxvi, xxvii, xxviii,
  xxix, xxx, xxxi, 1-1, 1-2, 1-3, 1-10, 2-1,
  2-2, 2-4, 2-5, 2-6, 2-9, 2-10, 2-11, 2-12,
  2-14, 2-15, 2-17, 2-18, 2-19, 3-2, 4-1, 4-
  3, 4-5, 4-6, 4-9, 4-10, 4-11, 4-13, 4-14,
  4-15, 4-17, 4-18, 4-19, 4-21, 4-23, 4-26,
  4-27, 4-29, 4-31, 4-32, 4-34, 4-36, 4-37,
  4-38, 4-40, 4-41, 4-42, 4-44, 4-49, 4-50,
  4-51, 4-54, 4-56, 4-58, 4-62, 4-63, 4-64,
  4-85, 4-86, 4-100, 4-102, 4-103, 4-109,
  4-110, 4-112, 4-113, 4-115, 5-1, 5-2, 5-
  3, 5-4, 6-2, 6-4, 6-5, 6-6, 7-1, 7-3, 7-4
Chrysogorgia squamata, 3-12
Clavularia modesta, 3-12
Comparison of Alternatives, vii, 2-3, 2-10,
  2-15, 2-17
Cumulative Effects, i, ix, 4-83, 4
Deepwater Corals, vii, 3-7
Deepwater Shrimp, vii, viii, 2-1, 3-16, 3-
  38, 3-43, 4-42, 10-1
```

```
Economic Effects, viii, ix, xi, xxvi, xxviii,
  xxix, xxxi, 4-19, 4-41, 4-51, 4-57, 7-2
EFH, i, iii, v, ix, xiii, xiv, xvi, xix, xxiv,
  xxv, 1-1, 1-4, 1-5, 1-7, 1-10, 2-4, 2-7, 3-
  2, 3-5, 3-6, 3-7, 4-2, 4-5, 4-37, 4-65, 4-
  66, 4-67, 4-68, 4-69, 4-70, 4-71, 4-72,
  4-73, 4-74, 4-75, 4-76, 4-77, 4-78, 4-79,
  4-80, 4-81, 4-82, 4-84, 4-85, 4-95, 4-96,
  4-113, 5-3, 6-5, 7-1, 7-2, 9-1
elkhorn, 3-23, 3-27, 3-28
Endangered Species, i, vii, x, xi, 2-7, 3-22,
  3-27, 4-98, 4-114, 8-2
Environmental Consequences, 4-1
essential fish habitat, v, xxiv, 1-9, 4-37, 7-
Fishery Impact Statement, 7-1
Gerardia spp., 3-10
golden crab, iii, v, xiii, xv, xvii, xix, xxiv,
  xxvi, xxvii, xxviii, xxix, xxx, xxxi,
  xxxii, 1-1, 1-2, 1-3, 1-8, 1-9, 1-10, 2-4,
  2-5, 2-8, 2-10, 2-15, 2-16, 2-17, 2-18, 2-
  19, 2-20, 3-13, 3-14, 3-15, 3-16, 3-28,
  3-31, 3-32, 3-33, 3-35, 3-36, 3-37, 3-47,
  4-2, 4-19, 4-20, 4-21, 4-23, 4-32, 4-36,
  4-37, 4-43, 4-47, 4-48, 4-49, 4-50, 4-51,
  4-53, 4-54, 4-55, 4-56, 4-57, 4-58, 4-61,
  4-62, 4-63, 4-76, 4-77, 4-84, 4-85, 4-87,
  4-89, 4-90, 4-92, 4-93, 4-94, 4-95, 4-96,
  4-98, 4-99, 4-100, 4-102, 4-103, 4-108,
  4-109, 4-110, 4-111, 4-112, 4-113, 4-
  114, 4-115, 5-1, 5-2, 5-3, 5-4, 5-5, 5-6,
  6-2, 6-3, 6-4, 6-5, 6-6, 6-7, 7-1, 7-2, 7-3,
  7-4, 7-5, 8-3, 8-5, 8-7, 7, 8, 16
Golden Crab, iii, v, vii, viii, ix, x, xv, xvi,
  xvii, xix, xx, xxiii, xxiv, xxvi, xxvii,
  xxix, xxx, xxxi, xxxii, xxxiii, xxxiv,
  xxxv, xxxvi, 1-1, 1-2, 1-3, 1-5, 1-6, 1-8,
  1-9, 2-1, 2-6, 2-11, 2-12, 2-14, 2-15, 2-
  16, 2-17, 2-18, 2-19, 2-20, 3-12, 3-13,
  3-31, 3-33, 3-36, 3-47, 4-1, 4-32, 4-36,
  4-44, 4-45, 4-46, 4-47, 4-48, 4-49, 4-50,
  4-51, 4-53, 4-54, 4-55, 4-56, 4-57, 4-58,
  4-61, 4-62, 4-76, 4-77, 4-85, 4-89, 4-90,
```

4-92, 4-93, 4-94, 4-96, *4-108*, *4-112*, *4-*113, 5-1, 5-2, 5-3, 5-4, 5-5, 5-6, 6-2, 6-4, 6-5, 6-6, 6-7, 7-1, 7-2, 7-3, 8-6, 10-1, 13 Habitat, 3-1 Habitat Area of Particular Concern, i, xv, 1-7, 1-10, 4-7, 4-74 HAPC, i, iii, xiii, xiv, xxv, 1-4, 1-5, 1-7, 1-10, 2-4, 3-19, 3-40, 4-1, 4-5, 4-26, 4-65, 4-72, 4-73, 4-74, 4-75, 4-76, 4-78, 4-79, 4-80, 4-81, 4-82, 4-84, 4-85, 4-95, 4-96, 4-113, 5-3, 7-2 History of Management, 1-6 Human Environment, 3-31 Initial Regulatory Flexibility Analysis, 6-1 *Keratoisis* spp., 3-10, 3-11 Kophobelemnon sertum, 3-12 L. pertusa, 3-2, 3-8, 3-9, 3-10 lace corals, 1-2, *3-12* Leiopathes spp., 3-10 Lophelia, xiii, xx, xxi, xxv, 2-1, 2-2, 2-4, 2-6, 3-1, 3-2, 3-3, 3-4, 3-5, 3-8, 3-10, 3-11, 3-12, 3-14, 4-1, 4-3, 4-5, 4-6, 4-8, 4-11, 4-102, 4-103, 5-2, 6-4, 7-1, 3, 4, 5, 6, 7, 10, 12, 17 Lophelia pertusa, xx, 3-2, 3-8, 3-10, 3-11, 4-3, 3, 5, 6, 7, 10, 12, 17 Management Objectives, 1-5 Monitoring and Mitigation Measures, 4-115 National Environmental Policy Act, ii, xi,

6-5, 6-6, 6-7, 7-1, 7-3 smalltooth sawfish, 3-22, 3-26, 3-27, 4-19, 4-40, 4-51, 4-57, 4-99, 2, 15 Social and Cultural Environment, 3-47 Social Effects, viii, ix, x, xi, xxvii, xxviii, xxx, xxxii, 4-36, 4-41, 4-54, 4-62, 4-111, 7-3 Species Most Impacted by this Amendment, 3-7 staghorn, 3-23, 3-27, 3-28 Summary, xix Thourella bipinnata, 3-12 Unavoidable Adverse Effects, 4-112 vessel monitoring, iii, v, vii, ix, xx, xxii, xxiv, xxx, 1-2, 1-3, 2-9, 2-16, 2-17, 4-24, 4-38, 4-40, 4-56, 4-57, 4-58, 4-61, 4-62, 4-63, 4-85, *4-109*, *4-110*, *4-113*, *4-114*, 5-2, 5-3, 6-2, 6-5, 6-7, 7-2 wreckfish, xix, xxi, xxv, xxvii, 1-1, 1-2, 2-1, 2-4, 2-6, 3-3, 3-6, 3-14, 4-1, 4-2, 4-5, 4-8, 4-9, 4-11, 4-19, 4-32, 4-33, 4-38, 4-73, 4-74, 4-102, 4-103, 4-105, 4-108, 4-*109*, *4-111*, *5-2*, *5-3*, 11

4-92, 4-95, 4-96, 4-97, *4-102*, *4-107*, *4-*

108, 4-110, 5-3, 6-3, 6-5, 6-6, 8-5, 4, 8,

Rock shrimp, xv, xvi, xxviii, 3-16, 3-17, 3-

18, 3-19, **3-22**, 3-39, 3-46, 4-30, 4-31,

Royal red shrimp, xiii, xv, xvi, **3-21**, *3-38*, 3-39, 3-43, 3-44, 4-25, 4-29, 4-30, 4-40,

**Royal Red Shrimp**, **3-21**, *3-38*, 3-43, 4-

Shrimp Fishery Access Area, iii, v, vii,

1-3, 2-5, 2-9, 2-10, 2-11, 2-12, 2-13, 2-

15, 4-1, 4-29, 4-38, 4-39, 4-40, 4-41, 4-

42, 4-44, 4-50, 4-53, 4-55, 4-85, *4-108*,

*4-110*, *4-112*, *4-114*, 5-1, 5-3, 6-2, 6-4,

4-89, 4-94, *4-108*, 15

4-90, 4-91, 4-94, 15

23, 4-107, 2, 3, 5

16

4-83, 8-6, 4

Purpose and Need, 1-1

NEPA, ii, 4-83, 7-4, 8-5, 8-6, 9-1

Pleoticus robustus, xv, 3-21, 3-22

rock shrimp, xiii, xv, xxii, xxviii, 1-3, 1-7,

*20*, **3-22**, *3-38*, 3-39, 3-40, 3-41, 3-42,

2-5, 2-9, 2-11, 3-16, 3-17, 3-18, 3-19, 3-

3-43, 3-45, 3-46, 3-47, 4-21, 4-24, 4-30,

4-37, 4-38, 4-40, 4-41, 4-42, 4-58, 4-71,

4-73, 4-84, 4-85, 4-86, 4-87, 4-89, 4-91,

Regulatory Impact Review, 5-1