

National Park Service  
U.S. Department of the Interior

Biscayne National Park  
Florida



# *Biscayne National Park*

Supplemental Draft General Management Plan /  
Environmental Impact Statement

November 2013





# **ABSTRACT**

## **Supplemental Draft General Management Plan / Environmental Impact Statement Biscayne National Park Miami-Dade County, Florida**

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Biscayne National Monument was authorized by an act of Congress in 1968 (Public Law 90-606), expanded in 1974 (Public Law 93-477), and redesignated as a national park and expanded again in 1980 (Public Law 96-287). The last comprehensive management plan for the park was completed in 1983. The National Park Service released a Draft General Management Plan / Environmental Impact Statement (2011 Draft GMP/EIS) to the public in August 2011. A key component of the agency-preferred alternative in the 2011 Draft GMP/EIS was inclusion of a marine reserve zone. The marine reserve zone was proposed as an area in the park where fishing of any kind would be prohibited in order to allow a portion of the park's coral reef ecosystem to recover and to offer visitors a high-quality visitor experience associated with a healthy, intact coral reef ecosystem.

During the August 2011 public comment period, a number of substantive comments were received that identified both positive and negative impacts related to the establishment of the marine reserve zone. In particular, individuals who fish, fishing and marine industry organizations, and the Florida Fish and Wildlife Conservation Commission with whom the National Park Service consults regarding fishing management actions in the park, raised a number of significant issues about the NPS preferred alternative, including the marine reserve zone. The position of the State of Florida was that any consideration of a marine reserve zone could only occur after measurable management objectives have been clearly defined and less restrictive management measures have been appropriately implemented and evaluated in close coordination with agencies and stakeholders.

Based on the comments received, the National Park Service undertook an evaluative process to consider a number of management actions that could be deployed to achieve the goal of a healthier coral reef ecosystem within the zone to provide a more enjoyable and diverse visitor experience, while protecting the park's natural and cultural resources. Two new alternatives (alternatives 6 and 7) were developed in consultation with the Florida Fish and Wildlife Conservation Commission and the National Oceanic and Atmospheric Administration Fisheries. These alternatives contain many of the same elements as the original agency preferred alternative, except that instead of including a marine reserve zone, the alternatives include a new concept referred to as a special recreation zone. In developing the two new alternatives, the National Park Service and partner agencies are pursuing a novel approach to managing special marine ecosystems in a way that seeks to accomplish the same goals as a marine reserve while accommodating recreational fishing and providing a more enjoyable and diverse visitor experience. The two alternatives are described in detail in chapter 2 of the Supplemental Draft General Management Plan / Environmental Impact Statement. Chapter 4 describes the key impacts of implementing each of the two alternatives.

In alternative 6 (the new agency preferred alternative), the special recreation zone would include the following activities and limitations: fishing would be allowed year-round, with a special permit required for access to fish recreationally. There would be some zone-specific fishing restrictions (e.g., no grouper or lobster harvest, no spearfishing), but in general all other state fishing regulations would apply. There would be no commercial fishing allowed in the special recreation zone, with exception of the existing ballyhoo lampara net fishery. Anchoring within the zone would be prohibited; however, additional mooring buoys would be added over time as needed to disperse visitor use and improve the safety of diving operations. Snorkeling and diving would be allowed, and marine debris would be removed throughout the zone to improve the overall visitor experience for these activities. Alternative 7 is similar to alternative 6 in that it includes a special recreation zone with many of the same zone-specific fishing limitations. Differing from alternative 6, alternative 7 would not require an access permit to fish in the zone, but the area would be closed to recreational fishing during the summer months (June through September). This period is when the coral reef ecosystem is most stressed by warm water conditions and fish would benefit greatly from a respite in fishing pressure. The Florida Fish and Wildlife Conservation Commission would actively participate in the implementation of alternative 6, including permitting, research, monitoring, or rulemaking, but would not for alternative 7.

Adaptive management would be used in both new alternatives to guide long-term decision making. Both would employ a research and monitoring program to inform future decisions. Over time, a multiagency team would evaluate the need for management actions that may be warranted to reduce recreational impacts through the adaptive management process. Following the 10-year adaptive management period for the special recreation zone, the National Park Service would consider monitoring data and consult with relevant agencies (including the Florida Fish and Wildlife Conservation Commission for alternative 6 only) and an expert panel. At that point, the National Park

Service would decide whether to continue adaptive management strategies for a special recreation zone or implement a marine reserve zone.

This document fully describes and examines the original alternative 1 (no action) with minor updates, the two new alternatives (alternatives 6 and 7), and briefly summarizes alternatives 2 through 5 from the 2011 Draft GMP/EIS for comparison. The key impacts of implementing the no-action alternative (alternative 1) would be a continuation of existing impacts on natural and cultural resources, visitor experience, and park operations; including adverse effects on fisheries and some federally listed threatened and endangered species. Alternatives 6 and 7 have similar impacts, but many of the adverse impacts to fisheries, submerged aquatic communities, and listed species would be reduced due to zoning changes including the provisions of the special recreation zone. Alternatives 6 and 7 would also have both beneficial and adverse impacts on visitor experience and adverse impacts on park operations.

This Supplemental Draft General Management Plan / Environmental Impact Statement has been distributed to other agencies and interested organizations and individuals for their review and comment. The public comment period for this document will last for 90 days after the Environmental Protection Agency's notice of availability has been published in the *Federal Register*. Readers are encouraged to enter written comments on this draft plan on the park planning website at <http://parkplanning/nps.gov/BISC>. Please note that NPS practice is to make comments, including names and addresses of respondents, available for public review; see the following "How to Comment on this Plan" discussion for further information.

## HOW TO COMMENT ON THIS PLAN

Comments on this plan are welcome and will be accepted for 90 days after the Environmental Protection Agency's notice of availability appears in the *Federal Register*. If you wish to respond to the material in this document, you may submit your comments by any one of several methods. You may mail written comments to

Biscayne National Park GMP  
National Park Service  
M. Elmer (DSC-P)  
PO Box 25287  
Denver, CO 80225-0287

You may also comment via the NPS planning website (<http://parkplanning.nps.gov/bisc>). You may also hand deliver comments at public meetings to be announced in the media following release of this document. Before including your address, phone

number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. Although you may request in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

We will always make submissions from organizations or businesses and from individuals identifying themselves as representatives of or officials of organizations or businesses, available for public inspection in their entirety.

## SUMMARY

Biscayne National Monument was established in 1968 (Public Law 90-606), expanded in 1974 (Public Law 93-477), and redesignated as a national park and expanded again in 1980 (Public Law 96-287).

The last comprehensive planning effort (General Management Plan) for Biscayne National Park was completed in 1983. Much has occurred since 1983—the population near the park has greatly increased, visitor use patterns and types have changed, and people want to bring new recreational activities into the park. Each of these changes has important implications for how visitors access and use the park and the facilities needed to support those uses, how resources are managed, and how the National Park Service (NPS) manages its operations. A new plan is needed to

- Clearly define resource conditions and visitor experiences to be achieved in Biscayne National Park.
- Provide a framework for NPS managers to use when making decisions about how to best protect national park resources, how to provide a diverse range of visitor experience opportunities, how to manage visitor use, and what kinds of facilities, if any, to develop in the park.
- Ensure that this foundation for decision making has been developed in consultation with interested stakeholders and adopted by NPS leadership after an adequate analysis of the benefits, impacts, and economic costs of alternative courses of action.

The National Park Service released the Draft General Management Plan / Environmental Impact Statement (2011 Draft GMP/EIS) to the public in August 2011. A key component

of the agency-preferred alternative in the 2011 Draft GMP/EIS was inclusion of a marine reserve zone. The marine reserve zone was proposed as an area in the park where fishing of any kind would be prohibited in order to allow a portion of the park's coral reef ecosystem to recover and to offer visitors a high-quality visitor experience associated with a healthy, intact coral reef ecosystem.

During the August 2011 public comment period, over 18,000 pieces of correspondence were received, which contained over 20,000 comments. A number of these were substantive comments that identified both positive and negative impacts related to the establishment of the marine reserve zone. In particular, individuals who fish, fishing and marine industry organizations, and the Florida Fish and Wildlife Conservation Commission, with whom the National Park Service consults regarding fishing management actions in the park, raised a number of significant issues about the NPS preferred alternative, including the marine reserve zone. The position of the State of Florida was that any consideration of a marine reserve zone could only occur after measurable management objectives have been clearly defined and less restrictive management measures have been appropriately implemented and evaluated in close coordination with agencies and stakeholders.

Based on the comments received, the National Park Service undertook an evaluative process to consider a number of management actions that could be deployed to achieve the goal of a healthier coral reef ecosystem within the zone to provide a more enjoyable and diverse visitor experience, while protecting the park's natural and cultural resources. Two new alternatives (alternatives 6 and 7) were developed in consultation with the Florida Fish and

Wildlife Conservation Commission and the National Oceanic and Atmospheric Administration Fisheries and presented in this Supplemental Draft General Management Plan / Environmental Impact Statement. These alternatives contain many of the same elements as the original agency preferred alternative (alternative 4), except that instead of including a marine reserve zone, the alternatives include a new concept referred to as a special recreation zone. The special recreation zone is larger than the marine reserve zone in alternative 4, but still covers only about 8% of the park.

In developing the two new alternatives, the National Park Service and partner agencies are pursuing a novel approach to managing special marine ecosystems in a way that seeks to accomplish the same goals as a marine reserve while accommodating recreational fishing and providing a more enjoyable and diverse visitor experience. These alternatives seek to provide appropriate access, but prohibit specific activities that are most damaging to the coral reef system. Implementation of these alternatives within the framework of an adaptive management strategy represents a new opportunity to manage these special marine areas that are important to a diverse set of user groups. The two alternatives are described in detail in chapter 2 of the Supplemental Draft General Management Plan / Environmental Impact Statement. Chapter 4 describes the key impacts of implementing each of the two alternatives. Alternative 6 is identified as the new agency preferred alternative.

In alternative 6, the special recreation zone would include the following activities and limitations: fishing would be allowed year-round, with a special permit required for access to fish recreationally. There would be some zone-specific fishing restrictions (e.g., no grouper or lobster take, no spearfishing), but in general, all other state fishing regulations would apply. There would be no commercial fishing allowed in the special recreation zone, with exception of the existing ballyhoo lampara net fishery.

Anchoring within the zone would be prohibited; however, additional mooring buoys would be added over time as needed to disperse visitor use and improve diving operations safety. Snorkeling and diving would be allowed, and marine debris would be removed throughout the zone to improve the overall visitor experience for these activities. Alternative 7 is similar to alternative 6 in that it includes a special recreation zone with many of the same zone-specific fishing limitations. Alternative 6 is the NPS preferred alternative, replacing the former agency preferred alternative, alternative 4. Differing from alternative 6, alternative 7 would not require an access permit to fish in the zone, but the area would be closed to recreational fishing during the summer months (June through September). This period is when the coral reef ecosystem is most stressed by warm water conditions and would benefit greatest from a respite in fishing pressure. The Florida Fish and Wildlife Conservation Commission would actively participate in the implementation of alternative 6, including permitting, research, monitoring, or rulemaking, but would not for alternative 7.

Adaptive management would be used in both new alternatives to guide long-term decision-making. Both alternatives would employ a research and monitoring program (10-year science plan) to inform adaptive management decisions. Under alternative 6 only, the National Park Service would evaluate effort and take at regular intervals (see appendix F) to determine if the original assumptions are being met. If the assumptions of effort and take are being exceeded, a multiagency team would evaluate whether to reduce the number of permits to be issued for following years. For both alternatives 6 and 7, a multiagency team would evaluate the need for other management actions that may be warranted to reduce recreational impacts, through the adaptive management process. Depending on site-specific observations and concerns, such actions might include adjustments to the number and location of mooring buoys, changes to public messaging and law enforcement efforts, and increased

effort to remove marine debris. For both alternatives, a panel of experts would be convened at years 5 and 10 to provide recommendations on the science plan, the monitoring results, and long-term management. Following the 10-year adaptive management period for the special recreation zone, the National Park Service would consider monitoring data and consult with relevant agencies (including the Florida Fish and Wildlife Conservation Commission for alternative 6 only) and an expert panel. At that point, the National Park Service would decide whether to continue adaptive management strategies for a special recreation zone or implement a marine reserve zone.

This Supplemental Draft General Management Plan / Environmental Impact Statement presents two new alternatives in addition to the five alternatives previously presented in the 2011 Draft GMP/EIS, including the new preferred alternative (alternative 6), for future management of Biscayne National Park. The alternatives, which are based on the park's purpose, significance, and special mandates, present different ways to manage resources and visitor use and improve facilities and infrastructure at the park. Alternative 1 (no action) and the two new alternatives are described in full and analyzed in this Supplemental Draft General Management Plan / Environmental Impact Statement.

### **ALTERNATIVE 1: NO-ACTION ALTERNATIVE**

The no-action alternative consists of the continuation of existing management and trends at Biscayne National Park and provides a baseline for comparison in evaluating the changes and impacts of the other alternatives. The National Park Service would continue to manage the park as it is currently being managed. Existing operations and visitor facilities would continue, and no new construction would be authorized other than what has already been approved and

funded. Current law, policy, and plans would continue to provide the guidance framework.

The important impacts of continuing existing management conditions and trends would include a continuation of existing adverse effects on natural resources, an adverse effect on cultural resources, a continuation of adverse effects on visitor experience, a continuation of adverse effects on park operations, and a continuation of existing effects on the socioeconomic environment.

### **ALTERNATIVE 6: NPS PREFERRED ALTERNATIVE**

This alternative would emphasize strong natural and cultural resource protection while providing a diversity of visitor experiences. Visitor opportunities in this alternative would range from the challenges of exploring the natural environment alone to the convenience of built surroundings. A limited amount of moderate resource impacts would be tolerated in high-use areas of the park. Some visitor activities would be restricted in certain areas to protect sensitive resources and allow wildlife a respite from human contact. Other areas, such as the Legare Anchorage, would be reserved for limited types of visitor use.

As part of an adaptive management strategy, this alternative includes a special recreation zone that accommodates some recreational fishing by special permit while meeting the goal of providing a healthier coral reef ecosystem for a more enjoyable and diverse visitor experience.

Many of the existing adverse impacts to fisheries, coral reefs, submerged cultural resources, and identified listed species would persist in much of the park due to impacts associated with boating, fishing, and marine debris. However, some of these impacts would be reduced and there would be additional beneficial impacts in the special recreation zone and in other areas with protective zoning. There would also be

adverse impacts to park operations and both beneficial and adverse impacts to visitor experience and socioeconomic environment. The Florida Fish and Wildlife Conservation Commission would actively participate in the implementation of alternative 6, including permitting, research, monitoring, or rule development.

## ALTERNATIVE 7

Like alternative 6, this alternative would emphasize strong natural and cultural resource protection while providing a diversity of visitor experiences. Visitor opportunities in this alternative would range from the challenges of exploring the natural environment alone to the convenience of built surroundings. A limited amount of moderate resource impacts would be tolerated in high-use areas of the park. Some visitor activities would be restricted in certain areas to protect sensitive resources and allow wildlife a respite from human contact. Other areas, such as the Legare Anchorage, would be reserved for limited types of visitor use.

This alternative is similar to alternative 6 in that it incorporates an adaptive management approach to the special recreation zone. This alternative includes fishing limitations such as a seasonal fishing closure that accommodates some recreational fishing while meeting the goal of providing a healthy coral reef ecosystem for a more enjoyable and diverse visitor experience.

Many of the existing adverse impacts to fisheries, coral reefs, submerged cultural resources, and identified listed species would persist in much of the park due to impacts associated with boating, fishing, and marine debris. However, some of these impacts would be reduced and there would be additional beneficial impacts in the special recreation zone and in other areas with protective zoning. Some of these benefits

would be greater under alternative 7 when compared with alternative 6. There would also be adverse impacts to park operations and both beneficial and adverse impacts to visitor experience and socioeconomic environment.

In addition, the Florida Fish and Wildlife Conservation Commission would not participate in the research, monitoring, or rule development process associated with this alternative. All regulatory changes required under this alternative would be implemented via federal special regulation.

## THE NEXT STEPS

After distribution of the Supplemental Draft General Management Plan / Environmental Impact Statement, there will be a 90-day public review and comment period after which the NPS planning team will evaluate comments from other federal agencies, tribes, organizations, businesses, and individuals regarding the draft plan and incorporate appropriate changes into a Final General Management Plan / Environmental Impact Statement. The final plan will include letters from governmental agencies, any substantive comments on the draft, including the supplemental document, and NPS responses to those comments. Following distribution of the Final General Management Plan / Environmental Impact Statement and a 30-day no-action period, a “Record of Decision” can be prepared for the signature of the NPS regional director of the Southeast Region. The “Record of Decision” will document the NPS selection of an alternative for implementation. With the signed “Record of Decision,” the plan can then be implemented, depending on funding and staffing. (An approved plan does not guarantee that funds and staff for implementing the plan will become available.) Special regulations would need to be enacted through rule-making processes to implement many of the provisions of alternatives 6 or 7.

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# CHAPTER 1

## Introduction

### (SDEIS)



CHAPTER 1: INTRODUCTION

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## A GUIDE TO THIS DOCUMENT

This Supplemental Draft Environmental Impact Statement (SDEIS) is a supplement to the 2011 Draft General Management Plan / Environmental Impact Statement (2011 Draft GMP/EIS) and was developed to present updated information as well as two new alternatives (alternatives 6 and 7). Some sections of the original 2011 Draft GMP/EIS are incorporated by reference while other sections are modified to include new information.

Both documents can be accessed online at: <http://parkplanning.nps.gov/documentsList.cfm?parkID=353&projectID=11168>.

This SDEIS should be considered in addition to the 2011 Draft GMP/EIS document and is organized in accordance with the Council on Environmental Quality's (CEQ) implementing regulations for the National Environmental Policy Act (NEPA), National Park Service (NPS) *Management Policies 2006*, and NPS Director's Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision-making*.

**Chapter 1: Introduction** sets the framework for the entire document. It describes why the plan is being prepared and what needs it must address. It offers guidance for the alternatives that are being considered, which are based on the park's purpose and the significance of its resources, special mandates and administrative commitments, servicewide mandates and policies, and other planning efforts in the area.

The chapter also details the planning opportunities and issues that were raised during public scoping meetings and initial planning team efforts; the alternatives in the next chapter address these issues and concerns to varying degrees. This chapter concludes with a statement of the scope of the environmental

impact analysis—specifically what impact topics were or were not analyzed in detail.

**Chapter 2: Alternatives**, begins by describing the management zoning that would be used to manage the park in the future. It also presents the continuation of current management and trends in the park—alternative 1 (the no-action alternative) and then the “action” alternatives. Alternatives 2 through 5 are incorporated by reference, alternatives 6 and 7 are presented in full. There is a brief discussion of alternatives or actions that were dismissed from detailed evaluation. The mitigation measures proposed to minimize or eliminate the impacts of some proposed actions are described just before the discussion of future studies and/or implementation plans that would be needed. The cost estimates and an evaluation of the environmentally preferable alternative are followed by summary tables of the alternative actions and the environmental consequences of implementing those alternative actions (which are based on information in chapter 4).

**Chapter 3: the Affected Environment** describes those areas and resources that would be affected by implementing actions in the various alternatives—natural resources, cultural resources, visitor experience, park operations, and socioeconomic environment.

**Chapter 4: Environmental Consequences** analyzes the impacts of implementing the alternatives on topics described in the “Affected Environment” chapter. Methods that were used for assessing the impacts in terms of the intensity, type, and duration of impacts are outlined at the beginning of the chapter.

**Chapter 5: Consultation and Coordination** describes the history of public and agency coordination during the planning effort and

any future compliance requirements; it also lists agencies and organizations that will be receiving copies of the document.

The **appendixes** present supporting information for the document along with references, a list of the planning team and other consultants, and an index.

# **PURPOSE OF AND NEED FOR THIS BISCAYNE NATIONAL PARK SUPPLEMENTAL DRAFT GENERAL MANAGEMENT PLAN / ENVIRONMENTAL IMPACT STATEMENT**

This Supplemental Draft Environmental Impact Statement is a supplement to the 2011 Draft GMP/EIS, which describes the planned operation for the park for the next 20 years. This SDEIS was developed to present updated information as well as two new alternatives (alternatives 6 and 7) for consideration in the General Management Plan.

General management plans are intended to be long-term documents that establish and articulate a management philosophy and framework for decision making and problem solving in the parks. General management plans usually provide guidance during a 15- to 20-year period. The general management plan considers the park in its full ecological and cultural contexts – as a unit of the national park system and as a part of the surrounding ecosystem and region. The connections among various programs and management zones in the park are identified as a method of looking at the park holistically and fully considering the broader implications of specific decisions. Actions directed by general management plans or in subsequent implementation plans are accomplished over time, which may be many years into the future when dealing with timeframes of natural and cultural processes. Budget restrictions, requirements for additional data or regulatory compliance, and competing national park system priorities may prevent immediate implementation of many actions. Considerable or especially costly actions could be implemented 10 or more years into the future.

The full purpose of and need for the General Management Plan are described on pages 4–6 of the 2011 Draft GMP/EIS accessed online at: <http://parkplanning.nps.gov/>

[documentsList.cfm?parkID=353&projectID=11168](#).

This SDEIS incorporates by reference alternatives 2 through 5 that were previously analyzed in the 2011 Draft GMP/EIS. This SDEIS analyzes in full two new alternative future directions for the management and use of Biscayne National Park, referred to as alternatives 6 and 7, which were developed in response to public and agency comments on specific elements included in the 2011 Draft GMP/EIS.

## **Background**

The 2011 Draft GMP/EIS was released to the public in August 2011 and reflected agency and stakeholder engagement throughout the entire GMP process. The National Park Service conducted public scoping meetings and workshops (in 2001, 2003, and 2009) and held three public meetings on the Draft GMP/EIS in 2011. During the public comment period in 2011, more than 18,000 public comments were received and more than 300 people attended public meetings. A key component of the agency-preferred alternative in the 2011 Draft GMP/EIS was inclusion of a marine reserve zone. Most comments were related to fishing, and in particular, the marine reserve zone. The marine reserve zone was proposed as an area in the park where fishing of any kind would be prohibited to allow a portion of the coral reef system to recover and offer visitors a high-quality visitor experience associated with a healthy, intact coral reef system.

During the August 2011 public comment period, a number of substantive comments were received that identified both positive

and negative impacts related to the establishment of the marine reserve zone. In particular, individuals who fish, fishing and marine industry organizations, and the Florida Fish and Wildlife Conservation Commission with whom the National Park Service consults regarding fishing management actions in the park, raised a number of significant issues about the NPS preferred alternative, including the marine reserve zone. The position of the State of Florida was that any consideration of a marine reserve zone could only occur after measurable management objectives have been clearly defined and less restrictive management measures have been appropriately implemented and evaluated in close coordination with agencies and stakeholders.

Based on the comments received, the National Park Service undertook an evaluative process to consider a number of management actions that could be deployed to achieve the goal of a healthier coral reef ecosystem within the zone to provide a more enjoyable and diverse visitor experience, while protecting the park's natural and cultural resources. Thus, two new alternatives were developed in consultation with the Florida Fish and Wildlife Conservation Commission and presented in this Supplemental Draft Environmental Impact Statement for public consideration. Some other comments resulted in minor changes to the text of this SDEIS or will be reflected in the Final General Management Plan / Environmental Impact Statement.

In developing the two new alternatives, the National Park Service, in conjunction with the Florida Fish and Wildlife Conservation Commission, is attempting a novel approach to managing special marine ecosystems in a way that might accomplish the same goals as a marine reserve, without completely eliminating harvest. The partner agencies believe an approach that limits access and prohibits specific activities that are most damaging to the coral reef system, implemented within the framework of an

adaptive management strategy, could successfully manage special marine areas that are important to a diverse set of user groups.

## **Brief Description of the Park**

Biscayne National Monument was established by Public Law 90-606 in 1968, expanded by Public Law 93-477 in 1974, and expanded again and redesignated as a national park by Public Law 96-287 in 1980 (see appendix A in 2011 Draft GMP/EIS). It currently encompasses approximately 173,000 acres (270 square miles or 702 square kilometers), with park visitation of 480,379 in 2012.

The full description of the park as well as the purpose and need of the General Management Plan is found on pages 4–6 of the 2011 Draft GMP/EIS accessed online at: <http://parkplanning.nps.gov/documentsList.cfm?parkID=353&projectID=11168>.

## **Next Steps and Implementation of the Plan**

The 2011 Draft GMP/EIS as well as this SDEIS will be considered in a Final GMP/EIS. The public will have an opportunity to comment on the SDEIS. Following the public comment period, a Final GMP/EIS and “Record of Decision” will be prepared and made available to the public regarding the final selection of the proposed action, which will then be implemented by the National Park Service.

The implementation of the approved plan would depend on future funding. The approval of a plan does not guarantee that the funding and staffing needed to implement the plan would be forthcoming. Full implementation of the approved plan could be many years in the future.

The implementation of the approved plan also could be affected by other factors. Once the General Management Plan has been

approved, additional required feasibility studies and more detailed planning and environmental documentation would be completed before any proposed actions can be applied, as follows:

- Appropriate permits would be obtained before implementing actions that would impact wetlands.
- Appropriate federal and state agencies would be consulted concerning actions that could affect threatened and endangered species.
- American Indian tribes and the state historic preservation office would be consulted.

The General Management Plan does not describe how particular programs or projects should be prioritized or implemented. Those decisions would be addressed during the more detailed planning associated with strategic plans, implementation plans, etc. All of those future more-detailed plans would tier from the approved General Management Plan and would be based on the goals, future conditions, and appropriate types of activities established in the approved General Management Plan. Future plans will follow NPS planning guidelines.

## **GUIDANCE FOR THE PLANNING EFFORT**

The 2011 Draft GMP/EIS presented a full description of purpose and significance of the park, interpretive themes, special mandates, and administrative commitments. Those elements continue to serve as the foundation for this planning effort, including this SDEIS.

## **Relationship of Other Planning Efforts to this General Management Plan**

Other plans and planning projects have influenced or would be influenced by the approved *Final General Management Plan /*

*Environmental Impact Statement* for Biscayne National Park. These plans have been prepared (or are being prepared) by the National Park Service and other federal, regional, state, and local agencies and organizations. Those most directly related to this General Management Plan or are potentially affected by it were fully described in the 2011 Draft GMP/EIS on pages 16–18 and highlighted here.

The Fishery Management Plan (FMP) is a joint effort between the National Park Service and the Florida Fish and Wildlife Conservation Commission. The two agencies are working cooperatively to manage the park's fishery resources. The draft plan was presented to the public in 2009, and the final plan is anticipated for release in 2014. The plan presents five alternatives (the no-action alternative and four action alternatives), with each alternative written in terms of desired future conditions to be achieved through management actions. The agency preferred alternative aims for 20% increases in both the size and abundance of targeted fish species. Once completed, the Fishery Management Plan would propose changes in current management strategies for both recreational and commercial fishing activities that would be achieved via new, park-specific federal and state fishing regulations.

The Mooring Buoy and Marker Plan, released for public comment in July 2010, had both controversial and noncontroversial aspects. The National Park Service has suspended work on the Mooring Buoy and Marker Plan at this time while efforts are focused on finalizing the General Management Plan and the Fishery Management Plan. The National Park Service is implementing some of the noncontroversial aspects of the Mooring Buoy and Marker Plan separately using appropriate environmental review processes. For example, the installation of additional mooring buoys on the reef tract, including formalizing the Maritime Heritage Trail, have been implemented.

## PLANNING ISSUES AND CONCERNS

The general public; NPS staff with their knowledge about past planning efforts; representatives from other county, state, and federal agencies; and representatives from various organizations identified various issues and concerns during scoping (early information gathering) for the 2011 Draft GMP/EIS. An issue is defined as an opportunity, conflict, or problem regarding the use or management of public lands. Comments were solicited at public meetings, through planning newsletters and on the NPS planning website (see “Chapter 5: Consultation and Coordination”).

Comments received during scoping demonstrated that there is much that the public likes about the park—its resources, management, use, and facilities. The issues and concerns generally involve determining the appropriate visitor use and the types and levels of facilities, services, and activities, while remaining compatible with desired resource conditions. The GMP alternatives provide strategies for addressing the issues within the context of the park’s purpose, significance, and special mandates.

### Commercial Fishing

Comments on the 2011 Draft GMP/EIS questioned NPS authority to allow commercial fishing in Biscayne National Park. The National Park Service acknowledges that a park special regulation through formal rulemaking processes would be needed to properly authorize existing commercial fishing at the park. The Fishery Management Plan, described previously, proposes changes to the management of commercial fishing parkwide. The preferred alternative in the Fishery Management Plan would require all commercial fishers to purchase a limited-entry permit from the park. The permit would be nontransferable, require annual renewal, and would be “use or lose.” The permit could not be renewed if: (1) it was not renewed the previous year, or (2)

no catch was reported in the previous year. The intended purpose is to phase out commercial fishing in the park without having negative economic impacts on fishers who currently depend on the park’s resources to support their livelihood.

Because the Fishery Management Plan addresses future management of commercial fishing parkwide, the National Park Service has determined that any regulatory and policy processes relevant to the parkwide phase-out of commercial fishing at the park is not addressed in the 2011 Draft GMP/EIS. The impacts of these proposed changes are assessed in the Fishery Management Plan. A park-specific special regulation to affirmatively allow the permitting of commercial fishing would be pursued after completion of the plan. The only changes to commercial fishing proposed in this SDEIS would be to prohibit commercial fishing activity in the special recreation zone, with the exception of lampara net fishing for ballyhoo. It is anticipated that this activity would also be phased out in accordance with the final special regulation that would follow approval of the Fishery Management Plan. The possibility of a termination of commercial fishing within the special recreation zone, if this zone is converted to a marine reserve zone, is also addressed in this SDEIS.

### Coral Reefs

The coral reefs of Biscayne National Park have the attention of national and global reef conservation initiatives. Coral reefs are in serious decline globally, especially those near shallow shelves and dense populations. In the Florida Keys, because of nearby dense populations of people and the effects of hurricanes, vessel groundings, disease, overfishing, and a proliferation of algae, there has been a 37% decline in live coral cover in just five years, according to a 2002 report by the National Oceanic and Atmospheric Administration (NOAA). In addition to the impacts on the coral, fish populations, and coastal protection, the decline could affect

tourism because more than 4 million tourists visit the Florida Keys annually and the Florida Keys are the number one dive destination in the world. Some members of the public have voiced the desire to see reserves established; others noted that many people's livelihood depend on fishing. The possibility of including a marine reserve in Biscayne National Park has both proponents and opponents in the park's user community and beyond, including commercial and recreational anglers, divers, and snorkelers, boat enthusiasts, and environmental advocates.

## **Visitor Experience**

The park's proximity to Miami-Dade County and its growing metropolitan population are increasing pressures on the park to accommodate local recreational demand. Recreational activities occasionally result in visitor conflicts, accidents, and resource damage. Vessel groundings cause long-term scarring of the bay floor and damage to coral. Boat anchors damage coral. Propellers can injure manatees, sea turtles, seagrass beds, and corals. Debris from fishing activities has damaged historic underwater resources and coral reefs. Also, conflicts between different recreational groups occur. Wakes from larger, faster boats swamp smaller, slower boats. The noise of motorboats or "partying" groups diminishes efforts of canoeists and kayakers to experience quieter environments. Currently, there is no place within the park where visitors who snorkel and dive can experience a healthy, natural coral reef or at least a zone reflecting heightened protection above that afforded by state fishing regulations. The challenge to park management is finding and managing for a user capacity that enables visitors to have a quality experience while protecting park resources for future generations.

The only mainland-based park visitor center is 35 miles south of Miami, frequently a 1.5- to 2-hour drive for Miami residents and nonlocal visitors arriving at the airport or

Port of Miami. Due to its remote location, this visitor contact center receives less than 10% of total park visitation. This situation makes it difficult for the park to determine the type and level of visitor use it receives. It also makes it difficult to provide important information on park rules, regulations, navigational information, events, and activities to park users and visitors.

## **Park Operation**

Visitors have uncontrolled access to and from open waters of the bay and ocean, including the Intracoastal Waterway. Access points at developed areas include county and state parks and private and commercial developments in the Miami, Key Biscayne, and Key Largo areas. Because of the impracticality of marking the marine park's entire 50-mile water boundary, many park users are unaware of the fact that they are in a national park.

The northern part of the park, including historic Stiltsville, receives little law enforcement coverage and the park's ability to protect resources and respond to emergencies is limited by the hour-long boat ride from park headquarters.

## **Climate Change**

There are two different issues to consider with respect to climate change and general management planning: (1) what is the contribution of the proposed project to climate change, such as greenhouse gas emissions and the carbon footprint? and (2) what are the anticipated effects of climate change on the park resources and visitors who are affected by the management alternatives? Because the contribution to climate change is negligible under any alternative, the former issue has not been carried forward for consideration in this plan. The latter issue, a discussion of the anticipated effects of climate change on park resources, has been carried forward.

Other factors driving environmental change include population growth in the area (subsidence of water table, increased visitation, pollution), shifts in visitor use patterns, and land use change and development around the park.

Global scale stressors such as climate change and ocean acidification can affect coral reefs in many ways, including altering calcification rates and increasing prevalence of bleaching and disease. Few NPS management actions exist that would directly reduce the effects of climate change and ocean acidification. However, taking actions to protect reefs from other pressures such as overfishing; land-based sources of pollution; and physical damage from fishing gear, anchoring, and vessel groundings might increase reef resiliency, potentially delaying the effects of global stressors.

These issues are described in the 2011 Draft GMP/EIS on pages 19–22, accessed online at: <http://parkplanning.nps.gov/documentsList.cfm?parkID=353&projectID=11168>.

## **IMPACT TOPICS – RESOURCES AND VALUES AT STAKE IN THE PLANNING PROCESS**

An important part of planning is seeking to understand the consequences of making one decision over another. To this end, the

General Management Plan is accompanied by an Environmental Impact Statement, as presented in 2011, and this Supplemental Draft Environmental Impact Statement. Environmental impact statements identify the anticipated impacts of possible actions on resources and on park visitors and neighbors. Impacts are organized by topic such as “impacts on visitor experience” or “impacts on vegetation and soils.” Impact topics serve to focus the environmental analysis and to ensure the relevance of impact evaluation. The impact topics identified for this Draft General Management Plan were previously described in the 2011 Draft GMP/EIS. They were identified based on federal laws and other legal requirements, CEQ guidelines, NPS *Management Policies 2006*, staff subject matter expertise, and issues and concerns expressed by the public and other agencies early in the planning process (see previous section). Also included in the 2011 Draft GMP/EIS is a discussion of some impact topics that are commonly addressed, but that are not addressed in this plan for the reasons given.

As those impact topics remain unchanged, they are incorporated by reference in this Supplemental Draft Environmental Impact Statement and are found on pages 23–32 in the 2011 Draft GMP/EIS, accessed online at <http://parkplanning.nps.gov/documentsList.cfm?parkID=353&projectID=11168>.



## CHAPTER 2

### Alternatives (SDEIS)





## INTRODUCTION

Chapter 2 describes the alternatives for management of Biscayne National Park. Alternatives 1 to 5 were described in the 2011 Draft GMP/EIS. Please see chapter 2 (pages 35–104) of that document for a full description of alternatives 2 to 5. We are presenting alternative 1 (no action) from the 2011 Draft GMP/EIS, here in the SDEIS to provide the basis for comparison with alternative 6 and alternative 7 that were developed in response to agency and public comments on the 2011 Draft GMP/EIS. These alternatives include a new zone—the special recreation zone. Summary tables include all seven alternatives to allow comparison.

### USER CAPACITY

General management plans for national park system units, including Biscayne National Park, must address user capacity management. The National Park Service defines user capacity as the type and extent of visitor use that can be accommodated while sustaining the quality of a park unit's resources and visitor experiences consistent with the park unit's purpose.

Managing user capacity in national parks is inherently complex and depends not only on the number of visitors, but also on where they go, what they do, and the “footprints” they leave behind. In managing for user capacity, park staff relies on a variety of management tools and strategies, rather than relying solely on regulating the number of people in a park. The ever-changing nature of visitor use in parks requires a deliberate and adaptive approach to user capacity management.

The foundations for making user capacity decisions in this general management plan are the park's purpose, significance, special mandates, and management zones. In

addition, based on the desired conditions, indicators and standards associated with visitor use are identified. These indicators and standards help assess changes in resource and social conditions related to human activity to ensure that desired conditions are being maintained. The planning team considered many potential issues and related indicators that would identify impacts of concern, and those described in the following table were considered the most salient given the importance and vulnerability of the resource or visitor experience affected by visitor use. The specific, measurable indicators are organized in the table by their associated broad issue (e.g., disturbance of viable fish populations, visitor experience/use conflicts). These indicators are applicable to some or all of the management zones identified in the plan. The assigned zones where these indicators will be monitored and conditions compared to the standards are identified in the first column of the table.

See table 1 for a summary of user capacity by management zone. The complete user capacity introduction and description is found on pages 35–45 of the 2011 Draft GMP/EIS, accessed online at: <http://parkplanning.nps.gov/documentsList.cfm?parkID=353&projectID=11168>.

### BOUNDARY MODIFICATION

The National Park Service is required to analyze the need for possible modifications to a park's external boundaries in all general management plans. (See 2011 Draft GMP/EIS for a complete discussion.) No new decisions or information regarding boundary modifications are included in this SDEIS.

## **PREFERRED ALTERNATIVE**

The full range of alternatives was developed from a number of different perspectives. This included comments received on the alternatives newsletter and during public and stakeholder workshops, public and agency comments received on the 2011 Draft GMP/EIS, cost estimates, and analysis of potential impacts.

With these and other elements in mind, the agency preferred alternative is alternative 6, which balances resource protection, visitor experience, and interagency collaboration. Alternative 6 replaces the former agency preferred alternative 4.

The agency preferred alternative and the environmentally preferable alternative are not synonymous.

## **MANAGEMENT ZONES**

Management zones define specific resource conditions and visitor experiences to be achieved and maintained in each particular

area of the park under each of the action alternatives (the no-action alternative does not have zoning). Each zone description includes the types of activities and facilities that are appropriate in that zone.

There were 10 management zones in the 2011 Draft GMP/EIS. A new zone (the special recreation zone) is included in the SDEIS as part of alternative 6 and alternative 7. The 11 management zones for Biscayne National Park are presented in table 2. Resource conditions, visitor experience, and appropriate management actions and facilities are described for each zone.

All lands within the park's legislated boundary are zoned regardless of whether or not the lands are currently owned in fee-simple title by the National Park Service. This specification provides direction for future management should such lands be acquired

TABLE 1. USER CAPACITY INDICATORS AND STANDARDS

Assigned Zone	User Capacity Indicators	User Capacity Standards	Related Monitoring Strategies	Potential Management Strategies
<b>Topic: Viable Fish Populations</b>				
Multiuse Zone (water)	Harvest of regulated fish species	Harvest of regulated fish species is within legal regulations no less than 70% of the time	Periodic fish surveys and harvest monitoring	Increased awareness of the fishing education course
Slow Speed Zone	Abundance and density of targeted fish species (those fish that are specifically sought such as species in the snapper-grouper complex)	Abundance and density of targeted fish species maintains or exceeds baseline values when GMP was implemented	Visitor satisfaction survey questions pertaining to fish	Greater enforcement of fishing regulations
Access-by-Permit Zone				Greater efforts toward public education and awareness regarding fishing relations (e.g., recruit volunteers to assist; Spanish language efforts)
Sensitive Underwater Archeological Zone				
Special Recreation Zone				
Noncombustion Engine Use Zone				
Marine Reserve Zone	Average size of targeted fish species	Average size of targeted fish species maintains or exceeds baseline values when zone was implemented	Periodic fish surveys	Greater enforcement of fishing limitations
Special Recreation Zone	Species diversity	Species diversity maintains or exceeds baseline values when zone was implemented	Visitor satisfaction survey questions pertaining to fish	Greater efforts toward public education and awareness (e.g., recruit volunteers to assist; Spanish language efforts)
	Abundance and density of targeted fish species	Abundance and density of targeted fish species maintains or exceeds baseline values when zone was implemented		Proper marking of the marine reserve zone or special recreation zone
Noncombustion Engine Use Zone	Harvest of regulated fish species	Harvest of regulated fish species is within legal regulations no less than 70% of the time	Periodic fish surveys	Increased awareness of the fishing education course
Special Recreation Zone	Abundance and density of targeted fish species	Abundance and density of targeted fish species maintains or exceeds baseline values when GMP was implemented	Visitor satisfaction survey questions pertaining to fish	Greater enforcement of fishing regulations
	Fisher satisfaction rate	The fisher satisfaction survey indicates at least 70% satisfaction	Survey of fisher satisfaction	Greater efforts toward public education and awareness regarding fishing relations (e.g., recruit volunteers to assist; Spanish language efforts)

TABLE 1. USER CAPACITY INDICATORS AND STANDARDS

Assigned Zone	User Capacity Indicators	User Capacity Standards	Related Monitoring Strategies	Potential Management Strategies
<b>Topic: Seagrass</b>				
Multiuse Zone (water)	Average number of new groundings per year	Average number of new groundings per year in seagrass beds does not exceed baseline values when zone was implemented	Assess damage from reported and unreported groundings	Better marking of shallows
Slow Speed Zone	Areal extent of seagrass beds	Areal extent of seagrass beds maintains or exceeds baseline values when zone was implemented	Look for unreported grounding sites	Greater efforts toward public education and awareness (e.g., recruit volunteers to assist; Spanish language efforts; participate in marine fairs)
Access-by-Permit Zone			Monitor restored sites	Greater enforcement of violations and increased ranger response to groundings
Sensitive Underwater Archeological Zone			Monitor visitor use (e.g., trailer counts, registered boater statistics, etc.)	
Noncombustion Engine Use Zone				
Marine Reserve Zone				
Special Recreation Zone				
				Monitor natural recovery
				Active restoration and monitoring (bird stakes, substrate restoration, seagrass transplanting)
<b>Topic: Coral Reefs</b>				
Multiuse Zone (water)	Number of new reported and unreported reef groundings per year	Number of new reported and unreported reef groundings per year does not exceed baseline values when zone was implemented	Damage assessment of groundings	Installation of mooring buoys
Sensitive Underwater Archeological Zone	Areal extent of new reef groundings per year	Areal extent of new reef groundings per year does not exceed baseline values when zone was implemented	Visitor satisfaction survey questions pertaining to reef health	Greater efforts toward public education and awareness (e.g., recruit volunteers to assist; Spanish language efforts)
Marine Reserve			Overflights to do boat counts	Reef restoration techniques as outlined in the park's Coral Reef Restoration Programmatic Environmental Impact Statement (in progress)
Special Recreation Zone	Fishing debris volume and coverage on coral reefs, seagrass beds, and submerged archeological sites	Fishing debris volume and/or coverage does not exceed baseline values when zone is implemented	Periodic assessments of fishing debris (e.g., during visual fish surveys)	Volunteer clean-up events for marine debris
<i>Note: There are no coral reefs in the other water-based zones</i>				Marine debris removal as mitigation (e.g., derelict trap removal)

TABLE 1. USER CAPACITY INDICATORS AND STANDARDS

Assigned Zone	User Capacity Indicators	User Capacity Standards	Related Monitoring Strategies	Potential Management Strategies
Marine Reserve Special Recreation Zone	Visitor damage at sites within 1,000 feet of mooring buoys (damage includes broken coral, garbage associated with divers and snorkelers, and damage to submerged cultural resources)	No more than 5% increase in broken coral or garbage relative to initial assessment when mooring buoy was first installed	Periodic monitoring by park staff and volunteer observations of selected sites	Greater efforts toward public education and awareness (e.g., recruit volunteers to assist; Spanish language efforts) Enforcement of violations and increased ranger presence Relocate mooring buoys to allow active or passive restoration of corals Add mooring buoys to displace or diffuse impacts
<b>Topic: Cultural Resources</b>				
Multiuse Zone (land) Administrative Zone	Change in facility condition as a result of visitor use (using the Facility Condition Index [FCI]) Evidence of missing historical artifacts, defacement, or damage	No more than a FCI change of 1% from established baseline of all structures when GMP was implemented No missing historical artifacts, defacement, or damage	Annual condition assessments and regular inspections by maintenance personnel with work orders created to track deferred maintenance	Greater efforts toward public education and awareness regarding resource sensitivities and the need for appropriate behaviors Enforcement of violations and increased ranger presence Modify regulations to reduce visitor conflicts
Multiuse Zone (water) Nature Observation Zone Sensitive Underwater Archeological Zone Special Recreation Zone	Number of shipwreck cleanups required to maintain sites Percent increase in the debris field as a result of visitor use Evidence of missing historical artifacts, defacement, or damage	No more than two cleanups per assessment period No more than a 5% increase in the debris field relative to the annual assessment when the GMP was implemented No missing archeological artifacts, defacement, or damage No damage to submerged cultural resources	Regular monitoring by annual condition assessments Periodic monitoring by park staff and volunteer observations of selected sites Reinspection after storms to start new baseline for reference of visitor impact	Greater efforts toward public education to encourage voluntary redistribution of use Enforcement of violations and increased ranger presence Regulate use levels and patterns (e.g., institute a permitting or reservation system, limit group sizes) Document submerged cultural resources and consult with state historic preservation office

**TABLE 1. USER CAPACITY INDICATORS AND STANDARDS**

Assigned Zone	User Capacity Indicators	User Capacity Standards	Related Monitoring Strategies	Potential Management Strategies
Multiuse Zone (land)  Nature Observation Zone  Special Recreation Zone	Percent increase in the debris field as a result of visitor use  Evidence of missing historical artifacts, defacement, or damage	No more than a 5% increase of the debris field relative to the annual assessment when the GMP was implemented  No missing archeological artifacts, defacement, or damage	Regular monitoring by annual condition assessments  Periodic monitoring by park staff and volunteer observations of selected sites  Reinspection after storms to start new baseline for reference of visitor impact	Greater efforts toward public education and awareness regarding resource sensitivities and the need for appropriate behaviors  Enforcement of violations and increased ranger presence  Regulate use levels and patterns (e.g., institute a permitting system, designate single-use permits)  Site closure as necessary to protect resources
Marine Reserve  Special Recreation Zone	Visitor damage at sites within 1,000 feet of mooring buoys (damage includes broken coral, garbage associated with divers and snorkelers, damaged submerged cultural resources)	No more than 5% increase in broken coral or garbage relative to initial assessment when mooring buoy was first installed; no damage to submerged cultural resources	Periodic monitoring by park staff and volunteer observations of selected sites	Greater efforts toward public education and awareness (e.g., recruit volunteers to assist; Spanish language efforts)  Enforcement of violations and increased ranger presence  Relocate mooring buoys to allow active or passive restoration of corals  Add mooring buoys to displace or diffuse impacts  Document submerged cultural resources and consult with state historic preservation office
<b>Topic: Visitor Experience/Use Conflicts</b>				
All zones	Number of incidents of user conflicts requiring law enforcement attention or intervention resulting in a case incident report / warning / citation	No more than five law enforcement incidents per day and an average of two per day on an annual basis	Continue existing tracking of case incidents	Greater efforts toward public education and awareness regarding visitor use etiquette and park regulations  Greater enforcement of existing visitor use regulations and increased ranger presence  Modify regulation as necessary to reduce visitor conflicts

TABLE 1. USER CAPACITY INDICATORS AND STANDARDS

Assigned Zone	User Capacity Indicators	User Capacity Standards	Related Monitoring Strategies	Potential Management Strategies
Visitor Services / Administrative Zone	Number of times visitor center parking lot has exceeded its physical capacity	Allowable once a month or during special events	Regular monitoring by park staff at the entrance gate	<p>Greater efforts toward public education to encourage voluntary redistribution of use</p> <p>Explore ways to increase parking lot capacity through striping and parking time limitations</p> <p>Encourage carpooling to site via press releases/website</p> <p>Develop overflow parking area and use when needed</p> <p>Develop and use alternative parking areas (e.g., adjacent to the park)</p>
Visitor Services / Administrative Zone	In the Boca Chita boat basin and the Elliott Key docks, number of times improper mooring occurs as a result of island marinas reaching capacity	No tolerance per Superintendent's Compendium	Periodic monitoring by park staff and volunteer observations of selected sites	<p>Greater efforts toward public education to encourage voluntary redistribution of use</p> <p>Greater efforts toward public education regarding pertinent park regulations</p> <p>Greater enforcement of existing visitor use regulations</p> <p>Increased number of signs and information related to proper mooring locations and regulations</p>
Visitor Services / Administrative Zone	Number of times group camping exceeds limits	No more than once per month	Periodic monitoring by park staff and volunteer observations of selected sites	<p>Greater efforts toward public education to encourage voluntary redistribution of use</p> <p>Greater enforcement of existing visitor use regulations and increased ranger presence</p>

**TABLE 1. USER CAPACITY INDICATORS AND STANDARDS**

<b>Assigned Zone</b>	<b>User Capacity Indicators</b>	<b>User Capacity Standards</b>	<b>Related Monitoring Strategies</b>	<b>Potential Management Strategies</b>
Visitor Services / Administrative Zone	Number of times individual campsites are seen outside of the designated camping area	No more than once per week	Periodic monitoring by park staff and volunteer observations of selected sites	Greater efforts toward public education to encourage voluntary redistribution of use Greater efforts toward public education on camping policies Better delineation of existing campsites Greater enforcement of existing visitor use regulations and increased ranger presence
All areas with mooring buoys	Number of complaints received that mooring buoy capacity is met and boats are unable to moor in their desired location	No more than 10 complaints per day	Continue existing tracking of complaints	Greater efforts toward public education to encourage voluntary redistribution of use Change the number and location of mooring buoys consistent with the Mooring Buoy and Marker Plan Greater enforcement of existing visitor use regulations Implement adaptive management strategies from the Mooring Buoy and Marker Plan

**TABLE 2. BISCAYNE NATIONAL PARK MANAGEMENT ZONES, ALTERNATIVES 2 THROUGH 7**

	Resource Condition	Visitor Experience	Management Actions and Facilities
<b>Special Recreation Zone (Alternatives 6 and 7)</b>	<p>The special recreation zone would provide some protection from direct human-caused impacts for water-based ecosystems, habitats, and processes while allowing visitors to experience the zone. Natural processes occur with minor disturbance from human use. This zone would provide a moderate-to-high level protection to natural resources such as marine nursery areas and coral reefs.</p> <p>The special recreation zone would provide the opportunity to compare the resource status of an area with limited extractive uses to other areas allowing removal of resources.</p> <ol style="list-style-type: none"> <li>1. Natural processes would predominate.</li> <li>2. Resource impacts would be reduced.</li> <li>3. Some lasting signs of human use would be reduced.</li> <li>4. Intervention and restoration could occur to mitigate and stabilize human-caused disruption or for resource management purposes.</li> <li>5. The significance and vulnerability of cultural resources would be evaluated and appropriate management actions would be determined.</li> </ol>	<p>Visitors would be immersed in nature with opportunities to experience natural sounds, tranquility, and closeness to nature. Recreational fishing would be allowed with limitations; nonextractive activities would be allowed. Research activities would continue to be allowed under the NPS permit process or by the National Park Service, consistent with all park areas.</p> <ol style="list-style-type: none"> <li>1. Appropriate visitor activities could include fishing (with limitations), boating, sightseeing, nature-watching, mooring, swimming, snorkeling, and diving. Anchoring would not be allowed.</li> <li>2. Visitors would be self-reliant and have maximum opportunities to experience a sense of discovery and adventure. Application of outdoor skills would be essential.</li> <li>3. Interaction with nature would predominate, with a moderate level of encounters with others. The sights and sounds of nature would generally be more prevalent than those of human activities. Visitor activities would be mostly self-directed and have minor resource impacts.</li> <li>4. Visitors would benefit from the research by learning about protected resources.</li> <li>5. Limited commercial services that provide appropriate visitor recreational activities might be allowed if compatible with resource protection goals and desired visitor experiences.</li> </ol>	<p>Management actions would focus on protecting resources, ensuring visitors have an uncrowded experience, minimizing impacts from visitor use, and providing visitors with educational opportunities that encourage resource protection. Appropriate management actions could include:</p> <ol style="list-style-type: none"> <li>1. determining types and levels of use considering the desired visitor experience and the vulnerability of resources to impacts</li> <li>2. intervening and restoring natural resources to mitigate and stabilize human-caused disruption</li> <li>3. conducting research aimed at monitoring resource conditions and understanding natural processes to implement adaptive management</li> <li>4. prioritizing, overseeing, and managing research projects</li> <li>5. taking measures to prevent human-caused impacts</li> <li>6. defining additional compatible uses</li> </ol> <p>Facilities generally would not be appropriate, except when determined they would enhance resource protection or public safety. Facilities could include:</p> <ol style="list-style-type: none"> <li>1. signs, mooring buoys, and navigational aids</li> <li>2. research equipment—If installed, research apparatus would be minimal and unobtrusive</li> </ol>

**TABLE 2. BISCAYNE NATIONAL PARK MANAGEMENT ZONES, ALTERNATIVES 2 THROUGH 7**

	Resource Condition	Visitor Experience	Management Actions and Facilities
<b>Marine Reserve Zone (Alternatives 3, 4, and 5)</b>	<p>The marine reserve zone would provide a high level of protection from direct human-caused impacts for water-based ecosystems, habitats, and processes while allowing visitors to experience the zone. Natural processes occur with negligible disturbance from human use. This zone would protect natural resources such as marine nursery areas and coral reefs.</p> <p>The marine reserve zone would provide the opportunity to compare the resource status of an area with no extractive uses to other areas allowing removal of resources.</p> <ol style="list-style-type: none"> <li>1. Natural processes would predominate.</li> <li>2. Resource impacts would be reduced significantly.</li> <li>3. Most lasting signs of human use would not be apparent. Evidence of human impact would be restricted to cultural resources such as historic shipwrecks.</li> <li>4. Intervention and restoration could occur to mitigate and stabilize human-caused disruption or for resource management purposes. Otherwise alterations to natural resources would not occur.</li> <li>5. The significance and vulnerability of cultural resources would be evaluated, and appropriate management actions would be determined.</li> </ol>	<p>Visitors would be immersed in nature with opportunities to experience natural sounds, tranquility, solitude, and closeness to nature. Visitors would have opportunities to observe and learn about the differences and benefits to resources of a nonextractive use area compared to areas allowing removal of resources. Research activities would continue to be allowed under the NPS permit process or by NPS, consistent with all park areas.</p> <ol style="list-style-type: none"> <li>1. Appropriate visitor activities could include boating, sightseeing, nature-watching, mooring, swimming, snorkeling, and diving. Commercial and recreational fishing would not be allowed, except for lionfish harvest. Anchoring would not be allowed.</li> <li>2. Visitors would be self-reliant and have maximum opportunities to experience a sense of discovery and adventure. Application of outdoor skills would be essential.</li> <li>3. Interaction with nature would predominate, with only occasional encounters with others. There would be a sense of relative remoteness. The sights and sounds of nature would be more prevalent than those of human activities. Visitor activities would be mostly self-directed and have negligible resource impacts.</li> <li>4. Special events, with the exception of cleanup events or citizen science, would generally not be allowed.</li> <li>5. Visitors would benefit from research by learning about protected resources.</li> <li>6. Limited commercial services that provide appropriate visitor recreational activities might be allowed if compatible with resource protection goals and desired visitor experiences.</li> </ol>	<p>Management actions would focus on the preservation and protection of water-based ecosystems, habitats, and processes. Appropriate management actions could include:</p> <ol style="list-style-type: none"> <li>1. determining types and levels of use considering the desired visitor experience and the vulnerability of the resources to impacts</li> <li>2. intervening and restoring natural resources to mitigate and stabilize human-caused disruption</li> <li>3. conducting research aimed at monitoring resource conditions and understanding natural processes</li> <li>4. prioritizing, overseeing, and managing research projects</li> <li>5. taking measures to prevent human-caused impacts</li> <li>6. defining additional compatible uses</li> </ol> <p>Facilities generally would not be appropriate, except when determined they would enhance resource protection or public safety. Facilities could include:</p> <ol style="list-style-type: none"> <li>1. signs, mooring buoys, and navigational aids</li> <li>2. research equipment—if installed, research apparatus would be minimal and unobtrusive; if research could be accomplished in another management zone, it would not occur in the marine reserve zone</li> </ol>

**TABLE 2. BISCAYNE NATIONAL PARK MANAGEMENT ZONES, ALTERNATIVES 2 THROUGH 7**

	Resource Condition	Visitor Experience	Management Actions and Facilities
<b>Visitor Services / Park Administration Zone (All Alternatives)</b>	<p>This zone would provide for a high level of visitor activity and administrative operations. The zone would be modified for visitor access and park operations in a way that aesthetically blends with the natural and cultural environment.</p> <ol style="list-style-type: none"> <li>1. Elements of the natural and cultural environment would remain.</li> <li>2. Sights and sounds of human activity would frequently supplant the sights and sounds of nature.</li> <li>3. There would be tolerance for some resource impacts to accommodate visitor services and park operations.</li> <li>4. New development of park administrative facilities would occur only on previously disturbed sites. Some development for visitor access and activities might occur. The zone would not be near sensitive natural or cultural resources if such resources could not be adequately protected.</li> <li>5. The significance and vulnerability of cultural resources would be evaluated, and appropriate management actions would be determined. Cultural resources might be stabilized and hardened (protecting archeological values from illegal artifact removal or other destructive activities) to permit visitor access or considered for adaptive reuse.</li> </ol>	<p>Visitors would have opportunities to receive orientation and information, interact with park staff, and experience and learn about park resources.</p> <ol style="list-style-type: none"> <li>1. Appropriate visitor activities could include sightseeing, walking, swimming, recreational fishing, boating, camping, participating in educational activities, and interacting with resources.</li> <li>2. Visitors would see native flora and fauna and might see cultural resources.</li> <li>3. Interpretive and educational opportunities would be greatest in this zone. Visitor activities might be self-directed and/or visitors might use interpretive services to plan their activities. Visitor education could be self-directed or structured.</li> <li>4. Interpretive services would be offered in multiple languages.</li> <li>5. Special events could be allowed in this zone with appropriate permits.</li> <li>6. The probability of encountering others would be high. Visitors would experience a modified environment that accommodates high levels of use and minimizes further resource impacts.</li> <li>7. Facilities and services would enhance opportunities to experience and understand park resources and provide an orientation to the park.</li> <li>8. Visitor activities might be highly regulated to preserve elements of the natural and cultural environment, allow access to cultural resources, prevent visitor conflicts, and enhance public safety.</li> <li>9. Vessel type, size, and speed might be regulated to enhance resource protection and preserve the desired visitor experience.</li> <li>10. Commercial visitor services and facilities would be appropriate in this zone.</li> </ol>	<p>Management actions would focus on managing the higher levels of visitor use within the zone and providing administrative services. Management actions could include:</p> <ol style="list-style-type: none"> <li>1. administering daily parkwide operations</li> <li>2. providing maintenance activities</li> <li>3. providing interpretive and enforcement services</li> <li>4. providing emergency services</li> <li>5. implementing resource stewardship</li> <li>6. prioritizing, overseeing, and managing research projects</li> <li>7. defining additional compatible uses</li> <li>8. limiting public access to certain parts of this zone (housing, maintenance, and administration)</li> <li>9. regulating visitor activities and vessel type, size, and speed</li> <li>10. managing fishing activities, including fishing vessels and fishing vessel operation, in accordance with the Fishery Management Plan, pending approval</li> </ol> <p>Facilities would be appropriate in size and scale, blending with the natural and cultural landscape. Extent, size, and layout would be the minimum needed to accommodate the intended purposes. Existing and new visitor facilities or improvements would be analyzed for ongoing need, usefulness, and impacts on resources. New administrative facilities could be located outside park boundaries.</p> <ol style="list-style-type: none"> <li>1. Appropriate visitor facilities could include visitor centers, kiosks, wayside exhibits, educational spaces, observation boardwalks, roads, parking areas, docks, restrooms, picnic areas, campgrounds, navigational aids, mooring buoys and trails improved and maintained as necessary for universal accessibility.</li> <li>2. Appropriate park administrative facilities could include maintenance, storage, offices, and staff housing.</li> </ol>

**TABLE 2. BISCAYNE NATIONAL PARK MANAGEMENT ZONES, ALTERNATIVES 2 THROUGH 7**

	Resource Condition	Visitor Experience	Management Actions and Facilities
<b>Dredged Navigation Channels Zone (All Alternatives)</b>	<p>The purpose of this zone is to allow transportation routes for vessels in existing channels including the Intracoastal Waterway and the Black Point, Homestead Bayfront, and Turkey Point channels.</p> <ol style="list-style-type: none"> <li>1. Natural conditions and processes could be impacted by transportation use of the zone.</li> <li>2. Unnatural sounds might be prevalent.</li> <li>3. Resources within the dredged navigation channels would continue to be impacted by activities that maintain existing channels. Within the channels, some impacts on natural conditions would be tolerated. Impacts on resources outside the channels would be kept to an absolute minimum.</li> <li>4. There could be a high level of human use and activity.</li> <li>5. The existing depth, configuration, and alignment of navigational channels would not be expanded, and no new channels would be created. Channels would not exceed the following existing depths within the park: Intracoastal Waterway: 7 feet Black Point Channel: 4.5 feet Homestead Bayfront Channel: 4.5 feet Turkey Point Channel: 7.5 feet</li> <li>6. Channels would be marked with signs and navigational aids to protect resources and enhance public safety.</li> <li>7. The significance and vulnerability of cultural resources would be evaluated, and appropriate management actions would be determined.</li> </ol>	<p>The visitor experience would involve moving along a marked navigational channel by water vessel and would be perceived as linear or sequential in nature.</p> <ol style="list-style-type: none"> <li>1. Appropriate activities would be the use of channels for traveling through the park and/or gaining access to other park areas.</li> <li>2. Visitor activity would be self-directed travel through or within the park at varying speeds.</li> <li>3. Opportunities for discovery, challenge, and adventure could be low. Visitors would need to be self-reliant and possess navigational skills.</li> <li>4. Visitors would benefit from learning about this zone and how to navigate safely within it.</li> <li>5. Special events would not generally be allowed in this zone.</li> <li>6. There could be a high probability of encountering other people in this zone. Visitors could expect to hear human-caused sounds.</li> <li>7. Because of congested vessel traffic at times, conditions in the navigational channels could be dangerous. Visitors might encounter commercial ships and would need to exercise caution. Visitors would navigate through a well-marked channel of a specified depth. Use could be intensively managed and regulated to ensure safe passage and resource protection.</li> <li>8. Vessel size would generally not be regulated, except by conditions of the channel. Speed of vessels in the Intracoastal Waterway would be at a pace that is appropriate to conditions and skill levels.</li> <li>9. Commercial traffic could be allowed in this zone without the requirement of a permit.</li> </ol>	<p>Management activities would focus on resource protection and navigational aids to facilitate safe travel through and within the park. Appropriate management actions could include:</p> <ol style="list-style-type: none"> <li>1. regulating visitor activities</li> <li>2. providing law enforcement services</li> <li>3. monitoring resource impacts</li> <li>4. managing these zones for transportation and public safety (there might be overlapping jurisdiction with other agencies; coordination and cooperation with other agencies would occur)</li> <li>5. taking measures to prevent human-caused impacts</li> <li>6. In most cases, other agencies are responsible for the dredging of these channels through existing agreements or commitments; therefore, implementation of this GMP would not affect those agreements (proposed dredging would need a site-specific environmental study and NPS approval)</li> </ol> <p>Facilities appropriate in these zones would include navigational aids and signs for resource protection and enhancing visitor safety.</p>

**TABLE 2. BISCAYNE NATIONAL PARK MANAGEMENT ZONES, ALTERNATIVES 2 THROUGH 7**

	Resource Condition	Visitor Experience	Management Actions and Facilities
<b>Multiuse Zone (land and water) (Alternatives 2, 3, 4, 5, 6, and 7)</b>	<p>This zone would provide opportunities for visitors to recreate in natural or cultural settings. Natural and cultural scenes would remain largely intact.</p> <ol style="list-style-type: none"> <li>1. Natural conditions and processes would predominate. The environment might be adapted for human use.</li> <li>2. Sounds and sights of human activity might be apparent.</li> <li>3. There would be tolerance for minimal resource impacts.</li> <li>4. Additions to the landscape, including signs, buoys, and markers, might be used to enhance visitor experience and public safety and to protect resources.</li> <li>5. The significance and vulnerability of cultural resources would be evaluated, and appropriate management actions would be determined. To permit visitor access, cultural resources might be stabilized and hardened (protecting archeological values from unauthorized artifact removal or other destructive activities).</li> </ol>	<p>Visitors would experience a natural or cultural setting, whether they are on the water, under the water, or on land. Providing opportunities for people to interact with the resources in this zone would be important. Visitor use of this zone would be resource-based recreation and education that is consistent with park purpose and significance.</p> <ol style="list-style-type: none"> <li>1. Appropriate visitor activities could include sightseeing, boating, scuba diving, snorkeling, swimming, sport fishing, nature-watching, hiking, picnicking, camping, and visiting cultural resources. Commercial fishing would be managed as described in the Fishery Management Plan, pending approval.</li> <li>2. There would be opportunities for challenge, adventure, and discovery. Visitors might need to use outdoor skills and be self-reliant.</li> <li>3. Visitor activities might be self-directed, or visitors might use interpretive services to plan their activities.</li> <li>4. Special events could be allowed in this zone with the appropriate permit.</li> <li>5. The probability of seeing or encountering others would range from low to moderate most of the time.</li> <li>6. Occasional special events might result in high levels of visitor encounters for short periods.</li> <li>7. Visitor activities might be limited to protect resources and enhance public safety. Limitations might be short or long term.</li> <li>8. Vessel type, size, and speed could be regulated to enhance resource protection and public safety and preserve the desired visitor experience.</li> </ol>	<p>Management actions would focus on enhancing visitor experience and safety, protecting resources, minimizing impacts from visitor and commercial use, and restoring disturbed areas. Appropriate management actions could include:</p> <ol style="list-style-type: none"> <li>1. determining types and levels of use by considering the desired visitor experience and resource vulnerability to impact</li> <li>2. managing access based on the determined user capacity</li> <li>3. inventorying and monitoring resources</li> <li>4. providing interpretation and enforcement services</li> <li>5. conducting research and restoring and stabilizing resources</li> <li>6. minimizing and mitigating impacts from visitor and commercial use</li> <li>7. defining additional compatible uses</li> <li>8. managing fishing in consultation with the state and in accordance with the Fishery Management Plan, pending approval</li> <li>9. developing permit systems for various activities</li> <li>10. regulating vessel type, size, and speed</li> <li>11. managing recreational and commercial fishing in the interest of sound conservation to protect and preserve marine resources for the education, inspiration, recreation, and enjoyment of present and future generations and in accordance with the Fishery Management Plan, pending approval</li> </ol> <p>Facilities in this zone would be small, unobtrusive, and dispersed. Facilities would provide basic visitor services, enhance visitor safety, and be compatible with resource protection goals. Facilities could include:</p> <ol style="list-style-type: none"> <li>1. primitive trails</li> <li>2. signs, mooring buoys, and navigation markers</li> <li>3. interpretive exhibits</li> <li>4. restrooms, primitive camping, and picnicking sites</li> <li>5. research equipment</li> </ol>

**TABLE 2. BISCAYNE NATIONAL PARK MANAGEMENT ZONES, ALTERNATIVES 2 THROUGH 7**

	Resource Condition	Visitor Experience	Management Actions and Facilities
Slow Speed Zone (All Alternatives)	<p>The preservation of shallow water habitats, restoration of degraded and impacted resources, and continuation of natural processes would be the resource goals in this zone.</p> <ol style="list-style-type: none"> <li>1. Protection and continuation of natural processes.</li> <li>2. Minor impact to panoramic viewsheds.</li> <li>3. There would be tolerance for minor resource impacts, including noise levels.</li> <li>4. Evidence of human impact would be minimal or part of a cultural scene.</li> <li>5. The significance and vulnerability of the cultural resources would be evaluated, and appropriate management actions would be determined.</li> </ol>	<p>Visitors would have opportunities to experience nature.</p> <ol style="list-style-type: none"> <li>1. Appropriate visitor activities would include boating (motorized or nonmotorized), sightseeing, , fishing, swimming, snorkeling, and nature observation. Commercial fishing would be managed as described in the Fishery Management Plan, pending approval.</li> <li>2. Boats with motors could be used when propelled at slow (wakeless) speeds to reduce user conflicts and ensure visitor safety.</li> <li>3. Visitor activities would be mostly self-directed and have minor resource impacts.</li> <li>4. Limited commercial services might provide appropriate visitor recreational activities if compatible with resource protection goals and desired visitor experience.</li> </ol>	<p>Management actions would focus on protecting visitors and water-based resources, restoring disturbed areas, minimizing impacts from visitor use, and reducing conflicts between different types of users. Appropriate management actions could include:</p> <ol style="list-style-type: none"> <li>1. determining types of use (user capacity) considering the desired visitor experience and the vulnerability of the resources to impacts</li> <li>2. inventorying and monitoring resources</li> <li>3. providing interpretation and enforcement services</li> <li>4. conducting research and restoring and stabilizing resources</li> <li>5. taking measures to prevent human-caused impacts</li> <li>6. defining additional compatible uses</li> </ol> <p>Facilities generally would not be appropriate, except when determined they would enhance resource protection or public safety. Facilities could include:</p> <ol style="list-style-type: none"> <li>1. signs and other navigational aids</li> <li>2. research and monitoring apparatus that is minimal and unobtrusive</li> <li>3. mooring buoys and informational markers such as hazard markers</li> </ol>

**TABLE 2. BISCAYNE NATIONAL PARK MANAGEMENT ZONES, ALTERNATIVES 2 THROUGH 7**

	Resource Condition	Visitor Experience	Management Actions and Facilities
<b>Noncombustion Engine Use Zone (All Alternatives)</b>	<p>The preservation of natural sounds, near-shore nursery areas and shallow water habitats, restoration of degraded and impacted resources, and continuation of natural processes would be the dominant resource goals in this zone.</p> <ol style="list-style-type: none"> <li>1. Natural processes would predominate.</li> <li>2. Natural sounds, sights, and vistas would prevail. Panoramic viewsheds would remain unaltered.</li> <li>3. There would be tolerance for minor resource impacts.</li> <li>4. Evidence of human impact would be minimal or part of a cultural scene.</li> <li>5. Human-caused intrusions, including visual obstructions, would be kept to an absolute minimum, except for resource protection and visitor safety purposes.</li> <li>6. The significance and vulnerability of cultural resources would be evaluated, and appropriate management actions would be determined.</li> </ol>	<p>Visitors would be immersed in nature with opportunities to experience natural sounds, tranquility, and closeness to nature.</p> <ol style="list-style-type: none"> <li>1. Appropriate visitor activities could include noncombustion engine boating (paddling, poling, or trolling), sightseeing, fishing, swimming, snorkeling, and nature observation. Commercial fishing would be managed as described in the Fishery Management Plan, pending approval.</li> <li>2. Boats equipped with combustion engines could be used when propelled by push-pole or electric trolling motor, with outboard engine tilted up.</li> <li>3. Visitors would be self-reliant and have maximum opportunities to experience a sense of discovery and adventure. Application of outdoor skills would be essential.</li> <li>4. The sights and sounds of nature would be more prevalent than those of human activities. Visitor activities would be mostly self-directed and have minor resource impacts.</li> <li>5. There would be some opportunities for interpretive activities.</li> <li>6. Special events would not be allowed.</li> <li>7. Visitor activities in these zones could be limited in the interest of protecting resources and enhancing public safety. Limitations might be short or long term.</li> <li>8. Use of combustion engines would generally not be allowed. However, in designated areas (between 3 feet to 5 feet in depth), the use of combustion engines would be allowed at slow speeds in channels.</li> <li>9. Limited commercial services might provide appropriate visitor recreational activities if compatible with resource protection goals and desired visitor experience.</li> </ol>	<p>Management actions would focus on protecting water-based resources, restoring disturbed areas, minimizing impacts from visitor use, and providing visitors with educational opportunities that encourage resource protection. Appropriate management actions could include:</p> <ol style="list-style-type: none"> <li>1. inventorying and monitoring resources</li> <li>2. determining types and levels of use considering the desired visitor experience and the vulnerability of the resources to impacts</li> <li>3. providing interpretation and enforcement services</li> <li>4. conducting research and restoring and stabilizing resources</li> <li>5. taking measures to prevent human-caused impacts</li> <li>6. defining additional compatible uses</li> <li>7. developing a permit system for various activities</li> <li>8. managing recreational and commercial fishing in the interest of sound conservation to protect and preserve marine resources for the education, inspiration, recreation, and enjoyment of present and future generations and in accordance with the Fishery Management Plan, pending approval</li> </ol> <p>Facilities generally would not be appropriate, except when determined that they would enhance resource protection or public safety. Facilities could include:</p> <ol style="list-style-type: none"> <li>1. signs and other navigational aids</li> <li>2. research equipment—if installed, research apparatus would be minimal and unobtrusive; if research could be accomplished in another management zone, it would not occur in this zone</li> <li>3. mooring buoys</li> </ol>

**TABLE 2. BISCAYNE NATIONAL PARK MANAGEMENT ZONES, ALTERNATIVES 2 THROUGH 7**

	Resource Condition	Visitor Experience	Management Actions and Facilities
<b>Access-by-Permit Zone (Alternatives 3 and 5)</b>	<p>The access-by-permit zone would provide opportunities for visitors to recreate in natural or cultural settings where natural processes occur with minor evidence of disturbance from human use. The zone would provide protection for resources such as fish nursery areas and coral reefs.</p> <ol style="list-style-type: none"> <li>1. Natural processes would predominate. This management zone would perpetuate a full complement of native species.</li> <li>2. Natural sounds, sights, and vistas would prevail.</li> <li>3. There would be tolerance for minor resource impacts.</li> <li>4. Evidence of human impact would be minimal or part of a cultural scene.</li> <li>5. Human-caused intrusions, including visual obstructions, would be kept to an absolute minimum, except for resource protection and visitor safety purposes.</li> <li>6. The significance and vulnerability of cultural resources would be evaluated, and appropriate management actions would be determined.</li> </ol>	<p>Visitors would be immersed in nature. Visitor activities and access to these zones would be managed through a permit system to provide visitors with opportunities to experience natural sounds, tranquility, closeness to nature, and a sense of relative remoteness. Limited numbers of visitors would enjoy a full range of resource-based recreational opportunities.</p> <ol style="list-style-type: none"> <li>1. Appropriate activities could include sightseeing, boating, swimming, snorkeling, scuba diving, and participating in recreational and commercial fishing.</li> <li>2. Visitor activities would usually be self-directed, which would require self-reliance and provide maximum opportunities to experience a sense of discovery and adventure. Application of outdoor skills would be essential.</li> <li>3. Visitors would receive orientation and information, interact with park staff and experience and learn about park resources before and after entering the park. Interpretive and educational opportunities would enable visitors to plan their trip into the park in advance through the permitting system.</li> <li>4. Special events would not be allowed.</li> <li>5. The probability of encountering others would be low. There would be only occasional encounters with others outside of one's social group.</li> <li>6. Vessel type, size, and speed might be regulated to enhance resource protection and preserve the desired visitor experience.</li> <li>7. Visitor activities could be structured through the use of commercial services with groups of limited size.</li> </ol>	<p>Management actions would focus on protecting resources, ensuring visitors have an uncrowded experience, minimizing impacts from visitor use, and providing visitors with educational opportunities that encourage resource protection. Appropriate management actions could include:</p> <ol style="list-style-type: none"> <li>1. determining types and levels of use considering the desired visitor experience and the vulnerability of resources to impacts</li> <li>2. managing and limiting access through a permit system</li> <li>3. providing interpretation and enforcement services</li> <li>4. taking measures to prevent human-caused impacts</li> <li>5. regulating visitor activities and vessel type, size, and speed</li> <li>6. authorizing commercial services</li> <li>7. conducting research and monitoring resource conditions; restoring and stabilizing resources</li> <li>8. managing recreational and commercial fishing in the interest of sound conservation to protect and preserve marine resources for the education, inspiration, recreation, and enjoyment of present and future generations and in accordance with the Fishery Management Plan, pending approval</li> </ol> <p>Facilities generally would not be appropriate, except when determined they would enhance resource protection or public safety. Facilities could include:</p> <ol style="list-style-type: none"> <li>1. signs and other navigational aids</li> <li>2. limited mooring buoys</li> <li>3. primitive trails</li> <li>4. research equipment—If installed, research apparatus would be minimal and unobtrusive; if research could be accomplished in another management zone, it would not occur in the access-by-permit zone</li> </ol>

**TABLE 2. BISCAYNE NATIONAL PARK MANAGEMENT ZONES, ALTERNATIVES 2 THROUGH 7**

	Resource Condition	Visitor Experience	Management Actions and Facilities
<b>Nature Observation Zone (Alternatives 2, 3, 4, 5, 6, and 7)</b>	<p>The preservation of natural and cultural resources, restoration of degraded and impacted resources, and continuation of natural processes would be the dominant goals in this zone. The nature observation zone would provide a sustainable ecosystem, including fully functioning communities, with natural complexity structure, and diversity of organisms.</p> <ol style="list-style-type: none"> <li>1. Natural processes would predominate. Nature observation areas would preserve and/or restore a full complement of native species.</li> <li>2. Natural sounds, sights, and vistas would prevail. Panoramic viewsheds would remain unaltered.</li> <li>3. There would be tolerance for minor resource impacts.</li> <li>4. Evidence of human impact would be minimal or part of a cultural scene.</li> <li>5. Human-caused intrusions, including visual obstructions, would be kept to an absolute minimum, except for resource protection and visitor safety purposes.</li> <li>6. The significance and vulnerability of cultural resources would be evaluated, and appropriate management actions would be determined.</li> </ol>	<p>Visitors would be immersed in nature with opportunities to experience natural sounds, tranquility, solitude, and closeness to nature. Visitors would have opportunities to experience and gain in-depth knowledge about sustainable ecosystems with fully functioning interdependent communities of organisms.</p> <ol style="list-style-type: none"> <li>1. Appropriate visitor activities could include sightseeing, nature observation, and fishing.</li> <li>2. Visitors would be self-reliant and have maximum opportunities to experience a sense of discovery and adventure. Application of outdoor skills would be essential.</li> <li>3. Interaction with nature would predominate, with only occasional encounters with others. There would be a sense of relative remoteness. The sights and sounds of nature would be more prevalent than those of human activities. Visitor activities would be mostly self-directed and have minor resource impacts.</li> <li>4. There would be opportunities for interpretive activities emphasizing sustainable ecosystems.</li> <li>5. Special events would not be allowed.</li> <li>6. Visitor activities in these zones could be limited in the interest of protecting resources and enhancing public safety. Limitations might be short or long term.</li> <li>7. Limited commercial services that provide appropriate visitor recreational activities might be appropriate if compatible with resource protection goals and desired visitor experience.</li> </ol>	<p>Management actions would focus on protecting resources, restoring disturbed areas, minimizing impacts from visitor use, and providing visitors with opportunities that encourage understanding of the natural functioning of resources within a sustainable ecosystem. Appropriate management actions could include:</p> <ol style="list-style-type: none"> <li>1. determining types and levels of use considering the desired visitor experience and the vulnerability of resources to impacts</li> <li>2. intense inventorying and monitoring of resources</li> <li>3. providing interpretation and enforcement services</li> <li>4. conducting research and restoring and stabilizing resources</li> <li>5. taking measures to prevent human-caused impacts</li> <li>6. defining additional compatible uses</li> <li>7. developing permit systems for various activities</li> </ol> <p>Facilities generally would not be appropriate, except when determined that they would enhance resource protection or public safety. Facilities could include:</p> <ol style="list-style-type: none"> <li>1. signs and other navigational aids</li> <li>2. primitive trails</li> <li>3. research equipment—if installed, research apparatus would be minimal and unobtrusive; If research could be accomplished in another management zone, it would not occur in the nature observation zone</li> </ol>

**TABLE 2. BISCAYNE NATIONAL PARK MANAGEMENT ZONES, ALTERNATIVES 2 THROUGH 7**

	Resource Condition	Visitor Experience	Management Actions and Facilities
<b>Sensitive Resource Zone (Alternatives 2, 3, 4, 5, 6, and 7)</b>	<p>The sensitive underwater archeological zone would provide protection for significant and vulnerable underwater cultural sites. Research activities could occur.</p> <ol style="list-style-type: none"> <li>1. Natural sea and soundscapes would be maintained as much as possible.</li> <li>2. Human-caused cultural resource degradation would not be tolerated. Intervention to natural processes would be allowed if necessary to protect cultural site integrity.</li> <li>3. Preservation and stabilization actions might occur.</li> </ol>	<p>Visitors would view protected resources from within vessels on the surface of the water. Research activities might be allowed under permit.</p> <ol style="list-style-type: none"> <li>1. Appropriate visitor activities could include sightseeing, nature-watching, hook and line fishing, and transit through the zone. Apparatus other than hook and line fishing gear would not be allowed in the water below the lowest point of the vessel. Trapping would not be allowed. Anchoring and mooring would not be allowed.</li> <li>2. Visitors must remain in their boats, and access to the water for activities including swimming, snorkeling, or diving would not be allowed.</li> <li>3. Researchers and other cooperating personnel could enter the zone for authorized purposes. Any impacts on cultural resources would be negligible.</li> <li>4. Visitors would benefit from the research by learning about significant and vulnerable resources as well as how they are studied and preserved.</li> <li>5. Commercial services would only transit through the zone.</li> <li>6. Underwater viewing devices, including but not limited to, face masks, glass-bottom vessels, glass-bottom buckets, and/or underwater cameras of any kind would not be allowed.</li> </ol>	<p>Management actions would focus on preservation and protection of underwater cultural sites. Appropriate management actions could include</p> <ol style="list-style-type: none"> <li>1. mitigating, stabilizing, and restoring resources and collecting artifacts in imminent danger of destruction or loss</li> <li>2. conducting research aimed at monitoring resource conditions and understanding the cultural context</li> <li>3. prioritizing, overseeing, and managing research projects</li> <li>4. taking measures to prevent human-caused impacts</li> <li>5. defining additional compatible uses</li> <li>6. managing recreational fishing in the interest of sound conservation to protect and preserve marine resources for the education, inspiration, recreation, and enjoyment of present and future generations and in accordance with the Fishery Management Plan, pending approval</li> <li>7. entering into agreements aimed at resource protection</li> </ol> <p>Facilities generally would not be appropriate, except when determined that they would enhance resource protection or public safety. Facilities could include</p> <ol style="list-style-type: none"> <li>1. signs and other navigational aids</li> <li>2. research equipment—If installed, research apparatus would be minimal and unobtrusive; if research could be accomplished in another management zone, it would not occur in the sensitive underwater archeological zone</li> </ol>

## FORMULATION OF THE ALTERNATIVES

The National Park Service prepares management alternatives to explore different approaches of managing the park. Each alternative must be within the bounds of laws, policies, and the park's purpose. They also present different ways to achieve the desired future conditions of the park.

The alternatives focus on *what* resource conditions and visitor uses and experiences/opportunities should be at the park rather than on details of *how* these conditions and uses/experiences should be achieved. Thus, the alternatives do not include many details on resource or visitor use management.

More detailed plans or studies will be required before most conditions proposed in the alternatives are achieved. The implementation of any alternative also depends on future funding and environmental compliance. This plan does not guarantee that funding would be forthcoming. The plan establishes a vision of the future that will guide day-to-day and year-to-year management of the park, but full implementation could take many years.

### ACTIONS COMMON TO ALL ALTERNATIVES

The following actions would be implemented regardless of which alternative is approved.

Full descriptions of these actions can be referenced in the 2011 Draft GMP/EIS on pages 60–62, accessed online at: <http://parkplanning.nps.gov/documentsList.cfm?parkID=353&projectID=11168>. One key change from the 2011 Draft GMP/EIS is the acquisition of Fowey Rocks Lighthouse.

### Fowey Rocks Lighthouse

In the 2011 Draft GMP/EIS released for public comment in 2011, acquisition of the historic (1878) Fowey Rocks Lighthouse by the National Park Service from the U.S. Coast Guard via the General Services Administration was presented in alternative 5, but not in the preferred alternative 4. The National Park Service received public comments as well as comments from the Florida state historic preservation office supporting both NPS acquisition of the lighthouse as well as the proposal in alternative 4 to partner with the eventual owner of the light after its divesture by the U.S. Coast Guard through the National Historic Lighthouse Preservation Act. In the intervening time period, the National Park Service contracted the completion of a detailed condition assessment and obtained cost estimates for stabilization and rehabilitation needs of the lighthouse. The results of these reports led park managers to believe that the best strategy for ensuring the continued protection and public interpretation of the lighthouse (located within the boundary of Biscayne National Park) would be to accept the no-cost transfer of the structure from the U.S. Coast Guard. This transfer was completed in October 2012. The National Park Service will manage the lighthouse in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* and has initial plans in place to complete repairs that will stabilize the structure, protect it from further deterioration, and potentially provide for visitor access in the future. It is currently closed to visitation due to safety concerns.

### Fishing

Recreational and commercial fishing would continue in the park in accordance with the

Fishery Management Plan, when approved, except in the marine reserve zone in alternatives 3, 4, and 5, and with limitations, in the special recreation zone in alternatives 6 and 7. (Note: for alternatives 6 and 7, after the 10-year evaluation interval, the option to institute a marine reserve zone would be considered.) Implementing the Fishery Management Plan, if approved, would be accomplished through state rulemaking by the Florida Fish and Wildlife Conservation Commission and federal special regulations promulgated in consultation with the commission. Harvest of invasive lionfish would continue to be managed in compliance with existing plans.

### **Mooring Buoys**

The use of mooring buoys and anchoring in the presence of mooring buoys would continue to be consistent with park policies and federal regulations.

Other elements and/or actions common to all alternatives as described in the 2011 Draft GMP/EIS are:

- management of Stiltsville
- establishment of a Miami area visitor center
- acquisition of Ragged Keys from willing sellers
- use of Black Point Jetty
- management of dredged navigation channels
- management of naturally occurring channels
- future establishment of a research learning center
- administrative closures to protect human health and safety, sensitive natural and cultural resources, and areas undergoing environmental restoration
- management of nonnative plants
- management of vessel grounding

## ALTERNATIVE 1: NO ACTION

### CONCEPT

Under alternative 1, the no-action alternative, future management would be a general continuation of what is being done now to provide visitor opportunities and to protect and preserve park resources. Current law, policy, and plans, such as the 1983 General Management Plan and 2003 General Management Plan Amendment, would continue to provide the framework of guidance. This alternative would continue to emphasize a high level of access with recreational opportunities throughout the park. Natural resources, activities for restoration, and recovery or maintenance of habitats and dependent species would continue to be actively managed. Cultural resources maintenance and monitoring would continue. The park would continue to seek partnership opportunities to provide visitor services and resource management beyond current park boundaries. For example, park employees could staff visitor contact stations and monitor water quality parameters beyond park boundaries. This alternative serves as a basis of comparison between the park's existing management and the action alternatives 2 through 7.

Funded projects that would be conducted under this alternative include an upgrade of the radio system, erosion control, building and grounds maintenance, landscape enhancement, maintenance mentoring program, completion of the Hurricane Sandy related repair projects, and collection recovery.

### THE MAINLAND

Convoy Point would continue to be the primary land-based entry point to the park. Visitors would park here and access the various available visitor services. The Dante

Fascell Visitor Center would continue to provide orientation and interpretive information, including exhibits, videos, and sales of interpretive/educational materials. Park interpretive staff would continue to provide a variety of special talks and programs at Convoy Point. Visitors would have access to designated paths, the interpretive boardwalk, and jetty as part of the landscaped grounds surrounding the visitor center and park administration buildings. They could continue to picnic, bird-watch, and sightsee, with broad vistas of the bay available from the second-floor veranda of the visitor center. Pole fishing, cast-netting, and yo-yo fishing would continue to be allowed from the walkway/jetty area, but would continue to be prohibited in the boat basin.

From Convoy Point, a commercial operator may continue to provide the following authorized visitor services through a concessions contract:

- a small retail store where visitors can buy sandwiches, soft drinks, practical/convenience vacation items, and souvenirs
- rentals of canoes, kayaks, and paddle boats; snorkeling and scuba diving equipment; snorkeling and diving trips to the park's coral reefs and submerged cultural resources; boat tours to view the coral reefs without getting in the water; and a transport service to and from the mainland and Elliott or Boca Chita keys for visitors who want to attend a ranger-led walk, hike independently, or camp

The park's narrow mainland areas north and south of Convoy Point are composed primarily of mangrove forest. For the most part, these areas receive very little visitation and would continue to be managed as remote

natural areas primarily to protect fish nurseries and crocodile habitat.

## **BAY AND OCEAN WATERS**

Under this alternative, the park would continue to be open to visitors with private boats of varying sizes and sources of power, including motorboats and sailboats. Visitors could continue to choose from a variety of activities including shallow and deep-water boating, snorkeling, diving, fishing, touring via commercial visitor services boats, visiting the keys, camping, canoeing, kayaking, sailing, windsurfing, and participating in boating events. The bay, the keys, and the coral reefs would continue to provide different settings to recreate in a marine atmosphere. Visitors could continue to seek solitude, if desired, and appreciate the many natural sights and sounds of nature—both above and below the water.

Fishing would continue in accordance with the enabling legislation of the park and as regulated by the state.

Popular snorkeling, diving, and anchoring sites would be evaluated for the installation of mooring buoys. This would provide targeted resource protection and serve to disperse use at these locations and limit the number of boats. For more information on mooring buoys, refer to the “Common to All Alternatives” section.

## **LEGARE ANCHORAGE**

The purpose of the triangular-shaped Legare Anchorage (3 square miles in size) would continue to be the long-term protection of submerged cultural resources, particularly the H.M.S. *Fowey* shipwreck, owned by the government of the United Kingdom of Great Britain and Northern Ireland. Visitors would not have underwater access; boaters could continue to traverse the area on the water’s surface, or troll, but they could not stop, anchor, swim, or dive.

## **SLOW SPEED AREAS**

The bay includes many shallow water areas, and less experienced boaters often run into difficulties that result in groundings and/or propeller damage to park resources. These areas include the Safety Valve Shoals, the Featherbed Banks, the shallows around the southern keys, the manatee habitat adjacent to the coast, and congested visitor use areas in and near Sands Cut. The park has regulations to manage boating activity in some of these areas to protect resources and ensure visitor safety.

The management objective of the slow speed zone is to enhance visitor safety and resource protection by slowing vessel speeds in shallow water areas. Less experienced boaters often run into difficulties that result in groundings and/or propeller damage to these shallow water areas. There would continue to be three slow speed zones in the park. The first area would be the manatee protection area that parallels the mainland, out to 1,000 feet from shore, from Black Point County Park south to Turkey Point. The second area would continue to be south of Sands Key along the northwest shore of Elliott Key to Coon Point. The noncombustion engine use area in Jones Lagoon would also continue. In this noncombustion engine zone, boats equipped with combustion engines could be used when propelled by push-pole or electric trolling motor with the outboard motor tilted up.

## **THE KEYS**

### **Boca Chita Key**

Boca Chita Key would continue to be a park destination point for people who like boating as well as getting out and strolling in a historic designed landscape. Visitors could continue to dock in the harbor for day use activities and walk among the historic stone structures (such as the covered picnic pavilion and chapel) and tour the ornamental lighthouse. Restrooms, a picnic area, a

walking trail, a primitive campground for individual and group camping overnight docking, and boat camping would also continue to be available. Kiosks for interpretation/education would remain at the harbor. The historic barn and chapel, currently used for storage, would also remain. The park would explore options to adaptively reuse these structures for park operations and visitor services. User fees would continue to be collected on Boca Chita, as would the existing procedure that allows the private use of some visitor facilities via a park-issued special use permit (SUP).

### **Elliott Key**

Elliott Key would continue to be open to visitors to dock (both day use and overnight docking / boat camping), picnic, hike, camp, access restrooms, and obtain potable water. Interpretive programs, facilitated by a concession operation, would continue. Several trails would remain for visitor activities—the unhardened central hiking trail referred to as “Spite Highway,” the east-west breezeway trail, and the self-guided interpretive loop boardwalk trail. The visitor contact/ranger station would continue to be opened occasionally to provide park law enforcement, visitor safety services, some environmental education activities, administrative operations, and interpretive visitor services.

A formal ranger-led environmental education program would continue to be offered at Elliott Key.

Day-use docking would continue to be allowed at University Dock, and existing ranger residences would remain.

### **Adams Key**

Facilities at Adams Key would continue to include a day-use dock, a picnic pavilion, restrooms, a walking trail, interpretive wayside exhibits, maintenance facility, and ranger residences. Adams Key would

continue to remain an alternate (backup) site for the formal ranger-led environmental education program.

### **Porgy, Totten, Old Rhodes, Reid, Rubicon, Swan, Long Arsenicker, and East Arsenicker**

These keys would remain relatively remote places that seldom have visitors and could be closed should circumstances warrant, as described in the “Common to All Alternatives” section. The historic structures on Porgy Key would remain stabilized. Visitors would not be encouraged to visit the Jones Homestead site on Porgy Key. Interpretive information about these keys would continue to be provided off-site at visitor areas like Convoy Point.

### **Arsenicker Key, West Arsenicker Key**

These areas and the waters extending 200 feet from their shores would continue to be closed to visitors for natural resource protection. In particular, these keys provide important habitat for nesting birds.

Soldier Key would remain closed for the protection of sensitive natural or cultural resources.

### **Jones Lagoon**

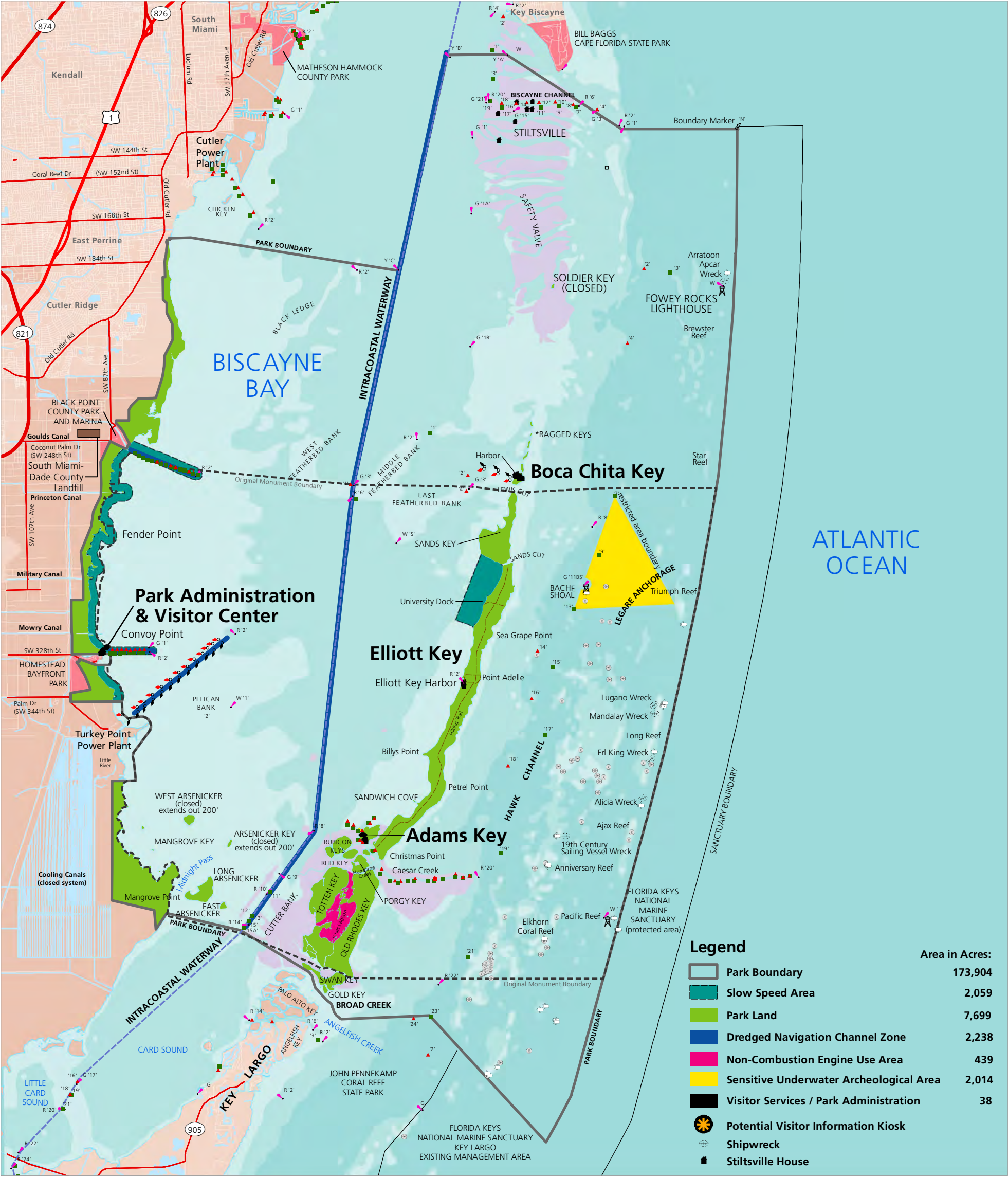
The lagoon would continue to be managed as a noncombustion engine use area to protect resources and provide a variety of visitor experience opportunities.

## **PARTNERSHIPS**

The park would continue to engage in partnership agreements to expand the park’s capacity both inside and beyond park boundaries at sites such as marinas and state and county parks.

Biscayne National Park would coordinate with Florida Keys National Marine Sanctuary and the South Atlantic Fishery Management Council to ensure compatible management strategies in adjacent federal waters.

The National Park Service would continue to collaborate with other entities to address water quality and many other concerns. These partnerships could include federal, state, and local agencies; community groups; commercial organizations; and individuals.



0 1 2 Kilometers  
0 1 2 Statute Miles  
0 1 2 Nautical Miles  
Map not for navigation

Note: To show visually, the size of zone colors have been enlarged in certain areas.

Map Key to Water Features and Landmarks		
Water Depths		
0-6 feet (0-1.8 meters)	6-12 feet (1.8-3.6 meters)	Over 12 feet (Over 3.6 meters)
Shallows and Reefs		
Shoal or spoil area	Coral reef near water surface	Coral reefs also lie deeper below water surface.
Aids to Navigation (entering from seaward)		
Red	Port side lateral marks (even numbered)	Other buoy
Green	Starboard side lateral marks (odd numbered)	Daymarker
Other Aids and Landmarks		
Light	Danger Shoal	Tower
Light color: R Red G Green W White Y Yellow	Mooring buoy	

\*RAGGED KEYS #2, #3, and #5 are Private Properties

# Alternative 1

## Biscayne National Park

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## ALTERNATIVES 2 THROUGH 5

Alternatives 2, 3, 4, and 5 are fully described in the 2011 Draft GMP/EIS on pages 69–103, accessed online at: <http://parkplanning.nps.gov/documentsList.cfm?parkID=353&projectID=11168>. Summaries and maps for each alternative are provided below for comparison with the two new alternatives, 6 and 7. The basic concept of each is listed below for reference; refer to the 2011 Draft GMP/EIS for complete descriptions.

### ALTERNATIVE 2

Alternative 2 would emphasize the recreational use of the park while providing resource protection as governed by law, policy, and resource sensitivity. This concept would be accomplished by providing the highest level of services, facilities, and access to specific areas of the park of all the action alternatives. Visitors would be able to access the entire park except small areas set aside for the protection of sensitive resources. Substantial concession services would enable visitors without their own boats to access the keys and bay and ocean waters. Additional staffing and a substantial built environment might be required to implement this alternative, and some areas might be developed beyond the current level. A high level of interaction among visitors, park staff, and park resources would be expected while providing a minimum level of resource protection.

### ALTERNATIVE 3

Alternative 3 would allow all visitors a full range of experience opportunities throughout most of the park and use a permit system to provide opportunity for visitors to experience a sense of solitude in two discrete areas of the bay. Small areas would be set aside that prohibit visitor access to protect

sensitive resources and allow wildlife a respite from human contact. Management actions would provide strong natural and cultural resource protection and diverse visitor experiences.

Additional staffing and some additional development might be required to implement this alternative.

Visitor opportunities in this alternative would range from the challenges of exploring the natural environment alone to the convenience of built surroundings. A high level of interaction among visitors, park staff, and park resources would be expected. Orientation to the park would help visitors choose types and locations of activities and learn about resource preservation and stewardship. Some impacts on resources might be tolerated in high-use areas of the park. Biscayne National Park staff would coordinate with Florida Keys National Marine Sanctuary staff to ensure compatible management strategies in adjacent federal waters.

This alternative includes a marine reserve zone.

### ALTERNATIVE 4

This alternative would emphasize strong natural and cultural resource protection while providing a diversity of visitor experiences. Visitor opportunities in this alternative would range from the challenges of exploring the natural environment alone to the convenience of built surroundings. A limited amount of resource impacts would be tolerated in high-use areas of the park. Some areas would be closed to visitors to protect sensitive resources and allow wildlife a respite from human contact. Other areas,

such as the Legare Anchorage, would be reserved for limited types of visitor use.

This alternative includes a marine reserve zone.

## **ALTERNATIVE 5**

The park would be managed to promote the protection of natural and cultural resources, including taking actions to optimize conditions for protection and restoration. Natural processes would prevail except when management actions were needed to preserve and protect significant cultural resources. This alternative would provide the highest level of resource protection and still authorize a level of visitor services greater than the no-action alternative. Visitor access

and activities would be highly managed for resource protection while still enabling visitors to participate in a variety of activities. To accomplish this variety, a permit system would be used to provide an opportunity to experience a sense of solitude in the bay, in one portion of the park. Other areas, such as the Legare Anchorage, would offer diverse visitor experiences and recreational activities. Some areas would be closed to visitors to protect sensitive resources and provide wildlife a respite from human contact. The built environment would be limited to basic visitor safety and services and would be geographically concentrated or outside park boundaries.

This alternative includes a marine reserve zone.



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0 1 2 Kilometers  
0 1 2 Statute Miles  
0 1 2 Nautical Miles  
Map not for navigation

Note 1: Existing conditions and some features such as the locations of shoals, reefs, and shallow coral areas, may be considered unchanged.

Note 2: To show visually, the size of zone colors have been enlarged in certain areas.

Note 3: Some areas in the Park Boundary are not NPS owned but do not appear at this map scale. Zoning shown would not apply to non NPS lands unless they were acquired from a willing seller.

# Alternative 3

## Biscayne National Park

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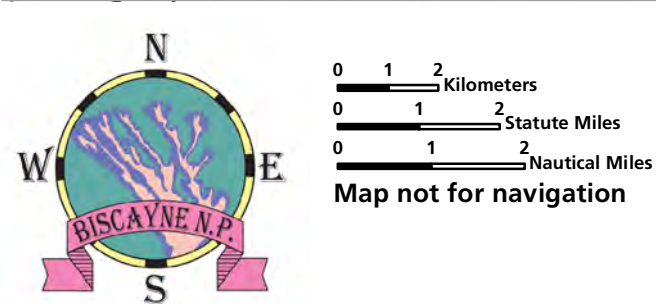
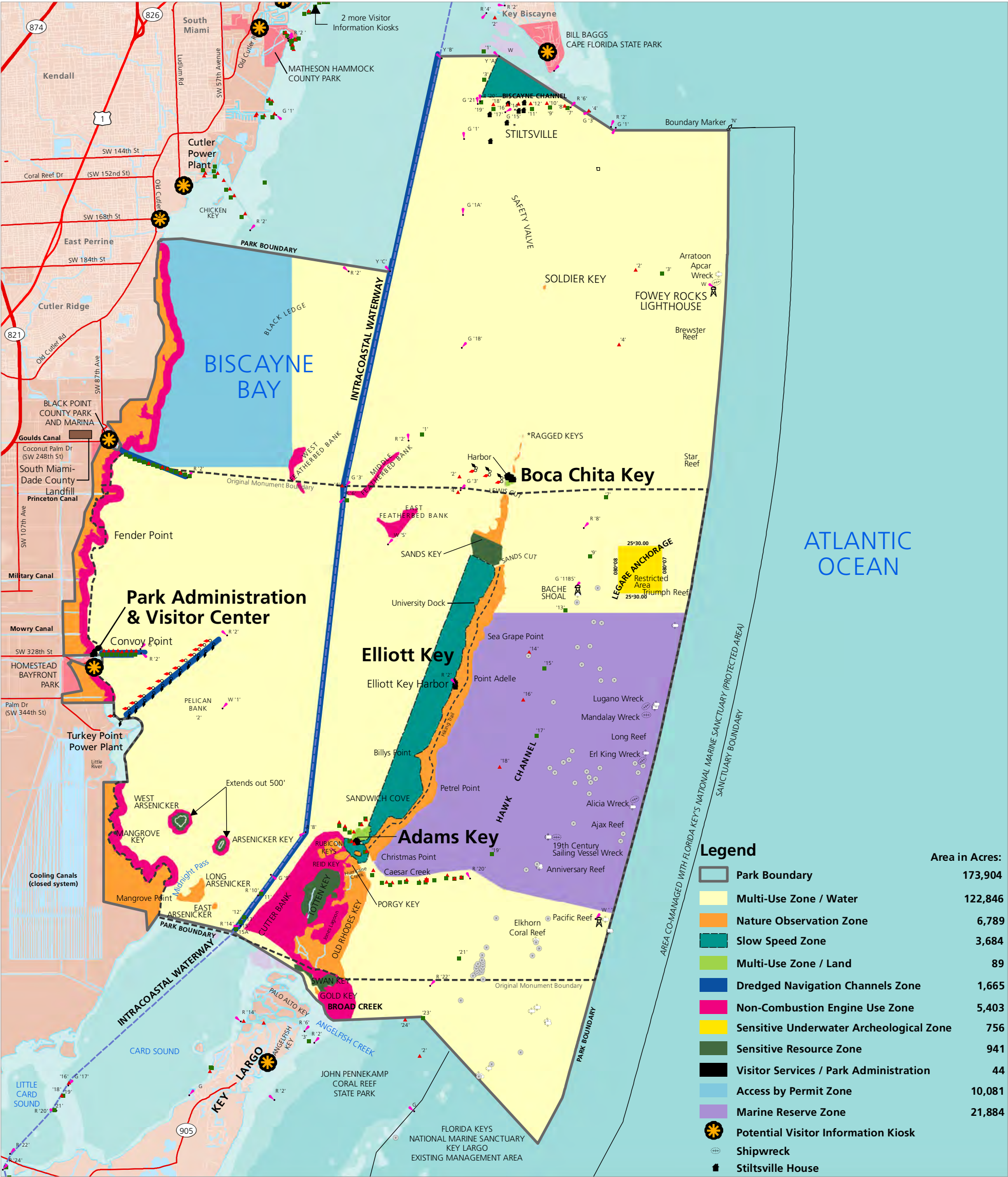
# Alternative 4

## Biscayne National Park

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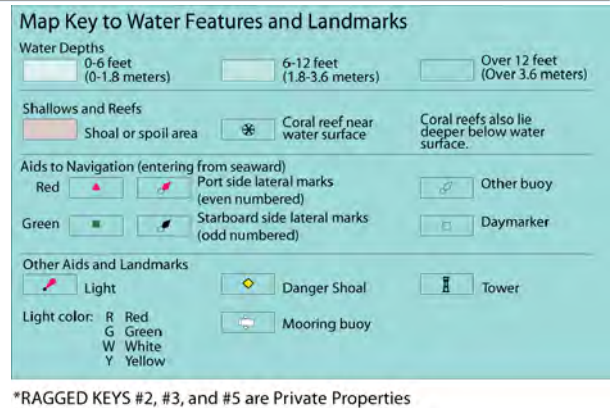
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**Note 1:** Existing conditions and some features such as the locations of shoals, reefs, and shallow coral areas, may be considered unchanged.

**Note 2:** To show visually, the size of zone colors have been enlarged in certain areas.

**Note 3:** Some areas in the Park Boundary are not NPS owned but do not appear at this map scale. Zoning shown would not apply to non NPS lands unless they were acquired from a willing seller.



# Alternative 5

## Biscayne National Park

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## ALTERNATIVE 6: THE NPS PREFERRED ALTERNATIVE

### CONCEPT

This alternative would emphasize strong natural and cultural resource protection while providing a diversity of visitor experiences. Visitor opportunities in this alternative would range from the challenges of exploring the natural environment alone to the convenience of built surroundings. A limited amount of resource impacts would be tolerated in high-use areas of the park. Some visitor activities would be restricted in certain areas to protect sensitive resources and allow wildlife a respite from human contact. Other areas, such as the Legare Anchorage, would be reserved for limited types of visitor use.

This alternative includes a special recreation zone that would be managed as part of an adaptive management strategy to achieve the goal of a healthier coral reef ecosystem within the zone to provide a more enjoyable and diverse visitor experience.

Taking action in this alternative to protect reefs from other pressures such as overfishing; land-based sources of pollution; and physical damage from fishing gear, anchoring, and vessel groundings might increase reef resiliency, potentially delaying the effects of climate change stressors.

Under alternative 6, some types of fishing would be prohibited and fishing pressure would be limited via permits in the special recreation zone. An adaptive management strategy (appendix F) is used to evaluate the effectiveness of this approach at 3-, 5-, 8-, and 10-year intervals after implementation with the option of implementing management actions to affect fishing pressure as indicated by monitoring data. Following the 10-year adaptive management period for the special recreation zone, the National Park Service would consider monitoring data and consult with the Florida Fish and Wildlife

Conservation Commission, NOAA Fisheries, other relevant agencies, and an expert panel. At that point, the National Park Service would decide whether to continue adaptive management strategies for a special recreation zone or implement a marine reserve zone.

### THE MAINLAND

Convoy Point would be in the visitor services / park administration zone and remain the park's primary administrative and visitor service area on the mainland, as described in alternative 1. If additional administrative space were needed, some functions would be expanded on-site while an alternate location in the local community would be studied for moving other functions and facilities.

Additionally, the park would actively seek opportunities to develop a modern visitor education facility outside Convoy Point (in the Miami area).

A boardwalk and viewing platform would be built near Convoy Point to interpret the dwarf mangrove and marsh ecosystems. Site-specific environmental planning would be conducted before constructing the boardwalk.

The visitor center boardwalk and jetty could be improved for safety and visitor access. These improvements would consist of benches and shade structures.

The mainland area between Convoy Point and Black Point County Park would be zoned multiuse, totaling 2,756 acres of land, and the remainder would be a nature observation zone, totaling 4,751 acres of land.

## BAY AND OCEAN WATERS

The multiuse zone would be applied to most of the park's water acreage (see alternative 6 map). Midnight Pass would remain open and part of the multiuse zone. Visitors could engage in a wide variety of activities such as sightseeing, boating, fishing, scuba diving, snorkeling, swimming, canoeing and kayaking, hiking, picnicking, camping, and visiting shipwrecks. The multiuse zone includes 144,522 acres of water, which is 83% of the park.

There would be a slow speed zone for 1,000 feet adjacent to the mainland shoreline from the northern boundary to the north end of Midnight Pass near the southern boundary. This would lessen the need for two sets of navigation markers that would have been needed to delineate both a slow speed zone and Noncombustion engine use zone as proposed in alternative 4, lessen the chance of boater confusion, and maintain boater access while still providing protection for Florida manatees and safety for kayakers. This designation is consistent with the Florida Manatee Recovery Plan (USFWS 1996), and the Dade County Manatee Protection Plan (FWC 1995).

A slow speed zone would also be along the bay side of Elliott Key beginning at Sands Key and extending south to Elliott Key Harbor, a larger area than described in alternatives 2 and 3. A slow speed zone would also be along Caesar Creek, south of Adams Key to Porgy Key, including the navigational channel between markers 20 to 24. The slow speed zone includes a total of 3,593 acres, or about 2% of the park.

Two shallow-water areas of the park would be included in the noncombustion engine use zone in alternative 6. This zone includes the waters around the park's southern keys including the bay side of Old Rhodes and Totten, and near portions of Rubicon, Reid, Porgy, and Swan keys. It would also include West, Middle, and East Featherbed banks. Boats equipped with combustion engines

could be used when propelled by push-pole or electric trolling motor, with outboard engine tilted up. The noncombustion engine use zone totals 903 acres, or less than 1% of the park.

## SPECIAL RECREATION ZONE

In alternative 6, the special recreation zone would extend from Hawk Channel to the park's eastern boundary, extending from 2 miles south of Pacific Reef north to Long Reef (14,585 acres). The proposed special recreation zone in alternative 6 would be about 8% of the park.

Within the special recreation zone, the following activities and limitations would be put into effect through rule-making processes:

- recreational fishing allowed year-round with a special permit required
- hook and line fishing only, with exception of lampara nets for the ballyhoo fishery
- no grouper harvest allowed
- no lobster harvest (recreational or commercial)
- no spearfishing, with the exception of nonnative lionfish or other invasive species identified by the park
- anchoring prohibited, additional mooring buoys to be installed
- all other state and federal fishing regulations apply
- no commercial fishing, with exception of the ballyhoo lampara net fishery
- snorkeling and diving allowed
- active removal of marine debris
- initiation of a research and monitoring program to inform adaptive management of the zone
- adoption of an adaptive management strategy (see appendix F)

The special recreation zone would be implemented using an adaptive management

strategy whereby resource conditions and fishing activities are monitored and management actions are reconsidered and adjusted on pre-defined intervals. A science and research strategy would be developed in the first three years of implementation to more clearly establish baseline conditions, thresholds for management actions, and monitoring protocols and metrics. Evaluation intervals at years 3, 5, and 8 would consider the need to potentially reduce the number of fishing permits to be issued for following years and the need to refine monitoring protocols to improve data quality for future evaluations. Also, the evaluation would consider adjustments to other management actions such as the location and number of mooring buoys and zone boundary markers, marine debris removal, public outreach efforts, and law enforcement efforts. Following the 10-year evaluation, the National Park Service, after consultation with Florida Fish and Wildlife Conservation Commission and other relevant agencies, and consideration of the expert panel recommendations, would determine appropriate adaptive management adjustments in SRZ management immediately following the panel report. This NPS decision may include relaxing regulations such as allowing grouper harvest or further restricting regulations to include possible conversion to a no-take marine reserve. The decision to either continue the adaptive management strategies or implement a marine reserve zone would be predicated on the monitoring data showing a sufficiently improved resource condition and that the park has met its goals for an improved visitor experience in the zone and the expectation that the trend would continue; otherwise the marine reserve zone would be implemented to more immediately address the downward trend in resource conditions and/or visitor experiences.

Dual permits would be required for fishing and take. A dual permit, anticipated to be an FWC special activity license (SAL) / NPS special use permit, would be required for fishing and take in the special recreation zone

(other than for lionfish harvested by approved spearing devices or hand-held nets). A maximum of 500 special activity licenses would be issued annually; currently set at 430 angling permits and 70 fishing guide permits, but could be decreased or reallocated if needed. It is anticipated that the Florida Fish and Wildlife Conservation Commission would issue these on a lottery basis annually; however, the specifics for issuance of these licenses have not been determined at this time. An educational component could be required for permit holders. Permit holders would be required to submit a monthly logbook with effort, catch, and harvest information.

As anchoring is prohibited under this alternative, additional mooring buoys would be added over time as needed to disperse visitor use and improve the safety of diving operations. Mooring buoys may also be relocated periodically within the zone to redistribute fishing, snorkeling, and diving impacts.

The special recreation zone would allow the lampara net commercial fishery for ballyhoo because this fishery does not physically impact coral reef habitat although there might be temporary noise impacts on reef organisms. Furthermore, there are only a small number of commercial fishers tied to this area with limited ability to easily relocate.

If selected as the proposed action in the "Record of Decision" at the end of this planning process, these limitations and requirements would be set forth in a memorandum of understanding with the Florida Fish and Wildlife Conservation Commission. A federal formal rule-making process would be used to establish the regulatory framework for the execution of these limitations and requirements associated with this and other zones.

## **LEGARE ANCHORAGE**

In alternative 6, the Legare Anchorage would be reduced to about 1 square mile and included in the sensitive underwater archeological zone, primarily to continue protecting underwater cultural resources. To facilitate protection and make it easier for boaters to identify, the area would be delineated by latitude and longitude lines and marked by dayboards or buoys. Travel through the area in a vessel would be allowed, but drifting, mooring, anchoring, and entering the water would not. Hook-and-line fishing would be allowed while trolling. Trapping would not be allowed. This area could be used for permitted research activities.

## **THE KEYS**

### **Boca Chita Key**

The northern portion of Boca Chita Key, including the day use area, campground, and boat basin, would be part of the visitor services / park administration zone. The management and use of the existing facilities in this northern portion of the key would remain as described in alternative 2. There would be no new construction. The southern portion of Boca Chita Key would be managed according to the multiuse zone.

The private use of some visitor facilities via a park-issued special use permit would continue.

### **Elliott Key**

Only the Elliott Key Harbor area would be included in the visitor services / park administration zone. The remainder would be in the multiuse land zone. Elliott Key would continue to be open to visitors to dock (both day use and overnight docking / boat camping), picnic, hike, camp, access restrooms, and obtain potable water, as described in alternatives 1, 2, and 3.

Current visitor services and park administration facilities would continue to be used, but the specific uses of these facilities could change to improve efficiency, including opening a small visitor contact station in the multiuse building that currently houses the environmental education program. The park would continue to use Elliott Key as the main location for its environmental education program and to use Adams Key as a backup location.

A staging area for canoes and kayaks could be built on the Elliott Key developed area, allowing visitors to be shuttled by motorboat to the key and depart from there to explore the island shorelines.

The Breezeway Loop Trail and boardwalk would be made universally accessible. The ranger residences would remain.

### **Adams Key**

Only the southern portion of Adams Key that includes the dock, day use / park administration area, pavilion, restrooms, and the two ranger residences would be part of the visitor services / park administration zone. Existing facilities and uses would continue as described in alternative 1. A staging area for canoes and kayaks might be built at the Adams Key developed area, allowing visitors to explore the island shorelines.

Should the park move the environmental education program to Adams Key, facilities may need to be built or rehabilitated, and appropriate environmental planning would occur before construction.

The northern portion of this key would be in the multiuse zone and managed accordingly.

### **Porgy Key**

Only the northern portion of Porgy Key would be placed in the visitor services / park

administration zone. The ruins from the old Jones Homestead would be maintained and interpreted on-site. A canoe dock would be established.

The southern portion of the key would be in the multiuse zone and would be managed as described in the multiuse zone in this alternative.

### **Other Keys**

Several keys would be included in the nature observation zone—the Ragged Keys, Sands Key, Rubicon Keys, Reid Key, Old Rhodes Key, Totten Key, Gold Key, East Arsenicker Key, Long Arsenicker Key, and Mangrove Key.

West Arsenicker Key, Arsenicker Key, the water extending out 300 feet from these keys, as well as Swan Key and Solider Key would be included in the sensitive resource zone (and marked by dayboards or buoys) to accommodate motorboat use in a greater area around the currently closed islands while protecting the sensitive resource that is consistent with the best available science. While access to the general public would be prohibited, scientific research would continue to be allowed following NPS research permitting procedures.

At Jones Lagoon, the noncombustion engine use zone provides boater access and ease of navigation in the creeks of the area. The sensitive resource zone would extend for 300 feet around the small keys to protect the wading bird colonies in Jones Lagoon.

### **PARTNERSHIPS**

All partnerships would be similar to alternative 2 found in the 2011 Draft GMP/EIS on page 78. The exception is for the Fowey Rocks Lighthouse, which the National Park Service has acquired.

The National Park Service and the Florida Fish and Wildlife Conservation Commission would continue to collaborate on implementation of the adaptive management strategy for the special recreation zone. Additional research collaborations may be developed in support of this adaptive management strategy.

The National Park Service would continue to collaborate with other entities to address water quality and many other concerns. These partnerships could include federal, state, and local agencies; community groups; commercial organizations; and individuals.



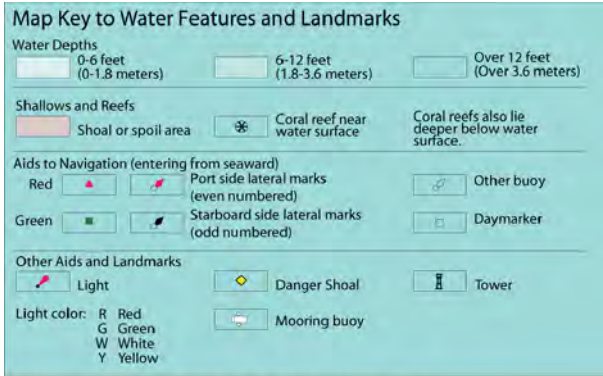


0 1 2 Kilometers  
0 1 2 Statute Miles  
0 1 2 Nautical Miles  
Map not for navigation

Note 1: Existing conditions and some features such as the locations of shoals, reefs, and shallow coral areas, may be considered unchanged.

Note 2: To show visually, the size of zone colors have been enlarged in certain areas.

Note 3: Some areas in the Park Boundary are not NPS owned but do not appear at this map scale. Zoning shown would not apply to non NPS lands unless they were acquired from a willing seller.



\*RAGGED KEYS #2, #3, and #5 are Private Properties

# Alternative 6

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## ALTERNATIVE 7

### CONCEPT

This alternative is exactly the same as alternative 6, except some details specific to the administration of the special recreation zone.

This alternative would emphasize strong natural and cultural resource protection while providing a diversity of visitor experiences. Visitor opportunities in this alternative would range from the challenges of exploring the natural environment alone to the convenience of built surroundings. A limited amount of resource impacts would be tolerated in high-use areas of the park. Some visitor activities would be restricted in certain areas to protect sensitive resources and allow wildlife a respite from human contact. Other areas, such as Legare Anchorage, would be reserved for limited types of visitor use.

This alternative is similar to alternative 6 in that it incorporates an adaptive management approach to the special recreation zone. This alternative includes fishing limitations, including a seasonal fishing closure, to achieve the goal of a healthier coral reef ecosystem within the zone to provide a more enjoyable and diverse visitor experience.

Taking actions under alternative 7 to protect coral reefs from other pressures such as overfishing and physical damage from fishing gear, anchoring, and vessel groundings might increase reef resiliency, potentially delaying the effects of climate change stressors.

Within the special recreation zone, some types of fishing would be prohibited altogether, and the area would be closed to recreational fishing during the summer months (June through September). This period is when fish that are caught and released are less likely to survive due to warm water conditions. An adaptive management

strategy (appendix F) is used to evaluate the effectiveness of this approach at 3-, 5-, 8-, and 10-year intervals after implementation with the option of implementing management actions as identified by an expert panel to affect fishing pressure as indicated by monitoring data. Following the 10-year adaptive management period for the special recreation zone, the National Park Service, after consultation with relevant agencies and consideration of expert panel recommendations, would decide whether to continue adaptive management strategies for a special recreation zone or implement a marine reserve zone.

### THE MAINLAND

Same as alternative 6.

### BAY AND OCEAN WATERS

Same as alternative 6.

### SPECIAL RECREATION ZONE

In alternative 7, the special recreation zone would extend from Hawk Channel to the park's eastern boundary, extending from 2 miles south of Pacific Reef, north to Long Reef (14,585 acres). The proposed special recreation zone in alternative 7 would be about 8% of the park.

Within the special recreation zone, the following activities and limitations would be put into effect through rule-making processes:

- recreational fishing prohibited during summer months

- hook and line fishing only, with the exception of lampara nets for the ballyhoo fishery
- no grouper harvest allowed
- no lobster harvest (recreational or commercial)
- no spearfishing, with the exception of the nonnative lionfish
- anchoring prohibited
- all other state and federal fishing regulations apply
- no commercial fishing, with the exception of the ballyhoo lampara net fishery
- snorkeling and diving allowed
- active removal of marine debris
- initiation of a research and monitoring program to inform adaptive management of the zone
- adoption of an adaptive management strategy (see appendix F)

The special recreation zone would be implemented using an adaptive management strategy whereby resource conditions and fishing activities are monitored and management actions are reconsidered and adjusted on pre-defined intervals. A science and research strategy would be developed in the first three years of implementation to more clearly establish baseline conditions, thresholds for management actions, and monitoring protocols and metrics. These evaluation intervals at years 3, 5, and 8 would consider the need to refine monitoring protocols to improve data quality for future evaluations. Also, the evaluation would consider adjustments to management actions such as the location and number of mooring buoys and zone boundary markers, marine debris removal, public outreach efforts, and law enforcement efforts. Following the 10-year adaptive management period for the special recreation zone, the National Park Service would consider monitoring data and consult with state and federal agencies, and an expert panel. At that point, the National Park Service would decide whether to continue adaptive management strategies for a special recreation zone or implement a

marine reserve zone. The decision to either continue the adaptive management strategies or implement a marine reserve would be predicated on the monitoring data showing a sufficiently improved resource condition and that the park has met its goals for an improved visitor experience in the zone; and the expectation that the trend would continue; otherwise, the marine reserve zone would be implemented to more immediately address the downward trend in resource conditions and/or visitor experiences.

During the seasonal closure, angler access would be closed June through September when water temperatures peak. At these increased temperatures, oxygen solubility is decreased, fish are more easily fatigued, and a caught fish is less likely to recover if it were to be released. Thus, this closure would allow a greater protection to reef fish during a time when they are already stressed by environmental extremes.

As anchoring is prohibited under this alternative, additional mooring buoys would be added over time as needed to disperse visitor use and improve the safety of diving operations.

The special recreation zone would allow the lampara net commercial fishery for ballyhoo because this fishery does not physically impact coral reef habitat although there might be temporary noise impacts on reef organisms. Furthermore there are only a small number of commercial fishers who fish this area and they have limited ability to relocate.

If selected as the proposed action in the “Record of Decision” at the end of this planning process, a federal formal rule-making process would be used to establish the regulatory framework for the execution of these limitations and requirements associated with this and other zones.

The Florida Fish and Wildlife Conservation Commission would not participate in the research, monitoring, or rule development

process associated with this alternative. All regulatory changes required under this alternative would be implemented via federal special regulation.

## **LEGARE ANCHORAGE**

Same as alternative 6.

## **THE KEYS**

Same as alternative 6.

## **PARTNERSHIPS**

All partnerships would be similar to alternative 2 found in the 2011 Draft GMP/EIS on page 78. The exception is the Fowey Rocks Lighthouse, which the National Park Service has acquired. The Florida Fish and Wildlife Conservation Commission would continue ongoing cooperative activities, but would not be involved in the implementation of seasonal closures and other aspects of adaptive management strategies.

Additional research collaborations may be developed in support of this adaptive management strategy.





# Alternative 7

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## ALTERNATIVES OR ACTIONS CONSIDERED BUT DISMISSED

During development of alternatives 6 and 7, representatives from the National Park Service, Florida Fish and Wildlife Conservation Commission, and the NOAA Fisheries considered several new zone possibilities to protect patch reefs in the southeast corner of the park to enhance fisheries for a more enjoyable visitor experience that included both fishing and nonfishing opportunities. A number of management strategies (e.g., catch and release only, species-specific limits) associated with a new zone were considered to meet these objectives. In addition, different zone configurations (size, shape, and location) were

also considered. Some of the reasons these concepts were ultimately dismissed from analysis included significant overlap with management actions already being addressed in the draft Fishery Management Plan, lack of effectiveness at meeting the goal of the alternatives, and lack of feasibility for effective enforcement and regulation.

For alternatives or actions that were previously considered but dismissed, see page 93 of the 2011 Draft GMP/EIS accessed online at:  
<http://parkplanning.nps.gov/documentsList.cfm?parkID=353&projectID=11168>.

## MITIGATION MEASURES COMMON TO ALL ACTION ALTERNATIVES

Additional mitigation measures and best management practices would be applied to avoid or minimize potential impacts from implementation of the alternatives. These measures would apply to all action alternatives and are fully described in the 2011 Draft GMP/EIS on pages 94–97. Specific topics covered include:

- Natural Resources
  - Air Quality
  - Nonnative Species
- Soils
- Special Status Species
- Vegetation
- Water Resources
- Wildlife
- Wetlands
- Cultural Resources
- Soundscapes
- Sustainable Design and Aesthetics

## **FUTURE STUDIES AND PLANS NEEDED**

### **PLANS**

After completion and approval of a general management plan for managing the park, other more detailed studies and plans would be needed for implementation of specific actions. As required, additional environmental compliance (National Environmental Policy Act, National Historic Preservation Act (NHPA), and other relevant laws and policies) and public involvement would be conducted. Those additional studies include, but would not be limited to, the items described in the 2011 Draft GMP/EIS on pages 98–99.

### **OTHER FUTURE NEEDS**

As noted in the special rulemaking requirements described on pages 98–99 in the 2011 Draft GMP/EIS, the National Park Service can close areas or otherwise regulate specific uses through special regulations published in 36 *Code of Federal Regulations*

(CFR) when necessary for safety or resource protection. Several use limitations proposed under alternatives 6 and 7 would require special regulations. Implementing the special recreation zone (and potential subsequent conversion to a marine reserve zone) and noncombustion engine use zone would restrict uses of these areas and so would require special regulations under 36 CFR 1.5b.

If alternative 6 is selected for implementation, a new memorandum of understanding with the National Park Service and the State of Florida would be established to implement the adaptive management strategy (appendix F). It would include cooperative development of a science and research plan to establish the methods used to collect and analyze data, thresholds for management action, responsibility for data collection and analysis, priority research needs, budgetary considerations, and other implementation-level details specific to the special recreation zone.

## ESTIMATED COSTS

Cost estimates in general management plans are required by the 1978 Parks and Recreation Act and are requested by Congress. The purpose of cost estimates is to assist managers with setting priorities and to inform the public. For comparison purposes, the planning team estimated the cost to implement each of the alternatives (see table 3 at the end of this section).

The implementation of the approved plan, no matter which alternative, would depend on future NPS funding levels; servicewide priorities; and partnership funds, time, and effort. The approval of a general management plan does not guarantee that funding and staffing needed to implement the plan will be forthcoming. Full implementation of the plan could be many years in the future.

The following applies to costs presented in this plan:

- The cost figures shown here and throughout the plan are intended only to provide an estimate of relative costs of the alternatives and should not be used for budgeting purposes.
- The costs presented (in 2013 dollars) have been developed using NPS and industry standards to the extent available.
- Actual costs will be determined at a later date, considering the design of facilities and identification of detailed resource protection needs.
- Potential costs for land protection measures (easements, acquisitions, etc.) to implement any boundary adjustment proposals in this General Management Plan are not included in these estimates.
- The cost estimates represent the total costs of projects. Potential cost-sharing opportunities with partners could reduce the overall costs.

The NPS facility planning model was used to determine the needs for visitor service and administrative space.

The 2011 Draft GMP/EIS fully described the cost estimate for alternatives 2 through 5 on pages 100–103 of the 2011 Draft GMP/EIS. Summary tables are included here for ease of comparison. All costs were adjusted to 2013 dollar estimates.

### ASSOCIATED COSTS: ALTERNATIVE 1 (NO ACTION)

Costs associated with implementing this alternative are ongoing operations (base funding) and one-time projects that are already approved and funded. Already funded projects include an upgrade of the radio system, erosion control, building and grounds maintenance, landscape enhancement, maintenance mentoring program, completion of the underwater trail, and cost of collection recovery. The total funding requested for these projects is \$536,000 in facility costs and \$169,000 in nonfacility costs. This amount is included in the estimates for all alternatives. In addition to the above costs, periodic increases in base funding would be required to cover inflation and maintain the current level of park operations.

### ASSOCIATED COSTS: ALTERNATIVE 6

Cost estimates for this alternative include construction of the new facilities and amenities at the following locations:

**Miami Area.** Construction of a new visitor center. A possible partnership with the City of Miami would cut NPS costs.

**Convoy Point.** Upgrade jetty and boardwalk or viewing platform to interpret the dwarf

mangrove forest and the mangrove shoreline north of the visitor center.

**Boca Chita Key.** Conversion of two structures used for park operations and visitor services. The number of kiosks providing interpretive information would be increased. The retaining wall on the north side of the island would be strengthened to maintain its current configuration.

**Elliott Key.** Make the Breezeway Loop Trail and boardwalk universally accessible.

**Special Recreation Zone.** Personnel and equipment would be needed to implement the provisions of the special recreation zone including buoy installation and maintenance, increased law enforcement patrol, and administration of fishing permits. It would also include additional resource management personnel to undertake the monitoring requirements described in the adaptive management strategy. Additional personnel and one-time costs would be needed to increase visitor understanding of the zones via personal interpretive services, exhibits, media, and publications.

## ASSOCIATED COSTS: ALTERNATIVE 7

Cost estimates for this alternative include construction of new facilities and amenities at the following locations:

**Miami Area.** Construction of a new visitor center. A possible partnership with the City of Miami would cut NPS costs.

**Convoy Point.** Upgrade jetty and boardwalk or viewing platform to interpret the dwarf mangrove forest and the mangrove shoreline north of the visitor center.

**Boca Chita Key.** Conversion of two structures used for park operations and visitor services. The number of kiosks providing interpretive information would be increased. The retaining wall on the north side of the island would be strengthened to maintain its current configuration.

**Elliott Key.** Make the Breezeway Loop Trail and boardwalk universally accessible.

**Special Recreation Zone.** Personnel and equipment would be needed to implement the provisions of the special recreation zone including buoy installation and maintenance as well as increased law enforcement patrol to enforce the seasonal fishing closure. It would also include additional resource management personnel to undertake the monitoring requirements described in the adaptive management strategy. Additional personnel and one-time costs would be needed to increase visitor understanding of the zones via personal interpretive services, exhibits, media, and publications.

**TABLE 3. ESTIMATED RELATIVE COSTS OF THE ALTERNATIVES (IN 2013 DOLLARS)**

	<b>Alt 1 (no action)</b>	<b>Alt 2</b>	<b>Alt 3</b>	<b>Alt 4</b>	<b>Alt 5</b>	<b>Alt 6 (preferred)</b>	<b>Alt 7</b>
<b>Recurring Costs</b>							
<b>Enacted FY 2012</b>	\$4,254,000	\$4,254,000	\$4,254,000	\$4,254,000	\$4,254,000	\$4,254,000	\$4,254,000
<b>Additional Operational</b>	\$0	\$1,521,000	\$1,492,000	\$1,187,000	\$1,618,000	\$1,803,000	\$1,811,000
<b>Total</b>	<b>\$4,254,000</b>	<b>\$5,775,000</b>	<b>\$5,746,000</b>	<b>\$5,441,000</b>	<b>\$5,872,000</b>	<b>\$6,057,000</b>	<b>\$6,065,000</b>
<b>Additional Staffing (FTE<sup>1</sup>)</b>	—	+20	+19	+14	+19	+19	+19
<b>One-time Costs</b>							
Facility Costs	\$536,500	\$6,008,000	\$5,719,000	\$1,146,000	\$375,000	\$1,146,000	\$1,146,000
Nonfacility Costs	\$169,000	\$641,000	\$1,000,000	\$975,000	\$1,159,000	\$1,260,000	\$1,235,000
<b>Miami Visitor Service Center</b>		\$4,820,000	\$4,820,000	\$4,820,000	\$4,820,000	\$4,820,000	\$4,820,000
<b>Total One- time costs</b>	\$705,000	\$11,469,000	\$11,539,000	\$6,941,000	\$6,354,000	\$7,226,000	\$7,201,000

<sup>1</sup>Total full-time equivalents (FTE) are the number of employees required to maintain the assets of the park at a stable level, provide acceptable visitor services, protect resources, and generally support park operations. This includes effort needed to operate the potential Miami area visitor center. The FTE number would not necessarily be NPS employees, instead FTE reflects the level of work needed. Park managers would explore opportunities to work with partners, volunteers, and other federal agencies to manage the park efficiently.

## ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The National Park Service is required to identify the environmentally preferable alternative in its NEPA documents for public review and comment. The National Park Service, in accordance with the Department of the Interior NEPA regulations (43 CFR 46) and CEQ's Forty Questions, defines the environmentally preferable alternative (or alternatives) as the alternative that best promotes the national environmental policy expressed in NEPA (section 101(b)) (516 DM 4.10). The CEQ's Forty Questions (CEQ 1981) further clarifies the identification of the environmentally preferable alternative stating:

this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best

protects, preserves, and enhances historic, cultural, and natural resources (CEQ 40 Questions, Question 6a)

Alternative 5 was selected as the environmentally preferable alternative because it is the alternative that would best protect the largest amount of park lands and waters and the most sensitive resources and habitats from the negative impacts of motorized boating, fishing, and marine debris. It also includes specific actions to enhance the preservation of important natural and cultural resources. Alternative 5 was previously identified in the 2011 Draft GMP/EIS as the environmentally preferable alternative and so remains unchanged.

## CONSISTENCY WITH THE PURPOSES OF NEPA

NEPA requires an analysis of how each alternative meets or achieves the purposes of the act (section 101[b]). Each alternative analyzed in a NEPA document must be assessed as to how it meets the following purposes:

1. fulfill the responsibilities of each generation as trustee of the environment for succeeding generations
2. ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings
3. attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences
4. preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice
5. achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities
6. enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources (42 USC 4331)

The Council on Environmental Quality has promulgated regulations for federal agencies' implementation of NEPA (40 CFR 1500–1508). Section 1500.2 states that federal agencies shall, to the fullest extent possible, interpret and administer the policies, regulations, and public laws of the United States in accordance with the policies set forth in the act (sections 101[b] and 102[1]); therefore, other acts and NPS policies are referenced as applicable in the following discussion.

### ALTERNATIVE 1 (NO ACTION)

The no-action alternative (alternative 1) does not provide as much resource protection as the other alternatives and existing impacts would be expected to persist or escalate over time. Continuation of the widespread and relatively unregulated motorized boating in the park would continue to result in continued or increased resource degradation, visitor conflicts, and safety concerns over time as visitation increases. Thus, the no-action alternative would not meet purpose 5 as well as alternative 5 to achieve a balance between population and resource use because extractive resource use would continue to degrade the ecosystem. There would also continue to be few locations, on land, water, or underwater managed so as to provide opportunities for visitors who wish to experience natural ecosystems without extractive activities, natural soundscapes, and solitude. Thus, the no-action alternative would not meet purpose 3 as well as alternative 5 to attain the widest range of beneficial uses of the environment without degradation and purpose 4 to preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.

### ALTERNATIVE 6

This alternative would provide additional visitor use opportunities and facilities, but such developments have the potential for adverse impacts on the environment. In most park waters, including the sensitive coral reef environments in the southeast corner of the park, some impacts to fish and submerged aquatic communities would persist due to the continuation of fishing and related marine debris as well as boating impacts compared to

alternatives that include a marine reserve zone. These impacts would potentially continue to deplete important park resources, albeit at a slower rate than the no-action alternative, and so do not meet purpose 1 as well as alternative 5 to fulfill the responsibilities of each generation as trustee of the environment for succeeding generations. Furthermore, the continuation of fishing and associated marine debris does not meet purpose 2 as well as alternative 5 to ensure safe, healthful, productive, and esthetically and culturally pleasing surroundings for all Americans. And while some important resources would be targeted for preservation efforts under this alternative and fishing as a traditional activity would be continued, many submerged cultural resources and important submerged aquatic habitats would continue to be impacted by fishing, marine debris, and boating and so it does not meet purpose 3 as well as alternative 5 to preserve important historic, cultural, and natural aspects of our natural heritage.

## **ALTERNATIVE 7**

This alternative would provide additional visitor use opportunities and facilities, but such developments have the potential for

adverse impacts on the environment. In most park waters, including the sensitive coral reef environments in the southeast corner of the park, some impacts to fish and submerged aquatic communities would persist due to the continuation of fishing and related marine debris as well as boating impacts compared to alternatives that include a marine reserve zone. These impacts would potentially continue to deplete important park resources, albeit at a slower rate than the no-action alternative, and so do not meet purpose 1 as well as alternative 5 to fulfill the responsibilities of each generation as trustee of the environment for succeeding generations. Furthermore, the continuation of fishing and associated marine debris does not meet purpose 2 as well as alternative 5 to ensure safe, healthful, productive, and esthetically and culturally pleasing surroundings for all Americans. And while some important resources would be targeted for preservation efforts under this alternative and fishing as a traditional activity would be continued, many submerged cultural resources and important submerged aquatic habitats would continue to be impacted by fishing, marine debris, and boating and so it does not meet purpose 3 as well as alternative 5 to preserve important historic, cultural, and natural aspects of our natural heritage.

## **SUMMARY OF ALTERNATIVES AND IMPACTS**

A series of tables follows as a quick reference to summarize the alternatives (table 4) as well as conclusions regarding impacts of each alternative (tables 5 and 6).

TABLE 4. SUMMARY OF ALTERNATIVES

Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6 (preferred)	Alternative 7
<b>General Theme / Concept</b>						
<p>Alternative 1 (no action) would continue current management trends to provide visitor opportunities and preserve resources under current laws, policies, and plans.</p> <ul style="list-style-type: none"><li>– Emphasize high level of access, with recreational opportunities throughout park.</li><li>– Actively manage natural resources, activities for restoration, and recovery or maintenance of habitats and dependent species.</li><li>– Continue cultural resources maintenance and monitoring.</li></ul>	<p>Alternative 2 would emphasize the recreational use of the park while providing for resource protection as governed by law, policy, and resource sensitivity. This concept would be accomplished by providing the highest level of services, facilities, and access to specific areas of the park of all the action alternatives.</p> <ul style="list-style-type: none"><li>– Manage for a relatively high level of new or enhanced access, visitor services, and facilities at some locations.</li><li>– Minimally modify natural resources for increased visitor access and development.</li></ul>	<p>Alternative 3 would allow all visitors a full range of experience opportunities throughout most of the park and use a permit system to authorize a limited number of visitors to access some areas of the park. There would be limited access to other park areas to provide an uncrowded experience, and small areas would be set aside that prohibit visitor access to protect sensitive resources and allow wildlife a respite from human contact.</p> <ul style="list-style-type: none"><li>– Add a relatively high level of new or enhanced access, visitor services, and facilities at some locations.</li><li>– Relative to alternatives 1 and 2, provide additional opportunities to experience uncrowded areas and natural sounds.</li><li>– Designate a marine reserve to provide visitors the opportunity to experience a healthy, natural, and ecologically intact reef community.</li></ul>	<p>Alternative 4 would emphasize strong natural and cultural resource protection while providing a diversity of visitor experiences. Some areas would be closed to visitors to protect sensitive resources and allow wildlife a respite from human contact. Other areas would be reserved for limited types of visitor use.</p> <ul style="list-style-type: none"><li>– Provide moderate level of new or enhanced access, visitor services, and facilities.</li><li>– Compared to alternatives 1, 2, and 3, increase opportunities to experience natural sounds.</li><li>– Create a combination of increased noncombustion engine use and slow speed zones to provide high level of resource protection.</li><li>– Designate a marine reserve to provide visitors the opportunity to experience a healthy, natural, and ecologically intact reef community.</li></ul>	<p>Alternative 5 would promote the protection of natural and cultural resources. This alternative would provide the highest level of resource protection while allowing the lowest level of visitor services of all the action alternatives. Visitor access and activities would be highly managed for resource protection while still enabling visitors to participate in a variety of activities.</p> <ul style="list-style-type: none"><li>– Provide the highest level of opportunity to experience uncrowded areas and natural sounds of the action alternatives.</li><li>– With the combination of increased noncombustion engine use and slow speed zones, provide the greatest resource protection of the action alternatives.</li><li>– Designate the largest marine reserve (of the action alternatives) in the park to provide visitors the opportunity to experience a healthy, natural, and ecologically intact reef community.</li></ul>	<p>Alternative 6 (preferred alternative) would emphasize strong natural and cultural resource protection while providing a diversity of visitor experiences. Some visitor activities would be restricted in certain areas to protect sensitive resources and allow wildlife a respite from human contact. Other areas would be reserved for limited types of visitor use.</p> <ul style="list-style-type: none"><li>– Provide moderate level of new or enhanced access, visitor services, and facilities.</li><li>– Compared to alternatives 1, 2, and 3, increase opportunities to experience natural sounds.</li><li>– Create a combination of increased noncombustion engine use and slow speed zones to provide high level of resource protection.</li><li>– Designate a special recreation zone where some types of fishing would be prohibited, and recreational fishing would be by special permit, and snorkeling and diving activities would be allowed.</li></ul>	<p>Alternative 7 would emphasize strong natural and cultural resource protection while providing a diversity of visitor experiences. Some visitor activities would be restricted in certain areas to protect sensitive resources and allow wildlife a respite from human contact. Other areas would be reserved for limited types of visitor use.</p> <ul style="list-style-type: none"><li>– Provide moderate level of new or enhanced access, visitor services, and facilities.</li><li>– Compared to alternatives 1, 2, and 3, increase opportunities to experience natural sounds.</li><li>– Create a combination of increased noncombustion engine use and slow speed zones to provide high level of resource protection.</li><li>– Designate a special recreation zone with same geography and size of alternative 6 where some types of fishing would be prohibited, recreational fishing would be closed June through September, and snorkeling and diving activities would be allowed.</li></ul>
<b>Visitor Experience</b>						
<b>Mainland</b>						
<p>Maintain current primary land-based area where visitors learn about the park and its resources and picnic, bird-watch, sightsee, and fish.</p>	<p>Similar to alternative 1 plus provide expanded opportunities to explore, sightsee, and experience natural sights and sounds in relatively remote surroundings along mangrove shoreline.</p> <p>Add a viewing platform and a boardwalk/loop trail with viewing platforms for interpreting the dwarf mangrove forest and mangrove shoreline.</p>	<p>Same as alternative 2.</p>	<p>Same as alternative 2.</p>	<p>Provide highest level of opportunities (of the action alternatives) to experience natural sounds and sights in relatively remote surroundings along <i>all</i> of the shoreline.</p> <p>Maintain current primary land-based area where visitors learn about the park and its resources and picnic, bird-watch, sightsee, and fish, and possibly upgrade visitor center boardwalk and jetty.</p>	<p>Same as alternative 2.</p>	<p>Same as alternative 2.</p>

TABLE 4. SUMMARY OF ALTERNATIVES

Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6 (preferred)	Alternative 7
<b>Bay and Ocean</b>						
<ul style="list-style-type: none"><li>– With the exception of personal watercraft, keep park waters open to boats of varying sizes and power sources and a variety of activities including diving, camping, visiting shipwrecks, and recreational and commercial fishing.</li><li>– Continue three slow speed zone for visitor safety.</li><li>– Continue one noncombustion engine use area.</li><li>– Legare Anchorage: Continue allowing visitors to drift fish, troll, and traverse area but not to stop or enter the water. Continue to allow commercial fishing under future special regulations, prohibit trapping.</li></ul>	<ul style="list-style-type: none"><li>– Keep a large percentage of park waters open to boats of varying sizes and power sources in multiuse zone (where visitors can experience wide range of activities in natural and cultural settings).</li><li>– Include four slow speed zones.</li><li>– Provide two noncombustion engine zones for opportunities to experience natural soundscape.</li><li>– Legare Anchorage: Reduce size; visitors may travel through area and fish by hook and line, but they cannot stop or enter water. Prohibit commercial fishing and trapping.</li></ul>	<ul style="list-style-type: none"><li>– Provide large percentage of waters in multiuse zone.</li><li>– Include four slow speed zones.</li><li>– Similar to alternative 2, provide two noncombustion engine zones for opportunities to experience natural soundscapes in those areas.</li><li>– Manage two access-by-permit only zones for opportunities to experience areas with reduced congestion.</li><li>– Legare Anchorage: Same as alternative 2.</li><li>– Designate a marine reserve zone to provide swimmers, snorkelers and divers the opportunity to experience a healthy, natural coral reef and reduce visitor use conflicts.</li></ul>	<ul style="list-style-type: none"><li>– Provide large percentage of waters in multiuse zone.</li><li>– Include three slow speed zones.</li><li>– Provide four noncombustion engine zones for extensive opportunities to experience natural soundscapes.</li><li>– Legare Anchorage: Same as alternative 2.</li><li>– Designate a marine reserve zone: same as alternative 3.</li></ul>	<ul style="list-style-type: none"><li>– Provide moderate percentage of park waters in multiuse zone of action alternatives.</li><li>– Include three slow speed zones. Provides the largest area covered by slow speed zones of all action alternatives.</li><li>– Provides highest area of noncombustion engine zone areas for opportunities to experience natural soundscape.</li><li>– Provides largest area of access-by-permit zone area of all action alternatives for opportunities to experience reduced congestion areas.</li><li>– Legare Anchorage: Same as alternative 2.</li><li>– Designate largest marine reserve zone.</li></ul>	<ul style="list-style-type: none"><li>– Provide large percentage of waters in multiuse zone.</li><li>– Include three slow speed zones.</li><li>– Provide two noncombustion engine zones for extensive opportunities to experience natural soundscapes.</li><li>– Legare Anchorage: Same as alternative 2.</li><li>– Designate a special recreation zone with recreational fishing by special permit to accommodate some recreational fishing while meeting the goal of providing a healthy coral reef ecosystem for a more enjoyable and diverse visitor experience.</li></ul>	<ul style="list-style-type: none"><li>– Provide large percentage of waters in multiuse zone.</li><li>– Include three slow speed zones: same as alternative 6.</li><li>– Provide two noncombustion engine zones: same as alternative 6.</li><li>– Legare Anchorage: Same as alternative 2.</li><li>– Designate a special recreation zone (same as alternative 6 where recreational fishing does not need a permit and is not allowed for the months of June through September).</li></ul>
<b>Keys</b>						
<ul style="list-style-type: none"><li>– Maintain Boca Chita, Elliott, and Adams keys as destination sites with some development (depending on key) for boaters who want to hike, picnic, camp, or sightsee.</li><li>– Maintain relatively remote locations and self-directed activities on many remaining keys for visitor experiences.</li></ul>	<ul style="list-style-type: none"><li>– Similar to alternative 1 for Boca Chita, Elliott, and Adams keys, but with expanded opportunities (depending on keys) for hiking, camping, canoeing, kayaking, and increased docking capacity.</li><li>– Porgy Key: Provide improved access to and interpretation of Jones Homestead.</li><li>– Provide opportunities to experience natural sounds, sights, and systems in uncrowded, relatively remote surroundings on remaining park keys except Swan, West Arsenicker, and Arsenicker keys.</li></ul>	<ul style="list-style-type: none"><li>– Similar to alternative 2, except Elliott Key trail would only be improved and there would be no additional campsites on Elliott Key.</li></ul>	<ul style="list-style-type: none"><li>– Same as alternative 3, except reduce area of visitor services/park administration zone on Boca Chita, Elliott, Adams, and Porgy keys compared to alternatives 2 and 3. Other areas similar to alternative 1.</li></ul>	<ul style="list-style-type: none"><li>– Same as alternative 4 for Boca Chita and Adams keys; eliminate visitor services/park administration zone on Porgy Key and discourage visitation at Jones Homestead. Designate Elliott Key as a nature observation zone.</li><li>– Visitors experience natural sounds, sights, and systems in relatively remote surroundings on Porgy and Elliott keys.</li></ul>	<ul style="list-style-type: none"><li>– Same as alternative 2 and 3 except reduce area of visitor services/park administration zone on Boca Chita, Elliott, Adams, and Porgy keys compared to alternatives 2 and 3.</li><li>– Featherbed keys and Jones Lagoon managed for noncombustion engine use.</li><li>– Other keys similar to alternative 4 managed for sensitive resource zone, slow speed zone, and nature observation zone to provide opportunities to experience natural sounds, sights, and sounds in uncrowded, relatively remote surroundings.</li></ul>	Same as alternative 6.
<b>Mainland Shoreline</b>						
Maintain the mangrove habitat and the fresh and saltwater wetlands in their natural state.	Add a viewing platform and a boardwalk/loop trail with viewing platforms for interpreting the dwarf mangrove forest and mangrove shoreline.	Same as alternative 2.	Same as alternative 2.	Manage all of mainland to support sustainable, fully functioning, natural systems except zone encompassing visitor center and headquarters at Convoy Point.	Same as alternative 2.	Same as alternative 2.

TABLE 4. SUMMARY OF ALTERNATIVES

Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6 (preferred)	Alternative 7
<b>Resource Management</b>						
<i>Bay and Ocean</i>						
<ul style="list-style-type: none"><li>– Keep existing three slower speed areas to protect manatee in two areas (along mainland shoreline; west of the north part of Elliott Key; and the area of Caesar Creek in front of the Adams key dock).</li><li>– Keep existing noncombustion engine use area in Jones Lagoon.</li><li>– Legare Anchorage: Maintain protection for submerged cultural resources (2,360 acres).</li><li>– Manage the Fowey Lighthouse in accordance with the Secretary of the Interior’s Standards for the Treatment of Historic Properties and complete repairs that will stabilize the structure, protect it from further deterioration, and potentially provide for visitor access in the future.</li></ul>	<ul style="list-style-type: none"><li>– Designate four slow speed zones.</li><li>– Designate two noncombustion engine use zones</li><li>– Legare Anchorage: Maintain protection for submerged cultural resources (663 acres).</li><li>– Manage the Fowey Lighthouse the same as alternative 1.</li></ul>	<ul style="list-style-type: none"><li>– Designate four slow speed zones.</li><li>– Designate two noncombustion engine use zones to protect shallow water habitat along shoreline and around south-central keys — similar to alternative 2.</li><li>– Legare Anchorage: Same as alternative 2.</li><li>– Designate access-by-permit zone to limit damage to resources.</li><li>– Designate marine reserve zone and manage it for healthy, natural coral reef, with large and numerous tropical reef fish and an ecologically intact reef system.</li><li>– Manage the Fowey Lighthouse the same as alternative 1.</li></ul>	<ul style="list-style-type: none"><li>– Designate three slow speed zones.</li><li>– Designate four noncombustion engine use zones to protect shallow water habitat.</li><li>– Legare Anchorage: Same as alternative 2.</li><li>– Designate Marine Reserve Zone same as Alternative 3</li><li>– Manage the Fowey Lighthouse the same as alternative 1.</li></ul>	<ul style="list-style-type: none"><li>– Designate three slow speed zones.</li><li>– Represents largest area of protection by slow-speed zones of all action alternatives.</li><li>– With four Noncombustion Engine Use Zones, provide highest level of protection for shallow water habitat of all action alternatives.</li><li>– Legare Anchorage: same as alternative 2.</li><li>– Designate largest access-by-permit zone of all action alternatives in the northwest part of the park.</li><li>– Designate largest marine reserve zone of all.</li><li>– Manage the Fowey Lighthouse the same as alternative 1.</li></ul>	<ul style="list-style-type: none"><li>– Designate three slow speed zones.</li><li>– Designate two Noncombustion Engine Use Zones to protect shallow water habitat.</li><li>– Legare Anchorage: Same as alternative 2.</li><li>– Manage the Fowey Lighthouse the same as alternative 1.</li></ul> <p>Designate a special recreation zone with recreational fishing by special permit to accommodate some recreational fishing while meeting the goal of providing a healthy coral reef ecosystem for a more enjoyable and diverse visitor experience.</p>	<ul style="list-style-type: none"><li>– Designate three slow speed zones.</li><li>– Designate four Noncombustion Engine Use Zones to protect shallow water habitat.</li><li>– Legare Anchorage: Same as alternative 2.</li><li>– Manage the Fowey Lighthouse the same as alternative 1.</li></ul> <p>Designate a special recreation zone (same as alternative 6 where recreational fishing does not need a permit and is allowed for the months of June through September.</p>
<i>Keys</i>						
<ul style="list-style-type: none"><li>– Continue to close four keys to visitation for protection of exceptional and sensitive resources—Arsenicker, West Arsenicker, Soldier, and Sands keys.</li><li>– Continue to manage remaining keys for varied visitor access and recreational use.</li></ul>	<ul style="list-style-type: none"><li>– Close three keys to visitation for resource protection—Arsenicker, West Arsenicker, and Swan.</li><li>– Possibly minimally modify resources on Boca Chita, Elliott, Adams, and Porgy keys to allow for visitor access and recreation.</li><li>– Make current hiking trail universally accessible . Develop primitive trails. Establish primitive.</li><li>– Provide higher level of historic structure reuse on Boca Chita Key than in alternative 1.</li><li>– Manage southern cluster of keys and Sands and Ragged keys to support sustainable, fully functioning, natural systems.</li></ul>	Same as alternative 2, but no additional campsites on Elliott Key.	<ul style="list-style-type: none"><li>– Close three keys as in alternative 2.</li><li>– Manage Boca Chita, Elliott, Adams, and Porgy keys for visitor access and recreation, except manage larger areas as multiuse zone to limit development.</li><li>– Manage remaining park keys as in alternative 2.</li></ul>	<ul style="list-style-type: none"><li>– Close three keys as in alternative 2.</li><li>– Manage Boca Chita and Adams keys as in alternative 4.</li><li>– Manage majority of Elliott and Porgy keys to support sustainable, fully functioning, natural systems.</li><li>– Manage southern cluster of keys and Sands and Ragged keys as in alternative 2.</li></ul>	<ul style="list-style-type: none"><li>– Close three keys as in alternative 2.</li><li>– Manage Boca Chita, Elliott, Adams, and Porgy keys for visitor access and recreation, except manage larger areas as multiuse zone to limit development.</li></ul> <p>Manage remaining park keys as in alternative 2.</p>	<ul style="list-style-type: none"><li>– Close three keys as in alternative 2.</li><li>– Manage Boca Chita, Elliott, Adams, and Porgy keys for visitor access and recreation, except manage larger areas as multiuse zone to limit development.</li></ul> <p>Manage remaining park keys as in alternative 2.</p>
<b>Facilities</b>						
<i>Mainland</i>						
Maintain visitor services and infrastructure at or near current levels with the visitor center, designated paths, boardwalk, and jetty.	Add a viewing platform and a boardwalk/loop trail with viewing platforms for interpreting the dwarf mangrove forest and mangrove shoreline. Improve safety and accessibility of existing jetty and boardwalk, possibly with shade	Same as alternative 2.	Same as alternative 2.	Same as alternative 1.	Same as alternative 2.	Same as alternative 2.

TABLE 4. SUMMARY OF ALTERNATIVES

Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6 (preferred)	Alternative 7
Continue limited visitor contact facilities outside the park to provide contact information and signs at public sites.	structures and benches.  Increase visitor contact points outside the park through kiosks, signs, possibly educational programs and NPS personnel established at marinas and state/local parks through partnerships.	Visitor contact points outside the park: same as alternative 2.	Visitor contact points outside the park: Same as alternative 2	Visitor contact points outside the park: Same as alternative 2.	Visitor contact points outside the park: Same as alternative 2	Visitor contact points outside the park: Same as alternative 2
Keys						
Existing facilities:  – Boca Chita: Dock, kiosks, harbor, historic structures, picnic areas, restrooms, primitive campground, and maintenance building. Possibly reuse some historic structures for park operations. – Elliott: Dock, marina, trails, picnic and restroom facilities, environmental education center, maintenance facility, ranger station and residences. – Adams: Dock, trail, day use picnic pavilion, restroom facilities, wayside exhibits, ranger residences, and maintenance facility. – Porgy: Remains of historic dock, Jones home site, no interpretation. – Manage the Fowey Lighthouse in accordance with the Secretary of the Interior’s Standards for the Treatment of Historic Properties and complete repairs that will stabilize the structure, protect it from further deterioration, and potentially provide for visitor access in the future.	– Boca Chita: Reuse more historic structures for park operations and visitor services; add new docks; strengthen retaining wall on north side. – Elliott: Improve existing/establish new trails and enhance access; establish new primitive campsites and visitor kiosks; establish canoe launch; and possibly a food concession. Keep ranger residences. – Adams: Build new staging area for canoes/ kayaks, develop primitive campsites; improve trails, improve dock, possibly establish canoe rentals, and possibly a campers/convenience store and classroom facility. – Porgy: Improve Jones Homestead. – Manage the Fowey Lighthouse the same as alternative 1.	– Boca Chita: Same as alternative 2. – Elliott: Same as alternative 2 except no primitive campsites. – Adams: Same as alternative 2 except no primitive campsites. – Porgy: Same as alternative 2. – Manage the Fowey Lighthouse the same as alternative 1.	– Boca Chita: On north part continue s day use facilities, campground, and boat basin; use some historic structures for park operations/visitor services. – Elliott: Maintain existing harbor facilities and continue administrative and visitor services uses, and open small visitor contact station. Make Breezeway Loop Trail and boardwalk universally accessible. – Adams: Build new staging area for canoes/kayaks. Establish environmental education program with minimal facilities. – Porgy: Build rustic dock to improve site for visitation; stabilize Jones Homestead site and offer interpretation on site. – Manage the Fowey Lighthouse the same as alternative 1.	– Boca Chita: Same as alternative 4. – Elliott: Continue administrative and visitor services uses in existing harbor facilities. – Adams: Same as alternative 1. – Porgy: Same as alternative 1. – Manage the Fowey Lighthouse the same as alternative 1.	Same as alternative 4.  – Manage the Fowey Lighthouse the same as alternative 1.	Same as alternative 4.  – Manage the Fowey Lighthouse the same as alternative 1.

TABLE 5. SUMMARY OF KEY IMPACTS OF IMPLEMENTING THE ALTERNATIVES

ALTERNATIVE 1 — NO ACTION		ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4	ALTERNATIVE 5	ALTERNATIVE 6 - PREFERRED	ALTERNATIVE 7
<b>Impacts on Natural Resources</b>							
Fisheries	Existing impacts on fisheries and fish habitat from boating and fishing would continue to be adverse, minor to moderate, and long term.  No new adverse impacts.	Some existing adverse impacts now occurring on fisheries and fish habitat in the park would be reduced, resulting in a long-term beneficial impact and continuation of a minor to moderate adverse impact.  No new adverse impacts.	Some ongoing adverse impacts now occurring to fisheries and fish habitat in the park would be further reduced, resulting in a long-term, beneficial impact overall. However they would be less than alternative 2, due to the marine reserve zone.  No new adverse impacts.	Same as alternative 3.	Some ongoing adverse impacts now occurring to fisheries and fish habitat in the park would be further reduced, resulting in a long-term, beneficial impact overall. However they would be less than alternative 3, due to the larger marine reserve zone.  No new adverse impacts.	Some ongoing adverse impacts now occurring to fisheries and fish habitat in the park would be further reduced, resulting in a long-term, beneficial impact overall. However they would be less than alternative 3, because some fishing is still allowed in special recreation zone.  No new adverse impacts.	Same as alternative 6 but with more beneficial impacts due to seasonal fishing closure.  Some impacts would be reduced in the special recreation zone resulting in a long-term, beneficial impact to fish and fish habitat.  No new adverse impacts.
Threatened and Endangered Species	Existing long-term, moderate adverse impacts on some species (sea turtles, smalltooth sawfish, and stony corals) would persist as a result of boating, fishing, and marine debris.  Existing long-term, negligible, adverse impacts on some species (manatees, crocodiles, and butterflies) would persist as a result of pre-existing habitat modifications and continued recreational use.  No new or additional impacts.	Existing long-term, moderate, adverse impacts on some species (sea turtles, smalltooth sawfish, and acroporid corals) would persist as a result of recreational activities.  Existing long-term, negligible adverse impacts on some species (manatees, crocodiles, and butterflies) would persist.  Long-term, beneficial impacts on manatees due to slow speed and noncombustion engine zones.  Proposed development that could have negligible to minor long-term, adverse impacts American crocodiles, sea turtles, and butterflies, most impacts would be mitigated.  No new or additional impacts.	Existing long-term, moderate adverse impacts on some species (sea turtles, smalltooth sawfish, and acroporid corals) would persist in some areas as a result of recreational activities.  Existing long-term, negligible adverse impacts on some species (manatees, crocodiles, and butterflies) would persist in some areas.  Long-term, beneficial impact on manatees due to slow speed and noncombustion engine zones.  Localized long-term, beneficial impact to stony corals, sea turtles, and smalltooth sawfish in marine reserve zone.  Proposed development t could have long-term, adverse, negligible impacts on habitats utilized by American crocodiles, sea turtles, and butterflies, but most impacts would be mitigated.  No new or additional impacts.	Same as alternative 3.	Same as alternative 3.	Same as alternative 3.	Same as alternative 3.
Special Status Species	Continuation of long-term, negligible adverse impacts on some state listed bird species due to disturbance by park visitors.  No new or additional impacts.	Proposed development could result in long-term, negligible, adverse impacts on various state listed species.	Same as alternative 2.	Same as alternative 2.	Same as alternative 2.	Same as alternative 2.	Same as alternative 2.

TABLE 5. SUMMARY OF KEY IMPACTS OF IMPLEMENTING THE ALTERNATIVES

ALTERNATIVE 1 — NO ACTION		ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4	ALTERNATIVE 5	ALTERNATIVE 6 - PREFERRED	ALTERNATIVE 7
Terrestrial Vegetation	Existing long-term, negligible to minor, adverse impacts on terrestrial vegetation in the park would continue as a result of visitor activities.  No new or additional impacts.	Long-term, localized, negligible to minor adverse impacts associated with minor construction projects and continued or increasing visitor use.  Some construction related adverse impacts would be mitigated through project design.	Same as alternative 2.	Same as alternative 2.	Same as alternative 2.	Same as alternative 2.	Same as alternative 2.
Submerged Aquatic Communities	existing, minor to moderate, adverse impacts on submerged aquatic vegetation would continue as a result of boating, fishing, and marine debris  No new or additional impacts.	Long-term, beneficial impacts on submerged aquatic communities.  Existing, minor to moderate, adverse impacts on submerged aquatic vegetation would continue as a result of boating, fishing, and marine debris in much of the park though protective zoning would reduce those impacts in some areas.	Same as alternative 2. However benefits would be more than alternative 2 and less than alternative 5 due to the marine reserve zone.	Same as alternative 3.	Same as alternative 2. However benefits would be greatest with larger marine reserve zone.	Same as alternative 2. However benefits would be less than alternative 3 by allowing some fishing in the special recreation zone.	Same as alternative 2. However benefits would be less than alternative 3 by allowing some fishing in the special recreation zone and better than alternative 6 with a seasonal fishing closure.
Wetlands	No new or additional impacts.	Proposed development would have a long-term, minor, adverse impact on the wetlands along the mainland coast of the park, particularly the mangroves.  Short-term impacts associated with construction would continue to be adverse but minor to moderate and localized.  Long-term impacts would be mitigated through design and would be adverse but localized and minor.	Same as alternative 2.	Same as alternative 2.	Beneficial, long-term impacts to wetlands as a result of protective zoning.	Same as alternative 2.	Same as alternative 2.
Natural Soundscapes	Existing long-term, minor to moderate adverse impacts on natural soundscapes would continue as a result of persistent boat-related noise.  Existing negligible, short-term adverse impacts on natural soundscapes would continue as a result of routine park operations and maintenance activities.  No new or additional impacts.	Long-term beneficial impacts on soundscapes due to protective zoning.  Short-term negligible to minor, adverse impacts during construction existing minor to moderate adverse impacts on natural soundscapes would continue as a result of persistent boat-related noise in much of the park.  Existing negligible, short-term adverse impacts on natural soundscapes would continue as a result of routine park operations and maintenance activities.	Same as alternative 2.	Same as alternative 2.	Same as alternative 2.	Same as alternative 2.	Same as alternative 2.

TABLE 5. SUMMARY OF KEY IMPACTS OF IMPLEMENTING THE ALTERNATIVES

ALTERNATIVE 1 — NO ACTION		ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4	ALTERNATIVE 5	ALTERNATIVE 6 - PREFERRED	ALTERNATIVE 7
Impacts on Cultural Resources							
Archeological Resources  (including Submerged Maritime Resources)	Localized, negligible to minor, adverse, short-term to permanent impacts on submerged and terrestrial archeological resources due to visitor use.  Beneficial impacts from ongoing survey and inventory efforts.  No new or additional impacts.  For section 106 there would be no adverse effect.	Same impacts on archeological resources as those listed under alternative 1. Although they would be subjected to greater potential risk because of expanded recreational use and increased visitor services, facilities, and access in some areas of the park.  For section 106 there would be no adverse effect.	Same impacts on archeological resources as those listed under alternative 1. Although they would be subjected to minor to moderate potential adverse impact by the alternative’s provision for expanded recreational use and enhanced visitor services, facilities, and access to some areas of the park.  Beneficial impacts to submerged maritime resources in the marine reserve zone.  For section 106 there would be no adverse effect.	Same impacts on archeological resources alternative 1. Although the strong emphasis on cultural resource protection could be expected to have some additional, long-term, beneficial impacts on archeological sites.  For section 106 there would be no adverse effect.	Same as alternative 4.	Same as alternative 4.	Same impacts as described in alternative 4, though potentially there would be slightly more benefits from alternative 7 due to a slight anticipated reduction in fishing related impacts on submerged cultural resources.
Historic Structures and Buildings	Localized, long-term, beneficial and long-term negligible to minor adverse impacts due to preservation or rehabilitation undertakings, natural deterioration, and wear and tear from visitor use.  No new or additional impacts.  For section 106 there would be no adverse effect.	Same impacts on historic structures and buildings in the Boca Chita Key Historic District and at the Fowey Rocks Lighthouse as those listed under alternative 1.  Impacts on historic structures and buildings would be localized, long term to permanent, and generally beneficial.  For section 106 there would be no adverse effect.	Same as alternative 2.	Same as alternative 2.	Same as alternative 2.	Same as alternative 2.	Same as alternative 2.
Cultural Landscapes	Beneficial impacts on the landscape at the Boca Chita National Historic District, as well as other potential cultural landscapes because park properties would continue to be surveyed, inventoried, and evaluated to determine their eligibility for listing in the national register.  Short-term and long-term, minor, adverse impacts on integrity of potential cultural landscapes at popular visitor destinations would persist.  No new or additional impacts.  For section 106 there would be no adverse effect.	Same beneficial impacts on cultural landscapes as those listed under alternative 1, although expanded recreational use, enhanced visitor services, facilities, and access, and increased development could have some minor, adverse, long-term impacts on the integrity of the park’s potential cultural landscapes.  For section 106 there would be no adverse effect.	Same as alternative 2.	Same as alternative 2.	Same as alternative 2.	Same impacts on the park’s cultural landscapes as those listed under alternative 1, although the emphasis on natural resource preservation, as well as protection of significant cultural resources, could be expected to have some additional long-term, beneficial impacts.  For section 106 there would be no adverse effect.	Same impacts as described in alternative 6, though potentially there would be slightly more benefits from alternative 7 due to a slight anticipated reduction in fishing related impacts on cultural landscapes.

TABLE 5. SUMMARY OF KEY IMPACTS OF IMPLEMENTING THE ALTERNATIVES

ALTERNATIVE 1 — NO ACTION		ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4	ALTERNATIVE 5	ALTERNATIVE 6 - PREFERRED	ALTERNATIVE 7
Impacts on Visitor Experience							
	<p>Continued speed limitations would have negligible, long-term, adverse impacts on current visitor use patterns or opportunities.</p> <p>Potential for increased crowding and conflict resulting in increased short-term, minor to moderate, adverse impacts.</p> <p>Lack of visitor services and facilities to support access to park waters and keys would continue to result in long-term, minor to moderate, adverse impacts to visitors.</p> <p>No new or additional impacts.</p>	<p>Additional speed limits and new noncombustion engine requirements would be a long-term, minor, adverse impact on some visitors.</p> <p>Long-term, beneficial impacts due to zoning to reduce conflicts, improve safety, and improve diversity of visitor opportunities.</p> <p>Long-term, beneficial impacts due to upgrades of visitor services and facilities.</p>	<p>Impacts in most of the park would be the same as alternative 2.</p> <p>Establishment of a marine reserve zone would result in beneficial impacts to snorkelers and divers, minor to moderate adverse impacts to visitors who formerly fished in the marine reserve zone, and beneficial impacts to visitors who fish outside the marine reserve zone.</p>	Same as alternative 3.	<p>Additional slow speed zones, new noncombustion engine use zones, a new access-by-permit zone, and a large marine reserve zone would be a long-term, adverse impact to some visitors.</p> <p>Marine reserve zone would result in beneficial impacts to snorkelers and divers, minor to moderate adverse impacts to visitors who formerly fished in the marine reserve zone, and beneficial impacts to visitors who fish outside the marine reserve zone.</p>	<p>Additional speed limitations and new noncombustion engine use zones would be a long-term, minor to moderate, adverse impact to some visitors.</p> <p>Long-term beneficial impacts due to zoning to reduce conflicts, improve safety, and improve diversity of visitor opportunities as well as upgrades in in visitor information, services, and facilities.</p> <p>Long-term adverse and beneficial impacts would occur to different visitor groups from implementing the special recreation zone with fishing permit requirements.</p>	Same as alternative 6.
Impacts on Park Operations and Facilities							
	<p>Continuing, long-term, moderate adverse impacts on park operations and facilities due to unmet operational needs.</p> <p>No new or additional impacts.</p>	Short-term and long-term, minor to moderate, adverse impacts on park operations and facilities.	Same as alternative 2.	Same as alternative 2.	Same as alternative 2.	Same as alternative 2. However short-term and long-term, major, adverse impacts on park operations would be exacerbated due to additional capacity needed to implement the special recreation zone and associated permit system.	Same as alternative 2. However, existing long-term, moderate, adverse impacts on park operations would be exacerbated due to additional capacity needed to implement the special recreation zone with seasonal fishing closure.
Impacts on the Socioeconomic Environment							
	<p>Existing contributions to the local and regional economies would continue to be long-term and beneficial.</p> <p>No new or additional impacts.</p>	Short-term and long-term beneficial economic impacts in the region.	Same as alternative 2.	Long-term negligible adverse impact and short-term and long-term beneficial impacts on the regional economy.	Same as alternative 4.	Same as alternative 4.	Same as alternative 4.

**TABLE 6. THREATENED AND ENDANGERED SPECIES IMPACT DETERMINATIONS**

<b>Species</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4</b>	<b>Alternative 5</b>	<b>Alternative 6 (preferred)</b>	<b>Alternative 7</b>
<b>Florida manatee</b> ( <i>Trichechus manatus latirostris</i> )	No effect	May affect, not likely to adversely affect (NLAA)	NLAA	NLAA	NLAA	NLAA	NLAA
<b>Sea turtles</b> ( <i>Caretta caretta</i> , <i>Chelonia mydas</i> , <i>Lepidochelys kempii</i> , <i>Eretmochelys imbricata</i> , and <i>Dermochelys coriacea</i> )	May affect, likely to adversely (LAA) effect on three species	LAA	LAA	LAA	LAA	LAA	LAA
<b>American crocodile</b> ( <i>Crocodylus acutus</i> )	No effect	NLAA	NLAA	NLAA	NLAA	NLAA	NLAA
<b>Smalltooth sawfish</b> ( <i>Pristis pectinata</i> )	LAA	LAA	LAA	LAA	LAA	LAA	LAA
<b>Schaus swallowtail butterfly</b> ( <i>Heraclides aristodemus ponceanus</i> )	No effect	NLAA	NLAA	NLAA	NLAA	NLAA	NLAA
<b>Miami blue butterfly</b> ( <i>Cyclargus thomasi bethunebakeri</i> )	No effect	NLAA	NLAA	NLAA	NLAA	NLAA	NLAA
<b>Stony corals</b> (staghorn coral, <i>Acropora cervicornis</i> ; elkhorn coral, <i>A. palmata</i> ; boulder star coral, <i>Montastraea annularis</i> ; mountainous star coral, <i>M. faveolata</i> ; star coral, <i>M. franksi</i> ; pillar coral, <i>Dendrogyra cylindrus</i> ; rough cactus coral, <i>Mycetophyllia ferox</i> ; elliptical star coral, <i>Dichocoenia stokesii</i> ; Lamarck sheet coral, <i>Agaricia lamarcki</i> )	LAA	LAA	LAA	LAA	LAA	LAA	LAA



# CHAPTER 3

## Affected Environment (SDEIS)





## INTRODUCTION

This chapter describes the existing environment of Biscayne National Park and the surrounding region. It is focused on the park resources, uses, facilities, and socioeconomic characteristics that have the potential to be affected if any of the alternatives were implemented. Some features, such as endangered species, are discussed because they provide context or must be considered in an environmental impact statement.

Refer to pages 119–182 of the 2011 Draft GMP/EIS, found at: <http://parkplanning.nps.gov/documentsList.cfm?parkID=353&projectID=11168>, for full descriptions of the following topics:

- Geographic and biological descriptions of these areas:
  - The Bay
  - The Mangrove Shoreline
  - The Keys
- Natural Resources
  - Fisheries
  - Special Status Species (see table 7)
  - Submerged Aquatic Communities
  - Coral Reefs
  - Wetlands
  - Soundscapes
- Cultural Resources
  - Introduction
  - Types of Cultural Resources
  - Historic Overview
  - Archeological Resources
  - Cultural Landscapes
  - Historic Buildings and Structures
- Visitor Experience
  - Overview
  - Visitation Levels
  - Visitor Information
  - Interpretation and Education
  - Recreational Activities
- NPS Operations

- Administration
- Facilities
- Marine Operations
- Socioeconomic Environment
  - Introduction
  - Demographics
  - Local Economic Base

In consideration of the affected environment related to historic buildings and structures, one substantial change has occurred regarding Fowey Rocks Lighthouse since the 2011 Draft GMP/EIS was released. Readers are referred to the following text in place of the description in the 2011 Draft GMP/EIS.

### FOWEY ROCKS LIGHTHOUSE

The Fowey Rocks Lighthouse is a pile reef light built in 1878 to supersede the Key Biscayne Lighthouse at Cape Florida. Located east of Soldier Key, it is one of six built on the Florida Coral Reef between 1852 and 1880. Its lamp was first lit on June 15, 1878, and it still functions as an aid to navigation. Like the Eiffel Tower in Paris, cast iron skeletal girders comprise its main octagonal construction. Known as the “Eye of Miami,” the lighthouse was named for the nearby reef, Fowey Rocks, which itself was named for the 1748 shipwreck (*HMS Fowey*) that rests nearby.

The 110-foot-tall dark brown tower of the lighthouse has an attached residence and enclosed stair cylinder. During the mid-1930s, the light was changed from incandescent oil vapor to electric power from generators, and a radio beacon was installed. The light was automated in 1972.

The history and architectural character of the lighthouse are an integral part of park history. The structure is listed in the National Register of Historic Places (NRHP) under

criteria A and C because of its association with the history of 19th- and 20th-century shipping and transportation off the Florida coast and its iron architecture that is typical of pile reef lights along the Florida coast (NPS 1999; USCG 2010).

The Fowey Rocks Lighthouse was designed and built by the United States Lighthouse Board (Department of the Treasury) and managed by the same agency until it was disestablished in favor of the United States Lighthouse Service (Department of Commerce) in 1910. The Lighthouse Service maintained the light until 1939 when it merged with the U.S. Coast Guard (USCG) (Armed Forces). In 2012, the U.S. Coast Guard was prepared to excess the lighthouse under the authority of the National Historic Lighthouse Preservation Act of 2000 (NHLPA) and make it available for auction or for transfer to a public or private entity prepared to preserve and interpret the lighthouse to the public. Because of the historic significance of the lighthouse and its location within the boundary of Biscayne National Park, the National Park Service chose to exercise its option under the National Historic Lighthouse Preservation Act and request direct transfer of the structure from the U.S. Coast Guard to the National Park Service. In 2012, the transfer was completed and the lighthouse became NPS property, although maintenance of the

functioning aid to navigation remains the responsibility of the U.S. Coast Guard. The National Park Service intends to maintain the lighthouse in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* and has initial plans in place to complete repairs that will stabilize the structure, protect it from further deterioration, and potentially provide visitor access in the future. It is currently closed to visitation because of safety concerns.

## LISTED SPECIES

Since the release of the 2011 DEIS, seven stony coral species that occur throughout the park are newly proposed for listing as federal protected species under the Endangered Species Act. Two previously listed federally threatened species are now proposed for listing as endangered.

In addition, the Miami blue butterfly, analyzed in the 2011 Draft GMP/EIS as a special status species, is now listed as endangered under the Endangered Species Act.

These species are indicated as proposed in table 7 and impacts to these species are analyzed in chapter 4.

TABLE 7. FEDERALLY LISTED AND CANDIDATE SPECIES KNOWN TO OCCUR IN BISCAYNE NATIONAL PARK

Common Name	Scientific Name	Federal Status / Notes <sup>1</sup>
<b>Mammals</b>		
West Indian manatee	<i>Trichechus manatus</i>	E, CH
<b>Reptiles</b>		
American crocodile	<i>Crocodylus acutus</i>	T, CH
American alligator	<i>Alligator mississippiensis</i>	T/SA
Green sea turtle <sup>2</sup>	<i>Chelonia mydas</i>	E
Hawksbill sea turtle <sup>2</sup>	<i>Eretmochelys imbricata</i>	E
Leatherback sea turtle <sup>2</sup>	<i>Dermochelys coriacea</i>	E
Loggerhead sea turtle <sup>2</sup>	<i>Caretta caretta</i>	T
Kemp's Ridley sea turtle <sup>2</sup>	<i>Lepidochelys kempii</i>	E
Eastern indigo snake	<i>Drymarchon corais couperi</i>	T
<b>Fishes</b>		
Smalltooth sawfish <sup>3</sup>	<i>Pristis pectinata</i>	E
<b>Invertebrates</b>		
Schaus swallowtail butterfly	<i>Heracles aristodemus ponceanus</i>	E
Miami blue butterfly	<i>Cyclargus thomasi bethunebakeri</i>	E
Staghorn coral <sup>3</sup>	<i>Acropora cervicornis</i>	T/Proposed E, CH
Elkhorn coral <sup>3</sup>	<i>Acropora palmata</i>	T/Proposed E, CH
Boulder star coral <sup>3</sup>	<i>Montastraea annularis</i>	Proposed E
Mountainous star coral <sup>3</sup>	<i>Montastraea faveolata</i>	Proposed E
Star coral <sup>3</sup>	<i>Montastraea franksi</i>	Proposed E
Pillar coral <sup>3</sup>	<i>Dendrogyra cylindrus</i>	Proposed E
Rough cactus coral <sup>3</sup>	<i>Mycetophyllia ferox</i>	Proposed E
Elliptical star coral <sup>3</sup>	<i>Dichocoenia stokesii</i>	Proposed T
Lamarck sheet coral <sup>3</sup>	<i>Agaricia lamarcki</i>	Proposed T
<b>Plants</b>		
Florida semaphore cactus	<i>Consolea corallica</i>	C

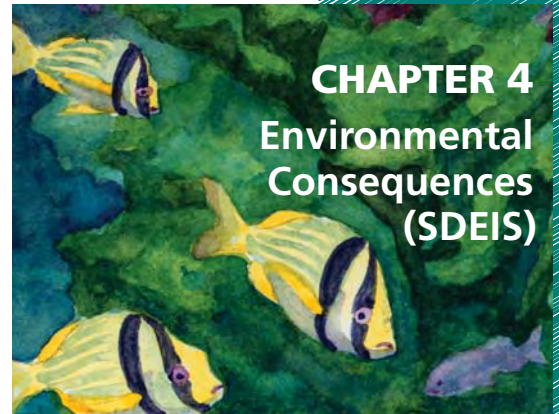
<sup>1</sup>E=Endangered; T=Threatened; C=Candidate; SA=Similarity of Appearance to a listed species, CH = Critical Habitat designated

<sup>2</sup>Sea turtles are jointly administered. NOAA Fisheries has the lead responsibility for the conservation and recovery of sea turtles in the marine environment, and U.S. Fish and Wildlife Service has the lead responsibility for the conservation and recovery of sea turtles on nesting beaches.

NOAA Fisheries has lead responsibility rather than the U.S. Fish and Wildlife Service.

NOTE: Per NPS policy, the park manages both federally listed and species of concern as if listed.







## INTRODUCTION

The National Environmental Policy Act requires that environmental documents discuss the environmental impacts of a proposed federal action, feasible alternatives to that action, and any adverse environmental effects that cannot be avoided if a proposed action is implemented. In this case, the proposed federal action would be the adoption of a general management plan for Biscayne National Park. The following portion of this document analyzes the environmental impacts of implementing the original alternative 1 (no action) and the two new alternatives (alternatives 6 and 7) on natural resources, cultural resources, visitor experience, socioeconomic environment, and park operations. The analysis is the basis for comparing the beneficial and adverse effects of implementing the alternatives.

Because of the general, conceptual nature of the actions described in the alternatives, the impacts of these actions are analyzed in general qualitative terms. Thus, this environmental impact statement should be considered a programmatic analysis. If and when site-specific developments or other actions are proposed for implementation subsequent to this General Management Plan, appropriate detailed environmental and cultural compliance documentation will be prepared in accord with NEPA and NHPA requirements.

This chapter begins with a description of the methods and assumptions used for each topic. Impact analysis discussions are organized by alternative and then by impact topic under each alternative.

Each alternative discussion also describes cumulative impacts and presents a conclusion. At the end of each alternative, there is a brief discussion of unavoidable adverse impacts; irreversible and irretrievable commitments of resources; the relationship

of short-term uses of the environment and the maintenance and enhancement of long-term productivity, energy requirements, and conservation potential. The impacts of each alternative are briefly summarized in table 5, at the end of the “Alternatives, Including the Preferred Alternative” section.

## CUMULATIVE IMPACT ANALYSIS

A cumulative impact is described in CEQ regulation 1508.7 as follows:

*Cumulative impacts* are incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other action. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time.

To determine potential cumulative impacts, other projects within and surrounding Biscayne National Park were identified. The area included Miami-Dade County and the state of Florida. Projects were identified by discussions with the park, federal land managers, and representatives of county and town governments. Potential projects identified as cumulative actions included any planning or development activity that was currently being implemented or would be implemented in the reasonably foreseeable future. Impacts of past actions were also considered in the analysis.

These actions are evaluated in conjunction with the impacts of each alternative to determine if there are any cumulative effects

on visitor use or a particular natural, cultural, or socioeconomic resource. Because most of these cumulative actions are in the early planning stages, the qualitative evaluation of cumulative impacts was based on a general description of the project.

## Past Actions

Tree cutters from the Bahamas logged mahogany trees on the keys for ships. Early settlers on Elliott Key cleared the native forests to plant key limes and pineapples. When Biscayne Bay was being considered for national monument designation, many of the keys were privately owned. At one time, the owner of Elliott Key bulldozed a road down the length of the key. This became known as “Spite Highway.” The owner of Boca Chita Key built a 65-foot-tall structure resembling a lighthouse although it never held a light. Other keys also contain remains of past ownership, such as the Jones Homestead on Porgy Key and the Sweeting Homestead on Elliott Key.

Establishment of Biscayne National Monument and the subsequent expansion as Biscayne National Park have allowed the majority of the waters and keys of Biscayne Bay to be protected as part of the national park system. Likewise, several marine protected areas in the immediate vicinity have also been established by various agencies and organizations. This has resulted in beneficial impacts on terrestrial and marine communities and recreational experience opportunities.

**Maritime Heritage Trail.** The park has recently developed a new cultural history component to its interpretive programs. The Maritime Heritage Trail (an underwater snorkeling/scuba experience) will facilitate visitor access to six historic shipwreck sites within the waters of the park’s proposed Maritime National Historic District. Mooring buoys have been installed under the guidance of the Mooring Buoy and Marker Plan (in progress) to reduce visitor impacts. Historic

documentation and interpretive materials for each site will be produced. In the future, the park may consider adding additional historic shipwrecks and other maritime sites (such as Fowey Rocks Lighthouse) or even terrestrial maritime sites such as docks and wharfs.

## Present Actions

**Fishing.** Both recreational and commercial fishing is allowed in the park. The park would continue monitoring fish populations, as identified in the Fishery Management Plan. All actions concerning fishing in the park would be implemented in accordance with the Fishery Management Plan and after consulting with the Florida Fish and Wildlife Conservation Commission regarding all areas except the marine reserve zone where fishing would not be allowed.

**Alternative Energy.** The park has completed the installation of solar power equipment on Adams Key that has reduced the need for diesel-engine generated power by 90%. The park is seeking funding to install solar panels on Elliott Key to reduce the use of diesel-powered generators.

**Black Point Jetty.** Adjacent to Black Point Marina County Park, the Black Point Jetty is owned by Biscayne National Park. A memorandum of agreement with the county outlines each party’s responsibilities for facility maintenance.

**Turkey Point Power Plant.** This electrical generating plant operates just outside park boundaries on the mainland south of Convoy Point. Although it has its own cooling canals, some heated water may be released into Biscayne Bay and park waters. The cooling canals evaporation may result in the use of water from Biscayne Aquifer, reducing the availability of fresh water to coastal and bay communities in the park. It is not known what level of effect this is having on plant and animal communities in the southwest portion of the park. The current plans for Turkey Point Power Plant include the addition of

two new reactors — the National Park Service is a cooperating agency for environmental compliance. However, no impact analysis has yet been completed on this expansion, so potential effects to park resources cannot be analyzed at this time.

**Recreational Boating.** Both motorized and nonmotorized boating is recognized as an appropriate and popular use of the park's waters. Some management issues are associated with this activity. Unintentional groundings and propeller scars cause damage to marine environments when boats are driven into water that is too shallow. There are also some conflicts between motorized and nonmotorized (paddling or sailing craft) boaters. Motorized boating also has impacts on the soundscapes of the park. Many agencies and organizations, including the park and the State of Florida, have boater education programs in place to minimize these impacts.

**Park Actions.** There are many actions being undertaken at the park that are improving natural resources, visitor experience opportunities, and park facilities. Examples of funded projects include maintenance of navigational buoys; development of a fishery management plan, and wildland fire plan; implementation of a multipark exotic plant management plan; rehabilitation of aged infrastructure; scientific studies, and trail work.

Park infrastructure has been and continues to be built in such a manner as to minimize impacts to the area's rich natural and cultural resources and to contribute to their conservation. One example is the minimal footprint of the Convoy Point grounds for visitor use.

Interagency initiatives are also being supported—such as the South Miami-Dade Watershed Study and Plan, the Biscayne Bay Surface Water Improvement and

Management Plan, the Lower East Coast Regional Water Supply Plan, the Biscayne Bay Partnership Initiative, the Southeast Florida Coral Reef Initiative, the Biscayne Bay Coastal Wetlands Plan, the U.S. Fish and Wildlife Service Multispecies Recovery Plan, and reintroduction of rare butterflies.

## Future Actions

Long-range actions that are beginning to be implemented would have future impacts on natural resources. The Comprehensive Everglades Restoration Plan would restore more natural flows of fresh water in southern Florida when completed. Part of this is the Biscayne Bay Coastal Wetlands Project that would concentrate on preserving or restoring the wetlands along the shore of Biscayne Bay. The Coral Reef Initiative would protect corals and coral reefs throughout the region.

The developed area of Miami-Dade County is continuing to grow according to city and county plans, especially north and west of the park. Such development would continue to reduce the availability of natural habitats in the geographic region outside park boundaries. Adjacent development also increases the potential for hydrologic alterations and increases the potential for urban runoff and associated effects on the water quality of Biscayne Bay. It is also expected that that this growth would lead to additional demand for recreation in the park, including increases in fishing and boating activities as well as their associated impacts to park fisheries, endangered sea life, submerged aquatic resources (including corals and seagrass beds), and submerged cultural resources. An increase in recreational use could result in increased levels of conflict between recreational user groups and increased demands on park operations to manage an increasing number of visitors.

## METHODS AND ASSUMPTIONS FOR ANALYZING IMPACTS

Methods and assumptions for analyzing the impacts for natural resources, cultural resources, visitor experience, socioeconomic environment, and NPS operations and facilities are included here for ease of reference and are the same as described on pages 188–195 in the 2011 Draft GMP/EIS accessed online at: <http://parkplanning.nps.gov/documentsList.cfm?parkID=353&projectID=11168>.

The planning team based the impact analysis and the conclusions in this chapter largely on the review of existing literature and studies, information provided by experts in the National Park Service and other agencies, and park staff insights and professional judgment. The team's method of analyzing impacts is further explained below. It is important to remember that all the impacts have been assessed assuming mitigating measures have been implemented to minimize or avoid impacts. If mitigating measures described in "Chapter 2: Alternatives" were not applied, the potential for resource impacts and the magnitude of those impacts would increase.

Director's Order 12, *Conservation Planning, Environmental Impact Analysis, and Decision-making*, presents an approach to identifying the duration (short or long term), type (adverse or beneficial), and intensity or magnitude (e.g., negligible, minor, moderate, or major) of the impact(s), and that approach has been used in this document. Where duration is not noted in the impact analysis, it is considered long term. Direct and indirect effects caused by an action were considered in the analysis. Direct effects are caused by an action and occur at the same time and place as the action. Indirect effects are caused by the action and occur later in time or farther removed from the place, but are still reasonably foreseeable.

The impacts of the action alternatives describe the *difference between* implementing the no-action alternative and implementing the action alternatives. To understand a complete picture of the impacts of implementing any of the action alternatives, the reader must also take into consideration the impacts that would occur under the no-action alternative.

The impacts of climate change on the park are not expected to differ among the alternatives, and the lack of qualitative information about climate change effects adds to the difficulty of predicting how these impacts might be realized in the park. For example, mangroves may be impacted by sea level rise and storm frequency and intensity may impact cultural resources and visitor amenities. Likewise, global scale stressors such as climate change and ocean acidification can affect coral reefs in many ways, including altering calcification rates and increasing prevalence of bleaching and disease. Few NPS management actions exist that would directly reduce the effects of climate change and ocean acidification. However, taking actions to protect coral reefs from other pressures such as overfishing; land-based sources of pollution; and physical damage from fishing gear, anchoring, and vessel groundings might increase reef resiliency, potentially delaying the effects of global stressors. Thus protection of coral reefs is an important management action incorporated into all action alternatives to varying degrees based on zoning schemes.

The range of variability in the potential effects of climate change is large in comparison to what is known about the future under an altered climate regime in the park in particular, even if larger-scale climatic patterns have been accurately predicted for South Florida and the Atlantic Coast (Loehman and Anderson 2009; NPS 2009c).

Therefore, the potential effects of this dynamic climate on park resources were included in “Chapter 3: Affected Environment.” However, they will not be analyzed in detail in “Chapter 4: Environmental Consequences” with respect to each alternative because of the uncertainty and variability of outcomes and because these impacts are not expected to differ among the alternatives.

## NATURAL RESOURCES

The analysis of natural resources was based on research; knowledge of park resources; and the best professional judgment of planners, biologists, hydrologists, and botanists who have experience with similar types of projects. Information on the park’s natural resources was gathered from several sources, including the U.S. Fish and Wildlife Service (USFWS), and site-specific resource inventories for wetlands, wildlife, water quality, and fisheries. As appropriate, additional sources of data are identified under each topic heading.

Where possible, map locations of sensitive resources were compared with the locations of proposed developments and modifications. Predictions about short-term and long-term site impacts were based on previous studies of visitor and facilities development impacts on natural resources.

**For each natural resource impact topic, the description of impacts includes duration and type as described here:**

**Duration.** The duration of the impact considers whether the impact would occur for a short term and be temporary in nature and associated with transitional types of activities and associated impacts, or if the impact would occur over a long term and have a permanent effect on the resource.

**Type of Impact.** Impacts are evaluated in terms of whether they are beneficial or adverse to the resource. Beneficial impacts

would generally be expected to result in improved conditions while adverse impacts would generally be expected to result in deteriorated conditions or the perpetuation of existing conditions that are less than the desired condition.

The impact intensity definitions below assume that mitigation would be implemented.

## Fisheries and Seabottom Communities

**Negligible** — Impacts would be at the lowest levels of detection and would have no appreciable effect on resources, values, or processes.

**Minor** — Impacts would be perceptible, but slight and localized.

**Moderate** — Impacts would be readily apparent and widespread and would result in a noticeable change to resources, values, or processes.

**Major** — Impacts would be readily apparent and widespread and would result in a substantial alteration or loss of resources or processes if adverse.

## Special Status Species

Through coordination with the U.S. Fish and Wildlife Service and NOAA Fisheries, species of special concern were identified that were generally in or near the park. This included information on each species, including preferred habitat, prey, and foraging areas. Park staff then collected more specific information such as the absence or presence of each species within park boundaries. For special status species, including federally listed species, the following impact intensities were used.

Note: To fulfill NPS obligations under the Endangered Species Act, determinations of

effect for the listed species retained for analysis are included below using additional language that corresponds to the Endangered Species Act for the purposes of review by the U.S. Fish and Wildlife Service and NOAA Fisheries.

**Negligible** — The action could result in a change to a population or individuals of a species or designated critical habitat, but the change would be so small that it would not be of any measurable or perceptible consequence and would be well within natural variability. This impact intensity equates to “may affect, not likely to adversely affect” determination.

**Minor** — The action could result in a change to a population or individuals of a species or designated critical habitat. The change would be measurable but small and localized and not outside the range of natural variability. This impact intensity equates to a “may affect, not likely to adversely affect” determination.

**Moderate** — Impacts on special status species, their habitats, or the natural processes sustaining them would be detectable and occur over a large area. Breeding animals of concern are present; animals are present during particularly vulnerable life stages such as migration or juvenile stages; mortality or interference with activities necessary for survival can be expected on an occasional basis, but is not expected to threaten the continued existence of the species in the park. This impact intensity equates to a “may affect, likely to adversely affect” determination.

**Major** — The action would result in a noticeable effect to viability of a population or individuals of a species or resource or designated critical habitat. Impacts on a special status species, critical habitat, or the natural processes sustaining them would be detectable. Loss of habitat might affect the viability

of at least some special status species. Impacts of this intensity may equate to a determination of “take” of individuals or “may affect, likely to jeopardize the continued existence of a species or adversely modify critical habitat for a species.”

As explained in detail in “Chapter 3: Affected Environment,” climate change is anticipated to alter water and air temperature, water quality, severe weather events, and vegetation and wildlife. The National Park Service is required to protect federally listed species, and by policy, supports species listed by the State of Florida. Climate change may cause alterations in listed species’ habitat, breeding and nesting timing and success, predator-prey relationships, and the food web that supports these species. Some of these changes may be difficult to distinguish from other natural processes such as barrier island migration. The park will work with the U.S. Fish and Wildlife Service, NOAA Fisheries, and appropriate state agencies to determine and implement new mitigation or management actions to support species health and population stability as the dynamic effects of climate change become apparent over the life of this General Management Plan.

## Terrestrial and Submerged Aquatic Vegetation

**Negligible** — The impact on vegetation (individuals and/or communities) would not be measurable. The abundance or distribution of individuals would not be affected or would be slightly affected. Ecological processes and biological productivity would not be affected.

**Minor** — An action would not necessarily decrease or increase the area’s overall biological productivity. An action would affect the abundance or distribution of individuals in a localized area, but would not affect the viability of

local or regional populations or communities.

**Moderate** — An action would result in a change in overall biological productivity in a small area. An action would affect a local population sufficiently to cause a change in abundance or distribution, but it would not affect the viability of the regional population or communities. Changes to ecological processes would be of limited extent.

**Major** — An action would result in a change in overall biological productivity in a relatively large area. An action would affect a regional or local population of a species sufficiently to cause a change in abundance or in distribution to the extent that the population or communities would not be likely to return to its/their former level (adverse). Significant ecological processes would be altered.

## **Wetlands**

**Negligible** — No measurable or perceptible changes in wetland size, integrity, or continuity would occur.

**Minor** — The impact would be measurable or perceptible but slight. A small localized change in size, integrity, or continuity could occur because of short-term indirect effects such as construction-related runoff. However, the overall viability of the resource would not be affected.

**Moderate** — The impact would be sufficient to cause a measurable change in the size, integrity, or continuity of the wetland or would result in a small, but permanent, loss or gain in wetland acreage.

**Major** — The action would result in a measurable change in all three parameters (size, integrity, and

continuity) or a permanent loss of large wetland areas. The impact would be substantial and highly noticeable.

## **Soundscapes**

Context, time, and intensity together determine the level of impact of an activity. For example, noise for a certain period and intensity would be a greater impact in a highly sensitive context, and a given intensity would be a greater impact if it occurred more often, or for longer duration. In some cases, an analysis of one or more factors may indicate one impact level, while an analysis of another factor may indicate a different impact level according to the criteria below. In such cases, best professional judgment based on a documented rationale was used to determine which impact level best applies to the situation being evaluated.

**Negligible** — In all zones, effects on natural sound environment would be at or below the level of detection, and such changes would be so slight that they would not be of any measurable or perceptible consequence to visitor experience or to biological resources.

**Minor** — Effects on the natural sound environment would be detectable, although the effects would be localized, and would be small and of little consequence to visitor experience or biological resources. Natural sounds would predominate in zones where management objectives call for natural processes to predominate, with human-caused noise infrequent and at low levels. In zones where more human-caused noise is tolerated, human-caused noise would not be so constant that natural sounds could not be heard occasionally. Beneficial impacts would reduce the amount of noise or otherwise improve the natural soundscape by a similar degree.

**Moderate** — Effects on the natural sound environment would be readily detectable with consequences over a relatively large area. Beneficial impacts would reduce the amount of noise or otherwise improve the natural soundscape by a similar degree. In zones where management objectives call for natural processes to predominate, natural sounds would predominate, but human-caused noise could occasionally be present at low to moderate levels. In zones where human-caused noise is consistent with desired conditions, this noise would predominate during daylight hours, but would not be overly disruptive to visitor activities in the area. In such areas, natural sounds could still be heard occasionally.

**Major** — Effects on the natural sound environment would be obvious and have substantial consequences to visitor experience or to biological resources in the region. Beneficial impacts would reduce the amount of noise or otherwise improve the natural soundscape by a similar degree. In zones where management objectives call for natural processes to predominate, natural sounds would be impacted by human-caused noise sources frequently or for extended periods of time. In zones where human-caused noise is more tolerated, the natural soundscape would be impacted most of the day and make enjoyment of activities in the area difficult.

**Duration.** A short-term impact occurs only during the construction period or up to three months. A long-term impact continues for more than three months.

## CULTURAL RESOURCES

For each cultural resource impact topic, the description of impacts includes duration and type as described here:

**Duration.** The duration of the impact considers whether the impact would occur for a short term and be temporary in nature and associated with transitional types of activities and associated impacts, or if the impact would occur over a long term and have a permanent effect on the resource.

**Type of Impact.** Impacts are evaluated in terms of whether they are beneficial or adverse to the resource. Beneficial impacts would generally be expected to result in improved conditions while adverse impacts would generally be expected to result in deteriorated conditions or the perpetuation of existing conditions that are less than the desired condition.

## Impacts on Cultural Resources and Section 106 of the National Historic Preservation Act

In this Supplemental Draft Environmental Impact Statement, impacts on cultural resources are described in terms of type, context, duration, and intensity, which is consistent with the regulations of the Council on Environmental Quality that implement the National Environmental Policy Act. These impact analyses are intended, however, to comply with the requirements of both the National Environmental Policy Act and section 106 of the National Historic Preservation Act. In accordance with the Advisory Council on Historic Preservation (ACHP) regulations implementing section 106 of the National Historic Preservation Act (36 CFR Part 800, *Protection of Historic Properties*), impacts on cultural resources were also identified and evaluated by (1) determining the area of potential effects; (2) identifying cultural resources present in the area of potential effects that are either listed in or eligible to be listed in the National Register of Historic Places; (3) applying the criteria of adverse effect to affected national register-eligible or listed cultural resources; and (4) considering ways to avoid, minimize, or mitigate adverse effects.

Under ACHP regulations, a determination of either adverse effect or no adverse effect must also be made for affected national register-listed or eligible cultural resources. An adverse effect occurs whenever an impact alters, directly or indirectly, any characteristic of a cultural resource that qualifies it for inclusion in the national register, e.g., diminishing the integrity (or the property's ability to convey its significance) of its location, design, setting, materials, workmanship, feeling, or association. Adverse effects also include reasonably foreseeable effects caused by the alternatives that would occur later in time, be farther removed in distance, or be cumulative (36 CFR 800.5, *Assessment of Adverse Effects*). A determination of no adverse effect means there is an effect, but the effect would not diminish the characteristics of the cultural resource that qualify it for inclusion in the national register.

CEQ regulations and NPS Director's Order 12: *Conservation Planning, Environmental Impact Analysis and Decision-making* also require a discussion of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact, e.g., reducing the intensity of an impact from major to moderate or minor. Any resultant reduction in intensity of impact due to mitigation, however, is an estimate of the effectiveness of mitigation under the National Environmental Policy Act only. It does not suggest that the level of effect as defined by section 106 is similarly reduced. Cultural resources are nonrenewable resources, and adverse effects generally consume, diminish, or destroy the original historic materials or form, resulting in a loss in the integrity of the resource that can never be recovered. Therefore, although actions determined to have an adverse effect under section 106 may be mitigated, the effect remains adverse.

A section 106 summary is included in the impact analysis sections. The section 106 summary is an assessment of the effect of the undertaking (implementation of the

alternative) based on the criterion of effect and criteria of adverse effect found in ACHP regulations.

## Archeological Resources

**Negligible**— Impact is at the lowest level of detection. Impacts would be measurable but with no perceptible consequences. For purposes of section 106, the determination of effect would be “no adverse effect.”

**Minor** — Disturbance of a site(s) results in little loss of integrity. The determination of effect for section 106 would be “no adverse effect.”

**Moderate** — Site(s) is disturbed but not obliterated. The determination of effect for section 106 would be “adverse effect.”

**Major** — Site(s) is obliterated. The determination of effect for section 106 would be “adverse effect.”

## Historic Structures and Buildings

**Negligible** — Impacts would be at the lowest levels of detection—barely perceptible and measurable. For purposes of section 106, the determination of effect would be “no adverse effect.”

**Minor** — Impacts would affect character-defining features but would not diminish the overall integrity of the building or structure. For purposes of section 106, the determination of effect would be “no adverse effect.”

**Moderate** — Impacts would alter a character-defining feature(s), diminishing the overall integrity of the building or structure to the extent that its national register eligibility could be jeopardized. For purposes of section

106, the determination of effect would be “adverse effect.”

**Major** — Impacts would alter character-defining features, diminishing the integrity of the building or structure to the extent that it would no longer be eligible to be listed in the national register. For purposes of section 106, the determination of effect would be “adverse effect.”

## Cultural Landscapes

**Negligible** — Impacts would be at the lowest levels of detection—barely perceptible and measurable. For purposes of section 106, the determination of effect would be “no adverse effect.”

**Minor** — Impacts would affect character-defining features or patterns but would not diminish the overall integrity of the landscape. For purposes of section 106, the determination of effect would be “no adverse effect.”

**Moderate** — Impacts would alter character-defining features or patterns, diminishing the overall integrity of the landscape to the extent that its national register eligibility would be jeopardized. For purposes of section 106, the determination of effect would be “adverse effect.”

**Major** — Impacts would alter character-defining features or patterns, diminishing the overall integrity of the landscape to the extent that it would no longer be eligible to be listed in the national register. For purposes of section 106, the determination of effect would be “adverse effect.”

## VISITOR EXPERIENCE

### Methodology for Analyzing Impacts

This impact analysis evaluated two primary aspects of visitor experience—diversity of visitor activities and visitor services and facilities (including information and education). Analysis is conducted in terms of how the visitor experience might vary by applying different management zones in the alternatives. Although some acreage numbers and percentages are used to provide a relative sense of the amount of area where visitor access and activities might be affected, analysis is primarily qualitative because of the conceptual nature of the alternatives. Consequently, professional judgment was used to reach reasonable conclusions as to the intensity and duration of potential impacts.

**Diversity of Visitor Activities.** The analysis of effects on activities is based on whether there was a complete loss, addition, expansion, or a change in access to or availability of a recreational opportunity and how proposed management actions and zones would affect visitor opportunities for social interaction, solitude, challenge, adventure, and access throughout the park.

**Visitor Services and Facilities.** This analysis is based on whether there would be a change in the availability of visitor services or facilities provided by the National Park Service and commercial services, including information, education, recreation, transport, or other visitor support services resulting from proposed management zone application or other actions.

**Intensity.** The intensity of the impact considers whether the impact on visitor experience would be negligible, minor, moderate, or major.

**Negligible impacts** are effects considered not detectable to the visitor and would have no discernible effect.

**Minor impacts** are effects that would be slightly detectable but not expected to have an overall effect on the visitor experience.

**Moderate impacts** would be clearly detectable by the visitor and could have an appreciable effect on visitor experience.

**Major impacts** would have a substantial and noticeable effect on the visitor experience or could permanently alter substantial aspects of the visitor experience.

**Duration.** The duration of the impact considers whether the impact would occur for a short term and be temporary in nature and associated with transitional types of activities, or if the impact would occur over a long term and have a permanent effect on visitor experience such as no fishing in the marine reserve zone.

**Type of Impact.** Impacts are evaluated in terms of whether they are beneficial or adverse to visitor experience. Beneficial impacts would provide greater availability of a recreational opportunity or educational program or other services and types of experiences. Adverse impacts would reduce access or availability to these facets of visitor experience.

## **SOCIOECONOMIC ENVIRONMENT**

The National Park Service applied logic, experience, professional expertise, and professional judgment to analyze the impacts on the social and economic situation resulting from the implementation of each alternative. Economic data, historic visitor use data, expected future visitor use, and future developments of the park were all considered in identifying, discussing, and evaluating expected impacts.

Assessments of potential socioeconomic impacts were based on comparisons between

the no-action alternative and each of the action alternatives.

## **Methodology for Analyzing Impacts**

**Duration of Impact.** The evaluation of impacts also included an assessment of duration. Distinguishing between short-term and long-term duration was necessary to understand the extent of the identified effects. In general, short-term impacts are temporary in duration and typically are transitional effects associated with implementation of an action (e.g., related to construction activities) and are less than one year. In contrast, long-term impacts might have a permanent effect on the socioeconomic environments, and their effect extends beyond one year (e.g., operational activities).

**Intensity of Impact.** The evaluation of impacts includes an assessment of the intensity of the impacts, as follows:

**Negligible** — Effects on socioeconomic conditions would be below or at the level of detection. There would be no noticeable change in any defined socioeconomic indicators.

**Minor** — Effects on socioeconomic conditions would be slight but detectable.

**Moderate** — Effects on socioeconomic conditions would be readily apparent and result in changes to socioeconomic conditions on a local scale.

**Major** — Effects on socioeconomic conditions would be readily apparent, resulting in demonstrable changes to socioeconomic conditions in the region.

**Type of Impact.** With respect to economic and social effects, few standards or clear definitions exist as to what constitute beneficial changes and those considered adverse. For example, rising unemployment

is generally perceived as adverse, while increases in job opportunities and average per capita personal income are regarded as beneficial. In many instances, however, changes viewed as favorable by some members of a community are seen as unfavorable by others. For example, the impact of growth on housing markets and values may be seen as favorable by construction contractors and many homeowners, but adverse by renters and by local government officials and community groups concerned with affordability. Consequently, some of the social and economic impacts of the alternatives may be described to allow the individual reviewer to determine whether they would be beneficial or adverse (impact is indeterminate with respect to “type”).

## NPS OPERATIONS AND FACILITIES

### Methodology for Analyzing Impacts

The impact evaluation was based on a qualitative evaluation of the effects on park operations and facilities from changes in providing visitor and administrative facilities, services, or programs under each of the alternatives. Impacts were determined by examining the effects of changes on staffing, infrastructure, facilities, and services. The analysis is more qualitative rather than quantitative because of the conceptual nature of the alternatives. Consequently, professional judgment was used to reach reasonable conclusions as to the intensity, duration, and type of potential impact.

**Duration of Impact.** Short-term impacts would be less than one year in duration. Long-term impacts would extend beyond one year.

**Intensity of Impact.** The intensity of the impact considers whether the impact would be negligible, minor, moderate, or major. Impact intensities for park operations and facilities are defined as follows:

**Negligible** — Park operations and facilities would be affected at or below the lower levels of detection, or there would be no measurable change in park operations or facilities.

**Minor** — Changes in park operations and facilities would be perceptible, although the changes would be slight and localized and would not be expected to have an appreciable effect on the ability of the park or concessioner to provide desired services and facilities.

**Moderate** — Changes in park operations and facilities would be readily apparent and would have appreciable effects on park operations that are noticeable to the staff and the public.

**Major** — Changes in park operations and facilities would be readily apparent and result in substantial changes in park operations that are noticeable to the staff and public and are markedly different from existing operations.

**Type of Impact.** Beneficial impacts would improve park operations and facilities. Adverse impacts would negatively affect park operations and facilities and could hinder the park’s ability to provide adequate services, equipment, and facilities to visitors and staff. Some impacts could be beneficial for some operations or facilities and adverse or neutral for others.

# IMPACTS OF IMPLEMENTING THE NO-ACTION ALTERNATIVE

## NATURAL RESOURCES

### Fisheries

Fisheries management in the park would continue to be governed by state- and park-specific regulations, NPS mandates, and legislation. Commercial and recreational fishing would continue throughout the park. Fisheries management in Biscayne National Park would continue to manage fishing in park waters with its mandate and responsibility to manage fishery resources in a way that such resources remain unimpaired.

Under the no-action alternative, fishing would continue to be managed according to state regulations in conjunction with park, NPS mandates, and legislation. In addition to state regulations, there would continue to be a ban on lobster harvest within the waters of the bay and a reduced bag limit for lobsters in waters outside the bay during the two-day sport season. Harvesting sponges, ornamental fish, and invertebrates would continue to be banned in all waters throughout the park.

Species in both the bay and the reefs would continue to experience substantial pressures from both commercial and recreational fishing. Some species would continue to be subject to overfishing. These impacts would continue to be adverse and minor to moderate in the long term.

Under this alternative, there would be no change in management of boating in the park. The 1,000-foot slow speed zone along a portion of the mainland would continue to provide some protection to the seagrass beds, which are an important habitat area for both juvenile and adult fish populations. Boating would continue to have an adverse impact on seagrass beds in all other areas of the park. The adverse impacts include seagrass bed

scarring. The long-term adverse impacts on fisheries habitat would likewise have an adverse impact on fish populations. These impacts on habitat would continue to long-term, minor to moderate, and adverse.

As no new actions are proposed, there would be no new or additional impacts as a result of implementing the no-action alternative.

**Cumulative Impacts.** In 2002, the National Park Service and the Florida Fish and Wildlife Conservation Commission initiated a Fishery Management Plan and Environmental Impact Statement. The draft plan was presented to the public in 2009, and the final plan is expected in 2014.

Once completed, the Fishery Management Plan would involve changes in current management strategies for both recreational and commercial fishing activities. These changes could include establishment of a permit system for both recreational boating and commercial fishers, limits on the type of spearfishing equipment that can be used in the park, a moderate decrease in fisheries take, and elimination of the lobster sport season. With implementation of the Fishery Management Plan, the park anticipates the current condition of fisheries stocks would improve and the adverse impact of fishing on habitat within the park would be reduced. The long-term impacts of the Fishery Management Plan on fisheries in the park would be beneficial. The adverse impacts on fish habitat associated with current management of boating in the park would continue. Under this alternative the beneficial impacts on fisheries associated with the Fishery Management Plan could be limited to what the plan proposes, without auxiliary benefits anticipated from other alternatives proposed in this General Management Plan.

The population of communities and cities around the park is expected to continue to increase. This could cause additional fishing pressure on fish populations in the park—a long-term adverse impact.

The United States Coral Reef Task Force created in 1998 was established to lead U.S. efforts to protect, restore, and promote the sustainable use of coral reef ecosystems. These efforts include but are not limited to reducing and mitigating coral reef degradation from pollution, overfishing, and other causes. The task force has identified fundamental themes to guide immediate and sustained national action. These themes include quickly reducing the adverse impacts of human activities on coral reefs and associated ecosystems. Specific actions that could be taken have not been proposed. However if the initiatives of the task force are fully implemented, the impacts of these activities would probably be beneficial for the coral reef system in the park. Full implementation of the task force's recommendations would also probably cause the park to modify current management approaches to incorporate the recommendations. Until any recommendations take effect, coral reefs would still be subject to recreational activities that are harmful to the ecosystem. These impacts would continue to be long term, adverse, and minor to moderate.

The no-action alternative would result in the continuation of adverse impacts on fish and fish habitats, but would not result in any new/additional impacts. Because there would be no project-related contribution to the impacts of other past, present, and future actions, this alternative would not have any new contribution to cumulative effects.

**Conclusion.** Under the no-action alternative, impacts on fisheries and fish habitat caused by boating and fishing in the park would continue to be adverse, minor to moderate, and long term, but there would be no additional impacts caused by implementing this alternative. There would be no project-related cumulative impacts.

## Threatened and Endangered Species

Management actions under the no-action alternative would continue to support populations of threatened and endangered species in the park. The park would continue to coordinate with the U.S. Fish and Wildlife Service and NOAA Fisheries regarding management actions related to the following threatened and endangered species, as necessary.

**Manatee.** The 1,000-foot-wide slow speed zone that extends along the mainland shoreline from Black Point County Park south to Turkey Point would remain as a manatee protection area. This setback distance was established in cooperation with the state and Miami-Dade County and is consistent with setback distances outside park boundaries. Slow speed zones are designed to provide boat operators sufficient time to react when manatees are observed, reducing the potential of striking the animals. The slow speed zone would continue to have a long-term, beneficial impact on the population of manatees in the park.

As no new actions are proposed, there would be no new or additional impacts as a result of implementing the no-action alternative.

*Section 7 Determination of Effect:* Protection measures already in place have minimized potential impacts to manatee from boat strikes. The determination of effect is “may affect, not likely to adversely affect” for manatee under a continuation of the no-action alternative.

**Sea Turtles.** Existing impacts include potential for collisions with boats, strangulation and entanglement with marine debris (including lobster and crab traps), hook and line fishing, and vessel groundings on sea turtle foraging habitat (coral and seagrass), which may adversely affect sea turtles, particularly green, hawksbill, and loggerhead species. Leatherback and Kemp's Ridleys would be less likely to be affected because they are rarely in the park. Existing

long-term, moderate, adverse impacts to sea turtles in park waters would continue.

Known sea turtle nesting beaches on Elliott Key would not be closed, but these beaches receive little use during nesting season. Park staff would continue to install mesh screening over nests to protect the nests from predation, particularly by raccoons. These management activities would continue to have a long-term, beneficial impact on nesting turtles in the park.

As no new actions are proposed, there would be no new or additional impacts as a result of implementing the no-action alternative.

*Section 7 Determination of Effect:* Sea turtles continue to be impacted by boating, fishing, and marine debris. Green, hawksbill, and loggerhead species are more likely to experience these impacts because they are more frequently found in park waters. The determination of effect is “may affect, likely to adversely affect” for sea turtles under a continuation of the no-action alternative.

**American Crocodile.** Most of the mangrove shoreline would continue to be managed primarily to protect wildlife habitat areas including crocodile habitat. Visitor services and infrastructure would continue to be concentrated at Convoy Point and would remain at or near current levels with the visitor center, designated paths, boardwalk, and jetty. These areas are outside the designated critical habitat. No development within the designated critical habitat would be proposed under this alternative. Impacts on crocodiles from current management approaches, development, and visitation patterns would continue to be adverse but negligible in the long term.

As no new actions are proposed, there would be no new or additional impacts as a result of implementing the no-action alternative.

*Section 7 Determination of Effect:* Shoreline mangrove habitat within the park is well protected. The determination of effect is

“may affect, not likely to adversely affect” for American crocodile under a continuation of the no-action alternative.

**Smalltooth Sawfish.** Under this alternative, relatively unrestricted boating and fishing would continue throughout most of the park and their related impacts to smalltooth sawfish would persist including potential for entanglement in marine debris and bycatch. These impacts would be expected to continue to have a long-term, minor to moderate, adverse impact on smalltooth sawfish.

As no new actions are proposed, there would be no new or additional impacts as a result of implementing the no-action alternative.

*Section 7 Determination of Effect:* Smalltooth sawfish and their habitat would continue to be impacted by fishing. The determination of effect is “may affect, likely to adversely affect” for sea smalltooth sawfish under a continuation of the no-action alternative.

**Schaus Swallowtail Butterfly and Miami Blue Butterfly.** Habitat for these two species is primarily focused on Adams Key and Elliott Key. Adams Key would continue to have a developed area that includes a dock, trail, picnic and restroom facilities, a ranger station, and park residential area. The developed area would remain on the southern shore and largely outside the hardwood hammock and away from preferred butterfly habitat. On Elliott Key, the trail that runs the length of the island also runs through the hardwood hammock. Under this alternative, no development would be proposed that would impact butterfly habitat on Elliott Key. Existing long-term, negligible adverse impacts would persist on Adams Key and Elliott Key due to previous modifications of the natural environment and visitor uses.

Old Rhodes and Totten keys would continue to be managed to preserve natural resources with minimal human-caused impacts. Swan Key would continue to be a sensitive resource

area and managed to protect critical ecosystems, habitats, and natural processes. Access to Swan Key would be tightly controlled and limited to permitted research activities. These natural habitats would continue to be a long-term, beneficial impact to the listed butterfly species.

The continued potential for disturbance to either the butterfly or its habitat throughout the park would be negligible. Weather-related phenomena would remain the greatest risk to the butterfly under this alternative.

As no new actions are proposed, there would be no new or additional impacts as a result of implementing the no-action alternative.

*Section 7 Determination of Effect:* Hardwood hammock habitat within the park is well protected. The determination of effect is “may affect, not likely to adversely affect” for Schaus swallowtail butterfly and Miami blue butterfly under a continuation of the no-action alternative.

**Stony Corals.** Fishing and recreational boating would continue in coral habitat in most of the park, allowing for the possibility of ecological and physical stress to corals from overfishing, fishing debris, anchoring, and/or vessel groundings. The use and maintenance of navigational markers and mooring buoys would continue to protect corals from unintentional vessel and anchor damage. Legare Anchorage would continue to be restricted for in-water activities, providing protection to corals in this area. Management activities under this alternative would continue to have long-term, moderate, adverse impacts on these species.

As no new actions are proposed, there would be no new or additional impacts as a result of implementing the no-action alternative.

*Section 7 Determination of Effect:* Stony corals would continue to be impacted by fishing, boating, and marine debris. The determination of effect is “may affect, likely to

adversely affect” for stony corals under a continuation of the no-action alternative.

**Cumulative Impacts.** Habitat disturbance or loss is the most common reason for a species to be listed. The establishment of Biscayne National Park has provided a protective refuge for terrestrial- and marine-listed species resulting in long-term beneficial impacts.

The Florida Manatee Recovery Plan and the site-specific county plans are designed in part to reduce boat-related manatee injury and mortality as well as protect habitat areas. These measures are consistent with protection measures incorporated into the proposed actions in this General Management Plan. There would continue to be a beneficial impact on manatee recovery efforts because there would be no changes to the existing system, which encourages compliance with the plans.

Reintroduction efforts of Miami blue butterflies have occurred on Elliott Key in an attempt to restore this species as an experimental population. If successful, this would be a long-term beneficial impact. The monitoring and recovery plan would continue to be implemented.

The no-action alternative would result in the continuation of adverse impacts on some listed species as well as some beneficial impacts, but would not result in any new or additional impacts. Because there would be no project-related contribution to the impacts of other past, present, and future actions, this alternative would not have any new contribution to cumulative effects.

**Conclusion.** Management under the no-action alternative would continue to support populations of threatened and endangered species in the park. Under this alternative, there would be no new actions that would impact listed species. Existing long-term negligible impacts would persist on manatees, American crocodile, and butterfly species; therefore, they would have a section 7

determination of no effect. However, the sea turtles, smalltooth sawfish, and stony corals would continue to experience long-term, moderate adverse impacts due to the continuation of boating, fishing, and/or marine debris impacts resulting in a section 7 determination of “may affect, likely to adversely affect” for these species. There would be no project-related cumulative effects.

### **Special Status Species, Including State Listed Species**

**Birds.** West Arsenicker Key is a sensitive resource area for bald eagles and would remain closed to visitors. Actions under this alternative would have no new effect on bald eagle populations and nesting activity on West Arsenicker Key. Nesting activity has been observed on the southern end of Sands Key and the ocean side of Elliott Key. Under this alternative, Sands Key would remain closed to visitors; therefore, the long-term impact on bald eagle populations and nesting activity in the park would continue to be beneficial. Under this alternative, no new facilities would be developed on Elliott Key, and visitation would be expected to continue at current levels. Visitation to the ocean side of the island is currently low and would not be expected to increase. If visitation increases to the point that eagle nesting activity might be disturbed the park could close part of the beach south of Petrel Point during nesting season to reduce impacts on the raptors. Under this alternative, the long-term impact on bald eagle populations and nesting activity in the park would continue to be beneficial. There would be no new actions that would affect bald eagles.

For other state listed birds, the potential for disruption to nesting, roosting, foraging, and/or loafing remains. For birds using low visitation areas, such as the difficult-to-access Jones Lagoon area, the potential for disturbance remains low. Birds using coastal areas adjacent to high use areas (such as Elliott Key, Sands Key, and Boca Chita Key),

however, would continue to be exposed to potential disturbances of the noise of boat engines and close approaches by people. This exposure could result in an alteration of natural behaviors, including the potential for nesting birds to inadvertently crush their eggs while fleeing or to temporarily or permanently abandon their nests, thereby exposing the eggs to predators and extreme temperatures. Under this alternative, the long-term impact on state listed birds in the park would continue to be long-term, negligible and adverse.

As no new actions are proposed, there would be no new or additional impacts as a result of implementing the no-action alternative.

**Cumulative Impacts.** These species were listed by the state because of adverse impacts of habitat disturbance or loss, which caused a severe reduction in their numbers. The establishment of Biscayne National Park has provided valuable refugia of protected habitat for many species.

At the time this plan was started, bald eagles were federally listed as endangered. They have since been delisted nationally because of widespread population recovery, indicating a long-term beneficial impact on this species.

Because there would be no project-related contribution to the impacts of other past, present, and future actions, this alternative would not have any new contribution to cumulative effects.

**Conclusion.** Under this alternative, existing impacts would persist including both long-term, negligible adverse impacts due to visitor-related disturbances and long-term beneficial impacts due to habitat protection. There would be no new or additional project-related impacts caused by implementing this alternative. There would be no project-related cumulative effects.

## Terrestrial Vegetation

Under this alternative, no new development would be proposed that would impact terrestrial vegetation. Current visitor facilities and park infrastructure would remain within their current footprint. Some vegetation in the park would continue to be adversely impacted by social trails and trampling. These impacts would continue to be long term, negligible to minor, and adverse.

As no new actions are proposed, there would be no new or additional impacts as a result of implementing the no-action alternative.

**Cumulative Impacts.** Nonnative invasive plant species can change the structure and function of native plant communities. These changes can have an adverse impact on habitat for native species that rely on the native plant communities. Soil and vegetation disturbances encourage growth of invasive species. A nonnative plant management plan has been developed for Biscayne National Park and eight other national park system units in the region. Removal of the nonnative species would provide better conditions to reestablish native vegetation in disturbed areas, which could help to mitigate the adverse impacts associated with social trails in the park. Implementation of this management plan would have a long-term, beneficial impact on terrestrial vegetation in the park and the habitat it provides.

Because there would be no project-related contribution to the impacts of other past, present, and future actions, this alternative would not have any new contribution to cumulative effects.

**Conclusion.** Under the no-action alternative, existing, negligible to minor, adverse impacts on terrestrial vegetation in the park would continue as a result of social trails and trampling, but there would be no additional impacts caused by implementing this alternative. There would be no project-related cumulative impacts.

## Submerged Aquatic Communities

Shallow benthic communities would continue to be vulnerable to impacts from boating. Boat activity has been associated with increased turbidity in shallow areas. In most areas of the bay, submerged aquatic communities would continue to be vulnerable to impacts from boating. Because the bay is shallow, boat activity has been associated with increased turbidity in all the aquatic communities. Damage to seagrass beds from boat groundings and anchors has degraded habitat for manatees, crustaceans, and echinoderms that inhabit these areas. Boat groundings (propeller and hull impacts) and inadvertent placement of anchors have damaged the dense soft corals, sea fans, and sponges in the hardbottom communities, which in turn have an adverse impact on the fish and invertebrates that seek refuge in these areas.

Coral reefs are complex ecosystems and sensitive to disturbances including fishing, snorkeling, and diving. The damage caused by these activities includes scarring from boat propellers and inadvertent placement of anchors, as well as breakage caused by snorkeling and diving.

Debris from recreational and commercial fishing (e.g., fishing tackle and lines from crab and lobster traps) left on the reef can wrap around the coral and damage it. Fishing also results in removal of predators and the removal of herbivorous fish that keep algae minimized (contributes to reef health). Damage to the coral reefs also adversely impacts other species that rely on the reefs for food and shelter.

Under this alternative, the current high levels of unrestricted boat use as well as other recreational activities would continue to cause long-term, minor to moderate, adverse impacts on the function and productivity of the submerged aquatic communities in the park.

As no new actions are proposed, there would be no new or additional impacts as a result of implementing the no-action alternative.

**Cumulative Impacts.** The population of communities and cities around the park is expected to continue to increase per county and city plans. This would probably result in additional boating use and related impacts on submerged aquatic communities, a long-term adverse impact.

Because there would be no project-related contribution to the impacts of other past, present, and future actions, this alternative would not have any new contribution to cumulative effects.

**Conclusion.** Under the no-action alternative, existing, minor to moderate, adverse impacts on submerged aquatic vegetation in the park would continue due to ongoing recreational uses including boating, fishing, diving, and snorkeling. There would be no new impacts caused by implementing this alternative. There would be no project-related cumulative impacts.

## **Wetlands**

Mangrove wetlands are found along the mainland coast and the fringes of the keys in the park. Under this alternative, wetlands in the park would continue to serve as an important habitat area for a wide variety of terrestrial and aquatic species. Currently, access for visitors into the mangroves is limited. No new access into the mangroves would be developed under this alternative on the mainland or on the keys so there would be no change in the current size, integrity, or continuity of the wetland areas in the park. Where wetlands have previously been impacted by development, including both park infrastructure for administration and visitor use as well as historic resources, those impacts would continue to persist and are generally long-term, minor to moderate, and adverse.

As no new actions are proposed, there would be no new or additional impacts as a result of implementing the no-action alternative.

**Cumulative Impacts.** The Biscayne Bay Coastal Wetlands Project of the Comprehensive Everglades Restoration Plan includes pump stations, spreader swales, stormwater treatment areas, flow ways, levees, culverts, and backfilled canals in southeast Miami-Dade County and covers 13,600 acres from the Deering Estate south to Turkey Point Power Plant. The purpose of this project is to rehydrate wetlands and reduce point source discharge to Biscayne Bay. Phase I has been implemented. The project is beginning to replace lost overland flow and partially compensate for the reduction in groundwater seepage by redistributing, through a spreader system, available surface water entering the area from regional canals. The redistribution of freshwater flow across a broad front is expected to restore or enhance freshwater wetlands, tidal wetlands, and near-shore bay habitat. Sustained lower-than-seawater salinities are required in tidal wetlands and the near-shore bay to provide nursery habitat for fish and shellfish. This project is expected to create conditions that would be conducive to the reestablishment of oysters and other components of the oyster reef community.

Diversion of canal discharges into coastal wetlands associated with Biscayne Bay Coastal Wetlands Project of the Comprehensive Everglades Restoration Plan is expected not only to reestablish productive nursery habitat along the shoreline, but also to reduce the abrupt freshwater discharges that are physiologically stressful to fish and benthic invertebrates in the bay near canal outlets. The impact of implementing these actions would be beneficial for wetlands inside and outside the park.

These other past, present, and future actions, in conjunction with the ongoing management actions in the park, would result in beneficial impacts on wetlands in the park.

Because there would be no project related contribution to the impacts of other past, present, and future actions, this alternative would not have any new contribution to cumulative effects.

**Conclusion.** Pre-existing, long-term, minor to moderate, adverse impacts to wetlands would persist due to past land management actions. There would be no new or additional impacts on wetlands under this alternative. There would be no project-related cumulative effects.

### Natural Soundscapes

Natural soundscapes have been degraded from activities on land and water portions of the park such as vehicle engines, boat traffic, agricultural or industrial activity, and occasional construction. Because most of the park is open water, noise from motorized boats is the most prevalent disruption to natural soundscapes. Frequent boat-related noise is a short-term, minor to moderate adverse impact on natural soundscapes.

The concentration of cars and visitors around the visitor center and parking lot also affects the natural soundscape at Convoy Point. NPS staff mowing the grass and blowing leaves with motorized equipment causes short-term localized adverse impacts on the soundscapes in this area. This noise is generally tolerated in the visitor services / park administration zone, so the related impacts would be short-term, negligible and adverse.

As no new actions are proposed, there would be no new or additional impacts as a result of implementing the no-action alternative.

**Cumulative Impacts.** Expected with the increased boating on the water; an associated increase in boat engine noise would be expected throughout the park.

Because there would be no project-related contribution to the impacts of other past,

present, and future actions, this alternative would not have any new contribution to cumulative effects.

**Conclusion.** Implementing alternative 1 would have no new effects on natural soundscapes. Because this alternative would not have any new effects on the natural soundscape, there would be no project-related cumulative effects.

## CULTURAL RESOURCES

### Archeological Resources (including submerged maritime)

Under the no-action alternative, archeological (including submerged maritime) resources would continue to be surveyed, inventoried, and evaluated under NRHP criteria of evaluation to determine their eligibility for listing in the national register. All ground-disturbing activities would be preceded by site-specific archeological surveys and, where appropriate, subsurface testing to determine the existence of archeological resources and how best to preserve them. Known archeological resources would be avoided whenever possible and only negligible to minor adverse impacts would be anticipated.

Although ongoing and expanded archeological site monitoring programs would be initiated and efforts would be undertaken to minimize or mitigate potential impacts from human activities and natural causes, an unknown number of archeological sites in Biscayne National Park would continue to be impacted by current and ongoing human activities. These ongoing activities would continue to cause localized, long-term, or permanent, minor adverse impacts.

Treasure hunting, looting, and amateur collection, which have had an impact on the park's archeological resources over the years, would continue to be a threat to the park's submerged cultural resources. Although such activities are not permitted in the park, and

restricting underwater access to visitors in the Legare Anchorage (which only covers a portion of the Offshore Reefs Archeological District) would continue to provide some protection for some submerged cultural resources, the park is still affected by these activities. Continuance of these activities in the park and surrounding waters promotes the commercial value of artifact selling to tourists and makes it lucrative for artifact hunters to visit the park. Much of the local public condones such activity in the park, although recognizing that it is illegal or requires permitting in other areas such as the Florida Keys National Marine Sanctuary and other state waters. Continued looting, depending on its severity, would be a minor adverse impact on submerged archeological resources.

Submerged cultural resources would also continue to be impacted by activities associated with commercial and sport fishing such as accidental net snagging. Recreational and commercial boating would continue to impact submerged archeological sites through the erosive processes of waves caused by their passage as well as activities such as dropping anchors. Impacts on cultural resources from fishing and boating would be long term to permanent, adverse, and of minor intensity depending on the frequency and intensity of these activities.

Although not as numerous or as threatened, Biscayne National Park's terrestrial archeological sites on the mainland and keys would continue to be subjected to similar concerns as those of the submerged sites. Most of the known terrestrial archeological sites, however, are not readily accessible to the public because of natural barriers and their isolation, and thus most human impacts on such resources would result from inadvertent or accidental use of park lands. Most of the significant prehistoric and historic sites on the islands are well protected by their distance from areas commonly used by the public and dense vegetation that makes them difficult to reach. Continued closure of Arsenicker and West Arsenicker

keys would help protect potential archeological resources on these islands. Because of their inaccessibility, any adverse impacts on terrestrial archeological resources would be negligible to minor and permanent.

As no new actions are proposed, there would be no new or additional impacts as a result of implementing the no-action alternative.

**Cumulative Impacts.** In the past, the relative isolation of the park and the lack of sufficient resource monitoring and protection programs have provided opportunities for treasure hunters, amateur collectors, and looters to engage in hunting artifacts and intentionally pilfering submerged archeological resources. Visitors have contributed to inadvertent disturbance of submerged and terrestrial archeological resources. Because much of the park has not been surveyed and inventoried for archeological resources, decisions about site development, such as visitor facilities, and permitted activities, such as recreational and commercial boating and commercial and sportfishing, have sometimes been made that in hindsight may have resulted in disturbance of archeological sites in the park. These impacts have been primarily adverse, permanent, and negligible to minor.

Ongoing NPS activities, such as expanded archeological site monitoring programs and archeological survey and inventory efforts, would provide better understanding and protection of the park's submerged and terrestrial archeological resources—a beneficial impact. Other current or reasonably foreseeable planning endeavors to protect Biscayne Bay resources—such as the Florida Keys National Marine Sanctuary Revised Management Plan (2007), Comprehensive Everglades Restoration Plan, Southeast Florida Coral Reef Initiative, Biscayne Bay Partnership Initiative, and the Biscayne Bay Strategic Access Plan—could also potentially contribute to these beneficial impacts on the park's archeological resources.

As described above, implementation of the no-action alternative would result in permanent, negligible to minor, adverse effects and some beneficial impacts. The impacts of the no-action alternative, in combination with both the negligible to minor permanent adverse impacts and beneficial impacts of other past, present, and reasonably foreseeable future actions, would result in a permanent, negligible to minor, adverse cumulative effect. The adverse effects of the no-action alternative, however, would be a small component of the adverse cumulative impact.

Because there would be no project-related contribution to the impacts of other past, present, and future actions, this alternative would not have any new contribution to cumulative effects.

**Conclusion.** Under this alternative, there would be primarily localized, negligible to minor, adverse, short-term to permanent impacts on submerged archeological resources, while impacts on terrestrial archeological resources would be in the negligible to minor range. Some benefits would result from survey and inventory of both submerged and terrestrial properties potentially eligible for national register listing. Generally, both submerged and terrestrial archeological resources would continue to be surveyed, inventoried, and evaluated, and all ground-disturbing activities would be preceded by site-specific archeological investigations to ensure that archeological resources would not be damaged or lost as a result of NPS actions.

Actions under this alternative would not contribute to any overall cumulative impact on terrestrial and submerged archeological resources. The adverse and beneficial impacts on archeological resources generally, however, would be a relatively small component of any overall cumulative impact.

## Historic Structures and Buildings

Under the no-action alternative, historic structures and buildings in the park would continue to be surveyed, inventoried, and evaluated under NRHP criteria to determine their eligibility for listing in the national register as staff and funding permit. The surveys and research necessary to determine the eligibility of a structure or building for listing in the national register are a prerequisite for understanding the resource's significance, as well as the basis of informed decision making in the future regarding how the resource should be managed. Such surveys and research would have a beneficial long-term impact.

To appropriately preserve and protect national register-listed or -eligible historic buildings and structures, all stabilization, preservation, and rehabilitation efforts would be undertaken in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (1995). Because the repair and replacement of historic fabric associated with the preservation or rehabilitation of historic buildings and structures would be undertaken in accordance with those standards, any adverse impacts would be of negligible to minor intensity and long term.

Historic structures and buildings, such as Fowey Rocks Lighthouse and those in the Boca Chita Key Historic District, could suffer natural deterioration and wear and tear from increased visitation and unstaffed or minimally staffed structures could be susceptible to vandalism. Regular cyclic maintenance and rehabilitative repairs minimize potential negligible to minor adverse impacts, and the possible monitoring of the user capacity of historic structures could result in the imposition of visitation levels or constraints that would contribute to the stability or integrity of the resources without unduly hindering interpretation for visitors, and continued ranger patrol and emphasis on visitor education would discourage vandalism or inadvertent impacts

and minimize adverse impacts. Any adverse impacts would be long term and of negligible to minor intensity.

As no new actions are proposed, there would be no new or additional impacts as a result of implementing the no-action alternative.

**Cumulative Impacts.** In the past, the lack of appropriate preservation treatments and the loss of historic fabric resulting from visitor use and vandalism have resulted in minor, long-term, adverse impacts on the historic structures and buildings of the Boca Chita Key Historic District. Other recent, current, and reasonably foreseeable future planning endeavors or undertakings to preserve historic structures or buildings in the surrounding region could potentially contribute to some beneficial impacts on historic structures and buildings.

As described above, implementation of the no-action alternative would result in long-term, negligible to minor, adverse effects and beneficial impacts on historic structures and buildings. The impacts of the no-action alternative, in combination with the minor, long-term, adverse impacts and beneficial impacts of other past, present, and reasonably foreseeable future actions, would result in a long-term, negligible to minor, adverse cumulative effect. The adverse effects of the no-action alternative, however, would be a small component of the adverse cumulative impact.

Because there would be no project-related contribution to the impacts of other past, present, and future actions, this alternative would not have any new contribution to cumulative effects.

**Conclusion.** Actions under alternative 1 would generally have localized, long-term, beneficial and long-term negligible to minor adverse impacts on historic structures and buildings. Actions under this alternative would attempt to minimize the continued loss of historic fabric to historic structures and buildings in the Boca Chita Key Historic

District and Fowey Rocks Lighthouse through law enforcement efforts and cyclic maintenance and preservation treatment. Implementation of this alternative would have long-term, beneficial impacts on the historic structures in the park because they would be preserved in accordance with the Secretary's Standards.

Actions under this alternative would generally contribute to beneficial impacts and the negligible to minor adverse impacts related to any overall cumulative effect on historic structures and buildings. Overall, the cumulative effect would be negligible to minor and adverse. The adverse and beneficial effects on historic structures and buildings, however, would be a relatively small component of any overall cumulative effect.

## Cultural Landscapes

Under the no-action alternative, the cultural landscape at the Boca Chita Key Historic District would continue to be managed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*. Potential cultural landscapes in Biscayne National Park would continue to be surveyed, inventoried, and evaluated under NRHP criteria to determine their eligibility for listing in the national register as NPS staff and funding permit. Ongoing studies would continue inventory and evaluation of the following potential cultural landscapes in the park:

Sweeting Homestead – Elliott Key  
Maritime Cultural Landscape –  
parkwide

Jones Family Historic District – Porgy  
and Totten Keys

Pending results of these evaluations, the National Park Service would recommend listing the park's significant cultural landscapes in the national register. The

National Park Service would implement resource management policies that preserve the natural resource values of the listed, or determined eligible, landscapes as well as their culturally significant character-defining patterns and features in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*. The surveys, inventories, and evaluation of cultural landscapes and their character-defining patterns and features are the basis of informed decision making in the future regarding how national register-eligible or -listed resources should be managed, which would be a beneficial impact.

Continued and increasing use of Boca Chita Key as a visitor destination point could continue to have some negligible to minor, adverse, short-term to long-term impacts on the integrity of the historic district's cultural landscape, and continued use of Elliott Key for docking, picnicking, hiking, and camping could continue to have some negligible to minor, adverse, short-term to long-term impacts on the integrity of the potential cultural landscape associated with Sweeting Homestead. The relatively remote and inaccessible location of Porgy and Totten keys would afford protection to the potential cultural landscape associated with the Jones Homestead. The continued management of Porgy Key and Totten Key in their isolation would have a beneficial impact.

As no new actions are proposed, there would be no new or additional impacts as a result of implementing the no-action alternative.

**Cumulative Impacts.** In the past, lack of awareness for the preservation of potential cultural landscapes in the park has resulted in decisions about site development and resource management that, in hindsight, may have not have been best for the preservation of cultural landscape values and preservation. Such decisions include the placement and location of a restroom building, wooden boardwalk, and concrete paths that have

compromised some of the character-defining patterns and features of the Boca Chita cultural landscape by adding prominent, nonhistoric structures and features to the landscape and covering or damaging historic walking paths. These past impacts could be a long-term, minor, adverse impact.

Other recent, current, and reasonably foreseeable future planning efforts to protect Biscayne Bay resources—such as the Florida Keys National Marine Sanctuary Revised Management Plan (2007) (comprehensive protection of diverse marine environments of the keys), and Comprehensive Everglades Restoration Plan (restoration and preservation of the Everglades and the South Florida ecosystem)—could potentially contribute to the preservation of character-defining patterns and features of cultural landscapes. Impacts on cultural landscapes associated with such preservation efforts would be beneficial.

As described above, implementation of the no-action alternative would result in long-term, negligible to minor, adverse effects and beneficial impacts on cultural landscapes. The impacts of the no-action alternative, in combination with the minor, long-term, adverse impacts and beneficial impacts of other past, present, and reasonably foreseeable future actions, would result in a long-term, minor, adverse cumulative effect. The adverse effects of the no-action alternative, however, would be a small component of the adverse cumulative impact.

Because there would be no project-related contribution to the impacts of other past, present, and future actions, this alternative would not have any new contribution to cumulative effects.

**Conclusion.** Actions under alternative 1 would have beneficial impacts on the landscape at the Boca Chita Key Historic District, as well as other potential cultural landscapes because park properties would continue to be surveyed, inventoried, and evaluated under national register criteria of

evaluation to determine their eligibility for listing in the national register. Listed and eligible cultural landscapes would be managed to preserve their natural resource values and culturally significant character-defining patterns and features in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*. Some unidentified cultural landscapes might experience long-term, minor, adverse impacts. Under alternative 1, potential cultural landscapes would experience mostly beneficial, short-term to long-term impacts. Actions under this alternative would generally contribute to cumulative, long-term, beneficial impacts on cultural landscapes.

## VISITOR EXPERIENCE

### Diversity of Visitor Activities

Visitors with boats would continue to have unrestricted access to most (approximately 97%) of park waters. Visitors would be able to participate in a full range of activities such as motorboating, sailing, canoeing, swimming, scuba diving, snorkeling, fishing, and nature study.

Under current park management policy, resource conditions fail to offer visitors the type of experiences for which the park was established. Under the no-action alternative, resource conditions and visitor experience would continue to degrade.

Some operators who lack information and/or navigation skills would continue to have the negative experience of running aground in shallow areas, potentially damaging their equipment and park resources and incurring fines and towing fees. In addition, the wide range of mixed use would continue to result in visitor conflicts in some locations such as safety conflicts between swimmers and motorboaters and speed and noise conflicts between motorboaters and nonmotorized boaters.

As visitor numbers increase over time, more areas of the park, especially during peak use times, would experience more conflicts and increased frequency of motorboaters running aground. For some visitors who enjoy a more social experience and the ability to travel and recreate throughout the park, increased numbers of visitors would not necessarily be perceived as a problem. However, it is likely that as incidents of conflict and groundings increase, many power boaters would perceive the change in their experience over time to be a long-term, minor to moderate, adverse impact on the quality and safety of their visit.

Visitors with boats who are seeking solitude and the natural sights and sounds of the park's bay and ocean waters would find it increasingly difficult to experience these qualities as visitor numbers increase. Also, safety would be an increasing problem because of the limited speeds and maneuverability of nonmotorized boats. This change in conditions would probably be perceived over time as a long-term, minor, adverse impact on these visitors' ability to navigate safely in park waters and achieve opportunities for quiet, solitude, and nature study.

There are areas of the park where visitors would continue to have limitations on their activities. This includes the slow speed zone along the mainland and at Sands Cut (by Sands Key), which would continue to restrict visitor use of about 3,295 acres of park waters. These limitations would continue to enhance visitor safety along the often crowded Sands Cut area and manatee protection area near the mainland, adding value to visitor opportunities to see these rare animals. Arsenicker Key, West Arsenicker Key, and adjacent waters within 200 feet from shore would continue to be closed to visitors for resource protection. Also, visitors would continue to be prohibited from stopping in Legare Anchorage or leaving their boat to swim or dive. These restrictions in Legare Anchorage (in its current configuration) would continue on about 2,360 acres of park waters. Because all these restrictions are well established, their continuation would have

negligible, long-term, adverse impacts on visitor experience.

As no new actions are proposed, there would be no new or additional impacts as a result of implementing the no-action alternative.

## Visitor Services and Facilities

Visitors would continue to have access to most of the park's land areas and would be able to participate in a range of land-based recreation such as hiking, picnicking, shore fishing, camping, nature study, and visiting historic sites. The level of access would generally continue to be limited by (1) the natural limitations of mangrove and tropical hardwood hammock habitats, and (2) the existing limits of facility development such as docking capacity and trail development. In this alternative, these conditions would continue relatively unchanged. As a result, visitor numbers on the keys would continue to be low to moderate. However, as visitor levels in the park increase, there would be an increasing likelihood that docking facilities at the keys would reach capacity more frequently and that some visitors who want access to the keys would not have anywhere to dock. This would potentially be a long-term, minor to moderate, adverse impact on some visitors' opportunities to access and experience these coral keys, especially during peak use periods.

Visitors who arrive at Convoy Point by car would continue to have easy access to visitor information and interpretation services at the Dante Fascell Visitor Center. Visitor center-based programs would continue to provide opportunities to learn about the significance and value of the park, which are not available elsewhere. This would continue to be a beneficial impact on visitor understanding and appreciation of South Florida's coastal marine environment. Visitors would continue to use the services of the park concessioner at Convoy Point to rent canoes, kayaks, or scuba equipment, or pay for a glass-bottom boat tour or guided scuba and snorkeling

trips. The concessioner would continue to provide occasional transport service to Elliott Key and Boca Chita Key for visitors interested in hiking, camping, and guided tours. Visitors who do not have the time, resources, or ability to use concessioner services would continue to be able to recreate in the Convoy Point area, including picnicking, fishing, and walking along the boardwalk. However, for many visitors, access to park waters and the keys beyond Convoy Point would remain limited, which would continue to be a long-term, minor to moderate, adverse impact on the quality of some visitor experiences.

As no new actions are proposed, there would be no new or additional impacts as a result of implementing the no-action alternative.

**Cumulative Impacts.** The growing population of the Miami-Dade region and related development pressures are being recognized by local, regional, state, and federal entities as important concerns affecting the region's environmental, economic, and community values. To this end, there are a number of ongoing studies and partnership efforts underway in the Biscayne Bay area to improve and protect water quality and quantity, wetlands, fisheries, and coastal viewsheds. Projects include the Fishery Management Plan for Biscayne National Park; the South Miami-Dade Watershed Study and Plan; the Biscayne Bay Surface Water Improvement and Management Plan; the Lower East Coast Regional Water Supply Plan; the Biscayne Bay Partnership Initiative; the Southeast Florida Coral Reef Initiative; and the Biscayne Bay Coastal Wetlands Plan. The projects could all contribute to improvements in visitor experience, especially related to quality fishing opportunities and other resource-based recreational activities. The intensity and duration of the cumulative effect of the above planning efforts would depend on the actual number and type of actions taken to implement them.

Adjacent state parks (such as Bill Baggs Cape Florida State Park, Key Largo Hammock Botanical State Park, and John Pennkamp Coral Reef State Park) and the Florida Keys National Marine Sanctuary offer services, facilities, and recreational opportunities that enable visitors to experience and learn about the natural and cultural resources of the Biscayne Bay and reef area. Also, current efforts through the Stiltsville plan and the public access plan for Biscayne Bay (“Get Your Feet Wet”) provide opportunities for enhanced visitor access, education, and recreation related to the Biscayne Bay area. These nearby and available recreational and interpretive resources would result in a beneficial effect on visitor understanding and opportunities in the Biscayne Bay area.

Because there would be no project-related contribution to the impacts of other past, present, and future actions, this alternative 1 would not have any new contribution to cumulative effects.

**Conclusion.** Continued speed limitations and closures under this alternative would have long-term, negligible, adverse impacts on current visitor use patterns or opportunities. The potential for increased crowding and conflict, especially during peak use times and between different user groups, would probably continue, which would continue to result in short-term, minor to moderate, adverse impacts on visitor experiences. Lack of visitor services and facilities to support access to park waters and keys would continue to result in long-term, minor to moderate, adverse impacts to visitors. There would be beneficial cumulative effects. Alternative 1 would have a slight contribution to these cumulative effects.

## **NPS OPERATIONS AND FACILITIES**

Actions under alternative 1 would provide continuation of current visitor opportunities, resource management practices, and law enforcement activities with current levels of

personnel, facilities, and equipment. The park’s developed area, which covers approximately 38 acres, would continue to be used for park operations and to provide recreational opportunities and visitor services. Mainland visitor services and infrastructure, including a visitor center, designated paths and trails, a boardwalk, and jetty, would remain at or near current levels at Convoy Point. Facilities on the keys would also continue to remain at or near current levels as follows:

- Boca Chita Key – boat dock, harbor, historic structures, picnic areas, restrooms, and primitive campground
- Elliott Key – boat dock, trail, picnic and restroom facilities, environmental education center, ranger station, employee residences, and maintenance facilities
- Adams Key – boat dock, trail, picnic and restroom facilities, and employee residences
- visitor contact points outside the park – limited contact information and signs at public sites

Channels, harbors, and areas with limitations, such as the slow speed zone (3,295 acres) and Legare Anchorage (2,360 acres), in the park would continue to be marked by existing navigation aids and buoys.

Because of the park’s growing visitation, the park’s staff has estimated that the number of current employees would need to be increased by 25% to stay current with the needs of law enforcement, visitor protection, resource management, facility maintenance, interpretation, and adequate contacts with visitors. However, no staffing increase is anticipated.

Additionally, to provide effective visitor protection and resource management, the park needs updated communications equipment and additional vessels, but such needs would continue to be largely unmet.

Special events, such as the Columbus Day Weekend, would probably continue to grow in size, thus resulting in increasing strains on the park's overburdened staff. Visitor destination points, such as day use areas and camp-grounds, would continue to be frequently congested and overcrowded during peak visitation periods, challenging the ability of NPS staff and existing facilities to provide an acceptable level of desired services. Increased visitor impacts combined with static or reduced staffing capacity would continue to adversely impact park operations. Thus, this alternative would have long-term, moderate, adverse impacts on park operations and facilities.

As no new actions are proposed, there would be no new or additional impacts as a result of implementing the no-action alternative.

**Cumulative Impacts.** Past and ongoing cooperative planning and development projects in the Biscayne Bay region, such as the Biscayne Bay Partnership Initiative, Miami-Dade County Comprehensive Development Master Plan, and Biscayne Bay Strategic Access Plan, and NPS special resource studies, such as those for Miami Circle and Virginia Key Beach Park, have resulted in some long-term beneficial effects on park operations and facilities. National Park Service participation in such collaborative efforts has enabled the National Park Service to engage in constructive dialogue with park neighbors regarding park operations and facilities. Such efforts have provided the National Park Service with better information on Biscayne Bay-wide visitor trends, services, and facilities, thus enabling NPS managers to make more informed decisions regarding appropriate park operations and facilities as well as enhancing the park's ability to provide desired services. However, these beneficial effects are almost impossible to measure.

This alternative's long-term, moderate, adverse impacts, in combination with the aforementioned beneficial effects of past and ongoing cooperative planning and

development projects in the Biscayne Bay region, would result in long-term adverse cumulative effects. However, this alternative's contribution to these effects would be small.

Because there would be no project-related contribution to the impacts of other past, present, and future actions, this alternative would not have any new contribution to cumulative effects.

**Conclusion.** Overall, actions under alternative 1 would result in continuing, long-term, moderate, adverse impacts on park operations and facilities due to unmet operational needs. The overall cumulative effects would be long term and adverse; this alternative's contribution to these effects would be small and adverse.

## SOCIOECONOMIC ENVIRONMENT

The social and economic situation in Miami-Dade County is affected by a combination of many factors, including the presence of units of the national park system. Some of the \$15.5 billion in federal spending in the county is generated by Biscayne National Park in the form of employee wages, purchase of supplies, and construction contracts. The livelihoods of service-related businesses in the region rely on the inflow of tourist dollars, especially restaurants and motels.

The no-action alternative would not result in any change to current contributions that park operations and visitation have on the regional economy. Visitors would continue to visit the park in the same manner and experience the same social conditions. This alternative would not be expected to alter the number of visitors or length of stay in the region. Park operations or development would not change appreciably, so the no-action alternative would have no new effects on the socioeconomic environment. The existing contributions to the local and regional economies would continue to be long term and beneficial.

The total direct economic value of public recreation areas includes two sets of values: (1) the user benefit that people receive from their visit, and (2) the values of land near the recreation area. Economic studies have shown that the value of land can increase with the number of outdoor recreation opportunities and the proximity to outdoor recreation space (Clawson and Knetsch 1966). Therefore, the continued presence and operation of Biscayne National Park provides a long-term, beneficial impact on the residents and property values in the vicinity.

As no new actions are proposed, there would be no new or additional impacts as a result of implementing the no-action alternative.

**Cumulative Impacts.** The population of communities and cities around the park is expected to continue to increase per county and city plans. Generally, increasing human population in the local community would be expected to result in increased park visitation; therefore, an increase in visitor use with associated economic activity—a long-term, beneficial impact.

Because there would be no project-related contribution to the impacts of other past, present, and future actions, this alternative would not have any new contribution to cumulative effects.

**Conclusion.** Existing contributions to the local and regional economies would continue to be long term and beneficial. Implementing the no-action alternative would have no new impact on the regional economy. There would be no project-related cumulative effects.

## **UNAVOIDABLE ADVERSE IMPACTS**

Existing moderate or major adverse impacts to fisheries, federally listed sea turtles, smalltooth sawfish, and stony corals, submerged aquatic communities, and natural soundscapes would be expected to continue. These impacts are primarily caused by the relatively unrestricted use of motorized boats as well as fishing and marine debris that continue to impact most park waters and submerged habitats. These impacts cannot be fully mitigated by perpetuating existing park operations and thus are unavoidable under the no-action alternative.

## **IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES**

There would be no change in irreversible or irretrievable commitments of resources as a result of implementing the no-action alternative because there would be no new development occurring in previously undeveloped areas.

## **NATURAL OR DEPLETABLE RESOURCES AND ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL**

No change in resource consumption, energy requirements, or conservation potential is expected as a result of implementing the no-action alternative.

## IMPACTS OF IMPLEMENTING ALTERNATIVE 6

### NATURAL RESOURCES

#### Fisheries

In the waters of the multiuse/water zone impacts described in the no-action alternative (alternative 1) would probably persist. These impacts include impacts on fisheries and fish habitat caused by boating and fishing in the park. These impacts would continue to be long term, minor to moderate, and adverse.

Proposed management actions under alternative 6 include designating both the West, Middle, and East Featherbed banks and Caesar Creek bank as noncombustion engine use zones. This zone would limit the speed and type of boats entering these waters, thus reducing boat traffic overall as well as reducing the impacts associated with boat traffic such as scarring and localized turbidity. This would be a long-term beneficial impact.

This alternative would provide a greater benefit to fisheries habitat in the seagrass than alternative 1 because a larger area of seagrass beds in the park would be included in protective zoning designation.

The west coast of Elliott Key from the southwest tip of Sands Key south to Elliott Key Harbor would be designated a slow speed zone. The number of boats entering this area would be reduced because not all boats would be able to travel at slower speeds in the shallow water. The slow speed zone would reduce the potential for scarring in the seagrass beds in this area as well as reduce the potential for turbidity in the water column, thus minimizing adverse impacts on the productivity of this habitat and water quality in the area. The slow speed zone would have a beneficial impact on the quality of fish habitat in this area.

A special recreation zone where spearfishing and commercial fishing (with the exception of the ballyhoo lampara net fishery) are prohibited, recreational fishing would be limited by the number of special fishing permits issued, and additional limitations would be in effect to preserve natural resources and reduce human-caused intrusions. The special recreation zone would include 14,585 acres, which is substantially larger than the marine reserve zone proposed in alternative 4, but less prohibitive to anglers by still allowing recreational fishing under a special license. The anticipated reduction in fishing pressure in this zone, where targeted fish species could grow larger and therefore increase in reproductive output, is expected to result in a long-term, beneficial impact on park fishery resources.

The special recreation zone would be implemented using an adaptive management strategy whereby resource conditions and fishing activities are monitored and management actions are reconsidered and adjusted on pre-defined intervals. These evaluation intervals at years 3, 5, and 8, would consider the need to potentially reduce the number of fishing permits to be issued for following years and the need to refine monitoring protocols to improve data quality for future evaluations. Also, the evaluation would consider adjustments to other management actions such as the location and number of mooring buoys and zone boundary markers, marine debris removal, public outreach efforts, and law enforcement efforts. Implementing these adaptive management actions, particularly a reduction in fishing permits issued and removal of marine debris, would be expected to improve fisheries and fish habitat in general. However, the addition of or relocation of mooring buoys and boundary markers would result in short-term, minor adverse impacts in specific areas associated with underwater installation

and associated impacts to submerged substrates, though every effort would be installed in locations away from corals, seagrass beds, and submerged cultural resources. Increased public outreach and/or law enforcement efforts would probably reduce the potential for illegal harvest of fish and could potentially improve data accuracy and collection through greater oversight. Also, any changes in the monitoring protocol that increases the number or frequency of extractive samples for destructive analysis could have short-term, minor adverse impacts on fish in general or fish habitat. Likewise, monitoring protocols that require installed markers or in situ equipment could have short-term localized, minor adverse impacts to the area around those sites. Additional analysis and agency consultation, as appropriate, would be conducted when site-specific location information has been adequately identified.

Following the 10-year adaptive management period for the special recreation zone, the National Park Service would consider monitoring data and consult with the Florida Fish and Wildlife Conservation Commission, NOAA Fisheries, and an expert panel. At that point, the National Park Service would decide whether to continue adaptive management strategies for a special recreation zone or implement a marine reserve zone. The continuation of the special recreation zone would be predicated on the monitoring data demonstrating a sufficiently improved resource condition and the expectation that the trend would continue. Where the decision is made to continue adaptive management and implementation of the special recreation zone, the impacts described above would be expected to continue. Where monitoring trends and indicator data show that management objectives are not being met, the marine reserve zone would be established to eliminate all fishing (except lionfish removal). If the decision is made to convert to a marine reserve zone where fishing is not allowed, it would eliminate commercial and recreational fishing from its area of coral reef habitat. It is

anticipated that commercial fishing would be phased out eventually in this area as provided for in the draft Fishery Management Plan, but implementation of a marine reserve zone would prohibit all commercial fishing in this zone, including the ballyhoo lampara net fishery, after passage of a park special regulation. This locally reduced fishing pressure, where targeted fish species could grow larger and therefore increase in reproductive output, would result in a long-term very beneficial impact on park fishery resources. Even though fishing pressure may increase outside this zone, the expected increase in size and abundance of fish within the marine reserve zone is expected to have a “spillover” effect outside the zone, as documented in other marine reserve zones worldwide.

All the commercial fishing activities that would occur now in the special recreation zone are part of the activities analyzed in the Fishery Management Plan, including a phase out of all commercial fishing overtime. Within the special recreation zone, almost all commercial fishing would be terminated immediately by special regulation with the exception of the ballyhoo lampara net fishery. That one fishery would continue during the adaptive management period but may still be terminated after 10 years if the decision is made to convert to a marine reserve zone. Termination of commercial fishing, whether immediately, at 10 years, or over time, would be a very beneficial impact to park fisheries and fish habitat and the benefit would be greater the sooner the termination occurs.

**Cumulative Impacts.** In 2002, the National Park Service and the Florida Fish and Wildlife Conservation Commission initiated a Fishery Management Plan and Environmental Impact Statement. Once completed, the Fishery Management Plan would involve changes in current management strategies for both recreational and commercial fishing activities throughout the multiuse zone. These changes could include establishment of a permit system for both recreational

boating and commercial fishers, limits on the type of spearfishing equipment that can be used in the park, a moderate decrease in fishery harvests, and elimination of the lobster sport season. With implementation of the Fishery Management Plan, the park anticipates the current condition of fisheries stocks would improve and the impact of fishing on habitat within the park would be reduced. The long-term impacts of the Fishery Management Plan on fisheries in the park would be beneficial. Because proposed management actions under this alternative are more protective of fish habitat than under alternative 1, there would be more benefits on fisheries realized from combining actions under this alternative with the implementation of the Fishery Management Plan than implementing the Fishery Management Plan alone (as in alternative 1).

The human population surrounding the park is expected to continue to increase per county and city plans. This could lead to additional fishing pressure on fish populations in the park—a potential long-term adverse impact that would be partially mitigated by actions in the Fishery Management Plan.

The United States Coral Reef Task Force, created in 1998, was established to lead U.S. efforts to protect, restore, and “sustainably” use coral reef ecosystems. These efforts include but are not limited to reducing and mitigating coral reef degradation from pollution, overfishing, and other causes. The task force has identified fundamental themes to guide immediate and sustained national action. These themes include quickly reducing the adverse impacts of human activities on coral reefs and associated ecosystems. This would be a long-term benefit to the ecosystem.

This alternative would contribute a beneficial impact to the beneficial impacts of other past, present, and future actions resulting in beneficial cumulative effects.

**Conclusion.** Adverse impacts now occurring to fisheries and fish habitat in the park would

persist in most of the park, but would be reduced in the special recreation zone under alternative 6, resulting in a long-term, minor impact to fish and fish habitat as well as beneficial impacts in some locations. Cumulative effects would be beneficial. This alternative’s contribution to these impacts would be minor.

## Threatened and Endangered Species

**Manatee.** Manatees are more likely to be found in the warm waters closest to shore, so the 1,000-foot-wide slow speed zone adjacent to the entire length of the mainland shoreline would provide protection for manatees in this area. The slow speed zone would provide boat operators a greater opportunity to avoid collisions with manatees by increasing their response time. The expanded slow speed zone under this alternative would also result in fewer boat groundings in seagrass beds, an important habitat/food source for manatees.

The modifications to the manatee protection area and zoning would have a long-term beneficial impact on manatees in the park.

*Section 7 Determination of Effect—* Measurable beneficial outcomes on individual manatees and the manatee population because of the protective zones are likely. The determination of effect is “may affect, not likely to adversely affect” for manatee under alternative 6.

**Sea Turtles.** In the waters of the multiuse / water zone, impacts described in the no-action alternative (alternative 1) would probably persist. These impacts include potential for collisions with boats, strangulation and entanglement with marine debris (including lobster and crab traps), hook and line fishing, and vessel groundings on sea turtle foraging habitat (coral and seagrass), which may adversely affect sea turtles, particularly green, hawksbill, and loggerhead species. Leatherback and Kemp’s Ridleys would be less likely to be affected because they are rarely in the park. These

impacts would continue to be long-term, minor to moderate, and adverse.

Collisions between boats and sea turtles would be expected to be minimized in the slow speed and the noncombustion engine use zones.

The implementation of a special recreation zone would result in less impact from fishing activities and from derelict fishing gear (monofilament, traps) in this area. This would result in the reduction of threat of entanglement for sea turtles within this zone. This would be a beneficial, long-term impact on sea turtles in and near that zone.

*Section 7 Determination of Effect* — Impacts to sea turtles from fishing and boating would persist in most of the park, resulting in a determination of “may affect, likely to adversely effect” for green, hawksbill, and loggerhead species that frequent the park waters.

**American Crocodile.** Most visitor services and infrastructure in habitat suitable for crocodile would remain near current levels with the designated paths, a possible viewing platform, boardwalk, and jetty in the vicinity of Convoy Point. This area is north of the designated critical habitat area for the crocodiles and so would not be expected to impact their activities in the park. The mangrove south of the visitor center would continue to be managed primarily to protect the natural habitat characteristics of the area. No additional development within the designated critical habitat would be proposed under this alternative. The impacts of activities on crocodile habitat and activities along the mainland shore would be long-term, negligible and adverse.

Under this preferred alternative, the development footprint on Porgy Key would remain as it is. The noncombustion engine use zone would include the eastern shoreline of Old Rhodes Key and the waters around Totten Key so relatively few visitors would be expected in this area because of the boating

limitations. Although in designated critical habitat, there are relatively few crocodiles in this area of the park.

If, because of human population pressure along the mainland, crocodiles begin to venture across the bay, there could be increased interaction between visitors and crocodiles around Old Rhodes and Totten keys. The developed area at Adams Key provides an excellent opportunity to orient visitors to this area of the park, including appropriate actions when traveling in crocodile habitat. With mitigation, the long-term adverse impact of this alternative on the crocodile population in this area of the park would be negligible.

As a whole, the park protects habitat for the crocodile and serves to further its conservation through education and law enforcement, resulting in long-term beneficial impacts to this species.

*Section 7 Determination of Effect* — The long-term impacts on the American crocodile under alternative 6 would be both beneficial due to habitat protection and education as well as negligible and adverse in localized areas. Mitigation measures would be put in place in the event of more human-crocodile interactions because of population pressures near the park. Overall, this would equate to a “may affect, not likely to adversely affect” determination for the American crocodile.

**Smalltooth Sawfish.** In the waters of the multiuse/water zone, impacts described in the no-action alternative (alternative 1) would probably persist. These impacts include potential for bycatch, which could occur with any continuation of hook-and-line fishing efforts as well as potential for entanglement in marine debris such as fishing line and nets. These impacts would continue to be adverse, minor to moderate, and long term, although realizing such effects is unlikely given the rarity of smalltooth sawfish in the park.

While the establishment of the special recreation zone in deeper reef habitat, is not likely to have a substantial effect on this species that tends to prefer shallow water, it is possible that the implementation of the fishing restrictions and limits on number of fishing licenses issued could have a beneficial impact on smalltooth sawfish by reducing bycatch since reports of this species in reef and deeper water habitats, although uncommon, do exist. No other actions that would occur under this alternative would be expected to affect sawfish in the park.

The special recreation zone would be implemented using an adaptive management strategy whereby resource conditions and fishing activities are monitored and management actions are reconsidered and adjusted on pre-defined intervals. These evaluation intervals at years 3, 5, and 8, would consider the need to potentially reduce the number of fishing permits to be issued for following years and the need to refine monitoring protocols to improve data quality for future evaluations. Also, the evaluation would consider adjustments to other management actions such as the location and number of mooring buoys and zone boundary markers, marine debris removal, public outreach efforts, and law enforcement efforts. Implementing these adaptive management actions, particularly a reduction in fishing permits issued and removal of marine debris, would be expected to benefit smalltooth sawfish by further reducing potential for bycatch and entanglement, respectively. Increased public outreach and/or law enforcement efforts would probably reduce the potential for illegal harvest of fish, including smalltooth sawfish, and could potentially improve data accuracy and collection through greater oversight. Also, any changes in the monitoring protocol that increases the number or frequency of extractive samples for destructive analysis could have short-term, minor adverse impacts on fish in general or fish habitat although smalltooth sawfish would not be targeted for such sampling. Additional analysis and agency

consultation, as appropriate, would be conducted when site-specific location information has been adequately identified.

Following the 10-year adaptive management period for the special recreation zone, the National Park Service would consider monitoring data and consult with the Florida Fish and Wildlife Conservation Commission, NOAA Fisheries, and an expert panel. At that point, the National Park Service would decide whether to continue adaptive management strategies for a special recreation zone or implement a marine reserve zone. The continuation of the special recreation zone would be predicated on the monitoring data demonstrating a sufficiently improved resource condition and the expectation that the trend would continue. Where the decision is made to continue adaptive management and implementation of the special recreation zone, the impacts described above would be expected to continue. Where monitoring trends and indicator data show that management objectives are not being met, the marine reserve zone would be established to eliminate all fishing (except lionfish removal). If the decision is made to convert to a marine reserve zone where fishing is not allowed, it would eliminate commercial and recreational fishing from its area of coral reef habitat. It is anticipated that commercial fishing would be phased out eventually in this area as provided for in the draft Fishery Management Plan, but implementation of a marine reserve zone would prohibit all commercial fishing in this zone, including the ballyhoo lampara net fishery, after passage of a park special regulation. This locally reduced fishing pressure, where targeted fish species could grow larger and therefore increase in reproductive output, would result in a long-term very beneficial impact on park fishery resources and effectively eliminate impacts to smalltooth sawfish from bycatch or entanglement in marine debris.

*Section 7 Determination of Effect* — Existing impacts from fishing would persist in much of the park and may be locally reduced by

implementation of the special recreation zone. The section 7 effect determination would be “may affect, likely to adversely affect” for smalltooth sawfish under alternative 6.

**Schaus Swallowtail Butterfly and Miami Blue Butterfly.** New development on Adams Key where butterfly habitat exists would be limited in scale to include only the staging area for canoes and kayaks and possibly minimal facilities for the environmental education center. The level of development on the island would occur near the shore where the habitat is less suitable for butterflies and would be unlikely to impact the butterfly population or habitat on the island. The impacts would be long term, negligible, and adverse.

On Elliott Key, the existing loop trail would be made universally accessible but this change would probably not alter its footprint or measurably increase visitor use. As a result, the potential disturbance of the butterfly population or habitat would be slight. The impacts would be long term, negligible, and adverse.

Old Rhodes and the other southern keys would be zoned for nature observation, and Swan Key and Soldier Key would be zoned as a sensitive resource area. Impacts on the hardwood hammocks on these keys would not change under this alternative. There would be no impacts on butterfly populations and habitat caused by this alternative.

Continued protection of butterfly habitat on these keys would generally be a beneficial impact to these butterfly species.

*Section 7 Determination of Effect* — The impacts on the Schaus swallowtail butterfly and the Miami blue butterfly would be both beneficial and long term, negligible and adverse in some locations, but mitigation measures to protect the species’ habitat and breeding season are likely to be successful. Overall, the determination of effect for alternative 6 is “may affect, not likely to

adversely affect” the Schaus swallowtail butterfly and the Miami blue butterfly.

**Stony Corals.** In the waters of the multiuse/water zone impacts described in the no-action alternative (alternative 1) would probably persist. These impacts include the potential for ecological and physical stress to corals from overfishing, fishing debris, anchoring, and/or vessel groundings associated with existing boating and fishing activities. Such impacts are moderate, long-term adverse impacts to stony corals and their habitat.

The Legare Anchorage would be reduced in size from its current configuration, and in-water activities would continue to be restricted for in-water activities that would provide protection to corals in this area.

The creation of a 14,585-acre special recreation zone would limit fishing and prohibit anchoring on many of the southern reefs in the park, which include areas known to have stony coral populations. Both of these actions are expected to benefit coral populations. Because visitors who would otherwise use the area in the special recreation zone to fish may choose to fish elsewhere with fewer limitations—boat traffic could be expected to decrease. Although unlikely, these decreases could be offset if people use the special recreation zone for nonextractive activities such as snorkeling and diving. Because the special recreation zone is expected to limit fishing through regulations and improve ecological balance, reduce fishing debris, reduce vessel groundings, and eliminate damage from anchoring in coral habitat, actions under alternative 6 are expected to have a beneficial effect.

The special recreation zone would be implemented using an adaptive management strategy whereby resource conditions and fishing activities are monitored and management actions are reconsidered and adjusted on pre-defined intervals. These evaluation intervals at years 3, 5, and 8, would

consider the need to potentially reduce the number of fishing permits to be issued for following years and the need to refine monitoring protocols to improve data quality for future evaluations. Also, the evaluation would consider adjustments to other management actions such as the location and number of mooring buoys and zone boundary markers, marine debris removal, public outreach efforts, and law enforcement efforts. Implementing these adaptive management actions, particularly a reduction in fishing permits issued and removal of marine debris, would be expected to have beneficial impacts on submerged aquatic communities including stony coral habitat. However, the addition of or relocation of mooring buoys and boundary markers would result in short-term, minor adverse impacts in specific areas associated with underwater installation and associated impacts to submerged substrates, although every effort would be installed in locations away from corals, seagrass beds, and submerged cultural resources. Increased public outreach and/or law enforcement efforts would probably reduce the potential for illegal anchoring that could impact stony corals. Also, any changes in the monitoring protocol that increases the number or frequency of extractive samples for destructive analysis could have short-term, minor adverse impacts on submerged habitats in general although endangered corals would not be targeted for such sampling. Likewise, monitoring protocols that require installed markers or in situ equipment could have localized adverse impacts to the area around those sites and in considering placement of such markers and equipment every effort would be made to avoid impacts to endangered corals and thus the impact would be negligible or nonexistent. Additional analysis and agency consultation, as appropriate, would be conducted when site-specific location information has been adequately identified.

Following the 10-year adaptive management period for the special recreation zone, the National Park Service would consider monitoring data and consult with the Florida

Fish and Wildlife Conservation Commission, NOAA Fisheries, and an expert panel. At that point, the National Park Service would decide whether to continue adaptive management strategies for a special recreation zone or implement a marine reserve zone. The continuation of the special recreation zone would be predicated on the monitoring data demonstrating a sufficiently improved resource condition and the expectation that the trend would continue. Where the decision is made to continue adaptive management and implementation of the special recreation zone, the impacts described above would be expected to continue. Where monitoring trends and indicator data show that management objectives are not being met, the marine reserve zone would be established to eliminate all fishing (except lionfish removal). If the decision is made to convert to a marine reserve zone where fishing is not allowed, it would eliminate commercial and recreational fishing from its area of coral reef habitat. It is anticipated that commercial fishing would be phased out eventually in this area as provided for in the draft Fishery Management Plan, but implementation of a marine reserve zone would prohibit all commercial fishing in this zone, including the ballyhoo lampara net fishery, after passage of a park special regulation. This locally reduced fishing pressure, where targeted fish species could grow larger and therefore increase in reproductive output, would result in a long-term very beneficial impact on the stony coral habitat.

*Section 7 Determination of Effect*—The special recreation zone in alternative 6 is expected to have a localized long-term, beneficial effect on corals by protecting them from activities that could lead to physical and ecological damage, but existing boating, fishing, and marine debris impacts in most of the park would persist. Thus, this alternative would result in a determination of “may affect, likely to adversely affect” on stony corals.

**Cumulative Impacts.** Habitat disturbance or loss is the most common reason for a species

to be listed. The establishment of Biscayne National Park has provided a protective refuge for listed species resulting in long-term beneficial impacts.

The Florida Manatee Recovery Plan and the site-specific county plans are designed in part to reduce boat-related manatee injury and mortality as well as protect habitat areas. These measures are consistent with protection measures incorporated into the proposed actions in this General Management Plan. Implementation of this recovery plan would continue to have a beneficial impact on manatee protection efforts in the park. The efforts to protect the manatee would be strengthened under this alternative with the establishment of a slow speed zone for 1,000 feet of the mainland shoreline. The impacts of this action would continue to have a beneficial impact on manatee protection efforts.

Reintroduction efforts of Miami blue butterflies have occurred on Elliott Key in an attempt to restore this species. If successful, this would be a long-term beneficial impact. The monitoring and recovery plan would continue to be implemented.

Alternative 6 would result in negligible adverse and beneficial impacts on federally listed species. When combined with the impacts of other past, present, and future actions the overall cumulative effect would be beneficial. This alternative would contribute a slight amount to the overall cumulative effects.

**Conclusion.** Existing impacts to listed species and their habitat would persist in much of the park. Some impacts would be reduced through changes in zoning which would be expected to have localized beneficial impacts. Under this alternative, there would be proposed small-scale development that could have long-term negligible adverse impacts on habitats used by American crocodiles, sea turtles, butterflies. The park would continue to coordinate with the U.S. Fish and Wildlife

Service and NOAA Fisheries and work to avoid and mitigate any adverse impacts on these species. Thus, the section 7 determination would be that this alternative “may affect, for those for those species. However, existing impacts to sea turtles, stony corals, and smalltooth sawfish would continue to be long term, moderate and adverse and would result in a “may affect, likely to adversely affect” determination although there are no new impacts to these species associated with any proposed actions. Cumulative effects would be negligible to beneficial. This alternative would contribute a small amount to the overall cumulative effects.

### Special Status Species, Including State Listed Bird Species

Birds that eat small fish near the water’s surface would continue to be impacted in the short term by the continuation of the ballyhoo lampara net commercial fishery that would reduce potential food sources for those bird species. All the commercial fishing activities that would occur now in the special recreation zone are part of the activities analyzed in the Fishery Management Plan, including a phase out of all commercial fishing over time. Within the special recreation zone, almost all commercial fishing would be terminated immediately by special regulation with the exception of the ballyhoo lampara net fishery. That one fishery would continue during the adaptive management period but may still be terminated after 10 years if the decision is made to convert to a marine reserve zone. Termination of commercial fishing, whether immediately, at 10 years, or over time, would be a very beneficial impact to park fisheries and the bird species that use them for food. The benefit would be greater the sooner the termination occurs.

West Arsenicker Key, used by bald eagles, would be zoned a sensitive resource zone and would remain closed to visitors. Thus, there would be no effect on the West Arsenicker

Key bald eagle population or nesting activity under this alternative. Furthermore, the creation of a slow speed zone extending 300 feet from the sensitive resource zones around West Arsenicker and Arsenicker keys would further reduce the likelihood of disturbances to bald eagles or any other state listed birds using these islands.

Under this alternative, Sands Key, which is closed to visitors, and the islands surrounding Jones Lagoon would be zoned as nature observation zones. Most of the waters of Jones Lagoon would be designated a noncombustion engine zone. Visitation would be allowed on Sands Key and the islands of Jones Lagoon, so there would be some human-caused intrusions to birds nesting, roosting, loafing, and/or foraging there; however, resource protection would be emphasized. Actions under alternative 6 would reduce, although not eliminate, the potential for disturbance to birds using the Jones Lagoon area because there is still the possibility that small vessels (e.g., kayaks and canoes) and people coming ashore could closely approach birds.

The establishment of a visitor services zone on Porgy Key could encourage visitation to the Jones Lagoon area, although the difficulty in accessing this area and the specialized equipment and knowledge needed to safely traverse Jones Lagoon would keep the likelihood of this fairly low. Given that visitation to both Sands Key and Jones Lagoon would be expected to remain minimal, adverse impacts on the birds and their habitat would be negligible. If visitation increases such that any state listed birds could be disturbed, management actions could include limiting access to areas where birds are known to nest during nesting season and/or establishing set-back distances following recommendations in scientific literature. Under this alternative, the long-term adverse impact on the state listed bird populations in the park and potential nesting activity on Sands Key and the Jones Lagoon area would be negligible.

Currently, visitation to the ocean side of Elliott Key is low. The level of visitation on Elliott Key is likely to increase if facilities are developed—the trail from the harbor to Sweeting Homestead was hardened for universal accessibility, and three primitive campsites were developed, including one near Petrel Point. Birds using coastal areas adjacent to areas developed for visitor recreation (such as Elliott Key) could be exposed to potential disturbances of the noise of boat engines and close approaches by people. This exposure could result in an alteration of natural behaviors, including the potential for nesting birds to inadvertently crush their eggs while fleeing or to temporarily or permanently abandon their nests, thereby exposing the eggs to predators and extreme temperatures. If visitation to the ocean side increases such that the state listed birds could be discouraged from nesting or are disturbed during nesting, the park could enforce no-access set-back distances and/or close areas near Petrel Point during critical nesting season to reduce impacts on the birds.

The proposed slow speed zone on the bay side of Elliott Key would be expected to reduce the likelihood of disruptions to birds using the coastal areas immediately adjacent to this zone. As a result, beneficial effects on state listed birds in the immediate area would be expected.

Under this alternative, birds using coastal habitats along the park's mainland shoreline would receive protection from potential boat-related disturbances from a slow speed zone covering the area 1,000 feet from the mainland shoreline. By essentially reducing the speed of boats, the waters immediately adjacent to the mainland shoreline would be expected to reduce potential boat-related disturbances to birds that are roosting, nesting, foraging, and/or loafing along the mainland shoreline. Some birds may still experience disturbance from noise associated with motorized watercraft in this zone, even though they are operating at slower speeds.

Overall, under this alternative, any necessary mitigation, would probably result in long-term, minor, adverse impacts on state listed bird populations in the keys.

**Cumulative Impacts.** Large-scale habitat loss is an ongoing impact throughout the region, which resulted in the classification of many bird species as state listed. The establishment of Biscayne National Park has provided increased habitat protection for bald eagles and other state listed birds in the park—a long-term beneficial impact.

Alternative 6 would result in negligible impacts on listed birds due to increased visitor use and construction of minor visitor facilities. When combined with the impacts of other past, present, and future actions, the overall cumulative effect would be minor and adverse. This alternative would have a small contribution to the overall cumulative effects.

**Conclusion.** Implementing alternative 6 would result in long-term, negligible to adverse impacts on state listed birds and would not be likely to lead to federal listing. Cumulative effects would be minor and adverse.

## Terrestrial Vegetation

Under this alternative, the impacts on terrestrial vegetation on the keys, particularly the hardwood hammocks, would occur due to localized construction of minor visitor facilities and continued visitor use. Visitation to the keys would still be expected to increase over current levels because visitor services would be concentrated in these areas. The adverse impacts from increased visitation could include trampling and loss of vegetation from social trails. In general, these impacts could be mitigated by visitor education efforts and trail design to keep visitors on the existing trails. With mitigation measures in place, the impacts would be long term, negligible to minor and adverse. Under this alternative, the existing “loop” area of the hiking trail (the two east-west segments from

Elliott Key Harbor to the north and south entrances of the boardwalk and the north-south segment near the harbor) would be hardened to provide universal access. With mitigation, the localized impacts on vegetation would be long term, negligible and adverse.

Long-term impacts from the proposed Convoy Point boardwalk would include the removal of mangroves and other wetland plants, trimming mangroves, and would have shading impacts on mangroves and other vegetation. Localized impacts would be long term, minor, and adverse.

**Cumulative Impacts.** A nonnative plant management plan has been developed for Biscayne National Park and eight other national parks in the region. Nonnative invasive plant species can change the structure and function of native plant communities. These changes can have an adverse impact on habitat for native species that rely on the native plant communities. Vegetation disturbances caused by social trails and trampling of native vegetation encourages growth of invasive species. Removal of nonnative species would provide better conditions to reestablish native vegetation in disturbed areas, which could help mitigate the adverse impacts associated with social trails in the park. Implementation of this plant management plan would have a beneficial impact on terrestrial vegetation in the park and the habitat it provides.

When the negligible to minor adverse impacts of alternative 6 are combined with the beneficial impacts of other past, present, and future actions, the resulting cumulative effects would continue to be beneficial. This alternative would slightly reduce these beneficial cumulative impacts.

**Conclusion.** Implementing this alternative would result in long-term, negligible to minor adverse impacts on terrestrial vegetation in localized areas associated with minor construction projects and continued or increasing visitor use. Cumulative effects

would be beneficial. This alternative would slightly reduce these beneficial cumulative impacts.

### **Submerged Aquatic Communities**

In the waters of the multiuse zone impacts described in the no-action alternative (alternative 1) would probably persist. These impacts include impacts on submerged aquatic communities caused by boating and fishing and associated marine debris. These impacts would continue to be long term, minor to moderate, and adverse.

Under this alternative, there would be greater controls on speed and vessel types in areas where there are submerged aquatic communities, particularly seagrass beds. West, Middle, and East Featherbed banks would be zoned for noncombustion engine use (poling and trolling only). Boats in this zone would be traveling relatively slowly, and fewer boats would be operating with high-speed propellers so the potential for scarring of the seagrass beds would be substantially reduced. Within the noncombustion engine zone, the potential for turbidity in the water column caused by motorboats would also be reduced. Thus, the health of the seagrass beds would be higher under this alternative—a long-term beneficial impact.

The bay side of Elliott Key from Sands Cut to Elliott Key Harbor and a strip along the mainland shore from 1,000 feet out would be zoned as a slow speed area to protect natural marine resources such as seagrass. Because the boats in these areas would be traveling at a reduced rate of speed, there would be reduced potential for seagrass scarring. Overall, the health of the seagrass beds would be expected to increase under this alternative because of the increased areas zoned for slow speeds and noncombustion engines. The increase in the health of seagrass beds would be a long-term beneficial impact. The waters within Jones Lagoon and around Totten Key would be zoned for noncombustion engine use. The potential for scarring of

the seagrass and hardbottom communities would be reduced in this area. This would be a long-term beneficial impact on the productivity of the submerged aquatic communities in these areas.

Under this alternative, a special recreation zone would be designated from Hawk Channel east to the park boundary from 2 miles south of Pacific Reef to north of Long Reef. The special recreation zone includes limitations that accommodate some recreational fishing while meeting the goal of providing a healthy coral reef ecosystem for a more enjoyable and diverse visitor experience. Fishing activities would be restricted to protect resources in this zone, but some fishing would still occur, which could result in marine debris and conflicts with other users. It would be expected that the adverse impacts on the reef from fishing-related activities would be reduced under this alternative compared to alternative 1, but not eliminated. In particular, the prohibition on anchoring would reduce the potential for scarring, but there could still be adverse impacts from fishing and other recreational activities such as diving. There would still be potential impacts to submerged aquatic communities in this zone due to vessel groundings. Implementation of the special recreation zone would generally reduce the impacts of recreational activities in this area of the reef, resulting in a long-term beneficial impact. Moderate, adverse impacts from fishing and anchoring would continue outside the special recreation zone.

The special recreation zone would be implemented using an adaptive management strategy whereby resource conditions and fishing activities are monitored and management actions are reconsidered and adjusted on pre-defined intervals. These evaluation intervals at years 3, 5, and 8, would consider the need to potentially reduce the number of fishing permits to be issued for following years and the need to refine monitoring protocols to improve data quality for future evaluations. Also, the evaluation would consider adjustments to other

management actions such as the location and number of mooring buoys and zone boundary markers, marine debris removal, public outreach efforts, and law enforcement efforts. Implementing these adaptive management actions, particularly a reduction in fishing permits issued and removal of marine debris, would be expected to have beneficial impacts on submerged aquatic communities including corals and seagrass beds. However, the addition of or relocation of mooring buoys and boundary markers would result in short-term, minor adverse impacts in specific areas associated with underwater installation and associated impacts to submerged substrates, although every effort would be installed in locations away from corals, seagrass beds, and submerged cultural resources. Increased public outreach and/or law enforcement efforts would probably reduce the potential for illegal anchoring that could impact submerged aquatic communities and thus is a beneficial impact. Also, any changes in the monitoring protocol that increases the number or frequency of extractive samples for destructive analysis could have short-term, minor adverse impacts on submerged habitats in general although sensitive submerged aquatic communities would not be targeted for such sampling. Likewise, monitoring protocols that require installed markers or in situ equipment could have localized negligible adverse impacts to the area around those sites and in considering placement of such markers and equipment every effort would be made to avoid impacts to corals and seagrass beds and thus the impact would be negligible or nonexistent. Additional analysis and agency consultation, as appropriate, would be conducted when site-specific location information has been adequately identified.

Following the 10-year adaptive management period for the special recreation zone, the National Park Service would consider monitoring data and consult with the Florida Fish and Wildlife Conservation Commission, NOAA Fisheries, and an expert panel. At that point, the National Park Service would

decide whether to continue adaptive management strategies for a special recreation zone or implement a marine reserve zone. The continuation of the special recreation zone would be predicated on the monitoring data demonstrating a sufficiently improved resource condition and the expectation that the trend would continue. Where the decision is made to continue adaptive management and implementation of the special recreation zone, the impacts described above would be expected to continue. Where monitoring trends and indicator data show that management objectives are not being met, the marine reserve zone would be established to eliminate all fishing (except lionfish removal). If the decision is made to convert to a marine reserve zone where fishing is not allowed, it would eliminate commercial and recreational fishing from its area of coral reef habitat. It is anticipated that commercial fishing would be phased out eventually in this area as provided for in the draft Fishery Management Plan, but implementation of a marine reserve zone would prohibit all commercial fishing in this zone, including the ballyhoo lampara net fishery, after passage of a park special regulation. This locally reduced fishing pressure, where targeted fish species could grow larger and therefore increase in reproductive output, would result in a long-term very beneficial impact on the submerged aquatic habitats.

**Cumulative Impacts.** Boat groundings and anchoring have damaged seagrass beds, coral reefs, and hard bottom communities, and degraded habitat for fish, shrimp, crabs, lobsters, and other invertebrates that inhabit these areas.

Coral reefs are complex ecosystems and sensitive to disturbances. Fishing, snorkeling, and diving can also have adverse impacts on coral reef systems. The damage caused by these activities includes scarring from boat propellers and inadvertent placement of anchors, as well as breakage caused by snorkeling and diving. Fishing gear and debris can break, smother, and entangle

benthic resources on coral reefs and in seagrass meadows. Fishing also results in removal of predators and the removal of herbivorous fish that keep algae minimized (contributes to reef health). Damage to the coral reefs also adversely impacts other species that rely on the reefs for food and shelter. Damage to the seagrass beds, hardbottom communities, and coral reefs would continue to be a long term, minor to moderate, and adverse impact.

Alternative 6 would reduce some of the existing impacts associated with recreational and commercial boating and fishing use, which result in long-term beneficial impacts. When combined with the adverse impacts of other past, present, and future actions, the cumulative impacts would be minor to moderate and adverse. The contribution to this alternative would be small.

**Conclusion.** Impacts associated with boating and fishing would continue to have long-term, minor to moderate, adverse impacts in most of the park. In some areas where protective zoning would be in place around particularly sensitive resources, alternative 6 would result in long-term beneficial impacts on submerged aquatic communities. Cumulative effects would be minor to moderate and adverse, although the actions proposed in alternative 6 would modestly reduce these adverse cumulative impacts of other past, present, and reasonably foreseeable actions.

## Wetlands

Wetlands in the park would continue to serve as an important habitat area for a wide variety of terrestrial and aquatic species. Placement of the nature observation zone and the slow speed zone in the open water along the mainland shoreline along portions of the mainland would give greater protection to mangrove shorelines. This would have long-term, beneficial impacts.

Under this alternative, construction of a boardwalk or viewing platform would be considered to interpret the mangrove forests and the mangrove shoreline north of the visitor center at Convoy Point; also, the visitor center boardwalk and jetty could be upgraded. With these improvements, visitors would have an opportunity to experience the mangroves along the shore north of the visitor center at Convoy Point. Construction of the boardwalk and viewing platform would cause both short-term and long-term adverse impacts on the mangroves along the mainland shoreline of the park. During construction, there would be short-term adverse impacts on water quality from increased turbidity. Increased turbidity in the water column could degrade the habitat for wetland plant species. These localized impacts would be short-term, minor to moderate, and adverse.

Long-term impacts from the proposed boardwalk might include removal of some mangroves and other wetland plants, trimming mangroves, and shading mangroves and other aquatic life. Impacts would be long-term, minor, and adverse. These impacts could be mitigated during the design process to ensure that the structures do not substantially shade the mangroves.

No additional access into the mangroves that fringe the keys would be developed under this alternative so there would be no change in the current size, integrity, or continuity of these other wetland areas in the park. Mangroves are extremely difficult to walk through, and while the proposed visitor facility improvements at Porgy, Elliott, and Boca Chita keys might attract more visitors—this is not likely to affect the wetlands.

**Cumulative Impacts.** The Biscayne Bay Coastal Wetlands Project of the Comprehensive Everglades Restoration Plan includes pump stations, spreader swales, stormwater treatment areas, flow ways, levees, culverts, and backfilled canals in southeast Miami-Dade County and covers 13,600 acres from the Deering Estate south to the Turkey Point

Power Plant. The purpose of this project is to rehydrate wetlands and reduce point source discharge into Biscayne Bay. The proposed project would replace lost overland flow and partially compensate for the reduction in groundwater seepage by redistribution through a spreader system, with available surface water entering the area from regional canals. The proposed redistribution of freshwater flow across a broad front is expected to restore or enhance freshwater wetlands, tidal wetlands, and nearshore bay habitat.

Sustained lower-than-seawater salinities are required in tidal wetlands and the nearshore bay to provide nursery habitat for fish and shellfish. This project is expected to create conditions that will be conducive to the reestablishment of oysters and other components of the oyster reef community. Diversion of canal discharges into coastal wetlands is expected not only to reestablish productive nursery habitat along the shoreline, but also to reduce the abrupt freshwater discharges that are physiologically stressful to fish and benthic invertebrates in the bay near canal outlets. The impact of these actions once implemented would be beneficial for wetlands inside and outside the park.

The Biscayne Bay Coastal Wetlands Project could improve the overall health of the wetland areas along the mainland shoreline such that the system as a whole is better able to accommodate the stresses associated with the short- and long-term impacts of the development and human use in the area.

This alternative would contribute minor adverse impacts to the beneficial impacts of other present and future actions resulting in a beneficial cumulative impact. This alternative would slightly reduce these beneficial cumulative effects in localized areas.

**Conclusion.** Localized impacts associated with construction under this alternative would be short term, minor to moderate adverse. The long-term impacts of the new

facilities would be mitigated through design and would be adverse and minor. Cumulative effects would be beneficial. This alternative would slightly reduce these beneficial cumulative effects.

## Soundscapes

In the waters of the multiuse zone impacts described in the no-action alternative (alternative 1) would probably persist. These impacts include short-term, minor to moderate adverse impacts caused by boat noise on the water as well as short-term negligible adverse impacts caused by vehicles and routine maintenance equipment on land. In both cases, these noises can transcend the zone in which they originate and be heard in adjacent zones.

Under alternative 6, there would be areas of the bay zoned for slow speed or noncombustion engine use. Because these limitations would reduce the level and duration of noise from boats, there would be long-term, beneficial impacts on soundscapes on portions of the bay and adjacent land.

There would be a limited amount of new construction in this alternative occurring mostly in the visitor service and park administration zone. This would result in short-term, localized, adverse impacts that would be negligible to minor in intensity. Use of the new or upgraded facilities would result in a long-term negligible adverse impact to natural soundscapes.

Existing natural soundscapes in the interior of the larger keys would continue to be preserved by protective zoning and relatively low visitor use—a continuing beneficial impact.

**Cumulative Impacts.** Increased boating from a generally increasing human population as provided for in county and city plans would be expected to result in increased boat engine noise.

The beneficial and adverse impacts of this alternative, in combination with the adverse impacts of other actions, would result in minor and adverse cumulative impacts on the natural soundscape; however, the contribution of this alternative to these impacts would be a slight reduction of these adverse cumulative impacts.

**Conclusion.** Implementing alternative 6 would continue to have short-term, minor to moderate adverse impacts on land and water due to the noise generated by motorized boats and equipment. During construction of small-scale visitor facilities, there would also be localized impacts that are short term, minor, and adverse. There would be beneficial impacts on soundscapes on many of the keys due to protective zoning. The overall cumulative impacts would be minor and adverse.

## CULTURAL RESOURCES

### Archeological Resources (including submerged maritime)

Implementation of this alternative would have the same impacts on archeological resources as those listed in alternative 1, although the strong emphasis on cultural resource protection could be expected to have some additional beneficial impacts on archeological resources (including submerged maritime) sites. Actions under this alternative, such as exclusion of visitors from West Arsenicker, Arsenicker, and Swan keys, and prohibition of anchoring and fishing limitations in the special recreation zone would generally contribute to beneficial impacts on potential terrestrial archeological sites and both potential and known submerged maritime archeological resources. These added protections would provide far less potential for treasure hunting, looting, amateur collection, and inadvertent visitor impacts.

The special recreation zone would be implemented using an adaptive management

strategy whereby resource conditions and fishing activities are monitored and management actions are reconsidered and adjusted on pre-defined intervals. These evaluation intervals at years 3, 5, and 8, would consider the need to potentially reduce the number of fishing permits to be issued for following years and the need to refine monitoring protocols to improve data quality for future evaluations. Also, the evaluation would consider adjustments to other management actions such as the location and number of mooring buoys and zone boundary markers, marine debris removal, public outreach efforts, and law enforcement efforts. Implementing these adaptive management actions, particularly a reduction in fishing permits issued and the associated reduction in the generation of marine debris as well as the active removal marine debris would be expected to have beneficial impacts on submerged cultural resources. However, the addition of or relocation of mooring buoys and boundary markers would result in short-term, minor adverse impacts in specific areas associated with underwater installation and associated impacts to submerged substrates, though every effort would be installed in locations away from corals, seagrass beds, and known submerged cultural resources. Increased public outreach and/or law enforcement efforts would probably reduce the potential for illegal anchoring that could impact submerged cultural resources.

Following the 10-year adaptive management period for the special recreation zone, the National Park Service would consider monitoring data and consult with the Florida Fish and Wildlife Conservation Commission, National Oceanic and Atmospheric Administration, and an expert panel. At that point, the National Park Service would decide whether to continue adaptive management strategies for a special recreation zone or implement a marine reserve zone. The continuation of the special recreation zone would be predicated on monitoring data demonstrating a sufficiently improved resource condition and the expectation that the trend would continue. Where the decision is made to

continue adaptive management and implementation of the special recreation zone, the impacts described above would be expected to continue. Where monitoring trends and indicator data show that management objectives are not being met, the marine reserve zone would be established to eliminate all fishing (except lionfish removal). If the decision is made to convert to a marine reserve zone where fishing is not allowed, it would eliminate commercial and recreational fishing from its area of coral reef habitat. It is anticipated that commercial fishing would be phased out eventually in this area as provided for in the draft Fishery Management Plan, but implementation of a marine reserve zone would prohibit all commercial fishing in this zone, including the ballyhoo lampara net fishery, after passage of a park special regulation. This prohibition of fishing would virtually eliminate the on-site generation of fishing-related marine debris and its associated impacts on submerged cultural resources, which would be a long-term beneficial impact. The potentially increased diving-related activities associated with a healthy and attractive coral reef system could have negligible to minor adverse impacts on submerged cultural resources due to depreciative visitor behaviors and accidental damage.

**Cumulative Impacts.** Impacts associated with other past, present, and reasonably foreseeable actions would be the same as described under alternative 1. As described above, implementation of alternative 6 would result in negligible to minor adverse effects and beneficial effects. The impacts of alternative 6, in combination with negligible to minor adverse impacts and beneficial impacts of other past, present, and reasonably foreseeable future actions, would result in a negligible to minor adverse cumulative effect. The adverse effects of alternative 6, however, would be a small component of the adverse cumulative impact.

**Conclusion.** Implementation of this alternative would have the same impacts on archeological resources as those listed under

alternative 1, although the strong emphasis on cultural resource protection could be expected to have some additional, long-term beneficial impacts on archeological sites. Actions under this alternative would have the same cumulative effects on archeological resources as those listed under alternative 1. This alternative's contribution to these cumulative effects would be small.

**Section 106 Summary.** The implementation of this alternative could include some minor adverse impacts on archeological resources. If impacts remain minor, there would be no adverse effects under section 106. Any adverse impacts resulting from moderate or major impacts would be mitigated through the use of the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* and a memorandum of agreement with the state historic preservation office and Advisory Council to counteract such adverse effects.

## Historic Structures and Buildings

Implementation of this alternative would generally have the same impacts on historic structures and buildings in Boca Chita Key Historic District and at Fowey Rocks Lighthouse as those listed under alternative 1 because the structures and buildings would be rehabilitated, preserved, and adaptively used in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. However, some minor elements of historic fabric could be lost as a result of remodeling/rehabilitation efforts, and anticipated increasing visitation levels could result in loss of some historic fabric from inadvertent visitor use or vandalism. As with alternative 1, impacts on historic structures and buildings would be localized, long-term to permanent, generally beneficial, and of negligible to moderate intensity.

**Cumulative Impacts.** Impacts associated with other past, present, and reasonably foreseeable actions would be the same as described under alternative 1. As described

above, implementation of alternative 6 would result in negligible to minor adverse effects and beneficial effects. The impacts of alternative 6, in combination with negligible to minor adverse impacts and beneficial impacts of other past, present, and reasonably foreseeable future actions, would result in a long- and short-term beneficial impact. The adverse effects of alternative 6, however, would be a small component of the adverse cumulative impact.

**Conclusion.** Implementation of this alternative would have the same impacts on historic structures and buildings in the Boca Chita Key Historic District as those listed under alternative 1 because they would be rehabilitated, preserved, and interpreted by the National Park Service in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. As with alternative 1, impacts on historic structures and buildings would be localized, long-term to permanent, and generally beneficial. Implementation of this alternative would have a long-term, beneficial impact on the Fowey Rocks Lighthouse because it would be preserved in accordance with the Secretary's Standards.

Actions under this alternative would generally have the same cumulative effects on historic structures and buildings in the park as those listed under alternative 1. Implementation of this alternative would have cumulative beneficial effects.

**Section 106 Summary.** The implementation of this alternative could include some minor adverse impacts on historic structures and buildings. If impacts remain minor there would be no adverse effects under section 106. Any adverse impacts resulting from moderate or major impacts would be mitigated through the use of the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* and a memorandum of agreement with the state historic preservation officer and Advisory Council to counteract such adverse effects.

## Cultural Landscapes

Implementation of this alternative would have the same impacts on cultural landscapes in the park as those listed under alternative 1 because potential landscapes would continue to be surveyed, inventoried, and evaluated under NRHP criteria, and the National Park Service would implement resource management policies that preserve the natural resource values and culturally significant character-defining patterns and features of Boca Chita Key as well as other listed, or determined eligible, landscapes in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties With Guidelines for the Treatment of Cultural Landscapes*.

Although this alternative would emphasize strong cultural resource protection, enhancement of recreational opportunities and development of visitor services and facilities on Boca Chita, Elliott, and Porgy keys could result in some minor impacts on the integrity of the listed and potential cultural landscapes at those visitor destination points. Expansion of recreational opportunities and development of enhanced visitor services throughout much of the park's lands and waters could also result in some minor impacts on the integrity of the potential parkwide maritime and cultural landscape, actions under this alternative, such as the creation of the special recreation zone, would generally contribute to beneficial impacts to a potential marine cultural landscape.

**Cumulative Impacts.** Impacts associated with other past, present, and reasonably foreseeable actions would be the same as described under alternative 1. As described above, implementation of alternative 6 would result in negligible to minor adverse effects and beneficial impacts. The impacts of alternative 6, in combination with minor long-term adverse impacts and beneficial impacts of other past, present, and reasonably foreseeable future actions, would

result in a long-term minor adverse cumulative effect. The adverse effects of alternative 6, however, would be a small component of the adverse cumulative impact.

**Conclusion.** Implementation of this alternative would have the same beneficial impacts on cultural landscapes as those listed under alternative 1. Although the emphasis is on natural resource preservation, the strong protection provided cultural resources could be expected to have some additional long-term beneficial impacts.

Actions under this alternative would have the same cumulative effects on cultural landscapes as those listed under alternative 1. This alternative's contribution to these cumulative effects would be small.

**Section 106 Summary.** The implementation of this alternative could include some minor adverse impacts on cultural landscapes. If impacts remain minor, there would be no adverse effects under section 106. Any adverse impacts resulting from moderate or major impacts would be mitigated through the use of the *Secretary of the Interior's Standards and Guidelines for Documentation and Treatment of Cultural Landscapes* and a memorandum of agreement with the state historic preservation office and Advisory Council to counteract such adverse effects.

## VISITOR EXPERIENCE

### Diversity of Visitor Activities

Under this alternative, visitors would continue to have unrestricted access (as described in the multiuse zone) to most park waters (approximately 83%) to participate in a wide range of recreational opportunities such as motorboating, sailing, canoeing, swimming, scuba diving, snorkeling, fishing, and nature study. About 8% of the park would have some limitations or changes (existing and new) that would potentially enhance, modify, limit, or prohibit visitor access and activities.

This alternative would continue to require visitors to maintain slow speeds near the mainland and Sands Cut. It would also add a slow speed zone to Caesar Creek and the west side of Elliott Key beginning at Sands Key and extending south to Elliott Key Harbor. These slow speed zones would help visitors focus attention on these relatively shallow, sensitive, and sometimes busy areas of the bay, thus enhancing visitor safety. Slower speeds would help reduce damage to boats in docks and the frequency of boat groundings, which would be an indirect, long-term, beneficial impact on some visitors. Some visitors would have boats with a deep draft that would not operate successfully at slow speeds in these areas and would be excluded from access. For some visitors, this change would be perceived as a minor, adverse impact on their visitor experience while boating in the park. For other visitors these reduced speeds would enhance their sense of safety and opportunities for swimming, wading, and fishing. The total area that would have slow speed limits would be about 2% of park waters.

The noncombustion engine zone would include two areas that generally are shallow, where caution is needed, and where different visitor experiences are available. The waters around the park's southern keys, including the bay side of Old Rhodes and Totten, and near portions of Rubicon, Reid, Porgy, and Swan keys. It would also include West, Middle, and East Featherbed banks. This prohibition of combustion engine use (with some limited exceptions) would potentially have a negative impact on those visitors who are used to accessing these areas of the park with combustion engines. Some visitors would have boats with a deep draft that would not operate successfully at slow speeds in these areas and would be excluded from access. For some visitors, this change would be perceived as a long-term adverse impact on their visitor experience while boating in the park. This zoning would potentially have a beneficial impact on the experience of many visitors who currently use or would like

to use these areas of the park to canoe and kayak and explore the mangroves and more remote key environments. Prohibiting combustion engines would enhance visitors' abilities to more successfully view wildlife and experience the natural sounds of the bay and mangrove environments as well as increase the likelihood that some visitors would be able to achieve a sense of solitude and tranquility. Also, boaters would have less likelihood of grounding in this zone, and flats anglers would have improved conditions for successful catches. This noncombustion engine zone would affect less than 1% of park waters.

Under this alternative, Legare Anchorage would be rezoned and reduced in size relative to current conditions. This would result in visitors having access to an additional 1,700 acres of reef waters for a full range of recreational activities (multiuse zone). The sensitive underwater archeological zone, which would be applied to a smaller area at Legare Anchorage, would allow limited visitor access, which is currently the case. The addition of 1,700 acres to the multiuse zone would provide visitors with enhanced opportunities for access and recreation, which would be a long-term beneficial impact on visitors' abilities to access and recreate in park waters.

The continued closure to visitors of West Arsenicker and Arsenicker keys would not change. What would change under this alternative is the application of the sensitive resource zone 300 feet out from the keys' shorelines and a slow speed zone extending out another 500 feet from the sensitive resource zone. This would be a modest increase over the current 200-foot closure. Also, Swan Key and Soldier Key would be closed to visitors. This area is currently lightly used because of limited accessibility; however, those visitors who expect unrestricted access might find this closure to be a long-term, minor, adverse impact on their ability to experience the area.

Northern and southern portions of the mainland, the southern keys, and all of Sands Key would be zoned nature observation. The relative inaccessibility of the mangrove forests and tropical hardwood hammocks naturally limits the range of visitor activities. Most visitors to these areas would probably experience few interactions with others and would have opportunities to explore, observe nature, and find solitude.

An area from Hawk Channel to the eastern park boundary (about 8% of park waters) would be placed in the special recreation zone with recreational fishing by special permit and other limitations on fishing activities. Visitors to this zone would be able to engage in most of their current activities, and the concessioner would continue to be able to take visitors here. For anglers, these fishing limitations would result in a moderate adverse impact on their visitor experience. Overall, the reduced fishing pressure in this zone may result in more and bigger fish over time, which would result in a beneficial impact to both anglers and nonanglers.

Visitors who snorkel and dive in the special recreation zone would be able to experience a healthier, more natural coral reef than what is currently present, with larger and more numerous tropical reef fish and an ecologically intact reef system. The increased number of mooring buoys would make the snorkeling and diving experience safer and easier. The prohibition on spearfishing also improves visitor safety. Therefore, a beneficial impact would be expected for visitors who snorkel and dive in the special recreation zone.

Anchoring would not be allowed in the special recreation zone and some visitors may feel this is adverse impact on their visitor experience due to their lack of freedom to choose their stationary location. However, this should not be an adverse effect as additional mooring buoys would be provided to facilitate access to reefs and historic shipwrecks within this zone. The shift from anchoring to use of mooring buoys would

improve resource conditions, which would improve visitor experience and create a safer environment for park visitors.

The special recreation zone may also increase visitor confusion due to new permit requirements and other location-specific regulations. This would also increase law enforcement requirements. However, the requirement to obtain a special fishing permit would provide an opportunity to specifically educate anglers about the new limitations and benefits to park resources. These concerns would result in short-term, minor, adverse impacts to visitors initially after implementation of the new regulations.

The special recreation zone would be implemented using an adaptive management strategy whereby resource conditions and fishing activities are monitored and management actions are reconsidered and adjusted on pre-defined intervals. These evaluation intervals at years 3, 5, and 8, would consider the need to potentially reduce the number of fishing permits to be issued for following years and the need to refine monitoring protocols to improve data quality for future evaluations. Over time, the size and abundance of fish in the special recreation zone is expected to increase during the adaptive management period and this would have beneficial effects on the quality of visitor experience afforded to anglers, divers, and snorkelers. Also, the evaluation would consider adjustments to other management actions such as the location and number of mooring buoys and zone boundary markers, marine debris removal, public outreach efforts, and law enforcement efforts. Implementing these adaptive management actions, particularly a reduction in fishing permits issued and removal of marine debris, would be expected to improve visitor experience for divers and snorkelers. However, the addition of or relocation of mooring buoys and boundary markers would result in short-term, minor adverse impacts to visitors if they are unaware of the current location of buoys or find that their favorite mooring location is no longer available.

While every effort would be made to communicate changes in a timely manner to the visiting public, inevitably there will be some amount of visitor confusion and frustration during the adaptive management period as adjustments are made and visitor expectations are not realized, thus resulting in a short-term, minor adverse impact. Increased public outreach and/or law enforcement efforts would probably reduce the potential for unlawful and/or negative visitor behaviors and would probably improve visitor safety, thus realizing a beneficial impact.

Following the 10-year adaptive management period for the special recreation zone, the National Park Service would consider monitoring data and consult with the Florida Fish and Wildlife Conservation Commission, NOAA Fisheries, and an expert panel. At that point, the National Park Service would decide whether to continue adaptive management strategies for a special recreation zone or implement a marine reserve zone. The decision to either continue the adaptive management strategies or implement a marine reserve would be predicated on the monitoring data showing a sufficiently improved resource condition and that the park has met its goals for an improved visitor experience in the zone; and the expectation that the trends would continue; otherwise, the marine reserve zone would be implemented to more immediately address the downward trend in resource conditions and/or visitor experiences. Where monitoring trends and indicator data show that management objectives are not being met, the marine reserve zone would be established to eliminate all fishing (except lionfish removal). If the decision is made to convert to a marine reserve zone where fishing is not allowed, it would eliminate commercial and recreational fishing from its area of coral reef habitat. It is anticipated that commercial fishing would be phased out eventually in this area as provided for in the draft Fishery Management Plan, but implementation of a marine reserve zone would prohibit all commercial fishing in this

zone, including the ballyhoo lampara net fishery, after passage of a park special regulation. This locally reduced fishing pressure, where targeted fish species could grow larger and therefore increase in reproductive output, would result in long-term beneficial impacts on the quality of visitor experience afforded to anglers, divers, and snorkelers.

## Visitor Services and Facilities

The northern half of Boca Chita Key would be designated as a visitor services / park administration zone. Some of the historic structures could be used for expanded visitor services that might be provided through on-site staff or wayside exhibits. This would be a beneficial impact on enhancing visitors' opportunities to learn about and experience the key.

In the harbor area at Elliott Key, accessibility for visitors would be enhanced through hardening the trail connecting the harbor with the ocean side. This would be a beneficial enhancement of visitor opportunities to better access the ocean side of Elliott Key.

The park would consider using Adams Key as a backup staging area for canoes or kayaks and might use Adams Key as a staging area for canoes or kayaks to access Porgy Key during special events or programs.

At Porgy Key, a canoe dock and interpretation of the old homesite would provide long-term beneficial improvements in visitor opportunities to learn about and experience that key.

**Cumulative Impacts.** The growing population of the Miami-Dade area and related development pressures provided for in county and city plans raises concerns affecting the area's environmental, economic, and community values. To this end, there are a number of recent and ongoing studies and partnership efforts underway in the Biscayne

Bay area to improve and protect water quality and quantity, wetlands, fisheries, and coastal viewsheds. Projects include the Fishery Management Plan for Biscayne National Park; the South Miami-Dade Watershed Study and Plan; the Biscayne Bay Surface Water Improvement and Management Plan; the Lower East Coast Regional Water Supply Plan; the Biscayne Bay Partnership Initiative; the Southeast Florida Coral Reef Initiative; and the Biscayne Bay Coastal Wetlands Plan.

The actions of this alternative, especially park zoning that could enhance resource conditions, such as the slow speed, noncombustion engine use, sensitive resource, and nature observation zones, combined with these ongoing regional efforts, would have the potential to improve the quality of visitor activities in the region, especially related to fishing, nature viewing, and other resource-based recreational activities. There would also be improved visitor opportunities to learn from various sources regarding the importance and complexity of restoration efforts in a rapidly growing urban environment.

Adjacent state parks (such as Bill Baggs Cape Florida State Park, Key Largo Hammock Botanical State Park, and John Pennekamp Coral Reef State Park) and the Florida Keys National Marine Sanctuary offer services, facilities, and recreational opportunities that enable visitors to experience and learn about the natural and cultural resources of the Biscayne Bay and Florida Keys region. Also, current efforts through the General Management Plan Amendment: Stiltsville Management Plan, and the Biscayne Bay Coastal Wetlands project provide potential opportunities for enhanced visitor access, education, and recreation related to the Biscayne Bay area.

The actions of this alternative to improve access and recreational opportunities and facilities would have the potential positive contribution of more and better public information about and access to the Biscayne Bay area and enhanced opportunities to learn

about and recreate there, especially enhanced canoeing and kayaking opportunities.

Alternative 6 would have beneficial and adverse impacts, and when combined with the beneficial effects of other actions, would result in beneficial cumulative effects on visitor experience in the area. The contribution to the cumulative effects of alternative 6 would be small.

**Conclusion.** Additional speed limitations and new noncombustion engine zones would exclude some visitors from these areas, which would be a long-term, minor to moderate, adverse impact to some users. The same zones would help, over time, to separate conflicting visitor uses, increase boating safety, increase the quality of nonmotorized opportunities, and increase opportunities for solitude, which would be long-term beneficial impacts on some visitors' experiences. Upgrades of visitor information, services, and facilities would be limited but result in a long-term beneficial impact on some visitors' experiences. Both long-term, adverse, and beneficial impacts would occur to different visitors from implementing the special recreation zone. This alternative would have small contributions to the effects of other actions, resulting in beneficial cumulative effects on visitor experience in the area.

## NPS OPERATIONS AND FACILITIES

This alternative would establish many new park zones that would require new staff and investment to plan and implement, which would be addressed through staff and funding proposed in the alternative. Actions under alternative 6 would continue to concentrate park operations and facilities at Convoy Point and Porgy, Adams, Elliott, and Boca Chita keys. These impacts include increased workloads associated with construction of new facilities, acquisition of new equipment, continuing maintenance of new facilities and equipment, contract

oversight, and employment of additional staff.

The new special recreation zone as well as the expanded nature observation zone, slow speed zone, sensitive resource zone, and noncombustion engine zone would require additional park staff time to educate park visitors and enforce new regulations. Implementation of the adaptive management strategy for the special recreation zone would require additional staff for monitoring, issuance of fishing permits, and interagency coordination. It would also require additional capacity for enforcement, interpretation, education, and maintenance.

These actions would result in short-term, moderate, adverse impacts on the park because of equipment acquisition and construction management. There would also be long-term, minor, adverse impacts on the park because of the current lack of organizational capacity to undertake those tasks, but additional project and base funding would serve to mitigate those impacts. Creative use of partnerships and volunteers may also serve to bolster organizational capacity to undertake the proposed actions. After the initial implementation phase, and assuming adequate funding to meet existing and future park needs, this alternative could result in long-term efficiencies to park operations by reducing visitor conflicts and visitor-resource conflicts, which would be a long-term beneficial impact.

The special recreation zone would be implemented using an adaptive management strategy whereby resource conditions and fishing activities are monitored and management actions are reconsidered and adjusted on pre-defined intervals. These evaluation intervals at years 3, 5, and 8, would consider the need to potentially reduce the number of fishing permits to be issued for following years and the need to refine monitoring protocols to improve data quality for future evaluations. Over time, the size and abundance of fish in the special recreation zone is expected to increase during the

adaptive management period. Also, the evaluation would consider adjustments to other management actions such as the location and number of mooring buoys and zone boundary markers, marine debris removal, public outreach efforts, and law enforcement efforts. Implementing these adaptive management actions would require additional organizational capacity, including staff and equipment. The potential adaptive management changes to be implemented in the zone also introduce an added complexity to otherwise routine park operations such as law enforcement, visitor education, and resource management. This would result in a short-term, minor impact to park operations.

Following the 10-year adaptive management period for the special recreation zone, the National Park Service would consider monitoring data and consult with the Florida Fish and Wildlife Conservation Commission, NOAA Fisheries, and an expert panel. At that point, the National Park Service would decide whether to continue adaptive management strategies for a special recreation zone or implement a marine reserve zone. The continuation of the special recreation zone would be predicated on monitoring data demonstrating a sufficiently improved resource condition and the expectation that the trend would continue. Where the decision is made to continue adaptive management and implementation of the special recreation zone, the impacts described above would be expected to continue. Where monitoring trends and indicator data show that management objectives are not being met, the marine reserve zone would be established to eliminate all fishing (except lionfish removal).

If the decision is made to convert to a marine reserve zone where fishing is not allowed, it would eliminate commercial and recreational fishing from its area of coral reef habitat. It is anticipated that commercial fishing would be phased out eventually in this area as provided for in the draft Fishery Management Plan, but implementation of a marine reserve zone would prohibit all commercial fishing in this

zone, including the ballyhoo lampara net fishery, after passage of a special park regulation. Implementation of the marine reserve zone would result in short-term negligible to minor impacts to park operations during the first few years of implementation, but eventually those impacts would subside as park operations regarding the marine reserve zone normalize.

Assuming full funding, long-term impacts would be beneficial to park operations. Although under current funding reality and trends, the impacts may be much more severe to park operations.

**Cumulative Impacts.** As discussed under alternative 1, past and ongoing cooperative planning and development projects in the Biscayne Bay region, such as the Biscayne Bay Partnership Initiative, Miami-Dade County Comprehensive Development Master Plan, and Biscayne Bay Strategic Access Plan, and NPS special resource studies, such as those for Miami Circle and Virginia Key Beach Park, have resulted in some long-term beneficial effects on park operations and facilities. However, the effects are almost impossible to measure.

This alternative, with its emphasis on strong natural and cultural resource protection, while providing a diversity of visitor experiences as well as establishment of potential visitor contact points outside the park, in combination with the aforementioned beneficial effects of past and ongoing cooperative planning and development projects in the Biscayne Bay region, would generally result in long-term beneficial cumulative effects on facilities and long-term, minor, adverse cumulative effects on park operations. This alternative's contribution to these effects would be beneficial for facilities and adverse for park operations.

**Conclusion.** Actions under alternative 6 would generally result in short-term, minor to moderate, adverse impacts on park operations during construction and implementation. There would also be long-

term, minor adverse impacts that would be mitigated by increasing organizational capacity. Over time, the resolution of long-standing visitor use issues and conflicts would result in beneficial impacts to park operations. The overall cumulative effects would be long term and beneficial for facilities and long term, negligible, and adverse for park operations. This alternative's contribution to these effects would be small and beneficial for facilities and minor and adverse for park operations.

## **SOCIOECONOMIC ENVIRONMENT**

The social and economic situation in Miami-Dade County is affected by a combination of many factors, including the presence of units of the national park system. Some of the \$15.5 billion in federal spending in the county is generated by Biscayne National Park in the forms of employee wages, purchases of supplies, and various contracts. Although tourism is not the most important driving factor in the regional economy, the livelihood of service-related businesses in the region rely to some degree on the inflow of tourist dollars, especially restaurants and motels. In 2011, visitors to Biscayne National Park were estimated to have spent over \$34 million in the local region surrounding the park.

Full implementation of this alternative would be expected to require additional staff, partners, or volunteers to handle the increased workload for resource management, interpretation, and maintenance. Any additional employment along with the federal dollars that would be required to implement this alternative is expected to have a long-term beneficial impact on the regional economy.

The total direct economic value of public recreation areas includes two sets of values: (1) the user benefit that people receive from their visit, and (2) land values of property near the recreation area. Economic studies have shown that the value of private land can increase with the number of outdoor

recreation opportunities and the proximity to outdoor recreation space (Clawson and Knetsch 1966). Therefore, the continued presence of Biscayne National Park provides an important benefit to area residents and property values in the vicinity.

Implementing alternative 6 would result in the creation of a special recreation zone, which is an area where some types of fish harvest would be prohibited and the number of fishing permits within this area would be limited. With the exception of lampara net commercial fishing operations for ballyhoo, which would be allowed in the special recreation zone, this would have an adverse effect on commercial fishing as this activity would have to occur elsewhere in or out of the park. The zone in this alternative would comprise about 8% of the park, so the impact would be expected to be long term, negligible, and adverse.

The special recreation zone would be implemented using an adaptive management strategy whereby resource conditions and fishing activities are monitored and management actions are reconsidered and adjusted on pre-defined intervals. These evaluation intervals at years 3, 5, and 8, would consider the need to potentially reduce the number of fishing permits to be issued for following years and the need to refine monitoring protocols to improve data quality for future evaluations. Over time, the anticipated reduction in fishing pressure in this zone, where targeted fish species could grow larger and therefore increase in reproductive output, would be expected to result in a long-term, beneficial impacts on recreational fishing and associated service-related sectors. Even though fishing pressure may increase outside this zone, the expected increase in size and abundance of fish within the marine reserve zone is expected to have a "spillover" effect as documented in other marine reserve zones worldwide.

Following the 10-year adaptive management period for the special recreation zone, the National Park Service would consider

monitoring data and consult with the Florida Fish and Wildlife Conservation Commission, NOAA Fisheries, and an expert panel. At that point, the National Park Service would decide whether to continue adaptive management strategies for a special recreation zone or implement a marine reserve zone. The continuation of the special recreation zone would be predicated on monitoring data demonstrating a sufficiently improved resource condition and the expectation that the trend would continue. Where the decision is made to continue adaptive management and implementation of the special recreation zone, the impacts described above would be expected to continue. Where monitoring trends and indicator data show that management objectives are not being met, the marine reserve zone would be established to eliminate all fishing (except lionfish removal).

If the decision is made to convert to a marine reserve zone where fishing is not allowed, it would eliminate commercial and recreational fishing from its area of coral reef habitat. It is anticipated that commercial fishing would be phased out eventually in this area as provided for in the draft Fishery Management Plan, but implementation of a marine reserve zone would prohibit all commercial fishing in this zone, including the ballyhoo lampara net fishery, after passage of a special park regulation. Implementation of the marine reserve zone would result in long-term minor adverse impact to commercial fishing as this activity would have to occur elsewhere in or out of the park. Termination of commercial fishing, whether immediately, at 10 years, or over time, would be a localized minor adverse impact to commercial fishing in south Florida.

Under this alternative, nonconsumptive recreation benefits, such as snorkeling and diving, would be further allowed. Economic studies have shown that snorkelers and divers would increase trips with improvements in fish abundance, water visibility, and coral quality (Bhat 2003), all of which are expected to occur under this alternative, but

to a lesser extent than alternatives 3, 4, and 5. Due to a shift in visitation pattern, the net effect in the number of visitors or average length of visit would be expected to be negligible. Therefore, under this alternative it is expected there would be no effect on tourism-related businesses.

**Cumulative Impacts.** The population of communities and cities around the park is expected to continue to increase per county and city plans. Generally, increasing human population in the local community would be expected to result in increased park visitation; therefore, an increase visitor use with associated economic activity would have a long-term, beneficial impact. Population growth could also lead to additional fishing pressure on fish populations in the park—a potential long-term adverse impact on recreational fishing that would be partially mitigated by combining actions under this alternative with implementation of the Fishery Management Plan.

The long-term socioeconomic impacts of phasing out commercial fishing in the park are expected to be realized with the anticipated implementation of the Fishery Management Plan and are assessed in that plan.

Alternative 6 would contribute a small beneficial increment to the above impacts of other past, present, and future actions on socioeconomic conditions and, when considered in combination with other actions, would result in a beneficial cumulative impact.

**Conclusion.** Implementing alternative 6 would have a long-term negligible adverse impact and short-term and long-term beneficial impacts on the regional economy. The overall cumulative effects would be beneficial with this alternative contributing a small increment.

## **UNAVOIDABLE ADVERSE IMPACTS**

Unavoidable adverse impacts are defined here as impacts that cannot be fully mitigated or avoided.

Existing moderate or major adverse impacts to fisheries, federally listed sea turtles, smalltooth sawfish, stony corals, submerged aquatic communities, and natural soundscapes would be expected to continue in the majority of park waters included in the multiuse zone. These impacts are primarily caused by the relatively unrestricted use of motorized boats as well as fishing and marine debris that continue to impact most park waters and submerged habitats.

New actions proposed under this alternative would reduce some or all of those impacts to many of the most sensitive areas of park waters. Thus there would be no new unavoidable moderate or major adverse impacts expected as a result of implementing alternative 6.

## **IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES**

Alternative 6 would have a small potential for some commitments of resources because it would involve a minimum of new development (e.g., trails, primitive dock, marine signage). However, most of the development being proposed is minimal, such as trails with only small areas of potential effect. Most proposed development would be built in previously disturbed areas, so would not result in irreversible or irretrievable commitments of resources. Cultural resources would continue to be protected through active preservation maintenance.

## **NATURAL OR DEPLETABLE RESOURCES AND ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL**

Whenever feasible, the National Park Service strives to maximize the use of renewable resources and energy and therefore minimize the use of depletable resources. However, it is not possible with today's technologies to cost-effectively avoid all use of depletable resources in building and operating facilities.

Implementing alternative 6 would involve minimal increase in energy requirements.

## IMPACTS OF IMPLEMENTING ALTERNATIVE 7

### NATURAL RESOURCES

#### Fisheries

Fishery impacts to all zones except the special recreation zone are the same as those described in alternative 6.

Adverse impacts to fisheries in the special recreation zone would be similar to those described in alternative 6, except the impacts associated with bycatch would be absent for four months of the year. In addition, the beneficial impacts would be intensified because angler access would be closed June through September when water temperatures peak. At these increased temperatures, oxygen solubility is decreased, fish are more easily fatigued, and a caught fish is less likely to recover if it were released. Thus, this closure would allow a greater protection to reef fish during a time when they are already stressed by environmental extremes (Bartholomew and Bohnsack 2005; Wootton 1992). Thus, there are potentially greater benefits to fisheries to be realized in a summer seasonal fishing closure than in reduced fishing pressure year-round.

Beneficial impacts of terminating commercial fishing would be the same as described in alternative 6.

**Cumulative Impacts.** Same as alternative 6.

**Conclusion.** Same as alternative 6, but with more beneficial impacts due to season closure.

#### Threatened and Endangered Species

**Manatee.** Management actions proposed in manatee habitat are the same as alternative 6; therefore, impacts are expected to be the same as alternative 6.

**Sea Turtles.** Management actions proposed in sea turtle habitat are the same as alternative 6; therefore, impacts are expected to be the same as alternative 6.

**American Crocodile.** Management actions proposed for American crocodile habitat are the same as alternative 6; therefore, impacts are expected to be the same as alternative 6.

**Smalltooth Sawfish.** Adverse impacts to smalltooth sawfish would be the same as described in alternative 6 for all zones except the special recreation zone.

Adverse impacts to smalltooth sawfish in the special recreation zone would be similar to those described in alternative 6, except impacts associated with bycatch (a known cause of mortality) would be absent for four months of the year. In addition, beneficial impacts would be intensified because angler access would be closed June through September when water temperatures peak. At these increased temperatures, oxygen solubility is decreased, fish are more easily fatigued, and a caught fish is less likely to recover if it were released. Thus, this closure would allow a greater protection to smalltooth swordfish during a time when their habitat is already stressed by environmental extremes (Bartholomew and Bohnsack 2005; Wootton 1992). Thus, there are greater benefits to smalltooth sawfish to be realized in a summer seasonal fishing closure than in reduced fishing pressure year-round.

*Section 7 Determination of Effect* — no actions in this alternative would adversely affect the sawfish and there could be a reduction in potential hook-and-line catches due to the seasonal fishing closure in the special recreation zone, but moderate adverse impacts from fishing in most park waters persist. The section 7 effect determination

would be “May affect, likely to adversely affect.”

**Schaus Swallowtail Butterfly and Miami Blue Butterfly.** Management actions proposed in butterfly habitat are the same as alternative 6; therefore, impacts are expected to be the same as alternative 6.

**Stony Corals.** Adverse impacts to stony corals would be the same as described in alternative 6 for all zones except for the special recreation zone.

Adverse impacts to stony corals in the special recreation zone would be similar to those described in alternative 6, with the possible difference that fishing-related marine debris might be lessened, resulting in beneficial impacts to stony corals.

*Section 7 Determination of Effect* — The special recreation zone in alternative 7 is expected to have a beneficial, long-term, effect on corals by protecting them from activities that could lead to physical and ecological damage, but such impacts would persist in most of the park. Thus, this alternative would result in a determination of “may affect, likely to adversely affect” corals.

**Cumulative Impacts.** Same as alternative 6.

**Conclusion.** Same as alternative 6.

### **Special Status Species, including State Listed Species**

**Birds.** Same as alternative 6.

### **Terrestrial Vegetation**

Same as alternative 6.

### **Submerged Aquatic Communities**

Same as alternative 6. However benefits would be greater than alternative 6 due to seasonal closure.

### **Wetlands**

Same as alternative 6.

### **Soundscapes**

Same as alternative 6.

## **CULTURAL RESOURCES**

### **Archeological Resources (including submerged maritime)**

Same impacts as described in alternative 6, though potentially there would be slightly more benefits from alternative 7 due to a slight anticipated reduction in fishing-related impacts.

### **Historic Structures and Buildings**

Same impacts described in alternative 6.

### **Cultural Landscapes**

Same impacts as described in alternative 6, although potentially there would be slightly more benefits from alternative 7 due to an anticipated slight reduction in fishing-related impacts.

## **VISITOR EXPERIENCE**

### **Diversity of Visitor Activities**

Impacts not related to the special recreation zone are the same as alternative 6.

An area from Hawk Channel to the eastern park boundary (about 8% of park waters) would be placed in the special recreation zone with a summer seasonal recreational fishing closure and other limitations on fishing activities. Visitors to this zone would be able to engage in most of their current activities, and the concessioner would continue to be able to take visitors here. For some visitors these fishing limitations would result in a minor adverse impact on their visitor experience. However, the reduced fishing pressure in this zone may result in more and bigger fish over time, which would result in a beneficial impact for both anglers and nonanglers.

Visitors who snorkel and dive in the special recreation zone would be able to experience a healthier, more natural coral reef than what is currently present, with larger and more numerous tropical reef fish and an ecologically intact reef system. The increased number of mooring buoys would make the snorkeling and diving experience safer and simpler. The prohibition on spearfishing also improves visitor safety. Therefore, a beneficial impact would be expected for visitors who snorkel and dive in the special recreation zone.

Anchoring would not be allowed in the special recreation zone and some visitors may feel this is an adverse impact on their visitor experience due to the lack of freedom to choose a stationary location. However, this should not be an adverse effect as additional mooring buoys would be provided to facilitate access to coral reefs and historic shipwrecks within this zone. The shift from anchoring to use of mooring buoys would improve resource conditions, which would improve visitor experience and create a safer environment for park visitors.

The seasonal closure and new regulations in the special recreation zone may also increase visitor confusion as well as law enforcement requirements. These concerns would result in short-term, negligible, adverse impacts to

visitors initially following implementation of the new regulations.

## Visitor Services and Facilities

Same as alternative 6.

**Cumulative Impacts.** Same as alternative 6.

**Conclusion.** Same as alternative 6.

## NPS OPERATIONS AND FACILITIES

Actions under alternative 7 would generally have the same impacts on park operations and facilities as described for alternative 6.

Implementation of the adaptive management strategy for the special recreation zone would also require additional staff time for monitoring and enforcement of the seasonal fishing closure, although this would be less than required for implementation of alternative 6 because staff time would not be needed to administer the dual permit system, fulfill the monitoring requirements associated with the permits, or maintain collaborations with the Florida Fish and Wildlife Conservation Commission. Thus the implementation of this alternative is expected to result in long-term, negligible to minor, adverse impacts on park operations.

**Cumulative Impacts.** Same as alternative 6. However, existing long-term moderate adverse impacts on park operations would be exacerbated due to additional capacity needed to implement the special recreational zone with fishing closure.

**Conclusion.** Same as alternative 6.

## SOCIOECONOMIC ENVIRONMENT

Impacts not related to the special recreation zone are the same as alternative 6.

As in alternative 6, implementing alternative 7 would result in the creation of a special recreation zone, which is an area where some types of fishing would be prohibited. Unlike alternative 6, the number of fishing permits within this area would not be limited, but rather, the area would be closed to fishing during the summer months. This seasonal closure would have an adverse effect on recreational fishing as this activity would have to occur elsewhere in or out of the park. The anticipated reduction in fishing pressure in this zone, where targeted fish species could grow larger and therefore increase in reproductive output, would be expected to result in a long-term, beneficial impact on recreational fishing and associated service-related sectors. It would have no effect on commercial lampara net fishing for ballyhoo because that harvest occurs during winter months and not during the closed season. The zone in this alternative would comprise about 8% of the park, so the impact would be expected to be long term and adverse but negligible.

Under this alternative, nonconsumptive recreation benefits, such as snorkeling and diving, would be allowed. Economic studies have shown that snorkelers and divers would increase trips with improvements in fish abundance, water visibility, and coral quality (Bhat 2003), all of which are expected to occur under this alternative, but to a lesser extent than alternatives 3, 4, and 5. Due to a shift in visitation patterns, the net effect in

the number of visitors or average length of visit would be expected to be negligible. Therefore, under this alternative it is expected that there would be no effect on tourism-related businesses.

Impacts related to a conversion of a special recreation zone to a marine reserve zone are the same as alternative 6.

**Cumulative Impacts.** Same as alternative 6.

**Conclusion.** Same as alternative 6.

## **UNAVOIDABLE ADVERSE IMPACTS**

Same as alternative 6.

## **IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES**

Same as alternative 6.

## **NATURAL OR DEPLETABLE RESOURCES AND ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL**

Same as alternative 6.



## CHAPTER 5

### Consultation and Coordination (SDEIS)





## PUBLIC AND AGENCY INVOLVEMENT

Public input and feedback is a key element of the environmental impact statement process. Public and agency review of this draft document for Biscayne National Park help ensure that relevant issues and alternatives are adequately considered and evaluated and that all pertinent implications of the alternatives have been analyzed. The purpose of this section is to describe the agency and public comments received during the initial scoping process, and those from comments on the preliminary management prescriptions and alternatives. The comments and agency responses allow interested parties (including the National Park Service) to review and assess how other agencies, organizations, and individuals view the park and have responded to the different alternatives.

The 2011 Draft GMP/EIS fully described the publication participation process on pages 285–292, including these topics:

- Public meetings and newsletters
- Consultation with Other Agencies/ Officials and Organizations
  - U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration – Fisheries
  - Coastal Zone Management
  - National Historic Preservation Act, Section 106 Consultation
  - American Indian Tribes
  - Miami-Dade Historic Preservation
  - Florida Fish and Wildlife Conservation Commission
- Agencies, Organizations, and Individuals who received a copy of the 2011 Draft GMP/EIS

Copies of our consultation letters for the above topics are included in appendix D.

The National Park Service conducted public scoping meetings and workshops (in 2001, 2003, and 2009) and held three public meetings on the 2011 Draft GMP/EIS. During the public comment period in 2011, more than 300 people attended public meetings. The majority (17,597) of comments supported an alternative that contained a marine reserve zone, with 294 comments in opposition.

On September 14, 2011, the National Park Service received a letter from the Florida Department of State, Division of Historical Resources (SHPO) that stated the 2011 Draft GMP/EIS adequately addresses cultural resources located within Biscayne National Park. A copy of the SHPO consultation letter is included in appendix D.

In January 2012, the National Park Service received a letter from the Florida Department of Environmental Protection, including a letter from the Florida Fish and Wildlife and Conservation Commission, raising a number of significant concerns about the NPS preferred alternative (see appendix G). In particular, the Florida Department of Environmental Protection and Florida Fish and Wildlife and Conservation Commission identified a number of Florida statutes and policies of Florida's Coastal Management Program as the basis for their objections to the General Management Plan under the Coastal Zone Management Act. The State of Florida stated certain management actions and zones proposed in the General Management Plan, notably the marine reserve zone, are inconsistent with enforceable policies included in Florida Coastal Zone Management Program absent changes to the preferred alternative. In addition, the commission felt there were inconsistencies with the 2007 Memorandum of Understanding between Florida Fish and Wildlife and Conservation Commission and

the park. The position of the State of Florida was that any consideration of a marine reserve zone could only occur after measurable management objectives have been clearly defined and less restrictive management measures have been appropriately implemented and evaluated in close coordination with Florida Fish and Wildlife and Conservation Commission and stakeholders. The National Park Service maintains that the 2011 Draft GMP/EIS is consistent with the Coastal Zone Management Act and the memorandum of understanding.

In light of the concerns raised by the State of Florida and a number of other stakeholders, the National Park Service undertook an evaluative process to consider a number of management actions that could be deployed to achieve its objective of a diversified visitor use experience. All proposals were evaluated for protection of natural and cultural resources in the park. The National Park Service examined a wide range of management strategies that include varying

degrees of access for the diversity of visitor experiences. A number of additional meetings were held with federal and state authorities to discuss these proposals.

On September 19, 2012, the National Park Service received the biological opinion from the NOAA Fisheries that included section 7 determinations on the species that were listed at the time of the 2011 Draft GMP/EIS release. The cover letter is included in appendix D.

The National Park Service did not receive any official comments from any tribes on the 2011 Draft GMP/EIS.

For this SDEIS, the park will continue to consult with appropriate agencies and tribes to address the Endangered Species Act, section 7, and the National Historic Preservation Act, section 106 concerns as described on pages 287–290 of the 2011 Draft GMP/EIS.

## **AGENCIES, ORGANIZATIONS, AND INDIVIDUALS RECEIVING A COPY OF THIS DOCUMENT**

### **FEDERAL AGENCIES**

Advisory Council on Historic Preservation  
U.S. Department of Commerce  
NOAA - National Marine Fisheries Service,  
Florida Keys National Marine Sanctuary,  
U.S. Coral Reef Task Force, South  
Atlantic Fisheries Management Council  
U.S. Army Corps of Engineers  
U.S. Department of Agriculture  
National Forest Service  
Natural Resources Conservation  
Service  
U.S. Department of Homeland Security  
U.S. Coast Guard  
U.S. Department of the Interior  
U.S. Fish and Wildlife Service  
U.S. Geological Survey  
U.S. National Park Service  
U.S. Environmental Protection Agency

### **U.S. SENATORS AND REPRESENTATIVES**

Honorable, U.S. Senator from Florida  
Junior U.S. Senator from Florida  
Honorable U.S. Representative from Florida

### **STATE AGENCIES**

State of Florida Clearinghouse, including but  
not limited to Florida Fish and Wildlife  
Conservation Commission, Florida  
Department of Environmental  
Protection, South Florida Water  
Management District, and State Historic  
Preservation Office  
Bill Baggs Cape Florida State Park  
Florida Fish and Wildlife Research Institute  
John Pennekamp State Park

### **STATE OFFICIALS**

Florida Governor  
State Senators  
State Representatives

### **AMERICAN INDIAN TRIBES TRADITIONALLY ASSOCIATED WITH BISCAYNE NATIONAL PARK LANDS**

Miccosukee Tribe of Indians of Florida  
Seminole Tribe of Florida  
Seminole Nation of Oklahoma

### **CITY AND COUNTY GOVERNMENTS**

Mayor of Miami-Dade County  
Mayor of Florida City  
Mayor of Homestead  
Mayor of Cutler Bay  
Mayor of Miami  
Mayor of Palmetto Bay  
Mayor of Pinecrest  
Miami-Dade County Commissioners  
Miami-Dade County Office of Historic and  
Archeological Resources  
Miami-Dade Planning and Zoning  
Department  
Miami-Dade Department of Environmental  
Resource Management  
Monroe County Commissioners  
Public libraries of Miami-Dade County and  
Monroe County (Key Largo)

### **LOCAL AGENCIES/INSTITUTIONS**

University of Miami Rosenstiel School of  
Marine and Atmospheric Science  
University of Florida  
Florida International University  
Southeast Florida Coral Reef Initiative

### **ORGANIZATIONS AND BUSINESSES**

Active Divers Association  
American Fisheries Society  
American Whitewater Association  
Amy Slate's Amoray Dive Resort  
Associated Press  
Atlantic Gamefish Foundation  
Audubon Society of Florida

Austin's Dive Center  
Biscayne Bay Foundation  
Biscayne Bay Wingnet Association  
Biscayne National Underwater Park  
CCA Florida  
Center for Marine Conservation  
Citizens for a Better South Florida  
Community Partners  
The Conservation Fund  
Defenders of Wildlife  
Divers Direct Outlet Store  
Environmental Defense Fund  
Everglades Association, Inc.  
Federation of Fly Fishermen  
Fishin' Buddy  
Fishing Rights Alliance  
Florida Audubon Society  
Florida Bay Outfitters  
Florida Collector  
Florida Keys Commercial Fishermen's Association  
Florida Keys Guide Association  
Florida Power and Light  
Florida Scuba News  
Florida Sea Base High Adventure  
Florida Skin Divers Association  
Florida Sportsmen  
Greater Miami Convention & Visitors Bureau  
History Miami  
International Game Fish Association  
Islamorada Dive Association  
Izaak Walton League  
Holiday Diver  
Hook and Line Fishermen, Inc.  
Keys Association of Dive Operators  
The Miami Herald  
National Association of Black Scuba Divers

National Fish and Wildlife Foundation  
National Hispanic Environmental Council  
National Parks and Conservation Association  
National Park Concessions, Inc.  
Natural Resources Defense Council  
The Nature Conservancy  
The Ocean Conservancy  
Ocean Divers  
Organized Fishermen of Florida  
Quiescence Diving Services, Inc  
Reef Environmental Education Foundation  
Reefkeeper International  
Reef Relief  
R/V Coral Reef II  
Slate's Dive Center  
Sierra Club  
South Dade Anglers  
South Florida Freedivers  
South Florida National Parks Trust  
South Florida Sports Fishermen Club  
Tropical Anglers  
Tropical Audubon Society  
Trust for Public Land  
Underwater Society of America  
World Wildlife Fund  
WPBT-TV Channel 2  
Waterfront News  
Wildlife Rescue of Dade County  
World Wildlife Fund  
Youth Fishing Foundation  
Others on the park's mailing list

#### **INDIVIDUALS**

There were too many individuals to list here.  
A full mailing list is available from the park.



**Appendixes,  
Selected References,  
Preparers,  
Consultants,  
and Index  
(SDEIS)**





Please refer to pages 295–323 in the 2011 Draft General Management Plan / Environmental Impact Statement for appendixes A and B, and pages 329–349 for list of preparer, and selected references. Appendix C: the Determination of Nonimpairment will be appended to the “Record of Decision”. Appendixes D and E contain new information. New appendixes F through H and additions to preparers and selected references are listed below.

Appendix A: Legislation

Appendix B: Servicewide Mandates and Policies

Appendix C: Determination of Impairment (see errata)

Appendix D: Consultation Letters

Appendix E: Purpose and Authority for Marine Reserve Zone and Special Recreation Zone

Appendix F: Adaptive Management Strategy for Special Recreation Zone

Appendix G: State Response to the 2011 General Management Plan and Environmental Impact Statement

Appendix H: Errata

Selected References

Index



## **APPENDIX D: CONSULTATION LETTERS**





## United States Department of the Interior

National Park Service  
Biscayne National Park  
9700 S. W. 328th Street  
Homestead, Florida 33033-5634



L7615

18 AUG 2011

Mr. Scott M. Stroh III  
State Historic Preservation Officer and Director  
Division of Historic Resources  
Florida Department of State  
R.A. Gray Building, Fourth Floor  
500 South Bronough Street  
Tallahassee, Florida 32399-0250

Reference: Biscayne National Park, Miami-Dade County  
General Management Plan/Draft Environmental Impact Statement

Dear Mr. Stroh:

The General Management Plan/Draft Environmental Impact Statement for Biscayne National Park is now available. This plan details the National Park Service proposals for the long-term management of the park.

Enclosed is a copy of the plan which includes analysis pursuant to the National Environmental Policy Act as well as Section 106 of the National Historic Preservation Act. The park's Preferred Alternative emphasizes strong natural and cultural resource protection while providing a diversity of visitor experiences. The Preferred Alternative proposes to manage large areas of the park as they are managed today, and adds several zones for new recreational opportunities, such as no-motor zones by the mainland coast and a marine protected area where visitors can snorkel and dive a reef that experiences no fishing pressure. For a detailed analysis of the Preferred Alternative's effect on cultural resources, please see "Cultural Resources" under the section titled "Impacts of Implementing Alternative 4, the NPS Preferred Alternative" in Chapter 4.

Biscayne National Park is predominantly a marine park with significant cultural resources that are associated with human activity from prehistoric times to the present. The park's cultural resources include archeological resources, historic buildings, structures and sites, and cultural landscapes. Human activities have occurred on and around the mainland, keys, and waters of Biscayne Bay for some 12,000 years. These activities are associated with American Indian habitation, land use, and subsistence, and with European-American exploration, settlement, and socioeconomic development. Many of the park's more sensitive cultural sites are either submerged or are in locations currently closed to public access. A detailed description of the park's cultural properties can be found in the "Cultural Resources" section of Chapter 3.



Over the past eleven years the park has solicited public involvement to develop this plan, with two public comment periods and two series of public meetings during which 6,000 comments were received and analyzed. Comments were also received from four government agencies and 11 nongovernmental organizations and educational institutions. The tribes were briefed on the scope of the General Management Plan by newsletter and follow-up phone calls asking for additional comments. A meeting was also held with the Miccosukee Tribe of Indians of Florida in 2002. Tribal concerns and recommendations focused on the preservation of sites, return of artifacts to their original locations, inadvertent discoveries relevant to NAGPRA, and inclusion of tribal viewpoints in park interpretive and educational materials. Public and tribal comments were taken into consideration in the formulation of the five draft alternatives and in the selection of the preferred alternative. No controversial issues were identified relevant to cultural resources during public meetings or in the comments received.

We are inviting you or representatives from your office to attend any of three identical public meetings as follows:

September 13  
6 – 9 pm  
Crowne Plaza Hotel  
950 N.W. 42 Avenue  
Miami, FL 33126

September 14  
6 – 9 pm  
Florida City's City Hall  
404 W. Palm Drive  
Florida City, FL 33034

September 15  
6 – 9 pm  
Holiday Inn Key Largo  
99701 Overseas Hwy  
Key Largo, FL 33037

These public meetings will provide an opportunity for the public to learn about the draft plan and to submit verbal and/or written comments. Presentations, exhibits, and park staff will be available to facilitate understanding of the plan. Alternatively, we could schedule a face to face meeting at a time and location of your choosing.

We would appreciate receiving any comments you may have by October 25, the end of the public comment period. If you should have any questions, please contact me at (305) 230-1144 x024 or Charles Lawson, Biscayne National Park Cultural Resource Manager, at (786) 335-3676 or by email at [Charles\\_Lawson@nps.gov](mailto:Charles_Lawson@nps.gov).

Sincerely,



Mark Lewis  
Superintendent

Enclosures

General Management Plan/Draft Environmental Impact Statement  
Newsletter

cc: Gretchen Ward  
CR Specialist, National Park Service, Denver Service Center



IN REPLY REFER TO:

## United States Department of the Interior

National Park Service  
Biscayne National Park  
9700 S. W. 328th Street  
Homestead, Florida 33033-5634



L7615

19 AUG 2011

Reid Nelson, Director  
Office of Federal Agency Programs  
Advisory Council on Historic Preservation  
1100 Pennsylvania Avenue, NW, #803  
Washington, D.C. 20004

Reference: Biscayne National Park, General Management Plan/Draft Environmental Impact Statement

Dear Mr. Nelson:

The General Management Plan/Draft Environmental Impact Statement for Biscayne National Park is now available. This plan details the National Park Service proposals for the long-term management of the park.

Enclosed is a copy of the plan which includes analysis pursuant to the National Environmental Policy Act as well as Section 106 of the National Historic Preservation Act. The park's Preferred Alternative emphasizes strong natural and cultural resource protection while providing a diversity of visitor experiences. The Preferred Alternative proposes to manage large areas of the park as they are managed today, and adds several zones for new recreational opportunities, such as no-motor zones by the mainland coast and a marine protected area where visitors can snorkel and dive a reef that experiences no fishing pressure. For a detailed analysis of the Preferred Alternative's effect on cultural resources, please see "Cultural Resources" under the section titled "Impacts of Implementing Alternative 4, the NPS Preferred Alternative" in Chapter 4.

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Sincerely,



Mark Lewis  
Superintendent

Enclosures

General Management Plan/Draft Environmental Impact Statement  
Newsletter

cc: Gretchen Ward  
CR Specialist, National Park Service, Denver Service Center



## United States Department of the Interior

National Park Service  
Biscayne National Park  
9700 S. W. 328th Street  
Homestead, Florida 33033-5634



L7615

19 AUG 2011

Kathleen Kauffman, Chief  
Office of Historic and Archeological Resources  
Miami-Dade County Planning and Zoning  
111 NW 1<sup>st</sup> Street, Suite 695  
Miami, Florida 33128

Subject: Biscayne National Park, General Management Plan/Draft Environmental Impact Statement

Dear Ms. Kauffman:

The General Management Plan/Draft Environmental Impact Statement for Biscayne National Park is now available. This plan details the National Park Service proposals for the long-term management of the park.

Enclosed is a copy of the plan which includes analysis pursuant to the National Environmental Policy Act as well as Section 106 of the National Historic Preservation Act. The park's Preferred Alternative emphasizes strong natural and cultural resource protection while providing a diversity of visitor experiences. The Preferred Alternative proposes to manage large areas of the park as they are managed today, and adds several zones for new recreational opportunities, such as no-motor zones by the mainland coast and a marine protected area where visitors can snorkel and dive a reef that experiences no fishing pressure. For a detailed analysis of the Preferred Alternative's effect on cultural resources, please see "Cultural Resources" under the section titled "Impacts of Implementing Alternative 4, the NPS Preferred Alternative" in Chapter 4.

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Sincerely,



Mark Lewis  
Superintendent

Enclosures

General Management Plan/Draft Environmental Impact Statement  
Newsletter

cc: Gretchen Ward  
CR Specialist, National Park Service, Denver Service Center



## United States Department of the Interior

National Park Service  
Biscayne National Park  
9700 S. W. 328th Street  
Homestead, Florida 33033-5634



L7615

19 AUG 2011

Mr. Leonard M. Harjo, Principal Chief  
Seminole Nation of Oklahoma  
Post Office Box 1498  
Wewoka, Oklahoma 74884

Subject: Government to Government Consultations with American Indian Tribes  
General Management Plan/Draft Environmental Impact Statement for Biscayne National Park

Dear Principal Chief Harjo:

The General Management Plan/Draft Environmental Impact Statement for Biscayne National Park is now available. This plan details the National Park Service proposals for the long-term management of the park.

Enclosed is a copy of the plan which includes analysis pursuant to the National Environmental Policy Act as well as Section 106 of the National Historic Preservation Act. The park's Preferred Alternative emphasizes strong natural and cultural resource protection while providing a diversity of visitor experiences. The Preferred Alternative proposes to manage large areas of the park as they are managed today, and adds several zones for new recreational opportunities, such as no-motor zones by the mainland coast and a marine protected area where visitors can snorkel and dive a reef that experiences no fishing pressure. For a detailed analysis of the Preferred Alternative's effect on cultural resources, please see "Cultural Resources" under the section titled "Impacts of Implementing Alternative 4, the NPS Preferred Alternative" in Chapter 4.

Biscayne National Park is predominantly a marine park with significant cultural resources that are associated with human activity from prehistoric times to the present. The park's cultural resources include archeological resources, historic buildings, structures and sites, and cultural landscapes. Human activities have occurred on and around the mainland, keys, and waters of Biscayne Bay for some 12,000 years. These activities are associated with American Indian habitation, land use, and subsistence, and with European-American exploration, settlement, and socioeconomic development. Many of the park's more sensitive cultural sites are either submerged or are in locations currently closed to public access. A detailed description of the park's cultural properties can be found in the "Cultural Resources" section of Chapter 3.

Over the past eleven years the park has solicited public involvement to develop this plan, with two public comment periods and two series of public meetings during which 6,000 comments were



received and analyzed. Comments were also received from four government agencies and 11 nongovernmental organizations and educational institutions. The tribes were briefed on the scope of the General Management Plan by newsletter and follow-up phone calls asking for additional comments. A meeting was also held with the Miccosukee Tribe of Indians of Florida in 2002. Tribal concerns and recommendations focused on the preservation of sites, return of artifacts to their original locations, inadvertent discoveries relevant to NAGPRA, and inclusion of tribal viewpoints in park interpretive and educational materials. Public and tribal comments were taken into consideration in the formulation of the five draft alternatives and in the selection of the preferred alternative. No controversial issues were identified relevant to cultural resources during public meetings or in the comments received.

We are inviting tribal representatives to attend any of three identical public meetings as follows:

September 13	September 14	September 15
6 – 9 pm	6 – 9 pm	6 – 9 pm
Crowne Plaza Hotel	Florida City's City Hall	Holiday Inn Key Largo
950 N.W. 42 Avenue	404 W. Palm Drive	99701 Overseas Hwy
Miami, FL 33126	Florida City, FL 33034	Key Largo, FL 33037

These public meetings will provide an opportunity for the public to learn about the draft plan and to submit verbal and/or written comments. Presentations, exhibits, and park staff will be available to facilitate understanding of the plan. Alternatively, we could schedule a face to face meeting at a time and location of your choosing.

We would appreciate receiving any comments you may have by October 25, the end of the public comment period. If you should have any questions, please contact me at (305) 230-1144 x024 or Charles Lawson, Biscayne National Park Cultural Resource Manager, at (786) 335-3676 or by email at [Charles\\_Lawson@nps.gov](mailto:Charles_Lawson@nps.gov).

Sincerely,



Mark Lewis  
Superintendent

Enclosures

General Management Plan/Draft Environmental Impact Statement  
Newsletter

cc: Ms. Natalie Deere  
Tribal Historic Preservation Officer  
Seminole Nation of Oklahoma  
Post Office Box 1498  
Wewoka, Oklahoma 74884

Mr. Mickey Douglas, Director  
Environmental Protection Office  
Seminole Nation of Oklahoma  
P.O. Box 1603  
Seminole, Oklahoma 74818-1603

Gretchen Ward  
CR Specialist, National Park Service, Denver Service Center



IN REPLY REFER TO:

## United States Department of the Interior

National Park Service  
Biscayne National Park  
9700 S. W. 328th Street  
Homestead, Florida 33033-5634



L7615

19 AUG 2001

James Billie, Chairman  
Seminole Tribe of Florida  
6300 Stirling Road  
Hollywood, Florida 33024

Subject: Government to Government Consultations with American Indian Tribes  
General Management Plan/Draft Environmental Impact Statement for Biscayne National Park

Dear Chairman Billie,

The General Management Plan/Draft Environmental Impact Statement for Biscayne National Park is now available. This plan details the National Park Service proposals for the long-term management of the park.

Enclosed is a copy of the plan which includes analysis pursuant to the National Environmental Policy Act as well as Section 106 of the National Historic Preservation Act. The park's Preferred Alternative emphasizes strong natural and cultural resource protection while providing a diversity of visitor experiences. The Preferred Alternative proposes to manage large areas of the park as they are managed today, and adds several zones for new recreational opportunities, such as no-motor zones by the mainland coast and a marine protected area where visitors can snorkel and dive a reef that experiences no fishing pressure. For a detailed analysis of the Preferred Alternative's effect on cultural resources, please see "Cultural Resources" under the section titled "Impacts of Implementing Alternative 4, the NPS Preferred Alternative" in Chapter 4.

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received and analyzed. Comments were also received from four government agencies and 11 nongovernmental organizations and educational institutions. The tribes were briefed on the scope of the General Management Plan by newsletter and follow-up phone calls asking for additional comments. A meeting was also held with the Miccosukee Tribe of Indians of Florida in 2002. Tribal concerns and recommendations focused on the preservation of sites, return of artifacts to their original locations, inadvertent discoveries relevant to NAGPRA, and inclusion of tribal viewpoints in park interpretive and educational materials. Public and tribal comments were taken into consideration in the formulation of the five draft alternatives and in the selection of the preferred alternative. No controversial issues were identified relevant to cultural resources during public meetings or in the comments received.

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Miami, FL 33126

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We would appreciate receiving any comments you may have by October 25, the end of the public comment period. If you should have any questions, please contact me at (305) 230-1144 x024 or Charles Lawson, Biscayne National Park Cultural Resource Manager, at (786) 335-3676 or by email at [Charles\\_Lawson@nps.gov](mailto:Charles_Lawson@nps.gov).

Sincerely,



Mark Lewis  
Superintendent

Enclosures

General Management Plan/Draft Environmental Impact Statement  
Newsletter

cc: Mr. William S. Steele, Tribal Historic Preservation Officer, Seminole Tribe of Florida  
Tribal Historic Preservation Office  
30290 Josie Billie Highway  
PMB 1004  
Clewiston, FL 33440

Gretchen Ward, CR Specialist, National Park Service, Denver Service Center



## United States Department of the Interior

National Park Service  
Biscayne National Park  
9700 S. W. 328th Street  
Homestead, Florida 33033-5634



L7615

19 AUG 2017

Mr. Colley Billie, Chairman  
Miccosukee Tribe of Indians of Florida  
Post Office Box 440021, Tamiami Station  
Miami, Florida 33144

Subject: Government to Government Consultations with American Indian Tribes  
General Management Plan for Biscayne National Park

Dear Chairman Billie:

The General Management Plan/Draft Environmental Impact Statement for Biscayne National Park is now available. This plan details the National Park Service proposals for the long-term management of the park.

Enclosed is a copy of the plan which includes analysis pursuant to the National Environmental Policy Act as well as Section 106 of the National Historic Preservation Act. The park's Preferred Alternative emphasizes strong natural and cultural resource protection while providing a diversity of visitor experiences. The Preferred Alternative proposes to manage large areas of the park as they are managed today, and adds several zones for new recreational opportunities, such as no-motor zones by the mainland coast and a marine protected area where visitors can snorkel and dive a reef that experiences no fishing pressure. For a detailed analysis of the Preferred Alternative's effect on cultural resources, please see "Cultural Resources" under the section titled "Impacts of Implementing Alternative 4, the NPS Preferred Alternative" in Chapter 4.

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We would appreciate receiving any comments you may have by October 25, the end of the public comment period. If you should have any questions, please contact me at (305) 230-1144 x024 or Charles Lawson, Biscayne National Park Cultural Resource Manager, at (786) 335-3676 or by email at [Charles\\_Lawson@nps.gov](mailto:Charles_Lawson@nps.gov).

Sincerely,



Mark Lewis  
Superintendent

Enclosures

General Management Plan/Draft Environmental Impact Statement  
Newsletter

cc: Mr. Fred Dayhoff, NAGPRA/Section 106 Representative, Miccosukee Tribe of Indians of Florida  
HC61 S.R. 68  
Ochopee, FL 34141

Gretchen Ward, CR Specialist, National Park Service, Denver Service Center



**United States Department of the Interior  
NATIONAL PARK SERVICE**

**Biscayne National Park  
9700 S.W. 328<sup>th</sup> Street  
Homestead, Florida 33133**



In Reply Refer to:

L7615

19 AUG 2011

Mr. Bob Progulske  
Acting Field Supervisor  
South Florida Ecological Service Field Office  
U.S. Fish and Wildlife Service  
U.S. Department of the Interior  
1339-20<sup>th</sup> Street  
Vero Beach, Florida 32960

Re: Section 7 Consultation  
General Management Plan/Draft Environmental Impact Statement  
Biscayne National Park  
Miami-Dade County

Dear Mr. Progulske:

We are writing to initiate Section 7 consultation as described in the Endangered Species Act, as amended. Enclosed for your review and comment is the General Management Plan/Draft Environmental Impact Assessment for Biscayne National Park.

We are inviting your office to attend any of three identical public meetings as follows:

September 13  
6 – 9 pm  
Crowne Plaza Hotel  
950 N.W. 42 Avenue  
Miami, FL 33126

September 14  
6 – 9 pm  
Florida City's City Hall  
404 W. Palm Drive  
Florida City, FL 33034

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These public meetings will provide an opportunity for the public to learn about the draft plan and to submit verbal and/or written comments. Presentations, exhibits, and park staff will be available to facilitate understanding of the plan. Alternatively, we could schedule a face to face meeting at a time and location of your choosing. We would appreciate receiving your comments by October 31, the end of the public comment period.

Biscayne National Park is one of the largest marine parks in the National Park system and features a spectacular array of mangrove, coastal hammocks, seagrass, hardbottom, and coral reef habitats. The park is utilized for a variety of activities, including boating, recreational and commercial fishing, snorkeling and SCUBA diving, picnicking, wildlife viewing, and birding.

Much has changed since the last comprehensive management plan for the park was completed in 1983: the population near the park has greatly increased, visitor use patterns and types have changed, and people have brought new recreational activities into the park. Each of these changes has implications for how visitors access and use the national park and the facilities needed to support those uses, how resources are managed and protected, and how the National Park Service manages its operations. This new plan addresses the need for an updated plan and examines five alternatives for managing the park for the next 15 to 20 years. The alternatives are as follows:

**Alternative 1**, the no-action alternative, consists of a continuation of existing management and trends at Biscayne National Park and provides a baseline for comparison in evaluating the changes and impacts of the other alternatives. The National Park Service would continue to manage the national park as it is currently being managed. Existing operations and visitor facilities would continue, and no new construction would be authorized other than what has already been approved and funded. Current law, policy, and plans, would continue to provide the framework of guidance. The important impacts of continuing existing management conditions and trends would include no new impacts on natural resources, no adverse effect on cultural resources, a continuation of adverse effects on visitor experience, a continuation of adverse effects on park operations, and no new impact on the socioeconomic environment. Alternative 1 is described in detail beginning on page 63 of the enclosed plan.

**Alternative 2** would emphasize the recreational use of the park while providing for resource protection as governed by law, policy, or resource sensitivity. This concept would be accomplished by providing a high level of services, facilities, and access to specific areas of the park. Alternative 2 is described in detail beginning on page 69 of the enclosed plan.

**Alternative 3** would allow all visitors a full range of visitor experiences throughout most of the park and would use a permit system to authorize a limited number of visitors to access some areas of the park. Management actions would provide strong natural and cultural resource protection and diverse visitor experiences. This alternative designates a no-take Marine Reserve Zone to provide visitors the opportunity to experience a healthy, natural, and ecologically intact reef community. Alternative 3 is described in detail beginning on page 75 of the enclosed plan.

**Alternative 4** is the National Park Service's **preferred alternative** and would emphasize strong natural and cultural resource protection while providing a diversity of visitor experiences. Some areas would be reserved for limited types of visitor use. The preferred alternative is described in detail beginning on page 81 of the enclosed plan. Some highlights of Alternative 4 include:

- Providing a moderate level of new or enhanced visitor services, facilities, and access
- Increasing opportunities to experience natural sounds
- Creating a combination of increased Non-combustion Engine Use and Slow Speed zones to provide higher levels of resource protection and diversity of visitor opportunities

- Designating a no-take Marine Reserve Zone to provide visitors the opportunity to experience a healthy, natural, and ecologically intact reef community.

**Alternative 5** would promote the protection of natural resources, including taking actions to optimize conditions for protection and restoration. A permit system would be used in some parts of the park. Other areas would have limited numbers of visitors, manner of access, and recreational activities to provide certain experiences. This alternative proposes the largest no-take Marine Reserve Zone of all the alternatives. Alternative 5 is described in detail beginning on page 87 of the enclosed plan.

## **NATIONAL PARK SERVICE DETERMINATIONS ON THREATENED AND ENDANGERED SPECIES:**

A detailed discussion of threatened and endangered species occurring in Biscayne National Park and the effect determinations of each alternative on these species can be found beginning on page 124 of Chapter 3 and page 250 of Chapter 4, respectively. Table 7 (page 115) of the plan also summarizes the Section 7 effect determinations for threatened and endangered species. NPS scientists have determined that implementation of Alternative 4, the Preferred Alternative, will have the following determinations on federally listed species. We request that U.S. Fish and Wildlife Service concur with our effect determinations for the species listed below. The determinations are summarized in the table below, followed by more detailed explanation. Our agency is also completing consultation with National Marine Fisheries Service regarding impacts to those species which they oversee.

Species	Scientific Name	Effect Determination	Relevant pages in the plan
Florida manatee	<i>Trichechus manatus latirostris</i>	May affect, not likely to adversely affect	126, 250
Sea turtles (nesting)	<i>Caretta caretta</i> , <i>Chelonia mydas</i> , <i>Lepidochelys kempii</i> , <i>Eretmochelys imbricata</i> , and <i>Dermochelys coriacea</i>	May affect, not likely to adversely affect	126, 250
American crocodile	<i>Crocodylus acutus</i>	May affect, not likely to adversely affect	127, 251
Schaus Swallowtail Butterfly	<i>Heracles aristodemus ponceanus</i>	May affect, not likely to adversely affect	128, 251

**Florida Manatees:** Manatees are routinely observed within Biscayne National Park between October and May, and are occasionally observed in the park between June and September. The park, in cooperation with the state and Miami-Dade County, has implemented a Slow Speed Zone along the entire mainland coastline in the park. This zone extends out 1,000 feet from the mainland shoreline. The Slow Speed Zone in the park is consistent with areas so designated outside park boundaries. These zones are designed to provide boat operators time to react when they observe manatees, reducing the potential of striking the animals. Under the preferred alternative, the manatee protection area would be modified so that the 500 feet

nearest the shoreline would be designated a Non-combustion Engine Use Zone and the remaining 500 feet would be designated a Slow Speed Zone. Within the Non-combustion Engine Use Zone, management would focus on protecting water-based resources and minimizing visitor use impacts. This zone would provide additional protection to the manatee by reducing the potential for boat-related injuries and mortality in the areas where manatees are most likely to occur. The Slow Speed Zone would provide boat operators a greater opportunity to avoid collisions with manatees that are further from shore by increasing their response times. The Slow Speed and Non-combustion Engine Use zones under this alternative would also result in fewer boat groundings in seagrass beds, an important habitat/food source for manatees. The modifications to the manatee protection area and zoning would have a long-term beneficial impact on manatees in the park. The impacts on the manatee under the preferred alternative would be small, localized, and beneficial. Measurable beneficial outcomes on individual manatees and the manatee population because of the protective zones are likely. This would equate to a “may affect, not likely to adversely affect” determination.

**Sea Turtles:** Green and loggerhead turtles are routinely observed within Biscayne Bay and nesting has been documented primarily on Elliott Key. Most nesting activity is presumed to be from loggerhead turtles. The other species of sea turtles have only rarely been observed within the park, and are not known to nest within the park. Nesting behavior of sea turtles may be affected by noise from combustion-powered boats, and the preferred alternative could result in a reduced number of combustion-powered boats in the park. Although this alternative includes primitive campsites on Elliott Key, overall development on Elliott Key would be minimal because only the breezeway loop trail would be improved. There would not be a substantial amount of light from the campsites. Mitigation measures such as education efforts regarding the importance of reducing artificial light, additional monitoring and patrols as visitation increases, and possible limitations on the number of visitors would reduce the level of adverse impacts. No new development would occur. Overall, the effects of actions under Alternative 4 are likely to slightly benefit sea turtle nesting activity compared to current management actions, and thus may affect, but is not likely to adversely affect sea turtle nesting activity.

**American Crocodile:** Crocodile habitat is typically along the shoreline in the mangroves and in the canals. The USFWS has designated all land and waters encompassed by a line beginning at Turkey Point traveling southeast to the southernmost point of Elliott Key and southwest along the eastern shorelines of the keys to the park boundaries as critical habitat. Turkey Point Power Plant cooling canals, located just south of the park’s southern mainland boundary, are a major nesting area for American crocodiles. Juvenile crocodiles do inhabit the park and are infrequently observed by park staff and/or visitors. Under the preferred alternative, visitor services and infrastructure would remain near current levels with the designated paths, a possible viewing platform, boardwalk, and jetty in the vicinity of Convoy Point. This area is north of the designated critical habitat area for the crocodiles where few crocodiles are so this alternative would not be expected to impact their activities in the park. The mangroves south of the visitor center would continue to be managed primarily to protect the habitat characteristics of the area. No additional development within the designated critical habitat would be proposed under this alternative. The impacts of activities on crocodile habitat and activities along the mainland shore would be negligible for this


alternative. The impacts on the American crocodile under the preferred alternative would be negligible, localized, and beneficial. Mitigation measures would be put in place in the event of more visitor-crocodile interactions because of population pressures near the park. Overall, this would equate to a “may affect, not likely to adversely affect” determination for the American crocodile.

**Schaus Swallowtail Butterfly:** The largest numbers of Schaus swallowtail butterfly are observed within the boundaries of Biscayne National Park, particularly along trail edges within the hardwood hammocks of Elliott and Adams Keys. Schaus swallowtails are monitored annually during the May-June flight period. New development on Adams Key would include only the staging area for canoes and kayaks and possibly minimal facilities for the environmental education center. The level of development on the island would occur near the shore and would be unlikely to impact the butterfly population or habitat on the island. The long-term adverse impact on the butterfly population and habitat would be negligible. On Elliott Key the potential disturbance of the butterfly population or habitat would be slight because only the loop trail would be made universally accessible. The long-term impact of this alternative on the population of the butterfly would be adverse and negligible. Old Rhodes and the other southern keys would be zoned for nature observation, and Swan Key would be zoned as a sensitive resource area. Impacts on the hardwood hammocks on these keys would not change under this alternative. There would be no short-term or long-term impacts on butterfly populations and habitat caused by this alternative. Weather-related phenomena would remain the greatest risk to the butterfly under this alternative because there would be no development proposed that would impact butterfly habitat. Thus, the impacts on the Schaus swallowtail under the preferred alternative would be negligible and neutral to adverse in some locations, but mitigation measures to protect the species’ habitat and breeding season are likely to be successful. Overall, the preferred alternative “may affect, not likely to adversely affect” the Schaus swallowtail.

Thank you for your attention to this important project. If you have any questions or concerns, please contact Elsa Alvear, Chief of Resource Management, at (305) 230-1144 ext 002 or [elsa\\_alvear@nps.gov](mailto:elsa_alvear@nps.gov).

Sincerely,



 Mark Lewis  
Superintendent

Enclosures

General Management Plan/Draft Environmental Impact Statement  
Newsletter



**United States Department of the Interior  
NATIONAL PARK SERVICE**

**Biscayne National Park  
9700 S.W. 328<sup>th</sup> Street  
Homestead, Florida 33133**



In Reply Refer to:

L7615

18 AUG 2011

David Bernhart  
Protected Resources Division  
NOAA National Marine Fisheries Service  
263 13th Ave. South  
St. Petersburg, FL 33701

Re: Section 7 Consultation  
General Management Plan/Draft Environmental Impact Statement  
Biscayne National Park  
Miami-Dade County

Dear Mr. Bernhart:

We are writing to initiate section 7 consultation as described in the Endangered Species Act, as amended. Enclosed for your review and comment is the General Management Plan/Draft Environmental Impact Assessment at Biscayne National Park.

We are inviting your office to attend any of three identical public meetings as follows:

September 13	September 14	September 15
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changes has implications for how visitors access and use the national park and the facilities needed to support those uses, how resources are managed and protected, and how the National Park Service manages its operations. This new plan addresses the need for an updated plan and examines five alternatives for managing Biscayne National Park for the next 15 to 20 years. The alternatives are as follows:

**Alternative 1**, the no-action alternative, consists of a continuation of existing management and trends at Biscayne National Park and provides a baseline for comparison in evaluating the changes and impacts of the other alternatives. The National Park Service would continue to manage the national park as it is currently being managed. Existing operations and visitor facilities would continue, and no new construction would be authorized other than what has already been approved and funded. Current law, policy, and plans, would continue to provide the framework of guidance. The important impacts of continuing existing management conditions and trends would include no new impacts on natural resources, no adverse effect on cultural resources, a continuation of adverse effects on visitor experience, a continuation of adverse effects on park operations, and no new impact on the socioeconomic environment. Alternative 1 is described in detail beginning on page 63 of the enclosed plan.

**Alternative 2** would emphasize the recreational use of the park while providing for resource protection as governed by law, policy, or resource sensitivity. This concept would be accomplished by providing a high level of services, facilities, and access to specific areas of the park. Alternative 2 is described in detail beginning on page 69 of the enclosed plan.

**Alternative 3** would allow all visitors a full range of visitor experiences throughout most of the park and would use a permit system to authorize a limited number of visitors to access some areas of the park. Management actions would provide strong natural and cultural resource protection and diverse visitor experiences. This alternative designates a no-take Marine Reserve Zone to provide visitors the opportunity to experience a healthy, natural, and ecologically intact reef community. Alternative 3 is described in detail beginning on page 75 of the enclosed plan.

**Alternative 4** is the National Park Service's preferred alternative and would emphasize strong natural and cultural resource protection while providing a diversity of visitor experiences. Some areas would be reserved for limited types of visitor use. The preferred alternative is described in detail beginning on page 81 of the enclosed plan. Some highlights of Alternative 4 include:

- Providing a moderate level of new or enhanced visitor services, facilities, and access
- Increasing opportunities to experience natural sounds
- Creating a combination of increased Non-combustion Engine Use and Slow Speed zones to provide higher levels of resource protection and diversity of visitor opportunities
- Designating a Marine Reserve Zone to provide visitors the opportunity to experience a healthy, natural, and ecologically intact reef community.

**Alternative 5** would promote the protection of natural resources, including taking actions to optimize conditions for protection and restoration. A permit system would be used in some

parts of the park. Other areas would have limited numbers of visitors, manner of access, and recreational activities to provide certain experiences. Alternative 5 is described in detail beginning on page 87 of the enclosed draft plan.

## NATIONAL PARK SERVICE DETERMINATIONS ON THREATENED AND ENDANGERED SPECIES:

A detailed discussion of threatened and endangered species occurring in Biscayne National Park and the effect determinations of each alternative on these species can be found beginning on page 124 of Chapter 3 and page 250 of Chapter 4, respectively. Table 7 (page 115) of the plan also summarizes the Section 7 effect determinations for threatened and endangered species. The proposed NPS action is to implement Alternative 4, and NPS scientist determinations for federally listed species are shown below; however, please feel free to comment on any of the alternatives, including but not limited to the no-action alternative (Alternative 1) and the environmentally preferred alternative (Alternative 5). We request that NMFS concur with our effect determinations for the species listed below. The determinations are summarized in the table below, followed by more detailed explanation. Our agency is also completing consultation with U.S. Fish & Wildlife Service regarding impacts to those species which they oversee.

Species	Scientific Name	Effect Determination	Relevant pages in the plan
Sea turtles	<i>Caretta caretta</i> , <i>Chelonia mydas</i> , <i>Lepidochelys kempii</i> , <i>Eretmochelys imbricata</i> , and <i>Dermochelys coriacea</i>	May affect, not likely to adversely affect	126, 250
Acroporid corals	<i>Acropora cervicornis</i> , <i>Acropora palmata</i>	May affect, not likely to adversely affect	129, 252
Smalltooth Sawfish	<i>Pristis pectinata</i>	May affect, not likely to adversely affect	128, 251

**Sea Turtles:** Green, loggerhead and hawksbill turtles are routinely observed in the waters of Biscayne National Park. Leatherback and Kemp's Ridley sea turtles are rarely, if ever, observed within the park. Collisions between boats and sea turtles would be expected to be minimized in the Slow Speed and the Non-combustion Engine Use zones. However, given the size of these zones compared to the size of the Multiuse Zone, the beneficial impacts of implementation of this alternative would be minor. The implementation of a Marine Reserve Zone would result in less derelict fishing gear (monofilament, traps) in this area. This would result in the reduction of threat of entanglement for sea turtles within this zone. This would be a minor, beneficial, long-term impact on sea turtles. This beneficial impact would be offset if fishing pressure increased outside the Marine Reserve Zone. The impacts on sea turtles under

the preferred alternative would be adverse but negligible and would equate to a “may affect, not likely to adversely affect” determination.

**Acroporid corals:** In Biscayne National Park, Acroporid corals are observed primarily on the reef tract (oceanside of the keys), particularly on the southernmost reefs of the park. All waters east of the chain of islands running from north to south in the park are included in an area that has been designated as ‘critical habitat’ for elkhorn and staghorn corals. Acroporid corals can be adversely affected by a variety of factors including fishing, pollution, vessel groundings, sedimentation, macroalgal overgrowth, disease, and increasing sea temperatures. Indirect impacts result from the harvest of targeted species from park waters, which in turn may affect reef community structure due to ecological cascades caused by removal by fishing of predators, prey, or competitors in the food web. The creation of a 10,522-acre Marine Reserve Zone under the Preferred Alternative would prohibit fishing and anchoring on many of the southern reefs in the park, which include areas known to have healthy populations of Acroporid corals. Because visitors who would otherwise use the area in the Marine Reserve Zone to fish would have to fish elsewhere, boat traffic and anchoring throughout this zone could be expected to decrease. Although unlikely, these decreases could be offset if people use the Marine Reserve Zone for non-extractive activities such as snorkeling and diving. Because the Marine Reserve Zone is expected to reduce fishing and improve ecological balance, reduce fishing debris, reduce vessel groundings, and reduce damage from inappropriate anchoring in Acroporid coral habitat, actions under alternative 4 are expected to have a moderate and beneficial effect. The Marine Reserve Zone is expected to have a beneficial, long-term, effect on Acroporid corals by protecting them from activities that could lead to physical and ecological damage. Thus, this alternative “may affect, but is not likely to adversely affect” Acroporid corals.

**Smalltooth Sawfish:** This species is only rarely observed in the park. No incidences of unintentional catch of smalltooth sawfish have ever been reported to resource managers or law enforcement officers during routine recreational creel surveys which are conducted at least once per week. The Florida Museum of Natural History’s National Sawfish Encounter Database reports a total of nine encounters (sightings and/or captures) reported from within Biscayne’s boundaries from 1998 through 2009. These encounters have occurred in diverse habitats of the park, including marked channels, along coastlines, and in deeper reef habitats. Smalltooth sawfish could be affected by any increase in hook-and-line fishing efforts, although any effects are unlikely given the rarity of smalltooth sawfish in the park. While the establishment of the Marine Reserve Zone in deeper reef habitat is not likely to have a substantial effect on this species that tends to prefer shallow water, it is possible that the implementation of the no-take marine reserve zone could have a small yet positive benefit on smalltooth sawfish by reducing bycatch since reports of this species in reef and deeper water habitats, although uncommon, do exist. No other actions that would occur under this alternative would be expected to affect sawfish in the park. Thus, this alternative “may affect, but is not likely to adversely affect” smalltooth sawfish.

Thank you for your attention to this important project. If you have any questions or concerns, please contact Elsa Alvear, chief of Resource Management, at (305) 230-1144 ext 002 or [elsa\\_alvear@nps.gov](mailto:elsa_alvear@nps.gov).

Sincerely,

  
for Mark Lewis  
Superintendent

Enclosures

General Management Plan/Draft Environmental Impact Statement  
Newsletter



ML 9/30/11

FLORIDA DEPARTMENT OF STATE  
**Kurt S. Browning**  
Secretary of State  
DIVISION OF HISTORICAL RESOURCES

Mr. Mark Lewis  
U.S. Department of the Interior - National Park Service  
Biscayne National Park  
9700 S.W. 328th Street  
Homestead, Florida 33033-5634

September 14, 2011

RE: DHR Project File Number: 2011-3819  
National Park Service- Biscayne National Park  
L7615  
*General Management Plan and Draft Environmental Impact Statement for Biscayne National Park*  
Miami-Dade County

Dear Mr. Lewis:

This office reviewed the referenced project for possible impact to historic properties listed, or eligible for listing, on the *National Register of Historic Places*. The review was conducted in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended, 36 CFR Part 800: *Protection of Historic Properties* and the *National Environmental Policy Act of 1969*, as amended.

It is the opinion of this office that the *General Management Plan and Draft Environmental Impact Statement* adequately addresses cultural resources located within the Biscayne National Park

If you have any questions concerning our comments, please contact Scott Edwards, Historic Preservationist, by electronic mail [scott.edwards@dos.myflorida.com](mailto:scott.edwards@dos.myflorida.com), or at 850.245.6333 or 800.847.7278.

Sincerely,

Laura A. Kammerer  
Deputy State Historic Preservation Officer  
For Review and Compliance



# United States Department of the Interior


FISH AND WILDLIFE SERVICE  
South Florida Ecological Services Office  
1339 20<sup>th</sup> Street  
Vero Beach, Florida 32960



March 7, 2012

## Memorandum

To: Mark Lewis, Superintendent, Biscayne National Park

From:  Larry Williams, Field Supervisor, South Florida Ecological Services Office

Subject: Biscayne National Park: Draft General Management Plan/Environmental Impact Statement; National Park Service No. L7615; Service Federal Activity No. 41420-2011-CPA-0291; Service Log Number: 41420-2011-I- 0318

The U.S. Fish and Wildlife Service (Service) has reviewed your letter dated August 19, 2011, requesting consultation on the Biscayne National Park (BNP) Draft General Management Plan/Environmental Impact Statement (DGMP/EIS) and its potential effects on threatened and or endangered species in BNP. This memorandum is submitted in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*), and the Marine Mammal Protection Act of 1972, as amended (MMPA) (16 U.S.C. 1361 *et seq.*).

## PROJECT DESCRIPTION

BNP is utilized for a variety of activities, including boating, recreational and commercial fishing, snorkeling, SCUBA diving, picnicking, wildlife viewing, and birding. Since BNP's last comprehensive management plan was completed in 1983, the population near the park has increased, and visitor use has increased and changed. These changes have implications for how visitors access and use BNP. The DGMP/EIS outlines the facilities needed to support new uses, how resources are managed and protected and how the National Park Service (NPS) manages its operations. The new plan examines five alternatives for managing the park over the next 15 to 20 years.

The NPS proposes in its DGMP/EIS to implement the preferred alternative, Alternative 4, for areas within BNP. The highlights of Alternative 4 include:

- Providing a moderate level of new or enhanced visitor services, facilities and access;
- Increasing opportunities to experience natural sounds;
- Establishing a Marine Reserve Zone (a site-specific Non-combustion Engine Use zone within 500 feet of shorelines in conjunction with an existing 1,000-foot Slow Speed zone) to provide higher levels of resource protection;
- Establishing new partnerships with private entities, such as marinas and State and County parks, to expand the BNP's capacity; and
- Imposing restrictions on fishing, resource exploitation, mooring, anchoring and vessel usage to protect BNP resources.



BNP proposes to provide existing, new or enhanced visitor services, facilities and access by:

- Maintenance, improvement and possible expansion of a variety of existing structures and facilities;
- Maintenance dredging of existing channels;
- Exotic plant management;
- Acquisition of sites with important cultural and natural resources;
- Construction of a visitor center in Miami;
- Use of mooring buoys to preclude use of anchors that damage the marine environment;
- Restoration of prop scars and vessel grounding sites; and
- Construction of a learning center at an existing site.

BNP has determined implementing Alternative 4 will result in the following:

- Beneficial impacts on fisheries, and submerged aquatic communities;
- Beneficial, insignificant and/or discountable effects on federally listed species;
- Negligible adverse impacts on state listed species and wetlands;
- No adverse effect on archeological resources, historic structures, or cultural landscapes;
- Both beneficial and adverse effects on visitor use and experience;
- Minor adverse impacts on park operations; and
- Beneficial and adverse impacts on the socioeconomic environment.

### THREATENED AND ENDANGERED SPECIES

The NPS requests the Service concur with their determinations that implementation of Alternative 4 of the DGMP/EIS “may affect, but is not likely to adversely affect” (MANLTAA) the following federally listed species:

Common Name	Scientific Name	Status	Determination
<b>INVERTEBRATES</b>			
Schaus Swallowtail butterfly	<i>Orthalicus reses reses</i>	Threatened	MANLTAA
<b>MAMMALS</b>			
West Indian manatee and its designated critical habitat	<i>Trichechus manatus</i>	Endangered	MANLTAA
<b>REPTILES</b>			
American crocodile and its designated critical habitat	<i>Crocodylus acutus</i>	Threatened	MANLTAA
Green sea turtle	<i>Chelonia mydas</i>	Threatened	MANLTAA
Hawksbill sea turtle	<i>Eretmochelys imbricata</i>	Endangered	MANLTAA
Kemp’s Ridley sea turtle	<i>Lepidochelys kempii</i>	Endangered	MANLTAA
Leatherback sea turtle	<i>Dermochelys coriacea</i>	Endangered	MANLTAA
Loggerhead sea turtle	<i>Caretta caretta</i>	Threatened	MANLTAA

The Service has reviewed the plans, maps, and other information provided by BNP for the proposed project, including the conservation measures proposed to reduce adverse effects to federally listed threatened and endangered species. These species occur within the BNP boundaries in distinct habitats and areas and, for some species, even during distinct time periods. Therefore, depending on the time and location, all or none of these species may be present; details are presented below.

The largest numbers of the Schaus swallowtail butterfly are observed in the hardwood hammocks of Adams and Elliot Keys, during the May to June flight period. In Schaus swallowtail butterfly habitat, new development on Adams Key would include only the staging area for canoes and kayaks and possibly minimal facilities for the environmental education center. The level of development on the island would occur near the shore and would be unlikely to impact the butterfly population or habitat on the island. On Elliott Key, the potential disturbance of the butterfly population or habitat would be slight because only an existing loop trail would be made universally accessible. No new development is proposed in Schaus swallowtail butterfly habitat; therefore, none would be affected. Some slight disturbance may occur due to increased visitor use; however, the long-term adverse impact on the butterfly population and habitat would likely be negligible.

Manatees are routinely observed within BNP between October and May, and are occasionally observed in the park between June and September. All of Biscayne Bay, and all adjoining and connected lakes, rivers, canals and waterways, from the southern tip of Key Biscayne northward to and including Maule Lake (Miami-Dade County), is designated as manatee critical habitat. Currently, BNP has designated 1,000 feet out from its mainland shoreline a Slow Speed Zone to protect manatees. Under the preferred alternative, the manatee protection area in the park would be modified so that 500 feet out from the shoreline would also be designated a Marine Reserve Zone, or Non-combustion Engine Use Zone, and 500 to 1,000 feet would remain designated a Slow Speed Zone. Within the Non-combustion Engine Use Zone, management would focus on protecting water-based resources and minimizing visitor use impacts. This zone would provide additional protection to the manatee by reducing the potential for boat-related injuries and mortality in the areas where manatees are most likely to occur. These zones are designed to provide boat operators time to react when they observe manatees, reducing the potential of striking the animals. The establishment of a Marine Reserve Zone, as well other restrictions, will likely benefit the West Indian manatee by reducing the number of motorized boats. Little to no manatee critical habitat will be altered.

The American crocodile is a frequent inhabitant of BNP. Crocodile habitat is typically along the shoreline in the mangroves and in canals. The Service has designated crocodile critical habitat as all land and waters encompassed by a line beginning at Turkey Point, traveling southeast to the southernmost point of Elliott Key and southwest along the eastern shorelines of the Florida Keys to the park. Turkey Point Power Plant cooling canals, located just south of the park's southern mainland boundary, are a major nesting area for American crocodiles. Juvenile crocodiles do inhabit the park and are infrequently observed by park staff and visitors. Visitor services and infrastructure would remain near current levels with the designated paths, a possible viewing platform, boardwalk, and jetty in the vicinity of Convoy Point. This area is north of the

designated critical habitat area for the crocodiles where there are few crocodiles, so the preferred alternative is not expected to impact their activities in the park. The mangroves south of the visitor center would continue to be managed for conservation. The establishment of a Marine Reserve Zone, as well other restrictions, will also likely benefit the American crocodile. Little, if any, development within designated critical habitat is proposed.

Green and loggerhead sea turtles are routinely observed within Biscayne Bay and nesting has been documented from May through August, primarily on Elliott Key. Most nesting activity is presumed to be by loggerhead sea turtles. The other species of sea turtles have only rarely been observed in the park, and are not known to nest on park beaches. Nesting behavior of sea turtles may be affected by noise from combustion-powered boats, and the preferred alternative could result in a fewer motorized boats in the park. Although Alternative 4 includes primitive campsites on Elliott Key, overall development there would be minimal because only the Breezeway Loop trail would be improved. There would not be a substantial amount of light from the campsites. Mitigation measures such as education efforts regarding the importance of reducing artificial light, additional monitoring and patrols as visitation increases and possible limitations on visitor numbers would reduce the level of adverse impacts. No new development affecting sea turtle nesting habitat would occur. Sea turtle nesting behavior may be affected by noise from combustion-powered boats, and the Marine Reserve Zone could result in fewer motorized boats in the park. Therefore, the establishment of a Marine Reserve Zone, as well other restrictions, will likely benefit nesting sea turtles.

In addition, the following measures are used by BNP during any construction activities to reduce and avoid impacts to threatened and endangered species:

- Turbidity curtains are deployed and checked throughout the day to ensure no crocodiles or manatees have become entangled.
- Vessel operators are required to adhere to no-wake and minimum wake zones.
- The Standard Manatee Construction Conditions for In-water Work (FWC, 2011) are employed.
- The NPS adheres to the standard protection measures for sea turtles.

Under the preferred alternative, visitor services and infrastructure would remain near current levels. In almost all cases, existing structures and developed areas would be redeveloped to provide new or expanded services. Overall, the Service finds the actions proposed in the DGMP/EIS preferred Alternative 4 will benefit the listed species under consideration. Based on this information, the Service concurs with NPS's determinations of MANLTAA the Schaus swallowtail butterfly, the West Indian manatee and its critical habitat, the American crocodile and its critical habitat, the green sea turtle, the hawksbill sea turtle, the Kemp's Ridley sea turtle, the leatherback sea turtle and the loggerhead sea turtle. In addition, the Service finds that implementation of the DGMP/EIS will likely have beneficial effects on the fish and wildlife resources in the area.

If you have any questions regarding this memorandum, please contact Winston Hobgood at 772-469-4306.

cc: electronic only

BNP, Homestead, Florida (Elsa Alvear)

FWC, Tallahassee, Florida (FWC-CPS)

#### **LITERATURE CITED**

Florida Fish and Wildlife Conservation Commission. 2011. Standard Manatee Conditions for In-water Work. Tallahassee, Florida. [http://myfwc.com/docs/WildlifeHabitats/Manatee\\_StdCondIn\\_waterWork.pdf](http://myfwc.com/docs/WildlifeHabitats/Manatee_StdCondIn_waterWork.pdf)



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
Southeast Regional Office  
263 13<sup>th</sup> Avenue South  
St. Petersburg, FL 33701-5505  
(727) 824-5312; FAX 824-5309  
<http://sero.nmfs.noaa.gov>

F/SER31:KL

**SEP 19 2012**

Mr. Mark Lewis  
Superintendent, Biscayne National Park  
National Park Service  
9700 SW 328<sup>th</sup> Street  
Homestead, FL 33133

Re: Biscayne National Park General Management Plan

Dear Mr. Lewis:

Enclosed is the National Marine Fisheries Service's (NMFS) biological opinion (opinion) based on our review of impacts associated with the Biscayne National Park General Management Plan (GMP). This opinion is based on project-specific information provided in the draft environmental impact statement as well as NMFS' review of published literature. This opinion analyzed the project effects on sea turtles, smalltooth sawfish, elkhorn and staghorn corals, and designated critical habitat for elkhorn and staghorn corals. We believe that the implementation of the GMP is likely to adversely affect green, loggerhead, and hawksbill sea turtles but is not likely to jeopardize their continued existence.

We look forward to further cooperation with you on other National Park Service projects to ensure the conservation and recovery of our threatened and endangered marine species. If you have any questions regarding this consultation, please contact Kelly Logan, consultation biologist, by e-mail at [Kel.Logan@noaa.gov](mailto:Kel.Logan@noaa.gov) or (954) 356-6790.

Sincerely,

Roy E. Crabtree, Ph.D.  
Regional Administrator

Enclosure

File: 1514-22.P  
Ref: P/SER/2011/03871



## APPENDIX E: PURPOSE AND AUTHORITY FOR MARINE RESERVE ZONE AND SPECIAL RECREATION ZONE

### MARINE RESERVE ZONE

(Excerpted from 2011 Draft GMP/EIS)

#### Purpose and Need

The purpose of the proposed marine reserve zones is to provide snorkelers and divers with the opportunity to experience a healthy, natural coral reef, with larger and more numerous tropical reef fish and an ecologically intact reef system, while not being so large as to completely eliminate the opportunities for fishing any of the park's reef areas. Visitors to parks in the American West expect to see large healthy trees such as sequoias and redwoods, and large healthy diverse populations of big mammals such as bison and elk. Similarly, visitors to the largest marine park in the national park system expect to see healthy coral reefs teeming with diverse communities of large, healthy fish.

To accomplish this, the park has established objectives of larger, healthier, diverse corals and larger number and diversity of fish. Coral reef areas that are unfished would provide an opportunity for fish to obtain larger sizes and consequently have greater reproductive success; unfished areas would also benefit from intact ecological communities and a reduction of fishing gear impacts to organisms and benthic habitats. Therefore a no-take marine reserve zone would be expected to provide improved visitor experience for divers and snorkelers. The portion of the park's coral reef protected in this zone would contribute toward the Coral Reef Task Force's goal of 20% of the reefs in Florida being included in marine reserves (U.S. Coral Reef Task Force 2000).

The marine reserve zones proposed in this plan are large enough to accommodate many

dive sites with enough mooring buoys that would not only protect reefs from anchor damage, but also provide an uncrowded snorkel or dive experience. The park would have the ability to move mooring buoys to other equally suitable locations should reef monitoring indicate that specific sites are being impacted at an unacceptable level. Many locations for reef fishing opportunities would remain in the park outside of the marine reserve zones.

#### Authority

Recreational fishing is allowed in parks when not specifically prohibited by a federal law. Commercial fishing is allowed only when specifically authorized by federal law or treaty right (NPS *Management Policies* 2006).

Section 3 of the law establishing Biscayne National Monument in 1968 (Public Law 90-606) states:

The waters within Biscayne National Monument shall continue to be open to fishing in conformity with the laws of the State of Florida except as the Secretary [of the Interior], after consultation with appropriate officials of said State, designates species for which, areas and times within which, and methods by which fishing is prohibited, limited, or otherwise regulated in the interest of sound conservation to achieve the purposes for which the national monument is established.

Section 103(a) of Public Law 96-287 (June 28, 1980), which established Biscayne National Park and added areas to the park north of Boca Chita Key, reiterated much the same

language regarding fishing as in the legislation that established Biscayne as a national monument in 1968, but added the following:

*Provided*, That with respect to lands donated by the State after the effective date of this Act, fishing shall be in conformance with State law.

These passages allow the Secretary of the Interior (through his delegates) to prohibit or limit fishing in areas within the boundaries of the original national monument for reasons of conservation, visitor experience, or to achieve the purposes for which the park is established. Biscayne National Park's purpose is to preserve and protect for the education, inspiration, recreation, and enjoyment of present and future generations a rare combination of terrestrial, marine, and amphibious life in a tropical setting of great natural beauty. Fishing in areas of the park that were added later outside the original monument boundary is governed by the laws and regulations of the State of Florida.

The National Park Service can close areas or otherwise regulate specific uses through special regulations published in the *Code of Federal Regulations* (36 CFR) when necessary for safety or resource protection. Implementing the marine reserve zone would restrict uses of these areas and so would require special regulations under section 1.5 of 36 CFR.

## Zone Locations

Locations of the proposed marine reserve zones were developed following mapping workshops held with the public in 2009 and a science review meeting held shortly thereafter. The size and location of the zone proposed in alternatives 3 and 4 are the same, while the proposed zone in alternative 5 is larger and extends to the eastern shore of Elliott Key (see alternative maps in chapter 2 of the General Management Plan). These areas were selected, in part, because they

include a variety of reef types for visitors to experience, existing markers that could serve as boundary markers, living coral cover, documented fish use by targeted fish species, and some of the Maritime Heritage Trail shipwrecks that visitors enjoy snorkeling and diving on. In all three alternatives, the proposed marine reserve zone is in the original national monument boundary.

## SPECIAL RECREATION ZONE

### Purpose and Need

The purpose of the proposed special recreation zone is to accommodate some recreational fishing while meeting the goal of providing a healthy coral reef ecosystem for a more enjoyable and diverse visitor experience. To accomplish this, some types of fishing would be prohibited and fishing pressure would be limited via permits in the special recreation zone. An adaptive management strategy (appendix F) would be used to evaluate the effectiveness of this approach at 3-, 5-, 8-, and 10-year intervals after implementation with the option of implementing management actions to affect fishing pressure as indicated by monitoring data. At the 10-year evaluation interval, the option to institute a marine reserve zone would be considered.

The special recreation zone proposed in this plan would be large enough to accommodate many dive and fishing sites with enough mooring buoys that would not only protect reefs from anchor damage but also provide an uncrowded snorkel, dive, or fishing experience. The park would have the ability to move mooring buoys to other equally suitable locations should reef monitoring indicate that specific sites are being impacted at an unacceptable level or to improve visitor experience.

## Authority

Recreational fishing is allowed in parks when not specifically prohibited by a federal law. Commercial fishing is allowed only when specifically authorized by federal law, treaty right or special regulation (NPS *Management Policies* 2006).

Section 3 of the law establishing Biscayne National Monument in 1968 (Public Law 90-606) states:

The waters within Biscayne National Monument shall continue to be open to fishing in conformity with the laws of the State of Florida except as the Secretary [of the Interior], after consultation with appropriate officials of said State, designates species for which, areas and times within which, and methods by which fishing is prohibited, limited, or otherwise regulated in the interest of sound conservation to achieve the purposes for which the national monument is established.

Section 103(a) of Public Law 96-287 (June 28, 1980), which established Biscayne National Park and added areas to the park north of Boca Chita Key, reiterated the same language regarding fishing as in the legislation that established Biscayne as a national monument in 1968 but added the following:

*Provided*, That with respect to lands donated by the State after the effective date of this Act, fishing shall be in conformance with State law.

These laws allow the Secretary of the Interior (through his delegates) to prohibit or limit fishing in areas within the boundaries of the original national monument for reasons of conservation, visitor experience, or to achieve the purposes for which the park is established. Biscayne National Park's purpose is to preserve and protect for the

education, inspiration, recreation, and enjoyment of present and future generations a rare combination of terrestrial, marine, and amphibious life in a tropical setting of great natural beauty. Fishing in areas of the park that were added later outside the original monument boundary is governed by the laws and regulations of the State of Florida.

The National Park Service can close areas or otherwise regulate specific uses through special regulations published in the *Code of Federal Regulations* (36 CFR) when necessary for safety or resource protection. Implementing the special recreation zone would restrict uses of these areas and so would require special regulations under section 1.5 of 36 CFR.

## Zone Locations

The location of the proposed special recreation zone was developed largely based on the areas proposed as marine reserve zones in the 2011 Draft GMP/EIS. The areas proposed as marine reserves in 2011 followed mapping workshops held with the public in 2009 and a science review meeting held shortly after in 2009. To develop the size, shape and location of the special recreation zone, the National Park Service convened a science review meeting in 2012 that included representatives from Florida Fish and Wildlife Conservation Commission, Florida Department of Environmental Protection, and NOAA Fisheries. The special recreation zone area was selected, in part, because it includes a variety of reef types for visitors to experience, existing markers that could serve as boundary markers, living coral cover, documented fish use by targeted fish species, and some of the Maritime Heritage Trail shipwrecks on which visitors enjoy snorkeling and diving. In particular, the special recreation zone was sized larger than the original marine reserve zone in alternative 4, to include a greater expanse of patch reef habitat with the acknowledgement that the proposed management actions might need a

larger area to realize the desired outcomes of a healthy coral reef ecosystem.

The proposed special recreation zone is the same size and location in both alternatives 6

and 7 (see alternative maps in chapter 2). The proposed special recreation zone is within the original national monument boundary as defined in the 1968 enabling legislation.

## APPENDIX F: ADAPTIVE MANAGEMENT STRATEGIES FOR SPECIAL RECREATION ZONE ALTERNATIVES 6 AND 7

### OVERVIEW OF THE PROCESS

For the purposes of the special recreation zone adaptive management strategies, we use the following working definition taken from the Department of the Interior Technical Guide (Williams et al. 2007):

*Adaptive management is a decision process that promotes flexible decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Careful monitoring of these outcomes both advances scientific understanding and helps adjust policies or operations as part of an iterative learning process. Adaptive management also recognizes the importance of natural variability in contributing to ecological resilience and productivity. It is not a 'trial and error process,' but rather emphasizes learning while doing. Adaptive management does not represent an end in itself, but rather a means to more effective decision and enhanced benefits. Its true measure is in how well it helps meet environmental, social, and economic goals, increases scientific knowledge, and reduces tensions among stakeholders.*

Adaptive management allows decision makers to acknowledge the uncertainties surrounding the management of natural systems and helps natural resource managers respond to changing resource or system conditions over time through the collection and evaluation of additional social and ecological information. The knowledge that uncertainties exist gives managers the ability to consider them in their planning and to

modify management actions accordingly to progress toward desired outcomes. Adaptive management has the potential to improve a manager's understanding of social and ecological systems to better achieve management objectives.

The adaptive management process contains six steps that are usually completed sequentially (figure F-1). "Assess the Situation" is the typical starting point in this process.

Each of the steps of the process is discussed below in relation to the proposed special recreation zone described in alternatives 6 and 7. The National Park Service recognizes a complex jurisdictional relationship exists among the National Park Service, Florida Fish and Wildlife Conservation Commission, and NOAA Fisheries as they work cooperatively and collaboratively regarding the legislative boundaries and resources of Biscayne National Park. Tables F-2 and F-3 summarize the actions needed to implement the adaptive management strategies for alternatives 6 and 7.

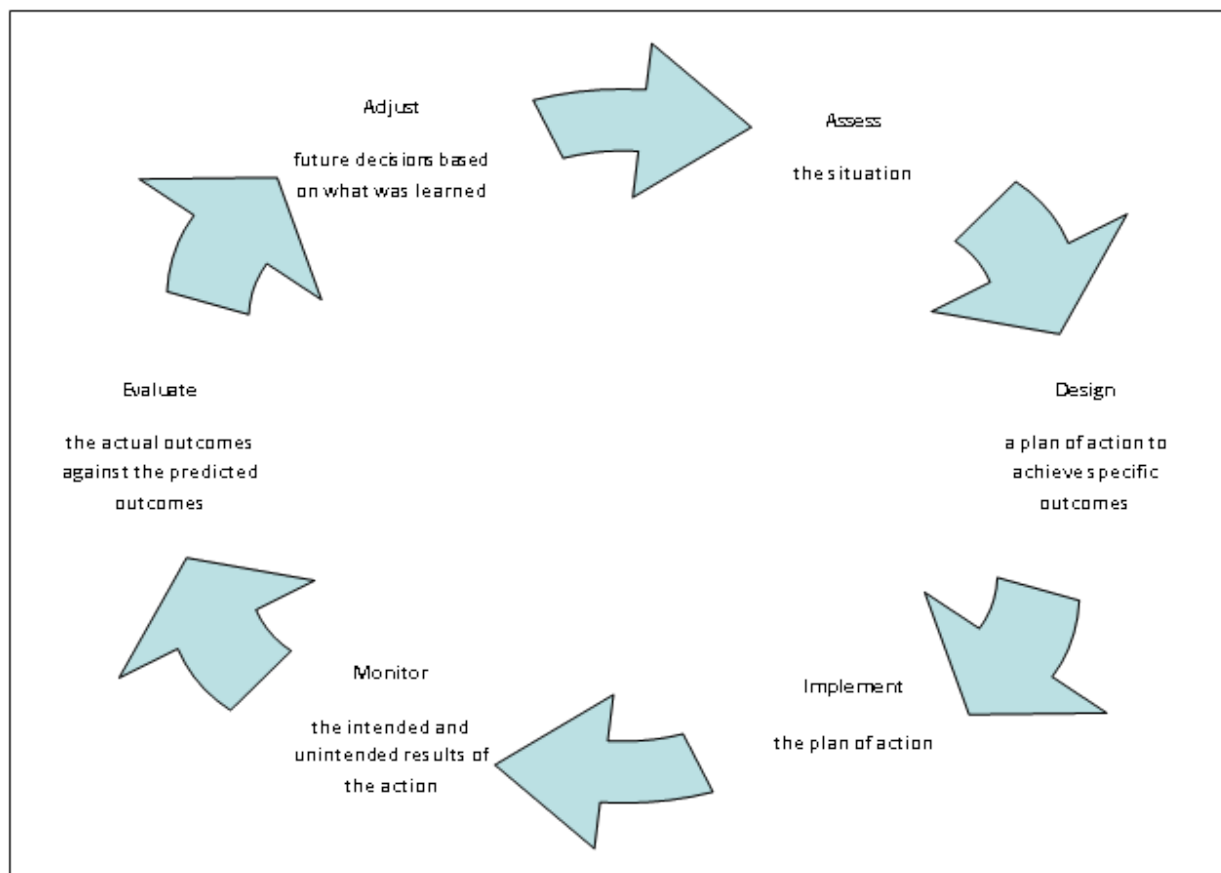
Full descriptions are previously described in chapter 1, "Special Mandates and Administrative Commitments" of the 2011 Draft GMP/EIS on pages 10 and 11.

**Assess the situation:** Over the last three decades, 64% of reef fish species exhibited a decline in their frequency of occurrence within the park (Kellison et al. 2011). Current monitoring data indicates that hogfish, mutton snapper, yellowtail snapper, black grouper, and red grouper populations are low enough that current fishing intensity coupled with legal bag limits has the potential to result in the harvest of the majority of legal-sized fish in the park in a single year. This concern is further supported by park creel surveys which have shown that about half of fishing

trips in the park return to dock with no fish. The low abundance of fish is an unfavorable condition for park resources and visitor experience.

Coral reefs are important global resources that have experienced dramatic declines worldwide in recent years. Biscayne National Park is important to the function and dynamics of the larger Florida reef tract. The reefs within the park are also popular visitor destinations for snorkeling and scuba diving as well as glass-bottom boat viewing. Due to the concentration of fish around coral reefs, the reefs are also popular fishing destinations. Today's live stony coral is estimated to be about 5%–7% (NPS 2013) compared to live coral cover estimates of 8%–28% from 1977–1981 (Dupont et al. 2008). These current values are comparable to coral cover at other long-term sites in the Florida Keys, which have documented declines (Porter and Meier

1992; Ruzicka et al 2009). There is a clear relationship between healthy fish populations and healthy reef ecosystems (Lirman 1999; Newman et al. 2006; Mumby et al. 2007; Paddock et al. 2009). In addition, reefs are damaged by fishing gear (traps, nets, line), anchoring, boat grounding, and abrasion by other debris as well as careless snorkelers and divers. Contaminants, nutrient enrichment and algal blooms are other local factors. Regional effects include stress caused by warm water and cold water events and their interaction with a variety of coral diseases. It is expected that reductions in fishing pressure, marine debris, anchor damage, and other local stressors may be enough to partially offset regional stressors and trends. Reductions in these local stressors should at a minimum improve the recreational experience.



**Figure F-1. Generic Adaptive Management Process**

**Design** a plan of action to achieve specific outcomes: A special recreation zone is proposed in alternatives 6 and 7 that would adopt an alternative-specific, adaptive management strategy to achieve the goal of a healthier coral reef ecosystem within the zone to provide a more enjoyable and diverse visitor experience.

Within the special recreation zone the following activities and limitations would be put into effect:

- Fishing allowed year-round (alternative 6) or closed during months of June through September (alternative 7)
- For alternative 6 only, a dual permit, anticipated to be a FWC special activity license / NPS special use permit, would be required for fishing and harvest in the special recreation zone (other than for lionfish). A maximum number of permits would be issued annually; currently set at 430 angling permits and 70 fishing guide permits.
  - It is anticipated that Florida Fish and Wildlife Conservation Commission would issue these by lottery annually; however the specifics for issuing these licenses would be determined after the “Record of Decision” is signed.
  - An educational component could be required for permit holders.
  - Permit holders would be required to submit a monthly logbook with effort, catch, and harvest information.
- Hook and line fishing only, with the exception of lampara nets
- No grouper harvest allowed
- No lobster harvest (commercial or recreational)
- No spearfishing, with the exception of the nonnative lionfish using approved spearing devices (or hand-held nets)

- Anchoring prohibited; additional mooring buoys to be installed.
- All other state regulations apply
- No commercial fishing, with the exception of lampara net fishery to be managed under NPS-issued permit within this zone
- Snorkeling and diving allowed
- Active removal of marine debris
- Focused visitor education messaging
- Focused law enforcement effort
- Initiate Research and Monitoring Program to inform adaptive management of the special recreation zone
- Implementation of an adaptive management strategy (this appendix)

#### Implementation of an Adaptive Management Strategy (this appendix).

In alternative 6, the number of permits (e.g., special activity licenses) proposed for the special recreation zone was determined based on current estimates of fish abundance within the proposed special recreation zone and an assumed annual fish harvest per fisherman, and estimated level of harvest that would allow goals to be achieved. Fish abundance was estimated from a multiagency reef visual census (Brandt et al. 2009). The park’s long-term creel survey data set was used to estimate the number of people per fishing boat. Levels of harvest were estimated using daily bag limits and initial assumptions regarding the number of times special activity license holders will fish in the zone in a year. The level of total allowable fishing harvest was initially set at 50% of legal-sized snapper species (grey, mutton, yellowtail, lane snapper, and hogfish) present in the zone. Snapper were chosen as they are popular recreational species as well as the most abundant of the exploited fish species within the proposed zone. Zone-specific monitoring of fish abundance and harvest will inform adaptive management decisions to maintain or adjust the number of special activity licenses in the zone. Reviewing SAL logbooks

will help determine if harvest is greater than predicted. Fish abundance monitoring will help determine whether or not the reduced harvest caused by SAL limits is sufficient to allow progress towards the goals. While the initial number of permits to be issued has been established, that number could be reduced based on results of future monitoring of abundance and harvest extraction. By reducing the amount of fishing pressure in the special recreation zone through SAL limitations, it is anticipated that populations of snappers and other species would increase over time leading to greater numbers of fish and larger fish in the special recreation zone.

**Implement** the plan of action: After signing of the “Record of Decision” for the Final General Management Plan / Environmental Impact Statement for Biscayne National Park, the preferred alternative as identified in the “Record of Decision” would be implemented. The National Park Service and Florida Fish and Wildlife Conservation Commission would jointly implement the actions described above within their respective jurisdictional authorities and depending on the specific alternative. Where such actions require a change in existing regulations, the standard process for revising or establishing new regulations would be followed, including the opportunity for public involvement. The National Park Service would pursue a park special regulation to formally establish the special recreation zone and the visitor use limitations identified within this zone. For alternative 6, it is also anticipated that Florida Fish and Wildlife Conservation Commission would pursue a park-specific state regulation to formally establish the zone-based special activity license and the process for applying for a special activity license to fish the special recreation zone. Any activity limitations in the special recreation zone, as described above, would not be implemented until after the regulations are finalized. Specific roles and responsibilities for implementing the adaptive management strategy would be clearly defined in a new memorandum of

agreement between National Park Service and Florida Fish and Wildlife Conservation Commission, which would include joint development of a science and research plan to inform the adaptive management strategy.

A Science and Research Strategy would be developed in the first years of implementation. For alternative 6, the Science and Research strategy would be developed in coordination with the Florida Fish and Wildlife Conservation Commission. For alternative 7, the National Park Service would develop the strategy with input of scientists, but the Florida Fish and Wildlife Conservation Commission would not be a partner in its development or implementation. The Science Plan will fully develop the needed research and monitoring required to detect change in the indicator metrics and evaluate the factors that are influencing that change. This plan will substantially recommend the scope and scale for essential monitoring, identify additional monitoring recommendations, and identify and recommend the priority research projects needed to successfully evaluate the efficacy of the special recreation zone in meeting its resource and visitor experience objectives.

**Monitor** the outcomes of the actions: Indicators and expected trends have been established (table F-1) to measure the effectiveness of the special recreation zone in achieving the goals of an increase in the abundance of fish and lobster and a healthier coral reef ecosystem within the zone in order to provide a more enjoyable visitor experience. Empirical data collected in the first three years of implementation would be used to establish baseline conditions within the zone for use in future comparisons. Comparable data collected outside of the zone, but within the park boundary and other appropriate areas in the park vicinity, would be used for comparisons. Catch and effort data would be derived from self-reporting by permittees in a monthly logbook as well as park-conducted creel surveys.

**Table F-1. Indicators and Metrics for Monitoring Outcomes of Adaptive Management Strategy**

Indicator Topic	Indicator Metric	Rationale for Selection	Reference Conditions	Expected Trends
Fish and Spiny Lobster	Abundance and size structure of fishery-targeted species (e.g., snappers, groupers, grunts, lobster); structure of the non-targeted fish community.	The reduction in fishing pressure should result in larger, more numerous fish and lobster as part of an ecologically balanced reef system and result in a better visitor experience.	Outside zone within park and other appropriate areas within FL Keys, and baseline within zone.	Increases in fish metrics, when compared to reference areas and baseline values of the special recreation zone. The timeline for attaining a new equilibrium is unknown and highly variable by species due to external factors. Multiple analyses would be conducted on various metrics to ensure that detected changes are biologically meaningful.
Catch and Effort	Catch per unit effort, total catch, daily fishing intensity (number of trips, number of anglers, number of hours per trip) within the zone, number of angler permits issued and associated use patterns, average size of harvested fish (by species).	Catch per unit effort and average size indicate visitor satisfaction for those visitors who fish, and, indirectly fish abundance and size structure. Intensity and SAL metrics would assess fishing effort and extractive pressure (alternative 6 only). Number of angler permits issued is one of the adaptive management actions that can occur.	Outside zone within park and other similar habitat areas near park that are included in creel survey, and baseline within zone.	Species-specific catch per unit effort and average sizes should increase over reference zone and baseline. If harvest exceeds initial assumptions, a review of permit policies would occur (alternative 6 only). If total harvest prevents recovery of fish populations, then management actions should be aimed at reducing fishing pressure.
Benthic Habitat Community Structure	Live cover of taxa groups (e.g., stony corals, soft corals, sponges, crustose coralline algae), diversity of organisms, presence/absence of various taxa; disease; size class information.	Reductions in habitat damage from traps and fishing pressure are expected to result in healthier, more vibrant and more diverse benthic habitats.	Outside zone within park and other appropriate areas within FL Keys, and baseline within zone.	As benthic shifts are slow to be observed and are influenced by a wide variety of external factors, no specific threshold is defined and management actions would not be initiated by the status of this metric. However, this metric is important for interpreting changes in other metrics that would guide management actions.
Fish Behavior	Flight initiation distance (FID)	In other areas where spearfishing is prohibited, it has been documented and anecdotally observed that visitors can more closely approach fish.	Outside zone within park and other appropriate areas within FL Keys (e.g., Pennekamp State Park, which has prohibited spearfishing for	No threshold is defined. However, this metric is important for interpreting the effectiveness of eliminating spearfishing on fish behavior, which influences visitor experience. The expectation is that FID would decrease, but the time

**Table F-1. Indicators and Metrics for Monitoring Outcomes of Adaptive Management Strategy**

Indicator Topic	Indicator Metric	Rationale for Selection	Reference Conditions	Expected Trends
			decades), and baseline within zone.	frame needed to observe this is unknown.
Fish Movement	Fish movement and home ranges, emigration rates and patterns	This metric would examine spatial life history patterns and can be used to assess the extent of protection received by fish based on how much time is spent within the zone. This metric would allow for improved understanding of the zone's ecological connectivity and function within a broader regional context.	Not applicable, although data could be compared to published data from other areas of similar habitat and/or size.	No threshold is defined. However, this metric is important for interpreting changes in other metrics, particularly those related to fish and lobsters, which would guide management actions. We expect that the zone would support both resident and transient fish. Emigration rates would be one factor that influences changes in targeted fish abundances and size structures within the zone.
Marine Debris (e.g., traps, monofilament fishing line, and other derelict fishing gear; trash)	Presence, location, types, quantity, accumulation rate	Marine debris adversely affects not only visitor experience but also reef condition, reef restoration sites, and submerged archeological sites. Derelict fishing gear can entangle and otherwise kill marine life including sea turtles, fish, lobsters, sea birds, and marine mammals.	Outside zone within park, and baseline within zone	Decrease in the amount of fishing-related marine debris in the zone.
Social Science/human dimension/human activities	Visitor impressions, visitation patterns and rates, socio-economic patterns, visitor satisfaction rates, visitor understanding of zone purpose and regulations.	Improvements in the conditions of the resources in the zone are expected to increase visitor satisfaction and visitation rates. Differences in visitor satisfaction and visitation rates may be detected for both extractive and nonextractive users.	Outside zone within park, and baseline.	Increased visitor satisfaction in this zone compared to baseline and in a reference zone.

**Table F-1. Indicators and Metrics for Monitoring Outcomes of Adaptive Management Strategy**

<b>Indicator Topic</b>	<b>Indicator Metric</b>	<b>Rationale for Selection</b>	<b>Reference Conditions</b>	<b>Expected Trends</b>
Submerged archeological resources	Presence and accumulation of marine debris on submerged archaeological resources, presence and extent of new damage to submerged archaeological resources	Marine debris causes irreparable damage to irreplaceable archaeological sites. Submerged archaeological sites are enjoyed by visitors and fully protected by NPS.	Submerged archaeological sites located outside the zone within the park and baseline	Decreased archeological site damage and debris accumulation in the zone compared to baseline and in a reference zone.

Monitoring would include indicators for targeted fish species, angler catch and effort, benthic habitat community structure, fish behavior and movement, marine debris, visitor satisfaction, and submerged archeological sites as summarized on table F-1. Appropriate SRZ-specific user capacity standards, as listed in chapter 2, would also apply.

**Evaluate** the observed trends against the expected trends (see table F-1): Some of the indicators do not have a numeric or qualitative change threshold. Instead, trends and external factors, as well as other data gathered from monitoring, would be considered.

Monitoring data would be used to inform adaptive management decisions to maintain or reduce the number of permits issued for the special recreation zone under alternative 6. Reviewing the logbooks would help determine if total take is greater than predicted and whether some species are preferentially targeted, and help the park determine the success of the zone in achieving desired outcomes. Specific to alternative 6, in years three, five, and eight, the agencies would evaluate catch and effort to determine if the original assumptions are being met. If these assumptions of effort and take are being exceeded, a multiagency team would evaluate potential reduction in number of permits to be issued for following years.

In years 5 and 10, the agencies would convene a panel of experts familiar with the marine ecology and fisheries of South Florida to review all data for all indicator topics and determine if the scientific effort (documented in the joint agency science plan) is adequate to detect change, if there has been any change in the performance metrics, and if performance metrics are trending toward performance expectations. The panel would provide an informal, impartial review of the monitoring results and make recommendations. The panel would consist of representatives from four groups: one

representative for the National Park Service, one representative for the NOAA Fisheries, one representative for the Florida Fish and Wildlife Conservation Commission, two representatives for academics. To achieve temporal consistency, the park would strive to have the same people at the 5- and 10-year reviews.

Adaptive management evaluation points (tables F-2 and F-3) would include:

- A. Whether the number of permits is sufficient to reduce the total level of take by recreational and guided fishing in the special recreation zone to no more than 50% of the legal-size snappers.
- B. Whether setting the maximum take of no more than 50% of the legal-sized snappers are allowing fish metrics of snappers and other fish species to show progress towards goals.
- C. Whether the level of monitoring effort is sufficient to answer questions A and B.
- D. Whether the number and location of mooring buoys and zone boundary markers is sufficient.
- E. Whether marine debris accumulation rates are within levels that can be maintained by removal efforts.
- F. Whether the level of public outreach is effective.
- G. Whether the level of law enforcement is effective.

**Adjust** future management actions based on what was learned: For alternatives 6 and 7, the following management actions may be adjusted at the 3, 5, 8, and 10 years:

- **Mooring Buoys.** Number and location of mooring buoys may be adjusted based on input from the public and from park Law Enforcement rangers and from social science survey results (Note: social science survey results only available three years after baseline and at 10 years). Relocation effort would aim to re-

distribute visitor use away from particularly sensitive areas, manage user conflicts, and minimize impacts to park resources.

- **Outreach.** Type, frequency, and messages communicated for outreach on this zone would be revisited and adjusted. Effort may include targeted messages for specific user groups and/or seasons or events as indicated by monitoring data as having a high frequency of noncompliance.
- **Law Enforcement Effort.** How frequently and thoroughly the zone is patrolled by law enforcement would be based on law enforcement statistics and public input (visitors reporting violations or commenting on their experience). Patrol effort and techniques may be targeted toward user groups or seasons of use as indicated by monitoring data as having a high frequency of non-compliance.
- **Marine Debris.** Increased efforts in removal would be undertaken if the monitored sites indicate debris accumulation exceeds removal rate. As extra efforts in removal are unfunded, there could be partnership opportunities.
- **Special Activity License (alternative 6 only).** Adjust number of special activity licenses issued for recreational fishing, not to exceed the maximum allowed.

Once it is determined that one or more of these future management actions is necessary or desirable to better achieve adaptive management objectives, an initial environmental screening process will be conducted to determine what, if any, additional environmental compliance may be required. Through this screening process, the National Park Service will document whether

adaptive management adjustments, both individually and cumulatively, are (1) within the range of management actions described for the selected alternative, and (2) fully analyzed in the environmental effects section of the Plan/SDEIS or previous NEPA documents incorporated by reference.

For alternatives 6 and 7, the metrics identified in table F-1 would be evaluated in years five and ten. At years three, five, and eight, logbook/ creel data would be analyzed to determine if the 50% harvest rate is accurate for use in potentially adjusting the number of licenses issued.

At years five and ten, the panel of experts would present their findings and recommend adjustments to the number of permits (alternative 6 only) and also provide recommendations to address nonfishing management (e.g., enforcement, education, marine debris removal, marking, etc.) based on observations from the partner agencies, permittee logs, etc. They may recommend changes to the scientific effort. These adjustments could be applied to either alternative 6 or alternative 7.

Following the 10-year adaptive management period for the special recreation zone, the National Park Service would consider monitoring data, consult with the Florida Fish and Wildlife Conservation Commission, NOAA Fisheries, and an expert panel and decide whether to continue adaptive management strategies for a special recreation zone or implement a marine reserve zone.

If at the end of the 10-year evaluation period, the decision is made to implement a marine reserve zone (no take for fishing), it would be established by park regulation as described in chapter 2.

**Table F-2. Summary of Adaptive Management Actions to be Taken in Support of the Special Recreation Zone – Alternative 6**

Adaptive Mgmt Steps	Actions to be Taken
Design, Implement	Legal processes: Establish a Memorandum of Understanding between National Park Service and Florida Fish and Wildlife Conservation Commission for implementation of the special recreation zone. Legally establish the special recreation zone and its various regulations and limitations through formal rule-making processes.
Design, Implement	Administrative Processes: The Florida Fish and Wildlife Conservation Commission special activity licenses or other special permit would be initiated by regulation for recreational fishing. Initiate NPS permits for guide services in the special recreation zone. Develop the science and research strategy to establish and refine monitoring protocols and identify research opportunities.
Implement Monitor	Determine ecological baselines: Conduct monitoring on performance metrics to determine baseline conditions upon implementation of the new special recreation zone for comparison at future monitoring intervals.
Implement Monitor	Establish starting point for marine debris removal: Remove marine debris from the special recreation zone, either in limited areas, or entire area as funding allows to determine effectiveness of new management actions in reducing marine debris.
Monitor, Evaluate, Adjust	Three-year check in: During year three of permit implementation, the agencies evaluate catch and effort to determine if the original assumptions are being met. If these assumptions are being exceeded, the agencies would evaluate potential reduction in number of permits and/or in the maximum percentage of fish considered allowable for harvest for following years. Evaluate adaptive management evaluation points A, C, D, E, F.
Evaluate	Five-year check in: During year five, the agencies would convene a panel of experts to review and determine if the scientific effort (documented in the joint agency science plan) is adequate to detect change, has there been any change in the performance metrics, and are performance metrics trending toward performance expectations. If not, the panel would provide suggestions to explain current findings and recommend adjustments to number of permits issued and/or in the maximum percentage of fish considered allowable for harvest. Other panel recommendations may address nonfishing management (e.g., enforcement, education, marine debris removal, marking, etc.) and changes to the scientific effort. Evaluate All adaptive management evaluation points.
Adjust	Following the five-year check, the Florida Fish and Wildlife Conservation Commission/National Park Service would consider expert panel recommendations and determine appropriate adaptive management adjustments to SAL/special use permit (SUP) numbers and/or in the maximum percentage of fish considered allowable for harvest, whether or not grouper numbers have recovered enough to allow some level of harvest, scientific effort, and nonfishing management following the panel report.
Monitor, Evaluate, Adjust	Eight-year check in: During year eight of SAL/ NPS permit implementation, the agencies evaluate catch and effort to determine if original assumptions are being met. If these assumptions are being exceeded, a multiagency team would evaluate potential reduction in number of SAL/SUP and/or in the maximum percentage of fish considered allowable for harvest for following years. Evaluate Adaptive Management Evaluation Points A, D, E, F.
Evaluate	Ten-year Evaluation: After 10 years of SRZ implementation, the agencies would reconvene the panel of experts to evaluate all of the results of management actions taken for the special recreation zone and report on the efficacy of the management approach to the agencies. The panel would provide recommendations for future adaptive management to be considered by the agencies. Evaluate all Adaptive Management Evaluation Points.
Adjust	Following the 10-year evaluation, the National Park Service, after consultation with Florida Fish and Wildlife Conservation Commission and other relevant agencies, and consideration of the expert panel recommendations, would determine appropriate adaptive management adjustments in SRZ management immediately following the panel report. This NPS decision may include relaxing regulations such as allowing grouper harvest or further restricting regulations to include possible conversion to a no-take marine reserve.

**Table F-3. Summary of Adaptive Management Action to be Taken  
in Support of the Special Recreation Zone – Alternative 7**

Adaptive Mgmt Steps	Actions to be Taken
Design, Implement	Legal processes: Legally establish the special recreation zone and its various regulations and limitations through formal NPS rulemaking processes.
Design, Implement	Initiate NPS seasonal closure during low oxygen months of June through September. Develop the Science and Research Strategy to establish and refine monitoring protocols and identify research opportunities.
Implement Monitor	Determine ecological baselines: Conduct monitoring on performance metrics to determine baseline conditions upon implementation of the new special recreation zone for comparison at future monitoring intervals.
Implement Monitor	Establish starting point for marine debris removal: Remove marine debris from the special recreation zone, either in limited areas, or entire area if possible in order to determine effectiveness of new management actions in reducing marine debris.
Monitor, Evaluate, Adjust	Three-year check in: National Park Service evaluates trend and threshold data to determine: (1) if depreciative visitor behaviors could be addressed by changes in level and types of education are required, (2) if changes in mooring buoy locations are needed to disperse use and impacts, or (3) if additional law enforcement is needed to prevent and/or detect or deter intentional impacts by park visitors.
Evaluate	Five-year check in: During year five, the National Park Service would convene a panel of experts review and determine if the scientific data are adequate to detect change, has there been any change in the performance metrics, and are performance metrics trending toward performance expectations. If not, the panel would provide suggestions to explain current findings and recommend adjustments to the seasonal closures. Other panel recommendations may address nonfishing management (e.g., enforcement, education, marine debris removal, marking, etc.) and changes to the scientific effort.
Adjust	Five-year check in: National Park Service would consider expert panel recommendations and determine appropriate adaptive management adjustments, may address nonfishing management (e.g., enforcement, education, marine debris removal, marking, etc.) and changes to the scientific effort, and nonfishing management following the panel report.
Monitor, Evaluate, Adjust	Eight-year check in: During year eight of seasonal closure, the National Park Service would evaluate fish population monitoring data to determine if assumptions are being met. If these assumptions are being exceeded National Park Service would evaluate potential reduction in the seasonal closure months for following years.
Evaluate	Ten-year Evaluation: After 10 years of SRZ implementation, the National Park Service would reconvene the panel of experts to evaluate all of the results of management actions taken for the special recreation zone and report on the efficacy of this management approach to the National Park Service. The panel would provide recommendations for future adaptive management to be considered by the National Park Service.
Adjust	Following the 10-year evaluation, the National Park Service, after consultation with relevant agencies and consideration of the expert panel recommendations, would determine appropriate adaptive management adjustments in SRZ management immediately following the panel report. This NPS decision may include relaxing regulations such as allowing grouper harvest or further restricting regulations to include possible conversion to a no-take marine reserve.



**APPENDIX G: STATE RESPONSE TO THE 2011 DRAFT GENERAL  
MANAGEMENT PLAN AND ENVIRONMENTAL IMPACT STATEMENT**





# Florida Department of Environmental Protection

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Herschel T. Vinyard Jr.  
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January 10, 2012

Mr. Mark Lewis, Superintendent  
Biscayne National Park  
9700 SW 328<sup>th</sup> Street  
Homestead, FL 33033-5634

RE: National Park Service – Draft General Management Plan/Environmental Impact  
Statement for Biscayne National Park – Miami-Dade County, Florida  
SAI # FL201108225930C

Dear Superintendent Lewis:

The Florida State Clearinghouse has coordinated the state's review of the August 2011 Draft General Management Plan/Environmental Impact Statement (GMP/EIS) for Biscayne National Park under the following authorities: Presidential Executive Order 12372; § 403.061(42), *Florida Statutes (F.S.)*; the Coastal Zone Management Act, 16 U.S.C. §§ 1451 et seq., as amended; and the National Environmental Policy Act, 42 U.S.C. §§ 4321-4347, as amended.

The Florida Department of Environmental Protection (Department), designated by the Florida Coastal Management Program (FCMP) as the state's lead coastal management agency pursuant to § 306(c) of the Coastal Zone Management Act, 16 U.S.C. § 1456(c) and § 380.22, *F.S.*, has reviewed the Draft GMP/EIS under the provisions of 15 C.F.R. 930, subpart C and hereby notifies the National Park Service (NPS) that the GMP/EIS will be consistent with the FCMP only upon NPS' full compliance with the conditions stated in this letter. The bases for this conditional concurrence are set forth in Section III below, and a summary of comments received from other state and regional agencies is reflected in Section I. The comment letters from those agencies are attached and incorporated in this letter by reference.

## I. SUMMARY OF STATE AGENCY COMMENTS

The Department's Office of Coastal and Aquatic Managed Areas (CAMA) supports the NPS' update of Biscayne National Park's GMP and notes that the Department is also preparing a new management plan for the adjacent 70,000-acre Biscayne Bay Aquatic Preserve. The national park and aquatic preserve comprise an important contiguous

ecosystem, and updated management plans and continued cooperation between the two programs are critical to manage important resources in Biscayne Bay. CAMA offers the following specific comments:

- The Biscayne Bay Aquatic Preserve (AP) often works with the NPS in training and outreach programs, as well as on water quality and restoration issues. Given the proximity of the two marine protected areas, the GMP/EIS should therefore recognize and support coordination between the programs. Staff looks forward to continuing this productive partnership with the park.
- CAMA supports the concept of a satellite visitor center closer to the Miami population center, if constructed in an appropriate location. It is likely that the facility would be adjacent to the AP, and staff reiterates the value of cooperation between AP staff and the NPS on outreach programs that foster stewardship and awareness of the park and preserve resources through the proposed facility.
- Preferred Alternative 4 would establish a 10,000-acre Marine Reserve Zone, in which recreational and commercial fishing would be prohibited. The area encompasses more than 2,600 acres of coral patch reef community. CAMA defers to the FWC on the necessity and effectiveness of prohibiting fishing in the zone for fisheries management purposes. Staff does recognize, however, that the use of marine protected areas in other areas has been an effective tool for the protection of reef resources. Expanding the network of coral reef protected areas for the improved management of coral reef resources is a goal of the United States Coral Reef Task Force, of which the U.S. Department of Interior and the State of Florida are members.

For additional information regarding CAMA's comments, please contact Ms. Carla Gaskin Mautz at (850) 245-2094.

The **South Florida Water Management District** (SFWMD) has reviewed the alternatives developed in the Draft GMP/EIS and advises that construction activities conducted in, on or over the water or within wetlands will require an Environmental Resource Permit (ERP) under Rule 40E-4, 40 or 400, *Florida Administrative Code*. Prior to issuance of an ERP, the state requires a demonstration that impacts to wetlands or other surface waters have been eliminated or reduced. For further information on the state's permitting and stormwater management requirements, please contact Mr. Ron Peekstok of the SFWMD's Natural Resources Management Section at (561) 682-6956.

The **Florida Fish and Wildlife Conservation Commission** (FWC) has provided detailed comments, recommendations and technical information in its letter of December 30, 2011, and Attachments 1, 2, 2A and 2B appended to the letter, copies of which are attached. The letter provides a detailed background of the efforts between the FWC and NPS to address the agency's concerns regarding management activities proposed in the Draft GMP/EIS. Because several major issues could not be resolved, however, the FWC finds it necessary to condition its concurrence regarding the consistency of the document with the federally approved FCMP.

## **II. STATE CONSISTENCY FINDING – CONDITIONAL CONCURRENCE**

The FWC and the Department hereby notify the NPS that Alternatives 2 through 5 (including Preferred Alternative 4), as presented in the Draft GMP/EIS, will be consistent with the enforceable policies of the FCMP **if and only if** the following conditions are satisfied. Should the NPS fail to implement the following measures, **or some alternative measures identified and mutually agreed upon between the Department, FWC and NPS to ensure the GMP/EIS' consistency with the enforceable policies of the FCMP**, this conditional concurrence shall be treated as a finding that the Draft GMP/EIS is inconsistent with the FWC's enforceable policies in Chapter 379, *F.S.*, under 15 C.F.R. 930.4(b).

1. Modify TABLE 2 (BISCAYNE NATIONAL PARK MANAGEMENT ZONES, ALTERNATIVES 2 THROUGH 5) as specified in Attachment 1 to the FWC's December 30<sup>th</sup> letter, to reflect the manner in which marine fisheries management issues will be addressed in the park.
2. Amend the Draft GMP/EIS, where appropriate, to reflect that fishing activities and fishing vessel operations will be conducted in the manner specified in the Fishery Management Plan currently being jointly developed by the FWC and NPS pursuant to the five-year Memorandum of Understanding executed by the FWC and NPS in 2007, in which the agencies agreed to fully cooperate and jointly manage fisheries within the park.
3. Include the following commitment in the Draft GMP/EIS where appropriate:

The Park commits to continued coordination with the FWC and stakeholders prior to implementation of the proposed management zones to determine if the size and locations of the proposed zones could be modified, or transit corridors developed, to provide maximum access for fishing activities, while still achieving park management goals. This additional zoning coordination will be conducted as part of the Fishery Management Plan process.

The FWC emphasizes that the NPS' compliance with the foregoing conditions need not delay finalizing the Draft GMP/EIS. The management zones could remain as proposed, as long as the final GMP/EIS provides that the management of fishing activities and fishing vessel operations within the zones will be governed by the Fishery Management Plan and that the Park commits to continued coordination with the FWC and stakeholders on the delineation and implementation of the management zones. The FWC recognizes that the GMP provides the framework for NPS' management of park resources – it does not implement the management actions reflected in the plan.

The FWC also recognizes that the management zones and actions listed below cannot be implemented through the Superintendent's Compendium process, and must instead be undertaken as rulemaking, because they would result in a significant alteration in the public use pattern of the park and are of a highly controversial nature (*see* 36 C.F.R. § 1.5(b)). Again, finalizing the Draft GMP/EIS need not be delayed to achieve consistency with the FWC's enforceable policies in the FCMP, as subsequent regulatory processes (*e.g.*, Fishery Management Plan development, implementation of management actions/management zones through rulemaking) could provide for further coordination and resolution of the issues of concern to the FWC and stakeholders.

Absent modification of the Draft GMP/EIS to address the three conditions listed above, this conditional concurrence shall be treated as an objection, because the FWC has determined that the following management actions contained in the Draft GMP/EIS that reduce or eliminate fishing activities, either directly or indirectly, are inconsistent with the FWC's enforceable policies contained in the FCMP:

1. Direct or indirect prohibition of recreational or commercial fishing activities;
2. Area closures;
3. Access limitations;
4. Limitations or prohibitions on the use of internal combustion motors;
5. Limitations or prohibitions on vessel type, size, and speed;
6. Limitations on harvesting gear; and
7. Permit requirements specific to fishing activities.

The FWC has further indentified one or more of the foregoing management actions that the NPS could implement in any of the following zones described in the Draft GMP/EIS, to achieve desired conditions. Therefore, the following zones are also inconsistent with the FWC's enforceable policies in the FCMP:

1. Marine Reserve Zone included in Alternatives 3, 4 and 5;
2. Multiuse Zones included in Alternatives 2-5;
3. Slow Speed Zones included in Alternatives 2-5;
4. Noncombustion Engine Use Zones included in Alternatives 2-5;
5. Access by Permit Zones included in Alternatives 2, 3 and 5;
6. Nature Observation Zones included in Alternatives 2-5;
7. Visitor Service/Park Administration Zones included in Alternatives 2-5;
8. Sensitive Underwater Archeological Zones included in Alternatives 2-5; and
9. Sensitive Resource Zones included in Alternatives 2-5.

### **III. BASIS FOR FINDING OF CONDITIONAL CONCURRENCE**

The following state laws are enforceable policies of the federally approved FCMP and therefore provide the bases for the FWC's objection:

*379.23 Federal conservation of fish and wildlife; limited jurisdiction. –*

*(2) The United States may exercise concurrent jurisdiction over lands so acquired and carry out the intent and purpose of the authority except that the existing laws of Florida relating to the Department of Environmental Protection or the Fish and Wildlife Conservation Commission shall prevail relating to any area under their supervision.*

The seven management actions listed above are inconsistent with this enforceable policy of the FCMP, because they will reduce or eliminate fishing activities through the enforcement and implementation of federal law rather than state law.

*379.244 Crustacea, marine animals, fish; regulations; general provisions. –*

*(1) OWNERSHIP OF FISH, SPONGES, ETC. – All fish, shellfish, sponges, oysters, clams, and crustacea found within the rivers, creeks, canals, lakes, bayous, lagoons, bays, sounds, inlets, and other bodies of water within the jurisdiction of the state, and within the*

*Gulf of Mexico and the Atlantic Ocean within the jurisdiction of the state, excluding all privately owned enclosed fish ponds not exceeding 150 acres, are the property of the state and may be taken and used by its citizens and persons not citizens, subject to the reservations and restrictions imposed by these statutes. No water bottoms owned by the state shall ever be sold, transferred, dedicated, or otherwise conveyed without reserving in the people the absolute right to fish thereon, except as otherwise provided in these statutes.*

The seven management actions listed above are inconsistent with this enforceable policy of the FCMP, because they will restrict the public's right to fish in a manner not provided by Florida law.

*379.2401 Marine fisheries; policy and standards. –*

*(1) The Legislature hereby declares the policy of the state to be management and preservation of its renewable marine fishery resources, based upon the best available information, emphasizing protection and enhancement of the marine and estuarine environment in such a manner as to provide for optimum sustained benefits and use to all the people of this state for present and future generations.*

The FWC adheres to the foregoing policy when managing the state's marine fishery resources for fishing activities, and because the statute is included in the federally approved FCMP, it applies equally to the NPS in its management of marine fishery resources located within park boundaries for desired resource conditions and visitor experiences.

The seven management actions described above are inconsistent with this enforceable policy, because they are not based on "best available information" and, by reducing or eliminating fishing activities, they do not provide for "optimum sustained benefits and use" to the people of this state.

*379.2401 Marine fisheries; policy and standards. –*

*(3) All rules relating to saltwater fisheries adopted by the commission shall be consistent with the following standards:*

*(c) Conservation and management measures shall permit reasonable means and quantities of annual harvest, consistent with maximum practicable sustainable stock abundance on a continuing basis.*

The seven management actions listed above are inconsistent with this enforceable policy, because they conflict with the marine fisheries rules developed and promulgated by the FWC for saltwater fisheries, by reducing or eliminating "reasonable means and quantities of annual harvest." The Draft GMP/EIS does not provide any data showing that the "maximum practicable stock abundance" of the park's marine fisheries resources will be impacted if fishing (harvesting) is not reduced or eliminated.

Please see the FWC's December 30<sup>th</sup> letter (attached) for additional comments and recommendations regarding commitments made by the NPS in the Memorandum of Understanding previously noted, which were designed to facilitate fishery management planning by improving communication, cooperation and coordination between the FWC and the BNP. Of particular concern to the FWC is the joint pledge to seek the "least restrictive management action as necessary to fully achieve mutual management goals for the fishery resources of the Park and adjoining areas."

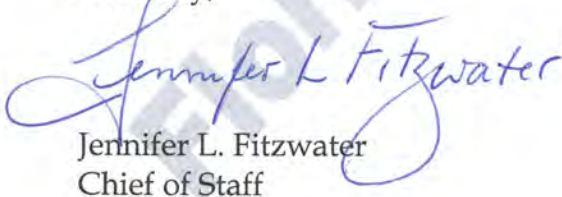
#### CONCLUSION

In accordance with 15 C.F.R. 930.43(c), a copy of this letter has been sent to the Director of the NOAA Office of Ocean and Coastal Resource Management. Mediation by the Secretary of the U.S. Department of Commerce may be sought pursuant to 15 C.F.R. 930, subpart G, for serious disagreements between a state and federal agency with regard to direct federal action as contemplated by 15 C.F.R. 930, subpart C.

Should you have any questions regarding the FWC's comments and recommendations, please contact Ms. Lisa Gregg at (850) 487-0554 or [Lisa.Gregg@MyFWC.com](mailto:Lisa.Gregg@MyFWC.com).

Thank you for the opportunity to review the Draft GMP/EIS. For additional information or assistance regarding the state's review, please contact Ms. Lauren P. Milligan, Coordinator of the Florida State Clearinghouse, or Mr. Danny Clayton, Administrator of the Florida Coastal Management Program, at (850) 245-2163.

Sincerely,



Jennifer L. Fitzwater  
Chief of Staff

JLF/sm/lm

Mr. Mark Lewis, Superintendent  
Biscayne National Park  
Page 8 of 8  
January 10, 2012

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Enclosures

cc: Ms. Donna Wieting, NOAA OCRM Acting Director  
Ms. Morgan Elmer, NPS Denver Service Center-Planning  
Mr. Nick Wiley, FWC Executive Director  
Mr. Scott Sanders, FWC Conservation Planning Services  
Ms. Jessica McCawley, Director, FWC Marine Fisheries Management  
Ms. Lisa Gregg, FWC Marine Fisheries Management  
Ms. Erma Slager, DEP Acting Deputy Secretary  
Ms. Carla Gaskin Mautz, DEP Coastal & Aquatic Managed Areas  
Ms. Sally Mann, DEP Office of Intergovernmental Programs



# Florida

Department of Environmental Protection

"More Protection, Less Process"



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Project Information	
Project:	FL201108225930C
Comments Due:	10/03/2011
Letter Due:	01/10/2012
Description:	NATIONAL PARK SERVICE - DRAFT GENERAL MANAGEMENT PLAN/ENVIRONMENTAL IMPACT STATEMENT FOR BISCAYNE NATIONAL PARK - MIAMI-DADE COUNTY, FLORIDA.
Keywords:	NPS - DRAFT GMP/EIS FOR BISCAYNE NATIONAL PARK - MIAMI-DADE CO.
CFDA #:	15.916
Agency Comments:	
<b>SOUTH FL RPC - SOUTH FLORIDA REGIONAL PLANNING COUNCIL</b>	
The SFRPC notes that the project should be consistent with the NEPA and ESA, and recommends that the NPS continue to coordinate with all governments of jurisdiction, particularly Miami-Dade County and its Comprehensive Development Master Plan, environmental groups and concerned local citizens. The goals and policies of the "Strategic Regional Policy Plan for South Florida" should also be observed when making decisions regarding this general management plan.	
<b>FISH and WILDLIFE COMMISSION - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION</b>	
FWC requests that the NPS honor the commitments made in the Memorandum of Understanding (MOU) between the FWC and BNP. The MOU was specifically designed to facilitate fishery management planning by improving communication, cooperation, and coordination between the FWC and BNP, and a significant amount of effort and detail went into MOU development to clearly reflect objectives, expectations, management approaches, and responsibilities for both parties. Staff has expressed significant concerns that the Draft GMP/EIS states, "Due to this ongoing planning process, the GMP will not address fisheries management in its alternatives." GMP Alternatives 2-5 would, however, utilize zones where fishing activities are purposefully reduced or eliminated, or are inadvertently restricted by gear type, vessel speed, access, etc. The FWC indicates that the proposed fisheries management regulatory actions within the Draft GMP that reduce or eliminate fishing activities are in direct conflict with the existing MOU. Therefore, the FWC can only support implementation of the proposed activities if certain conditions are met.	
<b>STATE - FLORIDA DEPARTMENT OF STATE</b>	
No Comment/Consistent	
<b>ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION</b>	
DEP's CAMA supports this update of Biscayne National Park's GMP and notes that it is also preparing a new management plan for the adjacent 70,000-acre Biscayne Bay Aquatic Preserve. The national park and aquatic preserve comprise an important contiguous ecosystem and updated management plans and continued cooperation between the two programs are critical to manage important resources in Biscayne Bay. CAMA offers the following specific comments: -- The Biscayne Bay Aquatic Preserve often cooperates with the Biscayne National Park - assisting with training, water quality issues, restoration issues and outreach programs. Given the proximity of these two marine protected areas, the plan should recognize and support coordination between the programs. Staff looks forward to continuing this productive partnership with the park. -- CAMA supports the concept of a satellite visitor center closer to the Miami population center, if constructed in an appropriate location. It is likely that this facility would be adjacent to the Biscayne Bay Aquatic Preserve and staff reiterates the value of cooperation between the aquatic preserve and national park on outreach programs that could foster stewardship and awareness of these resources through the proposed facility. -- Preferred Alternative 4 establishes a 10,000-acre Marine Reserve Zone, which would not allow recreational or commercial fishing. The area encompasses more than 2,600 acres of coral patch reef community. CAMA defers to the FWC concerning the necessity and effectiveness of the area for fisheries management purposes. Staff does recognize, however, that use of marine protected areas, such as this, is well established as an effective tool for the protection of reef resources. Expanding the network of coral reef marine protected areas for improved management of coral reef resources is a goal of the U.S. Coral Reef Task Force.	
<b>SOUTH FLORIDA WMD - SOUTH FLORIDA WATER MANAGEMENT DISTRICT</b>	
The South Florida Water Management District (District) has reviewed the various Alternatives developed in the Draft Biscayne National Park General Management Plan and pursuant to Rule 40E-4, 40 or 400, Florida Administrative Code (F.A.C.), activities conducted in, on or over the water, or within wetlands, as defined by Rule 62-340, F.A.C., will require an Environmental Resource Permit. Prior to issuance of an Environmental Resource Permit, the state would require a demonstration that impacts to wetlands or other surface waters were eliminated or reduced. For further information on District permitting requirements, please contact Mr. Ron Peekstok of the Natural Resources Management Section at (561) 682-6956. If you have any comments or questions, please contact Ms. Deborah Oblaczynski at (561) 682-2544 or <a href="mailto:doblaczy@sfwmd.gov">doblaczy@sfwmd.gov</a> .	



## Florida Fish and Wildlife Conservation Commission

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resources for their long-term  
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December 30, 2011

Ms. Sally Mann, Director

Office of Intergovernmental Programs

Department of Environmental Protection

3900 Commonwealth Boulevard, Mail Station 47

Tallahassee, FL 32399-3000

[Sally.mann@dep.state.fl.us](mailto:Sally.mann@dep.state.fl.us)

Re: SAI #FL201108225930C - National Park Service – Draft General Management Plan/Environmental Impact Statement (Draft GMP/EIS) for Biscayne National Park – Miami-Dade County, Florida

Dear Ms. Mann:

The Florida Fish and Wildlife Conservation Commission (FWC) has completed a second agency review of the Draft General Management Plan/Environmental Impact Statement (Draft GMP/EIS) for Biscayne National Park (BNP, Park). The FWC provides the following comments pursuant to the National Environmental Policy Act and the Coastal Zone Management Act/Florida Coastal Management Program.

### Background

Biscayne National Park is currently operating under a General Management Plan (GMP) that was completed in 1983. The GMP is in need of revision to address increased usage of Park resources, while maintaining a level of resource protection and providing for opportunities to enjoy Park resources that is expected from a National Park. This Draft GMP/EIS proposes alternatives for management of BNP for the next 20 or more years.

The FWC conducted a review of the Draft GMP/EIS and on October 11, 2011, submitted a determination of conditional consistency with the Coastal Zone Management Act/Florida Coastal Management Program to the Florida State Clearinghouse. Subsequently, the Park extended the date for completion of the State Coastal Zone Management Act federal consistency review until January 10, 2012, to allow for additional coordination efforts to attempt to resolve the consistency issues identified by the FWC. Additional coordination efforts have included the following:

- Teleconference on November 30, 2011, between FWC and BNP staff during which time staff identified specific issues and a schedule to address them.
- An onsite visit on December 7, 2011, by FWC South Florida Regional Director Chuck Collins with BNP Superintendent Mark Lewis to review the proposed management zones.
- Teleconference on December 20, 2011, between FWC and BNP staff to discuss scientific data issues.

## **Consistency Statement**

These additional coordination efforts were helpful with regard to mutual understanding of concerns about the GMP. Several of the major concerns, however, could not be addressed at this point, and therefore FWC still finds it necessary to condition its concurrence that the GMP is consistent with the Florida Coastal Management Program pursuant to the Coastal Zone Management Act.

### **a. Conditions for Consistency**

The following conditions are necessary in order for the FWC to determine the Draft General Management Plan/Environmental Impact Statement (Draft GMP/EIS) for Biscayne National Park will be consistent with FWC enforceable policies included within the federally approved Florida Coastal Management Program:

- 1) On pages 49-58 (Table 2: Biscayne National Park Management Zones, Alternatives 2 through 5), modify Table 2 as specified in Attachment 1 to reflect how marine fisheries management issues will be addressed.
- 2) Address fisheries management issues through the Fishery Management Plan process rather than the General Management Plan process, and amend Draft GMP/EIS language, where appropriate, to reflect that all fishing activities and fishing vessel operation will be conducted in the manner specified in the Fishery Management Plan.
- 3) Include the following commitment in the Draft GMP/EIS where appropriate: “The Park commits to continued coordination with the FWC and stakeholders prior to implementation of the proposed management zones to determine if the size and locations of the proposed zones can be modified, or transit corridors developed, to provide maximum access for fishing activities, while still achieving Park management goals. This additional zoning coordination will be conducted as part of the Fishery Management Plan process.”

FWC wishes to emphasize that complying with the above requested conditions need not delay finalizing the Draft GMP/EIS. The management zones could remain as proposed, as long as specific management of fishing activities and fishing vessel operation within the zones is shifted to the Fishery Management Plan as opposed to being addressed in the Draft GMP/EIS (conditions 1 and 2 above), and the Park commits to further zoning coordination (condition 3 above). The FWC recognizes that a GMP by itself does not implement the management actions that are proposed, and only provides a framework for National Park Service managers to manage Park resources. The FWC also recognizes that the proposed management actions identified below (or proposed management zones identified below that contain such management actions) could not be implemented through the Superintendent’s Compendium process, and must be published as rulemaking in the Federal Register because they would result in a significant alteration in the public use pattern of the Park area and are of a highly controversial nature (36 CFR § 1.5(b)). Again, finalizing this Draft GMP/EIS does not need to be delayed in order to achieve consistency with FWC enforceable policies included within the federally approved

Florida Coastal Management Program, as subsequent regulatory processes (e.g., Fishery Management Plan development, implementation of management actions/management zones through rulemaking in the Federal Register), could provide for further coordination and resolution of the issues of concern to the FWC and stakeholders.

Absent modification of the Draft GMP/EIS pursuant to the conditions above, this letter must be treated as an objection, as FWC has determined that proposed management actions contained within the Biscayne National Park Draft GMP/EIS that reduce or eliminate fishing activities, either directly or indirectly, are inconsistent with FWC enforceable policies included within the Florida Coastal Management Program. These management actions are identified as follows:

- 1) fishing activities are directly prohibited (either recreational or commercial fishing activities, or both);
- 2) area closures;
- 3) access limitations;
- 4) limitations or prohibitions on the use of internal combustion motors;
- 5) limitations or prohibitions on vessel type, size, and speed;
- 6) limitations on harvesting gear; and
- 7) permit requirements specific to fishing activities.

In each of the following Zones included in the Draft GMP/EIS, FWC has identified one or more of the above management actions that the Park may potentially use to achieve desired conditions; therefore, the following zones are also inconsistent with FWC enforceable policies included within the Florida Coastal Management Program:

- 1) Marine Reserve Zone included in Alternatives 3, 4 and 5.
- 2) Multiuse Zones included in Alternatives 2-5.
- 3) Slow Speed Zones included in Alternatives 2-5.
- 4) Noncombustion Engine Use Zones included in Alternatives 2-5.
- 5) Access by Permit Zones included in Alternatives 2, 3 and 5.
- 6) Nature Observation Zones included in Alternatives 2-5.
- 7) Visitor Service/Park Administration Zones included in Alternatives 2-5.
- 8) Sensitive Underwater Archeological Zones included in Alternatives 2-5.
- 9) Sensitive Resource Zones included in Alternatives 2-5.

**b. Basis for Determination**

The following enforceable policies within the federally approved Florida Coastal Management Program provide the basis for FWC's objection.

*379.23 Federal conservation of fish and wildlife; limited jurisdiction.—*

*(2) The United States may exercise concurrent jurisdiction over lands so acquired and carry out the intent and purpose of the authority except that the existing laws of Florida relating to the Department of Environmental Protection or the Fish and Wildlife Conservation Commission shall prevail relating to any area under their supervision.*

The seven management actions previously identified are inconsistent with this enforceable policy because they will reduce or eliminate fishing activities pursuant to National Park Service laws, without considering the laws of the Fish and Wildlife Conservation Commission.

*379.244 Crustacea, marine animals, fish; regulations; general provisions.—*

*(1) OWNERSHIP OF FISH, SPONGES, ETC.—All fish, shellfish, sponges, oysters, clams, and crustacea found within the rivers, creeks, canals, lakes, bayous, lagoons, bays, sounds, inlets, and other bodies of water within the jurisdiction of the state, and within the Gulf of Mexico and the Atlantic Ocean within the jurisdiction of the state, excluding all privately owned enclosed fish ponds not exceeding 150 acres, are the property of the state and may be taken and used by its citizens and persons not citizens, subject to the reservations and restrictions imposed by these statutes. No water bottoms owned by the state shall ever be sold, transferred, dedicated, or otherwise conveyed without reserving in the people the absolute right to fish thereon, except as otherwise provided in these statutes.*

The seven management actions previously identified are inconsistent with this enforceable policy because they will restrict the public's right to fish in a manner not provided by Florida Statute.

*379.2401 Marine fisheries; policy and standards.—*

*(1) The Legislature hereby declares the policy of the state to be management and preservation of its renewable marine fishery resources, based upon the best available information, emphasizing protection and enhancement of the marine and estuarine environment in such a manner as to provide for optimum sustained benefits and use to all the people of this state for present and future generations.*

This enforceable policy declares the policy of the State to be management and preservation of the state's renewable marine fishery resources, and is interpreted as follows:

- 1) Actions must be taken to manage and preserve the State's renewable marine fishery resources.
- 2) Actions taken must be based on the best available information.
- 3) Actions taken must emphasize protection and enhancement of the marine and estuarine environment.
- 4) Actions taken must accomplish management and preservation of the State's marine fishery resources in such a manner as to provide for optimum sustained benefits and use to all the people of this state for present and future generations.

The FWC adheres to this policy when managing the State's marine fishery resources for fishing activities, and because of the statute's inclusion in the federally-approved Florida Coastal Management Program, this policy equally applies to the Park when managing

State marine fishery resources located within Park boundaries for desired resource conditions and visitor experiences.

The seven management actions previously identified are inconsistent with this enforceable policy because they are not based on the best available information and they will not provide for optimum sustained benefits and use to all the people of this state for present and future generations by reducing or eliminating fishing activities.

*379.2401 Marine fisheries; policy and standards.—*

*(3) All rules relating to saltwater fisheries adopted by the commission shall be consistent with the following standards:*

*(c) Conservation and management measures shall permit reasonable means and quantities of annual harvest, consistent with maximum practicable sustainable stock abundance on a continuing basis.*

The seven management actions previously identified are inconsistent with this enforceable policy because they are inconsistent with how marine fisheries rules are developed and promulgated by the FWC for saltwater fisheries, by reducing or eliminating “reasonable means and quantities of annual harvest”. The Draft GMP/EIS does not provide any data that show the “maximum practicable stock abundance” of the marine fisheries resources will be impacted if fishing (harvest) were not reduced or eliminated.

### **Other Comments and Recommendations**

This conditional consistency determination could have been avoided if the Park had honored commitments they made in the Memorandum of Understanding (MOU) between the FWC and BNP. The MOU was specifically designed to facilitate fishery management planning by improving communication, cooperation, and coordination between the FWC and BNP, and a significant amount of effort and detail went into MOU development to clearly reflect objectives, expectations, management approaches, and responsibilities for both parties.

While there are numerous MOU commitments the Park did not honor during the development of the Draft GMP/EIS (further addressed in Attachment 2), the FWC wishes to draw specific attention to one commitment that was not honored, and is most concerning to the FWC. The MOU specifically states as follows:

“WHEREAS, FWC and the Park agree to seek the least restrictive management actions necessary to fully achieve mutual management goals for the fishery resources of the Park and adjoining areas. Furthermore, both parties recognize the FWC's belief that marine reserves (no-take areas) are overly restrictive and that less-restrictive management measures should be implemented during the duration of this MOU. Consequently, the FWC does not intend to implement a marine reserve (no-take area) in the waters of the Park during the duration of this MOU,

unless both parties agree it is absolutely necessary. Furthermore, the FWC and the Park recognize that the Park intends to consider the establishment of one or more marine reserves (no-take areas) under its General Management Planning process for purposes other than sound fisheries management in accordance with Federal authorities, management policies, directives and executive orders...”

The Park did not seek the least restrictive management actions to accomplish management goals, and did not propose a Marine Reserve Zone in the Draft GMP/EIS “for purposes other than sound fisheries management.” This, in addition to the disregard for the coordination commitments made and joint management approaches agreed upon, have put both the FWC and the Park in a difficult situation that could have been avoided.

The FWC has a vast amount of expertise encompassing decades of statewide resource management, research, enforcement, and institutional knowledge to assist the Park with development of appropriate management strategies that will meet the goals of the State of Florida, the FWC, and BNP, and maintain consistency with FWC enforceable policies included within the federally approved Florida Coastal Management Program. We are taking this opportunity to provide such assistance with additional comments, recommendations, and supporting technical information on the Draft GMP/EIS, included as Attachment 2. Specific attention should be paid to the two action items requested in section VII. Fisheries Management Coordination, Management Actions/Management Zones.

### **Closing Remarks**

The extensive fisheries management content within the Draft GMP/EIS indicates fisheries management issues need to be further considered and addressed through the Fishery Management Plan process, including but not limited to additional zoning coordination and data analyses. While last-minute efforts were made to address zoning issues through an onsite visit by the FWC, and data issues through a teleconference between FWC and BNP, these coordination efforts did not provide sufficient resolution of these issues.

To restate the FWC’s position, management actions proposed in the Draft GMP/EIS that reduce or eliminate fishing activities and the data used to support these actions are inconsistent with FWC enforceable policies included within the federally approved Florida Coastal Management Program, and furthermore violate mutually agreed upon conditions of the MOU. These management actions should be coordinated with the FWC pursuant to the MOU, and executed within the framework of the Fishery Management Plan. These management actions should not be executed within the framework of the General Management Plan. The FWC is willing to explore fisheries management issues within the context of further Fishery Management Plan development; however, consistent with discussions over the past ten years, FWC will not support a Marine Reserve Zone

which includes a management action that closes large areas for fishing within BNP, until measureable management objectives have been clearly defined and less restrictive management measures have been appropriately evaluated in close coordination with FWC and stakeholders.

The FWC appreciates the opportunity to provide input on the Draft GMP/EIS for BNP. We remain willing to work with BNP so the GMP can be finalized in a manner consistent with FWC's authorities within the Florida Coastal Management Program. If you have any questions or would like to discuss our comments, please contact Jessica McCawley in the Division of Marine Fisheries Management at (850) 487-0554 or [jessica.mccawley@myfwc.com](mailto:jessica.mccawley@myfwc.com).

Sincerely,

A handwritten signature in black ink that reads "Nick Wiley". The signature is fluid and cursive, with the first name "Nick" and last name "Wiley" clearly distinguishable.

Nick Wiley  
Executive Director

nw/jm/lg

BNP General Management Plan-EIS\_2273\_123011

Attachments

cc: Mark Lewis, Superintendent, Biscayne National Park

TABLE 2: BISCAYNE NATIONAL PARK MANAGEMENT ZONES, ALTERNATIVES 2 THROUGH 5

	RESOURCE CONDITION	VISITOR EXPERIENCE	MANAGEMENT ACTIONS AND FACILITIES
Visitor Services/Park Administration Zone (Concentrated use)	<p>This zone would provide for a high level of visitor activity and administrative operations. The zone would be modified for visitor access and park operations in a way that aesthetically blends with the natural and cultural environment.</p> <ol style="list-style-type: none"> <li>1. Elements of the natural and cultural environment would remain.</li> <li>2. Sights and sounds of human activity would frequently supplant the sights and sounds of nature.</li> <li>3. There would be tolerance for moderate resource impacts to accommodate visitor services and park operations.</li> <li>4. New development of park administrative facilities would occur only on previously disturbed sites. Some development for visitor access and activities might occur. The zone would not be near sensitive natural or cultural resources if such resources could not be adequately protected.</li> <li>5. The significance and vulnerability of cultural resources would be evaluated, and appropriate management actions would be determined. Cultural resources might be stabilized and hardened (protecting archeological values from unauthorized artifact removal or other destructive activities) to permit visitor access or considered for adaptive reuse.</li> </ol>	<p>Visitors would have opportunities to receive orientation and information, interact with park staff, and experience and learn about park resources.</p> <ol style="list-style-type: none"> <li>1. Appropriate visitor activities could include sightseeing, walking, swimming, recreational fishing, boating, camping, participating in educational activities, and interacting with resources.</li> <li>2. Visitors would see native flora and fauna and might see cultural resources.</li> <li>3. Interpretive and educational opportunities would be greatest in this zone. Visitor activities might be self-directed and/or visitors might use interpretive services to plan their activities. Visitor education could be self-directed or structured.</li> <li>4. Interpretive services would be offered in multiple languages.</li> <li>5. Special events could be allowed in this zone with appropriate permits.</li> <li>6. The probability of encountering others would be high. Visitors would experience a modified environment that accommodates high levels of use and minimizes further resource impacts.</li> <li>7. Facilities and services would enhance opportunities to experience and understand park resources and provide an orientation to the park.</li> <li>8. Visitor activities might be highly regulated to preserve elements of the natural and cultural environment, allow access to cultural resources, prevent visitor conflicts, and enhance public safety.</li> <li>9. Vessel type, size, and speed might be regulated to enhance resource protection and preserve the desired visitor experience.</li> <li>10. Commercial visitor services and facilities would be appropriate in this zone.</li> </ol>	<p>Management actions would focus on managing the higher levels of visitor use within the zone and providing administrative services. Management actions could include</p> <ol style="list-style-type: none"> <li>1. administering daily parkwide operations</li> <li>2. providing maintenance activities</li> <li>3. providing interpretive and enforcement services</li> <li>4. providing emergency services</li> <li>5. implementing resource stewardship</li> <li>6. prioritizing, overseeing, and managing research projects</li> <li>7. defining additional compatible uses</li> <li>8. limiting public access to certain parts of this zone (housing, maintenance, and administration)</li> <li>9. regulating visitor activities and vessel type, size, and speed</li> <li>10. authorizing commercial services</li> <li>11. managing recreational fishing in the interest of sound conservation to protect and preserve marine resources for the education, inspiration, recreation, and enjoyment of present and future generations.</li> </ol> <p>Facilities would be appropriate in size and scale, blending with the natural and cultural landscape. Extent, size, and layout would be the minimum needed to accommodate the intended purposes. Existing and new visitor facilities or improvements would be analyzed for ongoing need, usefulness, and impacts on resources. New administrative facilities could be located outside park boundaries.</p> <ol style="list-style-type: none"> <li>1. Appropriate visitor facilities could include visitor centers, kiosks, wayside exhibits, educational spaces, observation boardwalks, include roads, parking areas, docks, restrooms, picnic areas, campgrounds, navigational aids, mooring buoys and trails improved and maintained as necessary for handicapped accessibility.</li> <li>2. Appropriate park administrative facilities could include maintenance, storage, offices, and staff housing.</li> </ol>

Delete stricken language

Amend highlighted language to read, "managing fishing activities, including fishing vessels and fishing vessel operation, in accordance with the Fishery Management Plan, in the interest of sound conservation....."

	RESOURCE CONDITION	VISITOR EXPERIENCE	MANAGEMENT ACTIONS AND FACILITIES
Dredged Navigation Channels Zone (Boat transit in dredged channels)	<p>The purpose of this zone is to allow transportation routes for vessels in existing channels including the Intracoastal Waterway and the Black Point, Homestead Bayfront, and Turkey Point channels.</p> <ol style="list-style-type: none"> <li>1. Natural conditions and processes could be impacted by transportation use of the zone.</li> <li>2. Unnatural sounds might be prevalent.</li> <li>3. Resources within the dredged navigation channels would continue to be impacted by activities that maintain existing channels. Within the channels, moderate impacts on natural conditions would be tolerated. Impacts on resources outside the channels would be kept to an absolute minimum.</li> <li>4. There could be a high level of human use and activity.</li> <li>5. The existing depth, configuration, and alignment of navigational channels would not be expanded, and no new channels would be created. Channels would not exceed the following existing depths within the park: Intracoastal Waterway: 7 feet Black Point Channel: 4.5 feet Homestead Bayfront Channel: 4.5 feet Turkey Point Channel: 7.5 feet</li> <li>6. Channels would be marked with signs and navigational aids to protect resources and enhance public safety.</li> <li>7. The significance and vulnerability of cultural resources would be evaluated, and appropriate management actions would be determined.</li> </ol>	<p>The visitor experience would involve moving along a marked navigational channel by water vessel and would be perceived as linear or sequential in nature.</p> <ol style="list-style-type: none"> <li>1. Appropriate activities would be the use of channels for traveling through the park and/or gaining access into other park areas.</li> <li>2. Visitor activity would be self-directed travel through or within the park at varying speeds, <del>Recreational and commercial fishing that does not impede vessel traffic could be allowed.</del></li> <li>3. Opportunities for discovery, challenge, and adventure could be low. Visitors would need to be self-reliant and possess navigational skills.</li> <li>4. Visitors would benefit from learning about this zone and how to navigate safely within it.</li> <li>5. Special events would not generally be allowed in this zone.</li> <li>6. There could be a high probability of encountering other people in the zone. Visitors could expect to hear unnatural sounds.</li> <li>7. Because of congested vessel traffic at times, conditions in the navigational channels could be dangerous. Visitors might encounter commercial ships and would need to exercise caution. Visitors would navigate through a well-marked channel of a specified depth. Use could be intensively managed and regulated to ensure safe passage and resource protection.</li> <li>8. Vessel size would generally not be regulated except by conditions of the channel. Speed of vessels in the Intracoastal Waterway would be at a pace that is appropriate to conditions and skill levels.</li> <li>9. Commercial traffic could be allowed in this zone without the requirement of a permit.</li> </ol>	<p>Management activities would focus on resource protection and navigational aids to facilitate safe travel through and within the park. Appropriate management actions could include</p> <ol style="list-style-type: none"> <li>1. regulating visitor activities</li> <li>2. providing law enforcement services</li> <li>3. monitoring resource impacts</li> <li>4. managing these zones for transportation and public safety (there might be overlapping jurisdiction with other agencies; coordination and cooperation with other agencies would occur)</li> <li>5. taking measures to prevent human-caused impacts</li> <li>6. managing recreational and commercial fishing in the interest of sound conservation to protect and preserve marine resources for the education, inspiration, recreation, and enjoyment of present and future generations</li> <li>7. dredging (proposed dredging would need a site-specific environmental study and NPS approval)</li> </ol> <p>Facilities appropriate in these zones would include navigational aids and signs for resource protection and enhancing visitor safety.</p>

Delete stricken language, and insert language to read, "Appropriate fishing activities for this zone will be specified in the Fishery Management Plan."

Amend highlighted language to read, "managing fishing activities, including fishing vessels and fishing vessel operation, in accordance with the Fishery Management Plan, in the interest of sound conservation....."

Table 2: Biscayne National Park Management Zones, Alternatives 2 through 5

	RESOURCE CONDITION	VISITOR EXPERIENCE	MANAGEMENT ACTIONS AND FACILITIES
Multiuse Zone (land and water) (Full range of recreational opportunities)	<p>This zone would provide opportunities for visitors to recreate in natural or cultural settings. Natural and cultural scenes would remain largely intact.</p> <ol style="list-style-type: none"> <li>1. Natural conditions and processes would predominate. The environment might be adapted for human use.</li> <li>2. Sounds and sights of human activity might be apparent.</li> <li>3. There would be tolerance for minimal resource impacts.</li> <li>4. Additions to the landscape, including signs, buoys, and markers, might be used to enhance visitor experience and public safety and to protect resources.</li> <li>5. The significance and vulnerability of cultural resources would be evaluated, and appropriate management actions would be determined. To permit visitor access, cultural resources might be stabilized and hardened (protecting archeological values from unauthorized artifact removal or other destructive activities).</li> </ol>	<p>Visitors would experience a natural or cultural setting, whether they are on the water, under the water, or on land. Providing opportunities for people to interact with the resources in this zone would be important. Visitor use of this zone would be resource-based recreation and education that is consistent with park purpose and significance.</p> <ol style="list-style-type: none"> <li>1. Appropriate visitor activities could include sightseeing, boating, scuba diving, snorkeling, swimming, <del>sport</del> fishing, nature-watching, hiking, picnicking, camping, and visiting cultural resources. <del>Commercial fishing could be allowed.</del></li> <li>2. There would be opportunities for challenge, adventure, and discovery. Visitors might need to use outdoor skills and be self-reliant.</li> <li>3. Visitor activities might be self-directed, or visitors might use interpretive services to plan their activities.</li> <li>4. Special events could be allowed in this zone with the appropriate permit.</li> <li>5. The probability of seeing or encountering others would range from low to moderate most of the time.</li> <li>6. Occasional special events might result in high levels of visitor encounters for short periods.</li> <li>7. Visitor activities might be limited to protect resources and enhance public safety. Limitations might be short or long term.</li> <li>8. Vessel type, size, and speed could be regulated to enhance resource protection and public safety and preserve the desired visitor experience.</li> <li>9. Commercial fishing would follow the permitting procedures as outlined in the Fishery Management Plan.</li> </ol>	<p>Management actions would focus on enhancing visitor experience and safety, protecting resources, minimizing impacts from visitor and commercial use, and restoring disturbed areas. Appropriate management actions could include</p> <ol style="list-style-type: none"> <li>1. determining types and levels of use by considering the desired visitor experience and resource vulnerability to impact</li> <li>2. managing access based on the determined user capacity</li> <li>3. inventorying and monitoring resources</li> <li>4. providing interpretation and enforcement services</li> <li>5. conducting research and restoring and stabilizing resources</li> <li>6. minimizing and mitigating impacts from visitor and commercial use</li> <li>7. defining additional compatible uses</li> <li>8. managing fishing in consultation with the state</li> <li>9. developing permit systems for various activities</li> <li>10. regulating vessel type, size, and speed</li> <li>11. managing recreational and commercial fishing in the interest of sound conservation to protect and preserve marine resources for the education, inspiration, recreation, and enjoyment of present and future generations.</li> </ol> <p>Facilities in this zone would be small, unobtrusive, and dispersed. Facilities would provide basic visitor services, enhance visitor safety, and be compatible with resource protection goals. Facilities could include</p> <ol style="list-style-type: none"> <li>1. primitive trails</li> <li>2. signs, mooring buoys, and navigation markers</li> <li>3. interpretive exhibits</li> <li>4. Restrooms, primitive camping and picnicking sites</li> <li>5. research equipment</li> </ol>

Delete stricken language, and insert language to read, "Appropriate fishing activities for this zone will be specified in the Fishery Management Plan."

Amend highlighted language to read, "managing fishing activities, including fishing vessels and fishing vessel operation, in accordance with the Fishery Management Plan, in the interest of sound conservation....."

	RESOURCE CONDITION	VISITOR EXPERIENCE	MANAGEMENT ACTIONS AND FACILITIES
Slow Speed Zone (Shallow Water Habitat Protection and Visitor Experience)	<p>The preservation of shallow water habitats, restoration of degraded and impacted resources, and continuation of natural processes would be the resource goals in this zone.</p> <ol style="list-style-type: none"> <li>1. Protection and continuation of natural processes .</li> <li>2. Minor impact to Panoramic viewsheds.</li> <li>3. There would be tolerance for minor resource impacts, including noise levels.</li> <li>4. Evidence of human impact would be minimal or part of a cultural scene.</li> <li>5. The significance and vulnerability of the cultural resources would be evaluated, and appropriate management actions would be determined.</li> </ol>	<p>Visitors would have opportunities to experience nature.</p> <ol style="list-style-type: none"> <li>1. Appropriate visitor activities would include boating (motorized or non-motorized), sightseeing, <del>recreational fishing</del>, swimming, snorkeling, and nature observation. <del>Commercial fishing would be allowed with hours, engine use, trap type, tackle and location as specified in the Fishery Management Plan or other document.</del></li> <li>2. Boats with motors could be used when propelled at slow (wakeless) speeds to reduce user conflicts and ensure visitor safety.</li> <li>3. Visitor activities would be mostly self-directed and have minor resource impacts.</li> <li>4. Limited commercial services might provide appropriate visitor recreational activities if compatible with resource protection goals and desired visitor experience</li> </ol>	<p>Management actions would focus on protecting visitors and water-based resources, restoring disturbed areas, minimizing impacts from visitor use, and reducing conflicts between different types of users. Appropriate management actions could include</p> <ol style="list-style-type: none"> <li>1. determining types of use (user capacity) considering the desired visitor experience and the vulnerability of the resources to impacts</li> <li>2. inventorying and monitoring resources</li> <li>3. providing interpretation and enforcement services</li> <li>4. conducting research and restoring and stabilizing resources</li> <li>5. taking measures to prevent human-caused impacts</li> <li>6. defining additional compatible uses</li> </ol> <p>Facilities generally would not be appropriate, except when determined that they would enhance resource protection or public safety. Facilities could include</p> <ol style="list-style-type: none"> <li>1. signs and other navigational aids</li> <li>2. research and monitoring apparatus that is minimal and unobtrusive</li> <li>3. mooring buoys and informational markers such as hazard markers</li> </ol>

Delete stricken language, and insert language to read, "Appropriate fishing activities, fishing vessels and fishing vessel operation for this zone will be specified in the Fishery Management Plan."

Table 2: Biscayne National Park Management Zones, Alternatives 2 through 5

	RESOURCE CONDITION	VISITOR EXPERIENCE	MANAGEMENT ACTIONS AND FACILITIES
Noncombustion Engine Use Zone (Shallow water habitat and natural sounds protection)	<p>The preservation of natural sounds, near-shore nursery areas and shallow water habitats, restoration of degraded and impacted resources, and continuation of natural processes would be the dominant resource goals in this zone.</p> <ol style="list-style-type: none"> <li>1. Natural processes would predominate.</li> <li>2. Natural sounds, sights, and vistas would prevail. Panoramic viewsheds would remain unaltered.</li> <li>3. There would be tolerance for minor resource impacts.</li> <li>4. Evidence of human impact would be minimal or part of a cultural scene.</li> <li>5. Human-caused intrusions, including visual obstructions, would be kept to an absolute minimum, except for resource protection and visitor safety purposes.</li> <li>6. The significance and vulnerability of the cultural resources would be evaluated and appropriate management actions would be determined.</li> </ol>	<p>Visitors would be immersed in nature with opportunities to experience natural sounds, tranquility, and closeness to nature.</p> <ol style="list-style-type: none"> <li>1. Appropriate visitor activities could include noncombustion engine boating (paddling, poling, or trolling), sightseeing, <del>recreational fishing, swimming, snorkeling, and nature observation. Commercial fishing could be allowed with hours, engine use, trap type, tackle and location as specified in the Fishery Management Plan or other document.</del></li> <li>2. Boats equipped with combustion engines could be used when propelled by push-pole or electric trolling motor, with outboard engine tilted up.</li> <li>3. Visitors would be self-reliant and have maximum opportunities to experience a sense of discovery and adventure. Application of outdoor skills would be essential.</li> <li>4. The sights and sounds of nature would be more prevalent than those of human activities. Visitor activities would be mostly self-directed and have minor resource impacts.</li> <li>5. There would be some opportunities for interpretive activities.</li> <li>6. Special events would not be allowed.</li> <li>7. Visitor activities in these zones could be limited in the interest of protecting resources and enhancing public safety. Limitations might be short or long term.</li> <li>8. Use of combustion engines would generally not be allowed. However, in designated areas between 3 feet to 5 feet in depth, the use of combustion engines would be allowed at slow speeds in channels.</li> <li>9. Limited commercial services might provide appropriate visitor recreational activities if compatible with resource protection goals and desired visitor experience.</li> </ol>	<p>Management actions would focus on protecting water-based resources, restoring disturbed areas, minimizing impacts from visitor use, and providing visitors with educational opportunities that encourage resource protection. Appropriate management actions could include</p> <ol style="list-style-type: none"> <li>1. inventorying and monitoring resources</li> <li>2. determining types and levels of use considering the desired visitor experience and the vulnerability of the resources to impacts</li> <li>3. providing interpretation and enforcement services</li> <li>4. conducting research and restoring and stabilizing resources</li> <li>5. taking measures to prevent human-caused impacts</li> <li>6. defining additional compatible uses</li> <li>7. developing a permit system for various activities</li> <li>8. managing recreational and commercial fishing in the interest of sound conservation to protect and preserve marine resources for the education, inspiration, recreation, and enjoyment of present and future generations.</li> </ol> <p>Facilities generally would not be appropriate, except when determined that they would enhance resource protection or public safety. Facilities could include</p> <ol style="list-style-type: none"> <li>1. signs and other navigational aids</li> <li>2. research equipment — if installed, research apparatus would be minimal and unobtrusive. If research could be accomplished in another management zone, it would not occur in this zone.</li> <li>3. mooring buoys.</li> </ol>

Delete stricken language, and insert language to read, "Appropriate fishing activities, fishing vessels and fishing vessel operation for this zone will be specified in the Fishery Management Plan."

Amend highlighted language to read, "managing fishing activities, including fishing vessels and fishing vessel operation, in accordance with the Fishery Management Plan, in the interest of sound conservation....."

	RESOURCE CONDITION	VISITOR EXPERIENCE	MANAGEMENT ACTIONS AND FACILITIES
<p><b>Access-by-Permit Zone</b> (Full range of recreational opportunities; uncrowded, permit system)</p>	<p>The access-by-permit zone would provide opportunities for visitors to recreate in natural or cultural settings where natural processes occur with minor evidence of disturbance from human use. The zone would provide protection for resources such as fish nursery areas and coral reefs.</p> <ol style="list-style-type: none"> <li>1. Natural processes would predominate. This management zones would perpetuate a full complement of native species.</li> <li>2. Natural sounds, sights, and vistas would prevail.</li> <li>3. There would be tolerance for minor resource impacts.</li> <li>4. Evidence of human impact would be minimal or part of a cultural scene.</li> <li>5. Human-caused intrusions, including visual obstructions, would be kept to an absolute minimum, except for resource protection and visitor safety purposes.</li> <li>6. The significance and vulnerability of cultural resources would be evaluated, and appropriate management actions would be determined.</li> </ol>	<p>Visitors would be immersed in nature. Visitor activities and access to these zones would be managed through a permit system to provide visitors with opportunities to experience natural sounds, tranquility, closeness to nature and a sense of relative remoteness. Limited numbers of visitors would enjoy a full range of resource-based recreational opportunities.</p> <ol style="list-style-type: none"> <li>1. Appropriate activities could include sightseeing, boating, swimming, snorkeling, scuba diving, and <del>participating in recreational and commercial</del> fishing.</li> <li>2. Visitor activities would usually be self-directed, which would require self-reliance and provide maximum opportunities to experience a sense of discovery and adventure. Application of outdoor skills would be essential.</li> <li>3. Visitors would receive orientation and information, interact with park staff and experience and learn about park resources before and after entering the park. Interpretive and educational opportunities would enable visitors to plan their trip into the park in advance through the permitting system.</li> <li>4. Special events would not be allowed.</li> <li>5. The probability of encountering others would be low. There would be only occasional encounters with others outside of one's social group.</li> <li>6. Vessel type, size, and speed might be regulated to enhance resource protection and preserve the desired visitor experience.</li> <li>7. Visitor activities could be structured through the use of commercial services with groups of limited size.</li> </ol>	<p>Management actions would focus on protecting resources, ensuring visitors have an uncrowded experience, minimizing impacts from visitor use, and providing visitors with educational opportunities that encourage resource protection. Appropriate management actions could include</p> <ol style="list-style-type: none"> <li>1. determining types and levels of use considering the desired visitor experience and the vulnerability of the resources to impacts</li> <li>2. managing and limiting access through a permit system</li> <li>3. providing interpretation and enforcement services</li> <li>4. taking measures to prevent human-caused impacts</li> <li>5. regulating visitor activities and vessel type, size, and speed</li> <li>6. authorizing commercial services</li> <li>7. conducting research and monitoring resource conditions; restoring and stabilizing resources</li> <li>8. <b>managing recreational and commercial fishing in the interest of sound conservation to protect and preserve marine resources for the education, inspiration, recreation, and enjoyment of present and future generations.</b></li> </ol> <p>Facilities generally would not be appropriate, except when determined that they would enhance resource protection or public safety. Facilities could include</p> <ol style="list-style-type: none"> <li>1. signs and other navigational aids</li> <li>2. limited mooring buoys</li> <li>3. primitive trails</li> <li>4. research equipment—if installed, research apparatus would be minimal and unobtrusive. If research could be accomplished in another management zone, it would not occur in the access-by-permit zone.</li> </ol>

Delete stricken language.

Amend highlighted language to read, "managing fishing activities, including fishing vessels and fishing vessel operation, in accordance with the Fishery Management Plan, in the interest of sound conservation....."

Table 2: Biscayne National Park Management Zones, Alternatives 2 through 5

	RESOURCE CONDITION	VISITOR EXPERIENCE	MANAGEMENT ACTIONS AND FACILITIES
Nature Observation Zone (Intact ecosystem preservation)	<p>The preservation of natural and cultural resources, restoration of degraded and impacted resources, and continuation of natural processes would be the dominant goals in this zone. The nature observation zone would provide a sustainable ecosystem, including fully functioning communities, with natural complexity structure, and diversity of organisms.</p> <ol style="list-style-type: none"> <li>1. Natural processes would predominate. Nature observation areas would preserve and/or restore a full complement of native species.</li> <li>2. Natural sounds, sights, and vistas would prevail. Panoramic viewsheds would remain unaltered.</li> <li>3. There would be tolerance for minor resource impacts.</li> <li>4. Evidence of human impact would be minimal or part of a cultural scene.</li> <li>5. Human-caused intrusions, including visual obstructions, would be kept to an absolute minimum, except for resource protection and visitor safety purposes.</li> <li>6. The significance and vulnerability of the cultural resources would be evaluated, and appropriate management actions would be determined.</li> </ol>	<p>Visitors would be immersed in nature with opportunities to experience natural sounds, tranquility, solitude, and closeness to nature. Visitors would have opportunities to experience and gain in-depth knowledge about sustainable ecosystems with fully functioning interdependent communities of organisms.</p> <ol style="list-style-type: none"> <li>1. Appropriate visitor activities could include sightseeing, nature observation, <del>and recreational fishing from the land.</del></li> <li>2. Visitors would be self-reliant and have maximum opportunities to experience a sense of discovery and adventure. Application of outdoor skills would be essential.</li> <li>3. Interaction with nature would predominate, with only occasional encounters with others. There would be a sense of relative remoteness. The sights and sounds of nature would be more prevalent than those of human activities. Visitor activities would be mostly self-directed and have minor resource impacts.</li> <li>4. There would be opportunities for interpretive activities emphasizing sustainable ecosystems.</li> <li>5. Special events would not be allowed.</li> <li>6. Visitor activities in these zones could be limited in the interest of protecting resources and enhancing public safety. Limitations might be short or long term.</li> <li>7. Limited commercial services that provide appropriate visitor recreational activities might be appropriate if compatible with resource protection goals and desired visitor experience.</li> </ol>	<p>Management actions would focus on protecting resources, restoring disturbed areas, minimizing impacts from visitor use, and providing visitors with opportunities that encourage understanding of the natural functioning of resources within a sustainable ecosystem. Appropriate management actions could include</p> <ol style="list-style-type: none"> <li>1. determining types and levels of use considering the desired visitor experience and the vulnerability of the resources to impacts</li> <li>2. intense inventorying and monitoring of resources</li> <li>3. providing interpretation and enforcement services</li> <li>4. conducting research and restoring and stabilizing resources</li> <li>5. taking measures to prevent human-caused impacts</li> <li>6. defining additional compatible uses</li> <li>7. developing permit systems for various activities</li> </ol> <p>Facilities generally would not be appropriate, except when determined that they would enhance resource protection or public safety. Facilities could include</p> <ol style="list-style-type: none"> <li>1. signs and other navigational aids</li> <li>2. primitive trails</li> <li>3. research equipment—if installed, research apparatus would be minimal and unobtrusive. If research could be accomplished in another management zone, it would not occur in the nature observation zone.</li> </ol>

Delete stricken language, and insert language to read, "Appropriate fishing activities for this zone will be specified in the Fishery Management Plan."

	RESOURCE CONDITION	VISITOR EXPERIENCE	MANAGEMENT ACTIONS AND FACILITIES
Marine Reserve Zone (ecosystem preservation; non-extractive; visitor experience)	<p>The Marine Reserve Zone would provide a high level of protection from direct human-caused impacts for water-based ecosystems, habitats, and processes while allowing visitors to experience the zone. Natural processes occur with negligible disturbance from human use. This zone would protect natural resources such as marine nursery areas and coral reefs. The Marine Reserve Zone would provide the opportunity to compare the resource status of an area with no extractive uses to other areas allowing removal of resources.</p> <ol style="list-style-type: none"> <li>1. Natural processes would predominate.</li> <li>2. Resource impacts would be reduced.</li> <li>3. Most lasting signs of human use would not be apparent. Evidence of human impact would be restricted to cultural resources such as historic shipwrecks.</li> <li>4. Intervention and restoration could occur to mitigate and stabilize human-caused disruption or for resource management purposes. Otherwise alterations to natural resources would not occur.</li> <li>5. The significance and vulnerability of cultural resources would be evaluated, and appropriate management actions would be determined.</li> </ol>	<p>Visitors would be immersed in nature with opportunities to experience natural sounds, tranquility, solitude, and closeness to nature. Visitors would have opportunities to observe and learn about the differences and benefits to resources of a non-extractive use area compared to areas allowing removal of resources. Research activities might be allowed under a permit.</p> <ol style="list-style-type: none"> <li>1. Appropriate visitor activities could include boating, sightseeing, nature-watching, mooring, swimming, snorkeling, or diving. <del>Commercial and recreational fishing would not be appropriate activities.</del> Anchoring would not be allowed.</li> <li>2. Visitors would be self-reliant and have maximum opportunities to experience a sense of discovery and adventure. Application of outdoor skills would be essential.</li> <li>3. Interaction with nature would predominate, with only occasional encounters with others. There would be a sense of relative remoteness. The sights and sounds of nature would be more prevalent than those of human activities. Visitor activities would be mostly self-directed and have negligible resource impacts.</li> <li>4. Special events, with the exception of cleanup events or citizen science, would generally not be allowed.</li> <li>5. Visitors would benefit from the research by learning about protected resources.</li> <li>6. Limited commercial services that provide appropriate visitor recreational activities might be allowed if compatible with resource protection goals and desired visitor experiences.</li> </ol>	<p>Management actions would focus on the preservation and protection of water-based ecosystems, habitats, and processes. Appropriate management actions could include</p> <ol style="list-style-type: none"> <li>1. determining types and levels of use considering the desired visitor experience and the vulnerability of the resources to impacts</li> <li>2. intervening and restoring natural resources to mitigate and stabilize human-caused disruption</li> <li>3. conducting research aimed at monitoring resource conditions and understanding natural processes</li> <li>4. prioritizing, overseeing, and managing research projects</li> <li>5. taking measures to prevent human-caused impacts</li> <li>6. defining additional compatible uses</li> </ol> <p>Facilities generally would not be appropriate, except when determined that they would enhance resource protection or public safety. Facilities could include</p> <ol style="list-style-type: none"> <li>1. signs, mooring buoys, and navigational aids</li> <li>2. research equipment — if installed, research apparatus would be minimal and unobtrusive. If research could be accomplished in another management zone, it would not occur in the marine reserve zone.</li> </ol>

Delete stricken language, and insert language to read, "Appropriate fishing activities for this zone will be specified in the Fishery Management Plan."

Table 2: Biscayne National Park Management Zones, Alternatives 2 through 5

	RESOURCE CONDITION	VISITOR EXPERIENCE	MANAGEMENT ACTIONS AND FACILITIES
<b>Sensitive Underwater Archeological Zone (Visitors not allowed in water)</b>	<p>The Sensitive Underwater Archeological Zone would provide protection for significant and vulnerable underwater cultural sites. Research activities could occur.</p> <ol style="list-style-type: none"> <li>1. Natural sea and soundscapes would be maintained as much as possible.</li> <li>2. Human-caused cultural resource degradation would not be tolerated. Intervention to natural processes would be allowed if necessary to protect cultural site integrity.</li> <li>3. Preservation and stabilization actions might occur.</li> </ol>	<p>Visitors would view protected resources from within vessels on the surface of the water. Research activities might be allowed under permit.</p> <ol style="list-style-type: none"> <li>1. Appropriate visitor activities could include sightseeing, nature-watching, <del>recreational hook and line fishing, and transit through the zone. Apparatus other than hook and line fishing gear would not be allowed in the water below the lowest point of the vessel. Commercial fishing and trapping would not be appropriate.</del> Anchoring would not be allowed.</li> <li>2. Visitors must remain in their boats, and access to the water for activities including swimming, snorkeling or diving would not be allowed.</li> <li>3. Researchers and other cooperating personnel could enter the zone for authorized purposes. Any impacts on cultural resources would be negligible.</li> <li>4. Visitors would benefit from the research by learning about significant and vulnerable resources as well as how they are studied and preserved.</li> <li>5. Commercial services would only transit through the zone.</li> <li>6. Underwater viewing devices including but not limited to face masks, glass-bottom vessels, glass-bottom buckets, and/or underwater cameras of any kind would not be allowed.</li> </ol>	<p>Management actions would focus on preservation and protection of underwater cultural sites. Appropriate management actions could include</p> <ol style="list-style-type: none"> <li>1. mitigating, stabilizing, and restoring resources and collecting artifacts in imminent danger of destruction or loss</li> <li>2. conducting research aimed at monitoring resource conditions and understanding the cultural context</li> <li>3. prioritizing, overseeing, and managing research projects</li> <li>4. taking measures to prevent human-caused impacts</li> <li>5. defining additional compatible uses</li> <li>6. <b>managing recreational fishing in the interest of sound conservation to protect and preserve marine resources for the education, inspiration, recreation, and enjoyment of present and future generations.</b></li> <li>7. entering into agreements aimed at resource protection</li> </ol> <p>Facilities generally would not be appropriate, except when determined that they would enhance resource protection or public safety. Facilities could include</p> <ol style="list-style-type: none"> <li>1. signs and other navigational aids</li> <li>2. research equipment — if installed, research apparatus would be minimal and unobtrusive. If research could be accomplished in another management zone, it would not occur in the Sensitive Underwater Archeological Zone.</li> </ol>

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Amend highlighted language to read, "managing fishing activities, including fishing vessels and fishing vessel operation, in accordance with the Fishery Management Plan, in the interest of sound conservation....."

## CHAPTER 2: ALTERNATIVES, INCLUDING THE PREFERRED ALTERNATIVE

	RESOURCE CONDITION	VISITOR EXPERIENCE	MANAGEMENT ACTIONS AND FACILITIES
<b>Sensitive Resource Zone</b> <b>(Complete protection of exceptional &amp; critical resources)</b>	<p>Natural Resources: The Sensitive Resource Zone would provide complete protection for exceptional and critical ecosystems, habitats, and processes and for sensitive nesting and nursery areas. Natural processes occur with negligible disturbance from human use. This zone would be closed to visitor access to permit natural processes to proceed. Research or actions aimed at monitoring natural conditions could occur.</p> <ol style="list-style-type: none"> <li>1. Natural processes would predominate.</li> <li>2. Natural land, sea, and soundscapes would predominate within the zone.</li> <li>3. There would be no tolerance for resource impacts.</li> <li>4. Lasting signs of human use would not be apparent.</li> <li>5. Intervention and restoration could occur to mitigate and stabilize human-caused destruction. Otherwise, alterations to natural resources would not occur.</li> <li>6. The significance and vulnerability of natural resources would be evaluated, and appropriate management actions would be determined.</li> </ol> <p>Cultural Resources: The Sensitive Resource Zone would provide complete protection for exceptional and sensitive cultural sites and landscapes. This zone would be closed to visitor access to protect site integrity. Research activities could occur.</p> <ol style="list-style-type: none"> <li>1. Natural land, sea, and soundscapes would be maintained as much as possible.</li> <li>2. Cultural resource degradation would not be tolerated. Intervention of natural processes might occur to protect cultural site integrity.</li> <li>3. Evidence of historic human use that contributes to the site's cultural value would be apparent.</li> <li>4. Preservation and stabilization actions might occur.</li> </ol>	<p>Natural Resources: Sensitive Resource Zones would not be managed for visitor access, and use would be highly restricted.</p> <ol style="list-style-type: none"> <li>1. <b>Visitors would not be allowed into the zone.</b> Research activities might be allowed under a permit.</li> <li>2. Researchers and other cooperating personnel might enter the zone for authorized purposes. Any impacts on natural processes would not be tolerated.</li> <li>3. Visitors would benefit by learning about sensitive and vulnerable resources as well as how they are studied and preserved.</li> <li>4. Vessels and vehicles would be restricted from the zone except for administrative, emergency, or research purposes.</li> <li>5. Commercial activity would not be allowed.</li> </ol> <p>Cultural Resources: This zone would not be managed for visitor access, and use would be highly restricted.</p> <ol style="list-style-type: none"> <li>1. Visitors would not be allowed into the zone. Research activities might be allowed under a permit.</li> <li>2. Researchers and other cooperating personnel could enter the zone for authorized purposes. Any impacts on cultural resources would not be tolerated.</li> <li>3. Visitors would benefit by learning about sensitive and vulnerable resources as well as how they are studied and preserved.</li> <li>4. Vessels and vehicles would be restricted from the zone except for administrative, emergency, or research purposes.</li> <li>5. Commercial activity would not be allowed.</li> </ol>	<p>Natural Resources: Management actions would focus on the preservation and protection of ecosystems, habitats, and processes unique to this zone. Appropriate management actions could include</p> <ol style="list-style-type: none"> <li>1. intervening and restoring resources to mitigate and stabilize human-caused destruction</li> <li>2. conducting research aimed at monitoring resource conditions and understanding natural processes</li> <li>3. prioritizing, overseeing, and managing research projects</li> <li>4. taking measures to prevent human-caused impacts</li> <li>5. defining additional compatible uses</li> <li>6. providing interpretive and enforcement services.</li> </ol> <p>Facilities would not be allowed. If installed, research apparatus would be minimal and unobtrusive. If research could be accomplished in another management zone, it would not occur in the Sensitive Resource Zone.</p> <p>Cultural Resources: Management actions would focus on preservation and protection of cultural sites and landscapes. Appropriate management actions could include</p> <ol style="list-style-type: none"> <li>1. mitigating, stabilizing, and restoring resources and collecting artifacts in imminent danger of destruction or loss</li> <li>2. conducting research aimed at monitoring resource conditions and understanding the cultural context</li> <li>3. prioritizing, overseeing, and managing research projects</li> <li>4. taking measures to prevent human-caused impacts</li> <li>5. defining additional compatible uses</li> <li>6. providing interpretive and enforcement services.</li> </ol> <p>Facilities would not be allowed in this zone. If installed, research apparatus would be minimal and unobtrusive. If research could be accomplished in another management zone, it would not occur in the Sensitive Resource Zone.</p>
	<div> 1) Insert at the end of the highlighted sentence, "...unless fishing activities were allowed pursuant to the Fishery Management Plan."  2) Insert "6. Appropriate fishing activities for this zone will be specified in the Fishery Management Plan." </div>		

## **Attachment 2. Comments and Recommendations and Supporting Technical Information**

### **I. Boating Restricted Areas and Uniform Waterway Markers**

The FWC requests that National Park Service (NPS) apply for the Florida Uniform Waterway Marker (FUWM) Permit for all signs and buoys (markers) placed in the waterways of the Park, regardless of which Alternative is adopted by NPS. By voluntarily applying for the FUWM permit, which the Park has already done for existing waterway markers, NPS will ensure that their markers are consistent with state and federal regulations (United States Aids to Navigation System, a system consistent with the International Association of Lighthouse Authorities Maritime Buoyage System). The Uniform Waterway Marker system ensures that boaters see consistent messages and symbols while boating throughout the state. Consistent waterway markers symbols and messages ensure greater zone compliance and ultimately less impact on benthic resources. By applying for a FUWM permit, the Park's waterway markers will be more readily identifiable when they are damaged or destroyed, expediting the notification process. FWC's Marker On-Call Program is a statewide program that quickly identifies damaged or destroyed waterway markers and notifies the owner, regardless of the agency to which the marker belongs.

The Preferred Alternative (Alternative 4) in the Draft GMP/EIS suggests the installation of a number of additional waterway markers (both regulatory and informational) within the Park. In an effort to minimize risk associated with vessel collisions with markers, the FWC suggests the Mooring Buoy and Marker Plan be developed to minimize the number of waterway markers while providing for appropriate levels of boater awareness and accomplishing other goals. FWC staff within the Division of Law Enforcement, Boating and Waterway Section, has considerable experience in this area and would be eager to participate in the development of the Mooring Buoy and Marker Plan.

Additionally, to reduce vessel operator confusion and complement existing state zones within the park, the FWC suggests that NPS consider adopting the state definitions of "no power-driven vessels," "no motor zone," or "manually propelled vessels only," and "slow speed minimum wake", to accomplish vessel operation objectives. The NPS can accomplish the same objective of prohibiting combustion engines by using the appropriate state definitions (refer to 68D-23.103(3)(b), (d)-(f), Florida Administrative Code).

Since 1991, the FWC has had regulatory zones located within the park boundary – particularly the 1000' buffer zone from Black Point to Turkey Point and Idle Speed No Wake zone within the North Canal located north of Turkey Point Power Plant and adjacent to the Park Administrative & Visitor Center. Should the NPS adopt any non-combustion engine use and slow speed zones along the western park boundary, the more restrictive NPS zone would be posted and the FWC markers posting the state zone would need to be removed or replaced to reflect the NPS regulation. In addition, the FWC strongly recommends that NPS adopt the State definitions of Slow Speed Minimum Wake. The Draft GMP/EIS references the term slow (wakeless) speed within Table 2 (pages 49-58), "Visitor Experience" column. The use of the State term of "Slow Speed Minimum Wake" reduces vessel operator confusion and perhaps increases compliance as

they enter/exit the park boundary and encounter other local or State regulatory zones. In addition the FWC has been successful in the use of the State zones in establishing federal manatee sanctuaries with the United States Fish and Wildlife Service. The State definition of “‘Slow Speed Minimum Wake’... means that a vessel must be fully off plane and completely settled into the water. The vessel must then proceed at a speed which is reasonable and prudent under the prevailing circumstances so as to avoid the creation of an excessive wake or other hazardous condition which endangers or is likely to endanger other vessels or other persons using the waterway. At no time is any vessel required to proceed so slowly that the operator is unable to maintain control over the vessel or any other vessel or object that it has under tow” (Ch. 68D-23.103(3)(b), Florida Administrative Code.).

The Draft GMP/EIS needs to further elaborate on the intended regulations for the “Marine Reserve Zone,” should such a zone be included in subsequent versions of the GMP. Currently, it states that boat size, type, and speed could be regulated to protect resources in the zone. With the exception of fishing as a prohibited activity, the plan does not state what activities are permitted or what vessel speed limits are being considered.

The Preferred Alternative (Alternative 4) in the Draft GMP/EIS indicates that the number of proposed moorings for many of the sites will be limited. In the interest of our continued support of safe and reasonable use of the waters and marine resources within the Park, we encourage staff to evaluate current and historic use trends for the areas where moorings are intended to be installed and to ensure that appropriate numbers of moorings are installed and maintained to support those levels of use. In those instances where anchoring is not permitted when all the moorings are in use, public access to public resources may be restricted, even though the activities being conducted may have an extremely low impact on such resources. If an appropriate number of moorings are installed to meet traditional and current use volume, many of the negative impacts to benthic resources would be eliminated while ensuring public access to public resources.

## **II. Personal Watercraft Transit**

The FWC very much supports responsible efforts to protect Florida’s environment while ensuring a wide variety of safe and enjoyable opportunities for Florida’s residents and visitors. However, we would like to emphasize that any efforts to amend the boating restrictions within the Park should include a provision which would allow for the operation of personal watercraft to transit south Miami-Dade County via the Atlantic Intracoastal Waterway, to ensure safety to those wishing to transit the Park to destinations beyond Park boundaries.

## **III. Marine Habitat Restoration**

The FWC supports the restoration of damaged marine resources including coral reef, seagrass and mangrove communities. FWC staff within the Division of Habitat Species Conservation, Aquatic Habitat Conservation and Restoration Section, would be willing partners in any marine restoration efforts conducted by BNP staff.

#### **IV. Exotic Species Removal**

The FWC encourages the removal of the Indo-Pacific lionfish (*Pterois volitans*) from BNP. Lionfish are a significant predator on native reef fish populations, including many that serve important roles in the continued health of the reef community. Lionfish also compete for food resources used by native species such as grouper and snapper. Park staff should investigate the use of Park-sponsored lionfish tournaments to assist in the control of lionfish populations. Removal of lionfish through public participation offers a recreational opportunity for the public while benefitting native fish communities.

#### **V. Satellite Visitor Education Center**

The FWC supports the idea of a satellite visitor education center in Miami, as long as it is not within the boundaries of the Bill Sadowski Virginia Key Critical Wildlife Area (CWA). A specific location on Virginia Key is not mentioned in the Draft GMP/EIS, but recent City of Miami Master Plans for Virginia Key have placed such a visitor center within or adjacent to the CWA.

#### **VI. Listed Species**

Recent surveys for the federally endangered Schaus' swallow-tail butterfly (*Heraclides aristodemus ponceanus*) are finding very few individuals (Attachment 2A). The vast majority are being found in BNP on the south end of Elliot Key near Petrel Point. The NPS should consider designating the area around Petrel Point (about ½ mile north and south of Petrel Point) as a Sensitive Resource Zone or as a Nature Observation Zone.

#### **VII. Fisheries Management Coordination**

##### **Memorandum of Understanding**

In 2002 and subsequently in 2007, the FWC entered into a Memorandum of Understanding (MOU) with BNP to "facilitate the management, protection, and scientific study of fish and aquatic resources" within BNP, "by improving communication, cooperation and coordination" between the FWC and the Park (Attachment 2B).

The MOU provides relevant background information, lists objectives to be achieved, outlines regulatory authorities, and details expectations of work on behalf of both the FWC and the Park for the mutual benefit of the aquatic resources within the Park. It is unfortunate--that despite the existing MOU wherein FWC and the Park agreed to make efforts to the maximum extent possible to cooperate fully and jointly to manage fisheries within the Park--the FWC is forced to provide extensive comments with regards to fisheries management issues on a Draft GMP/EIS through the Florida State Clearinghouse.

One of the tasks identified in the MOU is the joint development of a comprehensive fisheries management plan. The purpose of the Fishery Management Plan is to provide for the long-term management of fish and aquatic resources within the Park, separately yet complementary to a General Management Plan.

The development of the Fishery Management Plan is ongoing, and the Draft GMP/EIS specifically states: “Due to this ongoing planning process, the GMP will not address fisheries management in its alternatives” (page 16). However, Alternatives 2-5 of the Draft GMP/EIS would utilize zones where fishing activities are directly or indirectly reduced or eliminated through prohibitions on fishing activities, area closures, access limitations, limitations or prohibitions on the use of internal combustion motors, limitations or prohibitions on vessel type, size and speed, limitations on harvesting gear, and permit requirements. All 10 of the proposed zones in the Draft GMP/EIS propose to manage fishing activities in some manner, and “managing recreational [and commercial] fishing in the interest of sound conservation” is specifically identified as a management action in the majority of the zone descriptions. For example, the management objective for the Marine Reserve Zone included within Alternatives 3, 4 and 5 (pages 76, 82 and 88 respectively) addresses specific fisheries management objectives (e.g., larger and more numerous tropical reef fish, reducing mortality of fish), and compares the proposed management strategy of eliminating all fishing to other fisheries management strategies (e.g., catch and release, slot limits). This is clearly a fisheries management issue and as such belongs in a Fishery Management Plan, not a General Management Plan.

The proposed management actions within the Draft GMP/EIS that reduce or eliminate fishing activities are in direct conflict with the MOU which states:

Article I – Background and Objectives:

“WHEREAS, FWC and the Park agree that properly regulated commercial and recreational fishing will be continued within the boundaries of the Park. FWC and the Park recognize and acknowledge that commercial and recreational fishing constitutes activities of statewide importance that benefit the health and welfare of the people of the State of Florida.”

Article III – Statement of Work:

A. FWC and the Park agree to:

3. Provide for recreational and commercial fishing and opportunities for the angling public and other Park visitors to enjoy the natural aquatic environment.

In addition, the proposed management actions within the Draft GMP/EIS have not been jointly evaluated with the FWC, and the FWC was not consulted in advance of these recent actions being proposed and released to the public for comment. This is also in direct conflict with the MOU which states:

Article III – Statement of Work:

A. FWC and the Park agree to:

2. Acknowledge that the FWC will play a crucial role in implementing and promulgating new regulations as may be deemed appropriate, as well as take other management actions to achieve the mutual objectives for the management of fisheries within the boundaries of the Park for the term of this MOU. However, the agencies agree to consult with each

other on any actions that they may propose to be taken to conserve or protect fish populations and other aquatic resources within Park boundaries or to further regulate the fisheries.

5. Consult with each other and jointly evaluate the commercial and recreational harvest of fishery resources within the Park. Such consultation and evaluation, as set forth in the enabling legislation establishing the Park, should include a full review of all commercial and recreational fishery practices, harvest data, permitting requirements, techniques and other pertinent information for the purposes of determining to what extent mutually agreed upon fishery management goals are being met within the Park and to determine what additional management actions, if any, are necessary to achieve stated management goals.

The proposed regulatory actions combined with the lack of advanced agency coordination make it abundantly clear that the Park's regulatory strategy is to address fisheries management issues within the context of the General Management Plan and outside of the framework of the MOU and the Fishery Management Plan. The enabling acts establishing BNP and the MOU executed in good faith clearly call for consultation and coordination with the State of Florida/FWC regarding fisheries management, and the Fishery Management Plan is the most appropriate tool to support this consultation and coordination. Any significant restrictions on fishing opportunities within the BNP are clearly fishery management issues falling under the purview of these requirements and mutual agreements for consultation and coordination. There is no doubt the Draft GMP/EIS proposes significant restrictions on fishing opportunities that should be addressed through the framework of the MOU and the Fishery Management Plan. The FWC respectfully calls for NPS to honor these requirements and commitments by withdrawing these fishery- and fishing-related provisions from the GMP and working closely with FWC and stakeholders to develop proposals that reflect a better balance between resource protection and the public interest.

#### Management Actions/Management Zones

The FWC recognizes and supports that BNP has different but complementary goals for managing Florida's fish and wildlife resources located within Park boundaries, to provide for a level of resource conditions and visitor experiences that is expected of a National Park. The FWC also recognizes the significant value of the habitat resources within the Park to recreational and commercial fisheries, and the need to protect them. While the FWC can provide conceptual support for many of the management actions and management zones contained within the Draft GMP/EIS because of the benefits to fishery resources, the FWC cannot support how these actions and zones have been developed and are being proposed because of the significant impacts to fishing activities. Management strategies yet to be developed could provide maximum access for fishing activities while still achieving Park management goals, and development of these strategies will require additional coordination with the FWC and fishing stakeholders through the Fishery Management Plan process.

To begin coordination efforts, we would formally request BNP re-initiate coordination with the FWC and stakeholders on the Fishery Management Plan/Environmental Impact Statement in order to appropriately address the items identified by this consistency review.

In addition, we would request that the Park make modifications to the zones as discussed during the onsite visit on December 7, 2011, by FWC South Florida Regional Director Chuck Collins with BNP Superintendent Mark Lewis. We request these modifications be incorporated into the Final GMP/EIS. The modifications are as follows:

- 1) Modify the proposed zones in Preferred Alternative 4 around the Arsenickers from a 500' Noncombustible Engine Use Zone plus a 500' Slow Speed Zone, to only a 500' Slow Speed Zone. This area is currently managed by a 250' No-Wake Zone.
- 2) Modify the proposed zones in Preferred Alternative 4 for the creeks south of Jones Lagoon from a Noncombustible Engine Use Zone to a Slow Speed Zone.

#### Marine Reserve Zone

The FWC does not support establishment of a Marine Reserve Zone that prohibits fishing activities within BNP until measureable management goals have been clearly defined and less-restrictive fisheries management actions have been appropriately evaluated. During the December 20, 2011, teleconference call, the FWC proposed that the Park develop a management strategy evaluation of alternative management strategies, ranging from less restrictive fishery restrictions to no-take marine reserves. This type of simulation modeling is used to assess the potential outcomes for different management strategies, and can be used in situations such as Biscayne National Park where there is minimal data available and time limitations that will not facilitate additional data collection. The Park was not receptive to the FWC proposal, citing delays in the General Management Plan approval process as one reason for their objection. In response to this objection, FWC would refer the Park to the "Conditions for Consistency" section of the attached letter, which stated finalization of the GMP could be accomplished without delay even with compliance with FWC conditions. In that case, the Marine Reserve Zone could be still be included in the GMP, but specific management of fishing activities within the Marine Reserve Zone would be shifted from the Draft GMP/EIS to the Fishery Management Plan. The management strategy evaluation would then be part of the Fishery Management Plan process, and not the GMP process.

**Schaus' Swallowtail Butterfly Survey at Biscayne National Park  
and North Key Largo, 2011**

**This report is omitted due to sensitive natural resources material.**



**Memorandum of Understanding**  
**between**  
**the State of Florida, Fish and Wildlife Conservation Commission**  
**and**  
**the National Park Service, Biscayne National Park**

NPS Agreement Number G5250H0083

**ARTICLE I – BACKGROUND AND OBJECTIVES**

WHEREAS, The purpose of this Memorandum of Agreement (MOU) is to facilitate the management, protection and scientific study of fish and aquatic resources within the National Park Service, Biscayne National Park (hereinafter referred to as the Park) by improving communication, cooperation and coordination between the Florida Fish and Wildlife Conservation Commission, (hereinafter referred to as the FWC) and the Park; and

WHEREAS, Biscayne National Monument was established by Congress in 1968 “in order to preserve and protect for the education, inspiration, recreation, and enjoyment of present and future generations a rare combination of terrestrial, marine, and amphibious life in a tropical setting of great natural beauty” (PL 90-606). The Monument was later expanded in 1974 (PL 93-477), and again in 1980 (PL 96-287), to its current size of 173,000 acres (270 square miles), when it was also redesignated as the Park, where excellent opportunities are provided for fishing, snorkeling, scuba diving, boating, canoeing, kayaking, windsurfing and swimming; and

WHEREAS, the State of Florida conveyed sovereign submerged lands to the United States in 1970 to become part of Biscayne National Monument; and

WHEREAS, the Park is made up predominantly of submerged lands (95 percent), and may be divided generally into three major environments: coral reef, estuarine and terrestrial. The boundaries of the Park begin at the west mangrove shoreline, extend east to Biscayne Bay (including seagrass communities and shoals), the keys (including hardwood hammocks, mangrove wetlands, sandy beaches and rocky inter-tidal areas), the reef, and continue to their easternmost extent at a contiguous 60-foot depth contour. The northern boundary of the Park is near the southern extent of Key Biscayne, while the southern boundary is near the northern extent of Key Largo, adjacent to the Barnes Sound and Card Sound areas; and

WHEREAS, Biscayne Bay has also been designated by the State of Florida as an Aquatic Preserve, Outstanding Florida Water, Outstanding National Resource Water (pending ratification of State water quality standards) and lobster sanctuary under Florida Law, and by Dade County as an aquatic park and conservation area; and

WHEREAS, both FWC and the Park have responsibilities under Federal and State laws and regulations that affect fish and other aquatic resources within the Park; and

WHEREAS, FWC and the Park agree that "when possible and practicable, stocks of fish shall be managed as a biological unit" (Chapter 370.025(d) Florida Statutes). This statement is intended to recognize that measures to end overfishing and rebuild stocks are most effective when implemented over the range of the biological stock; however, it is not intended to preclude implementation of additional or more restrictive management measures within the Park than in adjacent State waters as a means of achieving mutual objectives; and

WHEREAS, FWC and the Park agree that properly regulated commercial and recreational fishing will be continued within the boundaries of the Park. FWC and the Park recognize and acknowledge that commercial and recreational fishing constitutes activities of statewide importance that benefit the health and welfare of the people of the State of Florida. The parties also recognize and acknowledge that preserving the nationally significant resources of the Park to a high conservation and protection standard to be agreed upon by both parties in the fishery management plan for all citizens to enjoy is of statewide as well as national importance, and as such, will also benefit the health and welfare of the people of the State of Florida; and

WHEREAS, FWC and the Park agree to seek the least restrictive management actions necessary to fully achieve mutual management goals for the fishery resources of the Park and adjoining areas. Furthermore, both parties recognize the FWC's belief that marine reserves (no-take areas) are overly restrictive and that less-restrictive management measures should be implemented during the duration of this MOU. Consequently, the FWC does not intend to implement a marine reserve (no-take area) in the waters of the Park during the duration of this MOU, unless both parties agree it is absolutely necessary. Furthermore, the FWC and the Park recognize that the Park intends to consider the establishment of one or more marine reserves (no-take areas) under its General Management Planning process for purposes other than sound fisheries management in accordance with Federal authorities, management policies, directives and executive orders; and

WHEREAS, both parties wish this MOU to reflect their common goals and intended cooperation and coordination to achieve those goals.

## ARTICLE II – AUTHORITY

In the Organic Act of 1916, U.S.C. § 1, Congress created the National Park Service (NPS) to promote and regulate the National Park System for “the purpose of conserving the scenery and the natural and historic objects and wildlife therein and to provide for the enjoyment of the same in such manner and by such means as would leave them unimpaired for the enjoyment of future generations.” Congress further determined, in 16 U.S.C. § 1a-1, that the authorization of activities within units of the National Park System be construed, and the protection, management and administration of national parks be conducted, in the light of high public value and integrity of the National Park System.

The legislation establishing the Park states that the “Secretary shall preserve and administer the park in accordance with the provisions of sections 1 and 2 to 4 of this title, as amended and supplemented. The waters within the park shall continue to be open to fishing in conformity with the laws of the State of Florida except as the Secretary, after consultation with appropriate officials of said State, designates species for which, areas and times within which, and methods by which fishing is prohibited, limited, or otherwise regulated in the interest of sound conservation to achieve the purposes for which the park is established: Provided, that with respect to lands donated by the State after the effective date of this Act, fishing shall be in conformance with State law.” PL 96-287, § 103(a), codified at 16 U.S.C. § 410gg-2(a).

As a unit of the National Park System, the Park is authorized under 16 U.S.C. §§ 1-6 to participate in memoranda of understanding that document mutually agreed upon policies, procedures and relationships that do not involve funding.

The FWC was created by Article IV, § 9 of the Florida Constitution and is vested with the state’s executive and regulatory authority with respect to freshwater aquatic life, wild animal life and marine life. This authority, directly derived from the Constitution, provides the FWC with autonomy to regulate and manage wild animal life, freshwater aquatic life and marine life within the State of Florida, which includes the areas encompassed by the Park.

The FWC is authorized under Chapter 370.103, Florida Statutes, to enter into cooperative agreements with the Federal Government or agencies thereof for the purpose of preserving saltwater fisheries within and without state waters and for the purpose of protecting against overfishing, waste, depletion, or any abuse whatsoever. Such authority includes authority to enter into cooperative agreements whereby officers of the FWC are empowered to enforce federal statutes and rules pertaining to fisheries management.

The regulatory responsibility of the State of Florida with respect to fishing on the original Park lands is set forth in section 103(a) of PL 96-287 (see above). The regulatory responsibility of the State of Florida with respect to fishing on additional lands conveyed to the Park after the effective date of PL 96-287 is set forth in a Board of

Trustees of the Internal Improvement Trust Fund Dedication dated December 13, 1985, which contains the following special reservation: "All rights to fish on the waters shall be retained and not transferred to the United States and fishing on the waters shall be subject to the laws of the State of Florida."

NOW, THEREFORE, both parties agree as follows:

### **ARTICLE III – STATEMENT OF WORK**

#### **A. FWC and the Park agree to:**

1. Seek concurrence in meeting their management goals and strive to identify means, measures and other interagency actions for the mutual benefit of the aquatic resources within Biscayne Bay and the Park.
2. Acknowledge that the FWC will play a crucial role in implementing and promulgating new regulations as may be deemed appropriate, as well as take other management actions to achieve the mutual objectives for the management of fisheries within the boundaries of the Park for the term of this MOU. However, the agencies agree to consult with each other on any actions that they may propose to be taken to conserve or protect fish populations and other aquatic resources within Park boundaries or to further regulate the fisheries.
3. Provide for recreational and commercial fishing and opportunities for the angling public and other Park visitors to enjoy the natural aquatic environment.
4. Manage fisheries within the Park and Biscayne Bay according to applicable Federal and State laws, and in a manner that promotes healthy, self-sustaining fish populations and recognizes the biological characteristics and reproductive potential of individual species. Desired future conditions for fisheries and visitor experiences within the Park will be established cooperatively to further guide fisheries management.
5. Consult with each other and jointly evaluate the commercial and recreational harvest of fishery resources within the Park. Such consultation and evaluation, as set forth in the enabling legislation establishing the Park, should include a full review of all commercial and recreational fishery practices, harvest data, permitting requirements, techniques and other pertinent information for the purposes of determining to what extent mutually agreed upon fishery management goals are being met within the Park and to determine what additional management actions, if any, are necessary to achieve stated management goals.
6. Collaborate on the review and approval of proposals for fisheries stock assessment, site characterization, maintenance or restoration, including scientifically based harvest management, species reestablishment, stocking, habitat protection, and habitat restoration or rehabilitation.

7. Notify each other, as early as possible, of the release of information pertaining to the development of agency policies, management plans, statutes, rules and regulations that may affect fisheries and aquatic resource management within the Park boundary.
8. Share scientific information, field data and observations on Park fishery resources and activities affecting those resources, except in situations where the exchange of such data would violate State or Federal laws or regulations (e.g. law enforcement investigations and confidential landings statistics). The parties will provide each other with copies of reports that include results of work conducted within the Park or Biscayne Bay.
9. Jointly consider proposals for the management and control of exotic (non-indigenous) species, if found to occur within the Park or in adjacent areas, that may pose a threat to the integrity of Park resources. Exotic species are those that occur in a given place as a result of direct or indirect, deliberate or accidental actions by humans.
10. Review and coordinate, on an annual basis, proposals for fisheries and aquatic resources management, research, inventory and monitoring within the Park and Biscayne Bay. Each party will provide prospective researchers with legal notice of agency-specific permitting requirements. Additionally, as a courtesy, and to encourage information sharing, the FWC and the Park will provide each other with annual summaries of marine and terrestrial research, inventory and monitoring activities conducted within and in close proximity to the Park.
11. Meet at least once annually and otherwise as needed to coordinate management and research activities and exchange information on fish and aquatic resources within the Park and Biscayne Bay.

12. Recognize that there may be times when the missions of the FWC and the Park may differ, and that while efforts will be made to the maximum extent possible to cooperate fully and jointly manage fishing within the Park as intended by Congress when the Park was established, there may be occasion when the two agencies choose to disagree. Such occasions will not be construed, as impasses and every attempt will made to avoid communication barriers and to not jeopardize future working relationships.
13. Develop a comprehensive fisheries management plan (hereinafter referred to as the Plan) for the long-term management of fish and aquatic resources within the Park. The Plan will summarize existing information and ongoing activities, clarify agency jurisdiction, roles and responsibilities, identify additional opportunities for cooperative management, list key issues, establish management goals and objectives, describe desired future conditions, indicators, performance measures and management triggers, and develop a list of prioritized project statements. Specifically, with respect to developing the Plan, the two agencies agree as follows:

**B. The FWC agrees to:**

1. Assist the Park, and play a collaborative role in coordinating with the Park and its cooperators, in the development and ongoing review of the Plan.
2. Provide representation to a technical committee formed to guide interagency fisheries management within Biscayne Bay, including the Park, and participate in monthly teleconference calls and meetings as may be scheduled for purposes of steering fisheries management planning project.
3. Assign staff, including those from the Florida Marine Research Institute, as deemed appropriate to assist the Park and its cooperators in developing credible project statements or preliminary research proposals. The emphasis of such proposals will be to design and prioritize projects intended to meet known fisheries data gaps or resource knowledge deficiencies to facilitate scientifically based and informed fisheries management decision- and rule-making.
4. Provide representation to and support for forming the Scientific Advisory Panel for the purposes described in C.4 below.
5. Provide access to and support for requests by the Park to existing data and information as may be applicable to Biscayne Bay fisheries and aquatic resources, jurisdictions and other pertinent aspects to developing the Plan.
6. Review and comment upon drafts of the Plan and participate in joint meetings that will be arranged to solicit public opinion and comment concerning proposed

fisheries management actions and/or alternatives as may be described within the draft Plan; and to review and comment upon any fisheries and aquatic resources issues and alternatives as may be identified within the Park's General Management Plan, also being developed in 2001–2002.

7. Facilitate information exchange and otherwise provide briefings to FWC Commissioners as necessary and deemed appropriate by the FWC.
8. Facilitate information exchange and otherwise provide briefings as may be deemed appropriate to the South Atlantic Fishery Management Council, of which FWC's Director of the Division of Marine Fisheries is a member.
9. Work with the Park to promulgate or revise existing State and Federal rules/regulations as may be jointly identified and recommended within the Plan.
10. As may be provided under State law and FWC policies, and upon full review, comment, revision and concurrence by the FWC, co-sign and endorse the Plan.

**C. The Park agrees to:**

1. Subject to the availability of funds, provide project funding support to cooperators, under contractual requirements separate from this MOU and described within an approved study plan prepared by NPS, to complete the Plan.
2. Secure contractors and cooperation from other fisheries experts to develop and/or assist the Park in developing the Plan. These cooperators may include, but are not limited to, research fishery biologists, aquatic ecologists and fisheries program managers from the FWC, Tennessee Valley Authority, Everglades National Park, National Marine Fisheries Service, Southeast Fisheries Science Center, and the University of Miami--Rosenstiel School of Marine and Atmospheric Science.
3. Form a technical steering committee comprised of Park personnel as well as those cited in C.2 above, and arrange and coordinate monthly teleconference calls and periodic other meetings of this committee as necessary to develop the Plan.
4. Arrange and coordinate a Scientific Advisory Panel to review the findings and recommendations contained in the 2001 report entitled "Site Characterization for Biscayne National Park: Assessment of Fisheries Resources and Habitats," prepared under contract for the Park by Dr. Jerald S. Ault, et al.
5. Work with the FWC to promulgate or revise existing State and Federal rules/regulations as may be jointly identified and recommended within the Plan.
6. Pursuant to the National Environmental Policy Act, arrange and coordinate public meetings, Federal Register Notices, and other requirements associated with preparing an Environmental Impact Statement in conjunction with the Plan.

7. Under contractual arrangements separate from this MOU, finance, print, and distribute a reasonable and sufficient number of draft and final copies of the Plan to all cooperators and other entities with an expressed or vested interest.
8. As requested by the FWC, help conduct or simply attend briefings, presentations or other forums concerning fisheries/wildlife management within Biscayne Bay, including the Park.
9. Facilitate and encourage the joint publication of press releases and the interchange between parties of all pertinent agency policies and objectives, statutes, rules and regulations, and other information required for the wise use and perpetuation of the fisheries resources of the Park.
10. Facilitate research permitting to state entities for activities needed to accomplish goals identified in the Plan.

#### **ARTICLE IV – TERMS OF AGREEMENT**

This MOU shall become effective upon signature by all parties hereto, and is executed as of the date of the last of those signatures and shall remain in effect for a term of five (5) years unless rescinded as provided in Article IX. It may be reaffirmed and extended for an additional five years.

This MOU in no way restricts the FWC or the Park from participating in similar activities with other public or private agencies, organizations, and individuals.

This MOU is neither a fiscal nor a funds obligation document. Any endeavor involving reimbursement or contribution of funds between the Park and the FWC will be handled in accordance with applicable laws, regulations, and procedures. Such endeavors will be set forth in separate written agreements executed by the parties and shall be independently authorized by appropriate statutory authority.

#### **ARTICLE V – KEY OFFICIALS**

##### **A. For Biscayne National Park:**

Superintendent  
Biscayne National Park  
9700 SW 328<sup>th</sup> Street  
Homestead, FL 33033

**B. For the Florida Fish and Wildlife Conservation Commission:**

Executive Director  
Florida Fish and Wildlife Conservation Commission  
620 South Meridian Street  
Tallahassee, FL 32399-1600

**ARTICLE VI – PRIOR APPROVAL**

Not applicable

**ARTICLE VII – REPORTS AND/OR OTHER DELIVERABLES**

Upon request and to the full extent permitted by applicable law, the parties shall share with each other final reports of actions involving both parties.

**ARTICLE VIII – PROPERTY UTILIZATION**

Unless otherwise agreed to in writing by the parties, any property furnished by one party to the other shall remain the property of the furnishing party. Any property furnished by the Park to the FWC during the performance of this MOU shall be used and disposed of as set forth in Federal property management regulations found at 41 C.F.R. Part 102.

**ARTICLE IX – MODIFICATION AND TERMINATION**

Either party may terminate this MOU by providing 60 days advance written notice to the other party. However, following such notice and before termination becomes effective, the parties will attempt to address and resolve the issues that led to the issuance of the notice.

Any disputes that may arise as a result of this MOU shall be subject to negotiation upon written request of either party, and each of the parties agrees to negotiate in good faith. The parties shall use their best efforts to conduct such negotiations at the lowest organizational level before seeking to elevate a dispute. If the parties cannot resolve the dispute through negotiation, they may agree to mediation using a neutral acceptable to both parties. Subject to the availability of funds, each party will pay an equal share of any costs for mediation services as such costs are incurred. If the dispute cannot be resolved through mediation, it will be elevated to a third party acceptable to both the Park and FWC for a final decision.

This MOU may be reviewed and/or modified at any time upon written agreement of the FWC and the Park.

## **ARTICLE X – STANDARD CLAUSES**

### **A. Compliance With Laws**

This MOU is subject to the laws of the United States and the State of Florida, and all lawful rules and regulations promulgated thereunder, and shall be interpreted accordingly.

### **B. Civil Rights**

During the performance of this MOU, the parties agree to abide by the terms of the U.S. Department of the Interior (hereinafter referred to as the Department)– Civil Rights Assurance Certification, non-discrimination and will not discriminate against any person because of race, color, religion, sex, or national origin. The participants will take affirmative action to ensure that applicants are employed without regard to their race, color, sexual orientation, national origin, disabilities, religion, age or sex.

### **C. Promotions**

The FWC will not publicize or otherwise circulate promotional material (such as advertisements, sales brochures, press releases, speeches, still and motion pictures, articles, manuscripts, or other publications), which states or implies Governmental, Departmental, bureau or Government employee endorsement of a product, service or position, which the Department represents. No release of information relating to this MOU may state or imply that the Government approves of the FWC's work product, or considers the Department's work product to be superior to other products or services.

### **D. Public Information Release**

The FWC will obtain prior approval from the Park for any public information releases, which refers, to the Department, any bureau, park unit, or employee (by name or title), or to this MOU. The specific text, layout, photographs, etc. of the proposed release must be submitted with the request for approval.

### **E. Liability Provision**

Each party to this agreement will indemnify, save and hold harmless, and defend each other against all fines, claims, damages, losses,

judgments, and expenses arising out of, or from, any omission or activity of such person organization, its representatives, or employees. During the term of the MOU, the Park will be liable for property damage, injury or death caused by the wrongful or negligent act or omission of an employee, agent, or assign of the Park acting within the scope of his or her employment under circumstances in which the Park, if a private person, would be liable to a claimant in accordance with the law of the place where the act or omission occurred, only to the extent allowable under the Federal Tort Claims Act, 28 U.S.C. Sec. 2671 et seq.

**ARTICLE XI - SIGNATURES**

**IN WITNESS HEREOF**, the parties hereto have executed this agreement on the dates set forth below.

**FOR BISCAYNE NATIONAL PARK:**

Signature: Mark Lewis

Mark Lewis  
Superintendent  
Biscayne National Park

Date: 9/14/07

**FOR THE FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION:**

Signature: Ken Haddad

Ken Haddad  
Executive Director  
Florida Fish and Wildlife Conservation Commission

Date: 9/14/07



October 31, 2011

Mr. Mark Lewis  
Superintendent  
Biscayne Bay National Park  
U.S. Department of the Interior  
9700 S.W. 328<sup>th</sup> Street  
Homestead, FL 33033

RE: SFRPC#11-0817, Clearinghouse review of the General Management Plan (GMP)/Environmental Impact Statement (EIS) for the Biscayne Bay National Park located off of Miami-Dade County.

Dear Mr. Lewis:

We have reviewed the above-referenced General Management Plan (GMP) for the Biscayne Bay National Park for consistency with the Council's regional policy document, the *Strategic Regional Policy Plan (SRPP)* and have the following comments:

- The project should be consistent with the goals and policies of the National Environmental Policy Act (NEPA), the Endangered Species Act and its corresponding regulations. It is important for the applicant to coordinate involvement with all governments of jurisdiction, particularly that of the Miami-Dade County and its Comprehensive Development Master Plan (CDMP), environmental groups, as well as concerned public citizens.
- The last comprehensive planning effort (general management plan) for Biscayne Bay National Park was completed in 1983. Much has occurred since 1983; the population near the park has greatly increased, visitor use patterns and types have changed, and people want to bring new recreational activities into the Park. Each of these changes has major implications for how visitors access and use the National Park and the facilities needed to support those uses, how resources are managed, and how the National Park Service (NPS) manages its operations.
- The GMP provides five (5) alternatives suggesting comprehensive management options for the Biscayne National Park for the next 15 to 20 years. Based on the five alternatives presented in the Marine Reserve Study Summary, with supporting criteria and science data for the selection of appropriate marine preservations, Alternatives 2 - 5 would benefit natural and cultural resource protection while providing a diversity of visitor experiences and educational opportunities and are more consistent with the *SRPP* rather than Alternative 1 (no-action).
- The *SRPP* identifies the Biscayne Bay National Park as a regional priority. The Goals and Policies of the *Strategic Regional Policy Plan for South Florida (SRPP)*, in particular those indicated below, should be observed when making decisions regarding this general management plan:

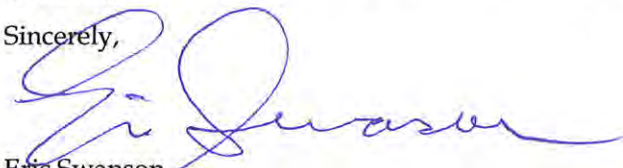
**GOAL 14      Preserve, protect and restore Natural Resources of Regional Significance.**

**Policy 14.2**      Improve the quality and connectedness of Natural Resources of Regional Significance by eliminating inappropriate uses of land, improving land use designations, and utilizing land acquisition where necessary.

- Policy 14.7 Restore, preserve, and protect the habitats of rare and state and federally listed species. For those rare and threatened species that have been scientifically demonstrated by past or site specific studies to be relocated successfully, without resulting in harm to the relocated or receiving populations, and where *in-situ* preservation is neither possible nor desirable from an ecological perspective, identify suitable receptor sites, guaranteed to be preserved and managed in perpetuity for the protection of the relocated species that will be utilized for the relocation of such rare or listed plants and animals made necessary by unavoidable project impacts. Consistent on-site shall be preserved on-site.
- Policy 14.14 Increase public awareness and continue to support programs regarding the importance of maintaining and enhancing the tree canopy and other native vegetative cover in improving air quality and natural habitat.
- Policy 14.15 Require the ecologically sensitive use of natural areas as a condition to access and utilization. Promote environmental education through parks, nature centers, and schools.
- Policy 14.16 Coordinate funding from various groups to produce common documents to be distributed to the public regarding natural resource protection, appropriate recreational opportunities, and access.
- Goal 16 Enhance and preserve natural system values of South Florida's shorelines, estuaries, benthic communities, fisheries, and associated habitats, including, but not limited to, Florida Bay, Biscayne Bay, tropical hardwood hammocks, and the coral reef tract.**
- Policy 16.2 Protect the Biscayne Bay Aquatic Preserve (BBAP) through such measures as:
- a. discontinuing all untreated stormwater discharges to the Bay;
  - b. requiring stormwater treatment systems to meet the required non-degradation water quality standards for this Class III, Outstanding Florida Water body;
  - c. discouraging development that proposes to fill within the Bay or discharge contaminants to its waters; and
  - d. connecting developments that are served by septic tanks within the watershed of the BBAP to central sanitary waste treatment facilities to treat pathogens and remove nutrients from the wastewater effluent.
- Policy 16.3 Enhance and preserve coastal, estuarine, and marine resources, including but not limited to, tropical hardwood hammocks, mangroves, sea grass and shellfish beds and coral habitats.

Thank you for the opportunity to comment. If you require further information, please contact me at 954-985-4416.

Sincerely,



Eric Swanson  
Policy Analyst

ES/kal

cc: Ms. Lauren P. Milligan, Florida State Clearinghouse

2011-03835

COUNTY: MIAMI-DADE

SCH-100-NPS-BNP

DADE

DATE: 8/22/2011

COMMENTS DUE DATE: 10/3/2011

CLEARANCE DUE DATE: 10/21/2011

SA#: FL201108225930C

MESSAGE:

STATE AGENCIES

ENVIRONMENTAL  
PROTECTION

FISH and WILDLIFE  
COMMISSION

X STATE

WATER MNGMNT.  
DISTRICTS

SOUTH FLORIDA WMD

OPB POLICY  
UNIT

RPCS & LOC  
GOVS

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evaluation and is categorized as one of the following:

- Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.
- X Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.
- Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.
- Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

Project Description:

NATIONAL PARK SERVICE - DRAFT GENERAL  
MANAGEMENT PLAN/ENVIRONMENTAL  
IMPACT STATEMENT FOR BISCAYNE  
NATIONAL PARK - MIAMI-DADE COUNTY,  
FLORIDA.

To: Florida State Clearinghouse

AGENCY CONTACT AND COORDINATOR (SCH)  
3900 COMMONWEALTH BOULEVARD MS-47  
TALLAHASSEE, FLORIDA 32399-3000  
TELEPHONE: (850) 245-2161  
FAX: (850) 245-2190

EO. 12372/NEPA Federal Consistency

☒ No Comment

☐ Comment Attached

☐ Not Applicable

☒ No Comment/Consistent

☐ Consistent/Comments Attached

☐ Inconsistent/Comments Attached

☐ Not Applicable

From:

Division of Historical Resources  
Division/Bureau: Bureau of Historic Preservation

Reviewer: S. Edwards BREVE for State 9/15/11

Date: 9-13-2011

RECEIVED

SEP 16 2011

DEP Office of  
Intergov't Programs



## APPENDIX H: ERRATA

On page 66, the 2011 Draft GMP/EIS erroneously left out a description of existing partnerships that would be expected to continue under the no-action alternative. That description has been included in the SDEIS in chapter 2, at the end of the Description of Alternative 1 (no action).

On pages 126 and 197, the 2011 Draft GMP/EIS erroneously described the existing manatee protection area as extending the length of the mainland shoreline. Elsewhere in the document, it was accurately described as extending only from Black Point County Park south to Turkey Point. In this SDEIS, the no-action alternative is correctly described with the Manatee protection area extending only from Black Point County Park south to Turkey Point and this information was used as the basis for comparison with both alternatives 6 and 7 where the proposed slow speed zone would extend the length of the mainland shoreline and thus benefit manatees.

On the alternative maps and in chapter 2 in the 2011 Draft GMP/EIS, the description of the alternatives, estimated acres were provided. Since the release of the 2011 Draft GMP/EIS, improved GIS data is available and some of the acreages for the zones have been refined as indicated in the maps and text of this SDEIS.

The park's Fire Management Plan helps guide resource management efforts in the park. The 2011 Draft GMP/EIS erroneously referred to park terrestrial vegetation as fire adapted in reference to the Fire Management Plan. Because the terrestrial vegetation communities in the park are not fire-adapted, prescribed fire is not part of natural resource management in the park though the plan does allow for burning of piled debris, notably along the sea turtle nesting beaches to restore this important habitat. This information has

been corrected throughout the SDEIS in reference to the relationship to the Fire Management Plan and cumulative impacts to terrestrial vegetation in chapter 4.

The costs described in chapter 2 were adjusted to 2013 dollars and the cost table (table 3) was reformulated to clarify what costs are reflected in the park's authorized base budget, currently funded projects and increases, and to separate the facility and nonfacility costs of each action alternative.

The 2011 Draft GMP/EIS failed to acknowledge that generally increasing human populations in the local community would be expected to result in increased boats on the water; therefore, an associated increase in boat engine noise would be expected throughout the park. This information has been added to this SDEIS in the soundscape impact topic in chapter 4.

References to and explanations of recreational and commercial fishing throughout the document have been edited for simplicity, accuracy, and consistency in terminology with the Fishery Management Plan.

As required by section 7 of the Endangered Species Act, during the agency and public review process in 2011 the National Park Service formally consulted with NOAA Fisheries and the U.S. Fish and Wildlife Service regarding endangered species effects of the preferred alternative (alternative 4) as described in the 2011 Draft GMP/EIS. The biological opinion issued by NOAA Fisheries concluded that three species of sea turtles, acroporid corals, and smalltooth swordfish were being impacted by recreational activities that are currently ongoing in the park and surrounding waters and would be expected to continue, at least in some areas, under the preferred alternative and all other

alternatives considered. While the National Park Service had proposed a finding of “may affect, not likely to adversely affect” NOAA Fisheries concluded “may affect, likely to adversely affect” but that those impacts would not be expected to jeopardize the continued existence of the species analyzed. As a result of this consultation process, the National Park Service has incorporated the “may affect, likely to adversely affect” finding for those species as considered in each of the alternatives addressed in this SDEIS based upon the analysis provided by the consulting agencies. Consistent with the methodology and terminology described at the beginning of chapter 4, the impact conclusion for these species has likewise been changed to “moderate adverse.”

The CEQ has promulgated regulations for federal agencies’ implementation of NEPA (40 CFR 1500–1508). Section 1500.2 states that federal agencies shall, to the fullest extent possible, interpret and administer the policies, regulations, and public laws of the United States in accordance with the policies set forth in the act (Sections 101[b] and 102[1]). This requires a new section for Environmental Impact Statements called “Consistency with the purposes of NEPA”

Similarly the format and content of the analysis for environmentally preferable alternative has been refined to focus more narrowly on the regulatory definition presented in 43 CFR 46.30 as the alternative “that causes the least damage to the biological and physical environment and best protects, preserves, and enhances historical, cultural, and natural resources.” Thus the Consistency with the Purposes of NEPA section for alternatives 1, 6, and 7 has been added to this SDEIS and all seven alternatives will be included in the FEIS. And the “Environmentally Preferable Alternative” section has been revised in this SDEIS.

Conclusions regarding the cultural resources impacts of some alternatives presented in the 2011 Draft GMP/EIS were re-evaluated and modified for consistency with the impact methodology and intensity thresholds presented at the beginning of chapter 4.

Consistent with NPS policy revision (NPS 2011b), the Determination of Impairment is no longer included in the Environmental Impact Statement and instead will be included in the “Record of Decision” at the conclusion of the planning process.

## SELECTED REFERENCES

In addition to the references provided in the 2011 Draft GMP/EIS, the following references are included in this SDEIS:

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Mumby, P. J., A. Hastings, and H. J. Edwards  
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- Wootton, Robert J.  
1992 Fish Ecology. Springer, 1992.

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As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

NPS 169/106381B November 2013



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National Park Service  
U.S. Department of the Interior

Biscayne National Park  
Florida

