UNITED STATES DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

RECORD OF DECISION

FINAL GENERAL MANAGEMENT PLAN AMENDMENT / ENVIRONMENTAL IMPACT STATEMENT DRY TORTUGAS NATIONAL PARK FLORIDA

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I. INTRODUCTION

The Department of the Interior, National Park Service (NPS) has prepared a *Final General Management Plan Amendment/Environmental Impact Statement (FGMPA/EIS)* for Dry Tortugas National Park, Monroe County, Florida. Five alternatives were evaluated for guiding the management of the park over the next 15 to 20 years. The alternatives incorporate various zoning applications and other management provisions to ensure resource protection and quality visitor experience conditions. The environmental consequences anticipated from implementation of each alternative are addressed in the *FGMPA/EIS*. Impacts to natural and cultural resources, visitor experience, socioeconomic environment, and park operations/facilities are analyzed. The *FGMPA/EIS* was prepared in conjunction with planning by the Florida Keys National Marine Sanctuary (FKNMS or sanctuary), the Florida Fish and Wildlife Conservation Commission (FFWCC) and the Gulf of Mexico Fisheries Management Council (GMFMC) to establish a Tortugas Ecological Reserve (TER) in state and federal waters adjacent to Dry Tortugas National Park. State and federal approvals for the TER are complete and implementation of the ecological reserve is underway.

The purpose of this *Record of Decision* (ROD) is to document the NPS selected action for the final GMPA/EIS. This ROD includes a description of the background of the project, a statement of the decision made, synopses of alternatives considered, the basis for the decision, a listing of measures to minimize environmental harm, a finding of no impairment of park resources and values, a description of the environmentally preferable alternative, implementation commitments, and a summary of public and agency involvement in the decision-making process.

II. BACKGROUND OF THE PROJECT

Dry Tortugas National Park is a 100-square-mile area about 70 miles west of Key West, Florida. The park is a unique tropical marine environment of national significance, renowned for its productive coral reef ecosystem, diverse and abundant natural resources, spectacular scenic beauty, diverse cultural resources and fascinating history. Established as Fort Jefferson National Monument in 1935, the area was designated a National Park by Congress in 1992. The park has been operating under the *Fort Jefferson National Monument General Management Plan / Development Concept Plan / Environmental Assessment* completed in 1983. Although much of the 1983 plan is still applicable, it needs amending to address current issues and rapidly changing levels of park visitation and use.

The park includes seven small islands, or keys, totaling 104 acres. Discovered in 1513 by Spanish explorer Ponce de Leon, a lack of fresh water and an abundance of sea turtles led to their name, the Dry Tortugas. The islands and reefs pose a serious navigation hazard to ships. The earliest known shipwreck occurred in 1622. These wrecks comprise one of the greatest concentrations of historically significant shipwrecks in North America. Fort Jefferson, on Garden Key, is the park's central cultural feature and is the largest 19th century American coastal fort. Loggerhead Key is the largest key and contains a brick tower lighthouse completed in 1858 that is still operable. Also on Loggerhead Key are the ruins of the world's first marine biological laboratory in the Western Hemisphere – the Carnegie Institution of Washington, D.C., Marine Biology Laboratory. The park includes: one of the most isolated and least disturbed habitats for

endangered and threatened sea turtles; the only significant sooty and noddy tern nesting colonies in the U.S.; the only frigate bird nesting colonies in the continental U.S.; and serves as an important resting spot for migrating birds.

The Florida Keys National Marine Sanctuary administered by the National Oceanic and Atmospheric Administration (NOAA) surrounds Dry Tortugas National Park. This extraordinary area is known for its clear blue waters, seagrass meadows and expansive coral reefs that support a diverse range of marine life. The Tortugas contains the healthiest reefs and the cleanest waters found in the Florida Keys.

Scientific studies reveal that the Tortugas region plays a critical role in the function and dynamics of the larger Florida Keys coral reef ecosystem. The Tortugas includes spawning and nursery grounds for numerous fish. Larvae spawned from adult populations are spread by a persistent system of currents and eddies throughout the Florida Keys and up the Southeast coast, helping to replenish depleted fish populations in Florida and beyond.

The coral reefs of the park and the Tortugas region have some of the best developed and most luxuriant corals found in the Gulf and Caribbean. The Tortugas region has more than 75 species of hard and soft corals, some of which are rare. In fact, some of the most pristine and vibrant portions of the Florida Keys coral reef ecosystem are protected within the park's boundaries.

The sheer number of different fishes in this region is extraordinary. More than 300 species of reef fish have been identified in Dry Tortugas National Park. The park and surrounding region contain both deep and shallow reef formations that support different fish faunas as well as different life stages (larval, juvenile, and adult). These different life stages have different distribution patterns among habitats.

Other underwater habitats in the park include immense and relatively diverse hardbottom communities of sponges and gorgonians, many of which are unique to the Tortugas. Sea grasses provide unique links in nutritional cycles and cover that animals use to avoid predators. Sea grasses also sustain production of debris that is essential to food web productivity. The Tortugas area has the highest diversity of sea grass species when compared to waters around the Florida Keys. Many of these habitats are extremely important to juvenile reef fishes.

Despite the park's remoteness, there are signs that rapidly increasing visitor use is degrading the resources and values that make the Tortugas area special. Visitation to Dry Tortugas National Park increased 400% from 1994 through 2000, rising from 23,000 to 95,000 visitors annually. The resources and infrastructure at the park cannot sustain a growth rate of this magnitude and still provide visitors a high quality experience. Affected issues include impacts on visitor facilities, the structural integrity of Fort Jefferson, submerged cultural resources, marine resources management, visitor safety and the quality of the visitor experience. Research has documented impacts from commercial and recreational fishing in the Tortugas. Fish and lobster populations have been significantly depleted, threatening the integrity and natural dynamics of the ecosystem. The average size of a black grouper caught in the Tortugas has decreased from 22.5 pounds to 9 pounds since 1930.

The population of South Florida is projected to increase from 6.3 million people currently to more than 12 million by 2050. With continued technological innovations such as global positioning systems and bigger, faster vessels, this increase in population and recreational tourism will translate into more pressure on the fragile resources in the Tortugas. There has been a steady increase of interest by the commercial sector during the past few years to operate in the park. Interest has been expressed for much larger vessels, which would bring many more visitors to the park.

A conservative approach and monitoring programs with rapid feedback to management are essential to ensure we provide adequate protection for park resources. In order to address these issues, a general management planning effort was started in 1998. Concerned that fragile park resources would suffer as a result of the increases being contemplated, park managers placed a moratorium on new commercial activity in the park until the *Final GMPA/EIS* is implemented.

III. DECISION (SELECTED ACTION)

After careful consideration of legislative mandates, visitation trends, environmental impacts, relevant scientific studies, and comments from the public and agencies, the National Park Service will implement Alternative C as described in the *Final GMPA/EIS* issued in January 2001 (with some minor clarifications, as listed in Appendix A, Errata). This alternative best accomplishes the legislated purposes of Dry Tortugas National Park and the statutory mission of the National Park Service to provide long-term protection of park resources and values while allowing for visitor use and enjoyment. It also furthers the objectives of Executive Order 13089, Coral Reef Protection.

A. Summary of the Selected Action

The goal of the selected action is to afford a high level of protection to park resources and provide for appropriate types and levels of high quality visitor experiences. This will be accomplished through management zoning, establishing visitor carrying capacity for specific locations in the park, using commercial services to direct and structure visitor use, and instituting a permit system for private boaters. A wide range of recreational and educational opportunities will be available to visitors provided that appropriate resource conditions are maintained. Visitor experiences will be enhanced due to expanded access throughout the park and higher quality resources to enjoy.

1. Management Zoning

Management zones will provide guidance for managing specific areas for desired resource conditions and visitor experiences. (Management zones are described in detail in the *Final GMPA/EIS,* beginning on page 33.) Fifty percent (50 square nautical miles) of the park will be managed as a **Natural/Cultural Zone**. The natural scene will remain largely intact, natural processes will predominate and little lasting evidence of recreational impacts will be discernable. Maintenance or improvement of resource quality will be emphasized but visitors will be free to move about the zone with few restrictions. Appropriate activities will include snorkeling, scuba diving, swimming, boating, wildlife viewing and recreational fishing. Use of anchors will be

generally permitted. However, tying to mooring buoys may be required in certain areas if protection of sensitive resources warrants additional management action to reduce or mitigate impacts, such as limiting anchoring. Opportunities for adventure and challenge will be relatively high compared to other zones.

A **Research Natural Area Zone** (RNA) will cover 46% (46 square nautical miles) of the park. It will include a representative range of the park's near-pristine terrestrial and marine ecosystems (e.g. islands, sea grass beds, shallow and deep coral reefs, sand and hardbottom sea floors). Management emphasis will be to provide the greatest possible protection of resource integrity and to promote non-manipulative research[1] and visitor education. Natural processes will occur without disturbance or impacts from humans. The RNA will protect biological diversity, provide a baseline area for measuring long-term ecological changes and a serve as a reference site for separating the effects of human activities from those caused by natural environmental changes.

A variety of recreational and educational opportunities will be available to visitors in the RNA such as wildlife viewing, snorkeling, and diving. Recreational fishing and other resource consumptive activities will not be allowed in this zone. To prevent damage to corals and other delicate organisms, commercial tour providers and private boaters will be required to use mooring buoys, and anchoring will be prohibited. Allowing non-consumptive uses in the RNA, with careful monitoring of impacts of these activities, will provide exceptional resource appreciation and public education benefits. The objectives of the research natural area fulfill the legislated purposes of Dry Tortugas National Park are compatible with and compliment the Tortugas Ecological Reserve recently established by the Florida Keys National Marine Sanctuary.

An **Historic Preservation/Adaptive Use Zone**, covering about 3 square nautical miles or 3% of the park, will be applied to Garden Key (Fort Jefferson), and will extend outwards for a radius of 1 nautical mile to encompass surrounding waters, including those around Bush and Long Keys. The central area of Loggerhead Key, where the historic lighthouse and adjacent buildings are located, will also be designated historic preservation/adaptive use. Visitors will be immersed in an environment rich in architectural and cultural history. Appropriate visitor activities will include studying history, bird watching, swimming, snorkeling, scuba diving, camping, boating, overnight anchoring and recreational fishing.

Special Protection Zones will provide added protection for critical resources and will be managed to allow natural processes to occur without disturbance from humans. Only limited research activities will be allowed. This zone is a management tool and "overlay" zone that allows protection of resources at certain times and in certain places throughout the park. Hospital and Long Keys, and a rare elkhorn coral community near Long Key, will be designated special protection zones year-round. Bush and East Keys will be designated special protection zones during critical turtle and bird nesting/hatching season.

[1] Non-manipulative research measures but does not alter existing conditions.

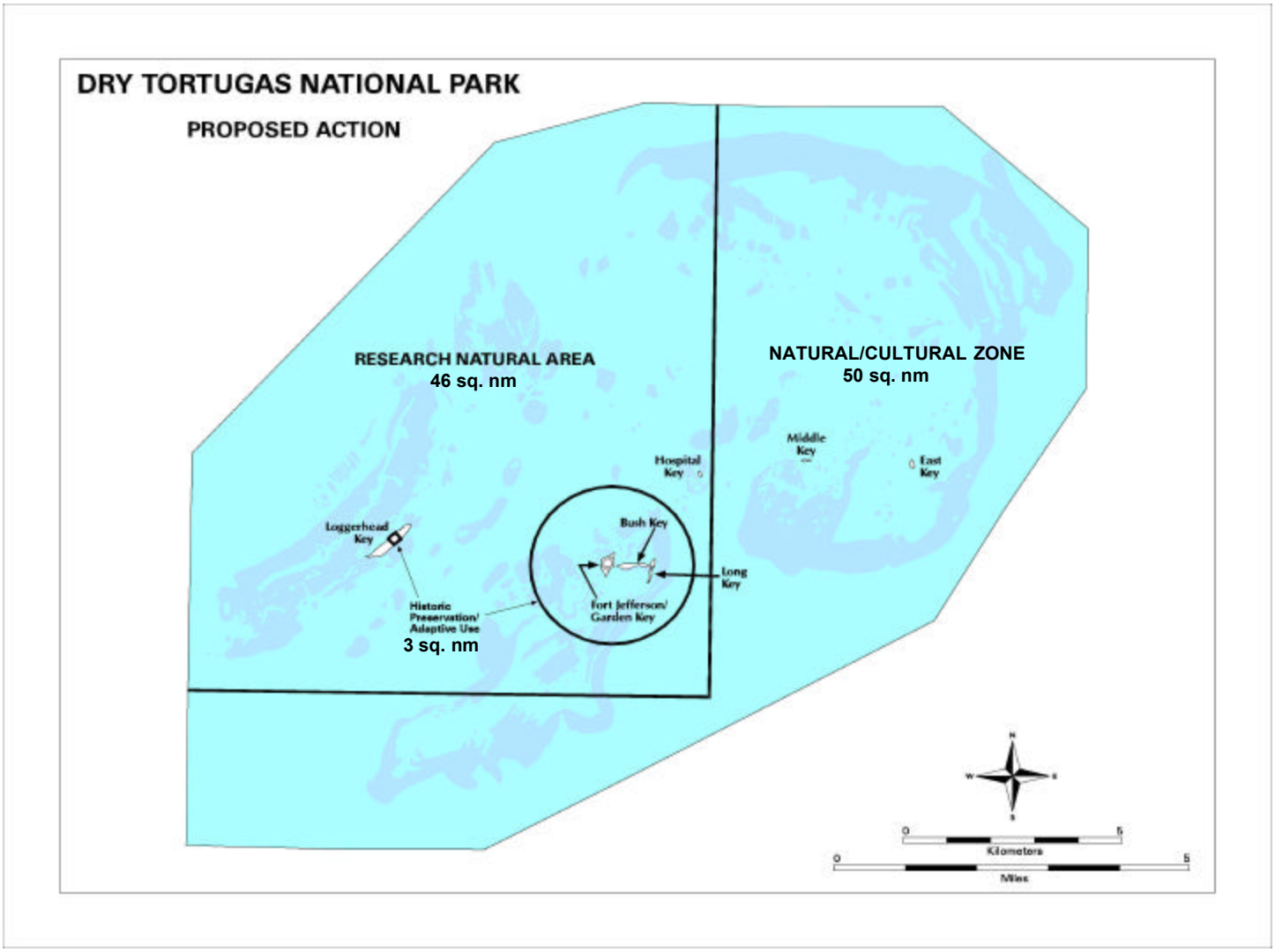

Figure 1. Management Zones for the Selected Action.

2. Visitor Carrying Capacity

The types and levels of visitor use will be managed to protect resources and quality visitor experiences. An initial visitor carrying capacity for Garden Key will allow for a maximum total of 330 people per day. This includes 24 people who might visit Loggerhead Key during the day, either by commercial tour or private boat, and up to 68 people per night in the campground on Garden Key. These numbers acknowledge the strong relationship among the number of visitors, the quality of the visitor experience and impacts on resources. Through monitoring, park staff will determine if these numbers are achieving desired visitor experience and resource conditions; if not the numbers may be adjusted. A reservation system will be established for the Garden Key campground to prevent overcrowding and ensure that visitor expectations are met.

Private boaters will be required to obtain a permit to navigate park waters. Information pertaining to appropriate visitor use in the park will be provided as part of the permit process. A park entrance fee will be instituted to help support the additional costs incurred for managing carrying capacities, visitor safety and enjoyment, resource protection activities and monitoring.

3. Recreational Fishing

Recreational fishing is a popular activity in the Dry Tortugas region. Fifty four percent of park waters (54 square nautical miles) will remain open for recreational fishing under the zoning plan describe above.[2] This area includes the natural/cultural zone, 5 of the park's 7 islands, and the most popular fishing area, the historic/adaptive use zone around Garden Key (Fort Jefferson). This zone includes the overnight anchorage for private boats and the shallows surrounding Garden, Bush and Long Keys where angling for permit and tarpon is popular. A 1995 NPS visitor use study found that the area around Garden Key is the single most heavily used fishing area (64% of all trips) in the park. Fishing from the dock and shoreline of Garden Key is popular with visitors who arrive by ferry or seaplane. The area open for fishing includes 56% of the park's seagrass meadows and 28% of park waters less than 6 feet deep. Commercial fishing activities, spear fishing, and the harvest of lobster and conch are banned in park waters.

Significant large areas adjacent to the park will also remain open to recreational fishing. These areas include the southern half of the Tortugas Banks (west of the park), the waters south and east of the park, and the popular king-fishing area northeast of the park. These areas were excluded from the FKNMS Tortugas Ecological Reserve in order to protect fishing interests in the region. Studies from other reserves have shown a dramatic increase in the size and abundance of fish taken by recreational fishing near the reserves.

4. Commercial Services

Commercial transportation operators will continue to transport visitors to the park by self-contained ferry and seaplane operations. Historic Fort Jefferson on Garden Key will remain the principal destination. One concession contract will be issued for a single seaplane operator who will be authorized to carry up to 60 visitors per day. A second concession contract will be for a ferry operator who will be authorized to carry up to 150 visitors per day. The number of vessels used in the operation, and arrival and departure patterns at Fort Jefferson, will be determined in the concession contracting process. The role of the ferry operator will be expanded to provide water-based transportation from Garden Key to other park locations, and guide/interpretive/educational services that supplement NPS staff services, thereby substantially increasing the range of opportunities for visitors throughout the park. Other appropriate commercial services in the park, such as guided fishing, sailing, and diving trips, will be authorized by commercial use authorizations (CUAs).

In addition to the actions described above, the following actions are part of the selected alternative:

- A Visitor Experience and Resource Protection (VERP) Plan will be prepared. This plan is needed to help achieve the desired conditions for resources and visitor experience described in the *Final GMPA/EIS*. It will address visitor carrying capacity and identify the indicators, standards, and monitoring strategies that will be used to ensure quality visitor experiences

[2] Recreational fishing (hook and line) for finfish in park waters is regulated by park fishing regulation which follow recreational fishing regulations for the State of Florida. In addition, there are park regulations in place which protect juvenile ornamental fish species, many of which are potentially rare reef associated species.

while protecting park resources. The plan will include a mooring and boundary buoy component that identifies the number, type and location of mooring and boundary buoys in the park. It will also contain an education and enforcement component that identifies management actions that will achieve the highest level of resource protection and compliance by the public who enter or visit the park.

- The Resource Management Plan will be revised to incorporate management direction provided by the *Final GMPA/EIS*. The revised plan will detail the status and needs of the park's natural and cultural resource programs and include a submerged cultural resources component.

- A Research, Inventory and Monitoring Plan will be developed that will include the design and implementation of long-term ecological monitoring to test the efficacy and ecological integrity of the park's RNA. This plan will have positive effects on park resources by providing the knowledge necessary to make informed decisions for protecting the biological diversity and natural ecosystem processes of the Tortugas area. The plan will be consistent with the research and monitoring strategies for the FKNMS Tortugas Ecological Reserve, and will be developed in cooperation with the Sanctuary to ensure a cost-effective approach.

- A Comprehensive Interpretive Plan will be developed to provide detailed guidance on improvements to the interpretive, education and outreach programs; and the associated media, facilities and resources needs.

- Rules will be developed and published in the *Federal Register* to regulate certain activities as directed by the *Final GMPA/EIS*. Activities that may require rules include research, diving and snorkeling, recreational fishing, the private boat permit system, and establishing special protection zones.

Other future actions include: revise the park strategic plan; develop a concessions contract prospectus; complete a memorandum of understanding with NOAA for cooperative enforcement, research and sharing of facilities; establish an interagency visitor center in Key West; improve visitor information facilities; install mooring and boundary buoys for the RNA; complete a solid waste management plan, and perform a study to evaluate options for improving the dock at Garden Key.

B. Alternatives Considered

Four other alternatives were evaluated in reaching a decision on the selected action:

Alternative A.

Alternative A (the no-action alternative) represents a continuation of current park management policies and operations. The park would attempt to accommodate increasing visitor use while protecting resources to the extent allowable under current policy and legal requirements. The park would continue to operate under its 1983 general management plan. The major impacts of implementing Alternative A include continued long-term adverse impacts on coral reefs and reef fisheries from unrestricted fishing and recreational use. Increases in use would also result in

minor to moderate long-term adverse impacts to the quality of the visitor experience. (Alternative A is described in detail in the *Final GMPA/EIS,* beginning on page 48.)

Alternative B.

Under Alternative B, natural and cultural resources would be afforded greater protection than under Alternative A, and the types and levels of appropriate visitor use would be more carefully managed. Where critical resource degradation was observed, park staff would undertake intensive protection and/or remediation measures to abate impacts. Visitors would continue to travel freely and experience a variety of recreational opportunities throughout much of the park. The major impacts of implementing Alternative B include continued long-term adverse impacts on coral reefs and reef fisheries from unrestricted fishing and recreational use. Establishing maximum types, levels and locations of use would have long-term beneficial impacts on the quality of the visitor experience. (Alternative B is described in detail in the *Final GMPA/EIS,* beginning on page 53.)

Alternative D.

The provisions of Alternative D are similar to those of the selected action (alternative C), although the research natural area zone would be slightly smaller (covering approximately 41% of the park), and its configuration would be different. The objectives for the RNA would be compatible with those of the Florida Keys National Marine Sanctuary's ecological reserve. Visitors would be required to use commercial tours to visit and enjoy attractions in the research natural area zone. Private boaters would be allowed to transit through the RNA without a permit, but would not be allowed to anchor or tie up to mooring buoys in this zone. For recreational activities inside the park but outside the RNA, private boaters would be required to obtain a permit and pay an entrance fee at Garden Key. Like Alternative C, a major positive impact of Alternatives D would include a significant reduction in the long-term adverse impacts from fishing and recreational uses through establishment of a research natural area in a portion of the park. Establishing visitor capacities, providing commercial tours throughout the park, and improving and protecting the quality of resources would also have major beneficial impacts on the quality of the visitor experience. (Alternative D is described in detail in the *Final GMPA/EIS,* beginning on page 66.)

Alternative E.

Under Alternative E, the majority of the park would be designated a research natural area zone, and primary emphasis would be placed on resource protection and conservation. The NPS, in cooperation with commercial service providers, would strictly manage the types and levels of appropriate visitor use to ensure resource protection and quality visitor experiences. Private boaters would moor at Garden Key (Fort Jefferson) and then join tour operations. The major impacts of implementing Alternative E would include the elimination of almost all of the long-term adverse impacts from fishing and recreational uses through the establishment of a research natural zone throughout most of the park. Visitor use would be highly restricted throughout the park. The restriction of private boat use and recreational fishing in most of the park, and the requirement that these visitors accompany a tour guide, would change the nature of the remote marine experience and sense of freedom now available. This would have long-term moderate

negative impacts for visitors with private boats. (Alternative E is described in detail in the *Final GMPA/EIS,* beginning on page 74.)

C. Basis for the Decision

This section presents an overview of the laws, policies, visitor use trends and scientific studies that formed the framework for identifying a range of alternatives and for selecting the preferred alternative. The management actions selected comply with the requirements of federal law and policy and are based on the best available scientific information. They will provide for the conservation of natural and cultural resources in Dry Tortugas National Park while providing for visitor use and enjoyment consistent with the purposes of the park.

1. Laws, Executive Orders, and Policy

The major federal laws, executive orders, and policies that apply to federal agency actions in the *Final GMPA/EIS* are the NPS Organic Act of 1916, the NPS General Authorities Act of 1970; Public Law 102-525 establishing Dry Tortugas National Park; Executive Order 13089, Coral Reef Protection; the National Parks Omnibus Management Act of 1998; the National Parks and Recreation Act of 1978; the National Environmental Policy Act; and related provisions of NPS *Management Policies*. These statutes and policies provide the National Park Service broad discretion to manage lands, waters, wildlife and programs under our administrative authority in a manner deemed best to meet the purposes Congress has delineated. (A comprehensive listing of applicable laws and policies is found on pages 14-22 of the *Final GMPA/EIS*.)

The provisions of the NPS Organic Act (16 U.S.C. 1-4) and the 1978 amendments to the NPS General Authorities Act (16 U.S.C. 1a-1) provide the most important statutory directive for the National Park Service. The Organic Act requires that park resources and values be managed in a manner that will leave them unimpaired for future generations. The General Authorities Act prohibits managing units of the National Park System in derogation of the values and purposes for which the various areas have been established, except as Congress may directly and specifically provide. The National Park Service considers these two mandates (no impairment and no derogation) as defining a single standard for the management of the National Park System.

National Park Service *Management Policies* provide guidance for interpreting the NPS Organic Act and the 1978 amendments to the General Authorities Act.[3] Generally, these two provisions direct the Secretary of the Interior to manage parks for conservation purposes and public enjoyment without impairment. The mandate to conserve park resources and values is separate from the prohibition on impairment. The conservation mandate, thus, applies even when there is no risk that park resources or values may be impaired.

Providing opportunities for public enjoyment of park resources and values to the people of the United States is a fundamental part of the NPS mission. This includes people who directly experience parks and those who appreciate them from afar. It also includes deriving benefit and

[3] *NPS Management Policies, 2001*, Sec. 1.4, p.11-13

inspiration from parks. Congress has provided that when there is a conflict between conserving resources and values and providing for enjoyment of them, conservation is to be predominant.[4]

Although park managers must seek ways to avoid or minimize adverse impacts on park resources and values, they have the discretion to allow impacts when necessary to fulfill the purposes of the park. This discretion exists, however, only so long as the impact does not constitute an impairment of the affected resources or values.[5] The sole exception is when an activity that would cause impairment or derogation is specifically mandated by Congress.

When Congress established Dry Tortugas National Park in 1992, it set the area apart to "*preserve and protect for the education, inspiration, and enjoyment of present and future generations nationally significant natural, historic, scenic, marine, and scientific values in South Florida."* [6]

Congress directed the Secretary of the Interior to manage the park for the following purposes:

> *(1) To protect and interpret a pristine subtropical marine ecosystem, including an intact coral reef community.*
> *(2) To protect populations of fish and wildlife, including (but not limited to) loggerhead and green sea turtles, sooty terns, frigate birds, and numerous migratory bird species.*
> *(3) To protect, stabilize, restore and interpret Fort Jefferson, an outstanding example of nineteenth century masonry fortification.*
> *(4) To protect the pristine natural environment of the Dry Tortugas group of islands.*
> *(5) To preserve and protect submerged cultural resources.*
> *(6) In a manner consistent with paragraphs (1) through (5), to provide opportunities for scientific research.*

The combination of actions provided for in this *Record of Decision* are consistent with the legislated purposes of Dry Tortugas National Park and will not result in the impairment of any park resources and values.

In 1998, Executive Order 13089, Coral Reef Protection, directed federal agencies to preserve and protect the biological diversity, health, heritage, and social and economic value of U.S. coral reef ecosystems and the marine environment. All federal agencies whose actions may affect U.S. coral reef ecosystems are directed to utilize their programs and authorities to protect and enhance the conditions of such ecosystem. Section 3 instructs agencies to implement measures needed to research, monitor, manage, and restore affected ecosystems, including, but not limited to, measures reducing impacts from pollution, sedimentation, and fishing.

In March, 2000, The U.S. Coral Reef Task Force issued a national action plan to implement Executive Order 13089.[7] The goals of the plan include designating 20% of all U.S. coral reefs as no-take ecological reserves by 2010, mapping of all coral reefs by 2009, and monitoring to track the health of U.S. coral reefs. The *Final GMPA/EIS* has been coordinated with this national

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[4] Id.
[5] Id.
[6] 16 USC 410xx-1-3
[7] *The National Action Plan To Conserve Coral Reefs,* U.S. Coral Reef Task Force, March 2000

initiative. The selected action will enhance protection of coral reef ecosystems in Dry Tortugas National Park and help to achieve the goals of the national action plan.

NPS *Management Policies* recognize that special designation labels apply to parts or all of some parks to highlight the additional management considerations that those designated areas warrant. Those labels include research natural areas.[8] RNAs contain prime examples of natural resources and processes, including significant genetic resources with value for long-term baseline observational studies or as control areas for comparative studies involving manipulative research outside the park. Superintendents recommend areas of parks to their regional director, who is authorized to designate them as research natural areas. Activities in RNAs are generally restricted to non-manipulative research, education, and other activities that will not detract from the area's research values.[9]

NPS *Natural Resources Management Guidelines (NPS 77)* direct park managers to consider the establishment of restricted waters in which no fishing is allowed.[10] These areas can be valuable for the study of unaltered ecological processes and serve as important baseline areas or control areas for harvested populations of fish. NPS *Management Policies* allow for recreational fishing in parks when it is authorized, or not specifically prohibited by federal law, and is in accordance with applicable federal/state laws and regulations. However, the NPS may restrict fishing activities whenever necessary to achieve management objectives or to otherwise protect park resources or public safety, unless such restrictions would violate a federal law or treaty.[11] When harvest is permitted, in no case should it be allowed to reduce the reproductive potential of the population or to radically alter its natural (unfished) age structure.

The statute establishing Dry Tortugas National Park does not mandate recreational fishing. The Act directs the NPS to protect fish and wildlife populations and to preserve an intact, pristine sub-tropical marine ecosystem. Establishing a research natural area in part of the park is one of the most effective tools available to fulfill the park's enabling legislation and the NPS mission. The RNA will help achieve park purposes by protecting a representative range of near-pristine terrestrial and marine resources; protecting biodiversity; ensuring the replenishment and protection of fish stocks; and providing outstanding opportunities for non-manipulative research, visitor education and other non-consumptive uses. The FKNMS ecological reserve, with its deep reefs and habitats, will provide breeding and spawning grounds for fish while the park, with its shallow reefs and sea grass beds, will provide nursery areas. Both parts are critical for the RNA and the ecological reserve to be biologically effective.

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[8] Federal land management agencies have been actively developing a national system of Research Natural Areas since 1927. Today, approximately 460 RNAs in the United States are administered by eight federal agencies. They range in size from less than 1 acre to more than 100,000 acres and total nearly 5 million acres. At present, approximately 86 RNAs in the National Park Service are administered by about 28 units of the National Park System. They range in size from 15 acres to approximately 70,000 acres. From the inception of the program there have been two primary purposes for developing a comprehensive system of RNAs: 1) To preserve a representative array of all significant natural ecosystems and their inherent processes as baseline areas; 2) To obtain through scientific research and education, information about natural system components, inherent processes, and comparisons with representative manipulated systems.

[9] *NPS Management Policies, 2001*, Sec. 4.3.1, p. 32

[10] *NPS Natural Resources Management Guidelines (NPS 77),* Chapter 3, p. 34

[11] *NPS Management Policies, 2001*, Sec. 8.2.2.5, p. 83

The National Parks and Recreation Act of 1978 (16 USC 1a-7) requires that NPS general management plans include implementation commitments for visitor carrying capacities for all areas of the park. NPS *Management Policies* define visitor carrying capacity as the types and levels of visitor use that can be accommodated while sustaining the desired resource and visitor experience conditions in the park. By identifying and staying within carrying capacities, park managers can prevent park uses that may unacceptably impact the resources and values for which the park was established. For all zones within a park, park managers will identify visitor carrying capacities and identify ways to monitor for, and address, unacceptable impacts to park resources and visitor experiences.[12]

The selected action prescribes appropriate types and levels of visitor use for each park management zone. It also establishes initial visitor use limits for Garden Key and Loggerhead Key. Monitoring will determine if these numbers are achieving visitor experience and resource conditions; if not the numbers may be adjusted. Indicators, standards, monitoring methods and management responses will be identified in a separate visitor experience and resource protection plan.

The National Parks Omnibus Management Act of 1998 (16 USC 5931-5937) provides the NPS with clear authority and direction for conducting scientific study in the national park system and to use the information gathered for management purposes. Title II requires the NPS to: undertake a program of inventory and monitoring; establish baseline information; provide information on long-term trends in the condition of park resources; and develop the monitoring program in cooperation with other federal monitoring efforts to ensure a cost-effective approach. The NPS is also directed to assure the full and proper utilization of the results of scientific study for park management decisions.

NPS *Management Policies* require that decisions documented in general management plans, including environmental analysis and documentation, will be based on current scientific and scholarly understanding of the park ecosystems and cultural contexts, and the socioeconomic environment (both internal and external in relation to park boundaries). The collection and analysis of information about park resources will be a continuous process that will help ensure that decisions are consistent with park purposes.[13]

The selected action incorporates the best available scientific and scholarly information and is ecologically sound. Implementation will include development of research, inventory and monitoring programs in cooperation with FKNMS. Systematic feedback of information to NPS and FKNMS management will allow for adjustment of activities to mitigate unplanned or undesirable outcomes.

The National Environmental Policy Act of 1969 (NEPA)[14], while not imposing substantive duties on federal agencies, supports a planning approach that incorporates an ecosystem perspective. NEPA also requires that federal agencies prepare detailed statements on proposed actions that significantly affect the quality of the human environment. NPS *Management Policies*

[12] *NPS Management Policies, 2001*, Sec. 8.2.1, p. 81
[13] *NPS Management Policies, 2001*, Sec. 2.3.1.5, p. 19-20
[14] 42 U.S.C. 4321-4347

direct that general management planning will be conducted as part of cooperative regional planning and ecosystem planning wherever possible. NPS participation in cooperative regional planning is undertaken with the goal of better coordinating and focusing the independent and autonomous efforts of multiple parties.[15]

The NPS has integrated an ecosystem approach and NEPA compliance into the general management planning process for Dry Tortugas National Park. Cooperative management of the Tortugas region requires an ecosystem perspective as multiple federal and state agencies have jurisdiction in the area. NPS planning for the park was closely coordinated with planning by the Florida Keys National Marine Sanctuary, the Florida Fish and Wildlife Conservation Commission, and the Gulf of Mexico Fishery Management Council to establish a 151-square nautical mile no-take ecological reserve in the westernmost portion of the sanctuary. Implementation of the *Final GMPA/EIS* will require close cooperation with FKNMS and the State in research, monitoring, visitor education, outreach, enforcement and fisheries management.

2. Visitor Use Trends

Visitation to Dry Tortugas National Park has increased dramatically over the past 16 years. From 1984 to 1994, visitation rose 25% from 18,000 to 23,266 visitors annually. By 2000, however, visitation topped 95,000, a 400% increase in just 6 years. Although increased visitation is due in large part to the advent of commercial ferry service out of Key West, the number of private boaters visiting the park has increased as well. The number of private recreational boats registered in Monroe County increased from 17,499 in 1988 to 25,862 in 1999, an increase of 48%.

A 1995 NPS study provided a profile of visitors to Dry Tortugas National Park.[16] United States visitors represented 35 states. Most visitors came from Florida (63%), while the next largest group of visitors came from California and Texas (4% each). The most often cited reasons for visiting were to pursue outdoor recreation (41%) and to learn about the history of Fort Jefferson (31%). Of the visitors surveyed, the most common form of transportation used to get to the park was by commercial vessel (44%). Visitors also arrived at the park via air charter (30%), private powerboat (16%) and private sailboat (10%).

The most common activities were visiting Fort Jefferson (98%), taking photographs (87%) and snorkeling (83%). The majority of visitors (78%) stated they did not fish on their visit to Dry Tortugas. Those visitors who fished rated the importance of their experience as "very important" or "extremely important" (46%), "somewhat important" (27%) and "important" (13%). Fifteen percent stated that the fishing experience was "not important". The park zones most heavily fished by visitors were a circular area extending 1 mile in radius outwards from Garden Key (64%) and the southwestern quarter of the park (57%). The total is more than 100% because some visitors fished in both areas.

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[15] *NPS Management Policies, 2001*, Sec. 2.3.1.9, p. 20

[16] *Dry Tortugas National Park Visitor Study- Summer 1995.* Report 83, Visitor Services Project, Cooperative Park Studies Unit, University of Idaho.

The increasing popularity of the park threatens resources, strains park infrastructure, compromises visitor safety and the quality of the visitor experience. The population of south Florida is projected to increase from the current 6.3 million people to more than 12 million by 2050. With continued technological innovations such as global positioning systems and bigger, faster vessels, it is likely that population pressures, increases in visitation, and improved boating and fishing technology will result in greater pressure on the resources of the Tortugas area. These trends are of great concern to the National Park Service; without new management strategies, the park's ability to fulfill its legislated mandates is in jeopardy.

3. Scientific Studies

To support planning and decision-making for the Dry Tortugas, the National Park Service and the Florida Keys National Marine Sanctuary commissioned an ecological site characterization document composed of three chapters: physical oceanography and recruitment; fish and fisheries; and benthic communities. The information contained in these analyses was used to inform management and the planning team of the resources and uniqueness of the Tortugas region and to assist in developing a range of alternatives for the park's GMPA and boundary alternatives for the Tortugas Ecological Reserve.

Recent studies reveal that the Tortugas region is unique in its location and the extent to which oceanographic processes impact the area. But even more importantly, the Tortugas plays a dynamic role in supporting marine ecosystems throughout south Florida and the Florida Keys.[17] Larvae that are spawned from adult populations in the Tortugas are spread throughout the Keys and south Florida by a system of currents and eddies that provide the retention and current pathways necessary for successful recruitment[18] of both local and foreign spawned juveniles with larval stages remaining for hours for some coral species up to one year for spiny lobster. In addition, the upwellings and convergences of the current systems provide the necessary food supplies in concentrated frontal regions to support larval growth stages.

The Dry Tortugas are located at the transition between the Gulf Mexico and the Atlantic. The area is strongly impacted by two major current systems, the Loop current in the eastern Gulf of Mexico and the Florida Current in the Straits of Florida, as well as by the system of eddies that form and travel along the boundaries of these currents.[19] Of particular importance to the marine communities of the Tortugas and Florida Keys is the formation of a large counterclockwise rotating gyre (large eddy) that forms just south of the Tortugas where the Loop Current turns abruptly into the Straits of Florida. This gyre can persist for several months before it is forced downstream along the Keys decreasing in size and increasing in forward speed until its demise in the Middle Keys. The gyre serves as a retention mechanism for local recruits and as a pathway to near-shore habitats and coastal bays for foreign recruits.[20] These nursery areas in Biscayne and Everglades National Parks and Florida Bay provide sanctuary for spiny lobster and many

[17] *Site Characterization for the Dry Tortugas Region: Physical Oceanography and Recruitment:* T.N. Lee, E. Johns, D. Wilson, E. Williams, University of Miami, 1999.
[18] Recruitment is defined as the addition of newborn to a stock each year.
[19] *Site Characterization for the Dry Tortugas Region: Physical Oceanography and Recruitment:* T.N. Lee, E. Johns, D. Wilson, E. Williams, University of Miami, 1999.
[20] Id.

juvenile fishes that return to the reefs as adults, including barracuda, hogfish, lobsters, pink shrimp, many grunts, and most snappers and groupers.

The Tortugas is also located adjacent to two coastal current systems, including the wind-driven currents of both the Florida Keys coastal zone and the west Florida Shelf. Persistent westward winds over the Keys create a downwelling system that drives a westward coastal counter current along the lower Keys to the Tortugas. The countercurrent provides a return route to the Tortugas and its gyre-dominated circulation, and onshore Ekman transport (a process by which wind-driven upwelling bottom water is transported 45 degrees to the left of the actual wind direction in the northern hemisphere) provide a mechanism for larval entry into coastal habitats. The combination of downstream transport in the Florida Current, onshore Ekman transport along the coast, upstream flow in the coastal countercurrent and recirculation in the Tortugas gyre forms a recirculating pathway stretching from the Dry Tortugas to the middle Keys that enhances larval retention and recruitment into the Keys coastal waters of larvae spawned locally or foreign larvae from remote upstream areas of the Gulf of Mexico and Caribbean Sea. [21]

Fisheries biologists have documented significant declines in the size and abundance of commercially and recreationally important species of snapper, grouper, and grunts throughout the Florida Keys including the Tortugas region.[22] The contribution of these largest fish to production in the Tortugas region is essential to the multi-billion dollar fishing and tourism industry in the Florida Keys.

A retrospective analysis of reef fisheries data collected from 1979 to 1996 showed that fishing mortality levels are very intense, that many stocks are overfished, and that exploitation has altered the structure and dynamics of the reef fish community.[23] This study of 35 economically important reef fish stocks found that 13 of 16 groupers, 7 of 13 snappers, one wrasse, and 2 of 5 grunts within the lower Keys and Tortugas region were below the 30% Spawning Potential Ratio (SPR), a level considered the threshold of overfishing under U.S. guidelines.[24] The high number of species with low SPRs indicates that past management practices have not been adequate to meet fishery objectives. The current rate of fishing mortality on the black grouper is now greater than 4 times the level that would be expected to produce maximum sustainable yield. Rapid growth of the barracuda population during the same period suggests that fishing has contributed to substantial changes in community structure and dynamics.

In 1999 and 2000 a team of scientists from the National Undersea Research Center, the University of Miami, the National Marine Fisheries Service, and the Florida Fish and Wildlife Conservation Commission conducted a study of reef fish and benthic communities in the Dry Tortugas region. The team found that in the Dry Tortugas, "the number and size of sought-after fish (e.g. groupers and snappers) are down considerably from presumed historical levels.

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[21] Id.

[22] *Site Characterization for the Dry Tortugas Region: Fisheries and Essential Habitats:* Schmidt, T.W., J.S. Ault,, J.A. Bohnsack, National Park Service, University of Miami, NOAA/National Marine Fisheries Service, 1999.

[23] *A Retrospective (1979-1996) Multispecies Assessment of Coral Reef Fish Stocks in the Florida Keys*, Ault, J.S., J.A. Bohnsack, and G.A. Meester, 1998.

[24] Spawning Potential Ratio (SPR) is the ratio of total egg production under fishing to total egg production without fishing. At 50% SPR, for example, only half the total number of eggs are produced as in an unexploited population. As fishing mortality increases, stock biomass and SPR decline and the risk of stock collapse increases.

Grouper, for example, were found to be down to approximately 5-10% of their historical spawning sizes. This is a serious concern because the Tortugas region is widely considered the place where the fish spawn and then repopulate the rest of the waters around the Keys and South Florida. These results are consistent with serial overfishing (i.e. the sequential loss of the most vulnerable species to fishing) documented throughout the Florida Keys in previous research." [25]

The potential for exploitation of the Tortugas is rapidly increasing with technological innovations like GPS, electronic fish finders, better and faster vessel design, and the growing size of the fishing fleets. Total fishing effort has increased significantly over the past 25 years because of greater average fishing power per vessel and a much larger recreational fishery. Trends in nominal fishing effort, measured by the numbers of licensed recreational, commercial and headboat vessels in Monroe County, show that recreational fishing effort has increased sharply since 1965. Since 1981, the largest increase has come from the recreational sector and continues to increase whereas commercial and headboat sectors have been relatively stable.[26]

The scientific literature, as well as the National Park Service's own experience in managing spiny lobster in the park, has shown that prohibiting harvest of marine life in select areas directly benefits species abundance, size and diversity. Dry Tortugas National Park has been designated a "no take" sanctuary for the spiny lobster since March 1974. Between 1996-1999, the Florida Marine Research Institute conducted 240 lobster surveys logging observations of over 3,100 lobsters in the park (an unfished area) and the rest of the Florida Keys reef tract (fished). The largest and most abundant sexually mature lobsters were found in the park, followed by Looe Key in the Florida Keys National Marine Sanctuary (a lobster sanctuary since 1981). As size generally correlates with the ability to produce eggs, it was found that the average number of eggs per clutch for park lobster was 797,126 compared with 309,069 (39%) for the rest of the Keys. In summary, lobster populations in unfished areas are significantly more abundant, larger, and more fecund than those found in fished areas.[27]

To further evaluate methods for protecting ocean ecosystems, the Department of the Interior and NOAA requested that the National Research Council assemble a committee of experts to examine the utility of marine reserves and protected areas (MPAs) for conserving marine resources, including fisheries, habitat, and biological diversity.[28] The committee was directed to compare the benefits and costs of MPAs to more conventional management tools, explore the feasibility of implementation, and assess the scientific basis and adequacy of techniques for designing marine reserves and protected areas. The NRC's report, *Marine Protected Areas: Tools for Sustaining Ocean Ecosystems,*[29] endorses increased use of no-take marine reserves, in concert with

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[25] *Multispecies Reef Fish Stock Assessment in the Dry Tortugas,* Ault, J.S., Bohnsack, J.A., and Miller, S.L., National Undersea Research Center/University of North Carolina, Wilmington, August 2000.

[26] *A Retrospective (1979-1996) Multispecies Assessment of Coral Reef Fish Stocks in the Florida Keys*, Ault, J.S., J.A. Bohnsack, and G.A. Meester, 1998.

[27] *Spiny Lobster Spawning Potential and Population Assessment: A Monitoring Program for the South Florida Fishing Region*, by R.D. Bertlesen and J.H. Hunt, Florida Marine Research Institute.

[28] The National Research Council is the principal operating arm of the National Academy of Sciences and the National Academy of Engineering. It is a private, nonprofit institution that provides scientific and technical advice under a congressional charter.

[29] *Marine Protected Areas: Tools for Sustaining Ocean Ecosystems,* National Research Council, November 2000: http://books.nap.edu/catalog/9994.html

conventional management approaches, as tools for managing ocean resources. The NRC found that declining or poorly managed fish populations and damage to marine habitats are signs that conventional ocean-management practices are insufficient, while recent research demonstrates that properly designed reserves can be effective tools for protecting and restoring ocean ecosystems.

Conventional approaches to marine management, especially for fisheries, usually focus on individual species. The NRC found, however, a growing body of scientific literature documenting the potential effectiveness of marine reserves for replenishing overexploited fish stocks, conserving biodiversity, and restoring habitats. Studies have shown for example that the size of both stocks and individual fish frequently increase in reserves. These larger fish produce more eggs, increasing the overall productivity of the population. A review of several studies looking at biodiversity found that nearly 60 percent of the reserves examined had a greater number of species in protected areas by a third on average. The NRC also found that effective implementation and enforcement to protect the areas will require coordination among state and federal government agencies, and active input from community, commercial and recreational interests.

During the development of alternatives for the park's Research natural area, several different evaluations were conducted using the best available scientific information to provide the broadest possible protection for threatened, endangered and rare marine resources. Goals, objectives and criteria were utilized to develop and compare RNA alternatives. Boundary alternatives were based on regional fisheries surveys, physical oceanography and larval dispersal pathways, benthic habitat investigations, and enforcement and socio-economic considerations. The RNA design process also considered the "larger ecosystem" as a specific objective when evaluating the appropriateness of the boundaries for the various alternatives. This objective was satisfied when the Park's RNA boundary was contiguous or shared a common boundary with the Florida Keys National Marine Sanctuary's proposed ecological reserve.

In order for the NPS research natural area and the FKNMS ecological reserve to be biologically effective, the full range of land and marine habitats and their associated communities, from the shallowest to the greatest depths, are included within the boundaries of these areas. The FKNMS ecological reserve, with its deep reefs and habitats, provides breeding and spawning grounds for fish while the park's RNA, with its shallow reefs and sea grass beds, will provide nursery areas for juveniles and reef habitats for adults. The RNA will provide long-term benefits to research and protection of marine resources in the FKNMS and serve as a reference site to help scientists distinguish between natural and human-induced changes to the Florida Keys ecosystem. The combined Tortugas Ecological Reserve and Research Natural Area will serve as a benchmark area for coral reef ecosystem research throughout the Caribbean Sea.

D. Rationale for the Selected Action

Alternative C was selected for implementation because it best supports the park's purpose and significance and accomplishes the statutory mission of the National Park Service to provide long-term protection of park resources while allowing for appropriate levels of visitor use and means of visitor enjoyment. This action provides the appropriate balance and flexibility necessary to protect traditional recreational values at Dry Tortugas National Park, as well as the

natural and cultural resources. This approach is vital to maintaining relationships between park visitors and the National Park Service, a critical element in the successful implementation of the proposed action and realization of its beneficial effects on the environment.

Decisions in the general management planning process involve a broad view of the park and its resources and a clear evaluation of gains and benefits in resource protection, visitor experience, health and safety, and park operations that are presented by each alternative. The process for selecting a preferred alternative for the Dry Tortugas *Final GMPA/EIS* required defining key decision factors in a manner germane to the key issues of Dry Tortugas and describing for each factor the advantages that each alternative presented. As presented in Appendix E of the *Final GMPA/EIS*, several factors were compared and evaluated in selecting alternative C as the proposed action. These factors were described as maximize the protection of resources, maximize the diversity of visitor experiences, and maximize operational efficiency.

Following is a comparison of the advantages of each alternative for each decision factor.

Maximize the Protection of Resources

Alternative A would provide the least protection of resources because of impacts from increased visitation, low potential for biodiversity, accomplishing few surveys and monitoring, a low level of research, random educational contact, and few patrols to monitor visitor activities.

Alternative B would provide minor additional protection because there is a better ability to limit visitor numbers, surveys would be completed, resources would be regularly monitored, mooring buoys could direct visitors to less sensitive areas, and patrols would monitor private boaters.

Alternatives C and D would offer greater protection because they establish the minimal area necessary for an effective research natural area, provide greater biodiversity, increase restrictions and controls on visitor behavior, and provide higher levels or research and monitoring.

Alternative E would offer the greatest protection because it establishes a maximum area of Research natural area, provides for greater biodiversity, creates maximum restrictions and controls on visitor behavior, and establishes higher levels of research and monitoring (similar to alternatives C and D). However, the additional size of the Research natural area does not necessarily constitute significant resource advantages because the preferred configuration provides the necessary range and size to accomplish RNA zone goals.

Maximize the Diversity of Visitor Experiences

Alternative A would be least preferred because degraded resources would result from greater visitor use; also there would be poor control of crowding, poor control of safety and public health, and low quality visitor experience.

Alternative B would be better with less crowding, better control, better standards for service, and slightly improved resources for visitors to experience.

Alternative E would be better. It would provide for a more managed and structured visitor experience and limited self-selection of activities by visitors, especially private boaters; there would be fewer options for activities, but there would be better support services, the best means to control crowding, and a greater guarantee of a quality, low-density visitor experience.

Alternatives C and D would be best with more certainty of intra-park travel, much better control of crowding, better diversity in the opportunities for visitor experiences, more freedom to experiences a remote marine environment for private boaters than in a completely managed and structured tour, and a high improvement of resources encountered by visitors.

Maximize Operational Efficiency

Alternative A would be least preferred because there would be some limitation on number of visitors and increased staff; there might be mitigation of some public use with better control of visitor numbers and more staff.

Alternatives C and D would be additionally better with improved control of visitors, a better match between use and staff, and more concessioner involvement in park operations and visitor management.

Alternative E would be the most attractive because it would offer the best control of visitors, require less day marker management for the research natural area delineation, match appropriate staff levels with visitation, and provide more concessioner involvement in park operations and visitor management.

Summary

Consistent with the park's legislated purposes and NPS policies, Alternative C was determined to best achieve the objectives for resource protection with the establishment of a research natural area zone, while continuing to accommodate a wide range of appropriate visitor uses. Although Alternative E would have maximized the area of resource protection with the research natural area zone extended to the majority of the park, the types and diversity of visitor experiences would have been significantly restricted as a consequence. Available scientific evidence also indicates that the size and configuration of the research natural area zone as presented under Alternative C would reliably achieve the primary objectives for increased biodiversity and protection of a vital range of habitats.

Designation of the majority of the remainder of the park as a natural/cultural zone would not restrict management options should the need arise to improve specific resource and visitor experience conditions. Park managers would continue to have a full range of options available to stop or mitigate impacts, including installing additional mooring buoys, expanding permitting and reservation systems, providing guided tours, and instituting site closures.

By implementing Alternative C, the National Park Service hopes to preserve and protect a place where the ecosystem's full potential can be realized. By enhancing protection of the resources of the Tortugas area now, the National Park Service, in partnership with the Florida Keys

National Marine Sanctuary and the State of Florida, will be able to maintain them in a nearly pristine state, for the benefit of present and future generations.

E. Measures to Minimize Environmental Harm

All practicable measures to avoid or minimize environmental impacts that could result from implementation of Alternative C have been identified and incorporated into the action. Within the research natural area zone, the NPS will have very low tolerance for impacts on terrestrial, marine, or submerged cultural resources due to visitor use or other causal factors within the park's ability to effectively manage. Low to moderate tolerance for resource impacts in other park zones will similarly be expected. To protect marine resources, anchoring will be permitted only in the natural/cultural and historic preservation/adaptive use zones. The use of mooring buoys will be required in the research natural area and possibly in other zones if determined necessary to protect resources.

The park will institute an aggressive visitor education program to adequately inform visitors of the importance of resource protection. Education and interpretation will be incorporated into tour activities. Private boaters will receive resource protection education as part of the permit requirements. The park will monitor visitor use activities to ensure that visitors engage in appropriate activities within particular zones. Visitors will be directed away from sensitive areas if necessary. The concept of carrying capacity was applied in the planning process to assist the park in arriving at suitable numbers of visitors that could reasonably be accommodated in various park locations without compromising resource conditions and high quality visitor experiences.

To sustain biodiversity and increased populations of marine life, no manipulation of resources by the NPS, other agencies, researchers or visitors will be allowed in the research natural area zone except for restoration. Minor manipulation of resources in other zones will be allowed only to meet visitor safety or resource protection objectives. Comprehensive resource surveys will continue throughout the park, and systematic monitoring will be carried out to document changes in resource conditions and provide informed direction for appropriate resource management and research. The NPS will continue to work with the Florida Keys National Marine Sanctuary and the state of Florida to study and manage fisheries and ecosystem health in the Tortugas region.

The NPS contacted the U.S. Fish and Wildlife Service, and the Florida Fish and Wildlife Conservation Commission regarding threatened/endangered species or designated critical habitat within the park. Lists of threatened/endangered species identified in the area were provided by these agencies. The U.S. Fish and Wildlife Service indicated that there is no designated critical habitat within the park boundaries. The proposal to establish a research natural area zone is expected to have long-term beneficial impacts on threatened/endangered species by eliminating the pressure caused by fishing or other visitor-caused impacts on habitats within the zone. Special protection zoning will also be applied to selected keys and submerged areas to protect significant bird and turtle nesting areas, and coral communities.

As part of the submerged cultural resource strategy developed for the park, the NPS has undertaken a comprehensive archeological survey and inventory of submerged sites (e.g.

shipwrecks and other resources). The strategy incorporates a comprehensive and multidisciplinary monitoring program to assess resource impacts. Diving will be allowed only in approved areas by means of mooring buoys or anchoring (if permitted in locations outside the research natural area zone). Visitors will be directed away from sensitive cultural site locations, and remote sensing surveillance systems will assist park patrol efforts to protect significant sites.

The Florida Division of Historical Resources (State Historic Preservation Office) reviewed the draft GMPA/EIS for compliance with section 106 of the National Historic Preservation Act. The SHPO supported Alternative E as providing the best protection of park cultural resources. While many of the park's ongoing preservation, maintenance and limited rehabilitation actions are programmatically excluded from section 106 review outside the NPS, the NPS will further consult with the Florida SHPO for proposed undertakings identified in the GMPA/EIS. These actions include expansion/rehabilitation of the Fort Jefferson visitor center into adjacent casemates; upgrade of casemates currently used for staff and administrative use quarters; and extension of the Garden Key dock requiring archeological assessment of construction areas. Consultation for these actions will occur during future design development stages. The NPS will continue to provide the SHPO information gathered as a result of ongoing archeological survey of submerged areas in the park.

Specific measures to minimize environmental harm will be included in implementation plans called for by the *Final GMPA/FEIS* and identified in Sections III-A and VI of this document. If future monitoring, as provided in this decision, indicates that impacts are too great to sustain recreational use, or that impairment occurs, it will be appropriate to implement further management changes. Monitoring plans will describe standards or thresholds of impact, and management actions that will be taken if standards are not met.

F. Relationship of the Selected Action to Other Plans for the Tortugas

There are four other actions underway in conjunction with the NPS action described in this ROD to ensure comprehensive protection of the unique resources of the Tortugas region.

The Florida Keys National Marine Sanctuary is currently implementing a 151 square nautical mile no-take ecological reserve in the westernmost portion of the sanctuary adjacent to Dry Tortugas National Park. The reserve consists of two sections, Tortugas North and South. The federal portion of the Tortugas Ecological Reserve includes all of Tortugas South (60 square nautical miles) and 14 square nautical miles in the northwest corner of Tortugas North. Rules designed to protect the federal portion of the ecological reserve went into effect on March 16, 2001.

On April 24, 2001, The Governor and Cabinet of the state of Florida unanimously approved establishment of the Tortugas Ecological Reserve in state territorial waters (77 square nautical miles). Their vote represented the final agency approval necessary for full implementation of the 151 square nautical mile Tortugas Ecological Reserve. State regulations for the reserve went into effect on July 1, 2001.

The Gulf of Mexico Fishery Management Council is amending its *Gulf of Mexico Fishery Management Plans* to effect a permanent closure to fishing of the Tortugas South area and the

portion of Tortugas North in the council's jurisdiction. The National Marine Fisheries Service intends to issue regulations consistent with the no-take status of the Tortugas Ecological Reserve for the species covered by the *Gulf of Mexico Fishery Management Plans* and for Atlantic tunas, Swordfish, sharks and Atlantic billfishes.

All aspects of planning by FKNMS and the NPS have been coordinated, including the involvement of the local and national publics. Although the agencies have distinct missions and responsibilities, it is recognized that the resources being managed are inextricably linked. Therefore, the actions of one agency will affect the effectiveness of the other agency's actions.

It is the intent of both agencies that the plans and subsequent management of the park and the sanctuary complement and support each other. The boundaries and regulations for the sanctuary's ecological reserve are compatible with the NPS research natural area. The boundaries for the sanctuary's ecological reserve are depicted on the map below for the purpose of providing the public a comprehensive view of what is proposed for the region. Combined with the establishment of the NPS research natural area, the actions described above will result in comprehensive protection for nationally significant coral reef habitats and communities from shallow to deep waters extending from the park into sanctuary and GMFMC waters.

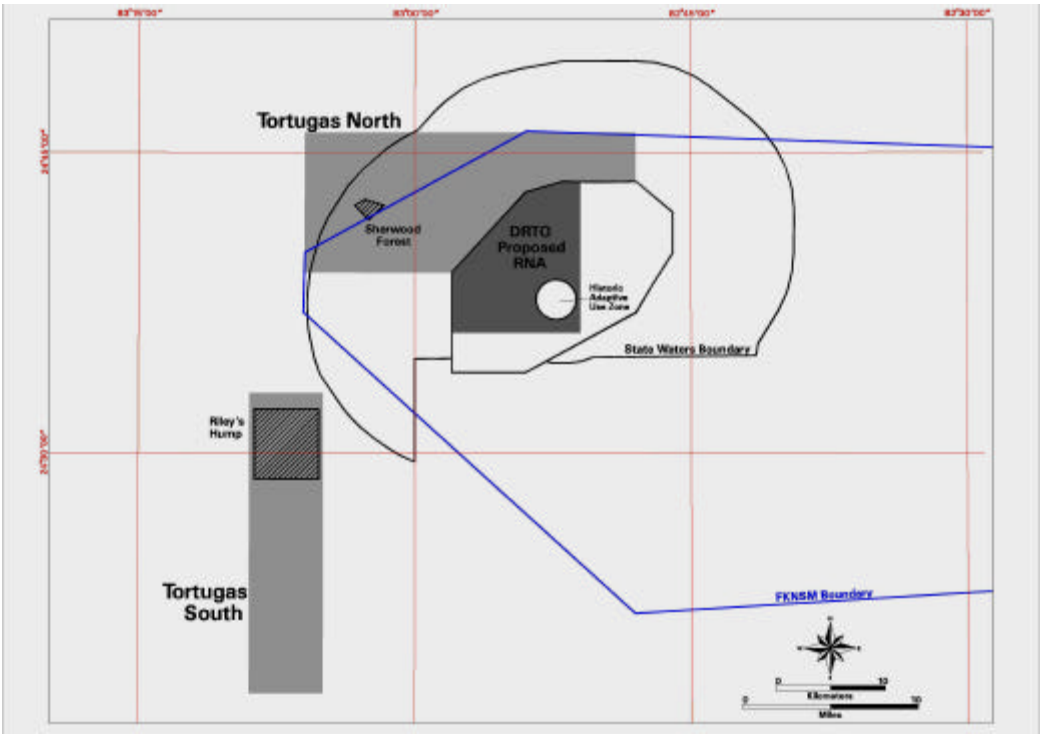

Figure 2. Relationship of Dry Tortugas National Park Management Zones to the Florida Keys National Marine Sanctuary Tortugas Ecological Reserve

IV. FINDING OF NO IMPAIRMENT OF PARK RESOURCES AND VALUES

Under the National Park Service Organic Act and the General Authorities Act, as amended, the National Park Service may not allow the impairment of park resources and values except as authorized specifically by Congress. The impairment that is prohibited by these acts is an impact that, in the professional judgement of the responsible NPS manager, would harm the integrity of critical park resources or values, including the opportunity that otherwise would be present for the enjoyment of those resources or values.

In determining whether impairment may occur, park managers consider the duration, severity, and magnitude of the impact; the resources and values affected; and direct, indirect, and cumulative effects of the action. According to NPS policy, "An impact would be more likely to constitute an impairment to the extent that it affects a resource or value whose conservation is: a) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park; b) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or c) identified as a goal in the park's general management plan or other relevant National Park Service planning document."

In accordance with NPS *Management Policies* the NPS has determined that implementation of the selected action will not constitute impairment of Dry Tortugas National Park's significant resources and values. This conclusion is based on a thorough analysis of the environmental impacts described in the final GMPA/EIS, relevant scientific studies, the public comments received, and the professional judgement of the decision-makers guided by the direction outlined in Section 1.4.7 of the *Management Policies.*

The decision to implement Alternative C will result in a comprehensive and coordinated set of actions that will ensure that the manner by which visitors experience the park does not impair park values and resources. Overall, long-term beneficial impacts will result, furthering the park's legislated purpose to *"preserve and protect for the education, inspiration, and enjoyment of present and future generations nationally significant natural, historic, scenic, marine, and scientific values in South Florida."*

V. ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The environmentally preferable alternative is defined as the alternative or alternatives that will promote the national environmental policy as expressed in Section 101 of the National Environmental Policy Act. Ordinarily, this means the alternative that causes least damage to the biological and physical environment; it also means the alternative that best protects, preserves, and enhances historic, cultural and natural resources. [30]

The National Park Service has identified Alternative E as the environmentally preferable alternative. Alternative E would offer the greatest protection of park resources because it establishes a maximum size of research natural area, provides for greater biological diversity, provides greater protection for submerged cultural resources, includes the best controls on

[30] *Forty Most Asked Questions Concerning Council on Environmental Quality's (CEQ) National Environmental Policy Act Regulations*, Federal Register, Vol. 46, No. 55, March 23, 1981.

human impacts, and establishes the highest levels of research and monitoring. The Florida State Historic Preservation Office, in its comments on the Draft EIS, identified alternative E as providing the best protection for the unique and important cultural resources located within the park.

VI. IMPLEMENTATION

A. Implementation Plans to Follow The General Management Plan Amendment

NPS general management plans are intended to establish general, conceptual guidance for management of the parks over a 15-20 year period. Due to the programmatic nature of the general management plan, specific measures to achieve the management prescriptions and mission goals in the GMP will be included in implementation plans called for by the Final GMPA/FEIS. Implementation planning will focus on how to implement activities and projects needed to achieve the management prescriptions identified in the GMP. Developing plans of action for dealing with complex, technical, and sometimes controversial issues often requires a level of detail and analysis beyond that appropriate at the GMP level. Implementation planning will provide this level of detail and analysis.

The National Park Service will complete the plans and actions described in Section III-A of this ROD and in the Final GMPA/FEIS. These include, but are not limited to, a visitor experience and resource protection plan; a resources management plan; a research and monitoring plan; a facilities plan; a comprehensive interpretive plan; rulemaking; a concessions contract prospectus; a solid waste management plan; a memorandum of understanding with NOAA; and a study to evaluate options for expanding the dock at Garden Key. Specific measures to minimize harm will be included in these implementation plans. Specific development projects will be reviewed as necessary for compliance with the National Environmental Policy Act, National Historic Preservation Act, and other applicable federal and state laws and regulations prior to project clearance and implementation.

B. Research and Monitoring

In order to assess the long-term effects of visitor use and management actions on park resources and values, research, inventory and monitoring are incorporated into this decision. The key resources and values potentially affected by management and visitor use of the park include air quality, water resources, fish and wildlife populations, coral reefs, other natural and cultural resources, visitor safety and the quality of visitor experience.

The GMPA does not identify specific indicators and standards for monitoring these resources and values. It also does not identify how the NPS will measure success or failure in achieving the desired conditions for resources and visitor experiences. The initial identification of indicators, standards, methods and management responses that relate to critical resources and values will be identified in the visitor experience and resource protection plan and the research and monitoring plan described in the *FGMPA/EIS* and on page 8 of this ROD. The indicators will be monitored to ensure protection of natural and cultural resources and park values and evaluate management success.

The park's research and monitoring programs will be coordinated with those of the Florida Keys National Marine Sanctuary for the purpose of effective use of funds and personnel. It is expected that initial monitoring will be intensive, both in geographical and temporal extent, so that correlations can be made and results can be extrapolated. It is also expected that monitoring over time will become less intensive and arrive at a low intensity, maintenance level. Systematic feedback of information to park management will allow for adjustment of activities to mitigate unplanned or undesirable outcomes.

C. Interagency Coordination

The NPS will complete a memorandum of understanding with the FKNMS for cooperation in research, monitoring, enforcement, education and sharing of facilities. An interagency visitor center will be established in Key West with the NPS, FKNMS and the U.S. Fish and Wildlife Service as participating agencies. The NPS will continue to work with the FKNMS, the U.S. Fish and Wildlife Service, the state of Florida and others to study and manage fisheries and ecosystem health in the Tortugas region.

VII. PUBLIC AND INTERAGENCY INVOLVEMENT

National Park Service planning for the GMPA/EIS was undertaken concurrently and in collaboration with planning by the Florida Keys National Marine Sanctuary, the Florida Fish and Wildlife Conservation Commission and the Gulf of Mexico Fisheries Management Council leading to establishment of a Tortugas Ecological Reserve within the FKNMS adjacent to Dry Tortugas National Park. To minimize public confusion about these planning processes and to maximize public involvement in both efforts, the NPS and FKNMS coordinated schedules, linked web sites, held joint scoping meetings, prepared separate but coordinated documents, and held joint public meetings with the FFWCC and the GMFMC on the draft plans. The NPS sent out a newsletter requesting public comments, established a web site to solicit public input, and held public scoping meetings during October and November 1998, in Washington, D.C., and at four Florida locations: Ft. Myers, Key West, Marathon, and Miami.

All responses received to the newsletter and web site, and as a result of the scoping meetings, were considered by the NPS and incorporated into the issues evaluated by the environmental impact statement. These included protection of the pristine natural marine resources (e.g. coral reefs, birds, sea turtles, etc.); the desire to maintain qualities of remoteness and tranquility in the park; the appropriateness of specific visitor activities in the park; the quality of the visitor experience; the preservation of Fort Jefferson and submerged cultural resources; and the effects of fishing on fisheries.

The NPS subsequently prepared a draft general management plan amendment/environmental impact statement. The availability of the plan was published in the *Federal Register* and a formal public review period was initiated. All interested agencies, groups and individuals were invited to review the document and submit comments. Public meetings on the draft plan were held during June 2000 at five Florida locations: Homestead, Naples, St. Petersburg, Marathon, and Key West. A sixth meeting was held in July 2000, in Washington D.C. The Florida Keys

National Marine Sanctuary, the Florida Fish and Wildlife Conservation Commission and the Gulf of Mexico Fisheries Management Council participated in these meetings to receive comments on their respective plans and regulations for the Tortugas Ecological Reserve.

A. Comments on the Draft GMPA/EIS

Public and agency comments strongly supported a management plan at least as protective as Alternative C. Of 6,104 comments received during the public comment period, 97% were supportive while 3% opposed the proposed action. Some sport fishermen, who maintain that properly regulated recreational fishing has no negative impacts on fish populations, expressed opposition to Alternative C. Several commentors expressed concern about limiting the ferry concession to one vessel, and also about the requirements for interpretation, education and intra-park transportation that would be placed upon the concessionaire. Environmental organizations generally supported the preferred alternative, although some stated that the research natural area should be larger. Many commentors recommended adjusting the boundaries of the RNA and historic/adaptive use zones to simplify identification and enforcement. The Florida Keys National Marine Sanctuary, the Florida Fish and Wildlife Conservation Commission and the Gulf of Mexico Fisheries Management Council supported the proposed action. A summary of the substantive comments received and the NPS response to these are included on pages 222-231 of the *Final GMPA/EIS*.

All public and agency comments were carefully evaluated by the NPS and the proposed action was modified in several areas in response to the comments. The boundaries of the RNA and historic adaptive use zones were revised to simplify identification and enforcement, resulting in a 3% increase in the size of the RNA. Special protection zoning was applied to the park's only remaining elkhorn and fused staghorn coral formations in the Long Key-Bush Key tidal channel to protect this at-risk community from vessel and diver impacts. To reduce crowding and improve the quality of the visitor experience, the maximum number of visitors arriving by ferry was reduced from 200 to 150 people per day, and the capacity of the Garden Key campground was lowered from 100 to 68 campers per night.

In January 2001, the *Final GMPA/EIS* was posted on the Internet at www.nps.gov/drto/planning, and distributed to agencies, organizations and individuals on the park's mailing list. Copies of the document were also made available in local libraries and at Everglades/Dry Tortugas National Park headquarters. The Department of the Interior, National Park Service's notice of availability of the final GMPA/EIS was published in the *Federal Register* on January 22, 2001. The 30-day no-action period ended on February 22, 2001.

B. Comments on the Final GMPA/EIS

The U.S. Environmental Protection Agency (EPA) expressed concerns about the level of information in the *Final GMPA/EIS* regarding plan implementation, environmental monitoring, impact mitigation, and enforcement. The NPS consulted with the EPA to clarify specific issues and has addressed these concerns in sections III-A, III-D, III-E, V and VI of this Record of Decision.

The NPS received several hundred letters from citizens and organizations reflecting a variety of viewpoints about the *Final GMPA/EIS*. Before approving the final plan, the NPS considered all the comments in our deliberations, including those for and against prohibiting recreational fishing in certain areas of the park. The *Final GMPA/EIS* has been reviewed and approved by the Secretary of the Interior.

VIII. APPROVAL

The above factors and considerations justify the selection of the final plan as described in the "Proposed Action" section of the Final Environmental Impact Statement. The Final General Management Plan Amendment is hereby approved.

Recommended:

Maureen Finnerty — Date: 7/27/01

Maureen Finnerty, Superintendent
Everglades and Dry Tortugas National Parks
National Park Service

Approved:

Patricia A. Hooks — Date: 7/27/01

Jerry Belson, Regional Director
Southeast Regional Office
National Park Service

APPENDIX A: ERRATA

1. Page 63, **Commercial Services,** second paragraph. Replace the second sentence with the following text: "The number of vessels used in the operation, and arrival and departure patterns at Fort Jefferson, will be determined in the concession contracting process."

   Explanation: The number of vessels to be used by the ferry concessionaire, and appropriate arrival and departure patterns, will be determined during the concessions contracting process that will occur during implementation of the *Final GMPA/EIS*.

2. Page 64, **Commercial Services,** third paragraph. Change the last word of the fourth sentence from "six" to "twelve."

   Explanation: Group size for snorkeling and diving with commercial guides in the research natural area zone will be limited to 12 passengers, rather than 6 passengers.

3. Page 64, **Commercial Services,** sixth paragraph. Change the fourth sentence to read: "CUA permits will be issued to boat operators for 12-passenger multi-day diving trips."

   Explanation: Group size for guided multi-day diving trips by operators with Commercial Use Authorizations will be 12 passengers, rather than 6 passengers.

4. Page 40, **Table 1. Ranges of Visitor Use At Specific Locations.** Change the last sentence in the box on page 40 to read: "Group size for snorkeling and diving with commercial guides in waters in the research natural area shall be a maximum of 12 passengers, excluding the guide."

   Explanation: Clarifies that maximum group size for guided multi-day diving trips in the RNA by operators with Commercial Use Authorizations will be 12 passengers, rather than six passengers.

5. Page 84, **Table 4: Summary of Alternative Actions.** In the first row of the table, under the column for **Alternative D**, strike the text in the box and replace it with the following: "Same as alternative C except that all visits to destinations in the research natural area zone would be by guided tour only. Private boats would be allowed to transit the RNA without stopping, but would not be allowed to anchor or tie up to mooring buoys in this zone."

   Explanation: Clarifies that private boats would be allowed to transit the RNA without stopping.

6. Page 84, **Table 4: Summary of Alternative Actions.** In the 5th row of the table, under the column for **Alternative D**, strike the word "Yes" and insert the following text: "Private boaters must obtain a permit for recreational activities occurring inside the park but outside of the RNA."

Explanation: Clarifies that private boaters would be required to obtain a permit for recreational activities such as snorkeling, diving and fishing that take place inside the park, but outside the RNA zone.

7. Page 479, **Preparers and Consultants.** Under **Consultants** add: "Jeffrey Marion, Adjunct Faculty Member; Unit Leader, Cooperative Park Studies Unit; Virginia Polytechnic Institute and State University"