



NATIONAL MARINE  
SANCTUARIES

GRAY'S REEF

1981 ★ 2006

*25<sup>th</sup> Anniversary*

---

# GRAY'S REEF

## NATIONAL MARINE SANCTUARY

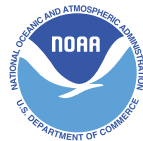
---



---

## FINAL MANAGEMENT PLAN/ FINAL ENVIRONMENTAL IMPACT STATEMENT

---



**JULY 2006**

U.S. Department of Commerce  
National Oceanic and Atmospheric Administration  
National Ocean Service  
National Marine Sanctuary Program

---

## ABOUT THIS DOCUMENT

This is a combined Final Management Plan (FMP) and a Final Environmental Impact Statement (FEIS) with the proposed Final Rule as an appendix. The Final Rule is expected to be published in the *Federal Register* 30 days after release of this document.

A Sanctuary management plan is a site-specific planning and management document that describes the objectives, policies, and activities for a sanctuary. The FMP outlines the activities for programs for the Gray’s Reef National Marine Sanctuary (GRNMS) over the next five years and beyond, along with staffing and budget needs, and performance measures. The FEIS is required by the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. §§ 4321 *et seq.*) and the National Marine Sanctuaries Act (NMSA)(16 U.S.C. §§ 1431 *et seq.*). To help readers locate topics required by NEPA and the NMSA, they are listed in Table 1 (below). The corresponding section of this document and the page numbers are provided in the other two columns.

The document relies on sanctuary program expertise and the information, comments, and recommendations of the public, participants of the management plan workshops, and the guidance of the GRNMS Advisory Council, South Atlantic Fishery Management Council, and NOAA Fisheries Service.

**Table 1: Legal Requirements for the FMP/FEIS.**

<b>NEPA Requirement</b>	<b>Section</b>	<b>Page</b>
Purpose and Need for Action	Executive Summary and Section IV	6 & 124
Alternatives Including the Preferred	Section IV	127
Affected Environment	Section II	31
Cumulative Impacts	Section IV	147
Environmental/Socioeconomic Consequences	Section IV	127
Findings and Determinations	Appendix V	218
List of Preparers	Appendix VII	255
List of Agencies, Organizations, and Persons Receiving Copies of the FEIS	Appendix VIII	256
<b>NMSA Requirements</b>		
Resource Assessment	Section II	31
Map Depicting the Boundary	Figure I	5

Comments or questions on this document should be directed to:

Reed Bohne, Manager  
 Gray’s Reef National Marine Sanctuary  
 10 Ocean Science Circle, Savannah, GA 31411  
 Telephone 912/598-2345; Fax 912/598-2367



JUL 13 2006

Dear Reviewer:

In accordance with provisions of the National Environmental Policy Act of 1969 (NEPA), we enclose for your review the NOAA National Ocean Service Final Management Plan/Final Environmental Impact Statement (FMP/FEIS) for the Gray's Reef National Marine Sanctuary (GRNMS or Sanctuary). Designated in 1981, Gray's Reef is one of the largest nearshore rocky reefs in the southeastern United States. The Sanctuary is located 17.5 nautical miles off Sapelo Island, Georgia. The Sanctuary boundary protects 16.68 square nautical miles of open ocean and submerged lands, including the hard bottom reef system. The rocky ridges and their associated attached organisms are commonly referred to as "live bottom habitat," a habitat of particular biological importance given the extensive sands that cover most of the broad continental shelf.

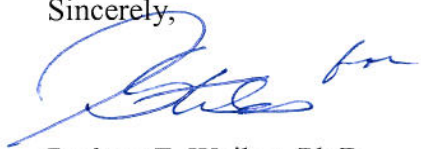
The National Marine Sanctuaries Act (NMSA or Act) requires NOAA to periodically review sanctuary management plans and regulations and revise them as necessary to fulfill the purposes and policies of the Act. This FMP/FEIS was prepared pursuant to NEPA to assess the environmental impacts associated with NOAA developing revised regulations for the GRNMS under the NMSA, as part of the management plan review process. This FMP/FEIS contains a range of alternatives, including a preferred alternative, describing changes to the Sanctuary's regulations. It also includes the final management plan, designation documents, and regulations that would implement the preferred alternative. The regulatory changes described in the preferred alternative include both new regulations as well as changes to existing regulations. To allow the regulation of certain activities not currently identified as subject to regulation, several of these changes require the Sanctuary to change its existing terms of designation. The final regulations will be issued in the Federal Register at the end of the agency's 30-day review period for the FEIS.

Comments or questions on this document submitted during the agency's 30-day review period for the FEIS must be received by August 28<sup>th</sup>, 2006. Written comments on the Final EIS should be submitted by mail to Reed Bohne, Manager, Gray's Reef National Marine Sanctuary, 10 Ocean Science Circle, Savannah, GA 31411. This FEIS is also available electronically from <http://graysreef.noaa.gov/management/FMPFEIS/welcome.html>. A copy of your comments should also be submitted to me by mail to NOAA Office of Program Planning and Integration (PPI), SSMC3, Room 15603, 1315 East West Highway, Silver Spring, Maryland, 20910; by fax to 301-713-0585, or by email to [nepa.comments@noaa.gov](mailto:nepa.comments@noaa.gov).



NOAA National Ocean Service is not required to respond to comments received as a result of the issuance of the FEIS. Comments received will be reviewed and considered for their impact on the issuance of a Record of Decision (ROD) and will be made part of our administrative record.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Rodney F. Weiher', with a stylized flourish at the end.

Rodney F. Weiher, Ph.D.  
NEPA Coordinator

## LIST OF ACRONYMS

AD – Administration (action plan)  
BP – Before present  
DEIS – Draft Environmental Impact Statement  
DMP – Draft Management Plan  
DOC – U.S. Department of Commerce  
EEZ – Exclusive Economic Zone  
EFH – Essential Fish Habitat  
EFH-HAPC – Essential Fish Habitat-Habitat Area of Particular Concern  
EO – Education and Outreach (action plan)  
ESA – Endangered Species Act  
EV – Evaluation (action plan)  
EX – Exploration (action plan)  
FEIS – Final Environmental Impact Statement  
FMP – Final Management Plan  
GADNR – Georgia Department of Natural Resources  
GA Tech – Georgia Institute of Technology  
GIS – Geographic Information System  
GPS – Global Positioning System  
GRNMS – Gray’s Reef National Marine Sanctuary  
GSU – Georgia Southern University  
JEA – Joint Enforcement Agreement  
MARMAP – Marine Resources Monitoring Assessment and Prediction  
MOU – Memorandum of Understanding  
MPA – Marine Protected Area  
MRFSS – Marine Recreational Fishery Statistical Survey  
MRP – Marine Resource Protection (action plan)  
MSA – Metropolitan Statistical Area  
NAD – North American Datum  
NCCOS – National Centers for Coastal Ocean Science  
NEPA – National Environmental Policy Act of 1969  
nm – Nautical miles  
NMS – National Marine Sanctuary  
NMSA – National Marine Sanctuaries Act  
NMSP – National Marine Sanctuary Program  
NMSS – National Marine Sanctuary System  
NOAA – National Oceanic and Atmospheric Administration  
OLE – NOAA’s Office of Law Enforcement  
PADI – Professional Association of Diving Instructors  
PSA – Public service announcement  
ppt – Parts per thousand  
RAWG – Research Area Working Group  
RM – Research and Monitoring (action plan)  
ROV – Remotely operated vehicle  
SAB – South Atlantic Bight

SAFMC – South Atlantic Fishery Management Council  
SCUBA – Self contained underwater breathing apparatus  
SkIO – Skidaway Institute of Oceanography  
SSU – Savannah State University  
UGA – University of Georgia  
USCG – United States Coast Guard  
USFWS – United States Fish and Wildlife Service

# TABLE OF CONTENTS

	PAGE
<b>ABOUT THIS DOCUMENT</b> .....	i
<b>LIST OF ACRONYMS</b> .....	ii
<b>EXECUTIVE SUMMARY</b> .....	1
Introduction.....	2
Organization of This Document.....	2
Sanctuary Characteristics.....	6
Purpose and Need for Action.....	6
Preferred Alternatives.....	7
Socioeconomic and Environmental Impacts.....	11
<b>SECTION I: INTRODUCTION AND OVERVIEW</b> .....	13
The Sanctuary Setting.....	14
The National Marine Sanctuary Program and GRNMS.....	15
Current GRNMS Activities.....	21
Management Plan Review.....	25
<b>SECTION II: AFFECTED ENVIRONMENT</b> .....	31
Sanctuary Overview.....	32
Natural Resources.....	35
Historical Resources.....	44
Social and Economic Resources.....	45
<b>SECTION III: FINAL MANAGEMENT PLAN</b> .....	55
Background.....	56
<b>MARINE RESOURCE PROTECTION ACTION PLAN</b> .....	59
National Priorities and GRNMS Priorities.....	59
MRP-1: Prevent Damage to Benthic Habitats from Anchoring..	61
MRP-2: Prevent Diver Impacts on Benthic Habitat.....	63
MRP-3: Remove Marine Debris from the Sanctuary and Prevent New Debris from Accumulating.....	65
MRP-4: Increase Protection for Fish and Invertebrate Species..	67
MRP-5: Enhance Enforcement Efforts.....	68
MRP-6: Enhance Coordination and Cooperation with SAFMC, NOAA Fisheries Service, and GADNR on Marine Reserves and Other Regional Programs.....	69
<b>RESEARCH AND MONITORING ACTION PLAN</b> .....	71
National Priorities and GRNMS Priorities.....	71
RM-1: Investigate Ecosystem Processes.....	73
RM-2: Investigate Designation of a Marine Research Area.....	75
RM-3: Assess and Characterize Sanctuary Resources.....	78

	PAGE
RM-4: Maintain and Enhance Monitoring Programs.....	80
<b>EDUCATION AND OUTREACH ACTION PLAN.....</b>	<b>84</b>
National Priorities and GRNMS Priorities.....	84
EO-1: Conduct Public Awareness Programs.....	86
EO-2: Create and Provide Scholastic Programs in Ocean Science Education.....	88
EO-3: Maintain Existing and Develop New Sanctuary Exhibits.....	90
EO-4: Increase Outreach to Minority Communities.....	92
EO-5: Develop Volunteer Programs to Support Sanctuary Programs.....	93
<b>EXPLORATION ACTION PLAN.....</b>	<b>94</b>
National Priorities and GRNMS Priorities.....	94
Strategy EX-1: Develop and Implement the Latitude 31 <sup>30</sup> Program.....	96
<b>ADMINISTRATION ACTION PLAN.....</b>	<b>99</b>
National Priorities and GRNMS Priorities.....	99
Strategy AD-1: Improve Overall Site Staffing and Support Capabilities.....	101
Strategy AD-2: Maintain and Enhance the Infrastructure of the Site.....	104
<b>PERFORMANCE EVALUATION ACTION PLAN.....</b>	<b>106</b>
National Priorities and GRNMS Priorities.....	106
Strategy EV-1: Develop and Implement a Performance Evaluation Program for GRNMS.....	108
<b>SECTION IV: ALTERNATIVES INCLUDING THE PREFERRED.....</b>	<b>123</b>
Purpose and Need for Action.....	124
General Socioeconomic Impacts Summary.....	125
Preferred Alternatives.....	127
Revisions to Existing Regulations.....	143
Terms of Designation.....	147
Environmental and Cumulative Impacts.....	147
<b>APPENDICES.....</b>	<b>149</b>
Appendix I: Final Rule.....	150
Appendix II: References.....	177
Appendix III: NMSA.....	182



	PAGE
Appendix IV: Memorandum of Understanding with SAFMC and NOAA Fisheries Service.....	212
Appendix V: Findings and Determinations.....	218
Appendix VI: Response to Comments.....	241
Appendix VII: Glossary.....	250
Appendix VIII: List of Preparers.....	255
Appendix IX: List of Agencies, Organizations, and Persons Consulted and Receiving Copies of the FMP/FEIS.....	256

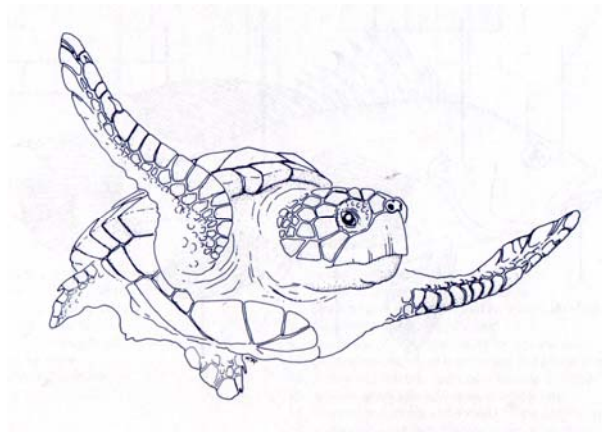
**LIST OF TABLES**

Table 1: Legal Requirements for the FMP/FEIS.....	i
Table 2: Implementation of Action Strategies over Five Years under Three Funding Scenarios.....	4
Table 3: Problem Statements and Desired Outcomes.....	27
Table 4: Issues and Where Addressed .....	29
Table 5: Gray’s Reef Onshore Study Area, 2000 Population and Percentage Population Change 1990-2000.....	46
Table 6: Priority Areas for Budget and Planning Purposes.....	57
Table 7: Strategies and Cost for the Marine Resource Protection Action Plan.....	60
Table 8: Strategies and Cost for the Research and Monitoring Action Plan.....	72
Table 9: Strategies and Cost for the Education and Outreach Action Plan.....	85
Table 10: Strategies and Cost for the Exploration Action Plan.....	95
Table 11: Strategies and Cost for the Administration Action Plan.....	100
Table 12: Strategies and Cost for the Performance Evaluation Action Plan.....	107
Table 13: Performance Measures for the Marine Resource Protection Action Plan.....	110
Table 14: Performance Measures for the Research and Monitoring Action Plan.....	113
Table 15: Performance Measures for the Education and Outreach Action Plan.....	116
Table 16: Performance Measures for the Exploration Action Plan.....	120
Table 17: Performance Measures for the Administration Action Plan.....	121
Table 18: Performance Measures for the Performance Evaluation Action Plan.....	122

**LIST OF FIGURES**

Figure 1: Location of Gray's Reef National Marine Sanctuary.....	5
Figure 2: The System of National Marine Sanctuaries.....	16
Figure 3: The Location of GRNMS.....	32
Figure 4: The South Atlantic Bight.....	33
Figure 5: Bathymetry of Gray's Reef.....	36
Figure 6: Black Sea Bass Catch per Unit Effort at GRNMS.....	41
Figure 7: GRNMS Socioeconomic Study Area.....	45
Figure 8: Population Trends for the Gray's Reef Study Area.....	47
Figure 9: Employment and Personal Income by Industry for the Gray's Reef Study Area, 1998.....	49
Figure 10: Georgia Recreational Fishing Harvest, 1981-1999....	50
Figure 11: Direct Income to Commercial Fishing, Harvesting Sector.....	52

# Executive Summary



## EXECUTIVE SUMMARY

### INTRODUCTION

Gray's Reef National Marine Sanctuary (GRNMS) (Figure 1) is managed by the National Marine Sanctuary Program, National Oceanic and Atmospheric Administration (NOAA), part of the U.S. Department of Commerce. This Final Management Plan (FMP) is designed to replace the 1983 GRNMS management plan, as management strategies have been updated and revised to address current and priority resource issues. The strategies within this revised plan address impacts from human activities, such as anchoring, diving, marine debris, and fishing, as well as administration, research, exploration, evaluation, and education needs.

The FMP describes these strategies as six action plans, which encompass the program areas of marine resource protection, research and monitoring, education and outreach, exploration, administration, and performance evaluation. A Final Environmental Impact Statement (FEIS), as required by the National Environmental Policy Act (NEPA) and other statutes, is integrated into this document.

NOAA is responsible for the conservation and management of the Sanctuary's valuable and vulnerable resources. To address these responsibilities, partnerships with constituents – users, researchers, educators, and other federal and state management agencies – are critical elements of site management. As such, the Draft Management Plan/Draft Environmental Impact Statement (DMP/DEIS) was developed through a planning process, which involved the public, constituent groups, program workshop participants, and the GRNMS Advisory Council. Public meetings on this document were conducted to consider revisions to the plan.

### ORGANIZATION OF THIS DOCUMENT

There are four principal sections in this document:

Section I: Introduction and Overview explains the management plan revision process, summarizes the history of the site (including the current regulations), outlines the site goals and objectives, and presents major program accomplishments.

Section II: Affected Environment describes the key physical, biological, and socioeconomic components of the Sanctuary. This section also represents the Resource Assessment as required under NMSA provisions.

Section III: Final Management Plan contains six action plans, which define the programs the Sanctuary will continue, develop, and/or implement over the next five years.

- Marine Resource Protection (MRP) Action Plan is a summary of the strategies and activities that pertain to resource protection issues and regulations.

- Research and Monitoring (RM) Action Plan is a summary of ongoing and new scientific projects.
- Education and Outreach (EO) Action Plan is a summary of the ongoing and new communications and traditional education projects.
- Exploration (EX) Action Plan is a summary of activities designed to investigate and monitor a broad range of regional physical and biological factors that may affect resources at GRNMS.
- Administration (AD) Action Plan is a summary of the organizational systems that allow GRNMS to implement the other action plans.
- Performance Evaluation (EV) Action Plan is a summary of the activities designed to evaluate the Sanctuary's management effectiveness.

Section IV: Alternatives Including the Preferred Alternative contains a discussion and analysis of alternative actions considered, along with the environmental consequences of the preferred alternative.

#### Cost of Action Plan Strategies

Following is a table that lists the individual strategies and associated costs over the next five years. The cost figures provide a rough estimate of the expenditures projected as needed to implement the associated programs. Given the uncertainty of projecting future budget levels, the cost figures provided should be viewed as a gauge of program priority rather than definitive statements of future funding levels.

**Table 2: Implementation of Action Strategies Over Five Years Under Three Funding Scenarios**

Implementation with NOAA Funding		Implementation with Anticipated Alternative Funding	Scenario 1: Level Funding	Scenario 2: 5% per year Increase	Scenario 3: 10% per year Increase
● - High		◆ - High			
⊙ - Medium		◇ - Medium			
○ - Low		◇ - Low			
<b>Marine Resources Protection Action Plan</b>					
●		Strategy MRP-1: Prevent damage to benthic habitats from anchoring	10	10	10
●		Strategy MRP-2: Prevent diver impacts on benthic habitat	10	10	10
●		Strategy MRP-3: Remove marine debris and prevent new debris from accumulating	15	15	15
●		Strategy MRP-4: Increase protection for fish and invertebrate species	10	10	10
●		Strategy MRP-5: Enhance enforcement efforts	145	155	165
●		Strategy MRP-6: Enhance coordination and cooperation with SAFMC, NOAA Fisheries Service, and GADNR on marine reserves and other regional programs	10	10	10
		Subtotal	200	210	220
<b>Research and Monitoring Action Plan</b>					
○		Strategy RM-1: Investigate ecosystem processes	40	40	40
⊙	◆	Strategy RM-2: Investigate designation of a marine research area	10	10	10
⊙	◆	Strategy RM-3: Assess and characterize sanctuary resources	50	50	50
●		Strategy RM-4: Maintain and enhance monitoring programs	200	215	230
		Subtotal	300	315	330
<b>Education and Outreach Action Plan</b>					
●		Strategy EO-1: Conduct public awareness programs	100	110	120
⊙	◆	Strategy EO-2: Create and provide scholastic programs in ocean science education	60	60	60
⊙	*	Strategy EO-3: Maintain existing and develop new sanctuary exhibits	*	*	*
⊙	◇	Strategy EO-4: Increase outreach to minority communities	30	30	30
○	◇	Strategy EO-5: Develop volunteer programs to support GRNMS	10	10	10
		Subtotal	200	210	220
<b>Exploration Action Plan</b>					
⊙	◆	Strategy EX-1: Develop and implement the Latitude 31 <sup>30</sup> Program	100	105	110
<b>Administration Action Plan</b>					
●		Strategy AD-1: Improve overall site staffing and support capabilities	75	85	95
⊙	◇	Strategy AD-2: Maintain and enhance the infrastructure of the site	125	125	125
		Subtotal	200	210	220
<b>Performance Evaluation Action Plan</b>					
●		Strategy EV-1: Develop and implement a performance evaluation program for GRNMS	50	52	55
		<b>TOTAL</b>	<b>1050</b>	<b>1102</b>	<b>1155</b>

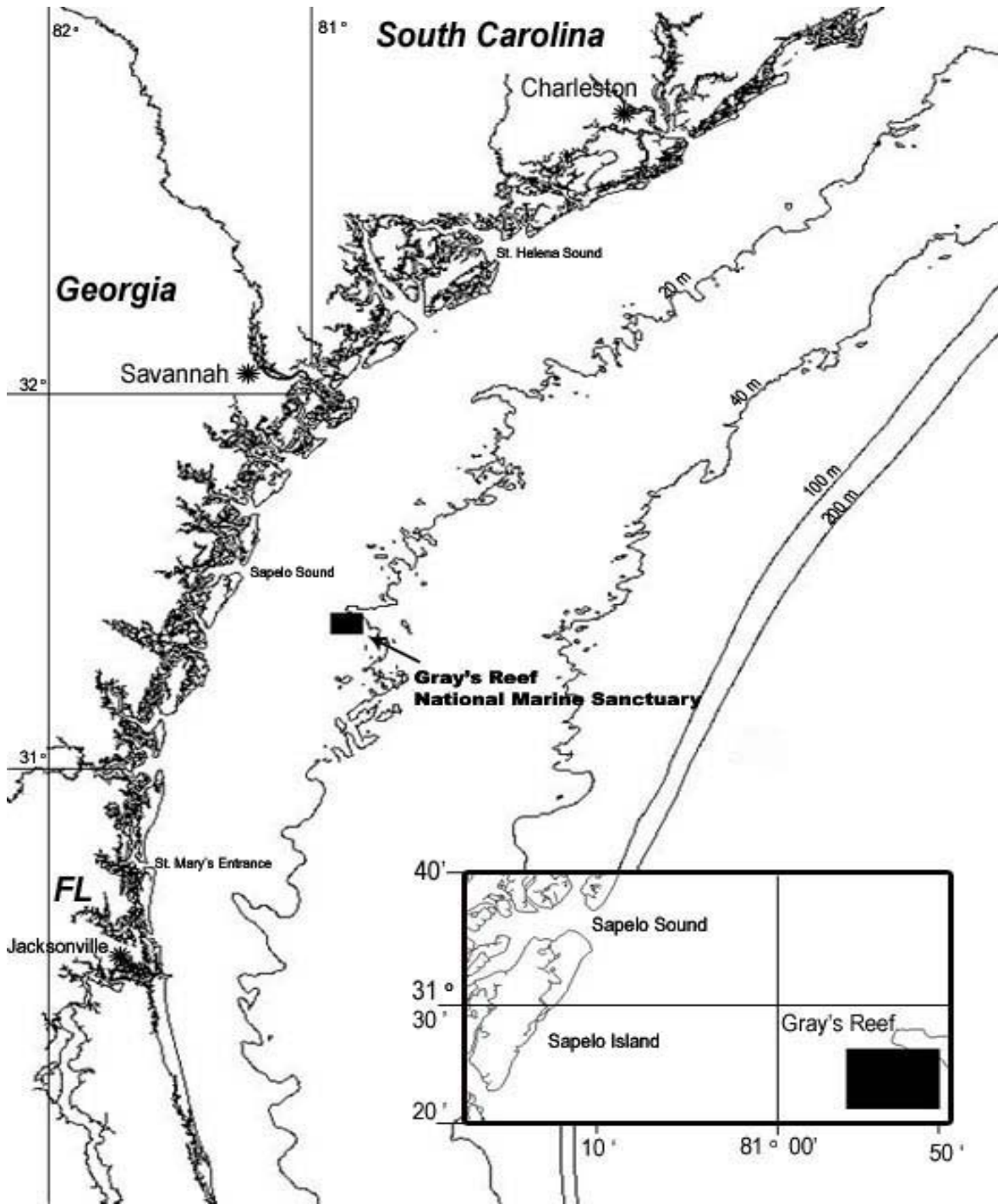


Figure 1: Location of Gray's Reef National Marine Sanctuary.

## SANCTUARY CHARACTERISTICS

Gray's Reef is one of the largest nearshore rocky reefs in the southeastern United States. The Sanctuary is located 17.5 nautical miles off Sapelo Island, Georgia. It was named in recognition of Milton B. Gray, a taxonomist and curator at the University of Georgia Marine Institute who studied the area in the 1960s. The Sanctuary boundary protects 16.68 square nautical miles of open ocean and submerged lands, including the hard bottom reef system. Although it is estimated that 75 percent of the hard bottom is covered by sand, rock outcroppings scattered throughout the Sanctuary form a complex habitat of caves, burrows, troughs, and overhangs some 60 to 70 feet below the Atlantic Ocean's surface. The rocky ridges and their associated attached organisms are commonly referred to as "live bottom habitat," a habitat of particular biological importance given the extensive sands that cover most of the broad continental shelf. The rocky bottom is carpeted with corals, sponges, and other invertebrates. This flourishing ecosystem attracts mackerel, grouper, black sea bass, angelfish, and a host of other fishes. An estimated 160 species of fish have been recorded at GRNMS; approximately 30 species are known to spawn there. Loggerhead sea turtles, a threatened species, use GRNMS year-round for foraging and resting, and the reef is also close to the winter calving ground for the highly endangered Northern right whale. GRNMS is one of the most popular sport fishing and diving areas along the Georgia coast.

## PURPOSE AND NEED FOR ACTION

### Background

GRNMS was designated as the nation's fourth national marine sanctuary in 1981 for the purposes of:

- Protecting the quality of this unique and fragile ecological community;
- Promoting scientific understanding of this live bottom ecosystem; and
- Enhancing public awareness and wise use of this significant regional resource.

Sanctuary regulations were published in the Federal Register on January 26, 1981, and the original management plan was completed in 1983. No formal review or revision of the plan has occurred since that time. Congress, however, has amended the NMSA numerous times, strengthening and clarifying the conservation principles for the program.

The NMSA includes a provision to periodically evaluate the progress in implementing the management plan and the goals for each sanctuary, especially the effectiveness of site-specific techniques and strategies. Management plans and regulations must be revised as necessary to fulfill the purposes and policies of the NMSA. Scientific information, advancements in managing marine resources, and new resource management issues over the past 20 years should be addressed in the plan. A new management plan is needed to reflect these changes and to provide effective conservation and management of Sanctuary resources.



The Sanctuary is near one of the more rapidly developing regions along the U.S. coast. The increase in coastal population has been reflected in the increase in visitation to the Sanctuary. At the time of Sanctuary designation in 1981, the population of the six Georgia coastal counties bordering the Atlantic Ocean (Camden, Glynn, McIntosh, Liberty, Bryan, and Chatham) was approximately 326,000. The 2000 census shows the population of the six counties to be 439,154 (U.S. Census Bureau, 2002). According to the Georgia Office of Planning and Budget (2002), the projected estimate of population of those counties for 2010 is 442,898, a 36 percent increase overall from 1981.

In 1983, the Sanctuary began conducting a year-long survey to count the number of vessels visiting the Sanctuary using fixed-wing aircraft to fly over GRNMS. There were a total of 106 vessels sighted visiting GRNMS during 62 flights over the course of the year. The highest daily sighting was 14 boats during the Sapelo Open Kingfish Tournament. Today, the U.S. Coast Guard Auxiliary flies routine surveys over the Sanctuary. In 1999, a total of 527 boats were observed in the Sanctuary during 90 overflights. During one tournament day in 2001, 150 vessels were counted at the Sanctuary, exceeding the total counted over the course of the year in 1983.

Overflight and on-water surveys (GRNMS, unpublished data) indicate a similar increase in recreational fishing activities at GRNMS. That trend is expected to continue due to the rise in human population along the coast with a corresponding increase in boat registrations, the popularity of recreational fishing, and improved boating and fish-finding technologies. Increase in use, coupled with declines in fish populations, degradation of coastal habitats, and advancements in scientific and educational technologies require that the Sanctuary management plan be reviewed and revised appropriately to reflect current conditions. This FMP/FEIS has been prepared to address current resource conditions and compatible multiple uses at GRNMS that are consistent with the primary objective of resource protection.

## PREFERRED ALTERNATIVES

The preferred alternatives include new regulations, which will prohibit anchoring and restrict fishing at GRNMS to use of rod and reel, handline, and spearfishing gear without powerheads. Several revisions to existing regulations are also included. Where necessary, the designation document has been revised accordingly. NOAA believes these measures will afford better protection to the nationally significant marine resources and habitats at GRNMS. In subsequent management plan reviews every five years, NOAA will review and reassess all regulations for the Sanctuary and make changes to those regulations if necessary based on current and projected resource considerations. Full background and analysis of the preferred alternatives can be found in Section IV.

### Anchoring

#### a. Prohibit anchoring in GRNMS

A new regulation will be promulgated to prohibit anchoring within GRNMS (except in an emergency that threatens life, property or the environment). Boat operators will also be allowed to moor at Sanctuary boundary marker buoys (located at the four corners of the Sanctuary boundary) during an emergency. The following regulatory language will be added to the GRNMS regulations (15 CFR Part 922, Subpart I):

*(10) Anchoring any vessel in the Sanctuary, except as provided in §922.92 when responding to an emergency threatening life, property, or the environment, or except as may be permitted by the Director.*

Resources will also be committed to comprehensive education and outreach programs alerting users and the general public about the new rule and the need to protect the live bottom habitat from impacts of anchors and anchor chains. Enforcement activities likewise will be a priority for the site, as well as consistent monitoring of the habitat during routine scientific dives.

### Conclusions

Prohibiting anchoring at GRNMS will contribute significantly to the prevention of direct physical damage and destruction of the live bottom caused by anchoring activities. Given the well-documented increases in use at GRNMS, this action is seen as a proactive, cost effective, and efficient use of resources to prevent additional damage or destruction to vital habitat. Prohibiting anchoring at GRNMS will improve protection of the vulnerable and valuable resources of an important live bottom habitat for present and future generations, without burdening users and without unreasonable expenditures. Prohibiting anchoring is, therefore, the preferred alternative to protect live bottom habitat.

### Fishing

Allow fishing in GRNMS only with rod and reel, handline, or spearfishing gear without powerheads (Preferred Alternative):

New regulations will be promulgated to allow fishing only with rod and reel, handline, or spearfishing gear without powerheads. All other fishing gear will be prohibited by these rules. The following regulatory language will be added to the GRNMS regulations (15 CFR Part 922, Subpart I):

*(5) (i) Injuring, catching, harvesting, or collecting, or attempting to injure, catch, harvest, or collect, any marine organism, or any part thereof, living or dead, within the Sanctuary by any means except by use of rod and reel, handline, or spearfishing gear without powerheads.*

*(ii) There shall be a rebuttable presumption that any marine organism or part thereof found in the possession of a person within the Sanctuary has been collected or removed from the Sanctuary.*

*(6) Except for fishing gear stowed and not available for immediate use, possessing or using within the Sanctuary any fishing gear or means except rod and reel, handline, or spearfishing gear without powerheads.*

In addition to those definitions found at §922.3, the following definitions apply to this subpart:

*Handline* means fishing gear that is set and pulled by hand and consists of one vertical line to which may be attached leader lines with hooks.

*Rod and reel* means a rod and reel unit that is not attached to a vessel, or, if attached, is readily removable, from which a line and attached hook(s) are deployed. The line is payed out from and retrieved on the reel manually or electrically.

*Stowed and not available for immediate use* means not readily accessible for immediate use, e.g., by being securely covered and lashed to a deck or bulkhead, tied down, unbaited, unloaded, partially disassembled, or stowed for transit.

Resources will also be committed to comprehensive education and outreach programs alerting users and the general public about the new rule. Enforcement activities likewise will be a priority for the site, as well as consistent monitoring of visitor use and activities.

#### *Allowable fishing gear*

Currently, there is a variety of fishing gear that could damage habitat and negatively affect biodiversity in the Sanctuary. Socioeconomic reports (Ehler and Leeworthy, 2002) clearly indicate that recreational rod and reel fishing is the principle activity in GRNMS. Allowing only rod and reel, handline, and spearfishing gear without powerheads is not expected to alter the activities of the vast majority of users of GRNMS, thus resulting in little socioeconomic impact. Gear types, including nets, traps and pots, currently allowed in the GRNMS are discussed in more detail in Section IV.

#### *Spearfishing*

In the original GRNMS designation document, spearfishing was identified as an activity that may be regulated to “ensure the protection and preservation of the Sanctuary’s marine features and the ecological, recreational, and aesthetic value of the area” (U.S. Department of Commerce, NOAA, GRNMS 1983). Although spearfishing was listed because of the potential for damage to marine resources, only the prohibition on powerheads (explosives) was promulgated at that time. While surveys (Ehler and Leeworthy 2002) indicated that commercial dive operators are unlikely to participate in spearfishing at GRNMS, some private recreational boaters spearfish in GRNMS. GRNMS proposed to prohibit spearfishing activity in the DMP/DEIS.

While it has been effectively demonstrated in other areas that selective removal of large individual fish can adversely affect the reproductive viability of a given population, the

sanctuary has little data on the actual level of spearfishing at GRNMS. The sanctuary will, therefore, gather additional socioeconomic information on this activity and review the issue again in two years. The additional socioeconomic information coupled with ongoing biological studies of fish populations will enable management to better evaluate the impact of current and potentially future levels of spearfishing at GRNMS. This determination is discussed in more detail in Section IV.

### *Hook Limits*

NOAA has determined that establishing hook limits on rod and reel and handline gear, as described in the proposed rule of the DMP/DEIS, will unnecessarily complicate compliance and law enforcement. Law enforcement officials noted that the hook limitations will be extremely difficult to enforce. The preferred alternative, therefore, does not impose hook limits in the regulations.

### *Conclusions*

Given all of these factors, GRNMS believes it is appropriate to prohibit the use of certain gear that is currently allowable under the existing regulations in order to better protect the resources of the Sanctuary. Prohibition of other fishing gear (trawls, longlines, nets, traps, and pots) that will likely have detrimental effects on habitats and marine resources is preferred. Additionally, these prohibitions will have little socioeconomic impact.

NOAA GRNMS will therefore defer taking action on spearfishing as was proposed in the draft management plan for a period of two years while additional information is collected on this activity. NOAA GRNMS will then determine what action to take, if any, given the additional data. In addition, hook limits will be eliminated from the final proposed rules.

### Revisions to Existing Regulations

Existing regulations will also be revised to address placing or abandoning structures on the submerged lands; using explosives or devices generating electrical current underwater; and removing, injuring, or possessing historical resources. The permit regulations for the Sanctuary are also being revised and clarified.

### Terms of Designation

The NMSA requires sanctuary designation to include a document that outlines the terms - such as boundary and activities prohibited and subject to future regulation - of each national marine sanctuary's designation (§ 304(a)(4)). The GRNMS designation document was published in 1981 when NOAA issued the original Sanctuary designation and regulations. The NMSA also requires that any change in the terms of designation can only be made by the same procedures used in the original designation. Thus, in adding new regulations and clarifying existing regulations with the FMP/FEIS, GRNMS must revise the existing designation document as necessary. The revised designation

document was included in public review of the DMP/DEIS, which concluded on January 1, 2004.

In addition to the scope of new and revised regulations, NOAA is clarifying that the submerged lands at GRNMS are legally part of the Sanctuary and are included in the boundary description. NOAA has consistently interpreted its authority under the NMSA as extending to submerged lands, and amendments to the NMSA in 1984 (Pub.L. 98-498) clarified that submerged lands may be designated by the Secretary of Commerce as part of a national marine sanctuary (16 U.S.C. § 1432(3)). Boundary coordinates in the revised designation document and in the Sanctuary regulations will be expressed in contemporary coordinates based on the North American Datum of 1983 (NAD 83). Language has also been added to the designation document to clarify authority for regulating the discharge or deposit of any material from outside the Sanctuary that subsequently enters and injures a Sanctuary resource or quality.

#### Non-regulatory Actions

In addition to the regulatory actions above, the following non-regulatory actions are incorporated in the FMP:

- Development of cooperative education and outreach programs to address marine debris and diver impacts to Sanctuary resources;
- Continued implementation of the Memorandum of Understanding with the South Atlantic Fishery Management Council (SAFMC) and NOAA Fisheries Service;
- Revisions and improvements to the research and monitoring, enforcement, education and outreach, and administration programs;
- Development of programs and action plans for exploration and performance evaluation; and
- Conduct a public decision-making process to more formally explore the concept of a marine research area in the sanctuary. This process will be conducted separately from this management plan in accordance with the provisions of NEPA and the NMSA.

#### SOCIOECONOMIC AND ENVIRONMENTAL IMPACTS

The regulations will apply to all users of the Sanctuary. However, nearly all users already conduct their activities in such a manner as to already be in compliance with the new regulations.

Based on current socioeconomic studies surveys (Ehler and Leeworthy, 2002; Bird et al., 2001) and on-site surveys (GRNMS, unpublished data) of visitor use, NOAA has determined that the majority of users in GRNMS are fishing recreationally with rod and reel gear without anchoring. Commercial fishing activity is minimal in GRNMS since commercial gear, such as bottom trawls and wire fish traps, are already prohibited in GRNMS due to the potential for damage to live bottom habitat.

GRNMS has only limited use by SCUBA divers due to the depth, strong currents, and variable visibility. Spearfishing activities also appear to be limited at GRNMS for many of the same reasons. The new regulations will not change diving activities beyond clarifying the prohibition on taking marine organisms by hand. All other diving-related activities such as spearfishing without powerheads, underwater photography, and nature viewing will continue to be allowed. NOAA is gathering additional information on spearfishing at GRNMS over the next two years to reassess this activity.

The NMSP therefore expects that this rule will have no significant socioeconomic impacts. These findings are described in greater detail in Section IV.

# Section I: Introduction and Overview



## SECTION I: INTRODUCTION AND OVERVIEW

### THE SANCTUARY SETTING

GRNMS lies 17.5 nautical miles offshore of Sapelo Island, Georgia, on the inner continental shelf of the southeastern United States. This area is a transition zone between temperate and tropical waters. Some reef fish populations and plant communities change seasonally, while others are year-round residents. Migratory fish move through the Sanctuary, using the reef for food and shelter. Loggerhead sea turtles, a species listed as threatened under the Endangered Species Act (ESA), use GRNMS for foraging and resting. The reef is also close to the only known calving ground for the highly endangered Northern right whale.

The hard bottom habitat at the Sanctuary is composed of marine sediments (mud, sand, and shells) that were deposited between two-three million years ago. These marine sediments were consolidated into rock during subsequent glacial periods by numerous changes in sea level that repeatedly exposed then submerged the area of GRNMS as the coastline advanced and retreated across the continental shelf.

Geologically, the Sanctuary is underlain by a single rock unit made of calcareous sandstone that formed as a result of the compacting marine sediments and aerial exposure. The irregularities of the bathymetry can be attributed to the easily erodable sandstone that has dissolved and pitted, creating the appearance of isolated ledges and patches of hard bottom. The exposed rock offers moderate relief (0.5 to 15 feet in height) with sandy, flat-bottomed troughs between. The series of rock ledges and sand expanses has produced a complex habitat of caves, burrows, troughs, and overhangs that provide a solid base on which temperate and tropical marine flora and fauna attach and grow. This rocky platform with its rich carpet of attached invertebrate and plant organisms is known locally as a “live bottom” habitat.

The Sanctuary is a small but very important part of the broad continental shelf off the southeastern coast sometimes known as the South Atlantic Bight (SAB). The SAB extends from Cape Hatteras, North Carolina to Cape Canaveral, Florida. The outer reaches are dominated by the Gulf Stream flowing northeastward. The inner area is defined by the curve of the coastline between the two capes and is dominated by tidal currents, river runoff, local winds, seasonal storms, hurricanes, and atmospheric changes. GRNMS lies in the inner-shelf zone of the SAB and is subject to seasonal variations in temperature, salinity, and water clarity. It is also influenced by the Gulf Stream at the outer shelf edge of the SAB. The Gulf Stream draws deep nutrient-rich water to the region, and carries and supports many of the tropical fish species and other animals found in the Sanctuary. Ocean currents transport fish and invertebrate eggs and larvae from other areas, linking this special place to reefs both north and south. GRNMS is the only protected natural reef area in the SAB.

The 16.68-square nautical miles of the Sanctuary constitute a tiny percentage of the ocean space off the coast, yet its value as a natural marine habitat is recognized nationally and



internationally. GRNMS is also an increasingly popular recreational fishing and sport diving destination. Sport fishing occurs year-round but intensifies in warmer months and with the migration of pelagic game fish. Use of certain fishing gear is restricted, as is the removal of marine organisms and substrate, and discharging or depositing most materials in the Sanctuary.

This management plan is the focal point for decisions on how NOAA and its national, regional, state, and local partners will protect GRNMS to ensure that it remains the premiere example for the nation of a thriving and healthy marine live bottom ecosystem.

## THE NATIONAL MARINE SANCTUARY PROGRAM AND GRNMS

In 1972, Congress passed the Marine Protection, Research, and Sanctuaries Act, creating the National Marine Sanctuary Program (NMSP). Title III of the Act, now referred to as the National Marine Sanctuaries Act (NMSA), established authority to protect the nation's most valued marine areas. The goals of the NMSP as stated in the NMSA are to:

- Improve the conservation, understanding, management, and wise and sustainable use of marine resources;
- Enhance public awareness, understanding, and appreciation of the marine environment; and
- Maintain for future generations the habitat, and ecological services, of the natural assemblage of living resources that inhabit these areas.

The National Marine Sanctuary Program serves as the trustee for a system of 14 marine protected areas, encompassing more than 150,000 square miles of marine and Great Lakes waters from Washington State to the Florida Keys, and from Lake Huron to American Samoa. The system (Figure 2) includes 13 national marine sanctuaries and the Northwestern Hawaiian Islands Marine National Monument. The system represents many of the diverse and productive marine habitats in U.S. Ocean and Great Lakes waters. The NMSP protects coral reef systems in the Atlantic, Pacific, and Gulf of Mexico; kelp forests and temperate marine habitat off both coasts, and historic shipwrecks and submerged historical sites throughout the system.

Live bottom habitat in the Southeast is essential to sustaining populations of reef fish, diverse and productive marine invertebrate communities, sea turtles, and marine mammals. GRNMS is the nation's foremost example of southeastern live bottom habitat.



Figure 2: The System of National Marine Sanctuaries.

### GRNMS Designation

In June 1978, the Coastal Resources Division of the Georgia Department of Natural Resources (GADNR) nominated Gray's Reef for consideration as a national marine sanctuary. NOAA determined, based on its distinctive marine resources and potential sensitivity to environmental perturbation, that Gray's Reef met the criteria for a recommended area. NOAA and the public reviewed and commented on the nomination extensively over the next two years. Several issues of concern were addressed in the environmental impact statement including:

- Conservation of live bottom resources and fishery habitats;
- The need for research to gain a better understanding of live bottoms and their role as an ecosystem;
- Prediction of natural or human-induced consequences;
- The value of Gray's Reef as a living educational laboratory, a vehicle to promote academic and public awareness;
- Increased use and overfishing;

- Spearfishing;
- Damage to habitat from anchoring, research, and fishing methods;
- Pollution;
- Offshore energy and mining development; and
- Oil spills.

Designation as a national marine sanctuary was approved and signed by President Jimmy Carter on January 16, 1981. The above listed issues were the focus of the management plan, which was published in 1983.

### GRNMS Regulations

Sanctuary regulations (15 CFR Part 922, Subpart I), which were promulgated with the 1981 designation, set forth the legal framework for the site by providing the legal description of the boundary, prohibited activities, and permit procedures for research, education, and special use activities in GRNMS. These regulations are designed to support the conservation, protection, and multiple uses of Sanctuary resources. The regulations restrict the discharge or deposit of materials in Sanctuary waters; the use of bottom trawls, fish traps, and other damaging fishing practices; damaging or removing any bottom formation, marine invertebrate, or marine plant; and tampering, damaging, or removing any historic or cultural resources. The following regulations have been in place since 1981:

*(a) Except as may be necessary for national defense (subject to the terms and conditions of Article 5, Section 2 of the Designation Document) or to respond to an emergency threatening life, property, or the environment, or except as may be permitted by the Director in accordance with § 922.48 and § 922.92, the following activities are prohibited and thus are unlawful for any person to conduct or to cause to be conducted within the Sanctuary:*

*(1) Dredging, drilling, or otherwise altering the seabed in any way nor constructing any structure other than a navigation aid.*

*(2) Discharging or depositing any material or other matter except:*

- (i) Fish or parts, bait, and chumming materials;*
- (ii) Effluent from marine sanitation devices; and*
- (iii) Vessel cooling waters.*

*(3) Operating a watercraft other than in accordance with the Federal rules and regulations that will apply if there were no Sanctuary.*

*(4) Using, placing, or possessing wire fish traps.*

*(5) Using a bottom trawl, specimen dredge, or similar vessel-towed bottom-sampling device.*

*(6)(i)(A) Breaking, cutting, or similarly damaging, taking, or removing any bottom formation, marine invertebrate, or marine plant.*

*(B) Taking any tropical fish.*

*(C) Using poisons, electric charges, explosives, or similar methods to take any marine animal not otherwise prohibited to be taken.*

*(ii) There shall be a rebuttable presumption that any bottom formation, marine invertebrate, tropical fish, marine plant, or marine animal found in the possession of a person within the Sanctuary have been collected within or removed from the Sanctuary.*

*(7) Tampering with, damaging, or removing any historic or cultural resources.*

*(b) All activities currently carried out by the Department of Defense within the Sanctuary are essential for the national defense and, therefore, not subject to the prohibitions in this section. The exemption of additional activities having significant impacts shall be determined in consultation between the Director and the Department of Defense.*

#### Other Regulations

GRNMS regulations provide the specific additional protections considered necessary to protect the resources of the Sanctuary in accordance with the NMSA.

Overall, Sanctuary regulations provide a higher level of conservation to sanctuary resources than is present in surrounding ocean waters. For example, NOAA Fisheries Service regulations that govern the size and number of fish that may be caught in federal waters off the southeastern coast apply as well to GRNMS. However, the Sanctuary regulations also restrict the use of certain fishing gear types, providing an additional level of ecosystem protection within the Sanctuary. Other activities not addressed in the Sanctuary regulations are governed by the prevailing federal rules that apply in the area. In GRNMS for example, there are no specific additional protections for threatened and endangered species; the Endangered Species Act and Marine Mammal Protection Act are considered to provide sufficient protection.

#### Sanctuary Advisory Council and GRNMS Goals

Pursuant to the NMSA and in anticipation of review of the 1983 GRNMS management plan, a Sanctuary Advisory Council (Advisory Council) was established in August 1999. The Advisory Council serves as a forum for consultation and deliberation for the community and provides advice to the Sanctuary manager on:

- Protecting natural and cultural resources, and identifying and evaluating emergent or critical issues involving Sanctuary use or resources;
- Identifying and supporting the Sanctuary's research objectives;

- Identifying and supporting educational opportunities to increase the public knowledge and stewardship of the Sanctuary environment; and
- Assisting to develop an informed constituency to increase awareness and understanding of the purpose and value of the Sanctuary and the NMSP.

Each Advisory Council member represents an important element of the Sanctuary mission whether it is research, education, conservation, user groups, or representatives of partner agencies. The Advisory Council and Sanctuary staff considered the original GRNMS goals and objectives from the 1983 plan, and modified them to be consistent with the most recent reauthorization of the NMSA, as well as contemporary issues.

These goals and objectives form the framework for building the action plans in Section III of this document. Each action plan is prefaced with a statement from the national goals as described in the NMSA and the site-specific goals and objectives developed by the Advisory Council. Consequently, all the activities described in the action plans are linked to the original vision established for GRNMS at the time of designation in 1981 through the site-specific goals and objectives and the national standards.

GRNMS and the Advisory Council adopted the following goals and objectives in December 2000:

GOAL 1: Protect, maintain, restore, and enhance the natural habitats, populations, and ecological processes in the Sanctuary.

Objectives

- a. Develop, implement, and periodically evaluate a comprehensive resource protection plan tailored to Sanctuary resources and uses that provides direction for resource management and protection.
- b. Develop, implement, and maintain an on-site management capability that reviews and assesses resource conditions and human activities, and recommends action if problems arise.
- c. Develop, implement, and maintain the surveillance and enforcement presence needed to ensure compliance with Sanctuary regulations and adequate protection of Sanctuary resources.
- d. Inform and educate the public users on the sensitive nature of the Sanctuary resources, the purpose of Sanctuary designation, and the need for Sanctuary regulations with enforcement.

GOAL 2: Support, promote, and coordinate scientific research and long-term monitoring to enhance the understanding of the Sanctuary environment and to improve management decision-making.

Objectives

- a. Develop, implement, and periodically evaluate a comprehensive research and monitoring plan that looks over a five-year horizon, and that is based on existing knowledge of ecosystems, socioeconomic conditions, and evolving management issues.

- b. Encourage and support resource and socioeconomic research and monitoring that addresses priority information needs.
- c. Provide a means for information exchange among managers, scientific investigators, user groups, and the public.
- d. Ensure the ability to rapidly respond to unforeseen events.

GOAL 3: Enhance public awareness, understanding, wise and sustainable use, and appreciation of the marine environment and the Sanctuary's natural, historical, cultural, and archeological resources.

#### Objectives

- a. Develop, implement, and periodically evaluate a comprehensive education and outreach plan to broaden public support for the protection of Sanctuary resources.
- b. Promote the Sanctuary as a resource for educational, interpretive, commercial, and recreational use consistent with the primary objective of resource protection.
- c. Provide mechanisms to engage the public in Sanctuary planning activities and evaluation.

GOAL 4: Facilitate, to the extent compatible with the primary objective of resource protection, all public and private uses of the Sanctuary not prohibited pursuant to other authorities.

#### Objectives

- a. Facilitate uses of the Sanctuary that are consistent with the primary objective of resource protection.
- b. Establish a means to monitor Sanctuary use and resource quality over time to minimize potential user conflicts and environmental degradation.

GOAL 5: Dedicate appropriate infrastructure and resources for all programs, and create models of, and incentives for, ways to conserve and manage Sanctuary resources, including the application of innovative management techniques.

#### Objectives

- a. Develop, implement, and periodically evaluate a comprehensive operation plan to coordinate activities related to the Sanctuary.
- b. Evaluate the effectiveness of the plan on an annual basis and initiate changes as necessary.
- c. Identify the roles and responsibilities of parties involved in Sanctuary administration and specify procedures for implementing essential components of the management plan.

GOAL 6: Coordinate with federal, state, and local governments, international organizations, and other public and private interests to develop and implement plans to protect the marine environment and the Sanctuary, and to encourage the conservation of these resources.

## Objectives

- a. Collaborate with other organizations to enhance opportunities for research priorities related to Sanctuary ecosystems and resource management.
- b. Collaborate with other public and private organizations to promote communication and cooperation between Sanctuary management and Sanctuary users.
- c. Cooperate with international programs encouraging conservation of marine resources.

## CURRENT GRNMS ACTIVITIES

Most of the projects proposed in the 1983 plan have been completed, while others are ongoing or no longer applicable. Some ongoing projects are designed to monitor resource changes over time and are valuable in providing continuity in measuring key resource and resource use parameters. The following list highlights some of the primary project accomplishments in research and monitoring, education and outreach, resource protection, exploration, and administration that have been conducted under the current management plan.

### Research and Monitoring

GRNMS research and monitoring programs have been designed to characterize the resources of the Sanctuary, understand the ecological links among key biological and physical components, and establish monitoring activities that track change in the health, condition, and use of Sanctuary resources. Where possible, the Sanctuary has emphasized developing research and monitoring programs that are consistent with other regional efforts so that data on GRNMS may be compared with that collected in other areas of the SAB. This has been accomplished by developing strong partnerships with the regional research institutions that conduct these types of projects in other areas of the Southeast.

**Marine Resources Monitoring Assessment and Prediction (MARMAP):** NOAA's MARMAP program has been studying reef fish populations in the region for close to 30 years and began sampling in GRNMS in 1993. Reef fish are captured in traps to determine species composition and length frequency, to compare catch-per-unit-effort at GRNMS with results from similar habitats, and to tag fishes to estimate population abundance and detect movements.

**Visual Reef Fish Assessments:** In 1995, GRNMS initiated a reef fish monitoring effort to supplement the MARMAP program. Divers swim to 22 different stations at the reef, and visually count and identify the fish species during different seasons of the year. This study provides a more complete picture of the variety of species at the reef than the MARMAP trapping project can provide. Divers at the reef have counted over 100,000 fish of 82 different species.

**Habitat Assessment:** GRNMS recently initiated a more comprehensive study of the Sanctuary habitat through NOAA's National Centers for Coastal Ocean Science (NCCOS). The centers in Beaufort, North Carolina and Charleston, South Carolina are analyzing reef fish monitoring data, examining the importance of the non-reef habitats for

juvenile fish, assessing possible contaminant levels in sediments and shellfish, determining the species of fish that spawn at GRNMS, and evaluating the movements of larval fish to and from GRNMS.

**Seabed Surveys:** Over the last 20 years, the bottom features have been surveyed at the Sanctuary using a variety of techniques including side scan sonar and sub-bottom profiling instruments. The accuracy and resolution of these surveys have changed dramatically during the last decade with the use of more accurate navigational positioning systems and improved imaging systems. In 2001, NOAA completed a detailed side scan sonar and multibeam survey of the Sanctuary that provides high-resolution imagery of the seafloor.

**Physical Oceanographic Properties:** The Skidaway Institute of Oceanography (SkIO) has conducted a study of ocean current patterns at GRNMS. In 1997, NOAA deployed an ocean data buoy in the Sanctuary that measures winds, waves, and other meteorological and oceanographic properties. In March 2003, the data buoy was upgraded to include salinity and a current profiler.

Over the course of many years, the data from the ocean buoy and other sensors tracks the dominant trends in meteorological and oceanographic conditions at the Sanctuary and captures the magnitude of episodic events such as hurricanes that can significantly affect the ecological balance of marine habitats. Since 1871, 11 hurricanes are believed to have passed over GRNMS.

**Sea Turtles:** GRNMS tracked the movements of loggerhead turtles at the Sanctuary using satellite telemetry tags. Scientific divers captured individual turtles to attach satellite tags to their shells to track their movements and record their dive frequencies and depths. This information adds to the sparse database about the open ocean habits of these marine reptiles. The studies are showing that GRNMS is an important area for loggerheads to rest and forage throughout the year, and especially during the summer nesting season when females may nest two to four times laying approximately 120 eggs per nest on area beaches. Analysis of this information is ongoing. Reassessment of the design of these studies will be conducted with agency and university partners.

**Paleo-Environmental Conditions:** Scientific divers have turned up fossils of now extinct land-dwelling animals, such as ground sloth, mastodons, early camels, horses and bison. Research on these fossils is expanding our general understanding of the ecology of the now-submerged coastal plain of Georgia and may be associated with early human groups colonizing the North American continent in the late Ice Age. Many of the fossil finds are known prey species of these early human hunters. Findings also include a possible “tool” derived from bone or antler and a projectile point.

## Education and Outreach

The Sanctuary educational and interpretive programs have been designed to broaden public awareness and understanding of the marine resources at GRNMS. Direct access to



the reef itself requires experience in open-ocean diving, thus limiting the opportunity for a first-hand encounter with the Sanctuary's reef environment. For this reason, the educational programs focus on land-based interpretive themes and exhibits.

**Marine Education Modules:** GRNMS has developed comprehensive education materials for the classroom. The modules provide manuals containing background information and activities, posters, and video or CD and DVD media about topics relating to the Sanctuary and marine conservation. Modules include "Whaling to Watching," which covers the history of the whaling industry and current conservation programs to protect the endangered Northern right whale.

**Education Workbooks and Posters:** A series of workbooks about GRNMS have been developed for elementary and middle school students. To supplement the workbooks, GRNMS has also produced a series of posters examining the "Fishes of Gray's Reef," "Invertebrates of the Reef," "Sea Monsters in the Sand," and a regional coastal and marine ecology poster entitled "Rivers to Reefs."

**Education Programs and Events:** During the school year, GRNMS staff conducts two educational programs for K-12 students: the Student Ocean Council (SOC) and the GRNMS Distance Learning Program. These programs allow students locally, through the SOC, or regionally and nationally, through the distance learning program, to participate in GRNMS activities and learn about marine science and conservation programs in the Southeast. Teacher workshops conducted either solely by GRNMS or in collaboration with partners like National Geographic Society and University of Georgia are offered throughout the year with most during the summer season. The Sanctuary also sponsors the annual Gray's Reef OceanFest in Savannah and participates in a number of other community events in the region.

**Exhibits and Outreach Programs:** The Sanctuary has developed partnerships with museums, science centers, and visitor centers in the region to display exhibits about the Sanctuary and its programs. Partnerships currently exist with the Fernbank Museum of Natural History, South Carolina Aquarium, Sapelo Island Visitor Center, University of Georgia Marine Education Center and Aquarium, Tybee Island Marine Science Center, Georgia Visitor Centers, Georgia Southern University Museum, and the Savannah Visitor Center. These organizations have exhibits that range from aquaria and dioramas to brochure racks providing information and interpretation of the resources of GRNMS. To extend out reach to the community, GRNMS has also produced radio messages and television programming.

#### Resource Protection

Sanctuary enforcement and monitoring activities are conducted to ensure that Sanctuary resources are protected in accordance with GRNMS and other regulations. Enforcement activities also provide information on the levels of visitor use and visitor activities.

Patrols: In accord with the GRNMS 1983 management plan, the U.S. Coast Guard (USCG) conducts periodic on-water patrols of the Sanctuary. Enforcement officers of the GADNR have supplemented these patrols with vessel patrols through a Joint Enforcement Agreement (JEA) with NOAA signed in 2001.

Aerial Surveys: It is difficult to assess visitor use in an open ocean environment. Therefore, in addition to GRNMS staff on-water patrols of the Sanctuary, the USCG Auxiliary conducts overflights of GRNMS as part of its routine patrols. This information is supplemented by periodic counts of vessels in the Sanctuary through national reconnaissance systems. The on-water surveys, overflights, and imagery provide cost effective techniques for monitoring use at GRNMS.

## Exploration

GRNMS exploration programs are designed to reveal the vital ecological, social, and historical connections that sustain the Sanctuary environment. These expeditions move beyond the formal boundary of the Sanctuary to investigate and describe areas inshore and farther offshore that connect the Sanctuary to the regional marine ecology and other resource conservation programs. Sanctuary exploration campaigns are launched to investigate the places and program connections that are undiscovered or poorly understood.

Sustainable Seas Expedition: The Sustainable Seas Expedition was a five-year effort funded by the Goldman Foundation and NOAA to explore the NMSS. Led by National Geographic Society Explorer-in-Residence Dr. Sylvia Earle, the expedition used one-person research submersibles to explore Sanctuary environments and nearby deepwater habitat. In 1999, the GRNMS expedition studied reef fish communities and Pleistocene era fossil deposits in the Sanctuary. The expedition also explored an area farther offshore known as the Sapelo Scarp, which lies about 40 nautical miles east of the Sanctuary and is considered an extension of the bedrock formation found at GRNMS.

Islands in the Stream: In 2001, the NOAA/NOS-sponsored Islands in the Stream expedition explored marine protected areas and sanctuaries in the Gulf of Mexico and along the Atlantic coast off Florida, Georgia, South Carolina, and North Carolina. The GRNMS segment of the expedition focused on characterizing the fish community on the Savannah Scarp, an area under consideration as a marine protected area by the SAFMC. The 2002 expedition focused on the characterization of deep reef habitats, with particular emphasis on the discovery, exploration and description of reef fish spawning sites.

Estuaries to the Abyss: In 2004, an expedition led by the NOAA Office of Ocean Exploration was conducted focusing on using a variety of tools to map and describe the unique bottom features, faunas, and ecology of the Florida-Hatteras Slope, the Charleston Bump, and Blake Escarpment off the Southeastern coast of the United States. Scientists explored faunal change and human impact along a gradient that includes increasing depth and distance from land. In addition to using the Harbor Branch Oceanographic Institution's research vessel Seward Johnson and the Sea Link submersible, scientists also

used dredges, nets and associated oceanographic and photo-documentation equipment to record the findings. The information gathered in this effort will be used to assist GRNMS staff in understanding the context of the ecosystem components found at GRNMS.

## Administration

The administrative organization and infrastructure of GRNMS programs are designed to facilitate efficient use of fiscal resources and ensure safe and effective implementation of Sanctuary activities.

**Organizational Structure:** The Sanctuary currently operates with a full time staff of nine employees. Staff positions include the Sanctuary manager, research coordinator, education coordinator, outreach and communications coordinator, planning and evaluation coordinator, executive officer, operations officer, regional programs coordinator, and administrative coordinator. GRNMS staff report to and are supported by the NMSP's national office in Silver Spring, Maryland.

**Facilities/Systems:** The Sanctuary's administrative offices are located on the Skidaway Institute of Oceanography (SkIO) campus on Skidaway Island, Savannah, Georgia. A special Memorandum of Understanding (MOU) has been developed between SkIO and GRNMS to support program management, administration, and a close collaborative working relationship.

GRNMS staff occupies a 4000-square foot building on the SkIO campus and maintain two research and patrol vessels. GRNMS staff has access to and use of the SkIO facilities and those of other institutions on campus such as the University of Georgia Marine Education Center and Aquarium, Georgia Institute of Technology, and Georgia Southern University facilities. The GRNMS office and conference facility are also available to the other institutions on campus.

## MANAGEMENT PLAN REVIEW

Many changes have occurred in the two decades since GRNMS was designated, which have a significant impact on the Sanctuary, including increased human population along the coastline, advancement in marine sciences and technologies, declines in regional reef fish populations, and new regulations in fisheries and endangered species recovery.

The NMSA is the guiding federal law for the program. Amendments to the NMSA over the past 30 years have strengthened the program's conservation principles, and the NMSA recognizes resource protection as its primary objective. In addition, the NMSA now requires a review of all sanctuary management plans every five years. The reviews (and revisions as needed) are critical to ensure that sanctuaries continue to best conserve, protect, and enhance their nationally significant living and cultural resources.

Management plan review is a process that relies on active public participation to shape plans for sanctuary programs. In addition to producing a revised plan, the process is intended to bring together diverse stakeholder interests and expertise to shape and support new program directions that address current priority resource issues and conservation objectives.

To that end, the GRNMS management plan review process has relied on a series of public meetings, program-specific workshops, and guidance from the Advisory Council. Stakeholders on a local and national level have been involved from the beginning. Following are the key steps in the process:

#### GRNMS Management Plan Timeline

- |                                       |                        |
|---------------------------------------|------------------------|
| • GRNMS Advisory Council established  | August 1999            |
| • Public scoping meetings and comment | December 1999-Jan 2000 |
| • State of the Sanctuary Report       | November 2000          |
| • Sanctuary plan workshops            | December 2000-Aug 2001 |
| • Release of DMP/DEIS                 | October 2003           |
| • Public meetings and comment         | November/December 2003 |
| • Release of Final MP/EIS             | July 2006              |

#### Identifying the Issues

Scoping: GRNMS initiated the public comment process of the management plan review in December 1999 and January 2000, holding eight public “scoping” meetings at which Sanctuary users, members of the public, and agencies identified the issues and problems they will like GRNMS to address over the next five to ten years. Comments were also received via mail, email, fax, and telephone. By the end of the comment period, more than 1,800 comments were received and incorporated into a summary report, which was presented to the Advisory Council and distributed to all participants, the media, and other interested parties.

Following an analysis by staff and the Advisory Council, the information was categorized according to a list of management topics:

- Anchoring;
- Mooring buoys;
- Bottom fishing;
- Fishing gear and regulations;
- Research reef designation;
- Artificial reefs;
- Marine debris;
- Diver impacts;
- Marine reserves; and
- Boundary changes.

During the scoping process, GRNMS staff also asked the public to offer suggestions on improvements to the basic program areas of research, education, and enforcement. In most all instances, the comments reflected suggestions to enhance existing programs and to address the issues that were identified during scoping.

State of the Sanctuary Report: During the scoping comment period, participants requested that GRNMS staff prepare a report on the status of the Sanctuary to use as a basis for continued discussions and to guide appropriate recommendations in the revised management plan. The “State of the Sanctuary Report” was developed and distributed in November 2000 for that purpose. The report discusses the state of knowledge and environmental health of GRNMS, lists the issues raised during scoping, and outlines the research, education, and enforcement programs in place at the Sanctuary. The report provided a foundation for understanding the management issues and served as a basis for identifying new programs and projects in the specific strategy workshops that followed its release.

### Priority Issues

Following the identification of issues and release of the State of the Sanctuary report, the Advisory Council and staff worked to consolidate and articulate all of the issues in a set of concise problem statements and desired outcomes. In Table 3 the problem statements incorporate the priority issues and describe threats to the resources. The desired outcome statements are targets for resource protection.

**Table 3: Problem Statements and Desired Outcomes.**

Problem Statement	Desired Outcome
Anchoring can harm habitat in the Sanctuary.	Prevent anchoring damage to habitat in the Sanctuary.
Diver contact can harm habitat in the Sanctuary.	Prevent harm to habitat from diver contact.
Marine debris is accumulating in the Sanctuary.	Extract and eliminate inputs of marine debris from inside and outside the Sanctuary.
Fishing is an activity that can alter the abundance and species composition of both fish and invertebrate communities in the Sanctuary.	Increase protection for bottom dwelling reef species, and as appropriate, increase protection for pelagic fish species in GRNMS.
There are no naturally occurring, live-bottom sites within the Sanctuary exclusively established for research.	Increase opportunity to discriminate scientifically between natural and human-induced change to species populations in the Sanctuary.

The problem statements were grouped into general themes - habitat conservation and species conservation - that could reasonably be addressed by a group of experts in a workshop format. The purpose of each workshop was to develop strategies to address the problems articulated for each issue and to better define the project activities and priorities in education and outreach, research and monitoring, and enforcement. All strategies that were developed in the five workshops have been considered for inclusion in this plan. The results of this process are the action plans contained in Section III.

**Fishing Issues:** The SAFMC is one of eight regional councils established under the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 et seq.). The SAFMC is responsible for the conservation and management of fish stocks within the federal Exclusive Economic Zone (EEZ) of the Atlantic off the coasts of North Carolina, South Carolina, Georgia and east Florida to Key West.

As the management plan review process began, GRNMS renewed its commitment to cooperation and coordination with partner agencies including SAFMC through the development of a Memorandum of Understanding (MOU) between the SAFMC, NOAA/GRNMS, and NOAA Fisheries Service Southeast Regional Office (NOS Agreement number: MOA-2001-664). The MOU (see Appendix IV) outlines the broad areas of cooperation in the development of GRNMS and SAFMC management plans, including the GRNMS/SAFMC responsibilities regarding fishing regulations. Section 304(a)(5) of the NMSA (see Appendix III) provides regional fishery management councils with the opportunity to develop draft regulations for fishing in the EEZ of sanctuaries.

In a letter dated February 10, 2003, GRNMS made the formal request of the SAFMC to draft revised fishing regulations. The SAFMC voted to adopt the model regulatory language prepared by GRNMS, which was developed through the management plan review process.

**Elimination of Issues:** Some issues identified in scoping, such as artificial reefs and boundary expansion, were determined by GRNMS staff and the Advisory Council to be inconsistent with the site's goals and objectives, or were inappropriate for consideration during this management plan review. These issues were eliminated from further consideration in the DMP. The mooring buoys topic was combined into consideration of anchoring impact alternatives. Other issues are addressed in Section III among the marine resource protection strategies as identified in Table 4 below.

**Table 4: Issues and Where Addressed.**

<b>Issue</b>	<b>Management Strategy</b>
Anchoring	MRP-1, page 61
Mooring buoys	MRP-1, page 61
Bottom fishing	MRP-4, page 67
Fishing gear and regulations	MRP-4, page 67
Research reef designation	RM-2, page 75
Artificial reefs	Eliminated – see page 28
Marine debris	MRP-3, page 65
Diver impacts	MRP-2, page 63
Marine reserves	MRP-6, page 69
Boundary changes	Eliminated – see page 28

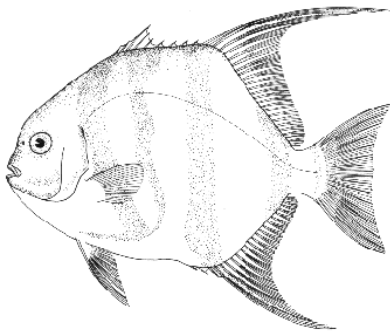
The marine reserves issue was raised in scoping for the GRNMS management plan review. Simultaneously, the South Atlantic Fishery Management Council (SAFMC) was, and still is, considering fishery marine reserves, now termed fishery marine protected areas. The SAFMC fishery marine protected areas are aimed at recovery of depleted snapper-grouper fish species in its jurisdiction, which includes GRNMS. During

SAFMC deliberations, one quarter of GRNMS was suggested as a fishery MPA. Subsequently, the SAFMC decided to focus on deepwater snapper-grouper species. GRNMS, as a more shallow habitat, was dropped from further consideration. GRNMS will continue to work with the SAFMC as it considers fishery MPAs throughout the region. Additional discussion of this topic as it relates to the sanctuary can be found in this document (see Strategy MRP-6: Enhance Coordination and Cooperation with SAFMC, NOAA Fisheries Service, and GADNR on Marine Reserves and other Regional Programs).





# Section II: Affected Environment



## SECTION II: AFFECTED ENVIRONMENT

### SANCTUARY OVERVIEW

Gray's Reef National Marine Sanctuary (GRNMS) is located 17.5 nautical miles (nm) off the coast of Sapelo Island, Georgia, approximately 42 miles south/southeast of Savannah, Georgia on the continental shelf off the southeastern United States (Figure 3). The Sanctuary boundary encompasses 16.68 square nautical miles of rocky topography and mobile sands. GRNMS is marked with boundary buoys at each corner.

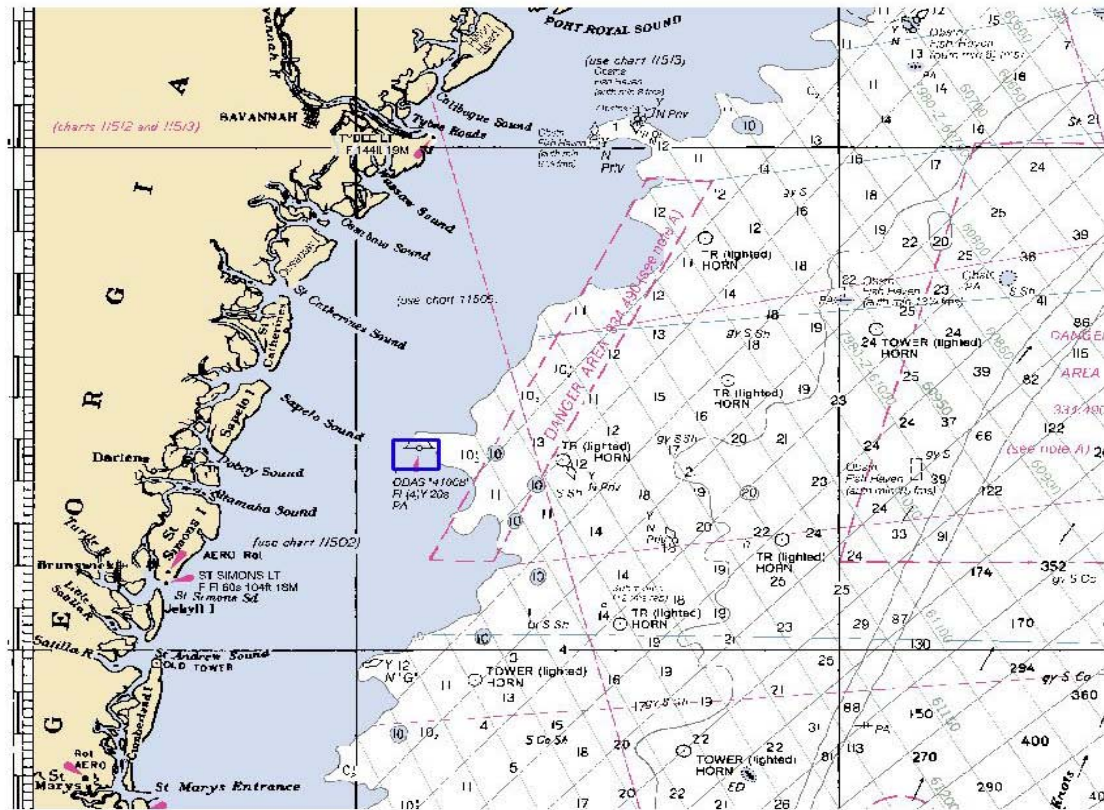
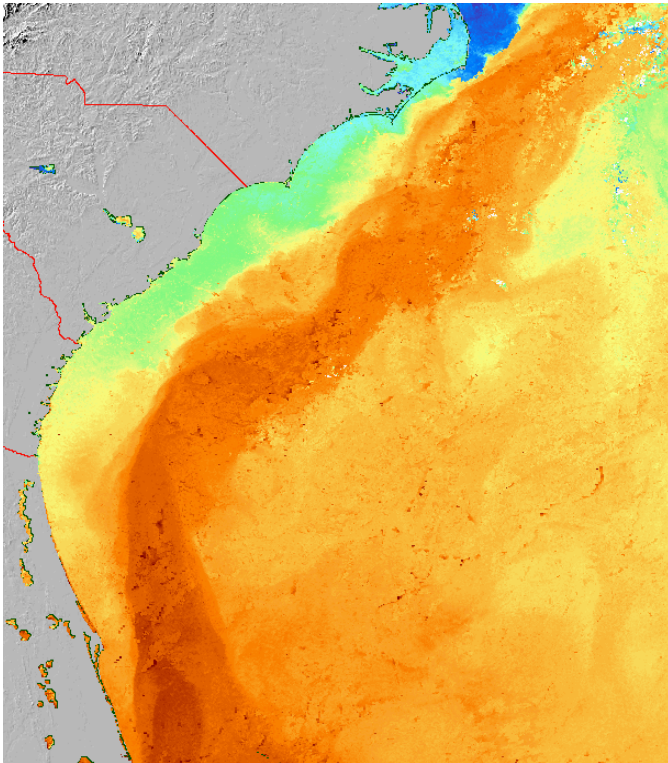


Figure 3: The Location of GRNMS.

The area of the continental shelf, on which GRNMS is located, is sometimes referred to as the South Atlantic Bight (SAB) (Figure 4). The SAB is bounded by Cape Hatteras, North Carolina to the north and Cape Canaveral, Florida to the south. Relatively undeveloped barrier islands, extensive coastal marshes, and tidal rivers characterize the coastal margin of the SAB. The outer reaches are dominated by the Gulf Stream, which flows in a northeasterly direction.

The SAB can be divided into three zones based on oceanographic forces. The dynamics of the outer shelf are driven by the Gulf Stream, which is a strong warm current that flows along the shelf edge. Mid-shelf dynamics are dominated by wind and tides with some influence of the Gulf Stream. Freshwater inflow, wind, and tides affect inner shelf oceanography. GRNMS lies at the boundary between the inner and mid-shelf and thus, the oceanography of GRNMS is largely a function of winds, tides, and freshwater inflow with some influence from the Gulf Stream. The inner and mid-shelf areas experience seasonal fluctuations in temperature, salinity, and water clarity, while conditions on the outer shelf are more constant owing to Gulf Stream influences.



The bathymetry of GRNMS is typified by several ridges and troughs, which extend for several miles in a northeast to southwest direction. The most prominent bathymetric features occur in the western and central portions of the Sanctuary with patchy expressions in the southern and eastern portions.

The rocky ridges and their associated attached organisms are commonly referred to as "live bottom habitat," a habitat of particular biological importance given the extensive sands that cover most of the broad continental shelf. The term "live bottom" is synonymous with the vernacular "patch reefs," "hard bottoms,"

*Figure 4: The South Atlantic Bight*

"coral patches," "black rock reefs," "algal (lithamnion) reefs," "limestone reefs," "fishing banks," and "snapper banks" (U.S. Department of Commerce, NOAA, GRNMS, 1980). Live bottoms have been characterized as areas which contain biological assemblages consisting of such sessile invertebrates as sea fans, sea whips, hydroids, anemones, ascidians, sponges, bryozoans, and corals living upon and attached to naturally occurring hard or rocky formations with rough, broken, or smooth topography, or whose lithotope favors the accumulation of turtles, fishes, and other fauna.

The southeastern U.S. continental shelf forms a transition between temperate and tropical waters. GRNMS is characteristic of live bottom reefs found further offshore. The complex habitat in the Sanctuary supports a mixture of temperate and tropical marine species ranging from loggerhead sea turtles, Atlantic spotted dolphins, barracuda, and

shark to more than 160 recorded species of fish, including snapper, grouper, and mackerel. The small vertical scarps, from 0.5-15 feet in relief, characterize the more prominent ledges where algae and invertebrates grow on the exposed rocks. Sponges, barnacles, fan corals, hard corals, sea stars, crustaceans, snails, and shrimp compete for space and food on the reef.

The reef attracts bottom-dwellers and mid-water fish species, including sea bass, snapper, grouper, and mackerel, as well as their prey. Sand areas between the reef features provide habitat and food for fishes and invertebrates, including flatfishes, cusk eels, stargazers, clams, snails, bristle worms, sand dollars, and other echinoderms, and a wide array of other species. Many reef fishes actively forage out on the surrounding sand flats. Some reef fish populations and seaweeds change seasonally, while others are year-round residents. Migratory fish move through the Sanctuary, feeding on the abundant food supply. Loggerhead sea turtles, a federally listed threatened species, use GRNMS for foraging and resting. The reef is part of the only known winter calving ground for the highly endangered Northern right whale.

Primary productivity at GRNMS is likely supported by input of nutrients from freshwater runoff, as well as deep, nutrient-rich water that is upwelled along the western edge of the Gulf Stream. Water column and benthic primary production are both important contributors to the overall productivity of GRNMS. In addition, the Gulf Stream likely supplies planktonic larvae of invertebrates and fishes originating in the Caribbean and Gulf of Mexico.

Contaminants may be transported from land across the inner shelf, but the quantity of material from this process is affected by the trapping efficiency of salt marsh estuaries. The concentration of nutrients in the water not only varies with intrusion events, but also varies with the rates of exchange of contaminants between the water and sediments. Additional sampling along three cross-shelf transects, extending from the mouths of Sapelo, Doboy, and Altamaha Sounds, showed a general pattern of decreasing trace concentrations of contaminants with increasing distance from shore, thus suggesting possible sources from outwelling through coastal sounds (Hyland et al., 2002). Data also revealed higher percentages of silt-clay fractions in sediments at stations closest to the sounds. These finer-grained particles represent a potential source for sorption of chemical contaminants entering these systems. Cross-shelf differences in salinity and temperature provided additional evidence of the influence of the sounds, especially the Altamaha, on the adjacent shelf environment. The atmosphere is also considered a pathway of contaminants to the reef, such as heavy metals, organic compounds, and nutrients.

Chemical contaminants within GRNMS are generally at low background concentrations below probable bioeffect levels. However, trace concentrations of pesticides (DDT, chlorpyrifos), polychlorinated biphenyls (PCBs), and polycyclic aromatic hydrocarbons (PAHs) have been detected in both sediments and biota, demonstrating that substances originating from human activities are capable of reaching the offshore environment (albeit at low levels) either by air or underwater cross-shelf transport from land (Hyland et al., 2001, 2002).

GRNMS has a temperate climate with a seasonal mean air temperature of 51°F in winter, 66°F in spring, 80°F in summer, and 66°F in fall. Sea conditions are generally calm, less than five feet, during late spring and throughout the summer, but are rougher during late summer, fall, and winter due to more frequent storms. Water temperatures follow seasonal conditions and range from 53.6°F in the winter to 84.2°F in the summer. Surface water circulation occurs generally to the south during fall and winter and to the north during spring and summer. Salinity levels are high, greater than 36 parts per thousand (ppt) in the summer and fall, whereas levels may fall below 34 ppt during the winter and spring. These seasonal fluxes may result from the offshore transport of low salinity waters during high levels of riverine freshwater runoff (Taylor, 1996).

GRNMS is also an area of interest for submerged archaeological and historical resources. Fossil oysters and snails embedded in the sandstone at GRNMS indicate that the reef was once a shallow coastal environment. Fragments of mammal bones and a projectile point located at the Sanctuary may indicate that the current reef area could have been inhabited 10,000 years ago by ancient Paleo-Indian tribes.

## NATURAL RESOURCES

### Geological Resources

The reef is composed of Pliocene, carbonate-cemented sands and muds that stand above the surrounding shelf sands, exhibiting relief up to fifteen feet. The rock outcrops are continuously being reshaped by storms, tidal currents, and bioerosion and are subject to frequent burial and exposure by mobile sands.

The reef rock originally formed during the Pliocene when heavily laden brines in the shallow, evaporating seas percolated through sediments, changing the chemical composition and forming rock (Harding and Henry, 1990; Hunt, 1974). Fossil fragments of certain mollusks, bryozoa, echinoids, and corals, along with their state of fragmentation, indicate that the rock was formed along a bar or a shoal. The existing form of GRNMS was created between 30,000 and 10,000 years ago when sea levels and wave energy fluctuated.

The single rock unit is composed of marine sediments (mud, sand, and shells) with exposed ledges and patch reefs found in the Sanctuary. These hard bottom (limestone/sandstone) features, which lie at depths along the 60-foot isobath, vary from almost flat, sparsely populated emergent rock features to fifteen-foot rock ledges, often separated by wide expanses of overlying sand, and densely inhabited by encrusting marine life and fishes. These ledges, oriented in a northeast to southwest direction, are subject to erosion by shifting sands and boring organisms. The constant change in the environment creates a complex habitat of caves, burrows, troughs, and overhangs. The sandy areas between the ledges are coarse and shelly, with varying amounts of “rock-like” litter (Henry and van Sant, 1982).

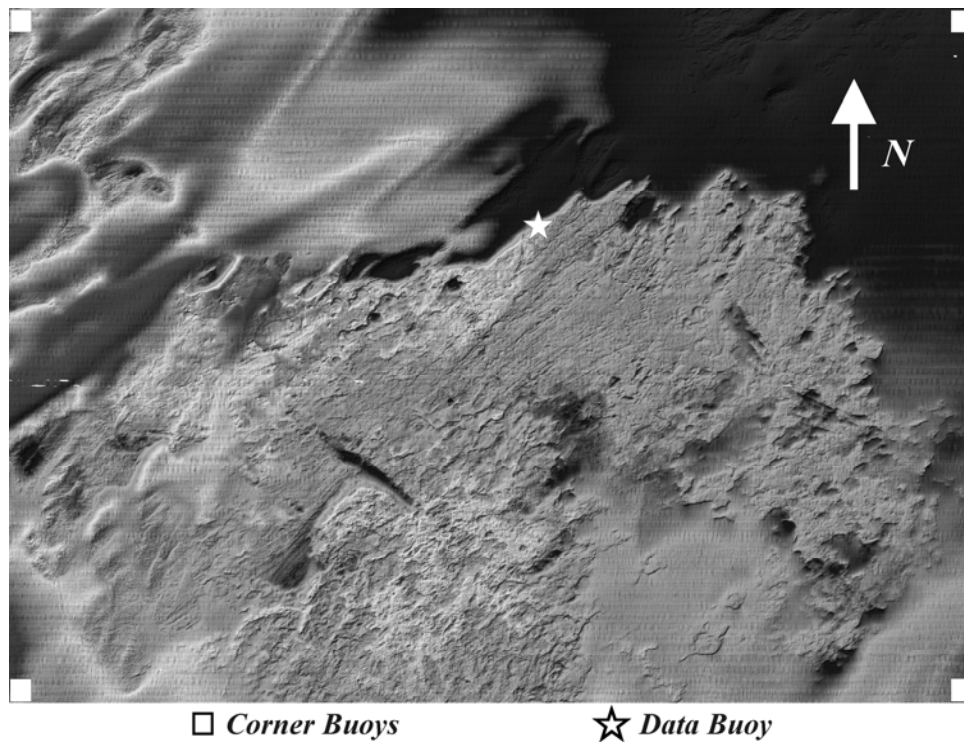
Sediments at GRNMS consist predominantly of fine-grained to medium-grained quartz sand and granule-sized gravel (Hunt, 1974). Approximately three-fourths of the ocean bottom in GRNMS is covered with a layer of sand. Iron-stained quartz sand is common in the larger grains, and phosphorite is common in small to medium-grained fractions. Sediment core samples (1996, 2000) indicate the upper seven feet of sand deposits contain 15 to 20 percent calcareous debris, with mollusk fragments constituting the greatest percentage. Below this level, a shell depauperate silty-sand was detected in the sediment cores. This stratum is interpreted as a sub-aerial surface formed over 150,000 years ago during the penultimate glaciation.

## Marine Resources

### Habitat

Live bottom habitats are structurally complex and provide a number of microhabitats. Although GRNMS is one of the most intensely surveyed live bottom features in the region, diver-focused survey methodologies have provided only basic information on the extent and distribution of the live bottom areas within the Sanctuary. To gain a better understanding of the amount of live bottom habitat, GRNMS was mapped by sidescan sonar and multibeam techniques in June 2001. The mapping allowed for high resolution imaging of the reef outcrops, ledges, and soft sediment or sand (Figure 5).

*Figure 5: Bathymetry of Gray's Reef.*



In conjunction with the bottom mapping, a bottom habitat classification test area was also identified and mapped (Kendall et al., 2003) prior to extending this technique to the Sanctuary as a whole. All features were delineated and ground truthed by diver observations and video transects. The final classification scheme for the Sanctuary included four habitat types: densely colonized live bottom, sparsely to moderately colonized live bottom, rippled sand, and flat sand.

Video transects, coupled with sidescan sonar and multibeam mapping, suggest that sand habitats (rippled sand and flat sand) dominate, accounting for 75% of the Sanctuary. Approximately 24% of GRNMS is sparsely or moderately colonized live bottom, and less than 1% of the Sanctuary is considered densely colonized live bottom. The habitat classification, multibeam bathymetry and sidescan sonar maps are the foundation of a Geographic Information System (GIS) database for GRNMS.

### Seaweeds

Approximately 65 species of seaweeds have been identified within the Sanctuary, some of which are indigenous to the region (Searles, 1988). Most benthic seaweeds are found on firm substrate; however, shifting sediments occasionally cover rocks on which seaweeds grow. Suspended sediments can obscure much of the light required for growth, and temperatures fluctuate with the seasons, limiting or changing seaweed growth. In addition, other organisms, such as fish and invertebrates, compete for space and feed on this food source.

During the winter, the live bottom community is nearly devoid of visible flora, but life begins to flourish in late spring. By July and early August, an abundance of seaweeds is found growing along the ledges, emerging through light sand cover on the flat rock surfaces behind the ledges, and growing attached to larger shell and coral fragments.

### Invertebrates

The hard bottom provides a firm base for a variety of sessile invertebrates including bryozoans (moss fauna), ascidians or tunicates (sea squirts), sponges, barnacles, and hard-tubed worms that form dense encrustations. Larger sessile invertebrates, such as sea whips and fans (gorgonians), hard corals, and large sponges, provide refuges for many smaller, more cryptic invertebrates. Other dominant invertebrates include starfish, brittlestars, crabs, lobsters, shrimps, bivalves, and snails. The scientific term for the organisms living on these hard substrates is “epifauna.” The attached epifauna are primarily filter feeders (obtaining nutrition by straining particles of food from the water column), while the more motile epifauna consist mostly of active predators and surface browsers.





*Orange-ridged sea star*

Sandy substrates extend beyond the Sanctuary to cover vast stretches of the shelf floor. Living buried within these sediments are assemblages of relatively sedentary worms, crustaceans, mollusks (snails and clams), echinoderms, and other invertebrate species commonly referred to as “infauna.” Benthic infauna are predominantly deposit feeders, obtaining nutrition by ingesting organically enriched sediment particles and associated detrital material that settles onto the seafloor. However, the infauna may consist of filter feeders and active predators as well. Motile epifaunal species such as starfish and crab, and more sessile forms attached to small pieces of rock or shell (e.g., barnacles, corals, anemones, sea fans, sea pansies) also can be found living at the surface of these soft bottom substrates. These fauna are a valuable component of the Sanctuary ecosystem, playing vital roles in detrital decomposition, nutrient cycling, and energy flow to higher trophic levels. They can be especially important as food to species of fish that feed away from live bottom rocky outcrops interspersed throughout the shelf.

The rather featureless sandy bottom overlying the rock substrate within GRNMS and adjacent shelf waters may at first glance appear to be a biological void, especially in comparison to the more visually impressive live bottom assemblages associated with rocky outcrops. However, these soft bottom substrates can be teeming with life. For example, measures of infaunal species diversity are over twice as high as those observed in neighboring unpolluted estuaries of comparable high salinity (Hyland et al., 2001, 2002). Within the GRNMS, Hyland et al. (2002) found up to 89 different species in a single 0.04-m<sup>2</sup> grab sample of sediment, which is a very high diversity for the relatively small sampling area (about the size of a sheet of notebook paper). The Sanctuary appears to be a valuable reservoir of marine biodiversity.

Because the Sanctuary lies within a transition zone between temperate and tropical waters, several invertebrate species appear to be surviving at the edge of their geographic range. The size of many sponges suggests that they may be year-round residents. New



evidence on the growth rates of tropical sponges indicates that some of the larger colonies may be 15-20 years old (McFall and LaRoache, 1998). The same situation exists for a number of the hard and soft corals, many of which are surviving year-round and are at the northern limit of their range.

## Fishes

Of the estimated 20,000 known species of marine fishes in the world, about half inhabit the continental shelves. Marine biologists believe that there may be more than 300 marine fish species in Georgia's coastal, inner-shelf, and mid-shelf areas. About one-third of them are reef fishes or are indirectly associated with reefs. The designation "reef fish" is ambiguous as species vary widely in their level of association with reefs and hard bottoms. The federally managed snapper-grouper complex includes 73 species, including sea basses, snapper, toadfishes, jacks, and groupers, some of which are subject to overfishing.

An estimated 160 species of fish, encompassing a wide variety of sizes, forms, and ecological roles, have been recorded at GRNMS. This diverse assemblage of reef fish includes subtropical to temperate benthic reef fishes (sea bass, snapper, toadfish, amberjack, and gag grouper); tropical reef dwellers (angelfishes, butterflyfishes, damselfishes, bigeyes, cardinalfishes, squirrelfishes, and morays); and a great variety of small cryptic fishes of both temperate and tropical realms (soapfish, blennies, and gobies). Some fish species are dependent upon the reef for food and shelter, and rarely venture away from it during their life. Many of these fishes are nocturnal by nature, seeking refuge within the structure of the reef during the day and emerging at night to feed. Some species of reef resident fish disperse to other reef areas north and south for feeding and spawning. Other reef residents, such as gag grouper and black sea bass, rely on the inshore areas and estuaries in early life stages.

Reef communities are complex units and the life histories of many reef fish species are not well known. Reef species composition and abundance fluctuate on a seasonal and yearly basis and vary from north to south and across the shelf. Reef fish are limited mainly by temperature, available habitat, and localized productivity. In many cases, reef fishes remain in a moderately restricted geographical area within a radius of several hundred yards to a few miles around live bottoms and coral reefs.

In addition to reef fish, GRNMS is habitat to a number of other fish species. Approximately 30 species spawn in the vicinity of the Sanctuary and only a third of these are "reef fish" (Hare, 2002 Annual report). The open sands of the Sanctuary form another habitat as rich in species, but less appreciated. These sandy areas support a number of species including flounders, toungefishes, cusk eels, stargazers, and lizardfish.



*Red snapper*

### *Reef Fish Populations*

Live bottoms are primary habitat for many of the recreational fisheries in the southeastern U.S. According to NOAA Fisheries Service (2004), fish stocks in the Southeast Region include 11 key species that are overfished, including species of snapper, grouper, tilefish, and black sea bass. Several of these species are known as “reef” or “bottom” fishes, some of which are vulnerable

to overfishing simply because of their life histories: they grow to be very large, grow slowly, are long-lived, and mature late in life. Many of the nearshore overfished snapper-grouper species are found in GRNMS, including black sea bass, red snapper, and red porgy.

In 1993, NOAA Fisheries Service’s Marine Resources Monitoring Assessment and Prediction (MARMAP) program established sampling stations at GRNMS to monitor reef fish populations. Through the MARMAP program, reef fishes are trapped at GRNMS and elsewhere, identified, measured, tagged, and released to provide estimates of the total population size and average number of fish caught per trap deployment. During the trapping period at GRNMS (July 1993-95 and July 1998-2001), catches were dominated by black sea bass (50 percent), followed by scup (34 percent) and tomtate (12 percent). The remaining species caught included pinfish, blue runner, gray triggerfish, northern puffer, and leopard toadfish.

In GRNMS, the number of black sea bass caught per trap has increased since 1993 with a significant increase occurring in 2000. However, the number of black sea bass caught per trap decreased from an average of 95 fish in 2000 to 76 fish during 2001 (McGovern et al., 2001) (Figure 6). This species, like many in the snapper-grouper complex, is resident on reefs and other structures as adults. Black sea bass are estuarine-dependent as juveniles, and relatively little is known about their spawning behaviors on or near GRNMS. Tagging showed that 93 percent of the fish were recaptured in the Sanctuary, indicating that these fishes show relatively low rates of movement. Tag returns, however, indicate that as many as 33,000 fish may move out of GRNMS over the period of a few months (McGovern et al., 2001).

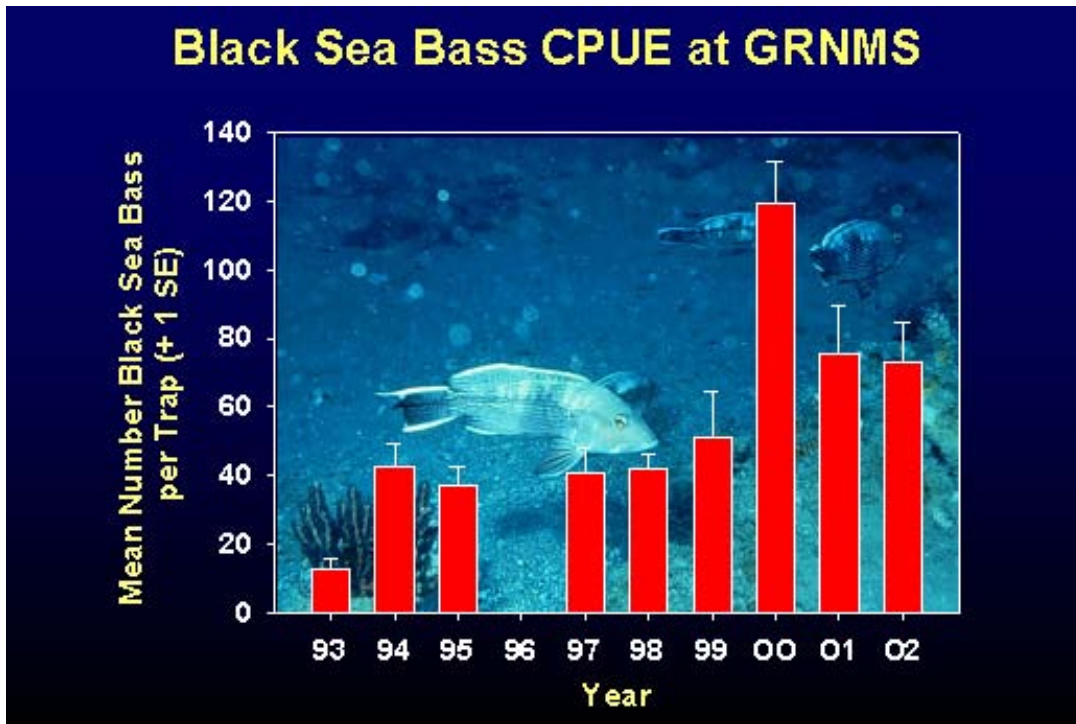


Figure 6: Black sea bass catch per unit effort at GRNMS.

The MARMAP program study showed that there has been a fairly steady increase in the number of black sea bass in GRNMS since 1993, and the mean length of black sea bass collected in 1999 was greater than any other period except the summer of 1994. However, the study revealed that for any given year, the average length of black sea bass at the Sanctuary was generally smaller than the mean length of black sea bass sampled at similar non-protected, commercially fished, live bottom reefs in the southeast. The study concluded that the fish community, including the black bass population, shows the same signs of overfishing that are prevalent on live-bottom reefs throughout the SAB (McGovern et al., 2001).

#### Coastal Pelagic Fish Populations

Coastal pelagic fish species consist of king mackerel, Spanish mackerel, cero, cobia, wahoo, and dolphin. In the Atlantic, the king mackerel and Spanish mackerel populations are considered to be healthy relative to the amount of fish that are harvested; both of these species spawn in the vicinity of GRNMS (Hare, 2003, pers. comm.) The status of dolphin, cobia, and cero mackerel is considered unknown, but current harvest levels are below that which will be expected to jeopardize the health or status of the populations.

Some pelagic species of fishes, including jacks, mackerels, bluefish, cobia, and barracuda, aggregate near reefs in search of food. At GRNMS, king mackerel is the primary coastal pelagic sought by recreational anglers. In contrast with reef species, pelagic fishes are highly mobile. Both adults and juveniles migrate north through GRNMS in the spring and summer and south in the fall and winter. The Gulf Stream has a direct influence on the distribution and composition of pelagic fisheries.

## Sea Turtles

Sea turtles known to occur in the SAB include the Kemp's ridley, hawksbill, leatherback, green, and loggerhead. All these species except the loggerhead are federally listed as endangered species. The loggerhead sea turtle is the most abundant sea turtle in the SAB and is federally listed as a threatened species.

Loggerhead sea turtles are circumglobal, inhabiting temperate, tropical, and subtropical marine areas. While loggerheads may range from Newfoundland to as far south as Argentina, they nest primarily on the east coast of Florida, with other sites in Georgia, the Carolinas, and the Gulf Coast of Florida. GRNMS is an important area for loggerheads to rest and forage throughout the year,



*Loggerhead sea turtle and vase sponge*

especially during the summer nesting season when females may nest two to four times laying approximately 120 eggs per nest on area beaches. Loggerheads are frequently sighted at GRNMS at the surface, as well as underwater swimming. These turtles are attracted to an abundance of mollusks, whelks, horseshoe crabs, sponges, oysters, marine algae, and jellyfish.

Because sea turtles use the land and marine environment, protection for these species is jointly shared by the U.S. Fish & Wildlife Service (USFWS) for onshore nesting sites and by NOAA Fisheries Service for turtles in the marine environment. Threats to the recovery of loggerhead sea turtles include numerous beach-related disturbances of nests and nesting, as well as human activities offshore such as commercial and recreational fishing gear entanglement, collision and injury by boats and propellers, and marine debris that is mistaken for food.

Section 4 of the Endangered Species Act requires NOAA Fisheries Service and USFWS to publish a recovery plan for species added to the list of Threatened and Endangered Species. In June 2001, NOAA Fisheries Service issued a "Strategy for Sea Turtle Conservation & Recovery in Relation to Atlantic Ocean and Gulf of Mexico Fisheries." This plan provides a strategy to address sea turtle capture in fishing gear.





*Atlantic spotted dolphins*

## Marine Mammals

Marine mammals in the southeast U.S. continental shelf include cetaceans (whales and dolphins), pinnipeds (harbor seals and sea lions), and sirenians (West Indian manatee). Atlantic spotted dolphin and Western North Atlantic coastal bottlenose dolphin, which have been designated as depleted under the Marine Mammal Protection Act, are the most often encountered marine mammals at GRNMS. There are four species of federally listed endangered whales in the region: North Atlantic right, humpback, sperm, and fin. Of these, only the highly endangered North Atlantic right whale, whose only known calving grounds are coastal Georgia and northern Florida, has been observed in the vicinity of GRNMS during the winter.

## Sea Birds

Pelagic birds, many of which are seasonal migratory species, occur on the middle and outer shelf regions of the SAB, particularly along the western edge of the Gulf Stream. More than 30 species of these marine birds occur off the southeastern coast of the United States. Sea birds observed in the GRNMS area include petrels, shearwaters, gannets, phalaropes, jaegers, and terns.



*Winter flock of pelagic birds*

## HISTORICAL RESOURCES

Sediment core samples taken at the Sanctuary indicate that as recently as 8,000 to 10,000 years ago, GRNMS may have been a terrestrial environment. During this period, GRNMS was a shallow coastal environment supporting oysters, clams, and other estuarine organisms. Scientific divers have discovered fossils of extinct land-dwelling animals, such as ground sloth, mammoth, mastodons, camels, horses, and bison. These fossils may be associated with early human groups colonizing the North American continent in the late Ice Age. Many of the fossil finds are known prey species of these early hunters. One antler fragment recovered at GRNMS shows possible evidence of human use as a tool. In 2002, an Early Archaic Period projectile/spear point (ca. 8000-5000 before present (BP)) was found at the reef near the earlier discovery of the antler tool.

Archeologists suspect that there may be submerged remnants of prehistoric human occupation on the U.S. East Coast continental shelf. Evidence of Paleo-Indian occupation of many parts of the United States dates from 12,000 years BP (perhaps dating from the Pleistocene) at a time when sea level on the southeast coast was over 100 feet below present levels. At this lower sea level, the Georgia coastline may have been over 50 miles east of its present location (BLM, 1978). The historical resources and paleo-environments found at GRNMS are indicative of early Indian living sites (e.g., mounds, shell middens, pottery, and tools) commonly found in coastal areas off the southeastern U.S.

Fossil materials, as well as wood samples, have been recovered since 1995 by NOAA and University of Georgia surveys. The fossil finds were identified by the Florida Museum of Natural History as a horse tooth, whale inner ear bone, and bone shaft material, probably from mammoth and bison or oxen. More recently, the rib bone from a mastodon was found partially imbedded in the substrate at GRNMS.



*Mastodon rib fragment*

Pollen from bottom samples at GRNMS has also been identified; through analyses of sediment cores from GRNMS, an ongoing project intends to describe the prehistoric coastal plain environments (Littman, 2000).

## SOCIAL AND ECONOMIC RESOURCES

### Demographic Profile

Ehler and Leeworthy (2002) identified the study area for GRNMS as composed of 27 coastal counties in Georgia, South Carolina, and Florida (see Figure 7). The primary study area for the socioeconomic analysis focuses on the 18 coastal Georgia counties (see Table 5). Census estimates show that approximately 2.3 million people resided within the total study area in 2000, compared with 2.2 million in 1999. Overall, the study area has grown by about 34 percent over the past twenty years, and is projected to continue to increase nearly 20 percent over the next decade (U.S. Department of Commerce, Census Bureau. <http://www.census.gov>).

## GRNMS Socioeconomic Study Area

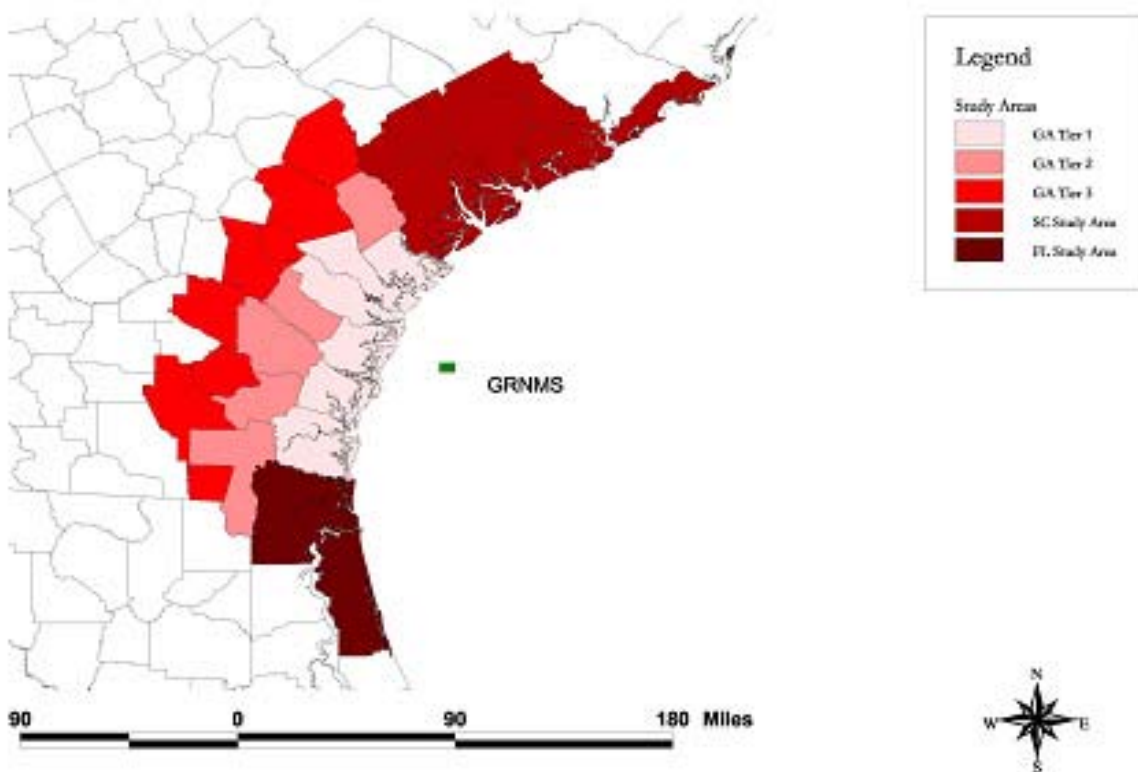


Figure 7: Gray's Reef Socioeconomic Study Area

The 2000 population estimates for these areas, as well as the percentage change in population since 1990, are presented (figures are based on the 2000 Census Bureau data). Although only three counties are represented in the Florida study area, these counties represented the highest population within the total study area with 959,677 residents in 2000, followed by Georgia which had 711,164 within the 18 counties in its study area, and South Carolina which had 607,647 residents in its six-county study area in 2000.

**Table 5: Gray’s Reef Onshore Study Area, 2000 Population and Percentage Population Change 1990-2000.**

Georgia Counties	2000 Population	% Change '90-'00	South Carolina Counties	2000 Population	% Change '90-'00	Florida Counties	2000 Population	% Change '90-'00
<b>1<sup>st</sup> Tier</b>								
Chatham	232,048	7	Charleston	309,969	5	Nassau	57,663	31.2
Bryan	23,417	51.7	Colleton	38,264	11.3	Duval	778,879	15.7
Liberty	61,610	16.8	Beaufort	120,937	39.9	St. Johns	123,135	46.9
McIntosh	10,847	25.6	Dorchester	96,413	16.1			
Glynn	67,568	8.1	Jasper	20,678	33.5			
Camden	43,664	44.7	Hampton	21,386	17.6			
<b>2<sup>nd</sup> Tier</b>								
Effingham	37,535	46.1						
Long	10,304	66.1						
Wayne	26,565	18.8						
Brantley	14,629	32.1						
Charlton	10,282	21						
<b>3<sup>rd</sup> Tier</b>								
Screven	15,374	11.1						
Bulloch	55,983	29.8						
Evans	10,495	20.3						
Tattnall	22,305	25.9						
Appling	17,419	10.6						
Pierce	15,636	17.3						
Ware	35,483	.03						
<b>Total</b>	711,164			607,647			959,677	

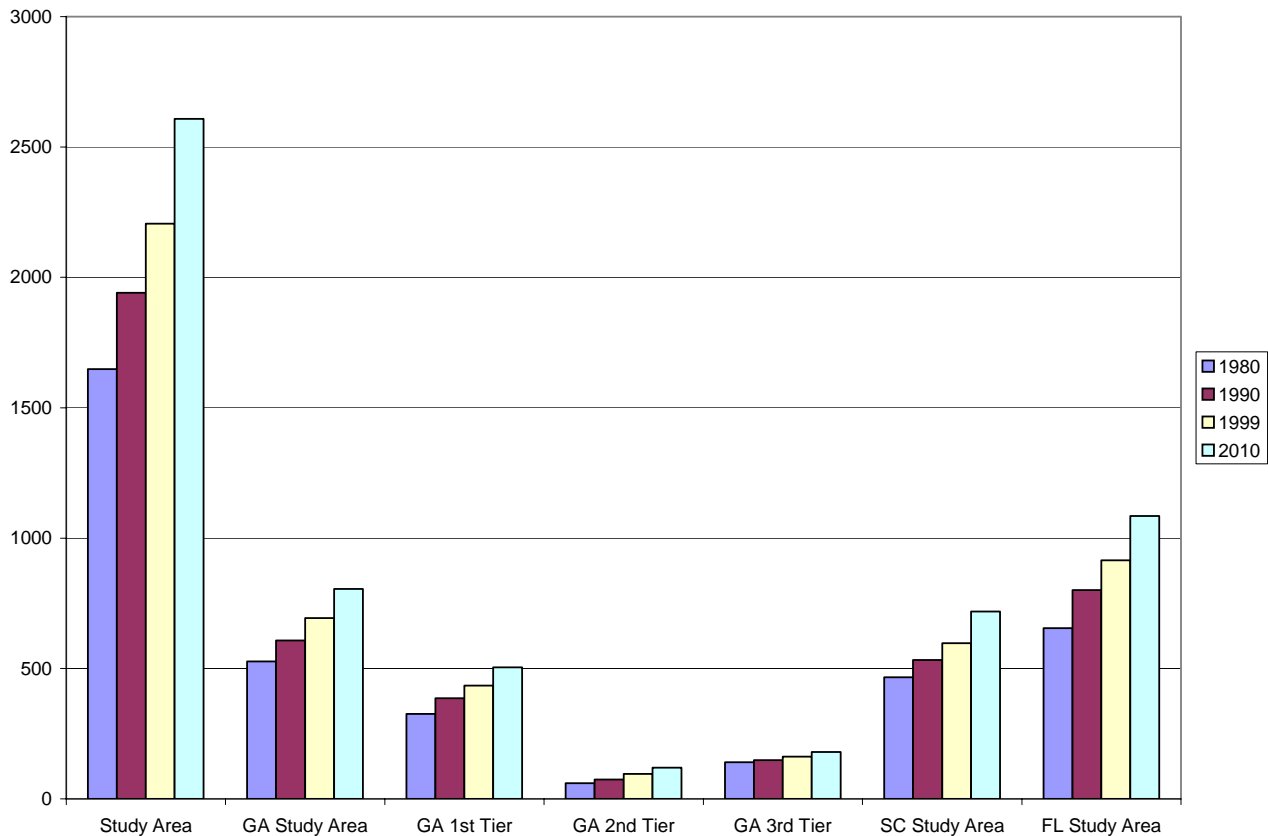
Source: U.S. Census Bureau, QuickFacts (<http://quickfacts.census.gov>) Census 2000 data. NOAA, A Socioeconomic Overview of Georgia’s Marine Related Industries and Activities, May 2002.

Almost half of the population of the study area lives in three northern Florida counties, of which Duval County and the City of Jacksonville are a part. The highest population growth (133 percent over the past 20 years) has been experienced in St. Johns County. Within the Georgia counties, the majority of people live in coastal counties, and more than half of these residents live in Chatham County. Significant growth has also been



experienced in two of the smaller Georgia coastal counties: Bryan and Camden. In fact, between 1980 and 1999, these two counties showed the highest population growth in the study area - 140 and 252 percent, respectively. This high increase in population growth in these two counties is forecast to continue to climb over the next decade, as projections show a 237-percent increase for Bryan County and nearly a 500-percent increase for Camden County between 1980 and 2010 (Ehler and Leeworthy, 2002). Figure 8 illustrates the population trends for the GRNMS study area.

*Figure 8: Population Trends for the Gray's Reef Study Area*



Between 1990 and 2000, the Savannah Metropolitan Statistical Area (MSA) grew 13.4 percent, as the population grew from 257,899 in 1990 to 292,458 in 2000. This compares with a slightly slower percentage growth of 11.7 percent experienced a decade earlier. Projections show that growth in the Savannah MSA is expected to be about 10.3 percent between 2000 and 2010 (Savannah Economic Development Authority, 2002).

The study area is predominately rural in character, except for counties within the Savannah MSA and those in which other cities, such as Brunswick, Charleston, Beaufort, and Jacksonville, are located. Although the majority of residents within the study area have high school degrees, many residents of the rural counties have not graduated from high school. The study area is predominantly white (70 percent), compared with 30 percent African-American (Ehler and Leeworthy, 2002).

The labor force characteristics of the study area closely match the pace of population growth. On average, the labor force has grown at a faster rate during the second half of the 1990's, compared with the beginning of the decade. However, three counties, Screven, Colleton, and McIntosh, showed declines in labor between 1994 and 1999 (Ehler and Leeworthy, 2002). Most of the residents of the study area work in the county where they reside. In 1998, income by place of work was nearly 76 percent of the income by place of residence throughout the study area. Since most of the marine-related economic activity in the study area occurs along the Georgia coast, the coastal counties were analyzed for connectivity. In Liberty, Glynn, and McIntosh Counties, more than 80 percent of the workers reside in their respective counties, whereas in Bryan County, only 63.4 percent of the workers reside in the county. More than 10 percent of workers in Camden County are Florida residents, while many come from Charlton County.

Although the trend for the study area has been toward lower unemployment, the unemployment rates did rise for many counties between 1990 and 1994. Throughout the 1990's, unemployment rates in the Georgia coastal counties were lower than that for the state of Georgia. Appling County had the highest unemployment rate in the study area—nearly 10 percent. Unemployment rose slightly in the South Carolina counties between 1990 and 1994, although a recovery occurred in 1999. The Florida counties showed a more consistent and lower than average unemployment rate, and enjoyed high per capita incomes, with St. Johns County showing the highest income level (\$36,809) in 1998.

Real per capita incomes (1999) in the Georgia counties were lower than that for the state throughout the 1990's, except for Chatham and Glynn Counties, which had higher per capita income levels. Long County had the lowest level of any county in the overall study area. The South Carolina study area showed a wide range of per capita incomes, with Charleston and Beaufort experiencing higher incomes and Colleton showing a lower income level.

Figure 9 illustrates the percentages of income and employment by industry in the study area. Commercial fisheries are included in the Agricultural Services, Forestry, Fishing, and Other category. Other direct impacts of commercial fishing are also included in the Wholesale Trade (fish houses and buyers) and Manufacturing (fish processing) categories. In 1998, this industry category accounted for only 0.5 percent of income by place of work in the study area. The Retail Trade and Services sectors shown in the chart represent the direct impacts of tourism/recreation.

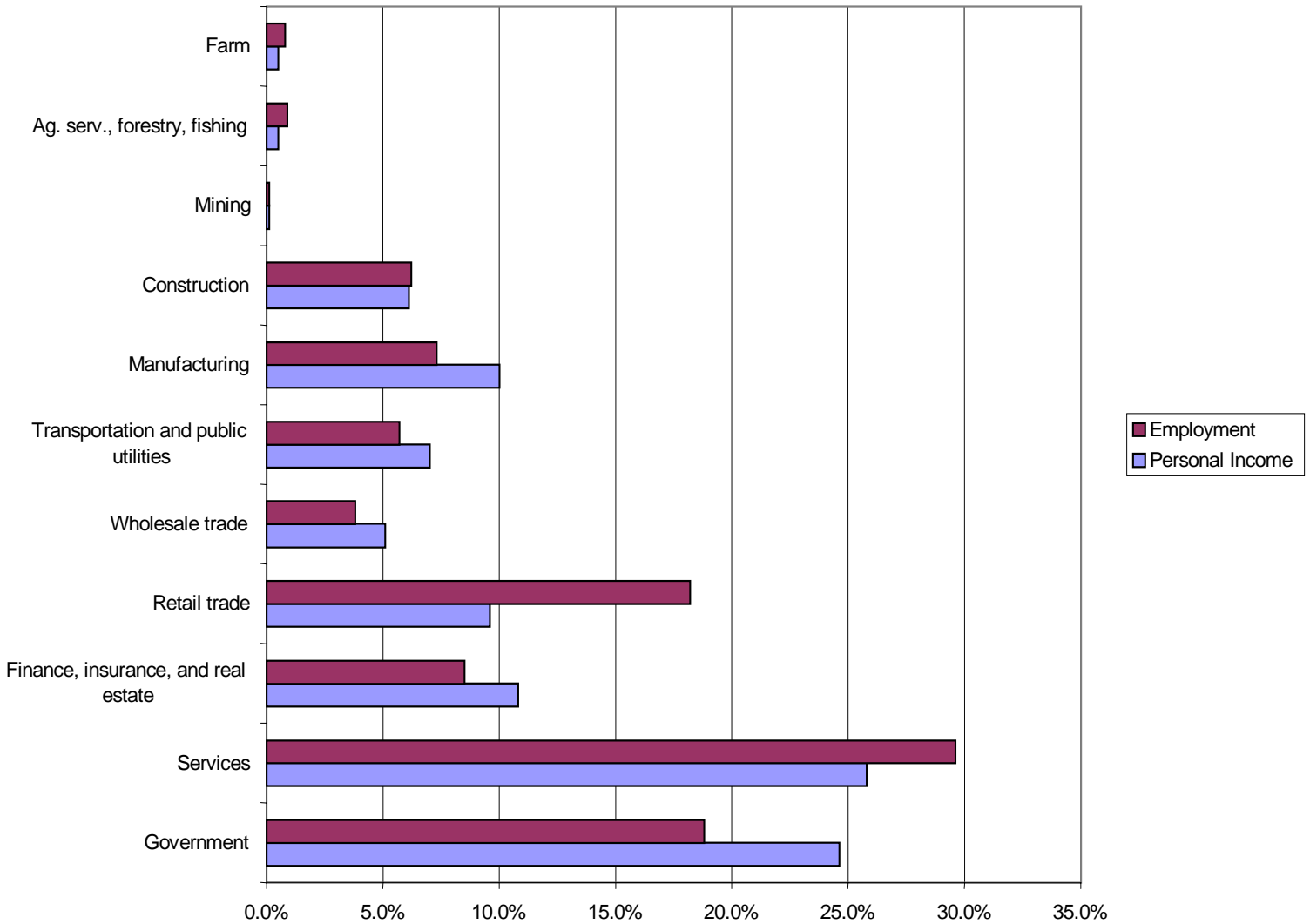
## Human Activities

### Recreational Fishing

GRNMS is attractive to recreational fishing enthusiasts. Although there is no primary access point to the Sanctuary, a variety of public and private boat launches and marinas extending from Savannah to Brunswick, Georgia, serve as staging sites for Sanctuary users. A boat excursion to GRNMS takes from one to three hours, depending on the type

of vessel, departure point, and sea conditions. Most recreational vessels that operate at GRNMS range from 20 to 40 feet in length, are motorized, use fuel, and are privately owned.

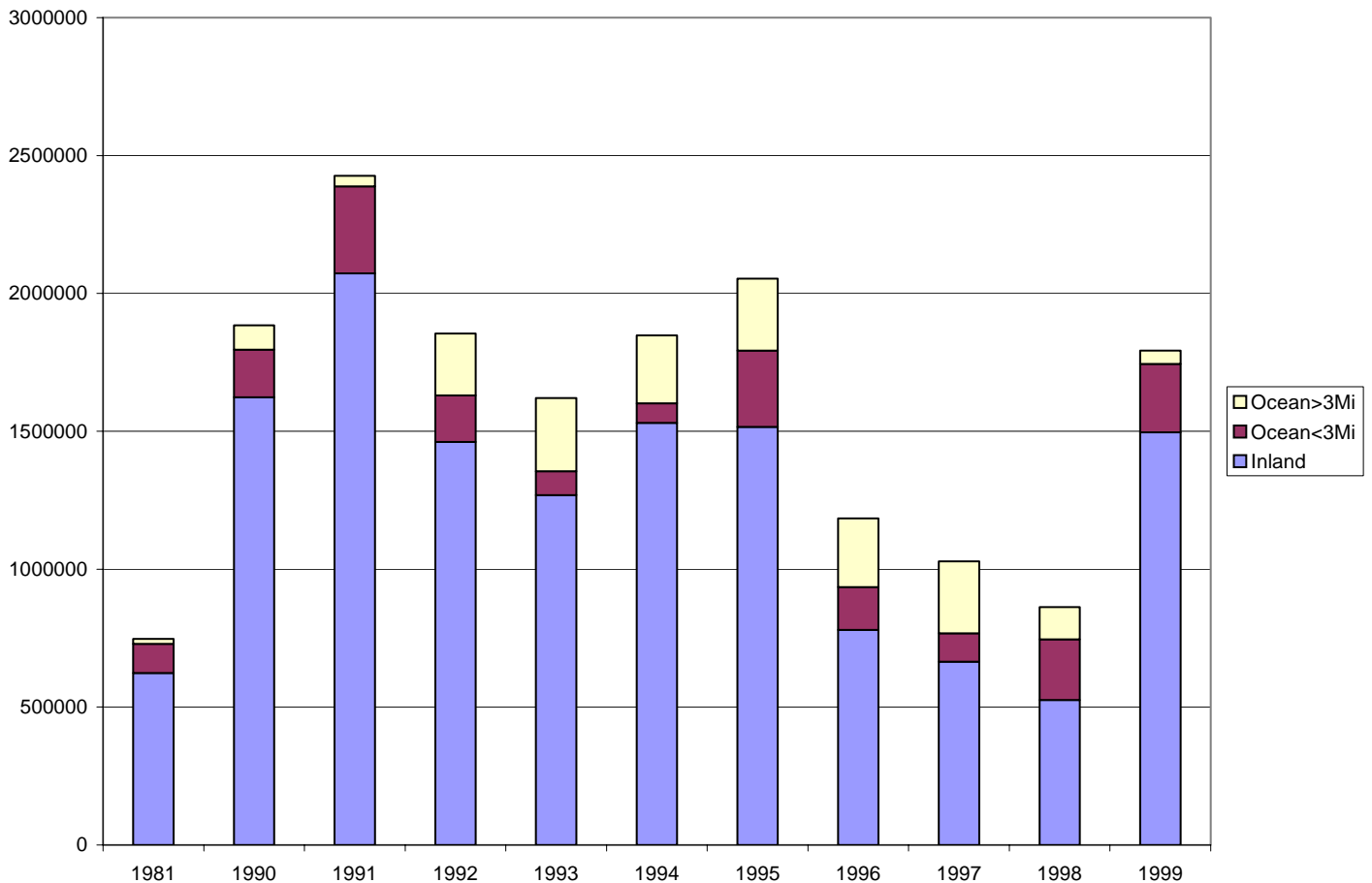
Figure 9: Employment and Personal Income by Industry for the Gray's Reef Study Area, 1998.



Recreational fishing at GRNMS occurs nearly year-round but at different levels of intensity. Most recreational fishing activities occur on weekends. Beginning in April and May, fishing steadily increases through the summer and tapers off in the fall. This pattern correlates with weather conditions and the availability of recreational species, such as king and Spanish mackerel. Fishermen troll, anchor, or drift fish for pelagic species, such as king mackerel, and a variety of reef fish, such as snapper, grouper, and black sea bass. The GADNR estimates that there are approximately 215 fishing days at GRNMS per year. This figure is based on days with less than 5-foot seas and winds variable, less than 10 knots.

Between 1993 and 1998, marine recreational fishing activities remained fairly steady at about 500,000 trips per year. In 1998, anglers took an estimated 572,000 saltwater fishing trips in Georgia. Private/rental boat trips comprised 60 percent, shore-fishing trips involved 37 percent, and charter/party boat trips included only 3 percent of the total. NOAA Fisheries Service reported that in 1981 and 1988 less than one million fish were caught in the near shore area compared to more than two million in 1991 and 1995. Further offshore, the catch grew from 18,664 fish in 1981 to 265,297 in 1993, but declined to 48,623 fish in 1998. In 1999, harvest almost tripled to 1.5 million fish from 0.5 million in 1998.

Figure 10: Georgia Recreational Fishing Harvest, Number of Fish.



Charter fishing harvest offshore grew from 0 in 1981 to more than 200,000 fish in 1995, but dropped again to 26,000 in 1999. Figure 10 illustrates the recreational fishing harvest in Georgia between 1981 and 1999.

Between 1991 and 1996, the number of marine recreational fishing days in Georgia significantly increased an estimated 63.9 percent, from 606,000 to 993,000, according to the U.S. Fish & Wildlife Service's Survey of Fishing, Hunting, and Wildlife Associated Activity. The total number of anglers increased nearly 92 percent from 72,000 in 1991 to 138,000 in 1996. Georgia residents have consistently accounted for almost 60 percent of total anglers and just fewer than 80 percent of total fishing days.

The same survey estimated that a total of \$51.8 million was expended on saltwater fishing in Georgia in 1996. This amount includes expenditures of \$9 million in food and lodging, \$7.5 million in transportation, \$8.3 million for equipment, and other trip costs (licenses, stamps, tags, permits, and land leasing) of \$27.1 million. A total of 164,000 spenders in Georgia with average expenditures of \$315 per spender and \$349 per angler were estimated (Ehler and Leeworthy, 2002).

### Commercial Fishing Industry

The major commercial fisheries for Georgia are shrimp, blue crab, snapper-grouper, bait shrimp, shellfish (oysters, clams), and whelk. The snapper-grouper fishery is the only commercial fishery that is largely dependent upon species that primarily frequent live bottom habitats. With the designation of GRNMS in 1981, commercial fishing with traps and bottom trawls was prohibited in order to protect the fish populations as well as the live bottom habitat. Some commercial fishing by hook-and-line has occurred for Spanish and king mackerel, cobia, and bluefish (Taylor, 1996).

In 1998, NOAA Fisheries Service estimated that 350 commercial fishing vessels operated out of Georgia ports, compared with 569 in South Carolina, and 2,384 in Florida. During this period, NOAA Fisheries Service reported eight processing plants and 66 wholesale operations in Georgia, employing 1,259 and 586 workers, respectively. South Carolina employed 194 people at five processing plants and 28 wholesale operations, compared with 3,142 Florida employees at 108 processing plants and 2,984 people at 374 wholesale operations (Ehler and Leeworthy, 2002).

In 1997, commercial fishing income was slightly more than \$19 million in the study area. This figure included income received by harvesters or commercial fishermen, including crews and proprietors of operations. As shown, a large increase in income occurred during the 1970's, then declined in the 1980's, and dropped even further in the 1990's (Ehler and Leeworthy, 2002) (see Figure 11).

The highest commercial fishery value is white shrimp, which accounted for about 80 percent, or 16.8 million, of the total \$21.1 million in 1999. Shellfish has historically accounted for more than 96 percent of the total commercial harvest for Georgia, which includes blue crab (\$2.2 million), conchs (\$415,000), and clams (\$122,000).

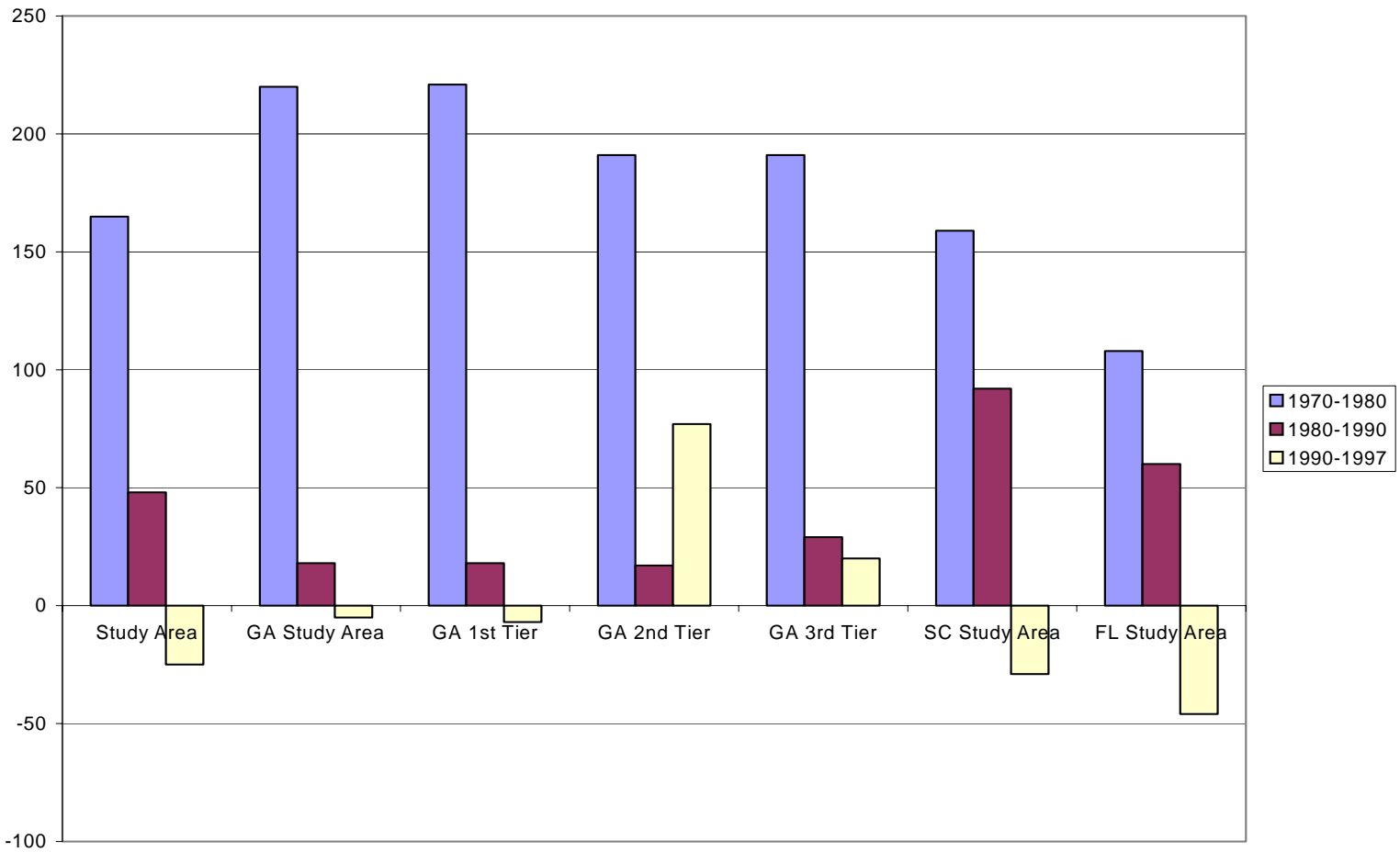


Figure 11: Direct Income to Commercial Fishing, Harvesting Sector.

Most of Georgia's shellfish catch occurred near shore within three miles (Ehler and Leeworthy, 2002).

Compared with shellfish value, the commercial finfish market was much smaller in 1999, showing a value of \$816,000. Most finfish are caught within federal waters from three to 200 miles from shore. The snapper-grouper fishery has provided the highest value (66 percent of the total finfish catch). In 1999, grouper landings were valued at \$298,000 and snapper (vermillion, red, and other) was valued at \$237,000. Other fish landed in Georgia with relatively high value included shark and American shad, valued at \$44,000 (Ehler and Leeworthy, 2002).

#### Tax Revenues

Income tax revenues were estimated by calculating earnings per job for each state. The taxes paid on this average level of earnings were determined using income tax tables from the U.S. Department of Commerce Clearing House. The American Sportfishing Association estimated that in 1996, 137,463 saltwater anglers spent over \$57 million dollars on their sport in the state of Georgia. These expenditures multiplied through the local, regional, and national economy with a total impact of almost \$117 million dollars. These expenditures supported 1,576 jobs accounting for \$32 million in saltwater fishing-related wages and salaries (Ehler and Leeworthy, 2002).

Combined with freshwater fishing, all sportfishing expenditures in Georgia in 1996 totaled \$1.2 billion. Saltwater expenditures accounted for only 5.1 percent of this total. The total economic impact of sportfishing in Georgia was \$2.3 billion, with saltwater comprising only 5.1 percent of the total.

#### Other Recreational Activities

SCUBA diving by more experienced divers occurs year-round, although most diving activities occur on weekends during warmer months of the year, and sometimes in conjunction with recreational fishing activities. Spearfishing without a powerhead is permitted at GRNMS. Target species include snapper, grouper, black sea bass, flounder, triggerfish, porgy, and sheepshead.

Underwater photography and nature observing are also popular activities. However taking any bottom formation, marine invertebrate, marine plant, or tropical fish is prohibited in the Sanctuary, except by permit for scientific and educational purposes.

#### Contemplated Future Uses

Because of its offshore location, several activities that occur outside the Sanctuary boundary are monitored to ensure that the resources inside the boundary are properly protected.

#### Military Activities

The Department of Defense has a general exemption from GRNMS regulations. The Sanctuary lies within the western edge of the Navy's Jacksonville Fleet Operating Area W-157, where training operations are conducted. Although use of this area can be intense and include surface and aerial gunnery, bombing, torpedo, and missile activity, as well as ship and submarine maneuvers, these activities have not affected the Sanctuary in the past. Military aircraft do not fly below 1500 feet or within a one nautical mile radius of the Sanctuary in order to minimize disturbance of marine resources.

#### Commercial Shipping

Based on reconnaissance conducted by the U.S. Coast Guard, the Brunswick Pilots Association, and GADNR, few commercial shipping vessels travel through or near the Sanctuary. Most ship traffic to the southeastern U.S. ports is estimated to occur eight to 33 miles east of GRNMS. Vessels traveling north follow the Gulf Stream and those traveling south remain shoreward of the current.

#### Ocean Dumping and Dredging

No known ocean dumping or dredging occurs in or near the Sanctuary.

## Offshore Mineral Activity

The Minerals Management Service, in the Department of the Interior, is responsible for implementing the requirements of the Outer Continental Shelf Lands Act, which involves exploration and development of offshore resources. These resources include hydrocarbons (oil and gas), phosphorites, heavy minerals, and sand and gravel.

Although offshore oil and gas tracts were offered for lease to industry in 1977, no leases exist today in the South Atlantic. In the current Proposed Outer Continental Shelf Oil & Gas Leasing Program 2002-2007, dated October 2001, there is no discussion of oil and gas leasing activities in the South Atlantic region. Based on historical limited interest in hydrocarbon exploration in the South Atlantic, offshore oil and gas activities are not likely.

The Blake Plateau, located between 145 and 170 km offshore, where the water depth drops rapidly to 500 meters, could be the site for mineral development in the future, if interest is exhibited by the industry. However, GRNMS and the inner shelf of Georgia are not expected to be directly affected by these activities.

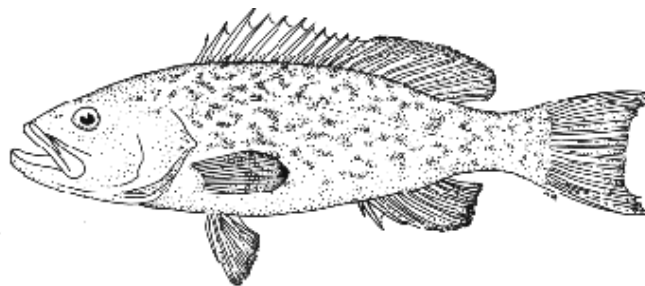
Phosphorite occurs on the inner shelf of the coast of Georgia and in the surface sediments at GRNMS. Phosphorites have not been quantified, but have been observed in sediments from cut-and-fill channels near the Sanctuary. Mining activity is prohibited in GRNMS but mining interests could develop adjacent areas in the future.

Some of the offshore regions may be sources of economically significant concentrations of phosphate, a product used primarily in fertilizer and feed supplements (Taylor, 1996). The primary sites considered having good potential include an area approximately 45 nm northeast of GRNMS; crests of the Outer Shelf High, approximately 13.6 nm east of GRNMS; and shallow areas of the Inner Shelf Low, between the Outer Shelf High and the Sea Island Escarpment (Taylor, 1996).

Heavy mineral sands, gravel, and shell are located offshore. Limited offshore dredging for sands, shell, and gravel currently occur offshore of Georgia. An extrapolation of sparse heavy minerals data off the coast of Georgia indicates that low concentrations exist offshore of Sapelo Island near GRNMS (Taylor, 1996). No trends in the occurrence of heavy minerals were noted in a survey near GRNMS. Further heavy minerals research was recommended south of Cumberland Island, Georgia (Taylor, 1996).



# **Section III: Final Management Plan**



## SECTION III: FINAL MANAGEMENT PLAN

### BACKGROUND

Each of the GRNMS program areas is covered by an action plan for implementing various management strategies. These action plans are designed to directly address current priority resource management issues and guide management of GRNMS over the next five years. The six action plans are:

- Marine Resource Protection (MRP);
- Research and Monitoring (RM);
- Education and Outreach (EO);
- Exploration (EX);
- Administration (AD); and
- Performance Evaluation (EV).

The order of these action plans, as they appear in this document, reflects the goals and objectives of the NMSA. The primary objective of the NMSA and for the GRNMS is the protection of the resources of the Sanctuary; hence the Marine Resource Protection Action Plan appears first and represents the Sanctuary's commitment to addressing the issues that characterize the threats to the marine resources. The next three action plans - Research and Monitoring, Education and Outreach, and Exploration - present some of the tools and projects that integrate with and support the strategies discussed in the Marine Resource Protection Action Plan while working to further other goals and objectives of the GRNMS. Finally, the Administrative and Performance Evaluation action plans provide the underpinnings of staff, infrastructure, and assessment that are necessary to sustain operation of the site and implementation of the other action plans.

GRNMS prioritizes the strategies contained in the action plans for budget and planning purposes over the next five years into one of three priority areas (see Table 6). Top priority strategies include those that sustain basic operations and resource protection actions. The second priority area includes those strategies in the Research and Monitoring and Education and Outreach action plans that directly support or correlate with the Marine Resource Protection Action Plan. The third priority area contains those strategies that are not necessary to basic operations but will enhance resource protection efforts and contribute to additional coordination, knowledge, and stewardship in the GRNMS region.

Implementation of this new management plan involves: 1) coordination within and between action plans; 2) sharing of staff and financial resources between program areas; 3) timely evaluation of the activities; and 4) cooperation and coordination among many federal, state, and local government agencies, as well as private organizations and individuals.

**Table 6: Priority Areas for Budget and Planning Purposes.**

<b>First Priority</b>	<b>Second Priority</b>	<b>Third Priority</b>
All strategies in the Marine Resource Protection Action Plan (MRP-1 through MRP-6)	Strategies RM-2 and RM-3 in the Research and Monitoring Action Plan	Strategy RM-1 in the Research and Monitoring Action Plan
Strategy RM-4 in the Research and Monitoring Action Plan	Strategies EO-2, EO-3 and EO-4 in the Education and Outreach Action Plan	Strategy EO-5 in the Education and Outreach Action Plan
Strategy EO-1 in the Education and Outreach Action Plan	All strategies in the Exploration Action Plan (EX-1)	
Strategy AD-1 in the Administration Action Plan	Strategy AD-2 in the Administration Action Plan	
All strategies in the Performance Evaluation Action Plan (EV-1)		

**Partners:** The NMSP works with a variety of partners - including many with shared or similar missions - to achieve its goals and objectives. GRNMS will continue to work with its existing partners, such as NOAA Fisheries Service, USCG, GADNR, SAFMC, South Carolina DNR, SkIO, UGA, GSU, GA Tech, SSU, Fernbank Natural History Museum, Tybee Island Marine Science Center, Georgia Aquarium, and South Carolina Aquarium. New partnerships will be developed as necessary and appropriate. Working with partners helps maximize the use of appropriated funds, achieve greater program efficiencies, and avoid duplication of efforts.

**Coordination:** Within the NMSP, the national office develops program-wide guidelines and policies in response to, or in anticipation of, issues or problems. Each sanctuary site then implements these national policies and guidelines in accordance with local conditions and circumstances. The national office is composed of a set of branches that are organized around the main functions of the NMSP. Branch staff and onsite field staff, having similar or complementary duties such as research or education, work together to advance the goals and objectives of both the NMSP and each individual sanctuary.

**Evaluation and Performance Measures:** As part of an effort to improve overall management, performance evaluation has become an emerging priority for the NMSP. The core objectives are outlined in detail as the Performance Evaluation Action Plan. Along with each performance measure is a brief plan on how each measure will be assessed and who will be responsible for its assessment, along with expected products (outputs) for each of the management actions in each of the action plans.

Cost of Action Plan Strategies: Each of the action plans that follow includes a table that lists the individual strategies and associated costs over the next five years. The cost figures listed in the tables provide a rough estimate of the expenditures projected as needed to implement the associated programs. Given the uncertainty of projecting future budget levels, the cost figures provided should be viewed as a gauge of program priority rather than definitive statements of future funding levels.



*Spotfin butterflyfish at Gray's Reef ledge*

## MARINE RESOURCE PROTECTION ACTION PLAN

### NATIONAL PRIORITIES

An essential purpose and policy of the NMSA is to “maintain the natural biological communities in the national marine sanctuaries, and to protect, and where appropriate, restore and enhance natural habitats, populations, and ecological processes” (16 U.S.C. 1431(b)(3)). One of GRNMS’ principal roles is to identify and address current and emerging local, state, and national marine resource management issues relative to the Sanctuary region. When addressing these issues, the site strives to determine levels of resource use that are compatible with resource protection. The Marine Resource Protection Action Plan is designed to address these issues.

### GRNMS PRIORITIES

In November 2000, the Advisory Council met to develop new site-specific goals and objectives to guide development of the revised management plan and its implementation. In reinforcing the national goal for marine resource protection, the Advisory Council established as its first goal the need to “protect, maintain, restore, and enhance the natural habitats, populations, and ecological processes in the Sanctuary.” Consistent with the NMSA, the Advisory Council also recommended that a goal of the program be added to facilitate uses of the Sanctuary that are consistent with the primary objective of resource protection.

When developing the management plan, GRNMS initiated a public participation process to gather information from Sanctuary constituents and experts on marine species and habitat conservation and protection. The Sanctuary convened workshops in habitat conservation, species conservation, and enforcement to develop the foundation for this action plan. This action plan specifically addresses the goals and objectives developed by the Advisory Council and the issues identified through the public participation process.

This action plan is composed of six strategies, as summarized in Table 7.

**Table 7: Strategies and Cost for the Marine Resources Protection Action Plan.**

Marine Resources Protection Action Plan					
Implementation with NOAA Funding		Implementation with Anticipated Alternative Funding	Scenario 1: Level Funding	Scenario 2: 5% per year Increase	Scenario 3: 10% per year Increase
● - High ⊙ - Medium ○ - Low		◆ - High ◇ - Medium ◇ - Low			
●		Strategy MRP-1: Prevent damage to benthic habitats from anchoring	10	10	10
●		Strategy MRP-2: Prevent diver impacts on benthic habitat	10	10	10
●		Strategy MRP-3: Remove marine debris and prevent new debris from accumulating	15	15	15
●		Strategy MRP-4: Increase protection for fish and invertebrate species	10	10	10
●		Strategy MRP-5: Enhance enforcement efforts	145	155	165
●		Strategy MRP-6: Enhance coordination and cooperation with SAFMC, NOAA Fisheries Service, and GADNR on marine reserves and other regional programs	10	10	10
		Total	200	210	220

STRATEGY MRP-1:  
PREVENT DAMAGE TO BENTHIC HABITATS  
FROM ANCHORING

BACKGROUND

Anchor damage can pose a serious threat to Sanctuary marine resources as anchors and anchor chains can damage or destroy hard bottom and the marine organisms that are dependent on the substrate. Some visitors to GRNMS use anchors to secure their boats for fishing, diving, and research. Given the nature of hard substrate in GRNMS, it is difficult to secure anchorage unless anchors snag crevices or overhanging ledges. Boats also typically are anchoring over live bottom substrate since it is the habitat of interest for fishing and diving. As a result, anchor contact can physically damage or modify habitat by scraping, cracking, displacing, breaking, or removing substrate, or otherwise harming marine life attached to this substrate.

Anchoring may also have a negative effect on biodiversity as changes to the live-bottom composition can adversely affect either the habitat or the marine organisms of the reef. Bottom-dwelling invertebrates that inhabit the hard-bottom areas of the reef provide either food or shelter to many species of fish and other invertebrates upon which larger reef and pelagic species of fishes feed. Any negative impact to this “foundation” of the reef can be passed along the food chain to adversely affect the overall health of the reef.

Recognizing that even one misplaced anchor or swaying anchor chain can destroy or dislodge an array of delicate and slow-growing flora and fauna, anchoring impacts were considered during the 1981 GRNMS designation deliberations. NOAA concluded that the level of boating activity and anchoring at that time was a concern and therefore anchoring was included in the designation document as an activity that could be regulated in the future.



*Abandoned anchor at Gray's Reef*

During the scoping phase of this management plan review, participants voiced concern that continued anchoring was a significant issue. Many participants suggested anchoring restrictions as a way to minimize damage to the ledges and live bottom habitat.

NOAA's analysis of this issue (Section IV) has concluded that the preferred alternative will be to prohibit all non-emergency anchoring to protect reef habitat.

## ACTIVITIES

The following are GRNMS activities for the preferred anchoring regulatory alternative.

Activity A: Prohibit anchoring in GRNMS. GRNMS will enact a regulation to prohibit anchoring in the Sanctuary. In an emergency situation, boaters will be allowed to anchor or moor to existing boundary marker buoys. (See Section IV for the draft regulatory language).

Activity B: Establish an outreach program to support the anchoring prohibition. This outreach program will be prepared to coincide with the adoption of the prohibition on anchoring at GRNMS. Information on the change in regulations will be widely distributed to ensure that users are aware of the new regulation and the rationale behind it. A series of press releases about the rule change will be sent out to all media in the region prior to adoption. A series of radio messages will be produced to discuss ways of enjoying fishing and diving activities at GRNMS without the damaging effects of anchoring. These press releases and radio messages will be followed by the distribution of similarly messaged brochures. Distribution of brochures may include but not be limited to: marinas, boat ramps, on-water contacts, meetings with civic groups, fishing clubs, diving clubs, conservation groups, business groups, and others. Other materials such as posters and other products that display the “no anchoring” message will be developed as needed. Whenever possible, GRMNS will use its partnerships to get the information out to the public through such means as displays at exhibit sites, information tables at events, and other public venues.



## STRATEGY MRP-2: PREVENT DIVER IMPACTS ON BENTHIC HABITAT

### BACKGROUND

Weather, sea conditions, and diver proficiency tend to limit the number of people who dive at GRNMS. Recent surveys (GRNMS, unpublished data), however, show increases in visits for both fishing and diving in GRNMS since Sanctuary designation in 1981. Coastal population increases, new diving and navigation technologies, and the public's enhanced awareness of GRNMS as a diving destination may continue to increase diving activities and the probability of inadvertent damage or disturbance to reef communities.

Studies have shown the impacts of dive activities. In Harriott et al. (1997), divers in Australia were followed for 30 minutes and all direct contacts with the reef were recorded. Most divers damaged no coral while a small minority damaged between 10 and 15 corals each per 30-minute dive; flippers caused most damage. A similar study in the Florida Keys showed that "...divers with gloves have significantly higher numbers of interactions with corals than divers without gloves..." (Talge, 1990). Data also indicates that contacts may not change the percent of coral coverage but may change composition from slower growing, older species, to faster growing, "weedy," opportunistic species. Other evidence indicates that most diving contacts may be sustainable. However, in combination with other environmental stresses like poor water quality from sedimentation, improperly treated organic wastes, or nutrient pollution from terrestrial runoff, diving contacts can be part of a significant cumulative effect in reef communities.

While GRNMS, the Advisory Council, and others concluded that new regulations directed at dive activities were not appropriate at this time, a revision of regulations will clarify the intent to protect all marine resources, including those resources that might be damaged or taken by hand by divers. These regulatory changes, along with a comprehensive education and outreach program, are designed to minimize the possible effects of diver contact with the reef environment.

### ACTIVITIES

The following GRNMS activities address diver impacts.

Activity A: Revise GRNMS regulations to protect marine resources from diver impact. The allowable gear fishing regulation will help protect marine resources by prohibiting divers from taking by hand "any marine organism, or any part thereof living or dead."

Activity B: Establish a diver education and outreach program. During the scoping meetings, diver impacts were identified as an issue of concern for GRNMS, and the need for an education and outreach program was recognized. These programs will consist of printed materials and radio spots to increase public awareness, especially within the diving community, about the importance of good diving techniques, GRNMS regulations that guide diver activities, and marine animal interactions. The campaign will coordinate

with PADI's Project Aware and include information about the value of the reef, rules and regulations, and diver responsibilities. Materials will be distributed at dive shops and at public events and presentations.



*Student divers*

STRATEGY MRP-3:  
REMOVE MARINE DEBRIS FROM THE SANCTUARY  
AND PREVENT NEW DEBRIS FROM ACCUMULATING

BACKGROUND

Marine debris may be any object of wood, metal, glass, rubber, plastic, cloth, paper, or other artificial item that has been lost or discarded in the marine environment. Such material may have been intentionally or accidentally dumped within the Sanctuary, or indirectly deposited from areas outside the Sanctuary. Marine debris is a direct result of human activities on land and at sea. It can pose a serious threat: to marine wildlife by entanglement and ingestion of plastics; to navigation by obstructing propellers and clogging cooling intakes; and to the aesthetic qualities of the Sanctuary.

Use of GRNMS and surrounding areas has increased since the designation of the Sanctuary in 1981. There has been a substantial increase in human population over the past 22 years within the 27 coastal counties of the socioeconomic study area (Ehler and Leeworthy, 2002). As coastal populations rise and boating, fishing, and offshore shipping increases in the region, an increase in the volume of refuse materials entering the waters of the Sanctuary from coastal and offshore areas can be anticipated. Scientific divers are already noting, photographing, and removing, whenever possible, debris found in the Sanctuary. The degree to which debris on the reef comes from outside the Sanctuary is unknown, but causing more concern. The origins of the debris are difficult to determine, although heavy items like bottles or fishing lures tangled in the reef likely originated from vessels in the Sanctuary.

Under current regulations, the only materials that can be deposited inside the Sanctuary are fish parts, bait and chumming materials, effluent from marine sanitation devices, and vessel cooling water. Items that are deployed and subsequently retrieved the same day, such as fishing line and small marker buoys, are not considered “deposited” in the Sanctuary.

Current restrictions on depositing any materials in the Sanctuary are significantly stricter than the discharge regulations for ocean waters outside the Sanctuary. Around the Sanctuary boundary in the ocean zone from 12 to 25 miles offshore, international rules restrict only dumping of plastic and dunnage (lining and packing materials that float). Because there is increased concern about materials deposited outside GRNMS drifting into and damaging Sanctuary resources, regulatory authority will be clarified, but no regulations are anticipated at this time. The primary focus of GRNMS activities to address this issue will be through outreach, education and monitoring.



*Debris at Gray's Reef*

## ACTIVITIES

The following GRNMS activities address marine debris.

Activity A: Clarify regulatory authority to address materials discharged or deposited outside the Sanctuary. The revised GRNMS designation document will address the discharge or deposit of any material from outside the Sanctuary that subsequently enters and injures a Sanctuary resource or quality.

Activity B: Develop and implement a marine debris education and outreach program. Recognizing the need for an education and outreach program, GRNMS will focus on the value of maintaining a trash-free marine habitat, while emphasizing that it is up to users to keep GRNMS debris free. The program will consist of printed materials as appropriate, detailing the impact marine debris has on the marine environment and especially marine animals, such as loggerhead sea turtles. Materials will be distributed at marinas, and at public events and presentations. Messages directly relating to the issue will be incorporated into the GRNMS messages on commercial and public radio. Additional components of the program may include the establishment of annual reef cleanups with data collection.

Activity C: Develop and implement a debris assessment and monitoring study. A specific control area will be designated, cleaned to record the types and amounts of impacts and debris, and monitored. This effort will not only help identify the type of debris, but the resulting damage to the living and physical resources of the Sanctuary. Continued monitoring of debris will proceed in following years of the plan. GRNMS will also sponsor reef cleanup dives and record the types and locations of debris recovered.

STRATEGY MRP-4:  
INCREASE PROTECTION FOR FISH AND INVERTEBRATE SPECIES

## BACKGROUND

Based on current socioeconomic studies (Ehler and Leeworthy, 2002; Bird et al., 2001) and Sanctuary surveys (GRNMS, unpublished data) of visitor use, recreational fishing activities have increased significantly at the Sanctuary in the past 20 years. The data also indicates that the majority of users in GRNMS are fishing with rod and reel fishing gear. The trends in use are expected to continue as population increases along the Georgia coast, and the popularity of recreational fishing and diving grows. Increase in use, coupled with declines in fish populations, degradation of coastal habitats, and advancements in scientific and educational technologies require that the sanctuary management plan be reviewed and revised appropriately to reflect current conditions.

Throughout the process of reviewing and revising the GRNMS management plan, fishing activities generated the most interest and discussion. The abundance and diversity of the marine fish species at GRNMS are critical component of the Sanctuary ecosystem. Through analysis of the current conditions (see Section IV), GRNMS has identified the following activities as the preferred alternative to enhance conservation of the fish and invertebrate resources at the Sanctuary.

## ACTIVITIES

The following are GRNMS activities for the preferred fishing regulatory alternative.

Activity A: Revise Sanctuary regulations with approval of this plan to allow fishing only with rod and reel, handline, or spearfishing gear without powerheads. All other fishing gear will be prohibited in the Sanctuary unless the prohibited gear is stowed and not available for use (see Section IV for draft regulations).

Activity B: Establish an outreach program to support the allowable fishing gear regulation. This outreach program will be prepared to coincide with the adoption of the rule change at GRNMS. Information on the change in regulations will be widely distributed to ensure that the fishing public is aware of the new regulation and the rationale behind it. A series of press releases about the rule change will be sent out to all media in the region prior to adoption. A series of PSAs and radio messages will also be produced. These press releases, PSAs, and messages will be followed by the distribution of similarly messaged brochures. Distribution of brochures may include but not be limited to: marinas, boat ramps, on-water contacts, meetings with civic groups, fishing clubs, diving clubs, conservation groups, business groups, and others. Other materials such as posters and other products that display the fishing rule will be developed as needed. Whenever possible, GRMNS will use its partnerships to get the information out to the public through such means as displays at exhibit sites, information tables at events, and other public venues.

## STRATEGY MRP-5: ENHANCE ENFORCEMENT EFFORTS

### BACKGROUND

Sanctuary enforcement activities established under the existing management plan rely on support from the USCG for on-water and aerial patrols. During the scoping phase of the management plan review, participants encouraged additional enforcement patrol presence and monitoring in the Sanctuary. This issue expressed by the public, along with the increasing use of the Sanctuary, supports consideration of increased patrols on the water for outreach and enforcement purposes.

### ACTIVITIES

The following are GRNMS activities designed to enhance enforcement efforts at the Sanctuary.

Activity A: Enhance enforcement activities at the Sanctuary. Enforcement of Sanctuary regulations will be enhanced as an ongoing activity through the Joint Enforcement Agreement (JEA) between NOAA's Office for Law Enforcement (OLE) and the GADNR. GRNMS will seek additional support for enforcement through a supplement to the JEA adding more specific terms relating to Sanctuary enforcement. The Sanctuary, NOAA, and GADNR will develop an enforcement plan and patrol protocols, utilizing a database of use and user patterns to assess future enforcement needs. The enforcement plan will include regular briefings with NOAA's General Counsel for Enforcement and Litigation in order to better coordinate enforcement actions.

Activity B: Enhance remote sensing capabilities for monitoring of activity at GRNMS. The Sanctuary will continue to work with the U.S. Navy to install a radar system on an offshore tower for surveillance of GRNMS. The Sanctuary will work with the U.S. Navy to use this system to make a daily count of boats in the Sanctuary. GRNMS plans to support the procurement of equipment necessary to make this system available for Sanctuary use.

Activity C: Enhance database of use and user patterns. A database of use and user patterns has been compiled from aerial and on-water surveys (GRNMS, unpublished data). This quantitative and spatial data will continue to be enhanced from expanded USCG and Coast Guard Auxiliary support, increased GRNMS staff on-water surveys, and enhanced enforcement activities through the JEA.

Activity D: Expand patrol-related outreach efforts to users. During patrols, officers will continue to provide Sanctuary information directly to fishermen and divers at the Sanctuary. Materials will be distributed as appropriate. Additionally, communications will be increased with constituents and user groups at marinas and community events.

STRATEGY MRP-6:  
ENHANCE COORDINATION AND COOPERATION  
WITH SAFMC, NOAA FISHERIES SERVICE, AND GADNR  
ON MARINE RESERVES AND OTHER REGIONAL PROGRAMS

## BACKGROUND

With the initiation of the Sanctuary management plan review, GRNMS renewed its commitment to cooperate and coordinate with partner agencies. In 2001, a MOU was developed in order to improve communication and coordination among the SAFMC, NMSP, NOAA Fisheries Service Southeast Region, and GADNR (see Appendix IV). The MOU outlines particular shared goals related to public outreach, sharing of information, and consultations in key areas such as fishing regulations for GRNMS. In 2004, this MOU was reviewed by the parties and approved for another three-year period.

During the initial scoping phase of management plan review, a number of comments suggested that to improve conservation and fisheries protection, NOAA staff consider designating an area within the Sanctuary where some or all human uses will be restricted or prohibited, including a no-take marine reserve. After consideration of these comments and consultation with the Advisory Council, the Sanctuary decided that the marine reserve issue suggested for GRNMS will best be considered through the regional SAFMC process. Coordination through the MOU will help avoid duplication of effort, ensure that the issue of marine reserve status will be considered in the context of a regional network, and maximize the limited resources of both agencies.

GRNMS was initially considered by the SAFMC for evaluation under the SAFMC's process. However, the SAFMC subsequently decided to focus on deep-water habitat and further consideration of GRNMS will be deferred to a future phase of analysis through the SAFMC process. GRNMS will work with the SAFMC at the appropriate time in their ongoing deliberations to consider fishery marine protected areas in the Southeast and the use of GRNMS in a regional network of areas set aside as fishery MPAs to promote conservation.

The Sanctuary will also work with these partners on other projects in this region. For example, over the past three years, SAFMC has established and expanded advisory panels on habitat, coral, outreach, and fishery MPAs. GRNMS staff has been appointed to four of the panels. GRNMS also continues to work with NOAA Fisheries Service Southeast Region on such programs as protected species projects. The benefits of continued coordination and cooperation are significant.

## ACTIVITIES

The following are GRNMS activities designed to enhance cooperation and coordination with partner agencies.



Activity A: Participate in advisory panels of the SAFMC. GRNMS staff will continue to participate as appointed members of the Habitat and Environmental Protection, Coral, Information and Education, and MPA advisory panels. The marine reserve issue referenced above will be addressed through the MPA advisory panel and other SAFMC activities.

Activity B: Coordinate, cooperate, and support agency partners with appropriate Sanctuary resources. In addition to the resources necessary for participation in SAFMC advisory panels, staff will continue to actively track development of SAFMC and NOAA Fisheries Service conservation efforts for marine resources including threatened and endangered species such as the loggerhead sea turtle and the Northern right whale. Awareness of the impacts on these species from human activities (fishing, diving, and boating) will be built into GRNMS outreach and education programs.

Program staff contacts have been identified at GRNMS, NOAA Fisheries Service Southeast Region, and GADNR to better coordinate and cooperate on shared marine resource protection goals. In addition, staff has been involved in the Right Whale Implementation Team's education efforts, and is included in the marine mammal stranding response network. Sanctuary resources, such as bottom mapping technology, may also be dedicated to these partner agency efforts.



*North Atlantic right whale*



## RESEARCH AND MONITORING ACTION PLAN

### NATIONAL PRIORITIES

Another purpose and policy of the NMSA is to “support, promote, and coordinate scientific research on, and long-term monitoring of, the resources of these marine areas” (16 U.S.C. 1431(b)(5)). Fundamental to the mission of the NMSP is the development and consistent application of a rigorous, objective scientific foundation for evaluating ecosystem health and implementing effective and sustainable management of natural resources.

This type of investigative process should include delineation of biological community dynamics and links; evaluating the social, historical, and economic aspects of marine sanctuaries; and evaluating the effects of human activities on natural systems. Implementing a quality research and monitoring program to document trends improves resource management decisions and strategies

### GRNMS PRIORITIES

The goal of the Research and Monitoring Action Plan for GRNMS is to develop research and monitoring projects in the key areas as discussed above that will help GRNMS build a strong foundation of science on which to base sound and informed management decisions. This foundation will also allow GRNMS to identify gaps in knowledge about the resources, to better identify future research and monitoring needs, and to address increasingly complex resource management issues. This information will be used to develop new strategies to better protect Sanctuary resources, restore impaired ecosystem structure and functioning, and mitigate threats to ecosystem health. Where appropriate, GRNMS will adopt NMSP system-wide protocols for research and monitoring so that data from GRNMS can be used to characterize resource health and trends on a much broader regional and national basis.

In November 2000, the Advisory Council met to propose site-specific goals and objectives to guide development of the revised management plan and its implementation. In reinforcing the national goal for research and monitoring, the Advisory Council urged GRNMS to emphasize collaboration with other organizations through partnerships and development of innovative approaches for addressing management issues through research and monitoring.

Given that the only allowable extractable activity in Gray's Reef is fishing, a major effort of the research and monitoring outlined in this management plan will focus on understanding the impacts and implications that these activities have on natural resources. More research has been conducted at GRNMS than any other offshore area in the South Atlantic Bight. While the reef fish resources have been monitored closely since 1993, a more focused effort to understand better the specific impacts that result from fishing is needed. Understanding how extractable activities affect the resources of the sanctuary is

key to the development of effective management strategies and ties directly into the sanctuary goals and objectives outlined previously in this document.

Coupling the national science plan framework of resource assessment and resource monitoring and research with direction from the Advisory Council to develop innovative programs through partnerships, GRNMS initiated the public participation process to gather information from Sanctuary constituents and experts in marine research and monitoring for this action plan. The Sanctuary convened workshops in habitat conservation, species conservation, and research and monitoring, and also used information from the public meetings to help develop the foundation for this action plan. This action plan is composed of four strategies, as shown in Table 8.

**Table 8: Strategies and Cost for the Research and Monitoring Action Plan**

Research and Monitoring Action Plan					
Implementation with NOAA Funding		Implementation with Anticipated Alternative Funding	Scenario 1: Level Funding	Scenario 2: 5% per year Increase	Scenario 3: 10% per year Increase
● - High ⊙ - Medium ○ - Low		◆ - High ◇ - Medium ◇ - Low			
○		Strategy RM-1: Investigate ecosystem processes	40	40	40
⊙	◆	Strategy RM-2: Investigate designation of a marine research area	10	10	10
⊙	◆	Strategy RM-3: Assess and characterize sanctuary resources	50	50	50
●		Strategy RM-4: Maintain and enhance monitoring programs	200	215	230
		Total	300	315	330



*Research Vessel Joe Ferguson*

## STRATEGY RM-1: INVESTIGATE ECOSYSTEM PROCESSES

### BACKGROUND

Effective stewardship of GRNMS requires an adequate understanding of the processes, species, or relationships that are most critical for sustaining ecosystem function.

As with the protection of any natural resource, information on the status and natural variability of resource components, species, and systems is essential for the informed management of an area as extensive as GRNMS. In order to adequately assess changes in key resources that occur naturally from that which is caused by human influence and to further determine how those changes might affect other components of the ecosystem, a baseline set of criteria must be established and monitored over subsequent years. Once this data has been gathered and analyzed, scientists and managers can determine more precisely what variability is naturally inherent in the system and what changes may be the result of anthropogenic influence. With a better understanding of those factors which influence ecosystem health and function, managers can better protect the resource and respond rapidly and appropriately to natural or artificial catastrophic events.

Marine ecosystems are critically dependent on a few key processes (such as the flow of energy from one organism to another) and/or species. Natural or human activities that remove a species in large quantities or significantly alter a natural process can alter the function of an entire marine ecosystem. Fishing practices, for example, can remove the top predators in a marine system, which has the potential to strongly affect the organization and function of that entire system.

### ACTIVITIES

The following are activities designed to investigate ecosystem processes.

Activity A: Characterize trophic dynamics. A summary of existing literature (either in published or unpublished works) will be developed to connect some of the key processes and species related to ecosystem dynamics of areas such as GRNMS before investigative processes can be conducted. Summarizing available literature is a cost-effective method to obtain needed information and will additionally prevent overlaps in research. This body of work will investigate and consolidate previously produced scientific information regarding: life history; habitat use patterns of ecologically and economically important species; trophic and energetic transfer information; feeding habits; species composition; stock abundance; migratory behavior; and essential habitat.

Activity B: Develop trophic model of the Sanctuary. After the current literature has been summarized, a trophic model of GRNMS should be constructed from existing modeling software (e.g., EcoPath). The model of the community will help address management plans for both GRNMS and the larger regional marine ecosystem. This project may be accomplished by: assembling a working group of the Advisory Council composed of

ecosystem modelers, field scientists, and managers to define parameters and purposes of the model and monitor its development and application; and by seeking the advice of university researchers to develop a preliminary trophic model based on existing understandings of food web relationships and energy flow patterns in the SAB.

The products of this project will be used to make predictions on how species populations use GRNMS by habitat, including seasonal and life history patterns; to construct mass balance models of GRNMS ecosystem dynamics to assess sources and fates of individuals, nutrients, and energy in the ecosystem; to make and test model predictions of disturbance on populations, energy, and energy flow; and to conduct model validation within GRNMS and similar habitats within the southeastern coastal U.S.

Activity C: Investigate invertebrate recruitment dynamics. GRNMS has little data that can be used to determine initial invertebrate recruitment and succession over time nor does it have the data necessary to determine how long it will take to recover from a natural or man-made catastrophe. Information on invertebrate recruitment will help GRNMS adequately and appropriately respond to such episodes. By conducting plot clearings on similar reef habitat outside the Sanctuary, GRNMS will be able to determine how long it takes to colonize and establish the substrate and what organisms recruit first. The data gathered from the recruitment plots can then be compared to adjacent and undisturbed plots to gather information on which benthic invertebrates represent the competitive dominants and successional organisms. As an example, this type of information can be crucial in responding to catastrophic events because competitively dominant organisms will be the most logical to transplant into an area that has been damaged. Having this type of information will provide the knowledge needed in order to respond rapidly and appropriately to events that threaten the natural resources.



*Ledge at Gray's Reef*

STRATEGY RM-2:  
INVESTIGATE DESIGNATION OF A MARINE RESEARCH AREA

BACKGROUND

During the initial scoping phase of management plan review, a number of comments suggested that NOAA staff consider designating a research area within the Sanctuary. This recommendation is considered separate and distinct from the comments submitted advocating marine reserve status for the Sanctuary referred to in MRP-6 of the Marine Resources Protection Action Plan. The marine reserve recommendation was put forward primarily to address fisheries sustainability. The marine research area concept has been proposed to improve the value of the Sanctuary for scientific research purposes, as a control site. There are currently no natural live bottom areas in the SAB that have been set aside for use as a scientific control area. However, further south in the Florida Keys National Marine Sanctuary, 24 areas have been designated as Sanctuary Preservation Areas, Special Use Areas, or Ecological Reserves, which restrict activity to non-extractive uses. These areas have shown tremendous value as control sites to monitor a variety of parameters such as reef fish populations and diversity, habitat productivity, and socioeconomic impacts (U.S. Department of Commerce, Florida Keys National Marine Sanctuary).

An area that is available primarily for research in the Sanctuary will provide scientists with a control area useful for the comparison of natural processes with human-induced change at GRNMS. Some scientists have suggested that even a small portion of the 11,000-acre Sanctuary delineated as a research area will be very useful to the science community to learn about living resource population changes compared with similar sites in the Sanctuary and very well may provide data that is useful in fisheries management throughout the region. Many scientists, however, agree that without having an area of the naturally occurring live bottom devoted to research, it becomes very difficult to scientifically contrast community structure between reefs that are used frequently for recreational and commercial purposes and those that receive relatively less impact.

Having an area that is closed to extractable activity could allow scientists to determine differences in local population size and structure between fished and non-fished areas for those fishes which remain resident in GRNMS for all or most of the year. Additionally, information could be collected with regard to the impact that extractable activities have on the habitat and non-fished living marine resources contained in GRNMS.

After consideration of the public comments on the DMP/DEIS and the factors discussed above, the Advisory Council recommended that the Sanctuary establish a working group to advise the Advisory Council on the development of this concept. The Advisory Council, with the concurrence of the Sanctuary, established the Marine Research Area Working Group (RAWG), which met from May 2004 until March 2005. The Working Group was comprised of representatives from education, fishing, diving, research and conservation; law enforcement and other regional, private, state, and federal

organizations. The recommendations of Working Group to the Advisory Council are included below verbatim:

#### Recommendation 1

Significant research questions exist at Gray's Reef National Marine Sanctuary that can only be addressed by establishing a control (research) area. Therefore, it is the finding of this working group of the Sanctuary Advisory Council to NOAA that the research area concept should be further explored through a public review process.

#### Recommendation 2

The Working Group recommends that a GIS-based site evaluation tool, very much like the one developed by Matt Kendall, be used, with proper siting criteria, if a research area is to be established within the boundaries of Gray's Reef National Marine Sanctuary. Further, it is recommended that the inclusion of high relief habitat be the primary criterion for siting and that certain previous research areas (e.g., the ongoing monitoring station) be included in any area designated as a secondary consideration.

#### Recommendation 3

Minimizing impact on fisherman should be a priority, with the use of non-bottom impinging trolling gear being allowed within a research area. It will be necessary to gather data from bottom-fishermen on where they fish and it is recommended that the impact to these fishermen be minimized to the extent practicable.

The Advisory Council deliberated on the Working Group's recommendations at its June 2005 meeting and made its recommendations to the Sanctuary. Recommendations below are verbatim:

#### Recommendation 1

Significant research questions exist at Gray's Reef National Marine Sanctuary that can only be addressed by establishing a control (research) area. Therefore, it is the finding of the Sanctuary Advisory Council based on the recommendation of the Marine Research Area Working Group to NOAA that the research area concept should be further explored through a public review process.

#### Recommendation 2

The SAC recommends that as many appropriate tools as feasible, especially the GIS-based site evaluation tool and the RAWG, be used to investigate a research area in GRNMS with proper siting criteria.

#### Recommendation 3

The SAC recommends consideration of the diversity of habitat (with emphasis on high relief habitat) as the primary siting criterion. Should NOAA decide to proceed, the RAWG should be maintained to support NOAA in consideration of these various criteria (e.g., habitat, size, existing research and monitoring sites, bottom fishing data) in developing proposed options for a DSEIS.



#### Recommendation 4

The SAC recommends minimizing impacts to user communities including fishing, diving, research, and resource management and considers this a priority under the research area concept. The SAC also endorses the RAWG finding that non-bottom impinging activities are not viewed as conflicting with the primary objectives of a proposed research area.

NOAA GRNMS has accepted the recommendations of the Advisory Council and made a decision to more formally consider the concept of a research area in the sanctuary through a public process guided by requirements of NEPA and the NMSA.

#### ACTIVITIES

The following are activities designed to further investigate the concept of a marine research area through a public process.

Activity A: Conduct a decision-making process. The next steps in this strategy will be conducted separate from this management plan in accordance with the provisions of NEPA and the NMSA.



*Oyster toadfish on sand Gray's Reef*

STRATEGY RM-3:  
ASSESS AND CHARACTERIZE SANCTUARY RESOURCES

## BACKGROUND

Enhanced resource assessment and characterization of GRNMS is needed to better understand associations between and among biological, physical, and geological components of the habitat. Detailed habitat surveys will augment scientific understanding of physical and ecological interactions and interdependencies in GRNMS as well as facilitate an understanding and assessment of use and users at the Sanctuary. A thorough characterization will further enable scientists and managers to assess changes in the distribution of resources and to track these changes over time.

In 2001, NOAA completed side-scan imaging and multibeam bathymetry of the entire Sanctuary, which will serve as the foundation for the Sanctuary geographic information system (GIS) database. Within this database, geo-referenced tracking of all future projects and investigations will occur. The data resulting from the seafloor imaging will enable GRNMS to identify and pinpoint key physical features and to further characterize these areas by ground-truth imaging using diving and remote cameras. Information gathered in this manner, and coupled with habitat modeling techniques, will enable GRNMS to characterize and map all the key habitat types and locations as well as monitor their distribution through time. Tying all characterization information together in a synthesized document will provide a baseline characterization from which to compare changes and will also serve as a resource to regional scientists and managers.

## ACTIVITIES

The following GRNMS activities are designed to assess and characterize Sanctuary resources.

Activity A: Develop and update the GIS database. GRNMS will continue to use the existing data from recent side-scan and multibeam imaging as the foundation for a new geo-referenced database. Data from biological and socioeconomic investigations and surveys will be added to the GIS database. The GIS database will provide easy access to comprehensive Sanctuary-wide, ocean-related data and information that will enhance local and regional integrated approaches to coastal and ocean resource management. The on-site and web-based product will be used for tracking events and projects through time to provide an overview of what has been done and where the impacts/investigations have occurred. The information can also be incorporated into larger regional GIS storehouses.

Activity B: Characterize benthic habitat. This work is ongoing and will largely draw on data that has already been collected and will be augmented with ground-truthing techniques. Modeling parameters will produce an inventory of habitat types and their distribution in the Sanctuary. In addition to mapping the habitat types, GRNMS will be able to couple this information with what is known of habitat/species associations to produce mosaics that provide indications of areas that may require further protection or



investigation. The primary products of this effort will be geo-referenced benthic habitat maps (in a GIS) and mosaics.

Several joint projects have been initiated to conduct reef fish ecological studies in an effort to map benthic habitats, describe the status and trends of coral reef fish abundance and distribution in U.S. waters, and identify and document essential fish habitat. The research effort has been designed to provide managers and scientists with an evaluation of essential habitat through robust statistical analysis of resource distribution, abundance, and ecological function. Accurate habitat maps are necessary for resource managers to make informed decisions about the protection and use of these areas.

*Diver and jelly at Gray's Reef*

Activity C: Develop an invertebrate identification guide. GRNMS will develop a guide to invertebrates of the Sanctuary, which will serve as both a scientific and recreational identification tool with information on species life history, abundance, and distribution throughout the region. The guide will be a living document, to which GRNMS can add information over time; it will help to bridge the gap between what is known about the importance



of the benthic community and what parameters should be monitored to ensure community health. The guide will include information on the more conspicuous species and include information on benthic infauna. In addition, GRNMS will be able to compare the current presence/absence of species with those species that were originally collected on the hard bottom reefs of Georgia. GRNMS will produce the guide by partnering with regional academic institutions and other NOAA facilities. The guide will be available both in hard copy and will be web-based for ease of access.

Activity D: Develop the Sanctuary characterization. A Sanctuary characterization study will be initiated to incorporate existing data into a single comprehensive volume. This volume will serve as a compilation of existing characterization data from GRNMS and as a resource from which regional scientists and managers can draw needed information. The volume will be provided in hard copy format and will be web-based for ease of access by others.

STRATEGY RM-4:  
MAINTAIN AND ENHANCE MONITORING PROGRAMS

## BACKGROUND

Information on the status and natural variability of resource components, species, and systems is essential for the informed management of an area as extensive as GRNMS. In order to adequately assess the naturally occurring changes in an ecosystem and further determine how those changes will affect other components of the resources, a baseline set of criteria must be determined and followed over time. Once this data has been gathered and analyzed, scientists and managers can determine more precisely what variability is inherent in the system and what changes may be the result of anthropogenic influence. With a better understanding of the factors that influence ecosystem health and function, managers can better protect the resource and respond rapidly and appropriately to catastrophic events.

Because extractable activities may affect sanctuary resources, a primary focus of research outlined in this management plan will attempt to determine whether or not these actions have negative short or long term impacts to either specific species or to the reef ecosystem as a whole. Removal of key species in an ecosystem can have a cascading effect on either the species which they prey upon or on species which depend upon them for food thereby forcing predation upon species which may not normally be consumed. These cascading effects can further result in impacts to invertebrate species, which if left unchecked, could lead to further unbalance in the ecosystem of Gray's Reef. In addition, targeted removal of selected species which breed locally may have a significant impact on future generations which might otherwise replenish resident breeding stocks, the long term effects of which may not be realized for years to come. Monitoring efforts will be initiated in this plan which will attempt to couple the effects of extractable activity on the resources contained within Gray's Reef.

## ACTIVITIES

The following GRNMS activities are designed to maintain and enhance monitoring programs.

Activity A: Monitor the status and health of fish. Ongoing analysis of data from the fish census monitoring efforts indicates that the fish community structure in GRNMS is highly variable with noticeable changes both seasonally and interannually. Because of this variability, the current census techniques make it difficult to detect the changes resulting from anthropogenic or natural causes. Owing to the unique nature of the dynamic ecosystem, GRNMS will initiate a study to develop a census methodology that, when coupled with appropriate modeling efforts, will allow for improved detection of changes and determination of impacts that extractable activities may have on the ecosystem generally and reef fish populations specifically. This improved level of detection and discrimination will enable management to develop appropriate responses to ensure adequate long-term protection of both the habitat and the species which rely upon

it. Identifying and partnering with appropriate government and academic institutions will enable GRNMS to:

- Determine spatial and temporal dynamics of fish communities;
- Develop and initiate new or enhanced monitoring protocols;
- Couple the effects of extractable activities with responses in targeted species composition and size structure;
- Assess the cascading effects that may be caused by extraction of key species;
- Develop and use an appropriate model in concert with identified monitoring data to define the ecosystem at GRNMS;
- Assist with management decisions;
- Compare data with representative regional sites outside GRNMS.



*Cubbyu at Gray's Reef*

Activity B: Design and implement an invertebrate monitoring program. Invertebrates of GRNMS are the most diverse, abundant, and conspicuous members of the fauna present on the hard bottom structure of the Sanctuary. While GRNMS has attempted to monitor the abundance, density, and presence/absence over time, these attempts have not yielded consistent and appropriate types of data to accurately detect changes that might be occurring. In light of this problem, GRNMS will continue to work with partners to design and implement a more effective strategy to detect changes on both short and long time scales. The products of this initiative will include information to understand ecosystem dynamics, recruitment, mortality, and invertebrate characterization, and to develop an invertebrate identification guide and species inventory.

Activity C: Develop a comprehensive water quality monitoring program. Because of the increase in coastal development and associated resource use, there is increasing concern over the quality of water that enters the Sanctuary from coastal and inland sources.

Although water quality testing has occurred, GRNMS does not currently have a comprehensive water quality monitoring program. GRNMS is one of the lead organizations in the Georgia Coastal Analysis Partnership (GCAP) with regional state, federal, and academic institutions. GCAP partners are developing a strategy that will monitor water quality parameters from inland sources to offshore sites such as GRNMS. The implementation of such a GRNMS water quality program will be initiated to help GRNMS to better understand the source and fates of contaminants and pollutants that might have long lasting effects on the living and physical resources of the Sanctuary.

Activity D: Develop and implement a sediment analysis and monitoring program. Observations in the Sanctuary and at other live bottom areas in the SAB document that significant movement of sand occurs along the ocean bottom on a seasonal basis. This movement of sand alternately covers and exposes rock outcroppings that may in turn affect such parameters as community structure, ecological succession, biological productivity, and erosion of the physical structure that supports the attached fauna. A better understanding of sediment dynamics will enable GRNMS to determine how natural processes affect the structure and function of biological systems. The analysis and monitoring program is expected to be in place by year three. The objectives should include determining aspects of potential sources and the transport, erosion, and deposition rates of sedimentary materials and indications of how these factors may impact biological structure and function.

Activity E: Support and enhance regional ocean observation systems. Although advancements have been made in the monitoring of surface weather and sea conditions through the addition of a National Data Buoy Center station, GRNMS doesn't currently have the ability to monitor physical parameters at the sea floor. The types of parameters that should be monitored include: temperature, conductivity, fluorescence, radiation, and current movements. With the addition of sensors to measure these parameters, GRNMS will provide data that will conform to regional ocean observing systems in development in the Southeast. It will also help the Sanctuary understand the effects of small-scale events at GRNMS.



*Data buoy at Gray's Reef*

GRNMS will monitor the additional oceanographic parameters in coordination with NOAA's National Data Buoy Center. GRNMS will work with regional ocean observing programs (e.g. Southeast Atlantic Coastal Ocean Observing System [SEACOOS]) and regional associations (e.g. Southeast Coastal Ocean Observations Regional Association [SECOORA]) to ensure that Sanctuary data can be extrapolated into a larger understanding of local and regional transport patterns and processes that are important to biological recruitment events, cross shelf transport, and oceanographic events.

Activity F: Expand and update socioeconomic assessment. GRNMS will further assess socioeconomic trends in coastal area population growth, development and use, and project how these changes might impact resource use in the Sanctuary. This investigation, starting with a user survey, will identify, summarize, and characterize existing uses, such as rod and reel fishing and diving, and project future trends based on a variety of socioeconomic factors. Since fishing is the only allowable extractive use of resources within the Sanctuary, focused assessments will be conducted utilizing on-water and telephone surveys to identify the level of effort and catch type and quantity (including catch and release). Pelagic fishing and bottom fishing effort will be investigated. In particular, information on effort and catch for spearfishing in GRNMS will be gathered over the next two years. These types of assessments will help GRNMS predict, plan, and design appropriate management strategies for situations that could have a significant impact on GRNMS, Georgia, and adjacent coastal area resources.

Activity G: Synthesize and characterize paleo-environmental information. Research conducted by the University of Georgia and NOAA at GRNMS and adjacent areas has demonstrated the wealth of paleontological and archaeological resources found at the site. Some of the best preserved remains of extinct faunal and floral communities have been found at GRNMS. These remains have been the subject of a continuing study using both university and governmental agency resources. The research has added to the national and international scientific and public understanding of the richness and diversity of these historical and paleontological resources together with the other resources protected by the original creation of the Sanctuary. The products of these studies, expected by year four include:

- Museum-quality exhibits, including casts of original materials, both temporary/traveling and permanent, such as that now at Fernbank Museum of Natural History, Atlanta;
- Presentations given at national and international scientific societies such as the Ecological Society of America, the Geological Society of America, the Society for American Archaeology;
- Reports and articles in peer-reviewed scientific journals as well as articles written for the lay audience. By these means, the knowledge of these important finds is disseminated and recognized by the larger audiences of scientists and the general public;
- Pedagogical items, for use in K-12 instruction, to include workbooks, DVD's/CD's, and other items appropriate to instruction in both general science and specialized courses in environment and ecology.

This information will help GRNMS understand how current physical reef features may have been of terrestrial importance in the past.

## EDUCATION AND OUTREACH ACTION PLAN

### NATIONAL PRIORITIES

The GRNMS' Education and Outreach Action Plan addresses the findings, purposes, and policies of the NMSA "to enhance public awareness, understanding, appreciation, and wise and sustainable use of the marine environment, and the natural, historical, cultural, and archaeological resources" of the National Marine Sanctuaries (16 U.S.C. 1431(b)(4)). The NMSP's Education Mission is "to promote public understanding of our national marine sanctuaries and to empower citizens with the necessary knowledge to make informed decisions that lead to the responsible stewardship of aquatic ecosystems." The vision of the NMSP is that "people value marine sanctuaries as treasured places protected for future generation." The eight goals of the NMSP's Education Plan support this vision and mission. GRNMS' action plan addresses the national mission and vision and supports the goals through various activities.

### GRNMS PRIORITIES

Since the Sanctuary's designation in 1981, the education program has been the main source of interaction with the public. While traditional classroom programs on resource value and stewardship have been the major thrust of the program, Sanctuary regulations and policies have been promoted to the public through outreach and educational programs as well as through printed materials and various aural and visual media presentations.

In December 2000, the Advisory Council met to propose site-specific goals and objectives to guide development of the revised management plan and its implementation. The Advisory Council urged the Sanctuary to achieve the purposes and policies of the NMSA described above. The Advisory Council also encouraged the Sanctuary to continue successful existing programs, to create others where gaps in public resource awareness and understanding exist, and to collaborate with other educational, minority, and public outreach entities to further promote the goals of GRNMS. While reviewing the various components of the management plan, GRNMS initiated public participation to gather recommendations from Sanctuary constituents and experts. The Sanctuary convened workshops to develop the foundation for this action plan.

The overarching issue to be addressed by the Education and Outreach Action Plan is the need for increased public awareness, understanding, appreciation, and wise use of GRNMS. By developing and producing educational modules that included teachers' manuals, posters, brochures, and videos, GRNMS educators have contributed to the store of classroom materials about oceans and reefs. Outreach to the general public and decision-makers, while an important component of the education plan, has been emphasized to a lesser extent. While education modules for the traditional classroom will continue to be a part of the education plan, more emphasis will be placed on outreach to the public. This action plan consists of several strategies designed to broaden the scope of public involvement and awareness at various levels. The action plan also seeks to provide



the public with information with improved stewardship of GRNMS and ocean resources in general.

The programs described below focus on providing better information to the public about GRNMS. Several existing programs will be strengthened and others will be initiated to support improved public awareness. This action plan is composed of five strategies, as summarized in Table 9.

**Table 9: Strategies and Cost for the Education and Outreach Action Plan**

Education and Outreach Action Plan					
Implementation with NOAA Funding		Implementation with Anticipated Alternative Funding	Scenario 1: Level Funding	Scenario 2: 5% per year Increase	Scenario 3: 10% per year Increase
● - High		◆ - High			
⊙ - Medium		◈ - Medium			
○ - Low		◇ - Low			
●		Strategy EO-1: Conduct public awareness programs	100	110	120
⊙	◆	Strategy EO-2: Create and provide scholastic programs in ocean science education	60	60	60
⊙	*	Strategy EO-3: Maintain existing and develop new sanctuary exhibits	*	*	*
⊙	◈	Strategy EO-4: Increase outreach to minority communities	30	30	30
○	◈	Strategy EO-5: Develop volunteer programs to support GRNMS	10	10	10
		Total	200	210	220

*\*Exhibit development is supported through construction funds appropriation.*



*Students at sea*

## STRATEGY EO-1: CONDUCT PUBLIC AWARENESS PROGRAMS

### BACKGROUND

At the time of the public scoping meetings, it became clear that general knowledge about the Sanctuary and its programs was limited to certain groups. While recreational and commercial fishing communities were well represented in those meetings, the diving community and other interest groups were not as active. Despite a historic relationship to the marine environment and marine resources, many of the residents of coastal Georgia do not seem to be aware of GRNMS and the important habitat it contains. The challenge is to increase public awareness of GRNMS as a national treasure and a local natural resource to broader segments of the public. A campaign to use various methods to increase public awareness follows.

### ACTIVITIES

The following GRNMS activities are designed to increase public awareness.

Activity A: Conduct surveys of public perceptions. Many programs are developed and implemented without an assessment component to gauge their effectiveness. In many cases an assessment component is not feasible for each initiative. A survey of public perceptions among private boaters will be conducted to develop a baseline indicator of their knowledge of the Sanctuary, its programs, and related coastal ocean issues. Later, a survey will be conducted among a broader segment of the general public to develop a baseline indicator of their knowledge of the Sanctuary, its programs and related ocean issues. These surveys will be conducted in concert with the socioeconomic assessment surveys to elucidate usage of GRNMS. By conducting the surveys coincidentally, the time burden on the public will be minimized and GRNMS resources will be most efficiently utilized. Results of surveys conducted periodically will be used to develop and improve a communications strategy, and to evaluate the effectiveness of public education and outreach programs.

Activity B: Develop a communications program to raise public and media awareness of GRNMS, its programs, and its protected environment. Sanctuary staff will develop a comprehensive communications program to raise the level of awareness about GRNMS nationally and regionally. Print, television, Internet, and radio are all valuable media to enhance public awareness of the Sanctuary. GRNMS will continue to create radio messages for commercial radio to support ocean stewardship and the Sanctuary programs. A radio message is broadcast each month that focuses on a different perspective of the Sanctuary from fishing and diving interests, academic, and exploration interests to education and conservation perspectives. The written word is equally powerful and has applications where television and radio are not appropriate. Sanctuary staff will continue to develop written materials such as newsletters, e-newsletters, stand-alone magazine articles, brochures, pamphlets, and posters to inform stakeholders about the Sanctuary, its programs, and its value as a natural resource both to the region and the



nation. A campaign of regular press releases will be used to raise awareness about the Sanctuary among regional and statewide media, regional and statewide decision makers, and the general public.

Activity C: Develop and maintain wayside signage stations. Most Sanctuary visitors are anglers who gain access via public boat ramps and marinas along the Georgia coast and to lesser extents along the northeastern Florida coast and southern South Carolina coast. Currently, there is very little information about Sanctuary resources and its rules available at marinas and boat ramps. To provide boaters traveling to the Sanctuary with the most current information about conditions and resources at GRNMS, a series of wayside permanent signage stations will be developed.

Activity D: Continue to sponsor GRNMS Festival. The GRNMS Festival is an annual sanctuary and ocean celebration for the general public. The festival has included OceanFest a celebration of ocean science and technology held on Savannah's historic riverfront. The event often coincides with tours of a research ship from NOAA or other agencies and institutions that are docked at the riverfront in downtown Savannah, Georgia. Exhibits and demonstrations from various ocean science related organizations and institutions in the region are displayed in the riverfront park. The annual celebration has also been focused on an ocean film festival.

Activity E: Maintain and enhance public awareness partnerships. By working with several organizations, foundations, and institutions in the coastal area, the awareness level of the general public about ocean stewardship and GRNMS is increased. Each year, GRNMS staff participates in events such as the GADNR's CoastFest, Earth Day, SKIO's CoastWeeks celebration, and several other events during the year. Staff also give numerous presentations to civic and non-profit organizations throughout the year to increase public awareness. The Sanctuary's volunteer program will be instrumental in supporting these opportunities.

GRNMS staff serve on committees, panels, boards, and groups to help boost public awareness of GRNMS and issues that are relevant to the work done through NOAA and GRNMS. At present these partners include: Georgia Coastal Education Group, Tybee Island Marine Science Center, Southeastern Center for Ocean Science Excellence Education, and national and state science teachers associations. GRNMS will enter into collaborations with other entities as they are identified.

STRATEGY EO-2:  
CREATE AND PROVIDE SCHOLASTIC PROGRAMS  
IN OCEAN SCIENCE EDUCATION

BACKGROUND

Educational objectives relating to ocean science are sparsely integrated throughout the general curricula of traditional kindergarten through 12th grade academic levels. College level teacher education departments also devote little attention to oceanography for science education. Few programs directly address the importance, health, and need for conservation of our planet's largest resource, our oceans. To support needed programming in the traditional education system, GRNMS will continue to provide and create programs in ocean science education in the Southeast. Several programs and projects are ongoing while others are planned for development over the next five years. The programs listed below were developed at the GRNMS Education and Outreach workshop and through staff analysis.

ACTIVITIES

The following are GRNMS scholastic activities.

Activity A: Continue to sponsor GRNMS Student Ocean Council. GRNMS Student Ocean Council is an educational outreach initiative that is offered to local high school students interested in ocean science. Programs vary depending on what is current and relevant to the students' interests. Participants learn about current research, track NOAA missions of exploration and research, and take on some data collecting projects.



Activities can include fossil hunting, net trawling, dissecting fish and squid, seining, hiking a barrier island, beach community sampling, water quality monitoring, and marsh studies to name a few. Students are encouraged to ask questions while interacting with collaborating professionals. Prior to each scheduled program, information is prepared by GRNMS and sent to participants. The Student Ocean Council gives students interested in marine science broad exposure to data collecting, career opportunities, and marine conservation issues with a focus on GRNMS and its partnerships with other agencies, universities, and the private sector.

*Student at sea*

Activity B: Continue to conduct Distance Learning Programs. Sanctuary and ocean science related subjects are taught via distance learning television throughout the state of

Georgia with capabilities to reach the entire nation and even other countries. These programs offer instruction about GRNMS in particular, coral reefs in general, the NMSP, Northern right whales, Florida manatees, various dolphins, watersheds, and in particular the Altamaha River Watershed that may directly influence GRNMS. These programs are taught with the aid of video footage, slides, preserved specimens, websites, recordings, and documents that are easily shown to the students through the interactive live broadcast technology of the Georgia Distance Learning Network. The greatest benefit to the classes from different areas of the state and other parts of the country is the ability to interact with the presenter on the coast in real time.

Activity C: Develop Gray's Reef Ocean Science Course. Some science objectives for Georgia public schools are devoted to ocean science; however, there are few programs or education modules that help the classroom teacher address these objectives. By year two, Sanctuary staff, in partnership with teachers, will develop an education module and implementation plan addressing the use of oceanography, and specifically GRNMS, to teach science objectives in the various content areas. These modules may consist of a short video segment for each objective with one companion teacher's manual. The module will use GRNMS as a real world example of how many of these oceanographic principles are evident in the Sanctuary. The manual will provide the teacher with information, suggested activities, and materials to meet those objectives.

Activity D: Continue to coordinate with and participate in teacher workshops. Many teachers in the local area and across the state are unfamiliar with programs, resources, and materials available in ocean science. GRNMS staff, in partnership with other coastal area and state institutions, will continue to introduce teachers to and familiarize them with available programs, materials, and resources through workshops that provide education credits to the participants. It will also provide a mechanism for the teachers to identify any deficiencies and needs for materials, programs, and resources. Among the partnerships, GRNMS staff will continue to collaborate with the University of Georgia Marine Education Center and Aquarium to conduct a workshop for local teachers that may include a trip to GRNMS aboard a research vessel. The cruise will be used to show teachers the reef through the use of ROV and video taken by divers. Participants will also collect data sets that monitor water quality, turbidity, conductivity, salinity, temperature, and depth. GRNMS also hopes to collaborate with partner agencies, organizations, and universities in a coastal, near shore, and offshore water workshop.

STRATEGY EO-3:  
MAINTAIN EXISTING AND DEVELOP  
NEW SANCTUARY EXHIBITS

## BACKGROUND

Through partnerships with visitor and educational centers, aquariums, and museums, GRNMS will continue to increase its public outreach campaign. With additional effort and funds, exhibit expansion can further improve and increase public awareness of the Sanctuary and its role in coastal and ocean conservation by taking advantage of already established audiences of partners in the southeastern region especially those in inland communities.

## ACTIVITIES

The following are GRNMS activities designed to maintain existing and develop new Sanctuary exhibits.

Activity A: Renovate existing displays and develop new exhibits over five years.

Presently GRNMS is working in partnership with aquariums, museums, and educational institutions to provide interpretive exhibits. The collaborating organizations and GRNMS work to revise and upgrade exhibits with technology and other enhancements to depict and interpret a variety of marine organisms and habitats featuring those of GRNMS. All costs are dependent upon allocations from construction funding. To maximize public outreach, new partners will be brought into the plan as they are identified and a program developed. The present partnerships include:

- Fernbank Museum of Natural History in Atlanta, Georgia is a well-respected museum of natural history and technology that serves the population of greater metropolitan Atlanta and the southeast region. Efforts will be focused on enhancements to the newly renovated diorama and GRNMS aquarium.
- South Carolina Aquarium in Charleston, South Carolina completed in 2000 is a popular tourist attraction and educational facility for the southeastern region. The overall theme of the South Carolina Aquarium is Mountains to the Sea. Efforts will be made to renovate and expand a reef exhibit aquarium and to make it GRNMS-focused.
- Sapelo Island Visitor Center is the public outreach facility for Sapelo Island National Estuarine Research Reserve (SINERR), which is a sister program to the GRNMS. A portion of the exhibit space is devoted to GRNMS. The reef lies 17.5 nm offshore of Sapelo Island. The exhibit (~90 sq. ft.) accurately represents the components of the reef. This exhibit is fully functional and adequately depicts the Sanctuary environment. Efforts over the next five years will be focused on signage and other enhancements.

- Georgia Aquarium in Atlanta works closely with GRNMS to develop exhibits and information about the Sanctuary and the NMSS. GRNMS has developed teacher workshops in partnership with the Georgia Aquarium to explore the resources and conservation issues along the Altamaha River watershed and near coastal waters of Georgia.
- University of Georgia Marine Education Center and Aquarium located on Skidaway Island devotes exhibit space and an aquarium tank to the interpretation of GRNMS. Substantial expansion of the available exhibit space and tank devoted to GRNMS is currently being reviewed by the Center and will be organized to fit its guidelines for development. Efforts will be made to renovate and expand the exhibits over the next five years
- Tybee Island Marine Science Center located on Tybee Island, Georgia provides beach and ocean programs for area schools as well as the general public. The Center is renovating exhibits with a focus on GRNMS and is planning over the long term to develop a completely new facility.
- Georgia Visitor Centers located on interstates at the northern and southern borders of Georgia on I-95 distribute GRNMS brochures and display a freestanding backlit exhibit. Both centers are assessing their space availability for additional exhibits about the Sanctuary.
- Savannah Airport, located in Savannah, Georgia, receives thousands of passengers each week. Currently GRNMS brochures are displayed for distribution at the airport and a backlit exhibit of GRNMS has been constructed in the airport's visitor center.
- Georgia Southern Museum located on the campus of Georgia Southern University (GSU) serves the city of Statesboro, Georgia and the region. A new permanent GRNMS exhibit is being planned for development.



*Gray's Reef exhibit at Georgia Southern University*

STRATEGY EO-4:  
INCREASE OUTREACH TO MINORITY COMMUNITIES

BACKGROUND

Approximately 30 percent of the population in coastal Georgia is of African-American heritage. GRNMS has a long-standing partnership with Savannah State University (SSU) to support education in the marine sciences for minority students. In an effort to improve outreach to minority audiences, GRNMS is developing several strategies in partnership with SSU.

ACTIVITIES

The following are GRNMS activities designed to enhance outreach to minority communities.

Activity A: Develop an outreach campaign. Presently GRNMS has an ongoing radio campaign with commercial radio stations. GRNMS will expand the campaign to include radio stations that specifically serve the African-American community. These programs will be developed in partnership with Savannah State University (SSU) Campus Radio. Other commercial stations will be identified as well.

Activity B: Develop Minority Serving Institution programs. Many programs and institutions have been identified that serve a majority of African-American people. Ocean and coastal resource stewardship messages and programs will be integrated into these already existing programs by year two. The programs that have been identified to date are Frank Callen Boys' and Girls' Clubs, and SSU Freshman Experience and Upward Bound programs. Others will be included as they are identified. These new programs will be developed in cooperation with SSU.

Activity C: Continue SSU Intern Program. Since June 2000, SSU has identified one minority student annually to serve as the GRNMS Education Intern. The intern is responsible for managing the Student Ocean Council and for recruiting students to that program. The program is designed to give the student personal work experience and also serve as an introduction to the workings of a government agency tasked with ocean resource management. By working in the office and participating in the various functions and meetings involved with the agency, the student receives a broad experience that may help serve as a bridge to future graduate work in the marine science field.

## STRATEGY EO-5: DEVELOP VOLUNTEER PROGRAMS TO SUPPORT SANCTUARY PROGRAMS

### BACKGROUND

Many functions of the NMSP and GRNMS can be enhanced through the National Marine Sanctuary Foundation, which was established to build financial support and interest in the national program. It serves as a model for the development of sanctuary-specific foundations or friends' groups. Sanctuary programs have been fortunate to attract people willing to support marine conservation through their time, skills, and talents, and with financial contributions. Volunteer programs will provide essential support for Sanctuary projects and build community commitment to the marine conservation objectives of the NMSP.

### ACTIVITIES

The following are GRNMS activities designed to maximize external resources.

Activity A: Provide information to parties interested in the creation of a National Marine Sanctuary Foundation chapter for GRNMS. A chapter of the National Marine Sanctuary Foundation may be developed by external parties to support special GRNMS programs and projects. The chapter will help procure support for GRNMS programs and special events. The sanctuary will provide publicly available information to them, as well as any other interested parties.

Activity B: Develop a comprehensive GRNMS volunteer plan/program.

Currently, GRNMS volunteers support activities and functions on an as-needed basis.

Volunteers typically help with office work and serve at events like OceanFest, CoastFest, and Earth Day. A formal volunteer program may be developed, focusing on educational outreach to schools and civic groups and scientific monitoring.



*Volunteering for Gray's Reef*

## EXPLORATION ACTION PLAN

### NATIONAL PRIORITIES

Two of the purposes and policies of the NMSA are to “create models of, and incentives for, ways to conserve and manage these areas, including the application of innovative management techniques” and to “cooperate with global programs encouraging conservation of marine resources.” ((16 U.S.C. 1431(b)(8) and (a)(9)). The coastal river systems inshore and major offshore currents such as the Gulf Stream that transport materials and organisms from south of the Sanctuary influence GRNMS. The Sanctuary must track both the human activities and natural conditions to effectively monitor changes that may affect Sanctuary resources. Understanding the GRNMS “neighborhood” encompasses water quality measurements in coastal rivers, eddies, and warm core rings from the Gulf Stream, and even atmospheric deposition on coastal waters from sources far inland. It also includes monitoring a variety of human uses such as marine transportation corridors, military operations, land use changes, and fishing activities throughout the region. The Sanctuary exploration program is being designed to investigate and monitor the broad range of physical factors that affect GRNMS and the surrounding coastal ocean management programs that shape the human dimension of resource use. Through cooperation and partnership with key management agencies in the coastal and ocean environment, the Sanctuary is exploring new ways to “create models of, and incentives for, ways to conserve and manage” the Sanctuary. From an educational standpoint, this cooperation can extend beyond the local area and include other global programs that may provide new ideas on improving management and conservation of marine resources locally.

### GRNMS PRIORITIES

In December 2000, the Advisory Council met to propose site-specific goals and objectives to guide development of the revised management plan and its implementation. The Advisory Council, in reinforcing the national goals listed above, urged the Sanctuary to focus on enhanced coordination with “federal, state, and local governments, international organizations, and other public and private interests to develop and implement plans to protect the marine environment and the Sanctuary, and to encourage conservation of these resources.” This recommendation calls for the Sanctuary to consider novel approaches for integrating marine resource management and science in the region as it relates to Sanctuary conservation. To address this need, the Sanctuary has focused on building upon recent successes through NOAA’s Ocean Exploration program to create a framework for enhanced marine science and conservation collaboration among local, regional, and national organizations. The new program is called Latitude 31<sup>30</sup>. This action plan is composed of one strategy, as summarized in Table 10.



**Table 10: Strategies and Cost for the Exploration Action Plan.**

Exploration Action Plan					
Implementation with NOAA Funding		Implementation with Anticipated Alternative Funding	Scenario 1: Level Funding	Scenario 2: 5% per year Increase	Scenario 3: 10% per year Increase
● - High	⊙ - Medium	○ - Low			
⊙	◆	Strategy EX-1: Develop and implement the Latitude 31 <sup>30</sup> Program	100	105	110



*Onboard the R/V Nancy Foster*

STRATEGY EX-1:  
DEVELOP AND IMPLEMENT THE LATITUDE 31<sup>30</sup> PROGRAM

BACKGROUND

In 1999, NOAA and the GRNMS launched a series of exploratory expeditions to better understand oceanic processes and habitats that are connected with the Sanctuary. The NMSP and the National Geographic Society joined in partnership to initiate the Sustainable Seas Expedition (SSE). Led by Dr. Sylvia Earle, the expedition investigated the reef habitat of GRNMS and explored the area known as the Sapelo Scarp which lies 40 miles seaward of GRNMS. The investigations focused on the connections between these two features that lie on the inner and middle portions of the continental shelf off Georgia. These studies were followed by the Sanctuary-sponsored Islands in the Stream Expedition that picked up from the SSE mission to explore the Sapelo Scarp/Savannah Scarp formation and subsequently move another 70 miles farther offshore to survey the Charleston Bump feature. In 2002, NOAA's Ocean Exploration program sponsored additional explorations of the shelf break zone to further characterize the habitat of this region.

Many of these expeditions are conducted to support improved management of marine resources in the region. The investigations of the Savannah Scarp and Charleston Bump features are providing direct support for SAFMC as they consider conservation measures at the Charleston Bump and possible marine protected area status for the region of the Savannah Scarp. The Sanctuary has built on the results of the SSE mission to initiate a series of regional scientific investigations to characterize fisheries and invertebrate communities along transects that run from the estuaries, offshore through GRNMS, and beyond to the Savannah Scarp.

Within the central portion of the continental shelf, GRNMS joined in partnership with other agencies and universities to support the South Atlantic Bight Synoptic Observational Network (SABSOON) led by the Skidaway Institute of Oceanography (SkIO). The SABSOON system provides continuous information on the coastal ocean conditions of the zone by collecting data from ocean monitoring sensors placed on the array of eight offshore communications towers operated by the U.S. Navy. Along and on either side of latitude 31 degrees 30 minutes lie an array of substantial scientific and management programs. These areas and programs include the Charleston Bump (140 miles offshore) to the Savannah Scarp and proposed marine protected areas in that area, across the network of eight oceanographic monitoring stations on the U.S. Navy's ocean telemetry towers; ten miles west of ocean tower R2 of SABSOON is GRNMS with its NOAA ocean data buoy. Proceeding landward lies the Sapelo Island National Estuarine Research Reserve, Wolf Island National Wildlife Refuge, and the Altamaha Bioserve administered by The Nature Conservancy. Across this zone in the nearshore region the State of Georgia operates an extensive water and sediment quality monitoring program that has recently been connected with the offshore monitoring GRNMS sponsors from nearshore waters to the shelf edge. The combined investment among federal, state, local, university, and non-profit organizations in resource management programs and science

along this transect offers an extraordinary opportunity to coordinate scientific exploration and conservation in a new collaborative, non-regulatory manner contemplated as the Latitude 31<sup>30</sup> program.

## ACTIVITIES

The following are GRNMS activities for development and implementation of the Latitude 31<sup>30</sup> Program. GRNMS will work in partnership with conservation and scientific organizations in the region to develop the council and initiate the program described below.

Activity A: Develop the Latitude 31<sup>30</sup> Council. The programs and conservation areas that lie within the area of Latitude 31<sup>30</sup> represent a variety of federal, state, and non-profit organizations. To coordinate the scientific, educational, and conservation initiatives of these entities, a voluntary council is proposed to help guide and coordinate activities undertaken by the Latitude 31<sup>30</sup> program. The council will be organized and meet on an annual basis to review activities of the member organizations and develop by consensus a list of projects for the pending fiscal year. Membership on the council is voluntary and project recommendations are advisory and non-binding for the member agencies and organizations. The council will be non-regulatory in nature and will rely upon consensus of the members on broad scientific and conservation objectives for the Latitude 31<sup>30</sup> area.

Activity B: Conduct a resource characterization of the Latitude 31<sup>30</sup> area. The Latitude 31<sup>30</sup> area has been the subject of extensive natural resource and habitat characterization. The Altamaha Bioreserve, Sapelo Island National Estuarine Research Reserve, National Wildlife Refuges, GRNMS, Savannah Scarp, and Charleston Bump have all been extensively mapped and studied. The Council will prepare a regional resource characterization that integrates the studies recently completed or ongoing. Central to this effort is incorporation of the monitoring data for transects from the estuaries to the shelf break that is being organized through the Georgia Coastal Analysis Partnership (GCAP). Comparable monitoring from the shelf break to the deeper waters to the



*Moray eel at Gray's Reef*

Charleston Bump is recommended. A comprehensive characterization of the area is an important first step in helping the council define appropriate collaborative programs in the future. The characterization can serve as a basis for encouraging exploration and

science programs in other agencies and organizations to focus activities in this area for marine research and conservation.

Activity C: Conduct Latitude 31<sup>30</sup> education and outreach. The special scientific opportunities and conservation qualities of this area have not been well defined to attract additional regional or national resources for research and management support. Initial products to support education and outreach for the Latitude 31<sup>30</sup> area include an introductory brochure defining the goals, objectives, and resource values of this cooperative conservation and research program. A poster depicting the key resource conservation areas within the Latitude 31<sup>30</sup> area is also planned.

Activity D: Form international partnerships in support of the Latitude 31<sup>30</sup> program. Defining this area of science and conservation along a line of latitude provides a convenient way to identify and possibly link with other marine conservation areas internationally. The line of latitude provides a common context in terms of seasonality and often habitat characteristics (e.g., Gulf Stream along Southeast coast of US and Kuroshio along Southeast Coast of Asia). The Latitude 31<sup>30</sup> council will review appropriate terrestrial and marine conservation areas along this zone of latitude to evaluate potential partnerships in science, education, and conservation in FY06.

## ADMINISTRATION ACTION PLAN

### NATIONAL PRIORITIES

The NMSA directs the NMSP to “ develop and implement coordinated plans for the protection and management of these areas with appropriate Federal agencies, State, and local governments, Native American tribes and organizations, international organizations, and other public and private interests concerned with the continuing health and resilience of these marine areas” (16 U.S.C. 1431(b)(7)). The Administration Action Plan describes the staffing and support necessary to implement the management plan.

### GRNMS PRIORITIES

In the process of developing the new management plan for GRNMS, the Advisory Council reviewed and revised the site goals and objectives. Among those is a statement mirroring the national purposes, to:

- Coordinate with federal, state, and local governments, international organizations, and other public and private interests to develop and implement plans to protect the marine environment and the Sanctuary, and to encourage the conservation of these resources.
- Dedicate appropriate infrastructure and resources for all programs, and create models of, and incentives for, ways to conserve and manage Sanctuary resources, including the application of innovative management techniques.

The Administration Action Plan describes the organizational structure and functions of the Sanctuary program to address the key responsibilities in marine resource protection, research and monitoring, exploration, evaluation, and education and outreach. The administrative framework also ensures that Sanctuary management activities are coordinated.

The NMSP is responsible for overall management of GRNMS. The NMSP supports the implementation of the management plan through funding of on-site operations. It is also responsible for establishing national policies and procedures to support specific issues in the Sanctuary.

The GRNMS Sanctuary office establishes an annual budget setting out expenditures for program development, operating costs, and staffing. Funding priorities are reviewed and adjusted annually to reflect evolving conditions in the Sanctuary and overall national program priorities. The Sanctuary Manager represents the NMSP at GRNMS. The Sanctuary office is located on the campus of the University System of Georgia/SkIO, Savannah, Georgia.

The Administration Action Plan describes the manner in which budget and staffing are organized to implement programs described in the other action plans. The action plan is composed of two strategies, as summarized in Table 11.

**Table 11: Strategies and Cost for the Administration Action Plan**

Administration Action Plan					
Implementation with NOAA Funding		Implementation with Anticipated Alternative Funding	Scenario 1: Level Funding	Scenario 2: 5% per year Increase	Scenario 3: 10% per year Increase
● - High ⊙ - Medium ○ - Low		◆ - High ◇ - Medium ◇ - Low			
●		Strategy AD-1: Improve overall site staffing and support capabilities	75	85	95
⊙	◇	Strategy AD-2: Maintain and enhance the infrastructure of the site	125	125	125
		Total	200	210	220

STRATEGY AD-1:  
IMPROVE OVERALL SITE STAFFING  
AND SUPPORT CAPABILITIES

## BACKGROUND

Administrative roles for governing the Sanctuary are divided up between the GRNMS Manager and the NMSP. NMSP provides oversight and coordination among the 13 National Marine Sanctuaries by developing a framework for resource management, setting priorities for addressing resource management issues, and directing program and policy development. The GRNMS is responsible for onsite management and day-to-day operation of the Sanctuary. Staff positions currently include:

- Sanctuary Manager: Responsible for overall administration of GRNMS programs and activities;
- Administrative Coordinator: Responsible for administrative systems and the Internet;
- Executive Officer: Responsible for financial management, enforcement programs, and oversight of marine operations;
- Operations Coordinator: Responsible for vessel maintenance, operations, and project support;
- Communications and Outreach Coordinator: Responsible for public awareness programs, communications, and exhibits;
- Education Coordinator: Responsible for scholastic programs;
- Research Coordinator: Responsible for research and monitoring programs;
- Planning and Evaluation Coordinator: Responsible for planning documents, assessments, and coordination of the Advisory Council; and
- Regional Programs Coordinator: Responsible for intergovernmental coordination and development of regional scientific initiatives and exploration programs;
- Sanctuary Interns: Seasonal and year-round opportunities for students and recent graduates to support Sanctuary programs and gain experience for graduate schooling or full time career placement.

Over the next five years the activities in this plan will necessitate an increase in staff support either through the addition of permanent staff positions or through the effective use of contract services to meet these needs. The decisions on adding permanent staff or addressing needs through contractual support will hinge on a variety of factors such as available personnel positions through NOAA, the annual budget, and the nature of the tasks to be addressed. Consequently, the staffing plan described below outlines the needs to be addressed but is not prescriptive in indicating the mechanism to be used to provide that support. Those decisions will be made on an annual basis, weighing the factors described above.

## ACTIVITIES

The following are GRNMS activities designed to address administrative needs.

Activity A: Maintain existing staff and hire additional staff in support of new programs. The current staff as listed above is responsible for undertaking existing projects and managing day-to-day operations. In addition to the existing positions within the GRNMS office, this management plan identifies new or renewed emphasis in the area of enforcement and outreach. The increase in patrol frequency and program visibility, which was called for by the public during the scoping process for this revised management plan, will require enhanced investment in these areas.

Enforcement of existing and new regulations will be enhanced through the Joint Enforcement Agreement (JEA) between NOAA's Office for Law Enforcement (OLE) and the GADNR. GRNMS will seek additional support for enforcement through a supplement to the JEA adding more specific terms relating to Sanctuary enforcement. The Sanctuary, NOAA, and GADNR will develop an enforcement plan and patrol protocols, utilizing a database of use and user patterns to assess future enforcement needs. As patrol activity increases, the Sanctuary will need additional support in vessel operations and maintenance.

Activity B: Maintain and enhance the operation of the GRNMS Advisory Council. The Advisory Council serves as a forum for consultation and deliberation for the community and as a source of consensus-based advice to the Sanctuary. Continuation and adequate support of the Advisory Council assures continued public input to management decision-making, while at the same time expanding public awareness about the Sanctuary and challenging marine resource management issues. Specifically, the Advisory Council's objectives are to provide the Sanctuary Manager with advice on:

- Protecting natural and cultural resources, and identifying and evaluating emergent or critical issues involving Sanctuary use or resources;
- Identifying and supporting the Sanctuary's research objectives;
- Identifying and supporting educational opportunities to increase the public knowledge and stewardship of the Sanctuary environment; and
- Assisting to develop an informed constituency to increase awareness and understanding of the purpose and value of the Sanctuary and the National Marine Sanctuary Program.

Each Advisory Council member represents an important element of the Sanctuary mission whether it is research, education, conservation, or user groups (e.g., fishing and diving), or serving as a representative of a partner agency.

The Sanctuary will continue to support the Advisory Council and ensure meetings are conducted on a regular basis. Any future proposals - such as adding new members or establishing specific working groups to address issues - will be discussed with the Advisory Council at the appropriate time.

Activity C: Develop and implement a comprehensive employee training plan. The increasing roles and responsibilities of the Sanctuary and ever-evolving techniques for effective marine sanctuary management require that the skill sets of present and future



employees continue to grow as well. The Sanctuary will examine the current skills of employees, and determine what training is necessary and appropriate for each employee. The Sanctuary will also determine what capacities are presently missing from its operational structure and ensure the development of that capacity through appropriate staff training. Such training will include a wide variety of courses and classes, and will be implemented in accordance with the NMSP's Training and Continuing Education Policy.



*Gray's Reef teacher workshop*

STRATEGY AD-2:  
MAINTAIN AND ENHANCE THE INFRASTRUCTURE OF THE SITE

## BACKGROUND

The management and administration of Sanctuary programs rely on adequate facilities, vehicles, and watercraft for support. The NMSP has recently assessed program needs for all sanctuaries through a national review of facility, visitor center, and vessel requirements for the sanctuaries. An individual assessment of GRNMS' needs was conducted as part of this effort.

### Facilities

GRNMS currently occupies a 4000-square foot one-story office building on the campus of the SkIO on Skidaway Island, Savannah, Georgia. The location on the Skidaway campus links the Sanctuary with other academic institutions of the University System of Georgia such as Georgia Southern University, Georgia Tech, and the University of Georgia which all have facilities and programs on the SkIO campus. The GRNMS facility is leased through 2007 from SkIO and, according to the recent national assessment of Sanctuary facilities, provides reasonable space in good condition for existing Sanctuary staff. The report does note that the Sanctuary will need to develop visitor facilities in areas of high tourist traffic to enhance the program's visibility. The location on Skidaway Island is remote for many visitors.

### Vessels and Vehicles

GRNMS currently operates two vessels for research and education. The Sanctuary renovated a 41-foot former Coast Guard patrol vessel and acquired a 36-foot twin-engine outboard for use. The vessels serve as the principal research vessels for the Sanctuary but also are used extensively for monitoring and education programs. The Sanctuary also operates three vehicles for passenger use and equipment transport.

## ACTIVITIES

The following are activities for the Administration Action Plan.

Activity A: Enhance the facilities of the site. The recently conducted assessment of the GRNMS administrative offices concluded that modifications to the existing facility will be needed to accommodate Sanctuary staff and volunteers and provide for additional storage space. Having completed a renovation of storage space in the administrative building for additional office space, the Sanctuary plans to construct a storage building adjacent to the offices.

Activity B: Maintain and renovate vessels as necessary. As enforcement patrol needs expand the Sanctuary anticipates the demand for use of the renovated USCG vessel for

research and education programs to compete with this use. An additional vessel dedicated primarily to enforcement with high-speed capabilities should be operational at GRNMS.

Activity C: Identify, prioritize, and fill equipment needs. The Sanctuary will annually conduct a review to determine what equipment and technical support is necessary, including full computer work stations for each employee, guest work stations, geographic information system stations, internet access lines, and adequate copiers and fax machines for the functions of the office. The needs of the office will be prioritized and new equipment purchased as funding allows.



*Advisory Council tours NOAA Ship Nancy Foster*

## PERFORMANCE EVALUATION ACTION PLAN

### NATIONAL PRIORITIES

As part of an effort to improve overall management, ongoing and routine performance evaluation has become an emerging national priority for the NMSP. There are many benefits to evaluating sanctuary effectiveness, including:

- Highlighting successful efforts of management;
- Keeping the public, Congress, and other interested parties apprised of site and program performance;
- Helping managers identify resource gaps so that they may better manage their sites;
- Improving accountability;
- Improving communication among sites, stakeholders, and the general public;
- Fostering the development of clear, concise, and, whenever possible, measurable outcomes;
- Providing a means for managers to comprehensively evaluate their sites in both the short and long term;
- Fostering an internal focus on problem-solving and improved performance;
- Providing additional support for the resource-allocation process; and
- Motivating staff with clear policies and a focused direction.

With the site performance measures in this management plan, GRNMS is initiating the performance measurement process for the Sanctuary and, therefore, beginning to establish a baseline of information that can be used by GRNMS and the NMSP to evaluate effectiveness of the site over time.

A key component to the measuring of performance will be the involvement of the public in understanding the progress of GRNMS action plans. GRNMS will provide annual updates to the public through the Sanctuary Advisory Council where feedback can be provided on the program assessment.

To ensure these benefits are realized, the NMSP has been developing various tools for measuring and understanding the effectiveness of existing and new management programs, strategies, and activities. Currently, these tools are primarily site-specific and are being worked into the regular cycle of management at each of the thirteen sanctuaries through the management plan review process at each site. In addition, evaluation tools are also being applied at the programmatic level to better understand the effectiveness of the entire NMSP. These tools combine results from site-specific evaluations with results from tools designed specifically for overall and cross-site programs, strategies, and activities.

As this process continues to mature, NMSP staff will continue to integrate new and improved methods for evaluating management effectiveness (at both the site-specific and programmatic levels). Development and application of improved methods and

approaches to evaluating and managing program effectiveness is a continuing and adaptive process in the NMSP.

**GRNMS PRIORITIES**

Performance measures have been developed for the six action plans in this draft management plan (including this Performance Evaluation Action Plan). These measures are to: 1) determine how effectively the actions in these action plans are addressing the issues identified through the management plan review process; and 2) present a set of outcome-based measures that demonstrate progress towards site goals and objectives. The strategy described below has been designed to carry the site through a process to integrate performance measurement into the regular cycle of site management.

This action plan is composed of one strategy, as summarized in Table 12.

**Table 12: Strategies and Cost for the Performance Evaluation Action Plan**

Performance Evaluation Action Plan						
Implementation with NOAA Funding		Implementation with Anticipated Alternative Funding		Scenario 1: Level Funding	Scenario 2: 5% per year Increase	Scenario 3: 10% per year Increase
● - High	◆ - High	⊙ - Medium	◊ - Medium			
○ - Low	◇ - Low					
●		Strategy EV-1: Develop and implement a performance evaluation program for GRNMS		50	52	55

## STRATEGY EV-1: DEVELOP AND IMPLEMENT A PERFORMANCE EVALUATION PROGRAM FOR THE GRNMS

The following are the performance evaluation activities.

Activity A: Monitor performance measures consistently over time. Conduct routine performance evaluation activities to develop information on performance measures over time. Using this information, determine effectiveness by 1) evaluating progress towards achievement of the measures' specific targets, and 2) assessing the role or value added of those targets in the accomplishment of site goals and objectives.

Activity B: Evaluate progress on regular basis and report out. Monitoring for effectiveness is to be conducted as a routine part of site management. Progress towards the achievement of targets will be assessed on an annual basis. Results will be published in a site-specific document at the end of each fiscal year. This analysis may become part of the bi-annual GRNMS State of the Sanctuary Report. Detailed explanations of each measure, how it was assessed, who conducted the assessment, and a measure of performance for that year will be provided in the report. Based on this report, site staff, in cooperation with the Advisory Council, will then work to determine management actions that may need to be adjusted or changed to better meet their specified targets. The targets themselves must also be analyzed to determine if they are too ambitious or unrealistic. Once this analysis is complete and articulated in the annual report, periodic public meetings may be held to seek additional comment on the site's perception of its performance, ways in which the site could be more effective, and recommendations for improving methods of measurement.

The following tables (Tables 13-18) describe the evaluation components for each of the Action Plans in this management plan.

Column 1 contains the management strategies and activities developed to address certain issues and to achieve the expected outputs. Each outcome may have many associated strategies and activities.

Column 2 contains one or more Sanctuary goals that apply to the strategy.

Column 3 contains the NMSP Performance Measures.

Column 4 contains the site performance measures. Each measure is designed to set a specific target for the strategies and activities that when monitored, will provide an indication of that action's ability to bring about a positive change at GRNMS (relative to its desired outcomes or goal statement).

Column 5 contains information on how each measure will be assessed.

Column 6 contains who will be responsible for its assessment.

Column 7 lists the expected outputs, or products, for each management action. Timely production of outputs will also be factored into the overall interpretation of site effectiveness.



*Anemone at Gray's Reef*

**Table 13: Performance Measures for the Marine Resource Protection Action Plan**

STRATEGIES & ACTIVITIES	GRNMS GOAL	PROGRAM PERFORMANCE MEASURE	GRNMS PERFORMANCE MEASURE	HOW MEASURED	EXPECTED OUTPUTS
<p>MRP-1 Prevent Damage To Benthic Habitats From Anchoring</p> <p>Activity A: Prohibit anchoring in GRNMS</p> <p>Activity B: Establish an outreach program to support the anchoring prohibition</p>	<p>GOAL 1: Protect, maintain, restore, and enhance the natural habitats, populations, and ecological processes in the Sanctuary</p> <p>GOAL 4: Facilitate, to the extent compatible with the primary objective of resource protection, all public and private uses of the Sanctuary not prohibited pursuant to other authorities</p>	<p>Habitat <i>(Number of sites in which habitat, based on long-term monitoring data, is being maintained or improved.)</i></p> <p>Living Marine Resources <i>(Number of sites in which select living marine resources, based on long-term monitoring data, are being maintained or improved.)</i></p> <p>Public Awareness of System <i>(By 2015, increase by 20% public awareness of national marine sanctuaries and the sanctuary system.)</i></p>	<p>No anchor use at GRNMS, except in emergencies</p> <p>Progressive increase in awareness and compliance of new regulations</p>	<p>Survey of users to assess awareness</p> <p>Annual analysis of anchor use compared to baseline</p>	<p>Press releases</p> <p>Radio message</p> <p>Brochure</p> <p>Posters</p> <p>Exhibits</p> <p>A awareness survey</p> <p>Comparative analysis</p> <p>Annual assessment of impacts</p>
<p>MRP-2 Prevent Diver Impacts On Benthic Habitat</p> <p>Activity A: Revise GRNMS regulations to protect marine resources from diver impact</p> <p>Activity B: Establish a diver education and outreach program</p>	<p>GOAL 1: Protect, maintain, restore, and enhance the natural habitats, populations, and ecological processes in the Sanctuary</p> <p>GOAL 4: Facilitate, to the extent compatible with the primary objective of resource protection, all public and private uses of the Sanctuary not prohibited pursuant to other authorities</p>	<p>Habitat</p> <p>Living Marine Resources</p> <p>Public Awareness of System</p>	<p>No observable damage to marine resources from divers</p> <p>Progressive increase in awareness and compliance of regulations</p>	<p>Survey of users to assess regulatory awareness</p> <p>Annual assessment of impacts to marine resources from divers at GRNMS</p>	<p>Press releases</p> <p>Radio message</p> <p>Brochure</p> <p>Posters</p> <p>Exhibits</p> <p>A awareness survey</p> <p>Comparative analysis</p> <p>Annual marine debris assessment study</p>



STRATEGIES & ACTIVITIES	GRNMS GOAL	PROGRAM PERFORMANCE MEASURE	GRNMS PERFORMANCE MEASURE	HOW MEASURED	EXPECTED OUTPUTS
<p>MRP-3 Remove Marine Debris From The Sanctuary And Prevent New Debris From Accumulating</p> <p>Activity A: Clarify regulatory authority to address materials discharged or deposited outside the Sanctuary</p> <p>Activity B: Develop and implement a marine debris education and outreach program</p> <p>Activity C: Develop and implement a debris assessment and monitoring study</p>	<p>GOAL 1: Protect, maintain, restore, and enhance the natural habitats, populations, and ecological processes in the Sanctuary</p> <p>GOAL 4: Facilitate, to the extent compatible with the primary objective of resource protection, all public and private uses of the Sanctuary not prohibited pursuant to other authorities</p>	<p>Habitat</p> <p>Living Marine Resources</p> <p>Public Awareness of System</p>	<p>Decrease in marine debris in the Sanctuary</p> <p>Progressive increase in awareness and compliance of regulations</p>	<p>Surveys of users to assess regulatory awareness</p> <p>Annual assessment of marine debris at GRNMS compared to baseline</p>	<p>Press releases</p> <p>Radio message</p> <p>Brochure</p> <p>Posters</p> <p>Exhibits</p> <p>Awareness survey</p> <p>Comparative analysis</p> <p>Annual marine debris assessment study</p>

STRATEGIES & ACTIVITIES	GRNMS GOAL	PROGRAM PERFORMANCE MEASURE	GRNMS PERFORMANCE MEASURE	HOW MEASURED	EXPECTED OUTPUTS
<p>MRP-4 Increase Protection For Fish And Invertebrate Species</p> <p>Activity A: Revise Sanctuary regulations with approval of this plan to allow fishing only with rod and reel and handline gear, and spearfishing gear without powerheads</p> <p>Activity B: Establish an outreach program to support the allowable fishing gear regulation</p>	<p>GOAL 1: Protect, maintain, restore, and enhance the natural habitats, populations, and ecological processes in the Sanctuary</p> <p>GOAL 4: Facilitate, to the extent compatible with the primary objective of resource protection, all public and private uses of the Sanctuary not prohibited pursuant to other authorities</p>	<p>Habitat</p> <p>Living Marine Resources</p> <p>Public Awareness of System</p>	<p>No fishing activities at GRNMS other than with rod and reel and handline gear, and spearfishing gear without powerheads</p> <p>Progressive increase in awareness and compliance of new regulations</p>	<p>Annual analysis of staff/enforcement vessel trips compared to baseline</p> <p>Record number of users, type of use and locations of use at GRNMS</p>	<p>Press releases</p> <p>Radio message</p> <p>Brochure</p> <p>Posters</p> <p>Exhibits</p> <p>Awareness survey</p> <p>Comparative analysis</p> <p>Annual assessment study</p>
<p>MRP-6: Enhance Coordination And Cooperation With SAFMC, NOAA Fisheries Service, And GADNR</p> <p>On Marine Reserves And Other Regional Programs</p> <p>Activity A: Participate in advisory panels of the SAFMC</p> <p>Activity B: Coordinate, cooperate, and support agency partners with appropriate Sanctuary resources</p>	<p>GOAL 1: Protect, maintain, restore, and enhance the natural habitats, populations, and ecological processes in the Sanctuary</p> <p>GOAL 6: Coordinate with federal, state, and local governments, international organizations, and other public and private interests to develop and implement plans to protect the marine environment and the Sanctuary, and to encourage the conservation of these resources</p>	<p>Living Marine Resources</p> <p>Partnerships</p> <p>Public Awareness of System</p>	<p>Progressive improvement in regional conservation of marine resources through cooperative programs</p>	<p>Annual analysis of cooperative activities; documentation of program interactions</p>	<p>Annual reports on SAFMC advisory panel activities</p> <p>Annual report on Right Whale Implementation Team Activities</p>

**Table 14: Performance Measures for the Research and Monitoring Action Plan**

<b>STRATEGIES &amp; ACTIVITIES</b>	<b>GRNMS GOAL</b>	<b>PROGRAM PERFORMANCE MEASURE</b>	<b>GRNMS PERFORMANCE MEASURE</b>	<b>HOW MEASURED</b>	<b>EXPECTED OUTPUTS</b>
<p>RM-1: Investigate Ecosystem Processes</p> <p>Activity A: Characterize trophic dynamics</p> <p>Activity B: Develop trophic model of the Sanctuary</p> <p>Activity C: Investigate invertebrate recruitment dynamics</p>	<p>GOAL 2: Support, promote and coordinate scientific research and long-term monitoring to enhance the understanding of the Sanctuary environment and to improve management decision-making</p>	<p>Living Marine Resources</p> <p>Characterization</p> <p>Habitat</p>	<p>Results from research projects are used to address most current site management issues</p> <p>Results from research projects are made available to other regional resource managers, scientists, and general public</p>	<p>Results report; report is produced demonstrating connection between research projects and current issues identified in FMP</p>	<p>Literature search</p> <p>Panel report</p> <p>Trophic model</p> <p>Characterization of invertebrate recruitment dynamics and colonization</p>
<p>RM-2: Investigate Designation of a Marine Research Area</p> <p>Activity A: Direct a working group established by the Advisory Council to study a marine research area concept</p>	<p>GOAL 2: Support, promote and coordinate scientific research and long-term monitoring to enhance the understanding of the Sanctuary environment and to improve management decision-making</p>	<p>Sanctuary Advisory Council (By 2010, Sanctuary Advisory Councils will provide significant input on 150 priority projects across the NMSF.)</p> <p>Marine Zones</p>	<p>Working group report submitted to Advisory Council</p> <p>Advisory Council recommendation(s) submitted to GRNMS</p>	<p>Monitor progress towards completion</p> <p>Consensus of working group</p> <p>Consensus of Advisory Council</p>	<p>Working group report</p> <p>Advisory Council recommendation(s)</p>

STRATEGIES & ACTIVITIES	GRNMS GOAL	PROGRAM PERFORMANCE MEASURE	GRNMS PERFORMANCE MEASURE	HOW MEASURED	EXPECTED OUTPUTS
<p>RM-3: Assess and Characterize Sanctuary Resources</p> <p>Activity A: Develop and update the GIS database</p> <p>Activity B: Characterize benthic habitat</p> <p>Activity C: Develop an invertebrate identification guide</p> <p>Activity D: Develop the Sanctuary characterization</p>	<p>GOAL 2: Support, promote and coordinate scientific research and long-term monitoring to enhance the understanding of the Sanctuary environment and to improve management decision-making</p>	<p>Characterization</p> <p>Marine Zones</p> <p>Safe and Effective Operations</p> <p>Habitat</p> <p>Living Marine Resources</p> <p>Public Awareness of System</p> <p>Management Plan Review - Future</p>	<p>Results from research projects are used to address most current site management issues</p> <p>Results from research projects are made available to other regional resource managers, scientists, and general public</p>	<p>Results report is produced demonstrating connection between research projects and current issues identified in FMP</p> <p>Ratio of published information (hard copy, web, etc.) per research venture</p> <p>Percent of images and data from monitoring that is packaged and presented to constituents</p>	<p>Updated GIS database</p> <p>Habitat inventory</p> <p>Invertebrate identification guide</p> <p>Site characterization volume</p>

STRATEGIES & ACTIVITIES	GRNMS GOAL	PROGRAM PERFORMANCE MEASURE	GRNMS PERFORMANCE MEASURE	HOW MEASURED	EXPECTED OUTPUTS
<p>RM-4: Maintain and Enhance Monitoring Program</p> <p>Activity A: Monitor the status and health of fishes</p> <p>Activity B: Design and implement an invertebrate monitoring program</p> <p>Activity C: Develop a comprehensive water quality monitoring program</p> <p>Activity D: Develop and implement a sediment analysis and monitoring program</p> <p>Activity E: Support and enhance regional ocean observation systems</p> <p>Activity F: Expand and update socioeconomic assessment</p> <p>Activity G: Synthesize and characterize paleo-environmental information</p>	<p>GOAL 2: Support, promote and coordinate scientific research and long-term monitoring to enhance the understanding of the Sanctuary environment and to improve management decision-making</p>	<p>Habitat</p> <p>Living Marine Resources</p> <p>Water Quality</p> <p>Characterization</p> <p>Enforcement</p> <p>Management Plan Review – Future</p> <p>Partnerships</p> <p>Public Awareness of System</p> <p>Ocean Observing System</p>	<p>Results from monitoring projects are used to address most current site management issues</p> <p>Results from research projects are made available to other regional resources managers, scientists, and general public</p> <p>Completion of all activities by specific dates</p>	<p>Report is produced demonstrating connection between research projects and current issues identified in FMP</p> <p>Ratio of published information (hard copy, web, etc.) per research venture</p> <p>Percent of images and data from monitoring that is packaged and presented to constituents</p> <p>Monitor process towards completion</p>	<p>Results report</p> <p>Fish census methodology</p> <p>Invertebrate identification guide</p> <p>Water quality parameter guide</p> <p>Sediment dynamics analysis</p> <p>Oceanographic processes report</p> <p>Socioeconomic status report</p> <p>Fossil exhibits with updated paleo-environmental information</p>

**Table 15: Performance Measures for the Education and Outreach Action Plan**

<b>STRATEGIES &amp; ACTIVITIES</b>	<b>GRNMS GOAL</b>	<b>PROGRAM PERFORMANCE MEASURE</b>	<b>GRNMS PERFORMANCE MEASURE</b>	<b>HOW MEASURED</b>	<b>EXPECTED OUTPUTS</b>
<p>EO-1: Conduct Public Awareness Programs</p> <p>Activity A: Conduct surveys of public perceptions</p> <p>Activity B: Develop a communications program to raise public and media awareness of GRNMS, its programs, and its protected environment</p> <p>Activity C: Develop and maintain wayside signage stations</p> <p>Activity D: Continue to sponsor GRNMS Festival</p> <p>Activity E. Maintain and enhance public awareness</p>	<p>Goal 3: Enhance public awareness, understanding, wise and sustainable use, and appreciation of the marine environment and the Sanctuary's natural, historical, cultural, and archaeological resources</p>	<p>Public Awareness of System Enforcement</p> <p>Management Plan Review – Future</p> <p>Volunteer (By 2010, increase by 25% the number of volunteer hours dedicated to NMSP science, public awareness and resource protection activities.)</p> <p>Partnerships</p> <p>Education Programs</p>	<p>Improved awareness amongst a broad audience of GRNMS users and public over five years</p> <p>Outreach events are reaching a progressively increasing number and variety of people</p>	<p>Periodic surveys of users, partners and general public</p> <p>Comparative analysis; data on current number and variety of event attendees (baseline) will be collected beginning year one then continued over next five years and compared against baseline</p>	<p>Comprehensive communications strategy</p> <p>Posters</p> <p>Newsletter</p> <p>Radio messages</p> <p>Signage stations</p> <p>Report on baseline of users' and publics' knowledge of GRNMS resources, enforcement, and regulations</p> <p>Short-term and long-term awareness survey and data/monitoring reports</p> <p>Annual GRNMS Festival</p> <p>Reports on outside partnership activities</p>

STRATEGIES & ACTIVITIES	GRNMS GOAL	PROGRAM PERFORMANCE MEASURE	GRNMS PERFORMANCE MEASURE	HOW MEASURED	EXPECTED OUTPUTS
<p>EO-2: Create and Provide Scholastic Programs in Ocean Science Education</p> <p>Activity A: Continue to sponsor GRNMS Student Ocean Council</p> <p>Activity B: Continue to conduct distance learning programs</p> <p>Activity C: Develop Georgia oceanography curricula</p> <p>Activity D: Continue to coordinate with and participate in teacher workshops</p>	<p>Goal 3: Enhance public awareness, understandable use, and appreciation of the marine environment and the Sanctuary's natural, historical, cultural, and archaeological resources</p>	<p>Education Programs (By 2010, all education programs implemented in national marine sanctuaries will be assessed for effectiveness against stated program goals and objectives and National Science Education Standards.)</p> <p>Partnerships</p> <p>Public Awareness of System</p>	<p>A progressive increase in the number of education programs and materials requested over the next five years</p> <p>A progressive increase in students' and teachers' knowledge of marine science and conservation is increased</p>	<p>Comparative analysis; (Data on current number of programs and materials requested – baseline - will be collected beginning year one then continued over next five years and compared against baseline.)</p> <p>Pre- and post-tests of curricula and workshops</p>	<p>6-8 monthly SOC programs per year</p> <p>Annual SOC report</p> <p>Annual distance learning report</p> <p>Comparative analysis of programs and materials application</p> <p>GA public schools oceanography curricula</p> <p>Workshop survey results and analysis</p> <p>Curricula users survey results and analysis</p>

<b>STRATEGIES &amp; ACTIVITIES</b>	<b>GRNMS GOAL</b>	<b>PROGRAM PERFORMANCE MEASURE</b>	<b>GRNMS PERFORMANCE MEASURE</b>	<b>HOW MEASURED</b>	<b>EXPECTED OUTPUTS</b>
<p>EO-3: Maintain Existing and Develop New Sanctuary Exhibits</p> <p>Activity A: Renovate existing displays and develop new exhibits over five years</p>	<p>Goal 3: Enhance public awareness, understanding, wise and sustainable use, and appreciation of the marine environment and the Sanctuary's natural, historical, cultural, and archaeological resources</p>	<p>Education Programs</p> <p>Partnerships</p> <p>Public Awareness of System</p>	<p>A progressive increase in user/general public's knowledge of GRNMS presence, location, and resources</p>	<p>Periodic surveys of users and public</p> <p>Comparative analysis; (Data on current number and variety of event attendees – baseline - will be collected beginning year one then continued over next five years and compared against baseline.)</p>	<p>Five-year exhibit plan</p> <p>New aquarium, diorama, interactive museum exhibits</p> <p>Comparative analysis of attendees and knowledge</p>
<p>EO-4: Increase Outreach to Minority Communities</p> <p>Activity A: Develop an outreach campaign</p> <p>Activity B: Develop Minority Serving Institution programs</p> <p>Activity C: Continue SSU intern program</p>	<p>Goal 3: Enhance public awareness, understanding, wise and sustainable use, and appreciation of the marine environment and the Sanctuary's natural, historical, cultural, and archaeological resources</p>	<p>Partnerships</p> <p>Public Awareness of System</p> <p>Education Programs</p>	<p>Outreach efforts are reaching a progressively increasing number of people in minority communities</p> <p>Number of fellowship program applicants progressively increases over time</p>	<p>Comparative analysis; (Data on current number of listeners and minority service programs – baseline - will be collected beginning year one then continued over next five years and compared against baseline.)</p> <p>Number of applications received</p>	<p>Expanded radio campaign</p> <p>Intern appointments</p> <p>Comparative analysis</p>



<b>STRATEGIES &amp; ACTIVITIES</b>	<b>GRNMS GOAL</b>	<b>PROGRAM PERFORMANCE MEASURE</b>	<b>GRNMS PERFORMANCE MEASURE</b>	<b>HOW MEASURED</b>	<b>EXPECTED OUTPUTS</b>
<p>EO-5: Develop Volunteer Programs to Support Sanctuary Programs</p> <p>Activity A: Support the creation of a National Marine Sanctuary Foundation chapter for GRNMS</p> <p>Activity B: Develop a comprehensive GRNMS volunteer plan/program</p>	<p>Goal 3: Enhance public awareness, understandable use, and appreciation of the marine environment and the Sanctuary's natural, historical, cultural, and archaeological resources</p>	<p>Volunteer Partnerships Public Awareness of System</p>	<p>Progressive increase in external resources raised to support GRNMS programs</p> <p>Volunteer plan/program fully implemented and operational by year three</p>	<p>Comparative analysis; (Data on current level of resources – baseline - will be collected beginning year one then continued over next five years and compared against baseline.)</p> <p>Staff monitoring</p>	<p>Comprehensive plan for NMSF chapter operations</p> <p>Comprehensive plan for volunteer operations</p> <p>Comparative analysis</p>

**Table 16: Performance Measures for the Exploration Action Plan**

<b>STRATEGIES &amp; ACTIVITIES</b>	<b>GRNMS GOAL</b>	<b>PROGRAM PERFORMANCE MEASURE</b>	<b>GRNMS PERFORMANCE MEASURE</b>	<b>HOW MEASURED</b>	<b>EXPECTED OUTPUTS</b>
<p>EX-1: Develop and Implement the Latitude 31-30 Program</p> <p>Activity A: Develop the Latitude 31-30 Council</p> <p>Activity B: Conduct a resource characterization of the Latitude 31-30 area</p> <p>Activity C: Conduct Latitude 31-30 education and outreach</p> <p>Activity D: Form international partnerships in support of the program</p>	<p>Goal 6: Coordinate with federal, state and local governments, international organizations, and other public and private interests to develop and implement plans to protect the marine environment and the Sanctuary, and to encourage the conservation of these resources</p>	<p>Partnerships</p> <p>Public Awareness of System Management Plan Review – Future</p> <p>Characterization</p>	<p>Council established and fully operational with consensus made on priority actions by year one</p> <p>Latitude 31-30 resources fully characterized by year three</p> <p>Five new partnerships established with relevant regional MPA authorities by year five</p> <p>Progressive increase in commitment of resources (funds, research, collaboration, etc.) to the Latitude 31-30 Program over next five years</p>	<p>Staff monitoring</p> <p>Annual analysis of agency activity in program area compared to baseline</p>	<p>Established Council</p> <p>Regional resource characterization document</p> <p>Education and outreach brochure and poster</p>

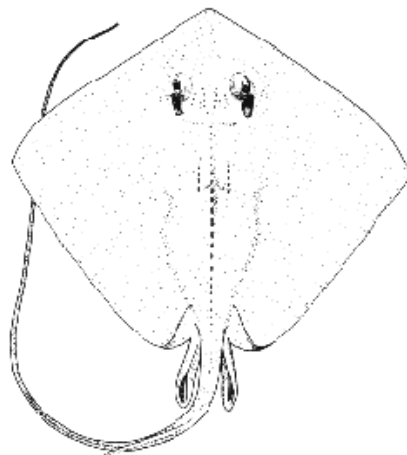
**Table 17: Performance Measures for the Administration Action Plan**

<b>STRATEGIES &amp; ACTIVITIES</b>	<b>GRNMS GOAL</b>	<b>PROGRAM PERFORMANCE MEASURE</b>	<b>GRNMS PERFORMANCE MEASURE</b>	<b>HOW MEASURED</b>	<b>EXPECTED OUTPUTS</b>
<p>AD-1: Improve Overall Site Staffing and Support Capabilities</p> <p>Activity A: Maintain existing staff and hire additional staff in support of new programs</p> <p>Activity B: Maintain and enhance the operation of the GRNMS Advisory Council</p> <p>Activity C: Develop and implement a comprehensive employee training plan</p>	<p>Goal 5: Dedicate appropriate infrastructure and resources for all programs, and create models of, and incentive for, ways to conserve and manage Sanctuary resources, including the application of innovative management techniques</p>	<p>Public Awareness of System</p> <p>Sanctuary Advisory Councils</p>	<p>Staffing level promotes efficient and effective implementation Sanctuary program plans</p> <p>Council meetings held on quarterly basis and lead to specific products</p> <p>Gaps in training needs identified and actions recommended by year two</p>	<p>Staff monitoring</p>	<p>Annual report of program plans</p> <p>Advisory Council minutes and annual report</p> <p>Completed employee training program</p>
<p>AD-2: Maintain and Enhance the Infrastructure of the Site</p> <p>Activity A: Enhance the facilities of the site</p> <p>Activity B: Maintain and renovate vessels as necessary</p> <p>Activity C: Identify, prioritize, and fill equipment needs</p>	<p>Goal 5: Dedicate appropriate infrastructure and resources for all programs, and create models of, and incentive for, ways to conserve and manage Sanctuary resources, including the application of innovative management techniques</p>	<p>Safe and Effective Operations</p>	<p>Office space and configuration of work stations promote efficient and effective working conditions</p> <p>Sanctuary IT systems are state-of-the-art, reliable, and useful (contain relevant applications, software, etc.)</p>	<p>Assessment performed and compared against agency standards</p> <p>Annual survey conducted and compared against agency standards</p>	<p>New storage facility</p> <p>Fully renovated existing facility</p> <p>New vessel</p> <p>IT equipment needs report</p>

**Table 18: Performance Measures for the Performance Evaluation Action Plan**

STRATEGIES & ACTIVITIES	GRNMS GOAL	PROGRAM PERFORMANCE MEASURE	GRNMS PERFORMANCE MEASURE	HOW MEASURED	EXPECTED OUTPUTS
EV-1: Develop and Implement a Performance Evaluation Program for GRNMS  Activity A: Monitor performance measures consistently over time  Activity B: Evaluate progress on regular basis and report out	All Site Goals		Performance measurement is fully integrated into site management  Results are reported consistently and fairly  Results directly impact management decision-making	In-house quarterly monitoring and report  All results are reported annually after review by the GRNMS Advisory Council	Annual Performance reports  State of the Sanctuary report to the public

# **Section IV: Alternatives Including the Preferred**



## SECTION IV: ALTERNATIVES INCLUDING THE PREFERRED

### PURPOSE AND NEED FOR ACTION

#### Background

GRNMS is a small but very important part of the broad continental shelf off the southeast coast known as the South Atlantic Bight (SAB). The Sanctuary encompasses 16.68 square nautical miles of rock outcroppings and ledges up to ten feet in height with sandy expanses and flat-bottomed troughs in a reef that combines temperate and tropical qualities. The rocky platform some 60 feet below the Atlantic Ocean's surface is carpeted with corals, sponges, and other invertebrates and is known as a "live bottom" habitat. The nearby Gulf Stream draws deep, nutrient-rich water to the region and carries and supports many of the tropical fish species and other animals found in the Sanctuary.

This flourishing ecosystem provides not only vertical relief, but also a solid base for an abundant marine invertebrate community. The reef attracts mackerel, grouper, black sea bass, angelfish, and a host of other fishes. An estimated 160 species of fish have been recorded at GRNMS; approximately 30 species spawn there. As a result, GRNMS is one of the most popular sport fishing and diving areas along the Georgia coast. Threatened loggerhead sea turtles use the live bottom features for resting and feeding. The world's most endangered large whale, the Northern right whale, calves nearby.

GRNMS was designated as the nation's fourth national marine sanctuary in 1981 for the purposes of:

- Protecting the quality of this unique and fragile ecological community;
- Promoting scientific understanding of this live bottom ecosystem; and
- Enhancing public awareness and wise use of this significant regional resource.

Sanctuary regulations were published in the *Federal Register* on January 26, 1981, and the original management plan was completed in 1983. No formal review or revision of the plan has occurred since that time. Congress, however, has amended the NMSA numerous times, strengthening and clarifying the conservation principles for the program.

The NMSA includes a provision to periodically evaluate the progress in implementing the management plan and the goals for each sanctuary, especially the effectiveness of site-specific techniques and strategies. Management plans and regulations must be revised as necessary to fulfill the purposes and policies of the NMSA. Scientific information, advancements in managing marine resources, and new resource management issues over the past 20 years should be addressed in the plan. A new management plan is needed to reflect these changes and to provide effective conservation and management of Sanctuary resources.

The Sanctuary is near one of the more rapidly developing regions along the U.S. coast. The increase in coastal population has been reflected in the increase in visitation to the

Sanctuary. At the time of Sanctuary designation in 1981, the population of the six Georgia coastal counties bordering the Atlantic Ocean (Camden, Glynn, McIntosh, Liberty, Bryan, and Chatham) was approximately 326,000. The 2000 census shows the population of the six counties to be 439,154 (U.S. Census Bureau, 2002). According to the Georgia Office of Planning and Budget (2002), the projected estimate of population of those counties for 2010 is 442,898, a 36 percent increase overall from 1981.

In 1983, the Sanctuary began conducting a yearlong survey to count the number of vessels visiting the Sanctuary using fixed-wing aircraft to fly over GRNMS. There were a total of 106 vessels sighted visiting GRNMS during 62 flights over the course of the year. The highest daily sighting was 14 boats during the Sapelo Open Kingfish Tournament. Today, the U.S. Coast Guard Auxiliary flies routine surveys over the Sanctuary. In 1999, a total of 527 boats were observed in the Sanctuary during 90 overflights. During one tournament day in 2001, 150 vessels were counted at the Sanctuary, exceeding the total counted over the course of the year in 1983.

Overflight and on-water surveys (GRNMS, unpublished data) indicate a similar increase in recreational fishing activities at GRNMS. That trend is expected to continue due to the rise in human population along the coast with a corresponding increase in boat registrations, the popularity of recreational fishing, and improved boating and fish-finding technologies. Increase in use, coupled with declines in fish populations, degradation of coastal habitats, and advancements in scientific and educational technologies require that the Sanctuary management plan be reviewed and revised appropriately to reflect current conditions. This FMP/FEIS has been prepared to address current resource conditions and compatible multiple uses at GRNMS.

## GENERAL SOCIOECONOMIC IMPACTS SUMMARY

### Overview of Sanctuary Users

Based on current socioeconomic studies (Ehler and Leeworthy, 2002; Bird *et al.*, 2001) and on-site surveys (GRNMS, unpublished data) of visitor use, NOAA has determined that the vast majority of users in GRNMS are recreationally fishing with rod and reel fishing gear. These recreational fishermen primarily use personal boats originating from various locations along the Georgia coast. There are less than ten fishing charter operations along the Georgia coast that occasionally target GRNMS.

Commercial fishing activity is negligible in GRNMS. Most commercial gear, such as bottom trawls, specimen dredges, explosives, and wire fish traps, are already prohibited in GRNMS due to the potential for damage to live bottom habitat. Surveys indicate that one charter boat captain (who also has a permit to fish commercially) may fish commercially on occasion using handline gear. Commercial hook-and-line fishermen targeting reef fish usually bypass the Sanctuary to fish well offshore along or just inside the shelf “break,” which is 80 nautical miles off Georgia but much closer to shore off Cape Hatteras, North Carolina, and Cape Canaveral, Florida. Commercial boats typically work north and south along the “break” well offshore of GRNMS and normally land most

of their catches in Florida and South Carolina since it is a shorter trip to/from the “break” to these ports.

While GRNMS is an important recreational fishing destination, it has only limited use by SCUBA divers due to the depth, strong currents, and frequent turbidity. Spearfishing activities also appear to be limited at GRNMS for many of the same reasons that limit divers.

### Regulatory Impact Analysis

The preferred alternatives have been reviewed by the NMSP to consider the effects of their regulatory actions on small businesses and other small entities, and to minimize any undue disproportionate burden. The regulations would apply to all users of the Sanctuary, including small entities. However, as described above, nearly all users already conduct their activities in such a manner as to already be in compliance with the regulations (i.e., most fishermen and divers do not anchor within the area, and the majority of recreational fishermen use rod and reel gear to fish in the area). There is only one known captain who occasionally fishes commercially in GRNMS using handline gear. Handline and spearfishing gear would continue to be authorized for use in the Sanctuary.

This EIS does not analyze the proposed FMP, with the exception of those strategies that involve regulatory actions that have been determined to be significant, which are analyzed in the following pages. The proposed FMP contains action plans that describe non-regulatory management strategies and actions that Sanctuary staff would use to address various issues identified during the management plan review process. Nested within each action plan is a series of strategies, each of which contains detailed actions Sanctuary staff would take over the next five years in order to meet GRNMS goals and objectives. These strategies comprise activities ranging from program planning, budgeting, administrative services, mapping, vessel operations, to basic and applied research and monitoring activities, education and outreach services, and advisory body activities. Section 6.03a3(b) of NOAA Administrative Order 216-6 (48 FR 14734) specifies that these and other administrative or routine program functions that have no potential for causing significant environmental impacts are eligible for a categorical exclusion. The NMSP has determined that the proposed actions within the Final Management Plan individually and cumulatively would have no significant impact on the environment and therefore, qualify for a categorical exclusion from NEPA’s requirement for conducting an environmental assessment or preparing an EIS. Thus, the FMP’s planned activities are not included or analyzed within this FEIS. The Sanctuary would implement the FMP regardless of which regulatory alternative it implements at the conclusion of this NEPA process.

Under Executive Order 12866, if a rule is determined to be significant, then a socioeconomic impact study (i.e., assessment of the costs and benefits of the regulatory action) must be conducted. The NMSP has concluded as the result of the socioeconomic studies noted above, that the preferred alternatives contained in this FMP/FEIS would not



have significant socioeconomic impacts (see Appendix I). The Office of Management and Budget has concurred with this conclusion.

## PREFERRED ALTERNATIVES

The following actions are regulatory in nature, and thus require an analysis of alternatives. The procedures include complying with NEPA by preparing an EIS that evaluates reasonable alternatives as well as the preferred alternatives.

Following is a discussion of the problems and alternative solutions that were identified through the management plan review and revision process. The options were developed through an open public process, consultations with the Advisory Council, analysis of the costs and benefits, and study of the socioeconomic implications.

### Anchoring

Anchor damage can pose a serious threat to GRNMS marine resources as anchors and anchor chains can damage or destroy hard bottom and the marine organisms that are dependent on the substrate. Some visitors to GRNMS use anchors to secure their boats for fishing, diving, and research. Given the nature of hard substrate in GRNMS, it is difficult to secure anchorage unless anchors snag crevices or overhanging ledges. As a result, anchor contact can physically damage or modify habitat by scraping, cracking, displacing, breaking, or removing substrate, or otherwise harming marine life attached to this substrate.

Marine invertebrates attached to the rock structure of the live bottom reef are especially susceptible to anchor damage. Anchors may dislodge or damage these organisms. While some animals may quickly recolonize such a damaged area of the substrate, the ecological value of the damaged community is significantly diminished. Scientists estimate that some of the large tropical sponge communities at GRNMS may be 15-20 years old (McFall and LaRoche, 1998). Preliminary evidence also suggests that hard corals at GRNMS are living close to their limits of environmental tolerance and have little energy to expend repairing damage. Because the fastest growing corals grow only a few centimeters a year, damage to coral communities from anchors and anchor chains can be especially severe and may require many years to recover, if recovery is even possible.

Anchoring may also have a negative effect on biodiversity as changes to the live-bottom composition can adversely affect either the habitat or the marine organisms of the reef. Bottom-dwelling invertebrates that inhabit the hard bottom areas of the reef provide either food or shelter to many species of fish and other invertebrates upon which larger reef and pelagic species of fishes feed. Any negative impact to the foundation of the reef can be passed along the food chain to adversely affect the overall biodiversity.

As a result of devastating anchoring impacts, the Florida Keys National Marine Sanctuary (FKNMS) has deployed a mooring buoy system throughout the Sanctuary, as well as prohibiting anchoring in certain areas. This system has proven to be an effective

tool for minimizing the damage to coral reefs and other sensitive marine resources resulting from careless and/or inappropriate anchoring practices. In addition, scientific and submersible dives have clearly documented severe anchor impacts on the corals of Flower Garden Banks National Marine Sanctuary (FGBNMS) off the Texas/Louisiana coast. This determination led the International Maritime Organization (IMO) to prohibit all anchoring in FGBNMS. In order to conform to the IMO regulations, NOAA/NMSP has also amended the FGBNMS regulations to prohibit anchoring. Vessels 100 feet in length and under can, however, tie to existing mooring buoys in FGBNMS.

Recognizing that even one misplaced anchor or swaying anchor chain can destroy or dislodge an array of delicate and slow-growing flora and fauna, which are critical to this natural community, anchoring impacts were considered during the 1981 GRNMS designation deliberations. The NMSP, however, concluded that anchoring practices at that time were not a significant threat to the marine resources. Anchoring, however, was included in the Designation Document as an activity that could be regulated in the future.

During the scoping phase of this management plan review, anchoring surfaced as a significant issue. Many participants suggested anchoring restrictions as a way to minimize damage to the ledges and live bottom habitat. One local recreational fishing organization delivered more than 500 comments indicating users would support an anchoring ban. Other participants in the management plan review suggested a ban might not be warranted given the limited number of boats that anchor.

Discussions with members of the recreational fishing community continue to indicate they support a ban on anchoring, noting that the majority of fishing activities take place without anchoring. In recent socioeconomic interviews (Ehler and Leeworthy, 2002), fishermen indicated once again that they are not utilizing fishing methods that require anchoring. Trolling and drift fishing are preferred methods of fishing for target species. Also, due to the nature of the strong currents, the small number of dive operators that currently visit GRNMS drift instead of anchoring (Ehler and Leeworthy, 2002).

While GRNMS has not conducted a detailed study on the effects of anchor-related damage at the Sanctuary, recreational and scientific divers have documented evidence of anchor damage on or near heavily fished ledges, including dislodged sponges, and debris associated with anchoring, such as cinder blocks. On-water surveys of use have begun to document the frequency and locations of anchored boats. One such survey during a fishing tournament documented approximately one-fourth of the boats as anchored, generally in known hard bottom areas of the Sanctuary where damage may have been done.

The U.S. Coast Guard Auxiliary has conducted overflights for several years to ascertain the level, and type, of use in the Sanctuary. While the frequency of the flights has been inconsistent, user data clearly indicates a trend toward increased visitation, principally by recreational fishermen. Given the new technologies in boating, electronic navigation, and fish finding, and the growth in human population along the Southeast coast (Ehler and Leeworthy, 2002), this trend is expected to continue. While the percentage of boats

anchoring may continue to be small, the number of boats anchored is expected to increase, resulting in increased damage to marine resources.

### Alternative Actions Considered

Following are the activities that have been considered in order to address the threat to resources from anchoring at GRNMS. The activities were developed through public comment, issue-specific workshops, and discussions with the Advisory Council. This section presents and recommends a specific regulatory action to address this issue. The preferred alternative is described first and other alternatives are described and considered. These alternatives and their analyses are required by NEPA.

#### a. Prohibit anchoring in GRNMS – (Preferred Alternative)

A new regulation would be promulgated to prohibit anchoring within GRNMS (except in an emergency that threatens life, property or the environment). Boat operators would also be allowed to moor at Sanctuary boundary marker buoys (located at the four corners of the Sanctuary boundary) for safety during an emergency. The following regulatory language would be added to the GRNMS regulations (15 CFR Part 922, Subpart I):

*(10) Anchoring any vessel in the Sanctuary, except as provided in §922.92 when responding to an emergency threatening life, property, or the environment, or except as may be permitted by the Director.*

Resources would also be committed to comprehensive education and outreach programs alerting users and the general public about the new rule and the need to protect the live bottom habitat from impacts of anchors and anchor chains. Enforcement activities likewise would be a priority for the site, as well as consistent monitoring of the habitat during routine scientific dives.

### Biological and Socioeconomic Impacts and Analysis

Aerial surveys over the past 20 years clearly indicate that some recreational users do anchor at GRNMS. The overall percentage of anchored users observed since 1983 is not definitive but seems to be in the range of 20-33 percent. While these figures are not exact, the definitive trend of the overall increase in use is clear. Even if the number of anchoring users seems small in terms of percentage, it is clear that the actual number of boats anchored has increased significantly over the past two decades. Recent aerial and on-water surveys have also linked the location of anchored boats to live bottom areas of the Sanctuary.

Live bottom habitat is strictly limited by the presence of rock outcroppings. Hard bottom can be damaged or destroyed by objects such as anchors, grappling hooks, or anchor chains. These threats were taken into account when determining that anchoring should be listed in the GRNMS terms of designation in 1981. At the time, it was concluded that anchoring activity was not significant enough to warrant a prohibition. Over the past 22

years since designation, it is evident that increased use of the Sanctuary merits consideration of an anchoring prohibition to protect reef resources.

Many public comments suggest that drifting or trolling are preferred methods for fishing and diving, the principal public activities in GRNMS. This indicates that it is entirely feasible to fish or dive at GRNMS without having to anchor and that there would be very minimal socioeconomic impact to users with an anchoring prohibition. A regulation with an exception for emergency anchoring in emergencies would address the needs of boaters should safety be an issue.

In analyzing this alternative, NOAA also considered GRNMS' designation by the SAFMC as an Essential Fish Habitat-Habitat Area of Particular Concern (EFH-HAPC). The designation under the provisions of the Sustainable Fisheries Act (P.L. 104-297) is designed to further protect certain locations in the marine environment that have important ecological functions. The designation is intended to assist the SAFMC in addressing further decreases in biological productivity leading to the decline of fish populations (SAFMC, 1998). Protecting fish habitat helps to support the sustainability of the economically important fishes at GRNMS.

Protection of the substrate and associated marine life of live bottom communities in GRNMS promotes long-term social and economic benefits to users and the public interest. Preventing damage to the live bottom from anchoring activities promotes healthy live bottom communities. From a socioeconomic perspective, healthy natural reef communities support the diversity of fishes sought by recreational fishermen and the diverse habitat of interest to recreational divers.

### Conclusions

Prohibiting anchoring at GRNMS would contribute significantly to the prevention of direct physical damages and destruction of the live bottom caused by anchoring activities. Given the well-documented increases in use at GRNMS, this action is seen as a proactive, cost effective, and efficient use of resources to prevent additional damage or destruction to vital habitat. Prohibiting anchoring at GRNMS would improve the ability of the Sanctuary to protect the vulnerable and valuable resources of an important live bottom habitat for present and future generations, without burdening users and without unreasonable expenditures. Prohibiting anchoring is, therefore, the preferred alternative to protect live bottom habitat.

#### b. Prohibit anchoring and establish a mooring buoy system:

All anchoring within GRNMS would be prohibited except in emergencies. An experimental mooring buoy system, however, would be designed and deployed in order to provide an alternative to users who wish to anchor their boats. The mooring buoy system would be monitored over time to determine effectiveness and possible negative impacts from concentrated use and user conflicts. The system would be designed for

removal or relocation as determined by monitoring during routine scientific dives. Education and enforcement programs would complement these changes.

### Biological and Socioeconomic Impacts and Analysis

As described in the preferred alternative above, prohibiting all anchoring in the Sanctuary would prevent future damage to the hard bottom and living marine resources from anchoring activities. The benefits and impacts are described under the preferred alternative.

The deployment of experimental mooring buoys in GRNMS might provide opportunities for some Sanctuary visitors who are unsure of fishing and diving without anchoring, as well as a safety measure to secure boats in an emergency. The absence of mooring buoys, however, is not a limiting factor for visitors to be able to conduct recreational activities in GRNMS.

An experimental mooring buoy system is anticipated to include less than five mooring buoys secured in locations within Sanctuary boundaries by drilling into hard bottom or securing in sandy bottom. Each buoy could support one or two recreational fishing boats (30 feet in length and under). Each buoy would cost approximately \$1000 to purchase and deploy. It is estimated that costs of design, annual maintenance, and monitoring could bring overall costs to approximately \$10,000 for the first year.

While the financial and administrative costs are reasonable, there are concerns of negative biological impacts and user conflicts that could arise from concentrated effort and use surrounding the buoys. Careful monitoring and evaluation of these effects (overfishing, diver impacts to living marine resources, and concentrated marine debris) would also be necessary. Securing mooring buoys in hard bottom would also result in some damage to the live bottom.

### Conclusions

As described above, prohibiting anchoring at GRNMS would improve the sustainability of the natural communities dependent upon the hard bottom habitat thus maintaining the economic benefits to recreational fishermen and divers. Management's concern that the elimination of anchoring may place a burden on users led to the suggestion to deploy an experimental mooring buoy system in GRNMS. However, in-person surveys (Ehler and Leeworthy, 2002) with various users and discussion with the GRNMS Advisory Council indicate that it is unnecessary for users to anchor in order to fish or dive in the area. In fact, the Advisory Council recommended not deploying a mooring buoy system, because it was not needed and may concentrate use over specific reef features, may result in additional user conflict, and may be an inefficient use of the Sanctuary's limited resources.

c. Establish and mark an anchoring zone over sandy bottom and prohibit anchoring elsewhere in the Sanctuary:

Anchoring would be prohibited in GRNMS except within a designated area over sandy bottom. The location of that area would be determined through ground truthing of existing bottom maps, and marked by buoys. Education and outreach projects would be developed to alert the public about the changes and the impacts of anchoring on live bottom habitat. Strict enforcement would be increased.

#### Biological and Socioeconomic Impacts and Analysis

The socioeconomic and biological consequences of a no-anchoring provision are discussed above. Likewise, a provision to allow anchoring only in a designated sandy bottom area of the Sanctuary would support protection of the live bottom habitat. Recent bottom mapping, with additional dives to ground truth an area, would make identification of a sandy bottom area feasible.

#### Conclusions

On-water and aerial survey analysis indicates that the majority of anchoring occurs in live bottom areas of GRNMS where users are fishing and sometimes diving. Thus, a designated anchoring zone over sand would provide no real benefit to users. Again, sport fishermen and divers indicate that drift diving, drift fishing, and trolling are the preferred techniques employed by most users at GRNMS. In addition to the cost for delineating an anchoring area over sandy bottom, costs would include buoys for marking the area, maintenance of those buoys, and significantly increased law enforcement patrols to ensure compliance. Therefore, other than for emergency purposes an anchoring zone over sand may not be useful and would be an inefficient use of Sanctuary resources.

#### d. Take no regulatory action but conduct an extensive research and monitoring program on the impacts of anchoring within GRNMS:

Significant resources, both funding and personnel, would be dedicated to a three to five-year study of the extent of anchoring activities and impacts at GRNMS. As proposed during the 2000 Habitat Conservation Workshop, the biological and physical research program would include larval source investigations, experimental manipulations, and seasonal monitoring, with an analysis of the results leading to conclusions in the next management plan review.

#### Biological and Socioeconomic Impacts and Analysis

Long-term biological consequences of continued and increased anchoring could be significant, as well as effects on the economic viability of the natural community for recreational and research purposes. In addition, design and implementation of the research and monitoring program would incur substantial costs. Accumulating user data as suggested would require more frequent on-water surveys throughout the year, diverting substantial personnel time and sizable funding from other priority projects.

## Conclusions

This alternative would represent a significant commitment of funding and personnel to activities for which the results are already well established, and would not represent an effective use of limited Sanctuary resources.

### e. No Action

No new regulatory, research, education, or enforcement programs would be planned over the next five years.

## Biological and Socioeconomic Impacts and Analysis

This alternative would have little or no short-term negative socioeconomic impacts for recreational or research users who visit GRNMS. Activities would continue as they do at this time. The long-term negative biological and socioeconomic impacts from the damage or destruction caused by anchor activities could, however, be significant. Given the recent observations by scientific and recreational divers of damage to the live bottom, and analysis of anchoring locations in live bottom areas, it is clear that the marine resources are now being damaged. Vessel use of the Sanctuary, and corresponding damage from anchors, would likely increase over time.

Continued anchoring at GRNMS and the consequent damage to the reef becomes increasingly inconsistent with the purposes and policies of the NMSA “to maintain the natural biological communities in the national marine sanctuaries, and to protect, and, where appropriate, restore, and enhance natural habitats, populations, and ecological processes.” Similarly, this management plan directs program staff to “[p]rotect, maintain, restore, and enhance the natural habitats, populations, and ecological processes in the Sanctuary.”

## Conclusions

Clearly, continued anchoring would result in additional damage to the habitat. While the percentage of boats anchoring may be small, a single incident of anchor contact with hard bottom and attached marine life can have significant and immediate biological consequences. Given the trend for human population increases in the coastal region near GRNMS and the corresponding trend of increasing visitor use at GRNMS, the damages are likely to mount, resulting in long-term socioeconomic consequences as the biological communities degrade.

## Fishing

Throughout the process of reviewing and revising the GRNMS management plan, fishing activities inspired the most interest and discussion. While most issue considerations have focused on fishing activities, the NMSP and GRNMS are concerned about maintaining

overall ecosystem health and the important role of fishery resources as a key component of the natural communities.

### Status of Relevant Fish Species in the Southeast Region

According to U.S. Department of Commerce, NOAA Fisheries Service (2004), fish stocks in the Southeast Region include 14 key species that are overfished or subject to overfishing, including snappers, groupers, tilefish, and black sea bass. These species are known as “reef” or “bottom” fishes, some of which are vulnerable to overfishing simply because of their life histories: they grow to be very large, grow slowly, are long-lived, and mature late in life. They are often harvested before they spawn for the first time.

Coastal pelagic fish species are composed of king, Spanish, and cero mackerel, cobia, wahoo, and dolphin. In the Atlantic, the king mackerel and Spanish mackerel populations are considered to be healthy relative to the amount of fish that are harvested. The status of dolphin, cobia, and cero mackerel is considered unknown, but current harvest levels are not expected to jeopardize populations. Established quotas for coastal pelagic fish species are closely monitored as part of management efforts to maintain sustainable populations, while continuing to allow economically beneficial harvesting of fish.

SAFMC has noted that, with improved technology to locate and capture fish, the number of people fishing is steadily increasing. Some fish species, particularly reef fish, have been heavily targeted with the level of catches exceeding the levels recommended to maintain stocks in a healthy condition.

### Commercial Fishing in the Southeast Region

Commercial fisheries in the Southeast Region (North Carolina through Texas and inland) total 1.8 billion pounds harvested, with a dockside value of \$922 million. The most valuable fishery is shrimp; menhaden is the second largest commercial fishery in volume. In 1999, the preliminary total ex-vessel value of landings of marine resources in Georgia was \$21.13 million. The highest value fishery is white shrimp. In 1999, shrimp accounted for \$16.8 million of the total \$21.1 million. Shrimp and crab landings have historically accounted for over 96 percent of the total commercial harvest for Georgia. Over 90 percent of Georgia shellfish are caught in the area zero to three miles from shore (Ehler and Leeworthy 2002).

### Commercial Fishing in GRNMS

Many commercial gears are prohibited in GRNMS. Bottom trawls, specimen dredges, explosives, and wire fish traps cannot be used in the Sanctuary, due in part to the potential for damage to live bottom habitat. Surveys (Ehler and Leeworthy, 2002) indicate that one fisherman is known to occasionally fish commercially in GRNMS for Atlantic king mackerel using rod and reel or handline gear. Commercial hook-and-liners or “bandit reel” fishermen targeting reef fish usually bypass the Sanctuary to fish well



offshore along or just inside the shelf “break,” which is 80 nautical miles off Georgia (Ehler and Leeworthy, 2002).

Commercial fishing for invertebrates has recently been documented in GRNMS. In early 2002, the U.S. Coast Guard boarded a commercial vessel trawling above the bottom for jellyfish within Sanctuary boundaries. Trawls utilized above the bottom are not currently restricted; however, taking of invertebrates is prohibited. In addition to mid-water trawls, examples of other commercial fishing gear not currently prohibited in GRNMS include bandit gear, buoy gear, longlines, sea bass pots, and run around gillnet.

### Recreational Fishing in the Southeast Region

The southeastern Atlantic U.S. coast accounted for the majority of total marine angling participants (5.8 million anglers), trips (53 million trips), and total number of fish caught (284 million fish) in U.S. waters in 2001. NOAA Fisheries Service’ data collected through the Marine Recreational Fishery Statistical Survey (MRFSS) for the Southeast Region show that recreational fisheries have significant impacts on many economically important species. Recreational landings surpass commercial landings for some species.

### Recreational Fishing in GRNMS

Since designation 23 years ago, recreational fishing at the Sanctuary has increased significantly. The Sanctuary is near a rapidly developing region along the U.S. coast. Boat registrations and offshore boating activities have likewise increased along with the growth in human population (Ehler and Leeworthy, 2002).

Observations from aerial and on-water surveys (GRNMS, unpublished data) at GRNMS indicate that the principal use of the Sanctuary by the public is recreational fishing. Fishing and diving activities are expected to continue to rise due to the increase in population, the increase in boaters, advanced boating and fishing technology, and the popularity of marine recreational activities. Available information indicates that the majority of fishermen in GRNMS are seeking pelagic Atlantic king mackerel (generally during tournaments), although black sea bass and other reef species are among the targeted catches.

The most extensive long-term survey of reef fish in the Sanctuary, MARMAP (Marine Resources Monitoring Assessment and Prediction), concludes that “...the fish community and dominant economically valuable species (black sea bass) at GRNMS show the same signs of overfishing that are prevalent on live bottom reefs throughout the South Atlantic Bight” (McGovern *et al.*, 2001). Whereas stocks of black sea bass are improving, other species of reef fish expected in habitats like GRNMS, such as vermilion snapper and gag, are found there only rarely (Sedberry pers. comm.).

### Recreational and Commercial Spearfishing in GRNMS

Spearfishing was considered for regulation during the original 1981 GRNMS designation. No regulations, however, were adopted at that time, except the prohibition of powerheads (explosives) for spearfishing. While the number of recreational divers spearfishing at GRNMS appears to be small, spearfishing typically targets the larger individual fish among the reef-dependent species. Large fish are important to the reproductive health of species. Some fish populations are overfished or approaching overfished status. Some researchers have commented on the lack of large snapper-grouper individuals at GRNMS (Bohnsack pers. comm.).

Research has shown significantly reduced populations of larger predatory fishes where spearfishing occurs (SAFMC, 1990; Bohnsack, 1982; Chapman and Kramer, 1999; Jouvenel and Pollard, 2001). Larger predators are favored targets of spearfishermen. Reduction in the larger predatory fishes can have a “top-down” effect on fish populations by allowing other fish populations to increase, altering the composition of the overall natural communities including invertebrates.

Although the use of powerheads is prohibited at GRNMS, powerhead cartridges found on site indicate that this gear is still in use. Law enforcement officials have expressed concerns that some commercial spearfishing operations may be harvesting large numbers of undersized fish from the region.

#### Alternative Actions Considered

The following are the alternatives that have been considered in order to address resource concerns from fishing activities at GRNMS. The alternative actions were developed through public comment, issue-specific workshops, and discussions with the GRNMS Advisory Council, SAFMC, NOAA Fisheries Service Southeast Region, and GADNR.

In the DMP/DEIS, Alternative “a” was identified as the preferred alternative, which would have prohibited spearfishing as well as all other types of fishing except with rod and reel and handline gear. However, NOAA has decided to adopt alternative “c” which would continue to allow use of spearfishing gear without powerheads while GRNMS gathers additional socioeconomic information on fishing activities in GRNMS. Biological studies that are now underway would continue and help address the issue. NOAA would reconsider this issue in two years. The preferred alternative is described first and other alternatives are described and considered.

#### c. Allow fishing in GRNMS only with rod and reel, handline, or spearfishing gear without powerheads (Preferred Alternative):

New regulations would be promulgated to allow fishing only with rod and reel, handline, or spearfishing gear without powerheads. All other fishing gear would be prohibited by these rules. The following regulatory language would be added to the GRNMS regulations (15 CFR Part 922, Subpart I):

(5) (i) *Injuring, catching, harvesting, or collecting, or attempting to injure, catch, harvest, or collect, any marine organism, or any part thereof, living or dead, within the Sanctuary by any means except by use of rod and reel, handline, or spearfishing gear without powerheads.*

(ii) *There shall be a rebuttable presumption that any marine organism or part thereof found in the possession of a person within the Sanctuary has been collected or removed from the Sanctuary.*

(6) *Except for fishing gear stowed and not available for immediate use, possessing or using within the Sanctuary any fishing gear or means except rod and reel, handline, or spearfishing gear without powerheads.*

In addition to those definitions found at §922.3, the following definitions apply to this subpart:

*Handline* means fishing gear that is set and pulled by hand and consists of one vertical line to which may be attached leader lines with hooks.

*Rod and reel* means a rod and reel unit that is not attached to a vessel, or, if attached, is readily removable, from which a line and attached hook(s) are deployed. The line is payed out from and retrieved on the reel manually or electrically.

*Stowed and not available for immediate use* means not readily accessible for immediate use, e.g., by being securely covered and lashed to a deck or bulkhead, tied down, unbaited, unloaded, partially disassembled, or stowed for transit.

#### Biological and Socioeconomic Impacts and Analysis

Socioeconomic reports (Ehler and Leeworthy, 2002) clearly indicate that recreational rod and reel fishing is the principal activity in GRNMS. Allowing only rod and reel, handline, and spearfishing gear without powerheads is not expected to alter the activities of the vast majority of users of GRNMS, thus resulting in little socioeconomic impact.

In considering Alternative “c”, NOAA acknowledges the designation of GRNMS by the SAFMC as an Essential Fish Habitat-Habitat Area of Particular Concern (EFH-HAPC) under amendments to the Coral, Coral Reefs and Live/Hard Bottom Fishery Management Plan (FMP). The designation is authorized under the provisions of the Magnuson-Stevens Fishery Conservation and Management Act (16 USC 1801 *et seq.*), and has been established to further protect certain locations in the marine environment that have important ecological functions. The EFH-HAPC designation is intended to assist the SAFMC in preventing further decreases in biological productivity leading to the decline of fish populations (SAFMC, 1998a, b). Further, preventing the decline of fish populations by protecting fish habitat, helps to ensure the sustainability of the economically important fishes at GRNMS.

Currently, there is a variety of fishing gear that could damage habitat and negatively affect resources in the Sanctuary and some of these gear types are described below:

- **Nets:** Bottom trawl nets have been prohibited in the Sanctuary since its designation in 1981 due to risk of damage to live bottom habitat however other types of nets are currently allowed to be used in the Sanctuary. Early in 2002, a USCG vessel observed and boarded a commercial trawl vessel that was operating above the bottom, harvesting jellyfish. While this practice is not likely to damage bottom resources, removing invertebrates such as jellyfish is currently prohibited in the GRNMS. Any trawl net towed through the Sanctuary is likely to remove invertebrates or other resources regardless of whether they are a targeted catch. Thus, to be consistent and clear to the public and users of GRNMS, the preferred alternative includes prohibiting all nets.
- **Traps and Pots:** At the time of designation, wire fish traps were prohibited in GRNMS due to the potential for habitat damage and depletion of fish stocks. Review of the existing regulations and NOAA Fisheries Service' gear definitions (50 C.F.R. § 622.2) indicates that a revision of the regulations is needed to clarify the intent to prohibit any traps or pots. The intent of GRNMS regulations as explained in the original 1981 FEIS is to prohibit all such traps or pots, which the allowable gear approach accomplishes.
- **Other gear types:** While other types of fishing gear are not currently believed to be in use or to be rarely used in the Sanctuary, the potential exists for such gear types to become more common in GRNMS. This includes bandit gear, longlines, and buoy gear. As targeted fisheries dwindle or are further regulated, commercial boats may shift their efforts and gear to target other species and other areas. These shifts could eventually focus on GRNMS, such as the trawler boarded for harvesting jellyfish in early 2002. These gear types could damage the hard bottom structure and organisms attached to, and dependent upon, the hard bottom. To avoid the potential for damage to Sanctuary resources from these gear types, use of these types of gear would be prohibited.

### *Spearfishing*

In the original GRNMS designation document, spearfishing was identified as an activity that may be regulated to “ensure the protection and preservation of the Sanctuary’s marine features and the ecological, recreational, and aesthetic value of the area” (U.S. Department of Commerce, NOAA, GRNMS 1983). Although spearfishing was listed because of the potential for damage to marine resources, only the prohibition on powerheads (explosives) was promulgated at that time. While surveys (Ehler and Leeworthy 2002) indicated that commercial dive operators are unlikely to participate in spearfishing at GRNMS, some private recreational boaters spearfish in GRNMS. GRNMS proposed to prohibit spearfishing activity in the DMP/DEIS.

While it has been effectively demonstrated in other areas that selective removal of large individual fish can adversely affect the reproductive viability of a given population, the sanctuary has little data on the actual level of spearfishing at GRNMS. In order to assess the socioeconomic landscape of spearfishing activities at the sanctuary a focused study would be initiated to determine the level of spearfishing and other fishing activities. An expanded socioeconomic survey coupled with ongoing biological studies of fish populations would enable management to better evaluate the impact of current and potentially future levels of spearfishing in GRNMS.

#### *Socioeconomic and Biological Surveys*

To support reconsideration of spearfishing activity at GRNMS, staff are in the process of designing federally-approved survey instruments (survey, observations and interviews) on spearfishing and other fishing activities. The socioeconomic data would address specifically the questions of spearfishing frequency and other fishing activities in the sanctuary, the estimated annual catch of reef dependent species at GRNMS and the relative contribution of spearfishing to the total catch each year. The sanctuary would use the ongoing, long-term biological data collected through the MARMAP program and diver census methods to evaluate fish populations at GRNMS.

#### *Hook Limits*

NOAA has also determined that establishing hook limits on rod and reel and handline gear, as described in the proposed rule of the DMP/DEIS, would complicate compliance and law enforcement. Law enforcement officials noted that the hook limitations would be extremely difficult to enforce. The preferred alternative, therefore, does not impose hook limits in the regulations.

#### Conclusions

Given all of these factors, GRNMS believes it is appropriate to prohibit the use of certain gear that is currently allowable under the existing regulations in order to better protect the resources of the Sanctuary. Prohibition of other fishing gear (trawls, longlines, nets, traps, and pots) that would likely have detrimental effects on habitats and marine resources is preferred. Additionally, these prohibitions would have little socioeconomic impact.

NOAA GRNMS would therefore defer taking action on spearfishing as was proposed in the DMP/DEIS for a period of two years while additional information is collected on this activity in GRNMS. The issue would be reviewed again with the benefit of additional socioeconomic and biological analyses. NOAA GRNMS would then determine what action to take, if any, given the additional data. In addition, hook limits would be eliminated from the final proposed rules.

#### Other Fishing Alternatives Considered

a. Revise Sanctuary regulations to allow fishing only with rod and reel and handline gear:

New regulations would be promulgated to allow fishing only with rod and reel and handline gear. All other fishing gear would be prohibited by these rules. The following draft regulatory language would be added to the GRNMS regulations (15 CFR Part 922, Subpart I):

*(5) (i) Injuring, catching, harvesting, or collecting, or attempting to injure, catch, harvest, or collect, any marine organism, or any part thereof, living or dead, within the Sanctuary by any means except by use of rod and reel and handline gear.*

*(ii) There shall be a rebuttable presumption that any marine organism or part thereof found in the possession of a person within the Sanctuary has been collected or removed from the Sanctuary.*

*(6) Except for fishing gear stowed and not available for immediate use, possessing or using within the Sanctuary any fishing gear or means except rod and reel and handline gear.*

In addition to those definitions found at §922.3, the following definitions apply to this subpart:

*Handline* means a single line with no more than three attached hook(s) that is tended directly by hand.

*Rod and reel* means a rod and reel unit that is not attached to a vessel, or, if attached, is readily removable, and from which a single line having no more than three hooks attached is deployed. The line is payed out from and retrieved on the reel manually, electrically, or hydraulically. Not more than eight hooks per line may be used to capture bait fish and the hooks must not exceed #8 size category of the “sabiki” style bait hooks.

*Stowed and not available for immediate use* means not readily accessible for immediate use, e.g., by being securely covered and lashed to a deck or bulkhead, tied down, unbaited, unloaded, partially disassembled (such as spear shafts being kept separate from spear guns), or stowed for transit.

### Biological and Socioeconomic Impacts and Analysis

As discussed above in the preferred alternative (“c”) there is a variety of fishing gear that could damage habitat and negatively affect marine resources in the Sanctuary. The types of gear include trawls, longlines, nets, traps, and pots. GRNMS has concluded that it is appropriate to prohibit the use of certain fishing gear that is currently allowable under the existing regulations in order to better protect the resources of the Sanctuary. Additionally, these prohibitions would have little socioeconomic impact.

In the original GRNMS designation document, spearfishing was identified as an activity that may be regulated to “ensure the protection and preservation of the Sanctuary’s marine features and the ecological, recreational, and aesthetic value of the area” (U.S. Department of Commerce, NOAA, GRNMS 1983). Although spearfishing was listed because of the potential for damage to marine resources, only the prohibition on powerheads (explosives) was promulgated at that time.

While surveys (Ehler and Leeworthy 2002) indicate that commercial dive operators are unlikely to participate in spearfishing at GRNMS, some private recreational boaters spearfish in GRNMS. Increasing use by recreational visitors and the potential impacts of such use as seen in other locations, along with the lack of individual large fish observed by researchers, prompted GRNMS to propose prohibiting any spearfishing activity in the DMP/DEIS.

NOAA GRNMS identified Alternative “a” as the preferred alternative in the DMP/DEIS. Analysis also noted that socioeconomic reports (Ehler and Leeworthy, 2002; Bird *et al.*, 2001) identify recreational rod and reel fishing as the principal activity in GRNMS. This alternative to allow only rod and reel and handline fishing gear would not affect the activities of the recreational rod and reel fishing community, thus resulting in little socioeconomic impact.

### Conclusions

GRNMS has carefully considered information and comment about this alternative provided during the comment period for the DMP/DEIS. NOAA recognizes that while it has been effectively demonstrated in other areas that selective removal of large individual fish can adversely affect the reproductive viability of a given population, the sanctuary has little data on the actual level of spearfishing at GRNMS. The sanctuary would, therefore, gather additional socioeconomic information on this activity in GRNMS and review the issue again in two years. The additional socioeconomic information coupled with ongoing biological studies of fish populations would enable management to better evaluate the impact of current and potentially future levels of spearfishing.

As a result of its further consideration of this issue, NOAA would not be prohibiting spearfishing at GRNMS at this time but does not preclude the possibility depending on the results of further data collection and analysis. Therefore this alternative is not preferred.

#### b. Prohibit use or possession of spearguns, nets, bandit gear, buoy gear, longlines, traps, or pots in GRNMS:

New regulations would be promulgated to prohibit use or possession of spearguns, nets, bandit gear, buoy gear, longlines, traps or pots, and the currently prohibited gear in GRNMS. With these restrictions in place, a public awareness campaign would be initiated to describe the new regulations. The Sanctuary would also enhance reef fish assessment, monitoring and enforcement activities.

## Biological and Socioeconomic Impacts and Analysis

Most visitors to GRNMS are recreationally fishing with rod and reel gear. Alternatives “a” and “c” outline an approach to protection through “allowable” gear regulation. This alternative analyzes the approach of “prohibiting” several types of incompatible fishing gear.

As noted above, some currently allowed gear types could negatively impact habitat and biodiversity in the Sanctuary. The types of gear include various nets, longlines, bandit gear, sea bass pots, and buoy gear. Eliminating use of these gear types would protect vulnerable marine resources, such as invertebrates, marine mammals, sea turtles, and sea birds.

SAFMC and NOAA Fisheries Service have instituted numerous regulations addressing specific fish species, groups of species, habitat restrictions, gear types, harvest limits, and closures. The result is a mosaic of restrictions on size and number of fish caught, type of gear used, category of permits, and time and area closures.

### Conclusions

Regulating specific gear types could add more complication and confusion for fishermen by lengthening the list of restricted fishing methods and gear, versus clearly identifying what gear is allowed in GRNMS. In addition, periodic analysis of new fishing gear, or gear types newly applied in the EEZ off the southeastern United States, would be necessary to keep the regulations current. This would add more cost to GRNMS and could increase the number of regulatory changes for Sanctuary users to adjust to over time. Addressing additional gear prohibitions would incur more costs over time, both to GRNMS and users who may have already invested in fishing gear that is damaging to GRNMS resources, and possibly create more confusion than clarity for users of GRNMS. This alternative is not preferred.

#### d. No Action:

Fishing activities would continue as is, with the potential for other types of fishing gear to be utilized in GRNMS. Education, research, and enforcement programs that address fishing activities in GRNMS would likely continue.

## Biological and Socioeconomic Impacts and Analysis

Fishing represents the primary use of GRNMS. With increasing numbers of fishermen accessing the Sanctuary, maintaining the health of the living and non-living resources is a complex challenge. NOAA expects that the continuing and increasing levels of certain activities in GRNMS would result in a degradation of the habitat and living marine resources. This is particularly true given the increase in use, improvements in technology



and the variety of new fishing gear not contemplated when the current regulations were adopted 25 years ago.

### Conclusions

Taking no action would ignore the significant changes over the last 23 years and that current activities are not in accord with the conservation objectives of the Sanctuary. Thus, this alternative is not preferred.

### REVISIONS TO EXISTING REGULATIONS

The following changes would be made to existing regulations. Each modification is compared with leaving the existing regulation unchanged. Although the changes would clarify and strengthen existing regulations no socioeconomic impacts are anticipated.

#### Adding Submerged Lands to the GRNMS Boundary

This change would clarify that the submerged lands (i.e., the lands underlying the waters of the Sanctuary) are part of the Sanctuary boundary (15 CFR § 922.90). There would be no practical change resulting from this revision because the Sanctuary has managed the submerged lands and has administered protective measures for them since designation in 1981. The NMSP has consistently regarded submerged lands as part of national marine sanctuaries and this was formally reflected in amendments to the NMSA 1984. This change would clarify the GRNMS boundary description and bring it into conformity with the NMSA.

#### No Action

Leaving the boundary regulation unchanged would have no legal effect because regulations promulgated in 1981 prohibiting dredging, drilling or altering the submerged lands would continue to apply. However, the boundary description would be less precise and would not be consistent with the definition of “marine environment” in the NMSA, which specifically includes submerged lands (16 U.S.C. § 1432(3)).

#### Biological and Socioeconomic Impacts and Analysis

This change would result in a clarification that would bring the boundary description into conformity with the NMSA. Because it is essentially technical in nature, no impacts would result from the change.

#### Constructing, Placing, or Abandoning Any Structure, Material, or Other Matter on Submerged Lands

The existing regulation prohibits constructing any structure other than a navigation aid (15 CFR § 922.91(a)(1)). The revision would extend this prohibition to placing or abandoning any structure, material or other matter on the submerged lands of the

Sanctuary. This change would prohibit activities that have been identified in the Florida Keys National Marine Sanctuary, where materials have been unlawfully placed on submerged lands to create artificial lobster habitat, as well as efforts by individuals in the Channel Islands National Marine Sanctuary to create an artificial reef by placing conduit sections on submerged lands. This measure would clarify that materials cannot be placed or abandoned on GRNMS submerged lands and would facilitate enforcement efforts by clearly specifying that “placing” and “abandoning” are prohibited activities.

#### No Action

The existing regulation prohibits constructing any structure on the submerged lands and could be interpreted to also prohibit placing or abandoning any material or other matter. However, the regulation is less clear and precise than the revision and might not reach activities identified in other sanctuaries that would be harmful to the significant bottom formations and habitats at GRNMS.

#### Biological and Socioeconomic Impacts and Analysis

The revised regulation is precautionary and would not affect current activities and would have no socioeconomic impacts. The disposal into the sanctuary of trash and debris is already prohibited and the regulation would prohibit activities that have not occurred at GRNMS but that have been identified at other sanctuaries (Florida Keys and Channel Islands). The revision would have positive biological impacts to species and habitats at GRNMS by protecting against the placing or abandoning of material on the submerged lands.

#### Using Underwater any Explosives, or Devices That Produce Electric Charges Underwater

The existing regulation prohibits using poisons, electric charges, explosives, or similar methods to take any marine animal not otherwise prohibited to be taken (15 CFR § 922.91(a)(6)(i)(C)). The revision would prohibit the use underwater of explosives and devices that produce electric current, without reference to the taking of a marine animal and would remove the reference to poisons, which is already prohibited by the regulation against discharges. NOAA is not aware of any non-scientific use of these materials underwater at GRNMS. This change would assist enforcement by removing the requirement that explosives or devices producing electric current were being used to take marine animals.

#### No action

The current prohibition would remain in effect and continue to afford protection to marine animals from poisons, electric charges and explosives. However, it would apply only if it could be shown that any of these means was being used to take a marine animal and would be more difficult to enforce than the revision.

#### Biological and Socioeconomic Impacts and Analysis

No socioeconomic impacts are expected to visitors of GRNMS. There would be positive impacts to marine life because the revision would be easier to enforce by prohibiting outright the use underwater of explosives and devices that produce electric current. Both can be very destructive to the reef species and habitats found at GRNMS.

#### Moving, Removing, Damaging, or Possessing, or Attempting to Move, Remove, Damage, or Possess, Any Sanctuary Historical Resource

Research is increasingly showing that there are significant historical resources at GRNMS. The current regulation prohibits tampering with, damaging, or removing historic or cultural resources (15 CFR § 922.91(a)(7)). The modification would add “moving” and “possessing” to the regulation while removing “tampering with”. Experience with historic resource violations at the Channel Islands National Marine Sanctuary indicates that simply moving historic resources from their original locations can result in the loss of significant contextual information that would be valuable for research and better understanding of the history of Gray’s Reef. Adding “possessing” to the regulation would facilitate enforcement and also discourage the transfer of unlawfully removed items. These changes would better protect the historic resources at GRNMS. The term “cultural” would be removed because the definition of “historical resource” in NMSP regulations includes any resource possessing historical, cultural, archaeological or paleontological significance (15 CFR § 922.3).

#### No Action

Without the change, historical resources would continue to be protected but enforcement would be more difficult because possession of unlawfully removed items would not be prohibited. It is also not clear that the existing regulation prohibits moving an item from its original location.

#### Biological and Socioeconomic Impacts and Analysis

No socioeconomic impacts are anticipated to visitors and users of the Sanctuary and there would be no biological impacts. Historical resources would be afforded better protection because the regulation would be clearer and easier to enforce, and would prohibit possession.

#### Permit Procedures and Criteria

The changes would make the permit process clearer in terms of the scope, purpose, manner, terms and conditions of permits issued at GRNMS. The modifications would clarify issuance criteria and would add a new permit category, “Assisting in managing the Sanctuary.” This new category would allow managers at GRNMS to engage in activities that would be otherwise prohibited and that would not fit in existing permit categories (research, education and salvage/recovery). For example, it would allow installation of permanent buoy anchors in the submerged lands to mark the corners of GRNMS to help

visitors know when they are in the Sanctuary. The modifications to permit categories would also clarify that salvage/recovery permits are issued in connection with recent air or marine casualties.

The current regulation (15 CFR § 922.83) requires only that prior to issuing a permit the Director “shall evaluate” the professional and financial responsibility of the applicant; the appropriateness of the methods that would be used; the extent to which the conduct of the activity may diminish or enhance the value of the Sanctuary; the end value of the activity; and other matters deemed appropriate. The changes would require the Director of the NMSP or his/her designee to make findings that a permit would meet specified criteria. This would result in a clearer basis for issuing permits and should result in greater consistency in the review of applications. In addition to the existing criteria, the Director would be required to find that the activity would not last longer than necessary to achieve its purpose; the proposed methods and procedures are appropriate to the activity’s goals in relation to its impacts on Sanctuary resources and qualities; the proposed activity would be conducted in a manner compatible with protection of Sanctuary resources and qualities, considering the extent to which they may be diminished by the activity or by indirect, secondary or cumulative effects and their duration; the activity would be conducted in manner compatible with Sanctuary’s recreational, educational, or scientific value, considering the extent to which the activity may result in conflicts between users, and the duration of such effects; whether it is necessary to conduct the activity within the Sanctuary; and whether the activity’s end value to further Sanctuary goals and purposes would outweigh potential adverse impacts on Sanctuary resources and qualities from the activity. The revised regulations would also require that a copy of the Sanctuary permit be displayed on board all vessels or aircraft used in the activity.

#### No Action

Under the no action alternative, the existing permit regulations would continue to apply.

#### Biological and Socioeconomic Impacts and Analysis

The revisions would have minor impact on permit applicants, who might be required to submit more detailed application descriptions. Generally, the nature of the information that they currently submit would be the same (e.g., professional and financial qualifications, proposed methodology and impacts, purpose of the activity). The primary impact would be on the NMSP, which would be required to analyze an application in terms of the proposed additional criteria and to make findings before a permit could be issued. This would result in a more consistent permit process with all applications being evaluated according to more specific criteria. This, in turn, would result in permits that are issued and conditioned more fully in accordance with the standards of the NMSA and the goals and objectives of GRNMS.

## TERMS OF DESIGNATION

Because this action includes changes to the Sanctuary's Designation Document, the FMP/FEIS is developed pursuant to section 304(a)(2) of the NMSA, 16 U.S.C. §1434(a)(2), consistent with, and in fulfillment of, the requirements of the National Environmental Policy Act of 1969. The NMSA requires that any changes in the terms of designation be made by the same procedures by which the original Sanctuary designation was made.

NOAA is proposing to clarify in the Designation Document that the submerged lands at GRNMS are legally part of the Sanctuary and are included in the boundary description. At the time the Sanctuary was designated in 1981, Title III of the Marine Protection, Research, and Sanctuaries Act (now also known as the National Marine Sanctuaries Act) characterized national marine sanctuaries as consisting of coastal and ocean waters but did not expressly mention submerged lands thereunder. NOAA has consistently interpreted its authority under the NMSA as extending to submerged lands, and amendments to the NMSA in 1984 (Pub.L. 98-498) clarified that submerged lands may be designated by the Secretary of Commerce as part of a national marine sanctuary (16 U.S.C. § 1432(3)). NOAA would therefore update the Designation Document and the boundary description for consistency with the NMSA. Boundary coordinates in the revised Designation Document and in the Sanctuary regulations would be expressed by coordinates based on NAD 83 datum.

Although certain fishing activities have been regulated at GRNMS since 1981, provisions addressing the injuring, catching, harvesting, or collecting of marine organisms, and the stowage of fishing gear the use of which is not allowed are being added to the Designation Document to authorize regulations for use of allowable fishing gear and for stowage of fishing gear the use of which would not be allowed in the Sanctuary. The Designation Document would also be updated to specifically authorize regulating the use underwater of explosives and devices that generate electrical current. Language would also be added to the Designation Document that would authorize regulating the discharge or deposit of any material from outside the Sanctuary that subsequently enters and injures a Sanctuary resource or quality.

## ENVIRONMENTAL AND CUMULATIVE IMPACTS

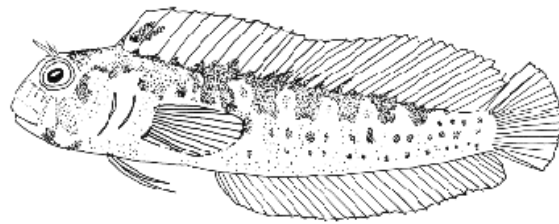
The proposed new and revised regulations would apply to all users of the Sanctuary. However, as described above, most users already conduct their activities in such a manner as to already be in compliance with the regulations (i.e., most fishermen and divers do not anchor within the area and the majority of recreational fishermen use rod and reel gear to fish in the area). There is only one known captain who occasionally fishes commercially in GRNMS using handline gear. Handline gear would continue to be authorized for use in the Sanctuary. Spearfishing without powerheads would continue to be authorized. The NMSP therefore expects that this rule would have no significant socioeconomic impacts.

Also, given that under this alternative all types of fishing gear would be prohibited at GRNMS except for rod and reel, handline, and spearfishing gear without powerheads, it is expected that this management strategy would be clear and easily understood by the fishing community and by the public generally. It would also simplify and facilitate monitoring and law enforcement.

Preventing damage to the live bottom from anchoring activities and the use of damaging fishing gear promotes healthy live bottom communities and creates minimal negative socioeconomic impacts. From a long-term socioeconomic perspective, healthy natural reef communities support the diversity of fishes sought by recreational fishermen and the diverse habitat of interest to non-consumptive recreational divers, thereby enhancing those uses for the future.

In conclusion, these actions would improve the ability of the NMSP and GRNMS to protect the vulnerable and valuable resources of an important live bottom habitat for present and future generations, without burdening users and without unreasonable Sanctuary expenditures. Given the well-documented increases in use at GRNMS, these actions are seen as a proactive, cost effective, and efficient use of resources to prevent additional damage or destruction to vital habitat.

# Appendices



## APPENDIX I: FINAL RULE

DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration

15 CFR Part 922  
Docket No. 031001243-3243-01  
RIN 0648-AQ41

Gray's Reef National Marine Sanctuary Regulations

**AGENCY:** National Marine Sanctuary Program (NMSP), National Ocean Service (NOS), National Oceanic and Atmospheric Administration (NOAA), Department of Commerce (DOC).

**ACTION:** Final rule; notice of public availability of final management plan/final environmental impact statement.

**SUMMARY:** The National Oceanic and Atmospheric Administration (NOAA) is issuing a final revised management plan and revised regulations for the Gray's Reef National Marine Sanctuary (GRNMS or sanctuary). The revised regulations prohibit anchoring in the sanctuary and restrict all fishing except that conducted by rod and reel, handline, or spearfishing gear without powerheads.

**EFFECTIVE DATE:** Pursuant to section 304(b) of the National Marine Sanctuaries Act (NMSA) (16 U.S.C. 1434(b)), the regulations shall take effect and become final after the close of a review period of forty-five days of continuous session of Congress beginning on the day on which this document is published. Announcement of the effective date of the final regulations will be published in the Federal Register.

**FOR FURTHER INFORMATION:** Contact Reed Bohne, Manager, Gray's Reef National Marine Sanctuary, 10 Ocean Science Circle, Savannah, Georgia, 31411; 912/598-2345.

### SUPPLEMENTARY INFORMATION:

#### Introduction

Pursuant to section 304(e) of the National Marine Sanctuaries Act (16 U.S.C. 1434(e)) the National Marine Sanctuary Program (NMSP) is releasing a revised management plan for GRNMS. The plan includes several revisions to existing regulations and several new regulations for the sanctuary. The new regulations restrict fishing at GRNMS to use of rod and reel, handline, and spearfishing gear without powerheads by prohibiting the injuring, catching, harvesting, or collecting of any marine organism or part thereof in the sanctuary except by these gear types. All other forms of fishing gear have to be stowed when a vessel is in the sanctuary. The regulations also prohibit anchoring vessels in the



sanctuary. These measures will afford better protection to the nationally significant marine resources and habitats at GRNMS.

In the Draft Management Plan/Draft Environmental Impact Statement (issued October 31, 2003, 68FR62033), Alternative “a” was identified as the preferred alternative, which would have prohibited spearfishing as well as all other types of fishing except with rod and reel and handline gear. However, NOAA has decided to adopt alternative “c” which continues to allow use of spearfishing gear without powerheads. While it has been effectively demonstrated in other areas that selective removal of large individual fish by spearfishing can adversely affect the reproductive viability of a given population, the sanctuary has little data on the actual level of spearfishing at GRNMS. In order to assess the socioeconomic landscape of spearfishing activities at the sanctuary a focused study will be initiated to determine the level of spearfishing and other fishing activities. The sanctuary will also use the ongoing, long-term biological data collected through the MARMAP program and diver census methods to evaluate fish populations at GRNMS.

NOAA therefore defers taking action on spearfishing as was proposed in the DMP/DEIS for a period of two years while additional information is collected on this activity in GRNMS. The issue will be reviewed again with the benefit of additional socioeconomic and biological analyses. NOAA will then determine what action to take, if any, given the additional data.

NOAA has also determined that establishing hook limits on rod and reel and handline gear, as described in the proposed rule of the DMP/DEIS, would complicate compliance and law enforcement. Law enforcement officials noted that the hook limitations would be extremely difficult to enforce. The preferred alternative, therefore, does not impose hook limits in the regulations.

Existing regulations are revised to address placing or abandoning structures on the submerged lands; using underwater explosives or devices generating electrical current; and moving or damaging historical resources. The permit regulations for the sanctuary are revised and clarified. Prior to permit issuance, the Director of the NMSP is required to consider the duration of the activity and its effects; the cumulative effects; and whether it is necessary to conduct the proposed activity in the sanctuary. Permit holders are required to display a copy of the permit on board any vessel or aircraft used in the permitted activity.

The revised management plan for the sanctuary contains a series of action plans that outline marine resource protection, administration, research, exploration, education, and performance evaluation activities that are planned for the next five years. The activities are designed to address specific issues facing the sanctuary and in doing so, help achieve the management objectives of the GRNMS and the larger mandates of the NMSP.

This document provides the final regulations and the revised Designation Document for the sanctuary; and announces the availability of the final management plan and the final

environmental impact statement (FMP/FEIS). The final management plan details the goals and objectives, management responsibilities, research and monitoring activities, outreach and educational programs, exploration, administration, and performance evaluation activities.

## Background

Gray's Reef National Marine Sanctuary, which was designated on January 16, 1981 (46 FR 7942), consists of approximately 16.68 square nautical miles of ocean waters and hard bottom located 17.5 nautical miles off Sapelo Island, Georgia. It is one of the largest nearshore rocky reefs off the southeastern United States and is in a transition zone between temperate and tropical waters. Some reef fish populations and plant communities change seasonally, while others are year-round residents. Migratory fish move through the sanctuary, using the reef for food and shelter. Loggerhead sea turtles, a threatened species, use GRNMS for foraging and resting. The reef is also close to the only known calving ground for the highly endangered Northern right whale.

The hard bottom habitat at the sanctuary is composed of marine sediments (mud, sand, and shells) that were deposited between 2-3,000,000 years ago. These marine sediments were consolidated into rock during subsequent glacial periods by numerous changes in sea level that repeatedly exposed and then submerged the areas of GRNMS as the coastline advanced and retreated across the continental shelf.

Recent bottom mapping indicates that the area is a single rock unit. It is made of calcareous sandstone that formed as a result of the compacting marine sediments and aerial exposure. The irregularities of the bathymetry can be attributed to the easily erodable sandstone that has dissolved and pitted, creating the appearance of isolated ledges and patches of hard bottom.

The exposed rock offers moderate relief (0.5 to 10 feet in height) with sandy, flat-bottomed troughs between. The series of rock ledges and sand expanses has produced a complex habitat of caves, burrows, troughs, and overhangs that provide a solid base on which temperate and tropical marine flora and fauna attach and grow. This rocky platform with its rich carpet of remarkable attached organisms is known locally as a "live bottom" habitat.

The sanctuary is a small but very important part of the broad continental shelf off the southeastern coast sometimes known as the South Atlantic Bight (SAB). The SAB extends from Cape Hatteras, North Carolina to Cape Canaveral, Florida. The outer reaches are dominated by the Gulf Stream flowing northeastward. The inner area is defined by the curve of the coastline between the two capes and is dominated by tidal currents, river runoff, local winds, seasonal storms, hurricanes, and atmospheric changes. While GRNMS lies in the inner-shelf zone of the SAB - which causes great seasonal variations in temperature, salinity, and water clarity - it is also influenced by the Gulf Stream. The Gulf Stream draws deep nutrient-rich water to the region, and carries and supports many of the tropical fish species and other animals found in the sanctuary.

Ocean currents transport fish and invertebrate eggs and larvae from other areas, linking this special place to reefs both north and south. GRNMS is the only protected natural reef area in the SAB.

The sanctuary's area constitutes a tiny percentage of the ocean space off the coast, yet the sanctuary's value as a natural marine habitat is recognized nationally and internationally. The live bottom is a flourishing ecosystem that attracts mackerel, grouper, black sea bass, angelfish, and a variety of other fishes. GRNMS is one of the most popular recreational fishing and sport diving destinations along the Georgia coast. Sport fishing occurs year-round but intensifies in warmer months and with the migration of pelagic game fish.

The sanctuary is located near an area of Georgia coastline that has experienced a dramatic increase in population. Aerial and on-water surveys indicate that visitation to GRNMS has increased significantly since 1981. With continued technological innovations such as global positioning systems (GPS), electronic fish finders, and improved watercraft design, it is likely that there will be increasing pressure on the resources of the sanctuary. With its new management plan and regulations, NOAA hopes to continue to protect GRNMS for the continued appreciation and use by the current and future generations.

Because this action includes changes to the sanctuary's Designation Document, the FMP/FEIS is developed pursuant to section 304(a)(2) of the NMSA (16 U.S.C. §1434(a)(2)) consistent with, and in fulfillment of, the requirements of the National Environmental Policy Act of 1969.

#### Revised Designation Document

NOAA specifies in the Designation Document that the submerged lands at GRNMS are legally part of the sanctuary and are included in the boundary description. At the time the sanctuary was designated in 1981, Title III of the Marine Protection, Research, and Sanctuaries Act (now also known as the National Marine Sanctuaries Act) characterized national marine sanctuaries as consisting of coastal and ocean waters but did not expressly mention submerged lands thereunder. NOAA has consistently interpreted its authority under the NMSA as extending to submerged lands, and amendments to the NMSA in 1984 (Pub.L. 98-498) clarified that submerged lands may be designated by the Secretary of Commerce as part of a national marine sanctuary (16 U.S.C. § 1432(3)). Therefore, to be consistent with the NMSA, NOAA is updating the Designation Document and the boundary description, and is replacing the term "seabed" with "submerged lands of the sanctuary." Although certain fishing activities have been regulated at GRNMS since 1981, terms are being added to the Designation Document to authorize regulations for use of allowable fishing gear and to prohibit the possession of non-allowed gear. This allows fishing regulations specifically for GRNMS and approved by the South Atlantic Fishery Management Council (SAFMC) to be proposed for the sanctuary. The Designation Document is also updated to authorize regulating drilling into the submerged lands of the sanctuary; constructing, placing or abandoning material or matter; discharging or depositing material or matter outside the sanctuary that subsequently enters and injures a sanctuary resource or quality; using explosives or

devices that produce electric current underwater; and moving, removing, injuring, or possessing historical resources.

Language in Article 4 Section 2 providing authority for temporary emergency regulations has been revised to allow NOAA greater flexibility to use this authority. NOAA is no longer required to show that ecosystem damage would be immediate, serious and irreversible before it could promulgate emergency regulations. The revised Designation Document requires a showing of actual or imminent risk of destruction, loss of, or injury to a sanctuary resource or quality. In addition, the 120-day limit on temporary emergency regulations has been removed. These changes provide NOAA greater discretion to act in emergency situations to protect sanctuary resources on a temporary basis and are more consistent with the NMSA's primary objective of resource protection.

Article 6 of the Designation Document is also updated regarding the process to modify the Designation. The requirement that modifications to the Designation must be approved by the President is deleted and replaced with the requirement that modifications be approved by the Secretary of Commerce or his or her designee. This is consistent with amendments to the NMSA that were enacted after the Sanctuary was designated in 1981 and which removed Presidential approval as a requirement for designation.

### Revised Designation Document for the Gray's Reef National Marine Sanctuary

#### Preamble

Under the Authority of Title III of the Marine Protection, Research and Sanctuaries Act of 1972, as amended, (the Act), the waters and the submerged lands thereunder at Gray's Reef in the South Atlantic Bight off the coast of Georgia are hereby designated a National Marine Sanctuary for the purposes of: (1) protecting the quality of this unique and fragile ecological community; (2) promoting scientific understanding of this live bottom ecosystem; and (3) enhancing public awareness and wise use of this significant regional resource.

#### Article 1. Designation and Effect

The Gray's Reef National Marine Sanctuary was designated on January 16, 1981 (46 FR 7942). The Act authorizes the Secretary of Commerce to issue such regulations as are necessary and reasonable to implement the designation, including managing and protecting the conservation, recreational, ecological, historical, scientific, educational, cultural, archaeological or aesthetic resources and qualities of a national marine sanctuary. Section 1 of Article 4 of this Designation Document lists activities of the type that are presently being regulated or may need to be regulated in the future, in order to protect sanctuary resources and qualities. Listing in Section 1 does not mean a type of activity would be regulated in the future, however, if a type of activity is not listed, it may not be regulated, except on an emergency basis, unless section 1 is amended, following the procedures for designation of a sanctuary set forth in the Act, to include the type of activity.

Nothing in this Designation Document is intended to restrict activities that do not cause an adverse effect on the resources or qualities of the sanctuary or on sanctuary property or that do not pose a threat of harm to users of the sanctuary.

#### Article 2. Description of the Area

The sanctuary consists of an area of ocean waters and the submerged lands thereunder located 17.5 nautical miles due east of Sapelo Island, Georgia. The exact coordinates are defined by regulation (15 CFR § 922.90).

#### Article 3. Characteristics of the Area

The sanctuary consists of submerged calcareous sandstone rock reefs with contiguous shallow-buried hard layer and soft sedimentary regime which supports rich and diverse marine plants, invertebrates, finfish, turtles, and occasional marine mammals in an otherwise sparsely populated expanse of ocean seabed. The area attracts multiple human uses, including recreational fishing and diving, scientific research, and educational activities.

#### Article 4. Scope of Regulation

##### Section 1. Activities Subject to Regulation.

The following activities are subject to regulation under the NMSA, either throughout the entire sanctuary or within identified portions of it or, as indicated, in areas beyond the boundary of the sanctuary, to the extent necessary and reasonable. Such regulation may include prohibitions to ensure the protection and management of the conservation, recreational, ecological, historical, scientific, educational, cultural, archaeological or aesthetic resources and qualities of the area. Because an activity is listed here does not mean that such activity is being or would be regulated. All listing means is that the activity can be regulated, after compliance with all applicable regulatory laws, without going through the designation procedures required by paragraphs (a) and (b) of section 304 of the NMSA (16 U.S.C. 1434(a) and (b)).

1. Dredging, drilling into, or otherwise altering the submerged lands of the sanctuary;
2. Within the boundary of the sanctuary, discharging or depositing any material or other matter or constructing, placing, or abandoning any structure, material or other matter; or discharging or depositing any material or other matter outside the boundary of the sanctuary that enters and injures a sanctuary resource or quality;
3. Vessel operations, including anchoring;
4. Injuring, catching, harvesting, or collecting any marine organism or any part thereof, living or dead, or attempting any of these activities, by any means except by use of rod and reel, and handline gear;
5. Possessing fishing gear that is not allowed to be used in the sanctuary;

6. Using explosives, or devices that produce electric charges underwater; and
7. Moving, removing, injuring, or possessing historical resources.

#### Section 2. Emergency Regulation

Where necessary to prevent or minimize the destruction of, loss of, or injury to a sanctuary resource or quality; or to minimize the imminent risk of such destruction, loss or injury, any activity, including any not listed in Section 1 of this article, is subject to immediate temporary regulation, including prohibition.

#### Article 5. Relation to Other Regulatory Programs

Section 1. Defense Activities. The regulation of activities listed in Article 4 shall not prohibit any Department of Defense activity that is essential for national defense or because of emergency. Such activities shall be consistent with the regulations to the maximum extent practical.

Section 2. Other Programs. All applicable regulatory programs will remain in effect, and all permits, licenses and other authorizations issued pursuant thereto shall be valid within the sanctuary unless authorizing any activity prohibited by a regulation implementing Article 4.

#### Article 6. Alteration of this Designation

The terms of designation, as defined in paragraph (a) of section 304 of the Act (16 U.S.C. 1434(a)) may be modified only by the procedures outlined in paragraphs (a) and (b) of section 304 of the Act (16 U.S.C. 1434(a) and (b)) including public hearings, consultation with interested federal, state, and local government agencies, the South Atlantic Fishery Management Council, review by the appropriate Congressional committees, and approval by the Secretary of Commerce, or his or her designee.

#### Summary of the Regulatory Amendment

The regulatory changes clarify that “submerged lands” are within the boundary and are part of the sanctuary. This updates the boundary regulation to make it consistent with the NMSA and its definition of areas of the “marine environment” that may be designated as a sanctuary.

The regulations also modify the sanctuary fishing regulations that have been in effect since 1981. The original regulations prohibited the use of specific fishing gear within the sanctuary particularly wire fish traps and bottom trawls. The new regulation prohibits the injuring, catching, harvesting, or collecting of any marine organism by any means except by rod and reel, handline, or spearfishing gear without powerheads. This establishes a clearer, more enforceable approach for the sanctuary fishing regulations than those currently in effect. Rod and reel gear is the predominant fishing gear now in use at GRNMS and continues to be allowed under the regulations. To facilitate enforcement of the gear restriction, a related regulation requires that all forms of fishing gear other than

rod and reel, handline, or spearfishing gear without powerheads be stowed when vessels are in the sanctuary.

The final regulations also prohibit anchoring vessels within the sanctuary. The unique bottom formations and habitats at GRNMS are vulnerable to the effects of anchoring. The documented increases of population in the region and of visitor use at GRNMS suggest that the risk from vessel anchoring will also increase and that prohibiting anchoring helps protect the live bottom habitat and the associated living marine resources that GRNMS was designated to protect. This regulation has little impact on current users of the sanctuary. Based on findings of a socioeconomic study (Ehler and Leeworthy) conducted in 2002, virtually none of the activities that occur at GRNMS require anchoring. Fishermen routinely allow their boats to drift during bottomfishing or are trolling for migratory species, and divers frequently use a “live-boat” for drift diving, due to the strong currents. There is overall support for the ban on anchoring among users surveyed during the socioeconomic study. In an emergency situation, boaters are allowed to anchor in the sanctuary and existing boundary marker buoys provide a place for a boat to moor in an emergency as well.

Finally, the regulations for the issuance of permits adds a new permit category for assisting in managing the sanctuary. This authorizes the NMSP to issue a permit to the sanctuary manager and qualified individuals outside the NMSP for activities that otherwise would be prohibited, if the activities assist in sanctuary management and if they satisfy permit criteria. The permit criteria allow the NMSP or the manager to consider the duration of a proposed activity, its cumulative effects, and whether it is necessary to conduct the proposed activity in the sanctuary. A permit holder is required to display a copy of the permit in any vessel or aircraft being used in the permitted activity.

The following regulatory changes are also included in this document: The term “seabed” is replaced with “submerged lands of the sanctuary” to be consistent with usage in the NMSA. The prohibition against dredging, drilling into or altering submerged lands of the sanctuary specifically includes bottom formations to call attention to one of the critical elements of the ecosystem at GRNMS. The original prohibition against constructing any structure other than a navigation aid is revised to include constructing, placing, or abandoning any structure or material on the sanctuary submerged lands. This change, among other things, prohibits activities that have been identified in the Florida Keys National Marine Sanctuary, where materials are placed on the submerged lands to create lobster habitat. The prohibition against using poisons, electric charges, explosives, or similar methods to take any marine animal not otherwise prohibited from being taken is revised to prohibit the use underwater of explosives and devices producing electric current while the reference to poisons is removed because it is already addressed by the prohibition against discharges. Use of these items is prohibited regardless of whether marine animals are being taken. The regulation prohibiting tampering with, damaging or removing historic or cultural resources is revised to prohibit moving, removing, damaging, or possessing any sanctuary historical resource, or attempting any of these.

This change better protects these resources from being removed and facilitates enforcement by prohibiting their possession.

#### Miscellaneous Rulemaking Requirements

##### National Marine Sanctuaries Act

Section 301(b) of the National Marine Sanctuaries Act (16 U.S.C. 1434) provides authority for comprehensive and coordinated conservation and management of these areas in coordination with other resource management authorities.

Section 304(a)(4) of the National Marine Sanctuaries Act (16 U.S.C. 1434(a)(4)) requires that the procedures specified in section 304 for designating a national marine sanctuary be followed for modifying any term of designation. Because this action revises the sanctuary boundary specifically to include the submerged land, it also revises the boundary terms of designation, thus triggering the requirements of section 304. All such requirements have been completed.

##### National Environmental Policy Act

When changing a term of designation of a national marine sanctuary, section 304 of the NMSA (16 U.S.C. 1434) requires the preparation of a draft environmental impact statement (DEIS), as provided by the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) and that the DEIS be made available to the public. The DEIS, along with a draft management plan, was released on October 31, 2003 (68 FR 62033). The public comment period ended on December 31, 2003.

#### Comments and Responses

During the public comment period, 144 written comments were received. Seven (7) public hearings were also held with approximately 125 individuals in attendance. Comment during the public hearings was derived out of round table discussions and recorded on flip charts at each of the small group tables. Written and verbal comments were compiled and grouped by general topics into a 10-page summary, which was reviewed and considered by the GRNMS Advisory Council on January 28, 2004.

Substantive comments received are summarized below, followed by NOAA's response. Multiple but similar comments have been treated as one comment for purposes of response. Comments beyond the scope of the proposed action are neither summarized nor responded to.

Comment 1: Spearfishing at Gray's Reef should not be prohibited as proposed in the draft plan. The sanctuary does not have specific data on the number of people who spearfish and the amount of fish they take. If spearfishing is prohibited then all bottom fishing at the sanctuary should be prohibited too. Bottom fishing takes far more fish and leaves far more debris on the reef than spearfishing does.



Response: Spearfishing was considered for regulation during the original 1981 GRNMS designation. No regulations, however, were adopted at that time, except the prohibition of powerheads (explosives) for spearfishing. While the number of recreational divers spearfishing at GRNMS appears to be small, spearfishing typically targets the larger individual fish among the reef-dependent species. Large fish are important to the reproductive health of species. Some fish populations are overfished or approaching overfished status. Some researchers have commented on the lack of large snapper-grouper individuals at GRNMS (Bohnsack pers. comm.).

Research has shown significantly reduced populations of larger predatory fishes where spearfishing occurs (SAFMC, 1990; Bohnsack, 1982; Chapman and Kramer, 1999; Jouvenel and Pollard, 2001). Larger predators are favored targets of spearfishermen. Reduction in the larger predatory fishes can have a “top-down” effect on fish populations by allowing other fish populations to increase, altering the composition of the overall natural communities including invertebrates.

Although the use of powerheads is prohibited at GRNMS, powerhead cartridges found on site indicate that this gear is still in use. Law enforcement officials have expressed concerns that some commercial spearfishing operations may be harvesting large numbers of undersized fish from the region.

NOAA recognizes that while it has been effectively demonstrated in other areas that selective removal of large individual fish by spearfishing can adversely affect the reproductive viability of a given population, the sanctuary has little data on the actual level of spearfishing at GRNMS. The sanctuary will, therefore, gather additional socioeconomic information on this activity in GRNMS and review the issue again in two years. The additional socioeconomic information coupled with ongoing biological studies of fish populations will enable management to better evaluate the impact of current and potentially future levels of spearfishing at GRNMS.

NOAA therefore defers taking action on spearfishing as was proposed in the draft management plan for a period of two years while additional information is collected on this activity in GRNMS. NOAA will then determine what action to take, if any, given the additional information.

Comment 2: (U.S. Environmental Protection Agency, Region IV) The language used in the Preferred Alternative could be strengthened to expressly prohibit the use or possession of spearguns, nets, bandit gear, buoy gear, traps, pots, etc., in the GRNMS. The distinction between permitted activities and prohibited activities should be made unambiguously clear.

Response: NOAA has determined that prohibiting specific gear types could add more complication and confusion for fishermen by lengthening the list of restricted fishing methods and gear, versus clearly identifying what gear is allowed in GRNMS. The allowable gear regulation approach was endorsed by the GRNMS Advisory Council and the SAFMC as the best approach.

Comment 3: (South Atlantic Fishery Management Council) The SAFMC voted to support the DMP/DEIS and proposed fishing regulatory language contained in the November 2003 public hearing document. Prohibiting anchoring and the other proposed actions are consistent with the SAFMC's Essential Fish Habitat (EFH) and EFH-Habitat Area of Particular Concern (HAPC) designations and with the SAFMC's habitat policies. The SAFMC did however request that GRNMS reconsider the proposed 3-hook limit.

Response: NOAA has adopted Alternative "c" of the proposed allowable gear regulation, to permit only rod and reel, handline, and spearfishing gear without powerheads in the sanctuary. NOAA has determined that the 3-hook limit on rod and reel and handline gear, as defined in the draft proposed rule, complicates compliance and law enforcement, and, therefore, defines it without a limit on the number of hooks.

The process of developing fishing regulations for GRNMS has complied with the NMSA, Section 304(a)(5) and the MOU executed by the SAFMC, NOAA Fisheries Service, and the NMSP.

Comment 4: (Georgia Department of Natural Resources, Coastal Resources Division, Marine Fisheries Section) Prohibiting anchoring and the other proposed actions are consistent with the SAFMC's EFH and EFH-HAPC designations and with the Council's habitat policies. The anchoring prohibition and similar marine resource action plan strategies to protect the live bottom habitat are appropriate and consistent not only with the SAFMC's EFH definitions/policies, but also with the goals and objectives of the NMSP.

Response: See response to comment 3 above. NOAA agrees with the statements that prohibition of anchoring is consistent with the SAFMC's EFH and EFH-HAPC designations of GRNMS, as well as the goals and objectives of the NMSP.

Comment 5: (U.S. Navy, Commander Navy Region Southeast) The Navy requested that the document expand the statements regarding military activities, specifically to indicate that the sanctuary designation did not limit or restrict ongoing or future military use for training and operations.

Response: Existing regulations governing national defense exemptions for current activities have not changed. Current Department of Defense activities essential for national defense are not subject to the regulatory prohibitions. The exemption of additional activities having significant impacts shall be determined in consultation between the Director and the Department of Defense.

Comment 6: (U.S. Navy, Commander Navy Region Southeast) The Navy recommended modification of the next to last sentence on page 50 to read "Military aircraft do not routinely fly below 1500 feet or within a one nautical mile radius of the Sanctuary."

Response: NOAA has determined that the language as it exists in the DMP/DEIS, coupled with the regulations governing national defense activities will adequately address the U.S. Navy's concern.

Comment 7: (U.S. Coast Guard, Commander (OLE), 7th Coast Guard District) Section (5)(ii) states that "There shall be a rebuttable presumption that any marine organism or part thereof found in the possession of a person within the sanctuary has been collected or removed from the Sanctuary." A "rebuttable presumption" places the burden of proving that any organism in possession of an alleged violator was actually caught in the sanctuary on the enforcement entity, something that is very difficult to do unless directly observed. Section 5 (ii) as written would be extremely difficult to enforce. The Coast Guard recommended changing this text to simply prohibit possession of any marine organism or part thereof when within the sanctuary and when in possession of any fishing gear or means except rod and reel and handline gear that is available for use. The prohibition text should also ensure that it is illegal to possess any species caught with a gear type prohibited in the sanctuary.

Response: The U.S. Coast Guard is a key enforcement partner to NOAA in the protection of sanctuary resources and NOAA appreciates its comment to improve the regulation. The rebuttable presumption does not place any additional burden on the enforcement entity; rather it operates such that any person located inside the sanctuary and found in possession of a marine organism is presumed to have taken that organism from the sanctuary. Thus, no actual observation of a violation is required - it is presumed - and the burden is shifted to the alleged violator to provide some evidence proving the organism was in fact not taken from the sanctuary. Although the presumption can be overcome by the introduction of contrary evidence, NOAA regards the rebuttable presumption as generally useful to enforcement of the sanctuary regulations and, therefore, believes it should be retained in the final regulations.

Comment 8: (U.S. Coast Guard, Commander (OLE), 7th Coast Guard District) Section (6) prohibits gear other than rod and reel and handline gear unless "stowed and not available for use." This term is later defined as "stowed and not available for immediate use." This disparity between prohibition and definition will cause confusion and may make this prohibition unenforceable. The Coast Guard recommended that the definition and prohibition language be aligned.

Response: NOAA agrees and has corrected this typographical error in the FMP/FEIS by adding the word "immediate" in Section (6).

Comment 9: (U.S. Coast Guard, Commander (OLE), 7th Coast Guard District) Rod and reel gear is defined in the definitions section and the definition includes a limit on the number of hooks per line to capture baitfish and a limit on the size and type of hooks that can be used. The Coast Guard recommended removing this limitation, as it is extremely difficult to enforce. However, if this limit is retained the Coast Guard recommended that these prohibitions be moved from the definition section and be included under the new

regulation section. This will help simplify the regulations, a key component of an enforceable regulation.

Response: NOAA agrees and has changed the regulation. See response to comment 3 above.

Comment 10: (U.S. Coast Guard, Commander (OLE), 7th Coast Guard District) Prior to implementing a final rule, the Coast Guard recommended that GRNMS coordinate with NOAA General Counsel for Enforcement and Litigation to update GRNMS' penalty schedule. The current penalty schedule was last revised in January 1997; and a proposed revision drafted in 2002 has not gone into effect. Unfortunately, the proposed revision is not adequate and does not address the proposed regulation changes in the DMP/DEIS. In addition, the majority of potential violations within GRNMS are likely to be small and perpetrated by recreational fishermen. The Coast Guard strongly recommended that any penalty schedule update reflect this.

Response: NOAA has developed a national penalty schedule for the NMSP. Penalty schedules, however, are not established by rulemaking; they are for internal guidance and have no binding effect on the amount of a penalty that may be assessed for a violation. Rather they are intended for consistency across a national system. The NMSA remains the authority and the source of penalties that NOAA may assess.

Comment 11: The South Carolina Aquarium fully supports the increased protection proposed in the DMP/DEIS. Limits placed on spearfishing and anchoring would help to minimize damage due to human activities on Gray's Reef.

Response: NOAA agrees and has chosen the prohibition on anchoring (alternative "a"). Regarding spearfishing, see response to comment 1 above.

Comment 12: The Coastal Group, Georgia Chapter, Sierra Club strongly supports the two major regulatory changes in the management plan: the prohibition of dropping anchor except in an emergency and the elimination of spearfishing from the sanctuary.

Response: NOAA agrees and has chosen the prohibition on anchoring (alternative "a"). Regarding spearfishing, see response to comment 1 above.

Comment 13: The Center for a Sustainable Coast believes that to truly serve as a sanctuary for marine life, ultimately GRNMS must be managed as a reserve to protect all species within its bounds against fishing and any other activities that disturb natural resources. To strengthen the capacity of efforts to improve water resource management, the GRNMS Management Plan should include analysis of the relationship of watersheds, water use, and water quality with the inter-tidal and marine areas. GRNMS must work to enhance and support greater awareness about these issues, and work to build a lasting intergovernmental management structure capable of resolving the complex water issues that may impact Gray's Reef and other marine resources.

Response: During the scoping process for the revised management plan, many comments received asked that GRNMS consider marine reserve status (no-take) for the sanctuary. As noted in the DMP/DEIS (pages 29-30 and 64-65), GRNMS determined that marine reserves are best addressed through our partnership with SAFMC as they continue deliberations on a network of reserves in the region.

NOAA agrees that water quality is critical to the continued sustainability of the protected resources at GRNMS. Therefore an extensive water quality monitoring program has been implemented at GRNMS. Education programs, such as the Rivers to Reef module, are also bringing awareness to students and teachers.

Comment 14: Many commenters expressed general support for increased protection of marine resources in the sanctuary and/or that NOAA adopt the preferred fishing alternative “a.”

Response: See responses to comments 11 through 14 above.

Comment 15: GRNMS should be managed as a “sanctuary;” and/or allow only dive activities; and/or allow only transit through the sanctuary with fishing gear stowed.

Response: GRNMS is managed as a “national marine sanctuary,” which is defined in the NMSA as “an area of the marine environment of special national significance due to its resource or human-use values, which is designated as such to ensure its conservation and management.” As such, all uses are evaluated as to whether they are compatible with the primary objective of resource protection. Ongoing research and monitoring are conducted to support that objective.

Comment 16: GRNMS should consider designating 25-50% of the sanctuary as a reserve for non-extractive uses. Protect Gray’s Reef NMS as representative hard-ground live bottom in the South Atlantic Bight.

Response: See response to comment 13 above.

Comment 17: Non-extractive diving as a compatible use at GRNMS is growing; more divers prefer recreational diving for wildlife observation and photography. Conflicts are arising due to spearfishing at GRNMS because the fish, particularly larger fish, are either killed or scared away. Most spearfishermen do not use GRNMS, but prefer other offshore sites.

Response: See response to comment 1 above.

Comment 18: Do the proposed regulations restrict use of commonly used equipment such as downriggers and marker buoys?

Response: The DMP/DEIS did not propose restrictions on commonly used equipment such as downriggers and marker buoys. That document specifically states on page 60:

“Items that are deployed and subsequently retrieved, such as fishing line and small marker buoys, are not considered ‘deposited’ in the Sanctuary.”

Comment 19: GRNMS should reduce all commercial and recreational fish harvest to “sustainable levels.” GRNMS should ban all commercial fishing and charter/head boats in order to achieve sustainable levels of harvest.

Response: Under the Magnuson-Stevens Fishery Conservation Act, the SAFMC is responsible for the conservation and management of fish stocks within the Federal 200-mile limit exclusive economic zone of the Atlantic Ocean off the southeastern U.S. Under these mandates, sustainable levels of fish harvest are an objective of the SAFMC for a wide range of fish species. GRNMS is within the geographic area of the EEZ managed by the SAFMC. Achieving sustainable fishing levels can be done better on a regional level well beyond the boundaries of GRNMS. However, the allowable fishing gear approach to GRNMS regulation does restrict certain types of fishing gear that have a negative impact on sustainable levels of many fish species.

Comment 20: GRNMS should regulate fishing gear by prohibiting specific gear instead of allowing specific gear.

Response: NOAA believes that fishing alternative “b” would not be in the best interest of the sanctuary or its users. The allowable gear approach is simple, clear, and easily understood by the fishing community and by the public generally. It means that gear identified as allowable is the only gear that may be used in the sanctuary; use of all other gear types is prohibited. This is a simpler, cleaner approach than attempting to list all possible gear types that are prohibited. It also simplifies and facilitates monitoring and law enforcement, and eliminates the costs to users who develop and utilize fishing gear in the sanctuary that may have to be prohibited in the future due to damage to the resources.

Comment 21: All diving activities will be eliminated at GRNMS.

Response: This plan does not propose eliminating diving at GRNMS. Although impacts on bottom resources from diving activities is a concern, GRNMS will establish a comprehensive outreach and education program to address these concerns. The revised regulations for GRNMS are very clear that only specific fishing gear is allowed and any other form of collection, harvest, or injury to marine organisms is prohibited.

Comment 22: The National Marine Manufacturers Association has strong reservations about NMSP’s proposal to prohibit anchoring in the sanctuary because there is no evidence that at any point NMSP considered the effect this proposal would have on boater safety. NMSP should formally consult with the U.S. Coast Guard (USCG) Office of Boating Safety for recommendations on how to make NMSP’s management policies consistent with proper boater safety procedures. NMMA also urges NMSP to adopt anchoring alternative “b” and establish and maintain a mooring buoy system in the appropriate places to enhance boater safety.

Response: NOAA involved the USCG, area boaters, fishermen, and divers on many occasions in the development of the DMP/DEIS through GRNMS Advisory Council meetings, scoping, and workshops. A representative of the 7th USCG District sits on the Advisory Council, along with a recreational angler and a recreational dive operator. The USCG's comment in its formal consultation letter response on the DMP/DEIS stated that: "There are no objectionable vessel safety concerns contained within this proposal."

Regarding anchoring alternative "b," NOAA has concluded that a mooring buoy system is not needed, in part because the proposed regulation allows for use of anchors in emergency situations. The GRNMS Advisory Council, and other users surveyed in the socioeconomic studies cited in the DMP/DEIS, also consistently advised that a mooring buoy system was not needed in the sanctuary because boaters (fishermen and divers) prefer to drift or troll. The potential negative impacts from concentrated use around mooring buoys is also a concern for the sanctuary. GRNMS will continue to monitor use in the sanctuary and may reconsider mooring buoys in the next management plan review if the sanctuary finds that they are needed.

Comment 23: NOAA should install mooring buoys in the sanctuary to enhance fishing, diving and research activities if anchoring is prohibited; consider 25-30 moorings and moveable moorings to minimize the negative impacts of concentrated activities.

Response: See response to comment 22 above.

Comment 24: NOAA should choose the preferred alternative "a" for anchoring.

Response: NOAA agrees and has chosen the preferred alternative "a" for anchoring.

Comment 25: Anchoring alternative "c" is not a good option because it assumes that sandy areas in GRNMS have no biological value. It makes little sense to anchor in the sandy areas away from fishing and diving locations.

Response: NOAA agrees with the concern about the biological importance of sandy areas in the sanctuary. Page 38 of the DMP/DEIS points out the high infaunal diversity in sandy bottom areas of the sanctuary. NOAA has chosen the preferred alternative "a" for anchoring.

Comment 26: The prohibition on anchoring is inappropriate because there is no concrete or photographic evidence of anchor damage.

Response: NOAA disagrees. Numerous photos have documented damage from anchoring at GRNMS. Page 110 of the DMP/DEIS shows anchoring gear photographed on a live bottom area at GRNMS. Numerous studies in other locations have also definitively documented the significant damage to delicate invertebrates, corals and hard bottoms from anchoring practices. The prohibition of anchoring is not a limiting factor for visitors to be able to conduct recreational activities in GRNMS. Anchoring continues to be allowed in emergency circumstances.

Comment 27: There is no purpose to establishing a working group to explore the concept of a marine research area because there is no such thing as a “natural process along a populated coast” and that there would be negative impact on the fishing community. Designating a research area would open the door to closing the entire sanctuary to fishing; other live bottom areas in the region should be chosen for a research reserve instead of GRNMS.

Response: After consideration of the public comments on the DMP/DEIS, the Advisory Council recommended that the sanctuary establish a working group to advise the Advisory Council on the development of the concept of a marine research area. The Advisory Council, with the concurrence of the sanctuary, established the Marine Research Area Concept Working Group (RAWG), which met from May 2004 until March 2005. The Working Group was comprised of representatives from education, fishing, diving, research and conservation; law enforcement and other regional, private, state, and federal organizations. The recommendations from the Working Group to the Advisory Council can be found in Section III under the Research and Monitoring Action Plan (RM-2). The Advisory Council deliberated on the Working Group’s recommendations at its June 2005 meeting and made its recommendations to the sanctuary (also found at RM-2).

NOAA has accepted the recommendations of the Advisory Council and made a decision to more formally consider the concept of a research area in the sanctuary through a public process guided by requirements of NEPA and the NMSA.

Comment 28: GRNMS should consider an area only for research in the sanctuary; the reserve could serve as a “constant” for monitoring marine resources, and help improve information specific to Gray’s Reef.

Response: GRNMS agrees that the research area concept should be considered and an investigation of its benefits will move forward.

Comment 29: GRNMS should consider a “rotational” marine research area (either geographically or temporally).

Response: See response to comment 27 above.

Comment 30: If the document is to follow the provisions of NEPA, it must have a List of Preparers contained within.

Response: NOAA agrees and a full list of preparers is included in the FMP/FEIS in an appendix entitled List of Preparers.

Comment 31: GRNMS is urged to formally incorporate a study of birds which occupy the reef as part of Goal 2 as research into the ecology of the reef.



Response: NOAA agrees and surveys of birds in the sanctuary have become a regular part of the monitoring program.

#### Executive Order 12866: Regulatory Impact

The final rule has been determined to be not significant within the meaning of section 3(f) of Executive Order 12866 because it will not result in:

(1) An annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, productivity, competition, jobs, the environment, or public health and safety; (2) A serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) A material alteration of the budgetary impact of entitlements, grants, user fees, or loan programs or rights and obligations of such recipients; or (4) Novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

#### Executive Order 13132: Federalism Assessment

NOAA has concluded that this regulatory action does not have federalism implications sufficient to warrant preparation of a federalism assessment under Executive Order 13132.

#### Regulatory Flexibility Act

The Assistant General Counsel for Legislation and Regulation of the Department of Commerce certified to the Chief Counsel for Advocacy of the Small Business Administration that the FMP/FEIS for the GRNMS does not have a significant economic impact on a substantial number of small entities, based on the regulatory flexibility analysis as follows:

#### Final Regulatory Flexibility Analysis for the Final Management Plan and Final Rule for the Gray's Reef National Marine Sanctuary

Description of the action being taken: This action promulgates a final rule for the Gray's Reef National Marine Sanctuary (GRNMS or sanctuary). This action is being taken by the National Marine Sanctuary Program (NMSP) of the National Oceanic and Atmospheric Administration (NOAA). A review and revision of the management plan for the GRNMS, located off the coast of Georgia in the federal exclusive economic zone (EEZ), was undertaken starting in 1999. Because the original management plan for the sanctuary dated back to 1983, the decision was made to prepare an entirely new management plan for the site. The Draft Management Plan/Draft Environmental Impact Statement (DMP/DEIS) was issued on October 31, 2003. The comment period on the DMP/DEIS was closed December 31, 2003. No boundary expansion is included in this action, but several regulatory clarifications and new regulations are included as part of the new management plan. The changes to clarify existing regulations are:

- Making clear that the sanctuary boundary includes submerged lands along with the water column, which is consistent with the NMSA;
- Adding “Injuring, catching, harvesting, or collecting any marine organism, or any part thereof, living or dead, or attempting any of these activities” to the scope of activities subject to regulation within the sanctuary (the sanctuary has had fishing regulations since its designation in 1981); and
- Revising existing regulations to address placing or abandoning structures on the submerged lands; using underwater poisons, explosives or devices generating electrical current underwater; and moving, removing, damaging, or possessing historical resources moving or damaging historical or cultural resources. The permit regulations for the sanctuary are also being revised and clarified. Prior to permit issuance, the Director of the NMSP is required to consider the duration of the activity and its effects; the cumulative effects; and whether it is necessary to conduct the proposed activity in the sanctuary. Permit holders are also be required to display a copy of the permit on board any vessel or aircraft used in the permitted activity.

The new regulations are:

- Anchoring any vessel in the sanctuary, except as provided in §922.92 when responding to an emergency threatening life, property, or the environment, or except as may be permitted by the Director;
- Injuring, catching, harvesting, or collecting, or attempting to injure, catch, harvest, or collect, any marine organism, or any part thereof, living or dead, within the sanctuary by any means except by use of rod and reel, handline, or spearfishing gear without powerheads. (ii) There shall be a rebuttable presumption that any marine organism or part thereof found in the possession of a person within the sanctuary has been collected or removed from the sanctuary; and
- Except for possessing fishing gear stowed and not available for use, possessing or using within the sanctuary any fishing gear or means except rod and reel, handline, or spearfishing gear without powerheads.

The new regulations help address the increase in fishing activities and gear types that have a strong potential to damage the nationally significant bottom formations and the associated living marine resources at GRNMS that were the basis for the designation of the sanctuary.

Summary of reasons why the action is being taken: The National Marine Sanctuaries Act (NMSA) requires that management plans for sanctuaries be reviewed every five years and that the management plans and regulations are revised, as necessary. This review provides the opportunity to ensure that management plans and regulations address current

issues facing each site. The review undertaken at GRNMS indicated that the regulatory changes should be made.

Statement of the objectives and legal basis for such a rule: The legal basis for this action is the NMSA. The objective of preparing a new management plan, and its accompanying regulatory changes, is to meet the mandates of the NMSA, primarily the protection of the resources of the GRNMS.

Description/Estimate of the number of small entities to which the rule applies:

#### Overview of Sanctuary Users

Based on current socioeconomic studies and on-site surveys of visitor use, NOAA has determined that the majority of users in GRNMS fish recreationally with rod and reel gear. These recreational fishermen primarily use personal boats originating from various locations along the Georgia coast. There are less than ten fishing charter operations along the Georgia coast that occasionally target GRNMS.

Commercial fishing activity is negligible in GRNMS. Most commercial gear, such as bottom trawls, specimen dredges, explosives, and wire fish traps, are already prohibited in GRNMS by existing sanctuary and Magnuson-Stevens Act regulations due to the potential for damage to live bottom habitat. Surveys indicate that one charter boat captain may fish commercially on occasion using handline gear. Commercial hook-and-line fishermen targeting reef fish usually bypass the sanctuary to fish well offshore along or just inside the shelf “break,” which is 80 nautical miles off Georgia but much closer to shore off Cape Hatteras, North Carolina, and Cape Canaveral, Florida. Commercial boats typically work north and south along the “break” well offshore of GRNMS and normally land most of their catches in Florida and South Carolina since it is a shorter trip to/ and from the “break” to these ports.

While GRNMS is an important recreational fishing destination for Georgia, it has only limited use by SCUBA divers due to the depth, strong currents and frequent turbidity. Only one diving operation has been identified as offering trips to GRNMS (approximately 10 trips per year). This business was found to be the only one that offers diving trips on its own boat; the others simply provide retail services, instruction, and tank fills. Employees of other diving businesses do offer their services as guides on privately owned boats. Spearfishing activities also appear to be very limited at GRNMS for many of the same reasons that limit divers. The one dive operator, who offers trips to GRNMS, reported that spearfishing in the sanctuary is rare. The new regulations prohibit the removal of marine organisms or parts (e.g., seashells); all other non-extractive diving related activities such as underwater photography and nature watching are unaffected.

#### Application and Impact of Regulations on Sanctuary Users

The regulations apply to all users of the sanctuary, including small entities. However, as described above, nearly all users already conduct their activities in such a manner as to

already be in compliance with the regulations (i.e., most fishermen and divers do not anchor within the area, and the large majority of recreational fishermen use rod and reel gear to fish in the area). There is only one known captain who occasionally fishes commercially in GRNMS using handline gear. Handline gear will continue to be authorized for use in the sanctuary. The NMSP therefore expects that this rule will have no significant socioeconomic impacts.

Description of proposed reporting, record keeping and other compliance requirements: There are no new reporting, record keeping, or other compliance requirements.

Identification of relevant federal rules that it may duplicate: The NMSP is not aware of any other duplicative laws. The sanctuary lies within the South Atlantic Fishery Management Council's (SAFMC) region. The SAFMC develops, and NOAA Fisheries Service approves and implements, various fishery management plans addressing specific fish species, groups of species, habitat restrictions, gear types, harvest limits, and closures. The result is a variety of restrictions on size and number of fish caught, type of gear used, category of permits, and time and area closures. The new regulations will simplify the public's understanding of allowable activities in GRNMS, while maintaining SAFMC/NOAA Fisheries Service restrictions.

Description and analysis of significant alternatives that will accomplish the stated objectives of applicable statutes:

1. Alternatives to the anchoring prohibition:

- Prohibit anchoring and establish a mooring buoy system.

This alternative was not preferred primarily because (1) user surveys and discussion with the GRNMS Advisory Council indicate that it is unnecessary for users to anchor or moor in order to fish or dive in the area. In fact, the Advisory Council strongly recommended against deploying a mooring buoy system, because it was not needed, could be a navigational obstacle, and would be an inefficient use of the sanctuary's limited resources. (2) There are concerns that a mooring buoy system would concentrate activities, leading to overfishing, localized diver impacts, and concentrated marine debris. A secondary consideration was the cost of installing and maintaining a mooring buoy system. Anchoring and mooring to existing boundary markers in emergencies is allowed in GRNMS.

- Establish and mark an anchoring zone over sandy bottom and prohibit anchoring elsewhere in the sanctuary.

This alternative was not preferred for the same reasons given for the mooring buoy alternative. Additionally, recent on-water and aerial survey analysis indicates that the majority of anchoring occurs in live bottom areas of GRNMS where users are fishing and sometimes diving. Thus, a designated anchoring zone over sand would provide no real

benefit to users because it would distance users from the features that attract both fishermen and divers.

- Take no regulatory action but conduct an extensive research and monitoring program on the impacts of anchoring within GRNMS.

Long-term biological consequences of continued anchoring could be severe and the effects on the economic viability of the natural community for recreational and research purposes could be negative. In addition, design and implementation of the research and monitoring program would incur substantial costs. This alternative would represent a significant commitment of funding and personnel to activities for which the results are already clear. This alternative was not an efficient or productive use of limited sanctuary resources and was not preferred.

- No Action.

This alternative was not preferred because allowing continued use of anchors at GRNMS would increase the potential for continued damage to the live bottom habitat in the sanctuary. Given the recent observations by scientific divers of damage to the live bottom, and analysis of anchoring locations in hard bottom areas, continuation of anchoring assures that live bottom resources will be damaged and degraded. Also, as human population increases in the nearby coastal region and the visitor use grows at GRNMS, the damages are likely to increase. The long-term result would be diminished socioeconomic value as the biological communities degrade.

## 2. Alternatives to the fishing “allowable gear” regulation:

- Prohibit use or possession of spearguns, nets, bandit gear, buoy gear, longlines, traps, or pots in GRNMS.

Some gear types not currently prohibited would have negative impacts on habitat and biodiversity. The types of gear include various nets, commercial hook and line, longlines, sea bass pots, and buoy gear. Eliminating use of these gear types would reduce fishing pressure on reef fish stocks and protect vulnerable marine resources, such as invertebrates, marine mammals, sea turtles and sea birds. Also, the SAFMC and NOAA Fisheries Service have instituted numerous regulations addressing specific fish species, groups of species, habitat restrictions, gear types, harvest limits, and closures. The result is a mosaic of restrictions on size and number of fish caught, type of gear used, category of permits, and time and area closures.

Regulating specific gear types could add more complication and confusion for fishermen by lengthening the list of restricted fishing methods and gear, versus clearly identifying what gear is allowed in GRNMS.

In addition, periodic analysis of new fishing gear, or gear types newly applied in the EEZ off the southeastern United States, would be necessary to keep the regulations current.

This would add more cost to GRNMS and could increase the number of regulatory changes for sanctuary users to adjust to over time. Addressing additional gear prohibitions would incur more costs over time, both to GRNMS and users who may have already invested in fishing gear that is damaging to GRNMS resources, and possibly create more confusion than clarity for users of GRNMS. Thus, this alternative was not preferred.

- Allow fishing in GRNMS only with rod and reel and handline gear.

This alternative is identical to the preferred alternative, except that it would also prohibit the use of all spearfishing gear. New regulations would be promulgated to allow fishing only with rod and reel and handline gear. All other fishing gear would be prohibited by these rules. When GRNMS was designated, spearfishing was identified as an activity that may be regulated at a later time to “ensure the protection and preservation of the sanctuary’s marine features and the ecological, recreational, and aesthetic value of the area.” Although spearfishing was listed because of the potential for damage to marine resources, only the prohibition on powerheads (explosives) was promulgated at that time.

GRNMS has carefully considered information and comment about this alternative provided during the comment period for the DMP/DEIS. NOAA concluded that additional information specific to GRNMS should be collected and analyzed before a decision is made regarding the status of spearfishing at GRNMS.

As a result of its further consideration of this issue, NOAA will not be prohibiting spearfishing at GRNMS at this time but does not preclude the possibility depending on the results of further data collection and analysis. Therefore this alternative was not preferred.

- No Action.

Fishing, specifically recreational fishing with rod and reel gear, represents the primary use of GRNMS. With increasing numbers of fishermen accessing the sanctuary, maintaining the health of the living and non-living resources is a complex challenge. NOAA expects that the continuing and increasing levels of certain activities in GRNMS will result in a degradation of the habitat and living marine resources. This is particularly true given the increase in use, improvements in technology and the variety of new fishing gear not contemplated when the current regulations were adopted 25 years ago. Taking no action would ignore these significant changes over the last 25 years. The sanctuary conservation standards established in 1981 were based on levels of use far lower than today. Recalibration of the conservation measures based on current use is therefore appropriate. Consequently taking the “no action” alternative was not preferred.

#### Paperwork Reduction Act

This rule does not impose an information collection requirement subject to review and approval by OMB under the Paperwork Reduction Act of 1980 (44 U.S.C. 3500 et seq.).

List of Subjects in 15 CFR Part 922

Administrative practice and procedure, Coastal zone, Education, Environmental protection, Marine resources, Natural resources, Penalties, Recreation and recreation areas, Reporting and recordkeeping requirements, Research.

(Federal Domestic Assistance Catalog Number 11.429  
Marine Sanctuary Program)

---

John H. Dunnigan Date  
Assistant Administrator for  
Ocean Services and Coastal Zone Management

Accordingly, for the reasons set forth above, 15 CFR Part 922 is to be amended as follows:

PART 922—[AMENDED]

1. The authority citation for Part 922 continues to read as follows:  
Authority: 16 U.S.C. 1431 et seq.

2. The regulations for GRNMS (15 CFR Part 922, Subpart I) are amended to read as follows:

922.90 Boundary.

The Gray's Reef National Marine Sanctuary (Sanctuary) consists of approximately 16.68 square nautical miles of ocean waters and the submerged lands thereunder, off the coast of Georgia. The Sanctuary boundary includes all waters and submerged lands within a rectangle marked by the following coordinates:

Datum: NAD83

Geographic Coordinate System

1) N 31.362732	degrees	W 80.921200 degrees
2) N 31.421064	degrees	W 80.921201 degrees
3) N 31.421064	degrees	W 80.828145 degrees
4) N 31.362732	degrees	W 80.828145 degrees
5) N 31.362732	degrees	W 80.921200 degrees

922.91 Definitions.

In addition to those definitions found at §922.3, the following definitions apply to this subpart:

*Handline* means fishing gear that is set and pulled by hand and consists of one vertical line to which may be attached leader lines with hooks.

*Rod and reel* means a rod and reel unit that is not attached to a vessel, or, if attached, is readily removable, from which a line and attached hook(s) are deployed. The line is payed out from and retrieved on the reel manually or electrically.

*Stowed and not available for immediate use* means not readily accessible for immediate use, e.g., by being securely covered and lashed to a deck or bulkhead, tied down, unbaited, unloaded, partially disassembled, or stowed for transit.

922.92 Prohibited or otherwise regulated activities.

(a) Except as may be necessary for national defense (subject to the terms and conditions of Article 5, Section 2 of the Designation Document) or to respond to an emergency threatening life, property, or the environment, or except as may be permitted by the Director in accordance with § 922.48 and § 922.93, the following activities are unlawful for any person to conduct or to cause to be conducted within the Sanctuary:

(1) Dredging, drilling into, or otherwise altering in any way the submerged lands of the Sanctuary (including bottom formations).

(2) Constructing any structure other than a navigation aid, or constructing, placing, or abandoning any structure, material, or other matter on the submerged lands of the Sanctuary.

(3) Discharging or depositing any material or other matter except:  
(i) Fish or fish parts or bait and chumming materials;  
(ii) Effluent from marine sanitation devices; and  
(iii) Vessel cooling water.

(4) Operating a watercraft other than in accordance with the Federal rules and regulations that would apply if there were no Sanctuary.

(5) (i) Injuring, catching, harvesting, or collecting, or attempting to injure, catch, harvest, or collect, any marine organism, or any part thereof, living or dead, within the Sanctuary by any means except by use of rod and reel, handline, or spearfishing gear without powerheads.  
(ii) There shall be a rebuttable presumption that any marine organism or part thereof referenced in this paragraph found in the possession of a person within the Sanctuary has been collected or removed from the Sanctuary.

(6) Except for possessing fishing gear stowed and not available for immediate use, possessing or using within the Sanctuary any fishing gear or means except rod and reel, handline, or spearfishing gear without powerheads.

(7) Using underwater any poisons, explosives, or devices that produce electric charges underwater.



(8) Breaking, cutting, or similarly damaging, taking, or removing any bottom formation.

(9) Moving, removing, damaging, or possessing, or attempting to move, remove, damage, or possess, any Sanctuary historical or cultural resource.

(10) Anchoring any vessel in the Sanctuary, except as provided in §922.92 when responding to an emergency threatening life, property, or the environment, or except as may be permitted by the Director.

(b) All activities currently carried out by the Department of Defense within the Sanctuary are essential for the national defense and, therefore, not subject to the prohibitions in this section. The exemption of additional activities having significant impacts shall be determined in consultation between the Director and the Department of Defense.

§922.93 Permit procedures and criteria.

(a) A person may conduct an activity prohibited by § 922.92(a)(1) through (10) if conducted in accordance within the scope, purpose, manner, terms and conditions of a permit issued under this section and § 922.48.

(b) Applications for such permits should be addressed to the Director, National Marine Sanctuary Program, ATTN: Manager, Gray's Reef National Marine Sanctuary, 10 Ocean Science Circle, Savannah, GA 31411.

(c) The Director, at his or her discretion may issue a permit, subject to such terms and conditions as he or she deems appropriate, to conduct an activity prohibited by § 922.92(a)(1) through (10). The Director must also find that the activity will:

(1) Further research related to the resources and qualities of the Sanctuary;

(2) Further the educational, natural, or historical resource value of the Sanctuary;

(3) Further salvage or recovery operations in connection with a recent air or marine casualty; or

(4) Assist in managing the Sanctuary.

(d) The Director shall not issue a permit unless the Director also finds that:

(1) The applicant is professionally qualified to conduct and complete the proposed activity;

(2) The applicant has adequate financial resources available to conduct and complete the proposed activity;

(3) The duration of the proposed activity is no longer than necessary to achieve its stated purpose;

(4) The methods and procedures proposed by the applicant are appropriate to achieve the proposed activity's goals in relation to the activity's impacts on Sanctuary resources and qualities;

(5) The proposed activity will be conducted in a manner compatible with the primary objective of protection of Sanctuary resources and qualities, considering the extent to which the conduct of the activity may diminish or enhance Sanctuary resources and qualities, any indirect, secondary or cumulative effects of the activity, and the duration of such effects;

(6) The proposed activity will be conducted in a manner compatible with the value of the Sanctuary as a source of recreation, or as a source of educational or scientific information considering the extent to which the conduct of the activity may result in conflicts between different users of the Sanctuary, and the duration of such effects;

(7) It is necessary to conduct the proposed activity within the Sanctuary to achieve its purposes;

(8) The reasonably expected end value of the activity to the furtherance of Sanctuary goals and purposes outweighs any potential adverse impacts on Sanctuary resources and qualities from the conduct of the activity; and

(9) Other matters deemed appropriate do not make the issuance of a permit for the activity inappropriate.

(e) It shall be a condition of any permit issued that the permit or a copy thereof be displayed on board all vessels or aircraft used in the conduct of the activity.

(f) The Director shall, inter alia, make it a condition of any permit issued that any data or information obtained under the permit be made available to the public.

(g) The Director may, inter alia, make it a condition of any permit issued to require the submission of one or more reports of the status and progress of such activity.

(h) The Director may, inter alia, make it a condition of any permit issued that a NOAA official be allowed to observe any activity conducted under the permit and/or that the permit holder submit one or more reports on the status, progress or results of any activity authorized by the permit.

## APPENDIX II: REFERENCES

### DOCUMENTS AND WEBSITES

ACN Community Profile: Chatham County and Savannah MSA Population & Population Estimates. February 2002. URL: <http://www.acn.net>

Bird C., B. Hooker, G. Moretti, L. Nojek, D. Wusinich. 2001. *An Analysis of Recreational Fishers' Activities and Attitudes at Gray's Reef National Marine Sanctuary*; Unpublished project, Nicholas School of the Environment and Earth Sciences, Duke University.

Bohnsack, J.A., 1982. "Effects of piscivorous predator removal on coral reef fish community structure." Wash. Sea Grant Publ., Seattle, WA.

Chapman, M.R. and D.L. Kramer. 1999. *Gradients in coral reef fish density and size across the Barbados Marine Reserve boundary: Effects of reserve protection and habitat characteristics*. Marine Ecology Progress Series 181:81-96.

Clark, J.R., B. Causey, and J.A. Bohnsack. 1989. "Benefits from coral reef protection: Looe Key Reef, Florida." Pp. 3076-3086 in O.T. Magoon, H. Converse, D. Minor, L.T. Tobin, and D. Clark (Eds). *Coastal Zone '89. Proceedings of the 6th Symposium on Coastal and Ocean Management*, held in Charleston, South Carolina, 11-14 July 1989. American Society of Civil Engineers, New York.

Ehler, Rod and V.R. Leeworthy. May 2002. A Socioeconomic Overview of Georgia's Marine Related Industries and Activities; NOAA, U.S. Department of Commerce.

Georgia Department of Natural Resources, Georgia Natural Heritage Program Oct. 2001. URL: <http://www.dnr.state.ga.us/dnr/wild/nongame/protected.htm>

GRNMS, unpublished data. A compilation of overflight and on-water observations of users at Gray's Reef NMS.

Harding, J.L. and V.J. Henry. 1990. *Geological History of Gray's Reef National Marine Sanctuary: A final report*.

Hare, Jon, *et al.* October 2001. Center for Coastal Fisheries and Habitat Research. *Annual Report-FY2001, Support of monitoring activities and site characterization at Gray's Reef National Marine Sanctuary*. Prepared for U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service, National Centers for Coastal Ocean Science.

Hare, Jon, *et al.* January 2003. Center for Coastal Fisheries and Habitat Research. *Annual Report-FY2002, Support of monitoring activities and site characterization at Gray's Reef National Marine Sanctuary*. Prepared for U.S. Department of Commerce,

National Oceanic and Atmospheric Administration, National Ocean Service, National Centers for Coastal Ocean Science.

Harriot, V.J.; Davis, D.; Banks, S.A. 1997. "Recreational diving and its impact in marine protected areas in eastern Australia." *Ambio*. Vol. 26, no. 3, pp. 173-179.

Henry, V.J. and S.B. Van Sant. 1982. *Results of reconnaissance mapping of the Gray's Reef National Marine Sanctuary*. A report prepared for the Georgia Department of Natural Resources, Coastal Resources Division, Brunswick, Georgia under cooperative agreement with Sanctuary Programs Division, National Oceanic and Atmospheric Administration. (No.NA81AAHC2098, Amendment 1)

Hunt, J.L. 1974. *The Geology and Origin of Gray's Reef, Georgia Continental Shelf*. M.S. Thesis. University of Georgia. Athens, Georgia.

Hyland, Jeffrey *et al.* September 2001. *Survey of Benthic Macroinfauna and Levels of Chemical Contaminants in Sediments and Biota at Gray's Reef National Marine Sanctuary*. Prepared for U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service, National Centers for Coastal Ocean Science.

Hyland, Jeffrey *et al.* December 2002. *Benthic Macroinfaunal Communities and Levels of Chemical Contaminants in Sediments and Biota at Gray's Reef National Marine Sanctuary and Nearby Shelf Waters off the coast of Georgia*. Prepared for U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service, National Centers for Coastal Ocean Science.

Jouvenel, J.-Y. and D.A. Pollard. 2001. *Some effects of marine reserve protection on the population structure of two spearfishing target-fish species, *Dicentrarchus labrax* (Moronidae) and *Sparus aurata* (Sparidae), in shallow inshore waters, along a rocky coast in the northwestern Mediterranean Sea*. *Aquatic Conservation: Marine and Freshwater Ecosystems* 11(1): 1-9.

Kendall M.S., O.P. Jenson, G. McFall, R. Bohne, D. Field, C. Alexander, and M.E. Monaco. 2003. *Benthic Habitats of Gray's Reef National Marine Sanctuary*. Prepared for U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service, National Centers for Coastal Ocean Science.

Littman, S.L. 2000. *Pleistocene/Holocene Sea Level Change in the Georgia bight: a paleoenvironmental reconstruction of Gray's Reef National Marine Sanctuary and J Reef*. Unpublished thesis, University of Georgia.

McFall, G. and E. LaRoache. 1998. *Identification and Species Diversity of Sessile Invertebrate Fauna Indigenous to the Natural Rock Formations of Gray's Reef National Marine Sanctuary*. Cruise report to the Gray's Reef National Marine Sanctuary.

McGovern, J. C., G.R. Sedberry, H.S. Meister, and D. Wyanski. 2001. *Annual Report–FY 2001. A summary of monitoring and tagging work by the Marine Resources Monitoring and Assessment Program at Gray’s Reef National Marine Sanctuary during 2001.* NOAA, U.S. Department of Commerce.

Savannah Economic Development Authority. 2002. Savannah MSA Population and Population Estimates. URL: <http://www.seda.org>.

Searles, R.B. 1988. *An Illustrated Field and Laboratory Guide to the Seaweeds of Gray’s Reef National Marine Sanctuary.* NOAA technical memorandum NOS MEMD 22. Washington D.C.

Sedberry, G.R. and R.F. Van Dolah. 1984. “Demersal fish assemblages associated with hard bottom habitat in the South Atlantic Bight of the U.S.A.” *Env. Biol. Fish.* 11(4): 241-258.

South Atlantic Fishery Management Council. 1998a. *Final Comprehensive Amendment Addressing Essential Fish Habitat in Fishery Management Plans of the South Atlantic Region.* NOAA, U.S. Department of Commerce.

South Atlantic Fishery Management Council. 1998b. *Final Habitat Plan for the South Atlantic Region: Essential Fish Habitat Requirements for Fishery Management Plans.* NOAA, U.S. Department of Commerce.

South Atlantic Fishery Management Council. November 2000. *Snapper Grouper Powerhead Source Document.* NOAA, U.S. Department of Commerce.

South Atlantic Fishery Management Council. 1990. *The Potential of Marine Fishery Reserves for Reef Fish Management in the U.S. Southern Atlantic.* Plan Development Team. Coastal Resources Division CRD/89-90/04.

State of Georgia, Office of Planning and Budget. <http://www.opb.state.ga.us>

Talge, H. 1990. “Impact of recreational divers on coral reefs in the Florida Keys.” *Proceedings Of The American Academy Of Underwater Sciences Tenth Annual Scientific Diving Symposium*, 1990, pp. 365-374.

Taylor, Lewis. 1996. *Gray’s Reef Site Characterization.*

U.S. Department of Commerce, National Marine Fisheries Service, Office of Protected Resources. URL: [http://www.nmfs.noaa.gov/prot\\_res/](http://www.nmfs.noaa.gov/prot_res/)

U.S. Department of Commerce, Census Bureau. <http://www.census.gov>

U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service. 1999. *Our Living Oceans: Report on the Status of U.S. Living Marine Resources, 1999*.

U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service. *Fisheries of the United States – 2000*.

U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service. 2001. *Report to Congress: Status of Fisheries of the United States*.

U.S. Department of Commerce, National Oceanic and Atmospheric Administration, NOAA Fisheries Service. 2004. *Report to Congress: Status of Fisheries of the United States*.

U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service. 1996. *Florida Keys National Marine Sanctuary Final Management Plan/Environmental Impact Statement*.

U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service. 1991. *Flower Garden Banks National Marine Sanctuary Final Environmental Impact Statement/Management Plan*.

U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Office of Coastal Zone Management. Sept. 1980. *Final Environmental Impact Statement on the Proposed Gray's Reef Marine Sanctuary*.

U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Office of Ocean and Coastal Resource Management. Jan. 1983. *Gray's Reef National Marine Sanctuary Management Plan*.

U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service. *Gray's Reef National Marine Sanctuary Shaping the Future Together. State of the Sanctuary Report, 2000-2001*.

U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service. Florida Keys National Marine Sanctuary.  
URL: [http://floridakeys.noaa.gov/research\\_monitoring](http://floridakeys.noaa.gov/research_monitoring).

U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service. Gray's Reef National Marine Sanctuary.  
URL: <http://www.sanctuaries.nos.noaa.gov/oms/omsgrays/omsgrays.html>.

U.S. Department of the Interior, Minerals Management Service. October 2001. *Proposed Outer Continental Shelf Oil & Gas Leasing Program, 2002-2007*.

Wenner, C.A. 1983. "Species associations and day-night variability of trawl caught fishes from the inshore sponge-coral habitat." South Atlantic Bight. Fish. Bull. 81:532-552.

Wenner, Elizabeth L., *et al.* 1997. *A Synthesis of Water Quality Data from the National Estuarine Research Reserve's Systemwide Monitoring Program*. NOAA Grant No. NA97OR0209. Marine Resources Research Institute, South Carolina Dept. of Natural Resources, Charleston, SC. MRD Contribution No. 459.

#### PERSONAL COMMUNICATIONS

Bohnsack, J., Southeast Fisheries Science Center, NOAA Fisheries Service, Miami, FL.

Hare, J., Center for Coastal Fisheries and Habitat Research, National Centers for Coastal Ocean Science, Beaufort, NC.

Sedberry G., Marine Resources Research Institute, South Carolina Department of Natural Resources, Charleston, SC.

### APPENDIX III: NATIONAL MARINE SANCTUARIES ACT

16 U.S.C. 1431 ET. SEQ., as amended by Public Law 106-513

#### Sec. 301. FINDINGS, PURPOSES, AND POLICIES; ESTABLISHMENT OF SYSTEM.

(a) FINDINGS.--The Congress finds that--

(1) this Nation historically has recognized the importance of protecting special areas of its public domain, but these efforts have been directed almost exclusively to land areas above the high-water mark;

(2) certain areas of the marine environment possess conservation, recreational, ecological, historical, scientific, educational, cultural, archeological, or esthetic qualities which give them special national, and in some instances, international, significance;

(3) while the need to control the effects of particular activities has led to enactment of resource-specific legislation, these laws cannot in all cases provide a coordinated and comprehensive approach to the conservation and management of special areas of the marine environment; and

(4) a Federal program which establishes areas of the marine environment which have special conservation, recreational, ecological, historical, cultural, archeological, scientific, educational, or esthetic qualities as national marine sanctuaries managed as the National Marine Sanctuary System will--

(A) improve the conservation, understanding, management, and wise and sustainable use of marine resources;

(B) enhance public awareness, understanding, and appreciation of the marine environment; and

(C) maintain for future generations the habitat, and ecological services, of the natural assemblage of living resources that inhabit these areas.

(b) PURPOSES AND POLICIES.--The purposes and policies of this title are--

(1) to identify and designate as national marine sanctuaries areas of the marine environment which are of special national significance and to manage these areas as the National Marine Sanctuary System;

(2) to provide authority for comprehensive and coordinated conservation and management of these marine areas, and activities affecting them, in a manner which complements existing regulatory authorities;



(3) to maintain the natural biological communities in the national marine sanctuaries, and to protect, and, where appropriate, restore and enhance natural habitats, populations, and ecological processes;

(4) to enhance public awareness, understanding, appreciation, and wise and sustainable use of the marine environment, and the natural, historical, cultural, and archeological resources of the National Marine Sanctuary System;

(5) to support, promote, and coordinate scientific research on, and long-term monitoring of, the resources of these marine areas;

(6) to facilitate to the extent compatible with the primary objective of resource protection, all public and private uses of the resources of these marine areas not prohibited pursuant to other authorities;

(7) to develop and implement coordinated plans for the protection and management of these areas with appropriate Federal agencies, State and local governments, Native American tribes and organizations, international organizations, and other public and private interests concerned with the continuing health and resilience of these marine areas;

(8) to create models of, and incentives for, ways to conserve and manage these areas, including the application of innovative management techniques; and

(9) to cooperate with global programs encouraging conservation of marine resources.

(c) ESTABLISHMENT OF SYSTEM.-There is established the National Marine Sanctuary System, which shall consist of national marine sanctuaries designated by the Secretary in accordance with this title.

## Sec. 302. DEFINITIONS

As used in this title, the term--

(1) "Draft management plan" means the plan described in section 304(a)(1)(C)(v);

(2) "Magnuson-Stevens Act" means the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 *et seq.*);

(3) "marine environment" means those areas of coastal and ocean waters, the Great Lakes and their connecting waters, and submerged lands over which the

United States exercises jurisdiction, including the exclusive economic zone, consistent with international law;

(4) "Secretary" means the Secretary of Commerce;

(5) "State" means each of the several States, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, American Samoa, the Virgin Islands, Guam, and any other commonwealth, territory, or possession of the United States;

(6) "damages" includes--

(A) compensation for--

(i)(I) the cost of replacing, restoring, or acquiring the equivalent of a sanctuary resource; and (II) the value of the lost use of a sanctuary resource pending its restoration or replacement or the acquisition of an equivalent sanctuary resource; or

(ii) the value of a sanctuary resource if the sanctuary resource cannot be restored or replaced or if the equivalent of such resource cannot be acquired;

(B) the cost of damage assessments under section 312(b)(2);

(C) the reasonable cost of monitoring appropriate to the injured, restored, or replaced resources;

(D) the cost of curation and conservation of archeological, historical, and cultural sanctuary resources; and

(E) the cost of enforcement actions undertaken by the Secretary in response to the destruction or loss of, or injury to, a sanctuary resource;

(7) "response costs" means the costs of actions taken or authorized by the Secretary to minimize destruction or loss of, or injury to, sanctuary resources, or to minimize the imminent risks of such destruction, loss, or injury, including costs related to seizure forfeiture, storage, or disposal arising from liability under section 312;

(8) "sanctuary resource" means any living or nonliving resource of a national marine sanctuary that contributes to the conservation, recreational, ecological, historical, educational, cultural, archeological, scientific, or aesthetic value of the sanctuary;

(9) "exclusive economic zone" means the exclusive economic zone as defined in the Magnuson-Stevens Act; and

(10) 'System' means the National Marine Sanctuary System established by section 301.

### Sec. 303. SANCTUARY DESIGNATION STANDARDS

(a) STANDARDS.--The Secretary may designate any discrete area of the marine environment as a national marine sanctuary and promulgate regulations implementing the designation if the Secretary determines that--

(1) the designation will fulfill the purposes and policies of this title;

(2) the area is of special national significance due to-

(A) its conservation, recreational, ecological, historical, scientific, cultural, archeological, educational, or esthetic qualities;

(B) the communities of living marine resources it harbors; or

(C) its resource or human-use values;

(3) existing State and Federal authorities are inadequate or should be supplemented to ensure coordinated and comprehensive conservation and management of the area, including resource protection, scientific research, and public education;

(4) designation of the area as a national marine sanctuary will facilitate the objectives in subparagraph (3); and

(5) the area is of a size and nature that will permit comprehensive and coordinated conservation and management.

(b) FACTORS AND CONSULTATIONS REQUIRED IN MAKING DETERMINATIONS AND FINDINGS.--

(1) Factors.--For purposes of determining if an area of the marine environment meets the standards set forth in subsection (a), the Secretary shall consider--

(A) the area's natural resource and ecological qualities, including its contribution to biological productivity, maintenance of ecosystem structure, maintenance of ecologically or commercially important or threatened species or species assemblages, maintenance of critical habitat of endangered species, and the biogeographic representation of the site;

(B) the area's historical, cultural, archaeological, or paleontological significance;

(C) the present and potential uses of the area that depend on maintenance of the area's resources, including commercial and recreational fishing, subsistence uses other commercial and recreational activities, and research and education;

(D) the present and potential activities that may adversely affect the factors identified in subparagraphs (A), (B), (C);

(E) the existing State and Federal regulatory and management authorities applicable to the area and the adequacy of those authorities to fulfill the purposes and policies of this title;

(F) the manageability of the area, including such factors as its size, its ability to be identified as a discrete ecological unit with definable boundaries, its accessibility, and its suitability for monitoring and enforcement activities;

(G) the public benefits to be derived from sanctuary status, with emphasis on the benefits of long-term protection of nationally significant resources, vital habitats, and resources which generate tourism;

(H) the negative impacts produced by management restrictions on income-generating activities such as living and nonliving resources development;

(I) the socioeconomic effects of sanctuary designation;

(J) the area's scientific value and value for monitoring the resources and natural processes that occur there;

(K) the feasibility, where appropriate, of employing innovative management approaches to protect sanctuary resources or to manage compatible uses; and

(L) the value of the area as an addition to the System.

(2) Consultation.--In making determinations and findings, the Secretary shall consult with--

(A) the Committee on Resources of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate;

(B) the Secretaries of State, Defense, Transportation, and the Interior, the Administrator, and the heads of other interested Federal agencies;

(C) the responsible officials or relevant agency heads of the appropriate State and local government entities, including coastal zone management agencies, that will or are likely to be affected by the establishment of the area as a national marine sanctuary;

(D) the appropriate officials of any Regional Fishery Management Council established by section 302 of the Magnuson-Stevens Act (16 U.S.C. 1852) that may be affected by the proposed designation; and

(E) other interested persons.

#### Sec. 304. PROCEDURES FOR DESIGNATION AND IMPLEMENTATION

##### (a) SANCTUARY PROPOSAL.--

(1) Notice.--In proposing to designate a national marine sanctuary, the Secretary shall--

(A) issue, in the *Federal Register*, a notice of the proposal, proposed regulations that may be necessary and reasonable to implement the proposal, and a summary of the draft management plan;

(B) provide notice of the proposal in newspapers of general circulation or electronic media in the communities that may be affected by the proposal; and

(C) no later than the day on which the notice required under subparagraph (A) is submitted to Office of the *Federal Register*, submit a copy of that notice and the draft sanctuary designation documents prepared pursuant to section 304(a)(2), including an executive summary, to the Committee on Resources of the House of Representatives, the Committee on Commerce, Science, and Transportation of the Senate, and the Governor of each State in which any part of the proposed sanctuary would be located.

(2) Sanctuary Designation Documents.- The Secretary shall prepare and make available to the public sanctuary designation documents on the proposal that include the following:

(A) A draft environmental impact statement pursuant to the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*).

(B) A resource assessment that documents-

(i) present and potential uses of the area, including commercial and recreational fishing, research and education, minerals and energy

development, subsistence uses, and other commercial, governmental, or recreational uses;

(ii) after consultation with the Secretary of the Interior, any commercial, governmental, or recreational resource uses in the areas that are subject to the primary jurisdiction of the Department of the Interior; and

(iii) information prepared in consultation with the Secretary of Defense, the Secretary of Energy, and the Administrator of the Environmental Protection Agency, on any past, present, or proposed future disposal or discharge of materials in the vicinity of the proposed sanctuary. Public disclosure by the Secretary of such information shall be consistent with national security regulations.

(C) A draft management plan for the proposed national marine sanctuary that includes the following:

(i) The terms of the proposed designation.

(ii) Proposed mechanisms to coordinate existing regulatory and management authorities within the area.

(iii) The proposed goals and objectives, management responsibilities, resource studies, and appropriate strategies for managing sanctuary resources of the proposed sanctuary, including interpretation and education, innovative management strategies, research, monitoring and assessment, resource protection, restoration, enforcement, and surveillance activities.

(iv) An evaluation of the advantages of cooperative State and Federal management if all or part of the proposed sanctuary is within the territorial limits of any State or is superjacent to the subsoil and seabed within the seaward boundary of a State, as that boundary is established under the Submerged Lands Act (43 U.S.C. 1301 *et seq.*).

(v) An estimate of the annual cost to the Federal Government of the proposed designation, including costs of personnel, equipment and facilities, enforcement, research, and public education.

(vi) The proposed regulations referred to in paragraph (1)(A).

(D) Maps depicting the boundaries of the proposed sanctuary.

(E) The basis for the determinations made under section 303(a) with respect to the area.

(F) An assessment of the considerations under section 303(b)(1).

(3) Public Hearing.--No sooner than thirty days after issuing a notice under this subsection, the Secretary shall hold at least one public hearing in the coastal area or areas that will be most affected by the proposed designation of the area as a national marine sanctuary for the purpose of receiving the views of interested parties.

(4) Terms of Designation.--The terms of designation of a sanctuary shall include the geographic area proposed to be included within the sanctuary, the characteristics of the area that give it conservation, recreational, ecological, historical, research, educational, or esthetic value, and the types of activities that will be subject to regulation by the Secretary to protect those characteristics. The terms of designation may be modified only by the same procedures by which the original designation is made.

(5) Fishing Regulations.--The Secretary shall provide the appropriate Regional Fishery Management Council with the opportunity to prepare draft regulations for fishing within the Exclusive Economic Zone as the Council may deem necessary to implement the proposed designation. Draft regulations prepared by the Council, or a Council determination that regulations are not necessary pursuant to this paragraph, shall be accepted and issued as proposed regulations by the Secretary unless the Secretary finds that the Council's action fails to fulfill the purposes and policies of this title and the goals and objectives of the proposed designation. In preparing the draft regulations, a Regional Fishery Management Council shall use as guidance the national standards of section 301(a) of the Magnuson-Stevens Act (16 U.S.C. 1851) to the extent that the standards are consistent and compatible with the goals and objectives of the proposed designation. The Secretary shall prepare the fishing regulations, if the Council declines to make a determination with respect to the need for regulations, makes a determination which is rejected by the Secretary, or fails to prepare the draft regulations in a timely manner. Any amendments to the fishing regulations shall be drafted, approved, and issued in the same manner as the original regulations. The Secretary shall also cooperate with other appropriate fishery management authorities with rights or responsibilities within a proposed sanctuary at the earliest practicable stage in drafting any sanctuary fishing regulations.

(6) Committee Action.--After receiving the documents under subsection (a)(1)(C), the Committee on Resources of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate may each hold hearings on the proposed designation and on the matters set forth in the documents. If within the forty-five day period of continuous session of Congress beginning on the date of submission of the documents, either Committee issues a report concerning matters addressed in the documents,

the Secretary shall consider this report before publishing a notice to designate the national marine sanctuary.

(b) TAKING EFFECT OF DESIGNATIONS.--

(1) Notice.--In designating a national marine sanctuary, the Secretary shall publish in the *Federal Register* notice of the designation together with final regulations to implement the designation and any other matters required by law, and submit such notice to the Congress. The Secretary shall advise the public of the availability of the final management plan and the final environmental impact statement with respect to such sanctuary. The Secretary shall issue a notice of designation with respect to a proposed national marine sanctuary site not later than 30 months after the date a notice declaring the site to be an active candidate for sanctuary designation is published in the *Federal Register* under regulations issued under this Act, or shall publish not later than such date in the *Federal Register* findings regarding why such notice has not been published. No notice of designation may occur until the expiration of the period for Committee action under subsection (a)(6). The designation (and any of its terms not disapproved under this subsection) and regulations shall take effect and become final after the close of a review period of forty-five days of continuous session of Congress beginning on the day on which such notice is published unless in the case of a natural [sic] marine sanctuary that is located partially or entirely within the seaward boundary of any State, the Governor affected certifies to the Secretary that the designation or any of its terms is unacceptable, in which case the designation or the unacceptable term shall not take effect in the area of the sanctuary lying within the seaward boundary of the State.

(2) Withdrawal of Designation.-- If the Secretary considers that actions taken under paragraph (1) will affect the designation of a national marine sanctuary in a manner that the goals and objectives of the sanctuary or System cannot be fulfilled, the Secretary may withdraw the entire designation. If the Secretary does not withdraw the designation, only those terms of the designation or not certified under paragraph (1) shall take effect.

(3) Procedures.-- In computing the forty-five-day periods of continuous session of Congress pursuant to subsection (a)(6) and paragraph (1) of this subsection--

(A) continuity of session is broken only by an adjournment of Congress sine die; and

(B) the days on which either House of Congress is not in session because of an adjournment of more than three days to a day certain are excluded.

(c) ACCESS AND VALID RIGHTS.--



(1) Nothing in this title shall be construed as terminating or granting to the Secretary the right to terminate any valid lease, permit, license, or right of subsistence use or of access that is in existence on the date of designation of any national marine sanctuary.

(2) The exercise of a lease, permit, license, or right is subject to regulation by the Secretary consistent with the purposes for which the sanctuary is designated.

(d) INTERAGENCY COOPERATION.--

(1) Review of Agency Actions.--

(A) In General.--Federal agency actions internal or external to a national marine sanctuary, including private activities authorized by licenses, leases, or permits, that are likely to destroy, cause the loss of, or injure any sanctuary resource are subject to consultation with the Secretary.

(B) Agency Statements Required.-- Subject to any regulations the Secretary may establish each Federal agency proposing an action described in subparagraph (A) shall provide the Secretary with a written statement describing the action and its potential effects on sanctuary resources at the earliest practicable time, but in no case later than 45 days before the final approval of the action unless such Federal agency and the Secretary agree to a different schedule.

(2) Secretary's Recommended Alternatives.--If the Secretary finds that a Federal agency action is likely to destroy, cause the loss of, or injure a sanctuary resource, the Secretary shall (within 45 days of receipt of complete information on the proposed agency action) recommend reasonable and prudent alternatives, which may include conduct of the action elsewhere, which can be taken by the Federal agency in implementing the agency action that will protect sanctuary resources.

(3) Response to Recommendations.--The agency head who receives the Secretary's recommended alternatives under paragraph (2) shall promptly consult with the Secretary on the alternatives. If the agency head decides not to follow the alternatives, the agency head shall provide the Secretary with a written statement explaining the reasons for that decision.

(4) FAILURE TO FOLLOW ALTERNATIVE.- If the head of a Federal agency takes an action other than an alternative recommended by the Secretary and such action results in the destruction of, loss of, or injury to a sanctuary resource, the head of the agency shall promptly prevent and

mitigate further damage and restore or replace the sanctuary resource in a manner approved by the Secretary.

(e) REVIEW OF MANAGEMENT PLANS.--Not more than 5 years after the date of designation of any national marine sanctuary, and thereafter at intervals not exceeding 5 years, the Secretary shall evaluate the substantive progress toward implementing the management plan and goals for the sanctuary, especially the effectiveness of site-specific management techniques and strategies, and shall revise the management plan and regulations as necessary to fulfill the purposes and policies of this title. This review shall include a prioritization of management objectives.

(f) LIMITATION ON DESIGNATION OF NEW SANCTUARIES.-

(1) FINDING REQUIRED.- The Secretary may not publish in the *Federal Register* any sanctuary designation notice or regulations proposing to designate a new sanctuary, unless the Secretary has published a finding that--

(A) the addition of a new sanctuary will not have a negative impact on the System; and

(B) sufficient resources were available in the fiscal year in which the finding is made to--

(i) effectively implement sanctuary management plans for each sanctuary in the System; and

(ii) complete site characterization studies and inventory known sanctuary resources, including cultural resources, for each sanctuary in the System within 10 years after the date that the finding is made if the resources available for those activities are maintained at the same level for each fiscal year in that 10 year period.

(2) DEADLINE- If the Secretary does not submit the findings required by paragraph (1) before February 1, 2004, the Secretary shall submit to the Congress before October 1, 2004, a finding with respect to whether the requirements of subparagraphs (A) and (B) of paragraph 1 have been met by all existing sanctuaries.

(3) LIMITATION ON APPLICATION- Paragraph (1) does not apply to any sanctuary designation documents for--

(A) a Thunder Bay National Marine Sanctuary; or

(B) a Northwestern Hawaiian Islands National Marine Sanctuary.

[(g) NORTHWESTERN HAWAIIAN ISLANDS CORAL REEF RESERVE\*.-

(1) PRESIDENTIAL DESIGNATION.- The President, after consultation with the Governor of the State of Hawaii, may designate any Northwestern Hawaiian Islands coral reef or coral reef ecosystem as a coral reef reserve to be managed by the Secretary of Commerce.

(2) SECRETARIAL ACTION.- Upon the designation of a reserve under paragraph (1) by the President, the Secretary shall--

(A) take action to initiate the designation of the reserve as a National Marine Sanctuary under sections 303 and 304 of the National Marine Sanctuaries Act (16 U.S.C. 1433);

(B) establish a Northwestern Hawaiian Islands Reserve Advisory Council under section 315 of that Act (16 U.S.C. 1445a), the membership of which shall include at least 1 representative from Native Hawaiian groups; and

(C) until the reserve is designated as a National Marine Sanctuary, manage the reserve in a manner consistent with the purposes and policies of that Act.

(3) PUBLIC COMMENT- Notwithstanding any other provision of law, no closure areas around the Northwestern Hawaiian Islands shall become permanent without adequate review and comment.

(4) COORDINATION- The Secretary shall work with other Federal agencies and the Director of the National Science Foundation, to develop a coordinated plan to make vessels and other resources available for conservation or research activities for the reserve.

(5) REVIEW- If the Secretary has not designated a national marine sanctuary in the Northwestern Hawaiian Islands under sections 303 and 304 of the National Marine Sanctuaries Act (16 U.S.C. 1433, 1434) before October 1, 2005, the Secretary shall conduct a review of the management of the reserve under section 304(e) of that Act (16 U.S.C. 1434(e)).

(6) REPORT- No later than 6 months after the date of enactment of this Act, the Secretary shall submit a report to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Resources, describing actions taken to implement this subsection, including costs of monitoring, enforcing, and addressing marine debris, and the extent to which the fiscal or other resources necessary to carry out this subsection are reflected in the Budget of the United States Government submitted by the President under section 1104 of title 31, United States Code.

(7) AUTHORIZATION OF APPROPRIATIONS- There are authorized to be appropriated to the Secretary of Commerce to carry out the provisions of this subsection such sums, not exceeding \$4,000,000 for each of fiscal years 2001, 2002, 2003, 2004, and 2005, as are reported under paragraph (6) to be reflected in the Budget of the United States Government.]]

#### Sec. 305. APPLICATION OF REGULATIONS AND INTERNATIONAL NEGOTIATIONS

(a) REGULATIONS.--This title and the regulations issued under section 304 shall be applied in accordance with generally recognized principles of international law, and in accordance with the treaties, conventions, and other agreements to which the United States is a party. No regulation shall apply to or be enforced against a person who is not a citizen, national, or resident alien of the United States, unless in accordance with--

- (1) generally recognized principles of international law;
- (2) an agreement between the United States and the foreign state of which the person is a citizen; or
- (3) an agreement between the United States and the flag state of a foreign vessel, if the person is a crewmember of the vessel.

(b) NEGOTIATIONS.--The Secretary of State, in consultation with the Secretary, shall take appropriate action to enter into negotiations with other governments to make necessary arrangements for the protection of any national marine sanctuary and to promote the purposes for which the sanctuary is established.

(c) INTERNATIONAL COOPERATION.--The Secretary, in consultation with the Secretary of State and other appropriate Federal agencies, shall cooperate with other governments and international organizations in the furtherance of the purposes and policies of this title and consistent with applicable regional and multilateral arrangements for the protection and management of special marine areas.

#### Sec. 306. PROHIBITED ACTIVITIES

It is unlawful for any person to--

- (1) destroy, cause the loss of, or injure any sanctuary resource managed under law or regulations for that sanctuary;

(2) possess, sell, offer for sale, purchase, import, export, deliver, carry, transport, or ship by any means any sanctuary resource taken in violation of this section;

(3) interfere with the enforcement of this title by--

(A) refusing to permit any officer authorized to enforce this title to board a vessel, other than a vessel operated by the Department of Defense or United States Coast Guard, subject to such person's control for the purposes of conducting any search or inspection in connection with the enforcement of this title;

(B) resisting, opposing, impeding, intimidating, harassing, bribing, interfering with, or forcibly assaulting any person authorized by the Secretary to implement this title or any such authorized officer in the conduct of any search or inspection performed under this title; or

(C) knowingly and willfully submitting false information to the Secretary or any officer authorized to enforce this title in connection with any search or inspection conducted under this title; or

(4) violate any provision of this title or any regulation or permit issued pursuant to this title.

#### Sec. 307. ENFORCEMENT

(a) IN GENERAL.--The Secretary shall conduct such enforcement activities as are necessary and reasonable to carry out this title.

(b) POWERS OF AUTHORIZED OFFICERS.--Any person who is authorized to enforce this title may--

(1) board, search, inspect, and seize any vessel suspected of being used to violate this title or any regulation or permit issued under this title and any equipment, stores, and cargo of such vessel;

(2) seize wherever found any sanctuary resource taken or retained in violation of this title or any regulation or permit issued under this title;

(3) seize any evidence of a violation of this title or of any regulation or permit issued under this title;

(4) execute any warrant or other process issued by any court of competent jurisdiction;

(5) exercise any other lawful authority; and

(6) arrest any person, if there is reasonable cause to believe that such a person has committed an act prohibited by section 306(3).

(c) CRIMINAL OFFENSES-

(1) OFFENSES.- A person is guilty of an offense under this subsection if the person commits any act prohibited by section 306(3).

(2) PUNISHMENT.- Any person that is guilty of an offense under this subsection--

(A) except as provided in subparagraph (B), shall be fined under title 18, United States Code, imprisoned for not more than 6 months, or both; or

(B) in the case of a person who in the commission of such an offense uses a dangerous weapon, engages in conduct that causes bodily injury to any person authorized to enforce this title or any person authorized to implement the provisions of this title, or places any such person in fear of imminent bodily injury, shall be fined under title 18, United States Code, imprisoned for not more than 10 years, or both.

(d) CIVIL PENALTIES.--

(1) Civil penalty.--Any person subject to the jurisdiction of the United States who violates this title or any regulation or permit issued under this title shall be liable to the United States for a civil penalty of not more than \$100,000 for each such violation, to be assessed by the Secretary. Each day of a continuing violation shall constitute a separate violation.

(2) Notice.--No penalty shall be assessed under this subsection until after the person charged has been given notice and an opportunity for a hearing.

(3) In Rem Jurisdiction.--A vessel used in violating this title or any regulation or permit issued under this title shall be liable in rem for any civil penalty assessed for such violation. Such penalty shall constitute a maritime lien on the vessel and may be recovered in an action in rem in the district court of the United States having jurisdiction over the vessel.

(4) Review of Civil Penalty.--Any person against whom a civil penalty is assessed under this subsection may obtain review in the United States district court for the appropriate district by filing a complaint in such court not later than 30 days after the date of such order.

(5) Collection of Penalties.--If any person fails to pay an assessment of a civil penalty under this section after it has become a final and unappealable

order, or after the appropriate court has entered final judgment in favor of the Secretary, the Secretary shall refer the matter to the Attorney General, who shall recover the amount assessed in any appropriate district court of the United States. In such action, the validity and appropriateness of the final order imposing the civil penalty shall not be subject to review.

(6) Compromise or Other Action by Secretary.--The Secretary may compromise, modify, or remit, with or without conditions, any civil penalty which is or may be imposed under this section.

(e) FORFEITURE.--

(1) In General.--Any vessel (including the vessel's equipment, stores, and cargo) and other item used, and any sanctuary resource taken or retained, in any manner, in connection with or as a result of any violation of this title or of any regulation or permit issued under this title shall be subject to forfeiture to the United States pursuant to a civil proceeding under this subsection. The proceeds from forfeiture actions under this subsection shall constitute a separate recovery in addition to any amounts recovered as civil penalties under this section or as civil damages under section 312. None of those proceeds shall be subject to set-off.

(2) Application of the Customs Laws.--The Secretary may exercise the authority of any United States official granted by any relevant customs law relating to the seizure, forfeiture, condemnation, disposition, remission, and mitigation of property in enforcing this title.

(3) Disposal of Sanctuary Resources.--Any sanctuary resource seized pursuant to this title may be disposed of pursuant to an order of the appropriate court or, if perishable, in a manner prescribed by regulations promulgated by the Secretary. Any proceeds from the sale of such sanctuary resource shall for all purposes represent the sanctuary resource so disposed of in any subsequent legal proceedings.

(4) Presumption.--For the purposes of this section there is a rebuttable presumption that all sanctuary resources found on board a vessel that is used or seized in connection with a violation of this title or of any regulation or permit issued under this title were taken or retained in violation of this title or of a regulation or permit issued under this title.

(f) PAYMENT OF STORAGE, CARE, AND OTHER COSTS.--

(1) Expenditures.--

(A) Notwithstanding any other law, amounts received by the United States as civil penalties, forfeitures of property, and costs imposed under paragraph (2)

shall be retained by the Secretary in the manner provided for in section 107(f)(1) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980.

(B) Amounts received under this section for forfeitures and costs imposed under paragraph (2) shall be used to pay the reasonable and necessary costs incurred by the Secretary to provide temporary storage, care, maintenance, and disposal of any sanctuary resource or other property seized in connection with a violation of this title or any regulation or permit issued under this title.

(C) Amounts received under this section as civil penalties and any amounts remaining after the operation of subparagraph (B) shall be used, in order of priority, to--

(i) manage and improve the national marine sanctuary with respect to which the violation occurred that resulted in the penalty or forfeiture;

(ii) pay a reward to any person who furnishes information leading to an assessment of a civil penalty, or to a forfeiture of property, for a violation of this title or any regulation or permit issued under this title; and

(iii) manage and improve any other national marine sanctuary.

(2) Liability for Costs.--Any person assessed a civil penalty for a violation of this title or of any regulation or permit issued under this title, and any claimant in a forfeiture action brought for such a violation, shall be liable for the reasonable costs incurred by the Secretary in storage, care, and maintenance of any sanctuary resource or other property seized in connection with the violation.

(g) SUBPOENAS.--In the case of any hearing under this section which is determined on the record in accordance with the procedures provided for under section 554 of title 5, United States Code, the Secretary may issue subpoenas for the attendance and testimony of witnesses and the production of relevant papers, books, electronic files, and documents, and may administer oaths.

(h) USE OF RESOURCES OF STATE AND OTHER FEDERAL AGENCIES.—The Secretary shall, whenever appropriate, use by agreement the personnel, services, and facilities of State and other Federal departments, agencies, and instrumentalities, on a reimbursable or nonreimbursable basis, to carry out the Secretary's responsibilities under this section.



(i) COAST GUARD AUTHORITY NOT LIMITED.--Nothing in this section shall be considered to limit the authority of the Coast Guard to enforce this or any other Federal law under section 89 of title 14, United States Code.

(j) INJUNCTIVE RELIEF.--If the Secretary determines that there is an imminent risk of destruction or loss of or injury to a sanctuary resource, or that there has been actual destruction or loss of, or injury to, a sanctuary resource which may give rise to liability under section 312, the Attorney General, upon request of the Secretary, shall seek to obtain such relief as may be necessary to abate such risk or actual destruction, loss, or injury, or to restore or replace the sanctuary resource, or both. The district courts of the United States shall have jurisdiction in such a case to order such relief as the public interest and the equities of the case may require.

(k) AREA OF APPLICATION AND ENFORCEABILITY.--The area of application and enforceability of this title includes the territorial sea of the United States, as described in Presidential Proclamation 5928 of December 27, 1988, which is subject to the sovereignty of the United States, and the United States exclusive economic zone, consistent with international law.

(l) NATIONWIDE SERVICE OF PROCESS.- In any action by the United States under this title, process may be served in any district where the defendant is found, resides, transacts business, or has appointed an agent for the service of process.

#### SEC. 308. REGULATIONS.

The Secretary may issue such regulations as may be necessary to carry out this title.

#### Sec. 309. RESEARCH, MONITORING, AND EDUCATION.

(a) IN GENERAL- The Secretary shall conduct, support, or coordinate research, monitoring, evaluation, and education programs consistent with subsections (b) and (c) and the purposes and policies of this title.

(b) RESEARCH AND MONITORING.-

(1) IN GENERAL.- The Secretary may--

(A) support, promote, and coordinate research on, and long-term monitoring of, sanctuary resources and natural processes that occur in national marine sanctuaries, including exploration, mapping, and environmental and socioeconomic assessment;

(B) develop and test methods to enhance degraded habitats or restore damaged, injured, or lost sanctuary resources; and

(C) support, promote, and coordinate research on, and the conservation, curation, and public display of, the cultural, archeological, and historical resources of national marine sanctuaries.

(2) AVAILABILITY OF RESULTS.- The results of research and monitoring conducted, supported, or permitted by the Secretary under this subsection shall be made available to the public.

(c) EDUCATION-

(1) IN GENERAL.- The Secretary may support, promote, and coordinate efforts to enhance public awareness, understanding, and appreciation of national marine sanctuaries and the System. Efforts supported, promoted, or coordinated under this subsection must emphasize the conservation goals and sustainable public uses of national marine sanctuaries and the System.

(2) EDUCATIONAL ACTIVITIES.- Activities under this subsection may include education of the general public, teachers, students, national marine sanctuary users, and ocean and coastal resource managers.

(d) INTERPRETIVE FACILITIES.-

(1) IN GENERAL.- The Secretary may develop interpretive facilities near any national marine sanctuary.

(2) FACILITY REQUIREMENT.- Any facility developed under this subsection must emphasize the conservation goals and sustainable public uses of national marine sanctuaries by providing the public with information about the conservation, recreational, ecological, historical, cultural, archeological, scientific, educational, or esthetic qualities of the national marine sanctuary.

(e) CONSULTATION AND COORDINATION.- In conducting, supporting, and coordinating research, monitoring, evaluation, and education programs under subsection (a) and developing interpretive facilities under subsection (d), the Secretary may consult or coordinate with Federal, interstate, or regional agencies, States or local governments.

Sec. 310. SPECIAL USE PERMITS

(a) ISSUANCE OF PERMITS.--The Secretary may issue special use permits which authorize the conduct of specific activities in a national marine sanctuary if the Secretary determines such authorization is necessary--

- (1) to establish conditions of access to and use of any sanctuary resource; or
- (2) to promote public use and understanding of a sanctuary resource.

(b) **PUBLIC NOTICE REQUIRED.**- The Secretary shall provide appropriate public notice before identifying any category of activity subject to a special use permit under subsection (a).

(c) **PERMIT TERMS.**--A permit issued under this section--

(1) shall authorize the conduct of an activity only if that activity is compatible with the purposes for which the sanctuary is designated and with protection of sanctuary resources;

(2) shall not authorize the conduct of any activity for a period of more than 5 years unless renewed by the Secretary;

(3) shall require that activities carried out under the permit be conducted in a manner that does not destroy, cause the loss of, or injure sanctuary resources; and

(4) shall require the permittee to purchase and maintain comprehensive general liability insurance, or post an equivalent bond, against claims arising out of activities conducted under the permit and to agree to hold the United States harmless against such claims.

(d) **FEES.**--

(1) **Assessment and Collection.**--The Secretary may assess and collect fees for the conduct of any activity under a permit issued under this section.

(2) **Amount.**--The amount of a fee under this subsection shall be equal to the sum of--

(A) costs incurred, or expected to be incurred, by the Secretary in issuing the permit;

(B) costs incurred, or expected to be incurred, by the Secretary as a direct result of the conduct of the activity for which the permit is issued, including costs of monitoring the conduct of the activity; and

(C) an amount which represents the fair market value of the use of the sanctuary resource.

(3) **Use of Fees.**--Amounts collected by the Secretary in the form of fees under this section may be used by the Secretary--

(A) for issuing and administering permits under this section; and

(B) for expenses of managing national marine sanctuaries.

(4) **WAIVER OR REDUCTION OF FEES.**- The Secretary may accept in-kind contributions in lieu of a fee under paragraph (2)(C), or waive or reduce any fee assessed under this subsection for any activity that does not derive a profit from the access to or use of sanctuary resources.

(e) **VIOLATIONS.**--Upon violation of a term or condition of a permit issued under this section, the Secretary may--

(1) suspend or revoke the permit without compensation to the permittee and without liability to the United States;

(2) assess a civil penalty in accordance with section 307; or

(3) both.

(f) **REPORTS.**--Each person issued a permit under this section shall submit an annual report to the Secretary not later than December 31 of each year which describes activities conducted under that permit and revenues derived from such activities during the year.

(g) **FISHING.**--Nothing in this section shall be considered to require a person to obtain a permit under this section for the conduct of any fishing activities in a national marine sanctuary.

#### **Sec. 311. COOPERATIVE AGREEMENTS, DONATIONS, AND ACQUISITIONS**

(a) **AGREEMENTS AND GRANTS.**- The Secretary may enter into cooperative agreements, contracts, or other agreements with, or make grants to, States, local governments, regional agencies, interstate agencies, or other persons to carry out the purposes and policies of this title.

(b) **AUTHORIZATION TO SOLICIT DONATIONS.**--The Secretary may enter into such agreements with any nonprofit organization authorizing the organization to solicit private donations to carry out the purposes and policies of this title.

(c) **DONATIONS.**--The Secretary may accept donations of funds, property, and services for use in designating and administering national marine sanctuaries under this title. Donations accepted under this section shall be considered as a gift or bequest to or for the use of the United States.

(d) ACQUISITIONS.--The Secretary may acquire by purchase, lease, or exchange, any land, facilities, or other property necessary and appropriate to carry out the purposes and policies of this title

(e) USE OF RESOURCES OF OTHER GOVERNMENT AGENCIES.- The Secretary may, whenever appropriate, enter into an agreement with a State or other Federal agency to use the personnel, services, or facilities of such agency on a reimbursable or nonreimbursable basis, to assist in carrying out the purposes and policies of this title.

(f) AUTHORITY TO OBTAIN GRANTS.- Notwithstanding any other provision of law that prohibits a Federal agency from receiving assistance, the Secretary may apply for, accept, and use grants from other Federal agencies, States, local governments, regional agencies, interstate agencies, foundations, or other persons, to carry out the purposes and policies of this title.

#### Sec. 312. DESTRUCTION OR LOSS OF, OR INJURY TO, SANCTUARY RESOURCES

(a) LIABILITY FOR INTEREST.--

(1) Liability to UNITED STATES.--Any person who destroys, causes the loss of, or injures any sanctuary resource is liable to the United States for an amount equal to the sum of--

(A) the amount of response costs and damages resulting from the destruction, loss, or injury; and

(B) interests on that amount calculated in the manner described under section 1005 of the Oil Pollution Act of 1990.

(2) Liability In Rem.--Any vessel used to destroy, cause the loss of, or injure any sanctuary resource shall be liable in rem to the United States for response costs and damages resulting from such destruction, loss, or injury. The amount of that liability shall constitute a maritime lien on the vessel and may be recovered in an action in rem in the district court of the United States having jurisdiction over the vessel.

(3) Defenses.--A person is not liable under this subsection if that person establishes that--

(A) the destruction or loss of, or injury to, the sanctuary resource was caused solely by an act of God, an act of war, or an act or omission of a third party, and the person acted with due care;

(B) the destruction, loss, or injury was caused by an activity authorized by Federal or State law; or

(C) the destruction, loss, or injury was negligible.

(4) Limits to Liability.-- Nothing in sections 4281-4289 of the Revised Statutes of the United States or section 3 of the Act of February 13, 1893, shall limit the liability of any person under this title.

(b) RESPONSE ACTIONS AND DAMAGE ASSESSMENT.-

(1) Response Actions.--The Secretary may undertake or authorize all necessary actions to prevent or minimize the destruction or loss of, or injury to, sanctuary resources, or to minimize the imminent risk of such destruction, loss, or injury.

(2) Damage Assessment.--The Secretary shall assess damages to sanctuary resources in accordance with section 302(6).

(c) CIVIL ACTIONS FOR RESPONSE COSTS AND DAMAGES.—

(1) The Attorney General, upon request of the Secretary, may commence a civil action against any person or vessel who may be liable under subsection (a) for response costs and damages. The Secretary, acting as trustee for sanctuary resources for the United States, shall submit a request for such an action to the Attorney General whenever a person may be liable for such costs or damages.

(2) An action under this subsection may be brought in the United States district court for any district in which-

(A) the defendant is located, resides, or is doing business, in the case of an action against a person;

(B) the vessel is located, in the case of an action against a vessel; or

(C) the destruction of, loss of, or injury to a sanctuary resource occurred.

(d) USE OF RECOVERED AMOUNTS.--Response costs and damages recovered by the Secretary under this section shall be retained by the Secretary in the manner provided for in section 107(f)(1) of the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. 9607(f)(1)), and used as follows:

(1) RESPONSE COSTS.- Amounts recovered by the United States for costs of response actions and damage assessments under this section shall be used, as the Secretary considers appropriate--

(A) to reimburse the Secretary or any other Federal or State agency that conducted those activities; and

(B) after reimbursement of such costs, to restore, replace, or acquire the equivalent of any sanctuary resource.

(2) OTHER AMOUNTS.- All other amounts recovered shall be used, in order of priority--

(A) to restore, replace, or acquire the equivalent of the sanctuary resources that were the subject of the action, including for costs of monitoring and the costs of curation and conservation of archeological, historical, and cultural sanctuary resources;

(B) to restore degraded sanctuary resources of the national marine sanctuary that was the subject of the action, giving priority to sanctuary resources and habitats that are comparable to the sanctuary resources that were the subject of the action; and

(C) to restore degraded sanctuary resources of other national marine sanctuaries.

(3) Federal-State Coordination.--Amounts recovered under this section with respect to sanctuary resources lying within the jurisdiction of a State shall be used under paragraphs (2)(A) and (B) in accordance with the court decree or settlement agreement and an agreement entered into by the Secretary and the Governor of that State.

(e) STATUTE OF LIMITATIONS- An action for response costs or damages under subsection (c) shall be barred unless the complaint is filed within 3 years after the date on which the Secretary completes a damage assessment and restoration plan for the sanctuary resources to which the action relates.

#### SEC. 313. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the Secretary--

(1) to carry out this title--

(A) \$32,000,000 for fiscal year 2001;

(B) \$34,000,000 for fiscal year 2002;

(C) \$36,000,000 for fiscal year 2003;

(D) \$38,000,000 for fiscal year 2004;

(E) \$40,000,000 for fiscal year 2005; and

(2) for construction projects at national marine sanctuaries, \$6,000,000 for each of fiscal years 2001, 2002, 2003, 2004, and 2005.

#### Sec. 314. U.S.S. MONITOR ARTIFACTS AND MATERIALS

(a) CONGRESSIONAL POLICY. -- In recognition of the historical significance of the wreck of the United States ship Monitor to coastal North Carolina and to the area off the coast of North Carolina known as the Graveyard of the Atlantic, the Congress directs that a suitable display of artifacts and materials from the United States ship Monitor be maintained permanently at an appropriate site in coastal North Carolina. [P.L. 102-587 authorized a grant for the acquisition of space in Hatteras Village, NC, for display of artifacts and administration and operations of the Monitor National Marine Sanctuary.

(b) DISCLAIMER. --This section shall not affect the following:

(1) Responsibilities Of Secretary.--The responsibilities of the Secretary to provide for the protection, conservation, and display of artifacts and materials from the United States ship Monitor.

(2) Authority Of Secretary.--The authority of the Secretary to designate the Mariner's Museum, located at Newport News, Virginia, as the principal museum for coordination of activities referred to in paragraph (1).

#### Sec. 315. ADVISORY COUNCILS

(a) ESTABLISHMENT.--The Secretary may establish one or more advisory councils (in this section referred to as an 'Advisory Council') to advise and make recommendations to the Secretary regarding the designation and management of national marine sanctuaries. The Advisory Councils shall be exempt from the Federal Advisory Committee Act.

(b) MEMBERSHIP.--Members of the Advisory Councils may be appointed from among--

(1) persons employed by Federal or State agencies with expertise in management of natural resources;



(2) members of relevant Regional Fishery Management Councils established under section 302 of the Magnuson-Stevens Act; and

(3) representatives of local user groups, conservation and other public interest organizations, scientific organizations, educational organizations, or others interested in the protection and multiple use management of sanctuary resources.

(c) LIMITS ON MEMBERSHIP.--For sanctuaries designated after the date of enactment of the National Marine Sanctuaries Program Amendments Act of 1992, the membership of Advisory Councils shall be limited to no more than 15 members.

(d) STAFFING AND ASSISTANCE.--The Secretary may make available to an Advisory Council any staff, information, administrative services, or assistance the Secretary determines are reasonably required to enable the Advisory Council to carry out its functions.

(e) PUBLIC PARTICIPATION AND PROCEDURAL MATTERS.--The following guidelines apply with respect to the conduct of business meetings of an Advisory Council:

(1) Each meeting shall be open to the public, and interested persons shall be permitted to present oral or written statements on items on the agenda.

(2) Emergency meetings may be held at the call of the chairman or presiding officer.

(3) Timely notice of each meeting, including the time, place, and agenda of the meeting, shall be published locally and in the *Federal Register*, except that in the case of a meeting of an Advisory Council established to provide assistance regarding any individual national marine sanctuary the notice is not required to be published in the *Federal Register*.

(4) Minutes of each meeting shall be kept and contain a summary of the attendees and matters discussed.

#### Sec. 316. ENHANCING SUPPORT FOR NATIONAL MARINE SANCTUARIES

(a) AUTHORITY.- The Secretary may establish a program consisting of--

(1) the creation, adoption, and publication in the *Federal Register* by the Secretary of a symbol for the national marine sanctuary program, or for individual national marine sanctuaries or the System;

- (2) the solicitation of persons to be designated as official sponsors of the national marine sanctuary program or of individual national marine sanctuaries;
- (3) the designation of persons by the Secretary as official sponsors of the national marine sanctuary program or of individual sanctuaries;
- (4) the authorization by the Secretary of the manufacture, reproduction, or other use of any symbol published under paragraph (1), including the sale of items bearing such a symbol, by official sponsors of the national marine sanctuary program or of individual national marine sanctuaries;
- (5) the creation, marketing, and selling of products to promote the national marine sanctuary program, and entering into exclusive or nonexclusive agreements authorizing entities to create, market or sell on the Secretary's behalf;
- (6) the solicitation and collection by the Secretary of monetary or in-kind contributions from official sponsors for the manufacture, reproduction or use of the symbols published under paragraph (1);
- (7) the retention of any monetary or in-kind contributions collected under paragraphs (5) and (6) by the Secretary; and
- (8) the expenditure and use of any monetary and in-kind contributions, without appropriation, by the Secretary to designate and manage national marine sanctuaries.

Monetary and in-kind contributions raised through the sale, marketing, or use of symbols and products related to an individual national marine sanctuary shall be used to support that sanctuary.

(b) **CONTRACT AUTHORITY.**-- The Secretary may contract with any person for the creation of symbols or the solicitation of official sponsors under subsection (a).

(c) **RESTRICTIONS.**-- The Secretary may restrict the use of the symbols published under subsection (a), and the designation of official sponsors of the national marine sanctuary program or of individual national marine sanctuaries to ensure compatibility with the goals of the national marine sanctuary program.

(d) **PROPERTY OF UNITED STATES.**-- Any symbol which is adopted by the Secretary and published in the *Federal Register* under subsection (a) is deemed to be the property of the United States.

(e) PROHIBITED ACTIVITIES.-- It is unlawful for any person--

(1) designated as an official sponsor to influence or seek to influence any decision by the Secretary or any other Federal official related to the designation or management of a national marine sanctuary, except to the extent that a person who is not so designated may do so;

(2) to represent himself or herself to be an official sponsor absent a designation by the Secretary;

(3) to manufacture, reproduce, or otherwise use any symbol adopted by the Secretary under subsection (a)(1), including to sell any item bearing such a symbol, unless authorized by the Secretary under subsection (a)(4) or subsection (f); or

(4) to violate any regulation promulgated by the Secretary under this section.

(f) COLLABORATIONS- The Secretary may authorize the use of a symbol adopted by the Secretary under subsection (a)(1) by any person engaged in a collaborative effort with the Secretary to carry out the purposes and policies of this title and to benefit a national marine sanctuary or the System.

(g) AUTHORIZATION FOR NON-PROFIT PARTNER ORGANIZATION TO SOLICIT SPONSORS.-

(1) IN GENERAL.- The Secretary may enter into an agreement with a non-profit partner organization authorizing it to assist in the administration of the sponsorship program established under this section. Under an agreement entered into under this paragraph, the Secretary may authorize the non-profit partner organization to solicit persons to be official sponsors of the national marine sanctuary system or of individual national marine sanctuaries, upon such terms as the Secretary deems reasonable and will contribute to the successful administration of the sanctuary system. The Secretary may also authorize the non-profit partner organization to collect the statutory contribution from the sponsor, and, subject to paragraph (2), transfer the contribution to the Secretary.

(2) REIMBURSEMENT FOR ADMINISTRATIVE COSTS.- Under the agreement entered into under paragraph (1), the Secretary may authorize the non-profit partner organization to retain not more than 5 percent of the amount of monetary contributions it receives from official sponsors under the agreement to offset the administrative costs of the organization in soliciting sponsors.

(3) PARTNER ORGANIZATION DEFINED.- In this subsection, the term 'partner organization' means an organization that--

(A) draws its membership from individuals, private organizations, corporation, academic institutions, or State and local governments; and

(B) is established to promote the understanding of, education relating to, and the conservation of the resources of a particular sanctuary or 2 or more related sanctuaries.

#### SEC. 318. DR. NANCY FOSTER SCHOLARSHIP PROGRAM.

(a) ESTABLISHMENT.- The Secretary shall establish and administer through the National Ocean Service the Dr. Nancy Foster Scholarship Program. Under the program, the Secretary shall award graduate education scholarships in oceanography, marine biology or maritime archeology, to be known as Dr. Nancy Foster Scholarships.

(b) PURPOSES- The purposes of the Dr. Nancy Foster Scholarship Program are--

(1) to recognize outstanding scholarship in oceanography, marine biology, or maritime archeology, particularly by women and members of minority groups ; and

(2) to encourage independent graduate level research in oceanography, marine biology, or maritime archeology.

(c) AWARD.- Each Dr. Nancy Foster Scholarship--

(1) shall be used to support graduate studies in oceanography, marine biology, or maritime archeology at a graduate level institution of higher education; and

(2) shall be awarded in accordance with guidelines issued by the Secretary.

(d) DISTRIBUTION OF FUNDS.- The amount of each Dr. Nancy Foster Scholarship shall be provided directly to a recipient selected by the Secretary upon receipt of certification that the recipient will adhere to a specific and detailed plan of study and research approved by a graduate level institution of higher education.

(e) FUNDING- Of the amount available each fiscal year to carry out this title, the Secretary shall award 1 percent as Dr. Nancy Foster Scholarships.

(f) SCHOLARSHIP REPAYMENT REQUIREMENT- The Secretary shall require an individual receiving a scholarship under this section to repay the full amount of the scholarship to the Secretary if the Secretary determines that the individual, in obtaining or using the scholarship, engaged in

fraudulent conduct or failed to comply with any term or condition of the scholarship.

(g) MARITIME ARCHEOLOGY DEFINED- In this section the term `maritime archeology' includes the curation, preservation, and display of maritime artifacts

**APPENDIX IV: MOU WITH SAFMC**

**MEMORANDUM OF UNDERSTANDING**

**BETWEEN**

**THE SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL**

**AND**

**THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION**

**THROUGH**

**THE NATIONAL OCEAN SERVICE  
OFFICE OF NATIONAL MARINE SANCTUARIES**

**AND**

**THE NATIONAL MARINE FISHERIES SERVICE  
SOUTHEAST REGION**

**NOS Agreement Number: MOA-2001-664  
(as amended December 2004)**

**I. PURPOSE**

The purposes of this Memorandum of Understanding (MOU) are: (1) to provide a framework for cooperation and coordination between the South Atlantic Fishery Management Council (SAFMC), Gray's Reef National Marine Sanctuary (GRNMS), and the National Marine Fisheries Service, Southeast Region (NMFS/SER) within the SAFMC's area of geographic authority; (2) to facilitate the exchange of information, advice and technical assistance between GRNMS, SAFMC and NMFS/SER; and (3) to coordinate their efforts concerning public outreach.

**II. AUTHORITIES**

This MOU is entered into by and between the Office of National Marine Sanctuaries (ONMS), National Ocean Service, NOAA; the NMFS/SER, NOAA; and the SAFMC (the "Parties"), pursuant to Sections 309 and 311 of the National Marine Sanctuaries Act, as amended, 16 U.S.C. 1440 and 1442 of 16 U.S.C. 1431, et seq. (NMSA or the Act), and the Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. 1801, et seq.

**III. BACKGROUND**

A. GRNMS - Gray's Reef was designated as a National Marine Sanctuary in 1981, due to its significance as a live-bottom habitat and the diversity of marine life. National marine sanctuaries are established to protect areas of the marine environment that have special conservation, recreational, ecological, historical, cultural, archaeological, scientific, educational, and aesthetic qualities. In accordance with the National Marine Sanctuaries Act, each sanctuary is managed to maintain natural biological communities, enhance public awareness, support research and monitoring, and facilitate to the extent compatible with the primary objective of resource protection, all public and private uses of the resources of these marine areas not prohibited pursuant to other authorities.

B. SAFMC - The South Atlantic Fishery Management Council is responsible for the conservation and management of fish stocks within the Federal 200-mile limit exclusive economic zone of the Atlantic Ocean off the coast of North Carolina, South Carolina, Georgia, and east Florida to Key West. In addition, the Council must describe and protect essential fish habitat (EFH) and essential fish habitat-habitat areas of particular concern (EFH-HAPC), as well as address an ecosystem management approach.

C. NMFS/SER - The National Marine Fisheries Service is dedicated to protecting and preserving our nation's living marine resources through scientific research, fisheries, management, enforcement, and habitat conservation. The NMFS/SER provides administrative and technical support to the SAFMC and works in partnership with the SAFMC to manage marine fisheries.

#### IV. GOALS

A. To exchange information, advice, and technical assistance, and to improve public outreach.

B. To involve the public in discussions and evaluations regarding management of specific marine areas.

C. To ensure that the public is well informed of the work and policy decisions of the SAFMC, GRNMS, and NMFS/SER.

D. To consult and cooperate fully with each other in matters regarding the conservation and management of natural resources of mutual concern and geographic authority. The consultations and cooperation shall take the form of participation in and presentations to the various committees, advisory panels, and working groups of each of the parties, and exchange of documents, viewpoints, recommendations, advice, and other pertinent information between the SAFMC, GRNMS and NMFS/SER. This consultation and cooperation should occur prior to implementation of regulatory changes affecting any of the parties.

E. To protect the ecological integrity of Gray's Reef and its biotic communities and their associated habitats for the benefit of current and future generations.

F. To contribute to the conservation and management of fish, the protection of EFH, EFH-HAPCs, and ecosystem management within the South Atlantic Region.

## V. COMMITMENTS OF THE PARTIES

SAFMC, ONMS, and NMFS/SER hereby affirm their mutual understanding and agree to use their efforts to take the following steps:

A. To carry out their mutual intent to discuss and evaluate management and regulation of specific marine areas.

B. To work together to coordinate current and future discussion, evaluation, and informational activities through cooperative planning.

C. To ensure that the public and constituent groups of all three organizations participate fully in the activities of the SAFMC, GRNMS, and NMFS/SER.

D. To share research and information that contribute to the above goals.

E. To request and respond to requests for input from each other in a timely and cooperative manner as required by or consistent with applicable laws, regulations and policies.

F. Specific matters for coordination may include but are not limited to:

1. Review, revision, and implementation of Gray's Reef National Marine Sanctuary Management Plan.
2. Consideration, development, and review of Fishery Management Plans related to GRNMS.
3. Research and education initiatives that further the goals and missions of the SAFMC, GRNMS and NMFS/SER.
4. Technical assistance regarding fisheries management (including fishing techniques, presence/abundance of fish species), protected species, habitat types and conditions, and socioeconomic issues and enforcement, related to GRNMS.

G. Regarding fishing regulations for the Sanctuary, GRNMS is required to follow the provisions of section 304(a)(5) of the NMSA, (16 U.S.C. 1434(a)(5)). The process described in section 304(a)(5) is summarized, in part, here:

1. SAFMC will have the opportunity to draft Sanctuary fishing regulations for GRNMS. Regulations drafted by SAFMC, or a determination by SAFMC that regulations are not necessary, will be accepted and shall be issued as the proposed regulations for GRNMS unless the Secretary of Commerce finds that SAFMC's action does not fulfill the purposes and policies of the NMSA and the objectives of the designation of GRNMS. In that event, the Secretary will draft the fishing regulations.



2. GRNMS will also consult with the State of Georgia regarding fishing regulations proposed by GRNMS for the Sanctuary and shall consider the views and comments of the State of Georgia before issuing final fishing regulations. As part of this process, GRNMS will meet with representatives from the State of Georgia to discuss draft fishing regulations prior to issuance of final fishing regulations. GRNMS will also coordinate with the Georgia Coastal Management Program pursuant to the Federal consistency requirement under § 307 of the Coastal Zone Management Act (16 U.S.C. 1456) and implementing NOAA regulations.

## VI. TECHNICAL POINTS OF CONTACT

Reed Bohne, Manager  
Gray's Reef National Marine Sanctuary  
10 Ocean Science Circle  
Savannah, GAS 1411  
(912) 598-2345

Robert Mahood, Executive Director  
South Atlantic Fishery Management Council  
1 Southpark Circle, Suite 306  
Charleston, SC 29407  
(843) 571-4366

Dr. Roy Crabtree, Regional Administrator  
National Marine Fisheries Service, Southeast Region  
9721 Executive Center Drive North  
St. Petersburg, FL 33702  
(727) 570-5301

## VII. OTHER PROVISIONS

A. Nothing herein is intended to conflict with any requirement of any Federal law or with any Federal, council, or Department of Commerce/NOAA regulation, policy, administrative order, or directive. If terms of this MOU are deemed to be inconsistent with the policies or programs of any party hereto, then those specific terms shall be deemed not binding on that party.

B. The responsibilities agreed to in this MOU are contingent upon the availability of funding and other necessary resources. The signature of agency officials on this MOU does not legally obligate their respective agencies to provide personnel or funds for planning or coordination unless specifically agreed to in subsequent obligatory documents.

C. This MOU will become effective upon the last date of the signatures of the approving officials of the parties and will remain in effect until terminated by written notice from

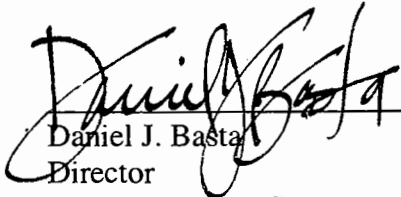
any party. Any party to this MOU may terminate its involvement upon 90 days written notice to the other parties.

D. The Parties will review this Agreement at least once every three years to determine whether it should be revised or canceled. Any revision or amendment to this MOU may be made upon approval of all of the parties.

E. This MOU does not affect the confidentiality provisions of the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1881a).

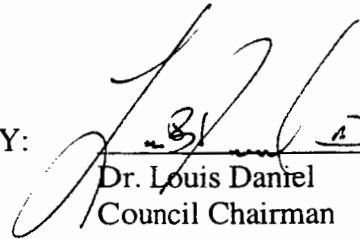
**APPROVALS**

ACCEPTED AND APPROVED FOR THE  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND  
ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SERVICE

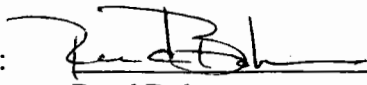
BY:   
Daniel J. Basta  
Director  
National Marine Sanctuary Program

DATE: 11/25/04

ACCEPTED AND APPROVED FOR THE  
SOUTH ATLANTIC FISHERY  
MANAGEMENT COUNCIL

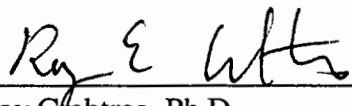
BY:   
Dr. Louis Daniel  
Council Chairman

DATE: 12/9/04

BY:   
Reed Bohne  
Manager  
Gray's Reef National Marine Sanctuary

DATE: 11/29/04

ACCEPTED AND APPROVED FOR THE  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND  
ATMOSPHERIC ADMINISTRATION  
NATIONAL MARINE FISHERIES SERVICE  
SOUTHEAST REGION

BY:   
Roy Crabtree, Ph.D.  
Regional Administrator

DATE: 12/9/04

## APPENDIX V: FINDINGS AND DETERMINATIONS

### INTRODUCTION

Under the NMSA the Secretary of Commerce may designate an area as a national marine sanctuary and promulgate regulations implementing the designation if the Secretary makes a set of determinations and findings and has considered factors and conducted consultations described in the NMSA (16 U.S.C. 1433(a) and (b)). Although GRNMS was designated in 1981, the NMSA states that terms of designation may be modified only by the same procedures by which the original designation was made. Because this action proposes to revise the GRNMS designation document, relevant determinations and findings based on required factors and consultations are described here. In addition, NEPA requires that the NMSP explain how the actions and regulations described in this document relate to existing law and executive orders. This Appendix meets these NMSA and NEPA requirements by describing the consultations in Section I, making determinations and findings and factors in Section II, and discussing the relation of the action to existing laws and executive orders in Section III.

### SECTION I: CONSULTATIONS AND RESULTS UNDER THE NMSA

Under section 303(b)(2) of the NMSA, the NMSP is required to conduct a series of consultations with Congress, federal and state agencies, and other interested parties. Per this requirement, consultation letters were sent in August 2002 to the following:

- Department of Defense;
- Department of Energy;
- Department of the Interior;
- Department of State;
- Department of Transportation;
- Environmental Protection Agency;
- NOAA Fisheries Service;
- South Atlantic Fishery Management Council;
- Georgia Department of Natural Resources;
- House of Representatives Resources Committee;
- Senate Committee on Commerce, Science, and Transportation; and
- Members of Georgia's Congressional Delegation.

The comments and ideas received from the results of the consultation letters were considered in the preparation of the FMP/FEIS. An additional set of consultations were also conducted, as required by the NMSA and other laws, after the DMP/DEIS was released for public review. These additional consultations included:

- Section 7 Endangered Species Act consultation with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service (required by the Endangered Species Act);

- Essential Fish Habitat with the National Marine Fisheries Service (required by the Magnuson-Stevens Act);
- Federal consistency consultation with the State’s coastal zone management agency (again, if State waters are involved or if an activity outside State waters may have an effect on resources within State waters) (required by the Coastal Zone Management Act); and
- National Historic Preservation Act §106.

Responses that were received are included at the end of this Appendix.

## SECTION II: NMSA AND NEPA FINDINGS AND DETERMINATIONS

### A. Determinations Required Under Section 303 of the NMSA

1. *The designation will fulfill the purposes and policies of the NMSA.*
2. *The area is of special national significance due to–*
  - A. *its conservation, recreational, ecological, historical, scientific, cultural, archaeological, educational, or esthetic qualities;*
  - B. *the communities of living marine resources it harbors; or*
  - C. *its resource or human-use values.*

These determinations and findings were made when the Sanctuary was designated in 1981 and are described in the FEIS at pages 17 and 18. The addition of submerged lands to the Sanctuary boundary and the other changes to the terms of designation described in this FMP/FEIS are consistent with and further support the original determinations and findings. The waters and submerged lands of the Sanctuary, and their associated marine organisms possess exceptional value in all categories (conservation, recreational, ecological, historical, scientific, cultural, archaeological, educational, and esthetic qualities). The changes would provide additional protection to bottom formations, the associated living resources, and historical resources within the Sanctuary.

3. *Existing State and Federal authorities are inadequate or should be supplemented to ensure coordinated and comprehensive conservation and management of the area, including resource protection, scientific research, and public education.*
4. *Designation of the area as a national marine sanctuary will facilitate the objectives stated in paragraph 3.*

The original FEIS found that existing statutes did not provide a comprehensive management mechanism for Gray’s Reef. The changes to the terms of designation would allow existing laws relating to fishing activities and the protection of marine organisms within the Sanctuary to be supplemented. The changes would also allow for a more comprehensive and coordinated management, including scientific research and public education, of the living and non-living resources in the Sanctuary.

5. *The area is of size and nature that will permit the comprehensive and coordinated conservation and management.*

Although changes to the terms of designation would clarify that submerged lands are included as part of Sanctuary, there would be no change to the Sanctuary's overall size. The addition would, however, ensure full protection and comprehensive management of the bottom formations that characterize Gray's Reef.

B. Section 303(b)(1) of the NMSA (16 U.S.C. 1433(b)(1)) requires that the following factors be considered for purposes of determining if an area of the marine environment meets the standards set forth in section 303(a). Each factor is discussed below:

1. *The area's natural resource and ecological qualities, including its contribution to biological productivity, maintenance of ecosystem structure, maintenance of ecologically or commercially important or threatened species or species assemblages, maintenance of critical habitat or endangered species, and the biogeographic representation of the site.*

2. *The area's historical, cultural, archaeological, or paleontological significance.*

The exceptional natural and ecological qualities of Gray's Reef are described in the original FEIS on pages 47-76, and an updated description is provided in this document at Section II. The addition of submerged lands to the Sanctuary boundary and the changes to the activities that could be regulated recognize the significance of the bottom formations, the associated living resources, and historical resources within the Sanctuary.

3. *The present and potential uses of the area that depend on maintenance of the area's resources, including commercial and recreational fishing, subsistence uses, other commercial and recreational activities, and research and education.*

4. *The present and potential activities that may adversely affect the factors identified in subparagraphs 1, 2, and 3.*

A description of the human uses of the Sanctuary and its surrounding areas is provided in the original FEIS on pages 76-103, and an updated description is provided in this document at Section II. The changes to the terms of designation would allow for increased protection of the resources that support fishing with rod and reel, handline, and spearfishing gear without powerheads, diving, research, and education.

5. *The existing State and Federal regulatory and management authorities applicable to the area and the adequacy of those authorities to fulfill the purposes of the NMSA.*

The management authorities applicable to the Sanctuary are described in the original FEIS on pages 104-123, and an updated description is found in Section I of this document. Existing management authorities were considered in the Final Rule designating the Sanctuary in 1981 (46 FR 7942, 7943) and the additional protections and

comprehensive management approach provided by the Sanctuary management plan and regulations continue to apply.

*6. The manageability of the area, including such factors as its size, its ability to be identified as a discrete ecological unit with definable boundaries, its accessibility, and its suitability for monitoring and enforcement activities.*

The changes to the terms of designation would add the submerged lands to the boundary but would not change the overall size, manageability, or accessibility of the Sanctuary. The changes would clarify that the waters and the submerged lands are a discrete ecological unit that can be effectively managed by the comprehensive approach described in the management plan and regulations.

*7. The public benefits to be derived from sanctuary status, with emphasis on the benefits of long-term protection of nationally significant resources, vital habitats, and resources which generate tourism.*

The public benefits from sanctuary status were described in the original FEIS and final rule designating the Sanctuary. The changes to the terms of designation by this FMP/FEIS will enhance public benefits by allowing for increased protection to bottom formations, water quality and living resources in the Sanctuary.

*8. The negative impacts produced by management restrictions on income-generating activities such as living and nonliving resources development.*

*9. The socioeconomic effects of sanctuary designation.*

An analysis of the socioeconomic impacts of the changes to the terms of designation by this FMP/FEIS is included in Section IV and is also analyzed in the Initial Regulatory Flexibility Analysis included in the rule in Appendix I. The socioeconomic analysis concludes that impacts of the changes would be minimal.

*10. The area's scientific value and value for monitoring the resources and natural processes that occur there.*

The area's scientific value and value for monitoring the resources and natural processes are described in the original FEIS, management plan and the final rule designating the Sanctuary. The changes to the terms of designation by this FMP/FEIS will enhance the area's scientific and monitoring value by allowing for increased protection to bottom formations, water quality, and living resources in the Sanctuary.

*11. The feasibility, where appropriate, of employing innovative management approaches to protect sanctuary resources or to manage compatible uses.*

The changes to the terms of designation, along with other regulatory and management changes in this FMP/FEIS, represent an appropriate mechanism to manage and protect Sanctuary resources.

*12. The value of the area as an addition to the System.*

The Sanctuary has already been a part of the Sanctuary System since 1981.

C. Resource Assessment

*1. Present and potential uses of the area, including commercial and recreational fishing, research and education, minerals and energy development, subsistence uses, and other commercial, governmental, or recreational uses.*

Section II of this FMP/FEIS (Affected Environment) provides a full description of the current and potential uses of the area.

*2. Any commercial, governmental, or recreational resource uses in the areas that are subject to the primary jurisdiction of the Department of the Interior.*

The Department of the Interior has been contacted. The NMSP is not aware of any resource uses in the area that are subject to the jurisdiction of the Department of the Interior.

*3. Information prepared in consultation with the Secretary of Defense, the Secretary of Energy, and the Administrator of the Environmental Protection Agency, on any past, present, or proposed future disposal or discharge of materials in the vicinity of the proposed sanctuary*

As noted above, these three agencies were consulted. The NMSP is not aware of any disposal or discharge areas designated by these agencies that are within the vicinity of the Sanctuary.

SECTION III: RELATION TO EXISTING LAWS AND EXECUTIVE ORDERS

NEPA requires that a discussion of the relation of the action to other existing laws and executive orders be included. The relation of this FMP/FEIS to other legal requirements is discussed as follows:

Coastal Zone Management Act (CZMA)

The CZMA creates a partnership between the Federal and State governments that allows States to develop coastal zone management programs within a set of Federal guidelines but tailored to their individual needs. The act also requires that each Federal agency activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried out in a manner that is, to the maximum



extent practicable, consistent with the enforceable policies of the Federally-approved state coastal zone management program.

Although located outside State waters, the Sanctuary works closely with the Georgia Department of Natural Resources, which houses the Coastal Resources Division. The NMSP consulted with the State of Georgia on the federal consistency of the DMP/DEIS with the Georgia Coastal Zone Management Program. The Georgia Department of Natural Resources concurred with the consistency determination made by the NMSP ensuring that the proposed project has been designed to comply to the maximum extent practicable with the applicable enforceable policies of the Georgia Coastal Management Program.

#### Magnuson-Steven Fishery Conservation and Management Act (MSFCMA)

The MSFCMA governs the management and conservation of fisheries in Federal waters of the U.S. and created the South Atlantic Fishery Management Council (SAFMC), along with seven other regional councils. The Sanctuary works closely with the SAFMC and NOAA Fisheries Service, through the provisions of the Memorandum of Understanding contained in Appendix IV.

This act requires Federal agencies to consult with NOAA Fisheries Service regarding any agency action they authorize (e.g., issue permits for), fund, or undertake, that may adversely affect essential fish habitat (EFH). The NMSP consulted with NOAA Fisheries Service on the impact of the DMP/DEIS on EFH. NOAA Fisheries Service agreed with the NMSP determination that the actions would not adversely affect EFH.

#### National Historic Preservation Act (NHPA)

The NHPA was enacted to help protect and preserve the historic heritage of the U.S. Section 106 of the NHPA requires that Federal agencies take into account the effects of their activities and programs on historic properties (which are defined as any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places) by providing the Advisory Council on Historic Preservation with the opportunity to comment on actions. The NMSP consulted with the Advisory Council on Historic Preservation on the impact of the DMP/DEIS on any historic or cultural resource in the Sanctuary. No response noting impacts was received.

#### Regulatory Flexibility Act (RFA)

The Regulatory Flexibility Act requires Federal agencies to consider the effects of their regulatory actions on small businesses and other small entities, and to minimize any undue disproportionate burden. If the regulations will have a significant economic impact on a substantial number of small businesses, then a Sanctuary will have to prepare initial (IRFA) and final regulatory flexibility analyses (FRFA). The NMSP has prepared a FRFA that is contained in the final contained in Appendix I. The FRFA concludes that the FMP/FEIS will have no significant socioeconomic impacts.

### Executive Order 12866 Cost-Benefit Analysis

Under Executive Order 12866, if a rule is determined to be significant, then a socioeconomic impact study (i.e., assessment of the costs and benefits of the regulatory action) must be conducted. Under 12866 a regulatory action is significant if the rule may:

- have an annual effect on the economy of \$100 million or more or adversely affecting in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;
- create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- materially alter the budgetary impacts of entitlements, grants, user fees, or loan programs, or the rights and obligations of recipients thereof; or
- raises novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order.

The NMSP has concluded that the rule contained in this FMP/FEIS is not significant. The Office of Management and Budget has concurred with this conclusion.

### Executive Order 13132 Federalism

Under Executive Order 13132, each agency must consult, to the extent practicable and permitted by law, with State and local officials early in the process of developing regulations. These consultations should seek comment on the compliance costs or preemption, as appropriate to the nature of the rulemaking under development.

When an agency submits a draft final regulation to OMB for review under Executive Order 12866 prior to promulgation of the final regulation, the agency must include a separately identified portion of the preamble to the regulation as a "federalism summary impact statement" that must include:

- a description of the extent of the agency's prior consultation with State and local officials;
- a summary of the nature of their concerns and the agency's position supporting the need to issue the regulation; and
- a statement of the extent to which the concerns of State and local concerns have been met.

The NMSP has worked closely with partner agencies within the State of Georgia and the Federal government in the development of this FMP/FEIS. In 1999, GRNMS established a Sanctuary Advisory Council, which includes a broad range of representation from federal, state and private interests. Advisory Council members assisted with development of the management plan review and revision on several levels, including public workshops conducted to address resource management issues identified in public

scoping. The Advisory Council was instrumental in developing strategies adopted to better protect the natural and cultural resources of GRNMS.

In addition, numerous informal meetings were held and formal consultations with the Georgia Department of Natural Resources, the primary state agency affected by management of GRNMS. The State of Georgia is also represented on the SAFMC, which has been consulted formally and informally throughout the process of management plan review and revision. As noted above, GRNMS works closely with the SAFMC and NOAA Fisheries Service through provisions of the MOU provided in Appendix IV. Deliberations with the State of Georgia are also specifically outlined in the MOU.

Responses to consultation letters follow that indicate the strong support from these interested parties. The issues that were raised by partner agencies have been addressed in the FMP/FEIS and in the Final Rule, Appendix I.



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

**FEB 06 2004**

Reed Bohne, Manager  
National Oceanic and Atmospheric Administration  
National Ocean Services  
Gray's Reef National Marine Sanctuary  
10 Ocean Science Circle  
Savannah, GA 31411

SUBJ: Gray's Reef National Marine Sanctuary Draft Management Plan/Draft Environmental Impact Statement (DMP/DEIS)    CEQ No. 030497    ERP No. NOA-E90018 - GA

Dear Mr. Bohne:

EPA is pleased to provide the following comments to the National Ocean Services (NOS) on the referenced document. These comments are offered in accordance with EPA's responsibilities under Section 309 of the Clean Air Act, Section 102(2)(C) of the National Environmental Policy Act (NEPA), and the Council on Environmental Quality's regulations for implementing NEPA.

The DMP/DEIS assesses environmental impacts associated with NOS developing a revised management plan for the Gray's Reef National Marine Sanctuary (GRNMS) as required under the National Marine Sanctuaries Act. The new management plan contains actions that outline management, research, education and exploration activities that are planned over the next five years. The proposed actions include new regulations which would prohibit the anchoring of any boat or vessel, and restrict modes of fishing at GRNMS to use only rod and reel and handline gear. These restrictions are necessary to protect the fishery resources and bottom habitats at GRNMS, which have sustained physical damage of the rock ledges and outcropping found at depths of approximately 60 feet.

EPA supports the Preferred Alternative and proposed regulation prohibiting the anchoring of boats/vessels in the Sanctuary to protect the rock outcropping and attendant benthic community. These rocky ledges provide topographic relief from an otherwise flat sandy bottom, and are not an abundant feature in the Sanctuary. Approximately 75 percent of the GRNMS is sandy bottom habitat, which offers little in the way of niches and crevices for fish and organisms to hide; 24 percent is classified as sparsely or moderately colonized live bottom, and less than 1 percent considered as densely colonized live bottom. There is ample evidence that deployment and recovery of anchors and lead chains snag the crevices and overhanging ledges, causing damage to the rock formations, corals, sea fans and encrusting algae. Because the best fishing is

often found in the high-value live bottom habitats, fishers tend to congregate there and increasing the likelihood of bottom damage from anchoring. Clearly, these rock formations need protection. Fishers can drift onto their favorite fishing locations, and depending on the strength of winds and currents, easily recover their fishing locations.

EPA supports fishing restrictions allowing only rod and reel and handline equipment in the GRNMS; however, we suggest that the language used in the Preferred Alternative (See bottom of Page 118) could be strengthened to expressly prohibit the use or possession of spear guns, nets, bandit gear, buoy gear, traps, pots, etc., in the GRNMS. The distinction between permitted activities and prohibited activities should be made unambiguously clear. The prohibition of spear fishing should result in an increase of the larger predatory species, such as sharks, and the snapper-grouper species.

Areas in which spear fishing has been permitted typically have demonstrated significant reductions of commercially valuable fish, sharks and other predatory species. Continued selective removal of these species disrupts food webs and reduce the biodiversity of the marine ecosystem. If too many fish at one trophic level are removed by excessive fishing pressure, their place in the food web may be replaced by lower-level members of the feeding hierarchy, and the now-depleted species may be replaced by lower members of the food web (such as jellyfish). Absent effective fishing management controls, there is a danger that recovery of a depleted species may not be possible because lower-level species have moved into its niche.

**Summary and Conclusions** - EPA supports the NOS Preferred Alternatives on anchoring restrictions and fishing gear recommendations as management tools to protect the resources in the GRNMS. The technical discussions in the DMP/DEIS were thorough and comprehensive. EPA rates the subject DEIS "LO", that is, the review has not identified any environmental impacts requiring substantive changes in the Preferred Alternative. For more information, please call John Hamilton at (404) 562-9617.

Sincerely,



Heinz J. Mueller, Chief  
NEPA Program Office  
Office of Policy and Management



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

DEC - 3 2003

OFFICE OF  
WATER

Mr. Daniel J. Basta  
Director  
National Marine Sanctuary Program  
Re: GRNMS Consultation  
1305 East-West Highway, N/ORM-6  
Silver Spring, MD 20910

Dear Mr. Basta:

Thank you for your letter of November 6, 2003, in which you requested comments on the Draft Management Plan/Draft Environmental Impact Statement (DMP/DEIS) for the Gray's Reef National Marine Sanctuary (GRNMS). As you noted in your letter, the National Marine Sanctuaries Act requires consultation with the Environmental Protection Agency on "any past, present, or proposed future disposal or discharge of material in the vicinity of [a] sanctuary."

As is noted on page 51 of the DMP/DEIS, "No known ocean dumping or dredging occurs in or near the Sanctuary." We have checked our records of designated ocean dredged material disposal sites (ODMDS); the closest ODMDS to the GRNMS is the Brunswick Harbor, Georgia, disposal site. The precise location, size, and depth of this site can be found at 40 CFR 228.15(h)(7). As noted in the DMP/DEIS, the GRNMS is 17.5 nautical miles east of Sapelo Island, Georgia, at a depth of approximately 60-70 feet. The Brunswick ODMDS is 2.3 nautical miles east of Brunswick, Georgia, at a depth of approximately 25-30 feet, and is 26.6 nautical miles southwest of the GRNMS. Further, disposal of material at the Brunswick ODMDS occurs three or four times a year, at the most, and in some years, fewer times than that. Thus, we can envision no dredged material disposal operations that would impact the GRNMS.

Thank you for the opportunity to comment on this important environmentally protective action. If you have further questions, please contact me or your staff may call Diane Regas, Director, Office of Wetlands, Oceans and Watersheds, at 202-566-1146.

Sincerely,

G. Tracy Mehan, III  
Assistant Administrator

228





**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office  
9721 Executive Center Drive N  
St. Petersburg, Florida 33702  
(727) 570-5317, FAX (727) 570-5300  
<http://caldera.sero.nmfs.gov/>

**RECEIVED**  
DEC 31 2003

December 19, 2003

F/SER4:DD

MEMORANDUM FOR: Daniel J. Basta  
Director, National Marine Sanctuary Program

FROM: *Miles M. Croom*  
Miles M. Croom  
Assistant Regional Administrator, Habitat Conservation Division

SUBJECT: Essential Fish Habitat (EFH) Consultation for Proposed Regulations  
and Management Plan Amendment for Gray's Reef National Marine  
Sanctuary (GRNMS)

This responds to your November 6, 2003, memorandum requesting an EFH review of the subject action. In that regard, we have reviewed the November 2003 Gray's Reef National Marine Sanctuary Draft Management Plan and Draft Environmental Impact Statement provided with your memorandum.

As specified in the Magnuson-Stevens Fishery Conservation and Management Act, EFH consultation is required for Federal actions which may adversely affect EFH. However, as the Federal action agency in this matter, the National Marine Sanctuary Program has determined that the proposed regulations and Management Plan amendment would not adversely affect EFH and, based on our review, we agree with your determination. Please be advised that further consultation on this matter is not necessary unless future modifications are proposed and you believe that resulting action may result in adverse impacts to EFH.

cc: R. Bohne - GRNMS  
Files





UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office  
9721 Executive Center Drive North  
St. Petersburg, FL 33702  
(727) 570-5312, FAX 570-5517  
<http://caldera.sero.nmfs.gov>

JAN 26 2004

Dear Colleague:

The National Marine Fisheries Service (NOAA Fisheries) Protected Resources Division has reviewed your letter pursuant to section 7(a)(2) of the Endangered Species Act (ESA) concerning Gray's Reef National Marine Sanctuary Draft Management Plan / Draft EIS, and consultation letter dated November 12, 2004.

We cannot determine impacts to threatened or endangered species, or designated critical habitat, under NOAA Fisheries' purview because the letter lacks sufficient information to evaluate the project. Enclosed are guidelines to conduct a proper biological evaluation.

As requested, enclosed is a list of federally-protected species under the jurisdiction of NOAA Fisheries for the state of \_\_\_\_\_. Biological information on federally-protected sea turtles, shortnose and gulf sturgeon, smalltooth sawfish, and other listed species and candidate species can be found at the following website addresses: NOAA Fisheries Southeast Regional Office (<http://caldera.sero.nmfs.gov/protect/protect.htm>); NOAA Fisheries Office of Protected Resources ([http://www.nmfs.noaa.gov/prot\\_res/prot\\_res.html](http://www.nmfs.noaa.gov/prot_res/prot_res.html)); U.S. Fish and Wildlife Service (<http://noflorida.fws.gov/SeaTurtles/seaturtle-info.htm>), <http://www.turtles.org>; <http://www.seaturtle.org>; <http://alabama.fws.gov/gsl>; <http://endangered.fws.gov/wildlife.html#Species>; the Ocean Conservancy (<http://www.ocean.org/main.php3>); the Caribbean Conservation Corporation (<http://www.cccturtle.org/>); Florida Fish and Wildlife Conservation Commission (<http://floridaconservation.org/psm/turtles/turtle.htm>); [http://obis.env.duke.edu/data/sp\\_profiles.php](http://obis.env.duke.edu/data/sp_profiles.php); [www.mote.org/~colins/Sawfish/SawfishHomePage.html](http://www.mote.org/~colins/Sawfish/SawfishHomePage.html); [www.floridasawfish.com](http://www.floridasawfish.com); [www.flmnh.ufl.edu/fish/sharks/InNews/sawprop.htm](http://www.flmnh.ufl.edu/fish/sharks/InNews/sawprop.htm).

✓ It is NOAA Fisheries' opinion that the project will have no effect on listed species or critical habitat protected by the ESA under NOAA Fisheries' purview. No further consultation with NOAA Fisheries pursuant to section 7(a)(2) of the ESA is required. Consultation with NOAA Fisheries, Habitat Conservation Division, pursuant to the Magnuson-Stevens Fishery Conservation and Management Act's requirements for essential fish habitat consultation (16 U.S.C. 1855 (b)(2) and 50 CFR 600.905-930, subpart K), may be required. Please contact our Habitat Conservation Division at (727) 570-5317.

If you have any questions, please contact the ESA section 7 coordinator, Eric Hawk, at (727) 570-5312, or by e-mail at [eric.hawk@noaa.gov](mailto:eric.hawk@noaa.gov).

Sincerely,

David Bernhart  
Acting Assistant Regional Administrator  
for Protected Resources

Enclosure  
File:1514-22. E.  
O:\forms\no-effect letter.wpd  
I/SER/2004/ 00044





Comments NOAA fisheries

NOAA Fisheries Comments on Gray's Reef National Marine Sanctuary Management Plan July 29, 2003

From Cheryl E. Ryder (cryder@whsun1.wh.who.edu)

I have reviewed the Draft Revised Management Plan/Draft EIS for the Gray's Reef National Marine Sanctuary \*GRNMS) for marine turtle concerns. The proposed regulation to prohibit anchoring within the Sanctuary will prevent damage to live bottom utilized by loggerhead turtles. A revision of Sanctuary regulations to allow only fishing with rod and reel and handline gear types will further protect marine turtles and their habitats. We do have the following recommendations for consideration to improve the document as it pertains to sea turtles:

1. Results from sea turtle satellite tracking studies conducted at the GRNMS are very briefly presented on p. 25 in the section on Research and Monitoring. These studies helped to demonstrate the importance of the GRNMS to both migrating and seasonally resident loggerheads. Additional information on numbers of animals tracked (sex, life stage etc.) along with their movements and behavior in and beyond the Sanctuary could be included here to provide information on the life history of turtles utilizing the Sanctuary.

In the Affected Environment on p. 41 there is a brief section on sea turtles that includes some vague language on the biology and management of sea turtles, that does not serve to inform the document or the reader. It would be useful to provide a context for turtles found at GRNMS: where they nest in Georgia; seasonal movements; and threats to turtles in regional waters. There is also reference to the Atlantic Sea Turtle Strategy here, but without more background on why NOAA Fisheries instituted the strategy, it really doesn't make sense to have it here.

Proposed regulations will restrict fishing gears to rod and reel and handline gears. These gear types are still known to interact with sea turtles. One of the strategies under the Resource Protection Plan should be to ensure that fishermen in the Sanctuary have and are familiar with, recreational hooking guidelines that have been developed for sea turtles and that these measures are implemented.

Vessel collisions and prop wounds are a significant source of serious injury and mortality for sea turtles during the peak boating months. While we don't suggest that the plan should include speed limits, there should be a component that addresses education about the need to exercise awareness when in the Sanctuary.

Recreational divers are identified as one of the dominant user groups of the Sanctuary. An action item under the strategies for the Education and Outreach Plan could be the education of divers to ensure that they do not harass turtles within the Sanctuary.

From Joe Kimmel (Joe.Kimmel@noaa.gov)\_

I have received and reviewed the GRNMS Management Plan (MP). The document is clear, well written, considers a reasonable range of alternatives with analyses, and is compatible with NOAA Fisheries management in surrounding waters. I offer below one substantive comment and a few editorial comments.

## Comments NOAA fisheries

### Substantive

p. 14, p. 118 One of the MP preferred alternatives prohibits (in GRNMS) fishing gear other than rod\_and\_reel and handline gear. In explaining the intent of the measure the document refers to other gear that, if on board when the vessel is in the GRNMS, must be "stowed". For further clarification and to simplify enforcement the term "stowed" should be defined for each of the most commonly encountered gears (i.e., nets, spear guns, power heads, lobster or black seabass pots).

### Editorial

p. 36 Figure 7. Bathymetry of Gray's Reef. This figure would be more valuable if some labels could be added to indicate boundaries, compass orientation, bottom type, high and low relief, etc.

p. 109 2nd paragraph under "Overview of Sanctuary Users" to clarify intent add to 3rd sentence "...one charterboat captain (who also has a permit to fish commercially)

p. 109 last paragraph, next to last sentence to clarify intent substitute prohibited for restricted.

p. 117 1st paragraph \_ second sentence to clarify add "... Atlantic king mackerel using rod\_and\_reel or handline gear.

# SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL



ONE SOUTHPARK CIRCLE, SUITE 306  
CHARLESTON, SOUTH CAROLINA 29407-4699  
TEL 843/571-4366 FAX 843/769-4520  
Toll Free: 866-SAFMC-10

E-mail: safmc@safmc.net

Web site: www.safmc.net

David Cupka, Chairman  
Louis Daniel, Vice-Chairman

Robert K. Mahood, Executive Director  
Gregg T. Waugh, Deputy Executive Director

December 19, 2003

Mr. Reed Bohne  
Sanctuary Manager  
Gray's Reef National Marine Sanctuary  
10 Ocean Science Circle  
Savannah, GA 31411

RE: DMP/DEIS FOR GRAY'S REEF

Dear Mr. Bohne:

Thank you for the presentation you gave during the December 1-4, 2003 Council meeting. The Council voted to support the DMP/DEIS and proposed fishing regulatory language contained in the November 2003 public hearing document. Prohibiting anchoring and the other proposed actions are consistent with the Council's EFH and EFH-HAPC designations and with the Council's habitat policies. The Council did however request that you reconsider the proposed 3-hook limit. We anticipate seeing the revisions to the fishing regulations based on the public comments, and our intent is to review these regulations prior to them being submitted for implementation.

We look forward to working with you and your staff and feel the MOU provides an excellent vehicle for our continued coordination. If you require any additional information please do not hesitate to contact Bob Mahood or me.

Sincerely,

David Cupka  
Chairman

cc: Council Members & Staff  
Council Executive Directors  
Rebecca Lent & Jack Dunnigan (NMFS - Silver Spring)  
Connie Sathre (NOAA GC - Washington Office)  
Monica Smit-Brunello (NOAA GC - St. Petersburg)  
Ginny Fay, Joe Kimmel & Julie Weeder (NMFS SERO)  
Georgia Cranmore (SERP Protected Resources)  
Nancy Thompson & Alex Chester (NMFS SEFSC - Miami)  
John Merriner (NMFS SEFSC - Beaufort)  
Snapper Grouper, MPA, Coral, Habitat & Law Enforcement Advisory Panels  
Steve Kokkinakis, NOAA/OSP, SSMC3, Room 15723  
East-West Highway, Silver Spring, MD 20910



16214  
December 30, 2003

Reed Bohne  
Manager  
Gray's Reef National Marine Sanctuary  
10 Ocean Science Circle  
Savannah, Georgia 31411

Dear Mr. Bohne,

Thank you for this opportunity to comment on the NOAA National Ocean Service Draft Management Plan/Draft Environmental Impact Statement (DMP/DEIS) for the Gray's Reef National Marine Sanctuary dated November 2003. The Seventh Coast Guard District is very supportive of the collaborative public process you have initiated and we value our role on the Sanctuary Advisory Council (SAC). Having reviewed the DMP/DEIS and participated in the SAC process, the following comments are provided:

1. Fishing, "(a) revise sanctuary regulations to allow fishing only with rod and reel and handline gear (preferred alternative)."
  - a. Section (5) (ii) states that "There shall be a rebuttable presumption that any marine organism or part thereof found in the possession of a person within the Sanctuary has been collected or removed from the Sanctuary." A "rebuttable presumption" places the burden of proving that any organism in possession of an alleged violator was actually caught in the Sanctuary on the enforcement entity, something that is very difficult to do unless directly observed. Section 5 (ii) as written would be extremely difficult to enforce. Recommend changing this text to simply prohibit possession of any marine organism or part thereof when within the Sanctuary and when in possession of any fishing gear or means except rod and reel and handline gear that is available for use. The prohibition text should also ensure that it is illegal to possess any species caught with a gear type prohibited in the sanctuary.
  - b. Section (6) prohibits gear other than rod and reel and handline gear unless "stowed and not available for use". This term is later defined as "stowed and not available for immediate use." This disparity between prohibition and definition will cause confusion and may make this prohibition unenforceable. Recommend that the definition and prohibition language be aligned.
  - c. Section on definition additions: Rod and reel gear is defined in this section and the definition includes a limit on the number of hooks per line to capture baitfish and a limit on the size and type of hooks that can be used. Recommend removing this limitation, as it is extremely difficult to enforce. However, if this limit is retained recommend that these prohibitions be moved from the definition section and be included under the new regulation section. This will help simplify the regulations, a key component of an enforceable regulation.

16214


December 30, 2003

Prior to implementing a final rule, the Coast Guard recommends that Gray's Reef National Marine Sanctuary coordinate with NOAA GCEL/SE to update Gray's Reef's Penalty Schedule. The current penalty schedule was last revised in January 1997 and a proposed revision drafted in 2002 has not gone into effect. Unfortunately, the proposed revision is not adequate and does not address the proposed regulation changes in the DMP/DEIS. In addition, the majority of potential violations within Gray's Reef are likely to be small and perpetrated by recreational fishermen. The Coast Guard strongly recommends that any penalty schedule update reflect this.

There are no objectionable vessel safety concerns contained within this proposal.

Thank you, again for this opportunity to comment on the proposed regulations. If you have any questions or I can clarify any of the above issues please do not hesitate to contact me.

Sincerely,

  
S. ROGERS  
Lieutenant Commander  
U.S. Coast Guard  
By direction

Copy: Commander, Coast Guard Atlantic Area (AOLE)

**Subject:** FW: Navy Comments on Gray's Reef DMP/DEIS  
**From:** "Durig, William B. GS (CNRSE N46E3)" <DurigW@CNRSE.NAVY.MIL>  
**Date:** Mon, 29 Dec 2003 11:46:20 -0500  
**To:** "graysreefcomments@noaa.gov" <graysreefcomments@noaa.gov>

Dear Mr. Bohne:

We appreciate the opportunity to comment on the Draft Management Plan/DEIS and want to continue the good working relationship between the Marine Sanctuary and the Navy.

After an internal review of the documents we have two comments:

- As discussed in the document and in our letter to National Marine Sanctuary Program dated 16 Dec 2002 (see attachment) GRNMS is located in the Jacksonville Operating Area (W-157), which is an extremely important area for Navy training and will continue to be in the foreseeable future. We request that the document expand the statements regarding military activities, specifically to indicate that the sanctuary designation does not limit or restrict ongoing or future military use for training and operations.

- Page 50 (Military Activities). Recommend modification of the next to last sentence to read, "Military aircraft do not routinely fly below 1500 feet or within a one nautical mile radius of the Sanctuary."

respectfully;

W. Brock Durig  
Commander Navy Region Southeast  
Environmental Ops Support & Planning Branch Head  
phone: 904-542-8251, DSN 942  
fax: 904-542-2414  
[durigw@cnrse.navy.mil](mailto:durigw@cnrse.navy.mil)

RECEIVED  
DEC 29 2003

<<SCANNED GREY'S REFF LETTER.pdf>>



DEPARTMENT OF THE NAVY

COMMANDER NAVY REGION SOUTHEAST  
BOX 102, NAVAL AIR STATION  
JACKSONVILLE, FLORIDA 32212-0102

5090

Ser N46E/ 1182

16 DEC 2002

Daniel J. Basta, Director  
National Marine Sanctuary Program  
RE: GRNMS Consultation  
1305 East West Highway, N/ORM6  
Silver Spring, MD 20910

RECEIVED  
DEC 29 2003

Dear Mr. Basta:

This responds to Mr. Hawkins' letter (undated) to Mr. John Paul Woodley, Assistant Deputy Under Secretary of Defense (Environment). We appreciate the opportunity to provide initial comments on the proposed changes to the Gray's Reef National Marine Sanctuary (GRNMS) Management Plan and associated environmental planning documentation. Please note that this correspondence does not constitute consultation under the National Marine Sanctuaries Act (NMSA); however, we believe early and continuing coordination is important and appreciate your efforts at such.

As you know, GRNMS is located within the Navy's Jacksonville Operating Area (OPAREA) where Navy and other service training and testing essential to the National Defense mission is conducted. For this reason, we are interested in activities and/or restrictions within this area, and will continue to participate in the GRNMS Advisory Council meetings. As noted in the 1980 GRNMS Environmental Impact Statement (EIS), the Navy and other services must reserve the flexibility to operate in this section of the OPAREA as circumstances require.

Consistent with the original designation of the sanctuary in 1981, unrestricted access for national defense purposes has been demonstrated to be compatible with the protection and management of sanctuary resources. We would like the upcoming revision of the management plan, Draft Environmental Impact Statement (DEIS), and sanctuary regulations to expand the statements regarding military activities, specifically to indicate that the sanctuary designation does not limit or restrict ongoing or future military use of the area for training and operations. To facilitate your review, we are developing a baseline activities list addressing Department of Defense Activities in the vicinity

5090

Ser N46E/1182

16 DEC 2002

of Gray's Reef for your use during the review process, and will coordinate this effort with the GRNMS manager.

We note that the inclusion of subaqueous bottom within the sanctuary boundary is the only boundary expansion proposed at this point. However, depending on the specific designation proposal, other geographic expansion of the boundaries could impact our ability to meet national security requirements unless assurances, as suggested above, are provided in the associated regulations to prevent such impacts.

In a continuing effort to achieve both DOD and NOAA mission requirements, we request that you provide additional information at the earliest possible time. This will enable us to provide the detailed information and comments that will be valuable for the review process.

Again, we appreciate your efforts at early coordination and look forward to working with you on this effort. If you have any questions or need further information, Navy Region Southeast point of contact is Mr. Brock Durig, N46E3, Environmental Planning Branch Head, (904) 542-8251.

Sincerely,



A. E. Brown

Rear Admiral, U.S. Navy  
Commander

Copy to:  
ADUSD (E)  
DASN (E)  
CNO N45  
COMLANTFLT N465





RECEIVED  
NOV 20 2003

November 17, 2003

Mr. Daniel J. Basta  
NOS National Marine Sanctuary Program  
1315 East-West Highway  
Silver Spring, Maryland 20910

RE: Consistency Determination of Draft MP/EIS Gray's Reef, off Sapelo Island, Georgia

Dear Mr. Basta:

Staff of the Coastal Management Program has reviewed your November 6, 2003 letter and attached Gray's Reef National Marine Sanctuary Draft Management Plan / Draft Environmental Impact Statement, November 2003. Representatives from Gray's Reef National Marine Sanctuary (GRNMS) also met with Program staff October 30, 2003 as per section G-2 of the Memorandum of Understanding listed under Appendix IV of the draft Plan. The proposed regulations would restrict fishing at GRNMS to use of rod and reel and handline gear by prohibiting the injuring, catching, harvesting, or collecting of any marine organism or part thereof in the Sanctuary except by these gear types. All other forms of fishing gear would have to be stowed when a vessel is in the Sanctuary.

The Program concurs with your consistency determination. This determination ensures that the proposed project has been designed to comply to the maximum extent practicable with the applicable enforceable policies of the Georgia Coastal Management Program. Please feel free to contact Kelie Moore or me if we can be of further assistance.

Sincerely,

Susan Shipman  
Director

SS/km

cc: DNR Board  
Mr. Sonny Purdue, Governor  
Mr. Lonice Barrett, Commissioner  
Ms. Becky Shortland

239

Georgia Department of Natural Resources  
Coastal Resources Division  
One Conservation Way  
Brunswick, GA 31520-8687  
(912) 264-7218  
FAX: (912) 262-3143

Date: Wed, 31 Dec 2003 14:17:48 -0500  
From: "Henry Ansley" <henry\_ansley@dnr.state.ga.us>  
To: <becky.shortland@noaa.gov>, <reed.bohne@noaa.gov>  
Cc: "Spud Woodward" <Spud\_Woodward@dnr.state.ga.us>, <s2@fisheries.dnr.state.ga.us>  
Subject: Initial Comments on the GRNMS Draft Management Plan

Reed/Becky,

Prior to the deadline, we wanted to provide some preliminary comments on = the GRNMS Draft Management Plan. Our comments are similar to those = forwarded to you by David Cupka, Chairman of the South Atlantic Fishery = Management Council. As noted in his letter, DNR also feels that the = prohibition of anchoring and similar Marine Resource Action Plan strategies = to protect the live bottom habitat are appropriate and consistent not = only with the Council's EFH definitions/policies, but also with the goals = and objectives of the Sanctuary program. As alluded to in the Council's = letter and at most of the public hearings, the proposed fishing regulations = need revision and reconsideration, although there does appear to be = general support for the allowable gear approach/concept. Based on these = revisions and the public comments, our preference is also to provide final = comments on revised fishing and fishing gear regulations later, but prior = to submittal for final implementation.

We support the proposed the Research and Monitoring Action Plan and = applaud the Sanctuary for committing to a focused, transparent investigatio = n on the possible designation of a marine research area, as discussed = under strategy RM-2. As you well know, there is considerable interest in = this topic. Dealing with this issue singly and openly as proposed is the = right thing to do to ensure its full discussion and examination.

The Education and Outreach Action Plan is very good. There was also some = excellent public input that could be used to further enhance this plan, = including strategies to target/educate user groups at tournaments, etc. = We also support the proposed Exploration Action Plan, the Administration = Action Plan, and the Performance Evaluation Action Plan, which is a = critical component in helping guide efforts towards Program goals. =20

Thank you for the opportunity to provide this literally last-minute = comment. As noted above, we look forward to reviewing the revised fishing = regulations and public comments so that we can generate more specific = comments on these strategies, prior to their submittal for implementation. = =20

Best wishes for a Happy New Year.

=20

## APPENDIX VI: RESPONSE TO COMMENTS

During the public comment period, 144 written comments were received. Seven (7) public hearings were also held with approximately 125 individuals in attendance. Comment during the public hearings was derived out of round table discussions and recorded on flip charts at each of the small group tables. Written and verbal comments were compiled and grouped by general topics into a 10-page summary, which was reviewed and considered by the GRNMS Advisory Council on January 28, 2004.

Substantive comments received are summarized below, followed by NOAA's response. Multiple but similar comments have been treated as one comment for purposes of response. Comments beyond the scope of the proposed action are neither summarized nor responded to.

Comment 1: Spearfishing at Gray's Reef should not be prohibited as proposed in the draft plan. The sanctuary does not have specific data on the number of people who spearfish and the amount of fish they take. If spearfishing is prohibited then all bottom fishing at the sanctuary should be prohibited too. Bottom fishing takes far more fish and leaves far more debris on the reef than spearfishing does.

Response: Spearfishing was considered for regulation during the original 1981 GRNMS designation. No regulations, however, were adopted at that time, except the prohibition of powerheads (explosives) for spearfishing. While the number of recreational divers spearfishing at GRNMS appears to be small, spearfishing typically targets the larger individual fish among the reef-dependent species. Large fish are important to the reproductive health of species. Some fish populations are overfished or approaching overfished status. Some researchers have commented on the lack of large snapper-grouper individuals at GRNMS (Bohnsack pers. comm.).

Research has shown significantly reduced populations of larger predatory fishes where spearfishing occurs (SAFMC, 1990; Bohnsack, 1982; Chapman and Kramer, 1999; Jouvenel and Pollard, 2001). Larger predators are favored targets of spearfishermen. Reduction in the larger predatory fishes can have a "top-down" effect on fish populations by allowing other fish populations to increase, altering the composition of the overall natural communities including invertebrates.

Although the use of powerheads is prohibited at GRNMS, powerhead cartridges found on site indicate that this gear is still in use. Law enforcement officials have expressed concerns that some commercial spearfishing operations may be harvesting large numbers of undersized fish from the region.

NOAA recognizes that while it has been effectively demonstrated in other areas that selective removal of large individual fish by spearfishing can adversely affect the reproductive viability of a given population, the sanctuary has little data on the actual level of spearfishing at GRNMS. The sanctuary will, therefore, gather additional socioeconomic information on this activity in GRNMS and review the issue again in two

years. The additional socioeconomic information coupled with ongoing biological studies of fish populations will enable management to better evaluate the impact of current and potentially future levels of spearfishing at GRNMS.

NOAA therefore defers taking action on spearfishing as was proposed in the draft management plan for a period of two years while additional information is collected on this activity in GRNMS. NOAA will then determine what action to take, if any, given the additional information.

Comment 2: (U.S. Environmental Protection Agency, Region IV) The language used in the Preferred Alternative could be strengthened to expressly prohibit the use or possession of spearguns, nets, bandit gear, buoy gear, traps, pots, etc., in the GRNMS. The distinction between permitted activities and prohibited activities should be made unambiguously clear.

Response: NOAA has determined that prohibiting specific gear types could add more complication and confusion for fishermen by lengthening the list of restricted fishing methods and gear, versus clearly identifying what gear is allowed in GRNMS. The allowable gear regulation approach was endorsed by the GRNMS Advisory Council and the SAFMC as the best approach.

Comment 3: (South Atlantic Fishery Management Council) The SAFMC voted to support the DMP/DEIS and proposed fishing regulatory language contained in the November 2003 public hearing document. Prohibiting anchoring and the other proposed actions are consistent with the SAFMC's Essential Fish Habitat (EFH) and EFH-Habitat Area of Particular Concern (HAPC) designations and with the SAFMC's habitat policies. The SAFMC did however request that GRNMS reconsider the proposed 3-hook limit.

Response: NOAA has adopted Alternative "c" of the proposed allowable gear regulation, to permit only rod and reel, handline, and spearfishing gear without powerheads in the sanctuary. NOAA has determined that the 3-hook limit on rod and reel and handline gear, as defined in the draft proposed rule, complicates compliance and law enforcement, and, therefore, defines it without a limit on the number of hooks.

The process of developing fishing regulations for GRNMS has complied with the NMSA, Section 304(a)(5) and the MOU executed by the SAFMC, NOAA Fisheries Service, and the NMSP.

Comment 4: (Georgia Department of Natural Resources, Coastal Resources Division, Marine Fisheries Section) Prohibiting anchoring and the other proposed actions are consistent with the SAFMC's EFH and EFH-HAPC designations and with the Council's habitat policies. The anchoring prohibition and similar marine resource action plan strategies to protect the live bottom habitat are appropriate and consistent not only with the SAFMC's EFH definitions/policies, but also with the goals and objectives of the NMSP.

Response: See response to comment 3 above. NOAA agrees with the statements that prohibition of anchoring is consistent with the SAFMC's EFH and EFH-HAPC designations of GRNMS, as well as the goals and objectives of the NMSP.

Comment 5: (U.S. Navy, Commander Navy Region Southeast) The Navy requested that the document expand the statements regarding military activities, specifically to indicate that the sanctuary designation did not limit or restrict ongoing or future military use for training and operations.

Response: Existing regulations governing national defense exemptions for current activities have not changed. Current Department of Defense activities essential for national defense are not subject to the regulatory prohibitions. The exemption of additional activities having significant impacts shall be determined in consultation between the Director and the Department of Defense.

Comment 6: (U.S. Navy, Commander Navy Region Southeast) The Navy recommended modification of the next to last sentence on page 50 to read "Military aircraft do not routinely fly below 1500 feet or within a one nautical mile radius of the Sanctuary."

Response: NOAA has determined that the language as it exists in the DMP/DEIS, coupled with the regulations governing national defense activities will adequately address the U.S. Navy's concern.

Comment 7: (U.S. Coast Guard, Commander (OLE), 7th Coast Guard District) Section (5)(ii) states that "There shall be a rebuttable presumption that any marine organism or part thereof found in the possession of a person within the sanctuary has been collected or removed from the Sanctuary." A "rebuttable presumption" places the burden of proving that any organism in possession of an alleged violator was actually caught in the sanctuary on the enforcement entity, something that is very difficult to do unless directly observed. Section 5 (ii) as written would be extremely difficult to enforce. The Coast Guard recommended changing this text to simply prohibit possession of any marine organism or part thereof when within the sanctuary and when in possession of any fishing gear or means except rod and reel and handline gear that is available for use. The prohibition text should also ensure that it is illegal to possess any species caught with a gear type prohibited in the sanctuary.

Response: The U.S. Coast Guard is a key enforcement partner to NOAA in the protection of sanctuary resources and NOAA appreciates its comment to improve the regulation. The rebuttable presumption does not place any additional burden on the enforcement entity; rather it operates such that any person located inside the sanctuary and found in possession of a marine organism is presumed to have taken that organism from the sanctuary. Thus, no actual observation of a violation is required - it is presumed - and the burden is shifted to the alleged violator to provide some evidence proving the organism was in fact not taken from the sanctuary. Although the presumption can be overcome by the introduction of contrary evidence, NOAA regards the rebuttable

presumption as generally useful to enforcement of the sanctuary regulations and, therefore, believes it should be retained in the final regulations.

Comment 8: (U.S. Coast Guard, Commander (OLE), 7th Coast Guard District) Section (6) prohibits gear other than rod and reel and handline gear unless “stowed and not available for use.” This term is later defined as “stowed and not available for immediate use.” This disparity between prohibition and definition will cause confusion and may make this prohibition unenforceable. The Coast Guard recommended that the definition and prohibition language be aligned.

Response: NOAA agrees and has corrected this typographical error in the FMP/FEIS by adding the word “immediate” in Section (6).

Comment 9: (U.S. Coast Guard, Commander (OLE), 7th Coast Guard District) Rod and reel gear is defined in the definitions section and the definition includes a limit on the number of hooks per line to capture baitfish and a limit on the size and type of hooks that can be used. The Coast Guard recommended removing this limitation, as it is extremely difficult to enforce. However, if this limit is retained the Coast Guard recommended that these prohibitions be moved from the definition section and be included under the new regulation section. This will help simplify the regulations, a key component of an enforceable regulation.

Response: NOAA agrees and has changed the regulation. See response to comment 3 above.

Comment 10: (U.S. Coast Guard, Commander (OLE), 7th Coast Guard District) Prior to implementing a final rule, the Coast Guard recommended that GRNMS coordinate with NOAA General Counsel for Enforcement and Litigation to update GRNMS’ penalty schedule. The current penalty schedule was last revised in January 1997; and a proposed revision drafted in 2002 has not gone into effect. Unfortunately, the proposed revision is not adequate and does not address the proposed regulation changes in the DMP/DEIS. In addition, the majority of potential violations within GRNMS are likely to be small and perpetrated by recreational fishermen. The Coast Guard strongly recommended that any penalty schedule update reflect this.

Response: NOAA has developed a national penalty schedule for the NMSP. Penalty schedules, however, are not established by rulemaking; they are for internal guidance and have no binding effect on the amount of a penalty that may be assessed for a violation. Rather they are intended for consistency across a national system. The NMSA remains the authority and the source of penalties that NOAA may assess.

Comment 11: The South Carolina Aquarium fully supports the increased protection proposed in the DMP/DEIS. Limits placed on spearfishing and anchoring would help to minimize damage due to human activities on Gray’s Reef.

Response: NOAA agrees and has chosen the prohibition on anchoring (alternative “a”). Regarding spearfishing, see response to comment 1 above.

Comment 12: The Coastal Group, Georgia Chapter, Sierra Club strongly supports the two major regulatory changes in the management plan: the prohibition of dropping anchor except in an emergency and the elimination of spearfishing from the sanctuary.

Response: NOAA agrees and has chosen the prohibition on anchoring (alternative “a”). Regarding spearfishing, see response to comment 1 above.

Comment 13: The Center for a Sustainable Coast believes that to truly serve as a sanctuary for marine life, ultimately GRNMS must be managed as a reserve to protect all species within its bounds against fishing and any other activities that disturb natural resources. To strengthen the capacity of efforts to improve water resource management, the GRNMS Management Plan should include analysis of the relationship of watersheds, water use, and water quality with the inter-tidal and marine areas. GRNMS must work to enhance and support greater awareness about these issues, and work to build a lasting intergovernmental management structure capable of resolving the complex water issues that may impact Gray’s Reef and other marine resources.

Response: During the scoping process for the revised management plan, many comments received asked that GRNMS consider marine reserve status (no-take) for the sanctuary. As noted in the DMP/DEIS (pages 29-30 and 64-65), GRNMS determined that marine reserves are best addressed through our partnership with SAFMC as they continue deliberations on a network of reserves in the region.

NOAA agrees that water quality is critical to the continued sustainability of the protected resources at GRNMS. Therefore an extensive water quality monitoring program has been implemented at GRNMS. Education programs, such as the Rivers to Reef module, are also bringing awareness to students and teachers.

Comment 14: Many commenters expressed general support for increased protection of marine resources in the sanctuary and/or that NOAA adopt the preferred fishing alternative “a.”

Response: See responses to comments 11 through 14 above.

Comment 15: GRNMS should be managed as a “sanctuary;” and/or allow only dive activities; and/or allow only transit through the sanctuary with fishing gear stowed.

Response: GRNMS is managed as a “national marine sanctuary,” which is defined in the NMSA as “an area of the marine environment of special national significance due to its resource or human-use values, which is designated as such to ensure its conservation and management.” As such, all uses are evaluated as to whether they are compatible with the primary objective of resource protection. Ongoing research and monitoring are conducted to support that objective.

Comment 16: GRNMS should consider designating 25-50% of the sanctuary as a reserve for non-extractive uses. Protect Gray's Reef NMS as representative hard-ground live bottom in the South Atlantic Bight.

Response: See response to comment 13 above.

Comment 17: Non-extractive diving as a compatible use at GRNMS is growing; more divers prefer recreational diving for wildlife observation and photography. Conflicts are arising due to spearfishing at GRNMS because the fish, particularly larger fish, are either killed or scared away. Most spearfishermen do not use GRNMS, but prefer other offshore sites.

Response: See response to comment 1 above.

Comment 18: Do the proposed regulations restrict use of commonly used equipment such as downriggers and marker buoys?

Response: The DMP/DEIS did not propose restrictions on commonly used equipment such as downriggers and marker buoys. That document specifically states on page 60: "Items that are deployed and subsequently retrieved, such as fishing line and small marker buoys, are not considered 'deposited' in the Sanctuary."

Comment 19: GRNMS should reduce all commercial and recreational fish harvest to "sustainable levels." GRNMS should ban all commercial fishing and charter/head boats in order to achieve sustainable levels of harvest.

Response: Under the Magnuson-Stevens Fishery Conservation Act, the SAFMC is responsible for the conservation and management of fish stocks within the Federal 200-mile limit exclusive economic zone of the Atlantic Ocean off the southeastern U.S. Under these mandates, sustainable levels of fish harvest are an objective of the SAFMC for a wide range of fish species. GRNMS is within the geographic area of the EEZ managed by the SAFMC. Achieving sustainable fishing levels can be done better on a regional level well beyond the boundaries of GRNMS. However, the allowable fishing gear approach to GRNMS regulation does restrict certain types of fishing gear that have a negative impact on sustainable levels of many fish species.

Comment 20: GRNMS should regulate fishing gear by prohibiting specific gear instead of allowing specific gear.

Response: NOAA believes that fishing alternative "b" would not be in the best interest of the sanctuary or its users. The allowable gear approach is simple, clear, and easily understood by the fishing community and by the public generally. It means that gear identified as allowable is the only gear that may be used in the sanctuary; use of all other gear types is prohibited. This is a simpler, cleaner approach than attempting to list all possible gear types that are prohibited. It also simplifies and facilitates monitoring and



law enforcement, and eliminates the costs to users who develop and utilize fishing gear in the sanctuary that may have to be prohibited in the future due to damage to the resources.

Comment 21: All diving activities will be eliminated at GRNMS.

Response: This plan does not propose eliminating diving at GRNMS. Although impacts on bottom resources from diving activities is a concern, GRNMS will establish a comprehensive outreach and education program to address these concerns. The revised regulations for GRNMS are very clear that only specific fishing gear is allowed and any other form of collection, harvest, or injury to marine organisms is prohibited.

Comment 22: The National Marine Manufacturers Association has strong reservations about NMSP's proposal to prohibit anchoring in the sanctuary because there is no evidence that at any point NMSP considered the effect this proposal would have on boater safety. NMSP should formally consult with the U.S. Coast Guard (USCG) Office of Boating Safety for recommendations on how to make NMSP's management policies consistent with proper boater safety procedures. NMMA also urges NMSP to adopt anchoring alternative "b" and establish and maintain a mooring buoy system in the appropriate places to enhance boater safety.

Response: NOAA involved the USCG, area boaters, fishermen, and divers on many occasions in the development of the DMP/DEIS through GRNMS Advisory Council meetings, scoping, and workshops. A representative of the 7th USCG District sits on the Advisory Council, along with a recreational angler and a recreational dive operator. The USCG's comment in its formal consultation letter response on the DMP/DEIS stated that: "There are no objectionable vessel safety concerns contained within this proposal."

Regarding anchoring alternative "b," NOAA has concluded that a mooring buoy system is not needed, in part because the proposed regulation allows for use of anchors in emergency situations. The GRNMS Advisory Council, and other users surveyed in the socioeconomic studies cited in the DMP/DEIS, also consistently advised that a mooring buoy system was not needed in the sanctuary because boaters (fishermen and divers) prefer to drift or troll. The potential negative impacts from concentrated use around mooring buoys is also a concern for the sanctuary. GRNMS will continue to monitor use in the sanctuary and may reconsider mooring buoys in the next management plan review if the sanctuary finds that they are needed.

Comment 23: NOAA should install mooring buoys in the sanctuary to enhance fishing, diving and research activities if anchoring is prohibited; consider 25-30 moorings and moveable moorings to minimize the negative impacts of concentrated activities.

Response: See response to comment 22 above.

Comment 24: NOAA should choose the preferred alternative "a" for anchoring.

Response: NOAA agrees and has chosen the preferred alternative "a" for anchoring.

Comment 25: Anchoring alternative “c” is not a good option because it assumes that sandy areas in GRNMS have no biological value. It makes little sense to anchor in the sandy areas away from fishing and diving locations.

Response: NOAA agrees with the concern about the biological importance of sandy areas in the sanctuary. Page 38 of the DMP/DEIS points out the high infaunal diversity in sandy bottom areas of the sanctuary. NOAA has chosen the preferred alternative “a” for anchoring.

Comment 26: The prohibition on anchoring is inappropriate because there is no concrete or photographic evidence of anchor damage.

Response: NOAA disagrees. Numerous photos have documented damage from anchoring at GRNMS. Page 110 of the DMP/DEIS shows anchoring gear photographed on a live bottom area at GRNMS. Numerous studies in other locations have also definitively documented the significant damage to delicate invertebrates, corals and hard bottoms from anchoring practices. The prohibition of anchoring is not a limiting factor for visitors to be able to conduct recreational activities in GRNMS. Anchoring continues to be allowed in emergency circumstances.

Comment 27: There is no purpose to establishing a working group to explore the concept of a marine research area because there is no such thing as a “natural process along a populated coast” and that there would be negative impact on the fishing community. Designating a research area would open the door to closing the entire sanctuary to fishing; other live bottom areas in the region should be chosen for a research reserve instead of GRNMS.

Response: After consideration of the public comments on the DMP/DEIS, the Advisory Council recommended that the sanctuary establish a working group to advise the Advisory Council on the development of the concept of a marine research area. The Advisory Council, with the concurrence of the sanctuary, established the Marine Research Area Concept Working Group (RAWG), which met from May 2004 until March 2005. The Working Group was comprised of representatives from education, fishing, diving, research and conservation; law enforcement and other regional, private, state, and federal organizations. The recommendations from the Working Group to the Advisory Council can be found in Section III under the Research and Monitoring Action Plan (RM-2). The Advisory Council deliberated on the Working Group’s recommendations at its June 2005 meeting and made its recommendations to the sanctuary (also found at RM-2).

NOAA has accepted the recommendations of the Advisory Council and made a decision to more formally consider the concept of a research area in the sanctuary through a public process guided by requirements of NEPA and the NMSA.

Comment 28: GRNMS should consider an area only for research in the sanctuary; the reserve could serve as a “constant” for monitoring marine resources, and help improve information specific to Gray’s Reef.

Response: GRNMS agrees that the research area concept should be considered and an investigation of its benefits will move forward.

Comment 29: GRNMS should consider a “rotational” marine research area (either geographically or temporally).

Response: See response to comment 27 above.

Comment 30: If the document is to follow the provisions of NEPA, it must have a List of Preparers contained within.

Response: NOAA agrees and a full list of preparers is included in the FMP/FEIS in an appendix entitled List of Preparers.

Comment 31: GRNMS is urged to formally incorporate a study of birds which occupy the reef as part of Goal 2 as research into the ecology of the reef.

Response: NOAA agrees and surveys of birds in the sanctuary have become a regular part of the monitoring program.

## APPENDIX VII: GLOSSARY

action plan – a major section of a management plan containing related strategies and activities designed to address a specific issue or function (NOAA, National Marine Sanctuary Management Plan Handbook, 3rd edition, 2002).

activity – specific actions that will be taken to carry out a strategy (NOAA, National Marine Sanctuary Management Plan Handbook, 3rd edition, 2002).

artificial reef –artificial reef is defined as any natural or artificial material or matter that is deliberately placed in an area of the marine environment where that structure does not exist under natural circumstances for the purpose of protecting, regenerating, concentrating or increasing populations of living marine resources.

bandit gear – means a rod and reel that remain attached to a vessel when in use from which a line and attached hook(s) are deployed; the line is payed out from and retrieved on the reel manually, electrically, or hydraulically.

bathymetry – water depth measurement information used to produce depth-contoured charts.

benthic – means the region of the ocean consisting of the sea bed and the organisms that live on or in it.

benthic communities – bottom-dwelling plants and animals.

biodiversity - the variability among living organisms from all sources including, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.

buoy gear – means fishing gear consisting of a float and one or more weighted lines suspended therefrom, generally long enough to reach the bottom. A hook or hooks are on the lines at or near the end. The float and line(s) drift freely and are retrieved periodically to remove catch and rebait hooks.

calcareous – containing characteristics of calcium carbonate, calcium, or limestone.

chum – bait usually consisting of oily fish ground up and scattered on the water.

continental shelf – a generally shallow, flat submerged portion of a continent, extending to the point of step descent to the ocean floor.

critical habitat – the specific areas within the geographical area occupied by a threatened or endangered species on which are found those physical or biological features essential to the conservation of the species, and which may require special management considerations or protection.

crustaceans – any of various predominantly aquatic arthropods of the class Crustacea including lobsters, crabs, shrimp, and barnacles, having segmented bodies, chitinous exoskeletons, and paired, jointed limbs.

demersal – fishes and other aquatic organisms that live near the bottom of the water column.

depleted - a species is termed depleted when it falls below its optimum sustainable population.

designation document – a portion of the regulations for a given sanctuary that spells out the terms of its designation, including boundaries, regulations, and those activities potentially subject to future regulation.

desired outcome – a succinct and concise statement that articulates a desired future for a sanctuary relative to a specific problem statement (NOAA, National Marine Sanctuary Management Plan Handbook, 3rd edition, 2002).

dunnage – loose packing material protecting a ship's cargo from damage during transport.

ecology – the science of the relationships between organisms and their environments.

ecosystem – the sum total of all living and nonliving components of a particular area that interact and exchange materials with each other; sometimes defined as the ecological community of organisms plus the environment with which they interact. Energy flow and nutrient cycling are regulated within a particular ecosystem and are studied as indicators of its overall health.

effluent – an outflow of waste, as from a sewer.

endangered species - any species that is in danger of extinction throughout all or a significant portion of its range.

fishery marine protected area - The South Atlantic Fishery Management Council defines MPAs within its jurisdiction as “a network of specific areas of marine environments reserved and managed for the primary purpose of aiding in the recovery of overfished stocks and to insure the persistence of healthy fish stocks, fisheries and habitat. Such areas may be over natural or artificial bottom and may include prohibition of harvest on a permanent or lesser time period to accomplish needed conservation goals.

food chain – a succession of organisms in a community that constitutes a feeding chain in which food energy is transferred from one organism to another as each consumes a lower member and in turn is preyed upon by a higher member.

gillnet – any of several types of methods (drift gillnet, run-around gillnet, long gillnet) utilizing nets to catch fish.

Gulf Stream – a warm ocean current of the North Atlantic off the eastern coast of North America.

indigenous – living or occurring naturally in a specific area or environment.

infaunal – organisms that live buried in sediments, including a variety of polychaetes, burrowing crustaceans, and mollusks.

International Biosphere Reserve - areas of terrestrial and coastal ecosystems promoting solutions to reconcile the conservation of biodiversity with its sustainable use, as designated by UNESCO.

invertebrate – an animal lacking a backbone or spinal column.

isobath – an imaginary line or one drawn on a map connecting all points of equal depth below the surface of a body of water.

larvae – the newly hatched, earliest stage of any of various animals that undergo metamorphosis, differing noticeably in form and appearance from an adult.

live bottom – naturally occurring hard or rocky formations in the ocean with attached biological assemblages of invertebrates.

longline – fishing gear that is set horizontally, either anchored, floating, or attached to a vessel, and that consists of a mainline with three or more gangions or hooks, retrieved either by hand or mechanical means.

marine protected area - 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. (Executive Order 13158 on Marine Protected Areas). Under this broad definition, a wide variety of sites - including fishery management zones, national parks, national marine sanctuaries, national estuarine research reserves, state conservation areas, critical habitats, and state reserves – could be considered as marine protected areas.

marine research area - an area established primarily for research to provide a scientific control zone to measure environmental change

marine reserve – a kind of marine protected area generally agreed to have strict regulations regarding the extraction of resources.

marine sanitation device – any equipment for installation on board a vessel which is designed to receive, retain, treat, or discharge sewage, and any process to treat such sewage.

minority serving institution - a U.S. Department of Education designated college or university such as a Historically Black College or University (HBCU), a Hispanic-Serving Institution (HSI), or a Tribal College or University (TCU).

mollusks – any of various members of the phylum Mollusca, largely marine invertebrates, including the edible shellfish and some 100,000 other species.

multibeam - a type of sonar that has multiple beams to record water depth.

organism – a plant or animal.

outcropping – a stratum or formation, as of bedrock, that protrudes through the soil level.

overfished – An overfished stock or stock complex is one whose size is sufficiently depleted that a change in management practices is required in order to achieve an appropriate level and rate of rebuilding. A rebuilding plan is required for stocks that are overfished.

overfishing - a rate or level of fishing mortality that jeopardizes the capacity of a fishery to produce the maximum sustainable yield on a continuing basis.

paleoarcheology - the study of ancient material remains (tools and the like from past cultures).

paleoenvironment - the study of the environment in ancient times.

pelagic – of, relating to, or living in open seas or oceans rather than waters adjacent to land or inland waters.

perturbation – a disturbance or state of being disturbed.

powerhead – means any device with an explosive charge, usually attached to a speargun, spear, pole, or stick that fires a projectile upon contact.

problem statements – a one or two sentence articulation of the specific components of an issue (NOAA, National Marine Sanctuary Management Plan Handbook, 3rd edition, 2002).

salinity – The relative concentration of salts, usually sodium chloride, in a given water sample. It is usually expressed in terms of the number of parts per thousand (ppt) or parts per million (ppm) of chlorine (Cl). As a reference, the salinity of seawater is approximately 35 ppt.

sandstone – variously colored sedimentary rock composed mainly of sand like quartz grains cemented by lime, silica, or other materials.

sessile – immobile organisms that are permanently fixed to the substrate.

side-scan sonar - a type of sonar that gathers sound reflections at oblique angles to the sensor.

socioeconomic – being both social and economic.

spawn – the eggs of aquatic organisms such as bivalve mollusks, fishes and amphibians; to produce such eggs.

strategy – the means by which a particular desired outcome can be achieved (NOAA, National Marine Sanctuary Management Plan Handbook, 3rd edition, 2002).

substrate – a surface on which a plant or animal grows or is attached.

temperate – neither hot nor cold in climate; mild.

threatened species – plant or animal species believed likely to move into the endangered category in the foreseeable future.

trawling – to fish using a trawl, a large tapered and flattened or conical net towed along the sea bottom.

trolling – to fish by running a baited line behind a slowly moving boat.

trophic – a description related to feeding; it often refers to a feeding form in the life history of an organism.

trophic level – one of a succession of steps in the movement of energy and matter through a food chain in an ecosystem.

turbidity – the extent to which there are suspended or stirred up particles or sediments, as in the water column.



## **APPENDIX VIII: LIST OF PREPARERS**

Theodore Beuttler, Attorney, Office of General Counsel for Ocean Services, NOAA

Reed Bohne, Sanctuary Manager, GRNMS

Matt Brookhart, Policy Analyst, NMSP

Rod Ehler, Economist, NMSP

Lt. Peter Fischel, Executive Officer, GRNMS

Eileen Hutchinson, EMC Consulting

Gail Krueger, Communications and Outreach Coordinator, GRNMS

Greg McFall, Research Coordinator, GRNMS

Elizabeth Moore, Branch Chief, NMSP

Cathy Sakas, Education Coordinator, GRNMS

Becky Shortland, Policy and Planning Coordinator, GRNMS

Jim Sullivan, Regional Projects Coordinator, GRNMS

**APPENDIX IX: LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS  
CONSULTED AND RECEIVING COPIES OF THE FMP/FEIS**

*Congressional Recipients*

The Honorable Ted Stevens  
Chairman, Senate Committee on  
Commerce, Science, and Transportation

The Honorable Daniel K. Inouye  
Co-Chairman, Senate Committee on  
Commerce, Science, and Transportation

The Honorable Richard Pombo  
Chair, House Resources Committee

The Honorable Nick J. Rahall, II  
Ranking Member, House Resources  
Committee

The Honorable Jack Kingston  
U.S. House of Representatives

The Honorable John Barrow  
U.S. House of Representatives

The Honorable Saxby Chambliss  
United States Senate

The Honorable Johnny Isakson  
United States Senate

*Agency Recipients*

Assistant Administrator for Fisheries  
NOAA Fisheries Service

Director, Coastal Resources Division  
Georgia Department of Natural  
Resources

Assistant Deputy Under Secretary for  
the Environment  
Department of Defense

Deputy Assistant Secretary for Oceans  
and Space  
Department of State

Director, Office of Environmental Policy  
and Guidance  
Department of Energy

Assistant Secretary for Governmental  
Affairs  
Department of Transportation

Director, Office of Ocean, Wetlands, and  
Watersheds  
Environmental Protection Agency

Office of Environmental Policy and  
Compliance  
Department of the Interior

Executive Director  
South Atlantic Fishery Management  
Council

*GRNMS Advisory Council Recipients*

Non-living Resources Research  
Dr. Clark Alexander  
Skidaway Institute of Oceanography  
Savannah, GA

Georgia Department of Natural  
Resources  
Henry Ansley  
Coastal Resources Division  
Brunswick, GA

K-12 Education  
Venetia R. Butler  
Savannah-Chatham Public Schools  
Savannah, GA

U.S. Coast Guard  
LCDR Scott Rogers  
Commander (OLE)  
Seventh Coast Guard District  
Miami, FL

U.S. Coast Guard (alternate)  
Lt. Eric Johnson  
U.S. Coast Guard SE Regional  
Fisheries Training Center  
Charleston, SC

University Education  
Dr. Leslie Sautter  
College of Charleston  
Charleston, SC

NOAA Fisheries Service  
Dr. Joe Kimmel  
Southeast Regional Office  
St. Petersburg, FL

Georgia Conservation  
Will Berson  
The Georgia Conservancy  
Savannah, GA

Sport Fishing  
Tim Tarver  
Coastal Conservation Association of  
Georgia  
Glennville, GA

Regional Conservation  
Christi Lambert  
The Nature Conservancy  
Darien, GA

Charter/Commercial Fishing  
Capt. Judy Helmey  
Savannah, GA

Living Resources Research  
Dr. Daniel Gleason  
Georgia Southern University  
Statesboro, GA

Sport Diving  
Ralph Neely  
Zero Gravity Dive Center  
Savannah, GA

Sapelo Island National Estuarine  
Research Reserve  
Buddy Sullivan  
Sapelo Island, GA

GADNR Law Enforcement Section  
Capt. Stephen Adams  
Brunswick, GA

GADNR Law Enforcement (alternate)  
Doug Lewis  
Brunswick, GA

*Advisory Council Alumni*

Anne Lindsay Frick  
UGA, Marine Extension Center &  
Aquarium  
Savannah, GA

Dr. Jim Henry  
Director, retired  
Applied Coastal Research Laboratory  
Georgia Southern University

Dr. George Sedberry  
Marine Resources Research Institute  
SC Department of Natural Resources  
Charleston, SC

Dr. Matt Gilligan  
Savannah State University  
Savannah, GA

Patty McIntosh  
The Georgia Conservancy  
Savannah, GA

LCDR Mark Gordon  
USCG  
Key West, FL

CDR David A. Cinalli  
USCG  
Miami, FL

Bing Phillips  
CCA- Georgia  
Statesboro, GA

Judy Wright  
Island Dive Center  
St. Simons Island, GA

*Other Recipients*

National Centers for Coastal Ocean  
Science  
Beaufort, NC

Dr. Jeffrey Hyland  
National Centers for Coastal Ocean  
Science  
Charleston, SC

Dr. James Bohnsack  
National Marine Fisheries Service  
Miami, FL

Lad Akins  
REEF  
Key Largo, FL

Rod Ehler  
NMSP  
Silver Spring, MD

V.R. Leeworthy  
National Ocean Service  
Silver Spring, MD

Dr. Matt Kendall  
National Centers for Coastal Ocean  
Science  
Silver Spring, MD

Dr. Mark Monaco  
National Centers for Coastal Ocean  
Science  
Silver Spring, MD

Dr. John McGovern  
National Marine Fisheries Service  
St. Petersburg, FL

Dr. Herb Windom  
Skidaway Institute of Oceanography  
Savannah, GA

John Duren  
Coastal Conservation Association of  
Georgia  
Savannah, GA

Bob Bunkley  
GA Offshore Scuba  
Richmond Hill, GA

Tim Vincent  
GA DNR Law Enforcement Section  
GADNR  
Savannah, GA

Steve Gittings  
NMSP  
Silver Spring, MD

Billy Causey  
Acting Regional Superintendent  
Southeast, GOM, Caribbean  
Marathon, FL

GP Schmahl  
Flower Garden Banks NMS  
Galveston, TX

LCDR David A. Score  
Acting Superintendent  
Florida Keys NMS

Tybee Island Marine Science Center  
Tybee Island, GA

Dr. Brian Keller  
Southeast, GOM, Caribbean Region  
NMSP  
St. Petersburg, FL

Sapelo Island National Estuarine  
Research Reserve  
Sapelo Island, GA

Paul Orlando  
NMSP  
Silver Spring, MD

South Carolina Aquarium  
Charleston, SC

Kerry O'Malley  
SAFMC  
Charleston, SC

Southern Kingfish Association  
St. Augustine, FL

Gregg Waugh  
SAFMC  
Charleston, SC

Atlanta Reef Dwellers  
Atlanta, GA

Jim Siler  
Coastal Conservation Association of  
Georgia  
Savannah, GA

Georgia Aquarium  
Atlanta, GA

Savannah Scuba Club  
Savannah, GA

Roger Pugliese  
SAFMC  
Charleston, SC

Southeast Scuba  
Savannah, GA

The Ocean Conservancy  
St. Petersburg, FL

Dr. Russell Kent  
Georgia Southern University  
Statesboro, GA

The Ocean Conservancy  
Washington, DC

Mark Marhefka  
Charleston, SC

Dr. Ervan Garrison  
University of Georgia  
Athens, GA

Charles Phillips  
Meridian, GA

Georgia Southern Museum  
Statesboro, GA

Dr. Mark Hay  
Georgia Institute of Technology  
Atlanta, GA

Dr. Dionne Hoskins  
Savannah State University  
Savannah, GA

Fernbank Natural History Museum  
Atlanta, GA

National Marine Sanctuary Foundation  
Silver Spring, MD

Brunswick Glynn County Regional  
Library  
Brunswick, GA

Bryan County Public Library  
Richmond Hill, GA

Camden County Public Library  
Kingsland, GA

Charleston County Public Library  
Charleston, SC

Ida Hilton Public Library  
Darien, GA

Live Oak Public Libraries  
Bull Street Branch, Savannah, GA

Oglethorpe Mall Branch, Savannah, GA  
Ogeechee Branch, Savannah, GA  
South Effingham Branch, Rincon, GA  
Midway-Riceboro Branch, Midway, GA

St. Marys Public Library  
St. Marys, GA

Statesboro Regional Library  
Statesboro, GA



