Office of National Marine Sanctuaries
National Oceanic and Atmospheric Administration

Gray's Reef National Marine Sanctuary

Final Environmental Assessment for Implementation of the Sanctuary Management Plan and New Regulations

http://graysreef.noaa.gov/

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Atmospheric Administration

U.S. Secretary of Commerce
Penny Pritzker

Under Secretary of Commerce for Oceans
and Atmosphere and NOAA Administrator
Kathryn Sullivan, Ph.D.

Assistant Administrator for
Ocean Services and Coastal Zone
Management, National Ocean Service
Holly A. Bamford, Ph.D.

Director of Office of National Marine Sanctuaries
Daniel J. Basta

Cover Photos:
Sea star and urchin; Gray's Reef National Marine Sanctuary seascape with diver; tube worms
Greg McFall/Gray's Reef National Marine Sanctuary

Dear Reviewer Letter (will be inserted after it is signed by PPI)

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About this document

This final environmental assessment analyzes the environmental impacts of revising the NOAA Office of National Marine Sanctuaries' (ONMS) Gray's Reef National Marine Sanctuary 2006 Final Management Plan, and the related rulemaking. A sanctuary management plan is a site-specific planning and management document that describes the goals, objectives, and management activities for a national marine sanctuary.

The final environmental assessment was prepared in accordance with the National Environmental Policy Act of 1969 (NEPA; 42 USC § 4321 *et seq.*) as implemented by the Council on Environmental Quality regulations (40 CFR Parts 1500-1508), and NOAA Administrative Order (NAO) 216-6, which describes NOAA policies, requirements, and procedures for implementing NEPA.

Acronyms

GADNR – Georgia Department of Natural Resources
GRNMS – Gray's Reef National Marine Sanctuary
NEPA – National Environmental Policy Act
NMFS – NOAA National Marine Fisheries Service (also known as NOAA Fisheries Service)
NMSA – National Marine Sanctuaries Act
NMSP – National Marine Sanctuary Program (now ONMS)
NOAA – National Oceanic and Atmospheric Administration
ONMS – NOAA Office of National Marine Sanctuaries
SAB – South Atlantic Bight
SAFMC – South Atlantic Fishery Management Council
SkIO – Skidaway Institute of Oceanography (part of the University of Georgia)

For more information contact:

Sanctuary Superintendent
Gray's Reef National Marine Sanctuary
10 Ocean Science Circle
Savannah, GA 31411
912-598-2345

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Purpose and Need

The purpose and need for the action - revising the 2006 Gray's Reef National Marine Sanctuary (GRNMS or sanctuary) management plan and revising the GRNMS regulations - are based on both the statutory requirements of the National Marine Sanctuaries Act of 1972 (NMSA; 16 USC §1431 *et seq*.) and the need to address current management issues and concerns.

Background

The Office of National Marine Sanctuaries (ONMS) serves as the trustee for a system of 14 marine protected areas, encompassing more than 170,000 square miles of ocean and Great Lakes waters. ONMS manages the national marine sanctuaries under the authority of the NMSA. The NMSA authorizes the Secretary of Commerce to designate discrete areas of the marine environment as national marine sanctuaries based on their special conservation, recreational, ecological, historical, scientific, educational, cultural, archaeological, and aesthetic qualities which give them special national, and in some cases international, significance.

The NMSA states that establishing areas as national marine sanctuaries will "maintain for future generations the habitat and ecological services of the natural assemblage of living resources that inhabit [sanctuaries]" (16 U.S.C. 1431(a)(4)(C)). The NMSA further recognizes that "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 the marine environment" (16 U.S.C. 1431(a)(3)). Accordingly, the ONMS subscribes to a broad and comprehensive management approach to meet the NMSA's primary mandate of resource protection. This approach differs from that of various other national and local agencies and laws directed at managing single or limited numbers of species, habitats, or specific human activities within the marine environment.

ONMS fosters public awareness of sanctuary resources through scientific research, monitoring, exploration, education, and outreach. The program works closely with its many partners and the public to protect and manage the biologically and culturally diverse environments of the National Marine Sanctuary System. Sanctuaries also allow recreational and commercial activities that are compatible with the protection of sanctuary resources.

Public comment on the proposed action

During the public comment period on the draft management plan and proposed regulations (December 10, 2013 to February 10, 2014) four written comments were received electronically. Three public hearings were also held to receive comment, but no members of the public attended. The written comments addressed only the proposed exemption to allow the use of weighted marker buoys in the sanctuary. Comments

supported the proposal, while another comment suggested a temporary exemption to document any impacts to sanctuary resources. NOAA's responses to the public comments can be found in appendix C of the final environmental assessment. Only minor edits to the text were made between the draft and final management plan and regulations. The environmental assessment and management plan were separated into two stand-alone documents. No substantive changes were made.

Purpose for action

NMSA section 304(e) requires that each of the national marine sanctuaries periodically engage in management plan review to reevaluate site-specific goals and objectives and, as necessary, revise the management plan and activities regulations to ensure the sanctuary fulfills the purposes and policies of the NMSA (see Appendix B). The purpose of the proposed, revised management plan (Chapter 2) is to provide an updated integrated program of resource protection, research, education and outreach that meets the mandates of the NMSA and addresses the needs that have emerged since the 2006 management plan was finalized. New vision and mission statements and revised GRNMS goals and objectives provide the framework for developing the proposed management activities, which are consistent with the purposes and policies of the NMSA. The plan outlines comprehensive management objectives that have been developed based upon new knowledge of the site and upon new opportunities.

The proposed, revised management plan (Chapter 2) provides an integrated program of resource protection, research, education and outreach. Modified GRNMS goals and objectives provide the framework for developing management activities, which are consistent with the purposes and policies of the NMSA. The plan outlines comprehensive management objectives that have been developed based upon new knowledge of the site and upon new opportunities.

Need for Action

A revised GRNMS management plan is needed to establish a new framework for sanctuary activities over the next 5-10 years. The revised management plan is also needed to address substantive resource protection issues that have emerged since completion of the 2006 GRNMS Management Plan. Invasive lionfish, for example, are now common in the sanctuary. Lionfish were not documented in GRNMS prior to 2007. Management activities to monitor and remove lionfish are proposed in the revised management plan, along with activities to address the challenges of climate change that were not included in the 2006 GRNMS Management Plan.

The 2006 plan includes several research and monitoring projects that have either been accomplished or are no longer a priority for the sanctuary. A research area was designated in 2011 and is now the primary focus of the GRNMS science program. The research area was not in effect at completion of the 2006 GRNMS Management Plan. Incorporation of the research area into the framework of GRNMS management activities is needed.

In addition, a revised GRNMS management plan is needed to address new administrative, infrastructure and public awareness challenges. Administrative and staffing needs have shifted and infrastructure planning is focused more on community visibility. Education and outreach programs have been implemented successfully, yet socioeconomic assessment indicates awareness needs in differing audiences not yet reached by those programs. Development of social media (e.g., Facebook) and other communications technology has changed the way target audiences might be reached.

Affected Environment

The affected environment for this action was extensively described in the 2006 GRNMS Final Management Plan/Final Environmental Impact Statement (NMSP 2006) and again in the GRNMS Final Environmental Impact Statement Sanctuary Research Area Designation (ONMS 2011). Those descriptions are incorporated by reference, and are summarized and supplemented below.

Overview

GRNMS is one of the largest nearshore live-bottom reefs in the southeastern United States. The sanctuary is a marine protected area in federal waters (U.S. Exclusive Economic Zone) in the South Atlantic Bight (SAB), an area of continental shelf stretching from Cape Hatteras, North Carolina to Cape Canaveral, Florida (Figure 3). It is the only marine protected area in the region that focuses on protection and conservation of all natural marine resources. Located 17 miles offshore of Sapelo Island, Georgia, the 22-square-mile sanctuary (Figure 4) contains rocky ledges and sandy flats. Unlike reefs built by corals, GRNMS is comprised of scattered sandstone rock outcroppings that rise above the sandy substrate of the nearly flat continental shelf. The reef also supports soft corals, non-reef-building hard corals, attached bivalves and sponges, as well as associated fishes, sea turtles, marine mammals, and pelagic birds.

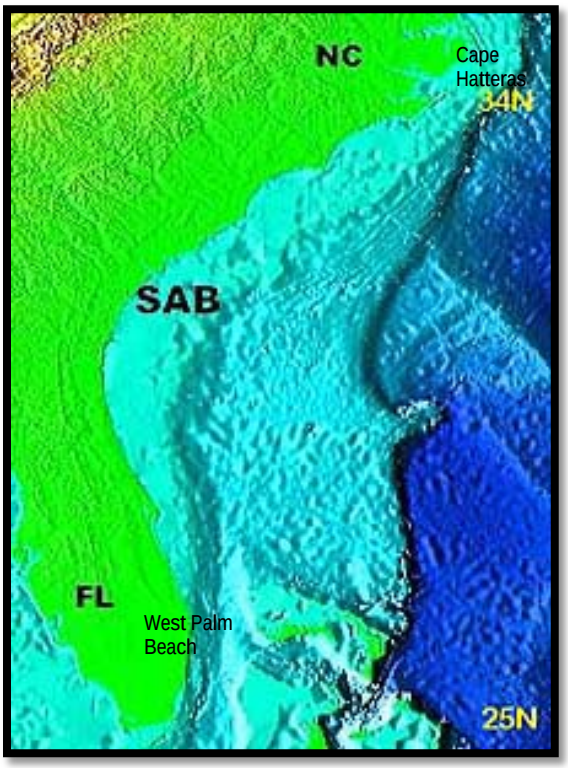

Figure 1: South Atlantic Bight (SAB)

Figure 2: Location of Gray's Reef National Marine Sanctuary

The sanctuary is one of the most popular recreational fishing destinations along the Georgia coast. Fishing for pelagic species, such as King Mackerel, is one of the most prevalent activities, particularly during tournaments. For divers, access to the reef itself requires experience in open-ocean diving; currents can be strong and visibility varies greatly. For those who do not scuba dive or fish, the staff at GRNMS engages the public through extensive land-based education and outreach programs. For scientists, the sanctuary is a living laboratory for a variety of marine research and monitoring projects.

Biological and Physical Resources

Water and Climate

The outer reaches of the SAB are dominated by the Gulf Stream flowing northeastward. The inner area is defined by the curves of the coastline between Cape Canaveral and Cape Hatteras and is dominated by tidal currents, river runoff, local winds, winter storms, hurricanes and seasonal atmospheric changes. GRNMS lies at the break between the inner- and mid-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, which transports and supports many of the tropical fish species and other animals found seasonally in the sanctuary, and which creates numerous eddies containing upwelled nutrient-rich water at their cores. Ocean currents and eddies also transport fish and invertebrate eggs and larvae from other areas, linking this special place to reefs north and south (NMSP 2006; Hare and Walsh 2007).

Contaminants found in GRNMS may be deposited from the atmosphere, transported from land across the inner shelf to the sanctuary, or carried in by Gulf Stream eddies. Studies suggest that the trapping efficiency of the extensive salt marsh systems on the coast and sediments in the nearshore areas decreases concentrations of contaminants moving offshore and affecting the sanctuary (ONMS 2012).

Habitat

GRNMS is not considered a coral reef such as those found in the tropics, as its foundation was not built by living hard corals. Instead, it was formed by the cementing and consolidation of marine and terrestrial sediments (shell fragments, sand and mud) which were originally deposited as a blanket of loose grains between six and two million years ago. Some of these sediments were brought to the coast by rivers and others were probably transported to the region by ocean currents. The "cement" that glued the grains together more than two million years ago was briny calcium-carbonate seawater. The resulting rock that is the foundation of GRNMS is carbonate-cemented sandstone.

The rocky features of the sanctuary vary from flat, semi-smooth surfaces to exposed vertical scarps and ledges with numerous overhangs, crevices and slopes (Riggs et al. 1996). The irregularities of the bathymetry can be attributed to the easily erodible sandstone that has dissolved and pitted, creating the appearance of isolated ledges and patches of hard bottom. Exposed surfaces are colonized to varying extents by algae and sessile and burrowing invertebrates, which in turn provide shelter, food and nursery areas for a large diversity of fish. This structurally-complex assemblage is known as live-bottom habitat.

Live-bottom habitats typically support high numbers of large invertebrates such as sponges, corals and sea squirts. These creatures thrive in rocky areas, where they are better able to attach themselves to the hard substrate as compared to sandy or muddy "soft" bottom habitats. The percent cover of attached benthic species is significantly greater on higher ledges in comparison to the low-relief ledges. In addition, total percent cover - and cover of macroalgae, sponges and other organisms - is significantly lower on low ledges in comparison to medium and tall ledges (NMSP 2006; Kendall et al. 2007; ONMS 2011).

Although GRNMS is the most intensely surveyed live-bottom feature in the region, diver-focused survey methods provided only basic information on the extent and distribution of the live-bottom areas within the sanctuary. Video transects, coupled with side-scan and multi-beam sonar mapping suggest, however, that sand habitats (rippled sand and flat sand) dominate, accounting for 75 percent of the sanctuary area. Approximately 24 percent of the sanctuary is sparsely- or moderately-colonized live bottom, and less than one percent of the sanctuary is considered densely-colonized live bottom (Kendall et al. 2005).

Sediments within the vast areas of sand in the sanctuary are probably re-suspended and redistributed during times of high wave action that accompany winter and tropical storms. These shifting sands can uncover barely buried sandstone rock areas or,

conversely, cover areas that were previously exposed. The effect of storm-suspended sediments has even been observed to scour entire low-relief ledges, removing all but the hardiest of attached marine organisms (McFall pers. comm.).

Living Resources

Invertebrates

Invertebrates are an important form of living marine resources and a vital component of live-bottom habitat. GRNMS supports a high diversity of 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 sea stars, brittlestars, crabs, lobsters, shrimps, bivalves, and snails. The scientific term for the animals living on these hard substrates is “epifauna.” The attached (sessile) epifauna are primarily filter feeders (obtaining nutrition by straining particles of food from the water column), while the more motile (having the power to move) epifauna consist mostly of active predators and surface browsers.

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 a highly diverse and abundant community that comprises mostly annelids (worms), mollusks (clams and snails) and arthropods (mostly crustaceans like small shrimp). Living buried within these sediments are assemblages of relatively sedentary worms, crustaceans, mollusks, echinoderms (sea stars, sand dollars and sea cucumbers), and other invertebrate species commonly referred to as “infauna.” Researchers have estimated that the number of species found in the sandy bottom areas of GRNMS may be as high as 600 species (Hyland pers. comm.). 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 sea stars and crabs, 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.

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. 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

The biologically diverse live-bottom habitat of GRNMS attracts reef-associated fishes including bottom-dwelling and midwater fish species such as sea bass, snapper, grouper and mackerel, as well as their prey. Just over 200 species of fish, encompassing a wide variety of sizes, forms and ecological roles, have been recorded at the sanctuary. 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, seeking refuge within the structure of the reef during the day and emerging at night to feed. Some species of reef-dwelling fish disperse to sandy habitats or to other reef areas north and south or offshore for feeding and spawning. Other reef residents, such as Gag and Black Sea Bass, rely on the inshore areas and estuaries in early life stages.

Many species of reef fish are overfished or subject to overfishing. According to the National Marine Fisheries Service (NMFS), overfished stocks in the waters of the Southeastern U.S. Atlantic include Red Grouper, Red Porgy, Red Snapper and Snowy Grouper. Black Sea Bass, Gag, Red Grouper, Red Snapper, Snowy Grouper, Speckled Hind and Warsaw Grouper are undergoing overfishing.[1] Of these species, Red Snapper, Black Sea Bass and Gag are common at GRNMS, and Red Grouper are occasionally seen.

Recent regional data is showing improvement in the status of Black Sea Bass and Red Snapper, which is reflected in GRNMS. Gag and Scamp, however, have decreased in abundance in visual census transects, and length-frequency measurements of Black Sea Bass, Gag and Scamp (from trap and visual census data) indicate that a large portion of the population is removed upon reaching minimum size, either by fishing or by migration out of the sanctuary. The reduced abundance of these selected key species may inhibit full community development and function in GRNMS (ONMS 2012). In addition, research suggests that a very low level of increased fishing pressure on the sanctuary's ledges could reduce local abundance of snapper-grouper complex species within a short amount of time (Kendall 2008).

In addition to reef-associated fishes, GRNMS serves as habitat for a number of other fish species. King Mackerel, Spanish Mackerel, Great Barracuda, and Cobia make up the majority of coastal pelagic species that are targeted for recreational angling. The high abundance of schooling baitfishes, such as Spanish Sardine and Round Scad, likely attract these pelagic predators to sanctuary waters. There is considerable but

[1] http://www.nmfs.noaa.gov/sfa/statusoffisheries/SOSmain.htm

unmeasured fishing effort on King and Spanish Mackerel during tournaments and at other times. Federal management of coastal pelagic species has resulted in sustainable fisheries for King Mackerel and the stock is not currently overfished (SEDAR 16 2008).

Approximately 30 species of fish spawn in the vicinity of GRNMS and only a third of these are reef-associated (Walsh et al. 2006, Sedberry et al. 2006). The large areas of sandy habitat in the sanctuary form another habitat that is not as rich in fish species, and is not targeted by recreational anglers. These sandy areas support a number of species including flounders, tonguefishes, cusk eels, stargazers, and lizardfishes (Gilligan 1989, Walsh et al. 2006).

Sea turtles

Sea turtles known to occur in the South Atlantic Bight include the Kemp's ridley, hawksbill, leatherback, green and loggerhead. Kemp's ridley, hawksbill, leatherback and green sea turtles are federally listed as endangered under the Endangered Species Act (ESA). Loggerhead sea turtles are divided into nine distinct population segments. The Northwest Atlantic Ocean population is the most abundant sea turtle population in the SAB and is listed as threatened under the ESA. GRNMS is an important area for juvenile and adult loggerheads to rest and forage throughout the year, especially during the summer nesting season when females may nest two to four times on area beaches laying approximately 120 eggs per nest.

Marine mammals

Marine mammals on the southeastern United States continental shelf include cetaceans (whales and dolphins), occasional pinnipeds (harbor seals and sea lions) and sirenians (West Indian manatees). Atlantic Spotted Dolphins and Bottlenose Dolphins are the most common marine mammals at GRNMS. The bottlenose dolphin has been designated as depleted under the Marine Mammal Protection Act. There is currently insufficient data on populations of spotted dolphins in the western North Atlantic Ocean to support a designation. There are four species of ESA-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 off coastal Georgia and northern Florida – has been observed in GRNMS, with sightings occurring during the winter.

Pelagic 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 marine birds occur off the southeastern coast of the United States. Seabirds observed in the sanctuary area include gulls, petrels, shearwaters, Northern Gannet, phalaropes, jaegers and terns. To date, species such as the Band-rumped Storm-Petrel and Audubon's Shearwater have not been observed in GRNMS, although records exist for offshore Georgia. No records for the threatened Roseate Tern

are known from offshore Georgia, including GRNMS. NOAA, however, recognizes the waters of GRNMS may be important as a "stop-over" site for various seabird species that move over long distances.

Invasive species

Non-indigenous (invasive) species that have been documented in GRNMS include the green mussel, acorn barnacle, orange cup coral and lionfish. The green mussel, acorn barnacle and orange cup coral have only been found at the surface on artificial substrate (the data buoy located in GRNMS) and not on the hard bottom. Two species of lionfish, however, have become well established in the western Atlantic Ocean and the range and abundance is rapidly increasing in the region (Ruiz-Carus et al. 2006, Morris and Whitfield 2009). The first sighting of lionfish in GRNMS was documented in 2007 and no lionfish were observed again (including during extensive visual surveys in June 2011) until 2012. Beginning in May 2012, lionfish of varying sizes were more commonly found in the sanctuary and were observed associated with densely-colonized live-bottom habitat.

Socioeconomic Resources

Recreational Fishing

GRNMS attracts recreational fishing enthusiasts. Fishing is allowed in the sanctuary using rod and reel or handline fishing gear. Although there is no primary access point to the sanctuary, a variety of public and private boat launches and marinas extending from Savannah to St. Mary's, Georgia, serve as staging sites for sanctuary users. Surveys indicate the majority of users in GRNMS are recreational fishing with rod and reel fishing gear (Ehler and Leeworthy 2002).

Recreational fishing at GRNMS occurs year-round but at varying levels of intensity. Most recreational fishing activities occur on weekends. The highest levels of use are during annual fishing tournaments for King Mackerel that occur from May through September. Multiple sources, including aerial photography and on-water Georgia DNR patrol boat records from 1999-2007 were used to determine the number and location of boats in GRNMS, and almost 1300 boat locations were identified (Ehler 2010). Approximately 50% of these boat sightings occurred on fishing tournament days. Analysis of the economic impact of a research area in GRNMS estimated that total expenditures of saltwater fishing in Georgia in 2006 were $119 million. Expenditures related to fishing in GRNMS total $1.5 million annually (Ehler 2010).

Because anchoring is prohibited in the sanctuary, recreational fishing is conducted by trolling or drifting for pelagic species or drift fishing for bottom (reef-related) species of fish. Recreational bottom anglers sometimes prefer the use of marker buoys that are

placed on the bottom with a float at the surface to mark and relocate a fishing spot as their boat drifts.

Commercial Fishing

With designation of GRNMS in 1981, commercial fishing gear such as traps and bottom trawls was prohibited to protect the live-bottom habitat. Regulations with the revision of the GRNMS Management Plan in 2006 now limit fishing in the sanctuary to rod and reel and handline gear only. There are no known commercial fishing operations using GRNMS at this time.

Recreational Diving

A small amount of scuba diving by more experienced divers occurs year-round, although most diving activities occur on weekends during warmer months of the year. Analysis derived from surveys of users of GRNMS on their knowledge, attitudes and perceptions (Leeworthy 2013) indicate that approximately 8% of visitors to the sanctuary dive. Diving is sometimes done in conjunction with recreational fishing activities, although spearfishing is prohibited in the sanctuary. Underwater photography and nature observing are also popular activities for scuba divers.

Research and Education

Scientific research and monitoring are increasingly important activities for GRNMS, particularly since the research area was designated in 2011. The sanctuary is relatively shallow and affords the opportunity for scientists to conduct experiments and make observations using scuba in a productive reef habitat that is relatively close to shore. The proximity of the sanctuary to coastal universities and marine research laboratories makes GRNMS a logical natural area that can be used to further understanding and management of these complex ecosystems. Likewise, GRNMS has been increasingly utilized as a living laboratory for education purposes both at the K-12 and the university level.

GRNMS Infrastructure

Facilities

GRNMS currently occupies a 4000 ft^2 one-story office building on the campus of the Skidaway Institute of Oceanography (SkIO; part of the University of Georgia) on Skidaway Island near Savannah, Georgia. Although the building is leased from SkIO, it was built to the sanctuary's specifications and includes offices, a conference room, computer operations and storage. Sanctuary vessel docking, dive locker and other field equipment storage are also located nearby on the SkIO campus. The location links the sanctuary with other academic institutions of the University System of Georgia such as

Georgia Southern University and the Georgia Institute of Technology, which have facilities and programs on the SkIO campus.

The current office facility, however, provides no public visibility, is remote from the main population area in Savannah, and is difficult to find. Long-term facility goals outlined in the 2010 GRNMS Master Plan suggested that improvements to the existing facilities would further support research and monitoring endeavors. The facilities plan stated that in the long-term, a showcase GRNMS facility is needed to attract top researchers, accommodate growth of staff, storage needs and expanding education programs. Such a facility would also directly support the staff to meet the education and outreach needs, as well as maintain the science and research presence in the sanctuary.

Because GRNMS is located offshore, there is limited opportunity for those who are casually interested in the sanctuary to experience its environment. For this reason, public knowledge about GRNMS is very limited, but could be improved by a visitor center in downtown Savannah to support outreach and education. A report entitled "Downtown Savannah Outreach Facility Strategy" completed in 2011 concluded that, with nearly seven million tourists annually and a growing resident population, the demand for more educational "attractions" is warranted and that the community is supportive of GRNMS and would welcome a downtown visitor center. The study suggested that in the short- and mid-term, the sanctuary should continue and expand its outreach and communications partnerships and that in the long term the sanctuary should implement a dedicated physical location for a GRNMS visitor center.

Vessels and vehicles

GRNMS currently operates two vessels for research and education. The sanctuary adapted a new 41-ft. catamaran in 2008 and has a 36-ft. twin-outboard. The vessels serve as the principal research vessels for the sanctuary but also are used extensively for monitoring and education programs. Since implementation of the research area at GRNMS, there has been additional interest in field research that occasionally exceeds the capabilities of our vessels. There is a need for a vessel that can provide multiple-day and overnight work for researchers. The sanctuary also operates three vehicles, including two hybrids for passenger use and a truck for equipment transport.

Staff and volunteers

The sanctuary's mission is supported by eight full-time GRNMS staff, a significant portion of a regional full-time staff member, a NOAA Corps officer and occasional part-time interns. Staffing levels are inadequate, however, as GRNMS has been functioning without a full-time research coordinator and without a full-time deputy superintendent. ONMS staffing plans call for full-time research coordinators at all sanctuary sites and deputy superintendents at most sites. Hiring a research coordinator would allow the superintendent, who also serves as research coordinator, to fulfill the full suite of duties for that position. The scope of duties for the remainder of the staff, such as education

and outreach, may also adjust in the analysis that takes place when the superintendent's position is restored to a full-time function.

The GRNMS Sanctuary Advisory Council comprises 19 members. These non-governmental volunteers and government agency representatives on the council advise the sanctuary on research and monitoring, enforcement, education and outreach, and management. Council members represent the sanctuary and community stakeholders, including research, education, diving, fishing, conservation, management, enforcement and the community at large. Advisory council members serve as liaisons between their constituents and the sanctuary, keeping sanctuary staff informed of issues and concerns and performing outreach to their respective constituents on the sanctuary's behalf. The advisory council played a large role in the development of this draft management plan by making recommendations based on their experiences with their constituents and their evaluation of the existing (2006) management plan.

Utilizing volunteer support for outreach and citizen science programs (e.g., Team Ocean scientific diving, and phytoplankton monitoring) leverages limited sanctuary staffing resources and provides an opportunity for citizens to contribute to and protect something they care about. Gray's Reef Team Ocean divers help with monitoring and research, and many volunteers help with teacher workshops and large outreach events such as the Gray's Reef Ocean Film Festival. Overall, more than 200 volunteers work annually to collect data, give presentations, advise the sanctuary, and provide support for workshops and outreach events.

Other partnerships

Because community engagement is essential to achieving effective sanctuary management, maintaining partnerships with intra-agency and inter-agency affiliates, environmental non-governmental organizations (NGOs) and the public at large is a high priority. The sanctuary also benefits immensely from partnerships within NOAA, private businesses, research, educational and cultural institutions, and community groups. These entities provide expertise, assets and funding to support the mission of the sanctuary. In exchange for field logistics support, university and agency research partners conduct experiments, surveys and monitoring in the sanctuary. This has resulted in over 50 scientific publications since 2000, based on research conducted in the sanctuary at very little cost to ONMS. Maintaining effective relationships with all of these partners is crucial to better management and protection of GRNMS, increasing knowledge of regional activities, and understanding how those activities may affect GRNMS.

Alternatives Considered

There are three alternatives that are considered for this action:

1. Alternative 1: No action - Leave the current (2006) GRNMS management plan in place and do not revise existing regulations to prohibit attempting to anchor and to allow use of weighted marker buoys in the sanctuary for diving and fishing.

With the no-action alternative, GRNMS would continue to operate with the 2006 Final Management Plan as the framework for sanctuary activities. The 2006 plan was designed to address impacts from human activities, such as anchoring, diving, marine debris, and fishing, as well as administration, research, exploration, evaluation, and education needs. The 2006 plan describes the management strategies, which encompass the program areas of marine resource protection, research and monitoring, education and outreach, exploration, administration, and performance evaluation. The 2006 plan is incorporated by reference.

2. Alternative 2: Adopt and implement the proposed management plan and make only the anchoring clarification to existing GRNMS regulations.

As stated in the Purpose and Need section above, a revised GRNMS management plan is needed to meet significant challenges that have evolved since 2006. Among those issues are climate change and invasive species in the sanctuary, current limited financial and personnel resources, and the need for more community visibility. A new plan is also needed to better incorporate the research area around which most science activities are now focused. The result of a recent survey of user and non-user knowledge, attitudes and perceptions also heightens the need for an assessment of education and outreach programs and the sanctuary's constituent base. In addition, technologies in science and communication have advanced significantly since 2006.

The objectives and activities in the Final Management Plan are derived from the sanctuary vision, mission and goals, evaluation of the 2006 management plan, public scoping, current resource conditions and protection issues, implementation of the research area, new technologies, emerging issues and public awareness needs. The plan is divided into three distinct but complementary themes each of which concurrently allows us to achieve our goals, fulfill our vision and meet a variety of objectives:

Maintain or Improve the Condition of all Sanctuary Resources

The purpose of the activities in this section is to strengthen resource protection of all sanctuary resources.

Increase the Awareness of, and Support for, GRNMS

The purpose of the activities in this section is to address the education and outreach needs to attain the next level of awareness and support for the sanctuary.

Advance Collaborative and Coordinated Management
The purpose of the objectives and activities in this section is to outline the activities that enable all the other objectives and activities in the management plan and to increase efficiencies and the effectiveness of GRNMS management.

Table 1 – Comparison of 2006 and 2014 Management Plan Activities and Effects

Activity Type	Completed	Ongoing and Included in 2014 Management Plan	New to 2014 Management Plan
Resource Protection			
2006 Management Plan			
Prevent damage to benthic habitats from anchoring	X		
Prevent diver impacts on benthic habitat		X	
Remove marine debris and prevent new debris from accumulating (In 2014 management plan, focus on: Marine debris monitoring and assessment)		X	
Increase protection for fish and invertebrate species	X		
Enhance enforcement efforts		X	
Enhance coordination and cooperation with SAFMC, NOAA Fisheries Service, and GADNR on marine reserves and other regional programs		X	
2014 Management Plan			
Regulatory changes (marker buoy exemption and anchoring regulation enhancement), permitting			X
Research and Monitoring			
2006 Management Plan			
Investigate ecosystem processes		X	
Investigate designation of a marine research area	X		
Assess and characterize sanctuary resources (In 2014 management plan, focus on: climate change scenario, habitat mapping, contaminants monitoring, sanctuary use data)		X	

Activity Type	Completed	Ongoing and Included in 2014 Management Plan	New to 2014 Management Plan
Maintain and enhance monitoring programs (In 2014 management plan, focus on: water quality, ocean observations, habitat and living marine resources monitoring, investigations and data analysis)		X	
2014 Management Plan			
Connected areas working group			X
Education and Outreach			
2006 Management Plan			
Conduct public awareness programs (In 2014 management plan, focus on: education and outreach for water quality, ocean observations, habitat and living marine resources and regulatory changes and voluntary compliance)		X	
Create and provide scholastic programs in ocean science education		X	
Maintain existing and develop new sanctuary exhibits		X	
Increase outreach to minority communities	X		
Develop volunteer programs to support GRNMS		X	
2014 Management Plan			
Articulate desired outcomes for education and outreach programs, assess and adjust existing programs, develop new programs, implement programming.			X
Administration			
2006 Management Plan			
Improve overall site staffing and support capabilities		X	
Maintain and enhance the infrastructure of the site		X	
2014 Management Plan			
N/A			
Performance Evaluation			
2006 Management Plan			
Develop and implement a performance evaluation program for GRNMS		X	
2014 Management Plan			
N/A			

As outlined in the above Table 1, the majority of activities from the 2006 GRNMS Management Plan are ongoing and a few have been completed. The effects of completed or ongoing actions have already been analyzed according to NEPA requirements during the 2006 management plan review, regardless of whether the plan is updated. Therefore, they will have no effect beyond what has been analyzed in 2006 and are not addressed in the following environmental consequences section.

The proposed management plan for GRNMS contains six objectives that all focus on the program's primary purpose of resource protection as well as the science that supports management decision-making. The objectives roughly match sanctuary resources (water, habitat and living marine resources) as they were assessed in the 2012 Condition Report Addendum (ONMS 2012). In addition, human uses that have the potential to affect GRNMS resources are addressed. These activities outline the needed research and monitoring to assess environmental conditions and increase the understanding of sanctuary resources. The activities are also designed to improve the condition of resources, such as fish in relation to sustainable fishing, that are considered "fair" rather than "good" (ONMS 2012; see Appendix C).

The activities proposed in the revised management plan also address potential threats to biological and physical resources through targeted, enhanced outreach on the importance of those resources, and the need to protect them. The audiences for the outreach programs include both users and non-users of the sanctuary. The purposes of programming would be to alter human behavior such that users of the sanctuary protect the resources and comply with regulations, and non-users of the sanctuary would become more aware and inclined to support GRNMS and protection of sanctuary resources.

Beyond the continuation of many activities from the 2006 GRNMS Management Plan, there are only three new activities presented in the 2014 Management Plan under Alternative 2: assessment of the education and outreach programming, regulatory changes, and the creation of a connected areas working group.

The new activity to assess outreach and education programming is expected to have no potential effect on the environment. The intent will be to continue, but more effectively target education and outreach programming. Therefore, the effects are expected to be the same as ongoing education and outreach activities and they are not addressed in the following environmental consequences section.

In addition, there is a new activity to convene a working group to explore potential areas outside of GRNMS that may have connectivity with GRNMS to enhance resource protection. Areas and resources that may have connectivity with the sanctuary would be considered for additional protection, through a sanctuary boundary expansion or working with other agencies to result in increased protection. At this time, there is no activity planned beyond this working group. Any action resulting from the working group (e.g., expanding the GRNMS boundary) would require further analysis (e.g., preparation of an environmental impact statement) in order to comply with NEPA and

the NMSA. Overall, we believe this new set of management priorities will provide beneficial effects for the resources of GRNMS over the next 5-10 years.

Since the 2006 Management Plan was enacted, the need for a clarification to the anchoring prohibition became apparent when a recreational fisherman was found attempting to anchor but stated he was "not anchored." The clarification – adding "...or attempting to anchor" to the existing regulation would be proposed with Alternative 2 and is analyzed in the environmental consequences section that follows. An exemption to current GRNMS regulations to allow the use of weighted marker buoys would *not* be implemented under this alternative.

3. Alternative 3: Adopt and implement the proposed management plan and propose a regulatory clarification to the anchoring prohibition along with an exemption for the use of weighted marker buoys in GRNMS (Preferred Alternative).

This alternative includes all elements of Alternative 2 above in addition to a proposed exemption to existing GRNMS regulations to allow the use of weighted marker buoys for diving safety and fishing convenience.

Weighted marker buoys would need to be continuously tended and used during otherwise lawful fishing or diving activities. Weighted marker buoys could not be attached to a vessel and could not be capable of holding a boat at anchor. Weights used with a marker buoy could not have a combined weight of more than ten (10) pounds and could not be attached with line that is greater than one-fourth inch (1/4"). Weighted marker buoy would need to be removed from the sanctuary within twelve (12) hours of deployment. Any weighted marker buoy that is not continuously tended could be removed by authorized personnel without notice. This is NOAA's preferred alternative.

Environmental Consequences

The changes to activities in the GRNMS management plan and proposed rulemaking will not result in any significant impacts. The following discussion provides analysis of the effects of the three alternatives on sanctuary resources described in the Affected Environment section (page 6).

Alternative 1 - No-Action

Under the no-action alternative, GRNMS would continue to operate with the 2006 management plan as the framework for sanctuary activities. The goals and objectives of the 2006 management plan would remain in place and unchanged. In addition, no changes would be proposed to existing regulations, including a regulatory clarification on the anchoring prohibition or an exemption for the use of weighted marker buoys in the sanctuary. The environmental impacts of the 2006 management plan were analyzed under NEPA as follows:

- *Anchor prohibition:*

NOAA concluded that 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 was seen as a proactive, cost effective, and efficient use of resources to prevent additional damage or destruction to vital habitat. Prohibiting anchoring at GRNMS improves 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.

- *Allowable fishing gear:*

NOAA concluded that it was appropriate to prohibit the use of certain gear that was allowable under existing regulations prior to 2006 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 also had little socioeconomic impact.

- *Spearfishing prohibition:*

NOAA deferred taking action on a spearfishing prohibition as was proposed in the 2003 draft Management Plan/draft Environmental Impact Statement for a period of two years while additional information was collected on this activity in GRNMS. The issue, however, was reviewed again and the prohibition became effective in March 2010.

- *Adding Submerged Lands to the GRNMS Boundary*

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

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

The existing regulation prohibited constructing any structure other than a navigation aid. The revision extended this prohibition to placing or abandoning any structure, material or other matter on the submerged lands of the Sanctuary. The revised regulation was precautionary and did not affect current activities or resources.

- *Using Underwater any Explosives, or Devices That Produce Electric Charges Underwater*

This revision prohibited the use underwater of explosives and devices that produce electric current, without reference to the taking of a marine animal and removed the reference to poisons, which is already prohibited by the regulation against discharges. This change assisted enforcement by removing the requirement that explosives or devices producing electric current were being used to take marine animals. There were no socioeconomic impacts expected to visitors of GRNMS. There are positive impacts to marine life because the revision is easier to enforce.

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

These changes better protect the historic resources at GRNMS. No socioeconomic impacts or biological impacts were anticipated. Historical resources are afforded better protection because the regulation would be clearer and easier to enforce.

- *Permit procedures and criteria*

These changes made the permit process clearer in terms of the scope, purpose, manner, terms and conditions of permits issued at GRNMS.

- *Environmental and cumulative impacts*

Overall, actions from the 2006 Management Plan and rulemaking improved the ability of the ONMS 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.

Biological and Physical Resources

GRNMS designated the research area in 2011 that now provides the umbrella for the majority of scientific activities. While proposed research area activities were outlined in the final environmental impact statement for designation of the research area (ONMS 2011), they are absent from the 2006 GRNMS management plan. The 2006 plan describes many research and monitoring projects that have either been accomplished or are ongoing in the context of research area projects, although the level of field operations remains essentially the same overall. The 2006 plan reflects outdated information about the condition of all sanctuary resources. Emerging issues, such as the effects of invasive lionfish or climate change on sanctuary resources, are also not addressed.

Many education and outreach programs outlined in the 2006 management plan have also been implemented. Public comment and a recent knowledge, attitudes and perceptions survey (Leeworthy 2013) indicates the need for reevaluation of current programming to achieve increased awareness of, and support for, GRNMS and consequent protection of the biological and physical resources.

While the revision of a management plan does not, in itself, enable or prevent implementation of any particular strategy or activity, without the revision, the potential beneficial effects (e.g., addressing emerging issues like invasive lionfish) from implementation of the revised management plan may not be realized because the overall management model would continue to be outmoded.

Under the no-action alternative (Alternative 1), no regulatory clarification language would be proposed for the existing anchoring prohibition. Enforcement officials have experienced occasions where sanctuary users were “attempting” to anchor in GRNMS despite the prohibition, but because the anchor had not yet been “set”, it was unclear whether an anchoring violation has occurred. With the proposed clarification, enforcement action can be taken when people are observed attempting to anchor even if the anchor has not yet been set in the seabed.

Under the no action alternative (Alternative 1) this regulatory language would remain more difficult to enforce, complicating enforcement efforts by requiring law enforcement officers to show that an anchor was fully “set”. By not adding “or attempting to anchor” to the existing regulation for anchoring, this alternative is expected to result in less than significant adverse effects on resources because the prohibition is not made more robust from an enforcement and prosecutorial standpoint and attempts to anchor may continue effecting biological and physical resources. While the impact of an anchor on the fragile live bottom of GRNMS can have a localized but long lasting effect on resources, these impacts are expected to be minimal because attempts to anchor have been shown to be rare.

Under the no-action alternative no exemption for the use of weighted marker buoys would be proposed. Currently, GRNMS regulations prohibit the “placement” of any material on the bottom, which prevents the use of weighted marker buoys that are

placed on the bottom for recreational diving safety and recreational fishing convenience. When compared to alternative 3, a less than significant beneficial effect on biological and physical resources would be expected under the no-action alternative because marker buoys would continue to be prohibited, thus small weights - attached to a surface marker – would not be placed on bottom habitat in GRNMS. While NOAA does not have a clear estimate of how much damage would be caused by marker buoys, it believes that very few visitors to the sanctuary have in the past used marker buoys for either fishing or diving, therefore only a small beneficial effect is expected from continuing to prohibit the use of weighted marker buoys.

Socioeconomic Resources and Safety

The absence of a clarification to the anchoring regulation could be expected to have no effect on socioeconomic resources since the status quo would continue to prohibit anchoring and therefore few attempts to anchor are expected to occur. The clarification to make the regulation more robust would not be expected to have any impact on the social or economic well-being of the public and users because it does not change the fact that anchoring was already prohibited, so there will be no reduced access of the sanctuary to the public.

GRNMS regulations prohibit the "placement" of any material on the bottom, which prevents the use of weighted marker buoys that are placed on the bottom for recreational diving safety and recreational fishing convenience. Public comment and sanctuary advisory council discussion during scoping for the management plan review revealed strong support for an exemption in the current regulations to allow the use of weighted marker buoys. With no regulatory exemption proposed for the use of weighted marker buoys under the no-action alternative, recreational divers would not have the option of using weighted marker buoys to increase human safety. Markers provide a stationary point for divers to more accurately locate a site and for boat operators to find divers on their ascent. Because the no-action alternative would continue to ban this safety measure for the small number of recreational divers in GRNMS, it would result in less than significant adverse effects on human safety, compared to action alternative 3. Safety and socioeconomic effects on recreational anglers would also be expected to be adverse but less than significant because the use of marker buoys is more of a convenience than a necessity for fishing in GRNMS.

GRNMS Infrastructure

As noted above, while the revision of a management plan does not, in itself, enable or prevent implementation of any particular strategy or activity, including those related to staffing (e.g., the need for a research coordinator), without the revision, implementation of the revised management plan may not be realized because the overall management model would continue to be outmoded.

<u>Alternative 2 - Adopt and implement the proposed management plan and propose only the anchoring clarification to existing GRNMS regulations.</u>

Under Alternative 2, NOAA would adopt the new GRNMS vision and mission along with revised goals and objectives. The proposed management plan of activities would also be adopted with this alternative. As outlined in the Alternatives Considered section above, the majority of activities from the 2006 GRNMS Management Plan are ongoing or completed. The effects of completed or ongoing actions have already been analyzed according to NEPA requirements during the 2006 management plan review (see Table 1, page 17), regardless of whether the plan is updated. Therefore, they will have no effect beyond what has been analyzed in 2006 and are not addressed in the following environmental consequences section.

Beyond the continuation of many activities from the 2006 GRNMS Management Plan, there are only three new activities presented in the 2014 Management Plan under Alternative 2: assessment of the education and outreach programming, regulatory changes, and the creation of a connected areas working group.

The new activity to assess outreach and education programming is expected to have no potential effect on the environment. The intent will be to continue, but more effectively target education and outreach programming. Therefore, the effects are expected to be the same as ongoing education and outreach activities analyzed in the 2006 environmental impact statement and they are not addressed in the following environmental consequences section.

In addition, the new activity to work with the Sanctuary Advisory Council on convening a working group to explore potential areas outside of GRNMS that may have connectivity with GRNMS is expected to have no potential effect on the environment because it is the Sanctuary Advisory Council, not NOAA, that would be convening the working group. Moreover, any action beyond convening a working group (e.g., expanding the GRNMS boundary), which is not currently ripe for decision and therefore not included in the new management plan, may require further analysis (e.g., preparation of an environmental impact statement) in order to comply with NEPA and the NMSA.

As noted in the GRNMS Infrastructure section of the Affected Environment, a “dedicated physical location for a GRNMS visitor center” has been suggested. Raising public awareness of GRNMS is difficult because of the sanctuary’s remote location offshore and the office’s location on Skidaway Island outside of downtown Savannah. The environmental consequences of a new visitor center cannot be determined until action is ripe for decision, and would be analyzed in a separate public process at the appropriate time. As described in more detail below, NOAA believes this new set of management priorities will provide less than significant beneficial effects for the resources of GRNMS over the next 5-10 years.

The clarification to the existing anchoring regulation would be implemented. An exemption for the use of weighted marker buoys would not be implemented.

Biological and Physical Resources

NOAA anticipates that the proposed addition of "...or attempting to anchor" to the existing anchoring prohibition would result in less than significant beneficial effects for biological and physical resources because enforcement action can be taken when people are observed attempting to anchor even if the anchor has not yet been set in the seabed. This proposed regulatory action with Alternative 2 is designed to help prevent the use of damaging anchors on live-bottom habitat because a more robust regulation would enhance regulatory compliance and enforcement. While the impact of an anchor on the fragile live bottom of GRNMS can have a localized but long lasting effect on resources, the positive impact of enhancing regulatory compliance and enforcement are expected to be minimal because attempts to anchor have been shown to be rare.

Under Alternative 2, no exemption for the use of weighted marker buoys would be proposed. Similar to Alternative 1, and compared to alternative 3, this alternative would be expected to result in less than significant beneficial effect on biological and physical resources because marker buoys would continue to be prohibited, thus weights - attached to a surface marker – would not be placed on live-bottom habitat in GRNMS.

Socioeconomic Resources and Safety

Only the clarification for the anchoring regulation would be proposed under Alternative 2, which could be expected to have less than significant beneficial effects on socioeconomic resources since the addition of "...or attempt to anchor" would make the regulation more robust. With the proposed clarification, enforcement action can be taken when people are observed attempting to anchor even if the anchor has not yet been set in the seabed. Sanctuary resources would be better protected for the benefit of all sanctuary users including researchers, educators, divers and fishermen.

Similar to Alternative 1, with no regulatory exemption proposed for the use of weighted marker buoys under Alternative 2, NOAA expects a less than significant adverse socioeconomic effect on recreational divers because the status quo would remain in place. Divers would not be allowed to use markers to provide a stationary point to more accurately locate a site and for boat operators to find them on their ascent. Recreational anglers would also be less than significantly adversely affected, because use of marker buoys is more of a convenience than a necessity for fishing in GRNMS.

GRNMS Infrastructure

The objectives focused on GRNMS infrastructure, volunteers, annual planning, and community and partnership enhancements are the foundation that makes the other activities possible. The overall effect on GRNMS management capabilities is expected to be negligible.

Alternative 3 (Preferred Alternative) - Adopt and implement the proposed management plan in this document; propose a clarification to the anchoring regulation along with an exemption for the use of weighted marker buoys in GRNMS.

Under Alternative 3, the preferred alternative, NOAA would adopt the new GRNMS vision and mission along with revised goals and objectives, and the proposed management plan of activities as in Alternative 2 above. In addition to adding "...or attempting to anchor" to the existing anchoring prohibition language proposed under Alternative 2, Alternative 3 would implement an exemption to existing regulations to allow the use of weighted marker buoys in the sanctuary for diving safety and fishing convenience.

The only difference between alternatives 2 and 3 is the addition of the proposed weighted marker buoy exemption in Alternative 3. Therefore, only the proposed regulatory exemption is analyzed below.

Biological and Physical Resources

The proposed regulatory change to exempt weighted marker buoys is expected to result in less than significant adverse effects on the biological and physical resources of GRNMS. Anchoring in GRNMS is prohibited to protect sensitive bottom habitats, so recreational diving and fishing must be conducted without anchoring ("live-boat" diving, troll or drift fishing). GRNMS regulations also prohibit the "placement" of any material on the bottom, which prevents the use of marker buoys that are placed on the bottom for recreational diving safety and recreational fishing convenience. The proposal to exempt placement on the bottom of weighted marker buoys is primarily for the purpose of enhancing recreational diving and increasing human safety. Markers provide a stationary point for divers to more accurately locate a site and for boat operators to find divers on their ascent. Due to open ocean conditions with strong currents and often limited visibility, GRNMS does not attract many divers. As noted in the Affected Environment section, surveys indicate that a small percentage of visitors to the sanctuary engage in diving. A sizeable increase in divers in GRNMS if marker buoys are allowed is not anticipated due to the open ocean conditions and additional prohibition on spearfishing in GRNMS (ONMS 2009).

Only minor, localized effects would be expected from the weights - attached to a surface marker – temporarily placed on the submerged lands of GRNMS for diving. With proposed regulatory limits, promotion of careful use of weighted marker buoys, and the small number of divers expected in the sanctuary, the potential effects on GRNMS habitat are expected to be less than significantly adverse.

In the past, very few anglers have been observed using weighted markers buoys for fishing in GRNMS. Allowing the use of weighted marker buoys for fishing in GRNMS, however, is expected to result in a slight increase in fishing with weighted marker buoys. As with diving activity, only minor effects would be expected from the weights - attached to a surface marker – temporarily placed on the submerged lands of GRNMS for fishing. With proposed regulatory limits, promotion of careful use of weighted

marker buoys, and the relatively small number of fishermen expected to use weighted marker buoys in the sanctuary, the potential effects on GRNMS habitat are expected to be less than significantly adverse.

Consultation with NOAA Fisheries Service Office of Protected Resources under the Endangered Species Act of 1973 concluded that this action may affect, but is not likely to adversely affect species of ESA-listed whales (North Atlantic right, finback, humpback, sei, and sperm), 5 species of sea turtles (loggerhead, green, hawksbill, Kemp' s ridley, and leatherback), and Atlantic sturgeon, as they can be found in or near the action area. Effects to whales, sea turtles, and Atlantic sturgeon from allowing weighted marker buoys to be used include entanglement in vertical lines.

Socioeconomic Resources and Safety

As noted in the no-action alternative (Alternative 1) above, public comment and sanctuary advisory council discussion during scoping for the management plan review indicated strong support for an exemption in the current regulations to allow the use of weighted marker buoys. The proposed exemption to existing regulations allowing the use of weighted marker buoys in the sanctuary for diving safety and fishing convenience is expected to result in less than significant beneficial effects for recreational divers and fishermen.

Anchoring in GRNMS is currently prohibited so recreational diving must be conducted by “live-boat” and recreational fishing by trolling or drifting with a vessel. GRNMS regulations also prohibit the “placement” of any material on the bottom, which prevents the use of weighted marker buoys that sit on the bottom with a float on the surface to mark recreational divers or recreational fishing locations. The proposal to allow weighted marker buoys is primarily for the purpose of enhancing recreational diving safety. Markers provide a stationary point for divers to more accurately locate a dive site and for boat operators to find divers on their ascent. As noted above in Biological and Physical Resources, GRNMS does not attract many divers. For those who dive in GRNMS, being able to use a marker buoy would provide a benefit of increased safety.

Recreational anglers would be expected to realize less than significant beneficial effects if weighted marker buoys are allowed to mark a fishing location in the sanctuary. The use of marker buoys, however, is more of a convenience than a necessity for fishing in GRNMS. Recreational bottom anglers sometimes prefer the use of weighted marker buoys to mark and relocate a fishing spot as their boat drifts.

GRNMS Infrastructure

Proposing an exemption for weighted marker buoys to be used by recreational users of GRNMS is expected to require some additional staff effort to conduct outreach on the proper equipment and careful use to prevent effects on the sensitive live-bottom habitat. For sanctuary operations, GRNMS staff uses a system that minimizes the

potential for any effect. Staff will be publicizing and promoting that system, although it will not be required by regulation. The overall effect on GRNMS management capabilities is expected to be negligible.

Cumulative Impacts

This section discusses and analyzes the cumulative impacts (effects) of the proposed action when viewed in the context of other past, present, and reasonably foreseeable influences and impacts.

Other activities occurring in the affected environment that could have direct or indirect impacts on the environment include:

- Oil, gas and renewable energy exploration
- Military activities
- GRNMS research area designation
- SAFMC actions addressing declines in reef fish species
- Climate change
- Invasive species

Activities to manage the sanctuary proposed in the revised management plan generally result in beneficial effects to the affected environment. Only very slight adverse effects from adopting the revised management plan and proposing the clarification to the anchoring prohibition and an exemption to existing regulations have been identified. However, the beneficial or adverse impacts do not meet the NEPA threshold for significance because the activities would primarily provide incremental additional resource protection for biological and physical resources and socioeconomic resources and safety of the affected environment.

As described above in the Alternatives Considered section, the majority of activities from the 2006 GRNMS Management Plan are ongoing or completed. The effects of completed or ongoing actions have already been analyzed according to NEPA requirements during the 2006 management plan review, regardless of whether the plan is updated. Therefore, they will have no effect beyond what has been analyzed in 2006 and are not addressed in the cumulative impacts section. Likewise, new activities proposed are not ripe for decision at this time and would be fully analyzed in a separate process (e.g., in preparation of an environmental impact statement) in order to comply with NEPA and the NMSA.

Biological and Physical Resources

<u>Oil, Gas and Renewable Energy Exploration (e.g., seismic surveys)</u>
Offshore exploration for oil, gas and renewable energy sources has the potential to adversely impact the water quality, habitat and living marine resources of the affected

environment. Geological and geophysical testing (e.g., seismic surveys) that precedes exploration also may affect living marine resources. The extent of these activities, however, and the potential to affect GRNMS biological and physical resources is unknown at this time. As described above in the Environmental Consequences section, NOAA anticipates that the proposed addition of "...or attempting to anchor" to the existing anchoring prohibition would result in less than significant beneficial effects for biological and physical resources. The exemption to allow weighted marker buoy use in the sanctuary would result in less than significant adverse effects. Overall, the added effects from the proposed action are expected to result in negligible cumulative effects on biological and physical resources of the affected environment due to the large portion of the U.S. Exclusive Economic Zone that is being proposed for energy exploration in comparison with the small (22 square mile) area of GRNMS. Therefore, the proposed action is not expected to reach any determined level of significance when considered cumulatively with oil, gas and renewable energy exploration.

Military Activities

Ongoing and proposed military activities, primarily U.S. Navy Atlantic Fleet Training and Testing operations, including active sonar, have the potential to adversely impact the habitat and living marine resources of the affected environment. The extent of these activities, however, and the potential to affect GRNMS biological and physical resources is unknown due to national defense protocols. As described above in the Environmental Consequences section, NOAA anticipates that the proposed addition of "...or attempting to anchor" to the existing anchoring prohibition would result in less than significant beneficial effects for biological and physical resources. The exemption to allow weighted marker buoy use in the sanctuary would result in less than significant adverse effects. Overall, the added effects from the proposed action are expected to result in negligible cumulative effects on biological and physical resources of the affected environment due to the expansive portion of the Atlantic Ocean of the eastern United States where Navy activities are conducted in comparison with the small (22 square mile) area of GRNMS. Therefore, the proposed action is not expected to reach any determined level of significance when considered cumulatively with military activities.

GRNMS Research Area Designation

The GRNMS research area became effective in December 2011. The purpose of the research area is to provide a control area within the sanctuary that permits scientists to study a natural near-shore marine community and help determine the effects of natural and human-induced activities on live-bottom habitat resources. Analysis of the research area determined that there would be beneficial effects for biological and physical resources of the affected environment. As described above in the Environmental Consequences section, NOAA anticipates that the proposed addition of "...or attempting to anchor" to the existing anchoring prohibition would result in less than significant beneficial effects for biological and physical resources. The exemption to allow weighted marker buoy use in the sanctuary would result in less than significant adverse effects, but since diving and fishing are not allowed in the research area, the regulations would not have any cumulative effect on the research area. Overall, the added effects of the clarification to the anchoring prohibition are expected to result in less than significant

beneficial effects because incremental additional resource protection for biological and physical resources of the research area should result from the proposed action. Therefore, the proposed action is not expected to reach any determined level of significance when considered cumulatively with the research area designation.

SAFMC Actions Addressing Declines in Reef Fish Species

On a regional basis, the South Atlantic Fishery Management Council (SAFMC) is implementing and considering actions to address the overfished and/or overfishing status of several reef fish species. Certain time-limited prohibitions and spatial closures are being implemented or proposed by SAFMC. As described above in the Environmental Consequences section, NOAA anticipates that the proposed addition of "…or attempting to anchor" to the existing anchoring prohibition would result in less than significant beneficial effects for biological and physical resources. The exemption to allow weighted marker buoy use in the sanctuary would result in less than significant adverse effects. Overall, the added effects from the proposed action are expected to result in negligible cumulative effects on biological and physical resources of the affected environment due to the very large portion of the U.S. Exclusive Economic Zone under SAFMC's jurisdiction compared to the small area (22 square miles) of GRNMS. Therefore, the proposed action is not expected to reach any determined level of significance when considered cumulatively with SAFMC actions.

Climate Change

Climate change, including ocean acidification, is projected to profoundly affect coastal and marine ecosystems on a global scale, and consequences are expected to be manifested in GRNMS as well. Other human-induced disturbances, such as loss of habitat, also influence coastal and marine systems, often reducing the ability of systems to adapt. Specific and reliable forecasts for the marine environment are, however, still not possible and the effects may also vary greatly by region. Overall, climate change is expected to add to the cumulative adverse impacts of both natural and human-caused stressors on resources of the affected environment. As described above in the Environmental Consequences section, NOAA anticipates that the proposed addition of "…or attempting to anchor" to the existing anchoring prohibition would result in less than significant beneficial effects for biological and physical resources. The exemption to allow weighted marker buoy use in the sanctuary would result in less than significant adverse effects. Overall, the added effects from the proposed action are expected to result in negligible cumulative effects on biological and physical resources of the affected environment due to the large portion of the globe that is affected by climate change in comparison with the small (22 square mile) area of GRNMS. Therefore, the proposed action is not expected to reach any determined level of significance when considered cumulatively with climate change.

Invasive Species

The invasive and venomous Indo-Pacific lionfish has been documented in GRNMS, along with the titan acorn barnacle, green mussel, and orange cup coral (ONMS 2012). Of these invasive species, the lionfish has the greatest known potential to alter the biological and physical resources of GRNMS because lionfish are prolific spawners and

voracious predators. As with climate change, invasive species are expected to add to the cumulative adverse impacts of both natural and human-caused stressors on all resources of the affected environment. The proposed action, however, may provide critical information, including more intense monitoring of invasive species, to inform management responses to invasive species impacts. Thus, the proposed action to adopt a new management plan of activities and regulatory changes may somewhat offset the cumulative adverse impacts of invasive species by continuing and enhancing monitoring and study activities on invasive species effects. Cumulatively, however, the added effects from the proposed action (addition of "...or attempting to anchor" to the existing anchoring prohibition and the exemption to allow weighted marker buoys) would result in negligible cumulative effects on biological and physical resources of the affected environment due to the overwhelming issue of invasive lionfish in the Atlantic and Caribbean seas. Therefore, the proposed action is not expected to reach any determined level of significance when considered cumulatively with the threat of invasive species.

Socioeconomic Resources

Oil, Gas and Renewable Energy Exploration

Offshore exploration for oil, gas and renewable energy sources has the potential to adversely impact the biological and physical resources of the affected environment, which in turn could be expected to have adverse effects on socioeconomic resources (fishing, diving, research, etc.) of the affected environment. Geological and geophysical testing (e.g., seismic surveys) that precedes exploration would be expected to have the same adverse effects. As described above in the Environmental Consequences section, NOAA anticipates that the proposed addition of "...or attempting to anchor" to the existing anchoring prohibition would result in less than significant beneficial effects for socioeconomic resources and safety. The proposed exemption to existing regulations allowing the use of weighted marker buoys in the sanctuary for diving safety and fishing convenience is also expected to result in less than significant beneficial effects. Overall, the added effects from the proposed action are expected to result in negligible cumulative effects on socioeconomic resources and safety of the affected environment due to the large portion of the U.S. Exclusive Economic Zone that is being proposed for energy exploration in comparison with the small (22 square mile) area of GRNMS. Therefore, the proposed action is not expected to reach any determined level of significance when considered cumulatively with oil, gas and renewable energy exploration.

Military Activities

Ongoing and proposed military activities, primarily U.S. Navy Atlantic Fleet Training and Testing operations, including active sonar, have the potential to adversely impact the living marine resources and habitat of the affected environment. The effects may in turn adversely impact socioeconomic resources such as recreational diving and research. As described above in the Environmental Consequences section, NOAA anticipates that the proposed addition of "...or attempting to anchor" to the existing anchoring prohibition would result in less than significant beneficial effects for socioeconomic resources and safety. The proposed exemption to existing regulations allowing the use

of weighted marker buoys in the sanctuary for diving safety and fishing convenience is also expected to result in less than significant beneficial effects. Overall, the added effects from the proposed action are expected to result in negligible cumulative effects on socioeconomic resources and safety of the affected environment due to the expansive portion of the Atlantic Ocean of the eastern United States where Navy activities are conducted in comparison with the small (22 square mile) area of GRNMS. Therefore, the proposed action is not expected to reach any determined level of significance when considered cumulatively with military activities.

GRNMS Research Area Designation

The purpose of the GRNMS research area is to provide a control area within the sanctuary that permits scientists to study a natural near-shore marine community and help determine the effects of natural and human-induced activities on live-bottom habitat resources. The proposed revised management plan and regulatory changes benefit users by allowing weighted marker buoys that enhance diving safety and fishing convenience. In terms of socioeconomic resources, the research area was determined to have no impact although a small number of users were expected to be displaced (ONMS 2011). As described above in the Environmental Consequences section, NOAA anticipates that the proposed addition of "...or attempting to anchor" to the existing anchoring prohibition would result in less than significant beneficial effects for socioeconomic resources and safety. The proposed exemption to existing regulations allowing the use of weighted marker buoys in the sanctuary for diving safety and fishing convenience is expected to result in less than significant beneficial effects but since diving and fishing are not allowed in the research area, that regulations would not have any cumulative effect on the research area. Overall, the added effects are expected to result in less than significant beneficial effects because incremental additional protection for socioeconomic resources and safety should result from the proposed action. Therefore, the proposed action is not expected to reach any determined level of significance when considered cumulatively with the research area designation.

SAFMC Actions Addressing Declines in Reef Fish Species

As described above, the SAFMC is implementing and considering actions to address the overfished and/or overfishing status of several reef fish species. As described above in the Environmental Consequences section, NOAA anticipates that the proposed addition of "...or attempting to anchor" to the existing anchoring prohibition would result in less than significant beneficial effects for socioeconomic resources and safety. The proposed exemption to existing regulations allowing the use of weighted marker buoys in the sanctuary for diving safety and fishing convenience is also expected to result in less than significant beneficial effects. Overall, the added effects from the proposed action are expected to result in negligible cumulative effects on socioeconomic resources and safety of the affected environment due to the very large portion of the U.S. Exclusive Economic Zone under SAFMC's jurisdiction compared to the small area (22 square miles) of GRNMS. Therefore, the proposed action is not expected to reach any determined level of significance when considered cumulatively with SAFMC actions.

Climate Change

As described above, climate change is projected to profoundly affect coastal and marine ecosystems including GRNMS. Specific and reliable forecasts for the marine environment are, however, still not possible and the effects may also vary greatly by region. As described above in the Environmental Consequences section, NOAA anticipates that the proposed addition of "...or attempting to anchor" to the existing anchoring prohibition would result in less than significant beneficial effects for socioeconomic resources and safety. The proposed exemption to existing regulations allowing the use of weighted marker buoys in the sanctuary for diving safety and fishing convenience is also expected to result in less than significant beneficial effects. Overall, the added effects from the proposed action are expected to result in negligible cumulative effects on socioeconomic resources and safety of the affected environment due to the large portion of the globe that is affected by climate change in comparison with the small (22 square mile) area of GRNMS. Therefore, the proposed action is not expected to reach any determined level of significance when considered cumulatively with climate change.

Invasive Species

As described above, the invasive and venomous Indo-Pacific lionfish has been documented in GRNMS, along with the titan acorn barnacle, green mussel, and orange cup coral (ONMS 2012). The proposed action, however, may provide critical information, including more intense monitoring of invasive species, to inform management responses to invasive species impacts. Thus, the proposed action to adopt a new management plan of activities and regulatory changes may somewhat offset the cumulative adverse impacts of invasive species on socioeconomic resources (e.g., recreational fishing) and safety by continuing and enhancing monitoring and study activities on invasive species effects. Cumulatively, however, the added effects from the proposed action (addition of "...or attempting to anchor" to the existing anchoring prohibition and the exemption to allow weighted marker buoys) would result in negligible cumulative effects on socioeconomic resources and safety of the affected environment due to the overwhelming issue of invasive lionfish in the Atlantic and Caribbean seas. Therefore, the proposed action is not expected to reach any determined level of significance when considered cumulatively with the threat of invasive species.

GRNMS Infrastructure

Oil, Gas and Renewable Energy Exploration

As described above, offshore energy exploration has the potential to adversely impact biological, physical and socioeconomic resources of the affected environment. Effects on the infrastructure resources of the affected environment, however, would be negligible due to the large portion of the U.S. Exclusive Economic Zone that is being proposed for energy exploration in comparison with the small (22 square mile) area of GRNMS. As described above in the Environmental Consequences section, NOAA anticipates that the proposed regulatory changes in this action are expected to have negligible effects on the infrastructure resources (facilities, staff, volunteers, etc.) of the affected environment. Therefore, the proposed action is not expected to reach any

determined level of significance when considered cumulatively with oil, gas and renewable energy exploration.

Military Activities

Ongoing and proposed military activities, primarily U.S. Navy Atlantic Fleet Training and Testing operations, including active sonar, is expected to have negligible effects on the infrastructure resources (facilities, staff, volunteers, etc.) of the affected environment due to the expansive portion of the Atlantic Ocean of the eastern United States where Navy activities are conducted in comparison with the small (22 square mile) area of GRNMS. As described above in the Environmental Consequences section, NOAA anticipates that the proposed regulatory changes in this action are expected to have negligible effects on the infrastructure resources (facilities, staff, volunteers, etc.) of the affected environment. Therefore, the proposed action is not expected to reach any determined level of significance when considered cumulatively with military activities.

GRNMS Research Area Designation

The proposed revised management plan and regulatory changes are expected to have negligible effects on the infrastructure resources of the affected environment since there is no infrastructure in place in the research area itself. In combination with the GRNMS research area the cumulative effects are negligible. As noted above, the revision of a management plan does not, in itself, enable or prevent implementation of any particular strategy or activity, including those related to staffing.

SAFMC Actions Addressing Declines in Reef Fish Species

SAFMC actions to address the overfished and/or overfishing status of several reef fish species in combination with the proposed action is expected to result in negligible effects on infrastructure resources of the affected environment due to the very large portion of the U.S. Exclusive Economic Zone under SAFMC's jurisdiction compared to the small area (22 square miles) of GRNMS. As described above in the Environmental Consequences section, NOAA anticipates that the proposed regulatory changes in this action are expected to have negligible effects on the infrastructure resources (facilities, staff, volunteers, etc.) of the affected environment. Therefore, the proposed action is not expected to reach any determined level of significance when considered cumulatively with SAFMC actions.

Climate Change

Climate change is projected to profoundly affect coastal and marine ecosystems including GRNMS. The effects on the infrastructure resources of the affected environment would be negligible due to the large portion of the globe that is affected by climate change in comparison with the small (22 square mile) area of GRNMS. As described above in the Environmental Consequences section, NOAA anticipates that the proposed regulatory changes in this action are expected to have negligible effects on the infrastructure resources (facilities, staff, volunteers, etc.) of the affected environment. Therefore, the proposed action is not expected to reach any determined level of significance when considered cumulatively with climate change.

Invasive Species

As described above, invasive species have been documented in GRNMS. The proposed action, however, may provide critical information, including more intense monitoring of invasive species, to inform management responses to invasive species impacts. Infrastructure resources are not expected to reach effects beyond negligible because GRNMS staff incorporate invasive species monitoring in vessel, dive and other operations with other science projects. Thus, the proposed action (addition of "...or attempting to anchor" to the existing anchoring prohibition and the exemption to allow weighted marker buoys) would result in negligible cumulative effects on infrastructure resources of the affected environment. Therefore, the proposed action is not expected to reach any determined level of significance when considered cumulatively with the threat of invasive species.

Conclusions

The preferred alternative to adopt the regulatory changes as described in Alternative 3 and analyzed for cumulative impacts considered together with other natural and human-induced effects to sanctuary resources, result in negligible effects to these resources. Overall, no impacts meet the NEPA threshold for significance.

Appendices

Appendix A: References

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Personal Communications

Hyland, J., NOAA NCCOS, Center for Coastal Environmental Health and Biomolecular Research, Charleston, SC.

McFall, G.B., NOAA Gray's Reef National Marine Sanctuary, Office of National Marine Sanctuaries, Savannah, GA.

Additional Website Resources

Gray's Reef National Marine Sanctuary Web Site: http://graysreef.noaa.gov/

Office of National Marine Sanctuaries Web Site: http://sanctuaries.noaa.gov/

Appendix B: Purposes and Policies of the NMSA as Amended (16 USC §1431 *et seq*.)

(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.

Appendix C: Responses to Public Comments

During the public comment period, four (4) written comments on the proposed rule were received through the electronic rulemaking portal http:// www.regulations.gov. Three (3) public hearings were also held to receive comment, but no members of the public attended. The written comments were grouped into two (2) general topics that are summarized below, followed by NOAA's response.

Comment 1: NOAA should move forward with the proposed rule, specifically the exemption for weighted marker buoys.
Response: Comment noted.

Comment 2: Although weighted marker buoys are proposed with certain limitations to reduce impacts to the submerged lands, impacts are still possible. Therefore, the exemption should be allowed only for a set, temporary period of time to benefit diving safety and to document actual effects, if any, on GRNMS resources. Once documented, a decision could be made to eliminate or continue the exemption to allow the use of weighted marker buoys in GRNMS.

Response: NOAA agrees that the proposed rule to allow the use of weighted marker buoys will contribute to diving safety in GRNMS. NOAA also determined that the expected effects on sanctuary resources from weights of ten (10) pounds or less placed temporarily on the submerged lands will be minimal.

In addition, NOAA is committed to managing the resources of GRNMS in an adaptive manner, as demonstrated by the deliberate and transparent management plan review process that takes place every 5-10 years. Any impacts of this new regulation to sanctuary resources would be brought to NOAA's attention during the next management plan review, which is always a process open to public participation. Instead of an automatic end date for the regulation on weighted marker buoys, the next management plan review would be the appropriate mechanism for making amendments to this regulation, if deemed necessary for the purpose of resource protection.

Appendix D: List of Preparers

Becky Shortland, Resource Protection Coordinator, GRNMS
Hélène Scalliet, Policy Analyst, ONMS
Vicki Wedell, Policy Analyst, ONMS
George Sedberry, Acting Superintendent and ONMS Southeast/Gulf of Mexico/Caribbean Region Science Coordinator
Sarah Fangman, Acting Deputy Superintendent/Science Coordinator and ONMS Southeast/Gulf of Mexico/Caribbean Region Program Coordinator
Amy Rath, Communications and Outreach Coordinator, GRNMS
Debbie Meeks, Financial & IT Coordinator/Webmaster, GRNMS
Jody Patterson, Administrative Assistant/Volunteer Coordinator, GRNMS
Todd Recicar, Marine Operations Coordinator, GRNMS
LTJG Jared Halonen, Vessel Operations Coordinator, GRNMS

Appendix E: Agencies and Persons Consulted

In addition to the preparers listed on page 43, the following agencies and persons were consulted in preparation of this document. In addition to the general public, these same individuals, agencies and organizations also received a copy of the document:

Persons - Gray's Reef National Marine Sanctuary Advisory Council

Dr. Scott Noakes – non-living resources research representative
Dr. Peter Auster – living resources research representative
Ms. Emily Kroutil – K-12 education representative
Capt. Warren Hupman – charter/commercial fishing representative
Mr. Randy Rudd – sport diving representative
Ms. Mary Conley – conservation representative
Dr. Anna George – conservation representative
Dr. Timothy Goodale – university education representative
Mr. Michael Denmark – sport fishing representative
Mr. William Cliett – citizen-at-large representative
Ms. Christine Laporte – citizen-at-large representative
Dr. Daniel Gleason – former living resources research representative
Dr. Clark Alexander – former non-living resources research representative
Ms. Venetia Butler – former K-12 education representative

Agencies - Gray's Reef National Marine Sanctuary Advisory Council

Mr. Rick DeVictor – National Marine Fisheries Service – SERO representative
Dr. Jack McGovern – alternate National Marine Fisheries Service – SERO representative
Mr. Pat Geer – GADNR Coastal Resources Division representative
Ms. January Murray – alternate GADNR Coastal Resources representative
Capt. Doug Lewis – GADNR law enforcement representative
Sgt. Mark Carson – alternate GADNR law enforcement representative
LT Mike Mastrianni – U.S. Coast Guard representative
Ms. Suzanne VanParreren – Sapelo Island NERR representative
Al Samuels - NOAA Office of Law Enforcement representative
Mr. Jene Nissen – U.S. Navy representative
Dr. Charles Hopkinson – NOAA Sea Grant representative

Persons/Agencies – Gray's Reef National Marine Sanctuary Advisory Council's Science Advisory Group

Jeff Hyland
NOAA Center for Coastal Environmental
Health & Biomolecular Research

Marcel Reichert
SC Department of Natural Resources
Marine Resources Research Institute
Offshore Finfish Section

Charleston, SC

Roldan Munoz
NOAA Fisheries Service
Fisheries Ecosystem Branch

Myra Brouwer

South Atlantic Fishery Management Council

Marc Frischer
Skidaway Institute of Oceanography

Laura Kracker
NOAA Center for Coastal Environmental Health & Biomolecular Research

Andy David
NOAA Fisheries Service
Southeast Fisheries Science Center

Paul Gayes
Coastal Carolina University
Center for Marine and Wetlands Studies

Nisse Goldberg
Jacksonville University

John Heine
California COFI

April Goodman Hall
NOAA Fisheries Service

Timothy Henkel
Valdosta State University

Agencies – Consultations under the Endangered Species Act, Magnuson-Stevens Fishery Conservation Act, Coastal Zone Management Act, and National Historic Preservation Act

Dr. Robin Goodloe
Ecological Services Field Supervisor for Georgia
U.S. Fish & Wildlife Service
Georgia Ecological Services
Athens, GA

David M. Bernhart
Assistant RA for Protected Resources
NOAA Fisheries Service, Southeast Regional Office
St. Petersburg, FL

Dr. Wilson Laney
South Atlantic FCO
U.S. Fish & Wildlife Service
Raleigh, NC

Ginny Fay
Deputy RA for Habitat Conservation
NOAA Fisheries Service, Southeast Regional Office
St. Petersburg, FL

Ms. Kelie Moore
Federal Consistency Coordinator
Georgia Coastal Management Program
GA Dept of Natural Resources
Coastal Resources Division
Brunswick, GA

Dr. David Crass
Division Director & Deputy State Historic Preservation Officer
Historic Preservation Division
Department of Natural Resources
Atlanta, GA

Appendix F: FEA Distribution List

The GRNMS final environmental assessment was distributed to the following in addition to the individuals and agencies consulted (Appendix E):

Congressional/Senate

The Honorable Saxby Chambliss
U.S. Senate

The Honorable Johnny Isakson
U.S. Senate

The Honorable Jack Kingston
U.S. House of Representatives

The Honorable John Barrow
U.S. House of Representatives

Federal Committees

The Honorable Jay Rockefeller
Chair, Committee on Commerce, Science, and Transportation
U.S. Senate

The Honorable Doc Hastings
Chair, Resources Committee
U.S. House of Representatives

Fishery Management Council

Mr. Robert Mahood
Executive Director
South Atlantic Fishery Management Council
4055 Faber Place Drive, Suite 201
North Charleston, SC 29405

Federal Agencies

U.S. Department of State
Bureau of Oceans and International Environmental and Scientific Affairs

U.S Department of Defense
Installations & Environment

Navy Region Southeast
U.S. Fleet Forces Command

Naval Submarine Base Kings Bay

U.S. Army Corps of Engineers
Savannah District

U.S. Department of Transportation
Maritime Administration (MARAD)

U.S. Department of the Interior
Office of Environmental Policy and Compliance

Bureau of Oceans and Energy Management

Fish and Wildlife Service
Southeast Region

U.S. Environmental Protection Agency
Office of Ocean, Wetlands, and Watersheds

Region IV NEPA Coordinator

U.S. Coast Guard
Vice Commandant

Atlantic States Marine Fisheries Commission

U.S. Department of Commerce
NOAA Fisheries Service
Office of Protected Resources

Southeast Regional Office

Sustainable Fisheries Division

NEPA Coordinator

NOAA Office of General Counsel
Ocean Service
Enforcement and Litigation
Southeast Regional Counsel

State Agencies

GA Department of Natural Resources

Coastal Resources Division

Wildlife Resources Division

NATIONAL MARINE SANCTUARIES

AMERICA'S UNDERWATER TREASURES