Florida Department of Environmental Protection

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3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Jonathan P. Steverson
Secretary

September 30, 2016

Mr. Ralph Perkins
Division of Recreation and Parks
Department of Environmental Protection
3900 Commonwealth boulevard, MS 525
Tallahassee, Florida 32399-3000

RE: The Barnacle Historic State Park- Lease No. 2690

Dear Mr. Perkins:

The Division of State Lands, Office of Environmental Services, acting as agent for the Board of Trustees of the Internal Improvement Trust Fund, hereby approves the Barnacle Historic State Park management plan. The next management plan update is due September 30, 2026.

Acceptance of this management plan does not waive the authority or jurisdiction of any governmental entity that may have an interest in this project. Implementation of any upland activities proposed by this management plan may require a permit or other authorization from federal and state agencies having regulatory jurisdiction over those particular activities. Pursuant to the conditions of your lease, please forward copies of all permits to this office upon issuance.

Sincerely,

Paula L. Allen
Office of Environmental Services
Division of State Lands
Department of Environmental Protection

THE BARNACLE HISTORIC STATE PARK

APPROVED
Unit Management Plan

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Division of Recreation and Parks
December 2016

TABLE OF CONTENTS

INTRODUCTION

PURPOSE AND SIGNIFICANCE OF THE PARK 1
Park Significance 1
PURPOSE AND SCOPE OF THE PLAN 2
MANAGEMENT PROGRAM OVERVIEW 7
Management Authority and Responsibility 7
Park Management Goals 8
Management Coordination 8
Public Participation 8
Other Designations 9

RESOURCE MANAGEMENT COMPONENT

INTRODUCTION 11
RESOURCE DESCRIPTION AND ASSESSMENT 12
Natural Resources 12
Topography 12
Geology 12
Soils 12
Minerals 17
Hydrology 17
Natural Communities (FNAI) 17
Imperiled Species 24
Exotic and Nuisance Species 27
Special Natural Features 30
Cultural Resources 30
Condition Assessment 30
Level of Significance 30
Prehistoric and Historic Archaeological Sites 31
Historic Structures 31
Collections 34
RESOURCE MANAGEMENT PROGRAM 37
Management Goals, Objectives and Actions 37
Natural Resource Management 37
Hydrological Management 37
Natural Communities Management 38
Imperiled Species Management 38
Exotic Species Management 39
Cultural Resource Management 40
Special Management Considerations 43
Timber Management Analysis 43
Coastal /Beach Management 43
Arthropod Control Plan 43
Sea Level Rise 44

Resource Management Schedule 44
Land Management Review 44

LAND USE COMPONENT

INTRODUCTION 45
EXTERNAL CONDITIONS 45
Existing Use of Adjacent Lands 47
Planned Use of Adjacent Lands 47
Florida Greenways and Trails System 48
PROPERTY ANALYSIS 48
Recreation Resource Elements 48
Land Area 48
Shoreline 49
Natural Scenery 49
Archaeological and Historic Features 49
Assessment of Use 49
Past Uses 49
Future Land Use and Zoning 50
Current Recreation Use and Visitor Programs 50
Other Uses 50
Protected Zones 53
Existing Facilities 53
Recreation Facilities 53
Support Facilities 53
CONCEPTUAL LAND USE PLAN 53
Potential Uses 54
Public Access and Recreational Opportunities 54
Proposed Facilities 57
Capital Facilities and Infrastructure 57
Facilities Development 58
Recreational Carrying Capacity 59
Optimum Boundary 60

IMPLEMENTATION COMPONENT

MANAGEMENT PROGRESS 61
Acquisition 61
Park Administration and Operations 61
Resource Management 61
Natural Resources 61
Cultural Resources 61
Recreation and Visitor Services 62
Park Facilities 62
MANAGEMENT PLAN IMPLEMENTATION 63

TABLES

TABLE 1 – The Barnacle Historic State Park Management Zones.....12
TABLE 2 – Imperiled Species Inventory.....25
TABLE 3 – Inventory of FLEPPC Category I and II Exotic Plant Species.....28
TABLE 4 – Cultural Sites Listed in the Florida Master Site File 36
TABLE 5 – Recreational Carrying Capacity 60
TABLE 6 – Implementation Schedule and Cost Estimates.....65

MAPS

Vicinity Map.....3
Reference Map 5
Management Zones Map.....13
Soils Map 15
Natural Communities Map.....19
Base Map 51
Conceptual Land Use Plan.....55

LIST OF ADDENDA

ADDENDUM 1
Acquisition History.....A 1 - 1
ADDENDUM 2
Advisory Group Members and Report .....A 2 - 1
ADDENDUM 3
References Cited .....A 3 - 1
ADDENDUM 4
Soil Descriptions .....A 4 - 1
ADDENDUM 5
Plant and Animal List .....A 5 - 1
ADDENDUM 6
Imperiled Species Ranking Definitions.....A 6 - 1
ADDENDUM 7
Cultural Information .....A 7 - 1

INTRODUCTION

The Barnacle Historic State Park is located in Miami-Dade County in the historic village of Coconut Grove (see Vicinity Map). Access to the park entrance is on Main Highway (see Reference Map) in the heart of Coconut Grove. The Vicinity Map also reflects significant land and water resources existing near the park.

The Barnacle Historic State Park was initially purchased from the Munroe family in 1973. In 1981, the Division of Recreation and Parks entered into an agreement with the Board of Trustees of the Internal Improvement Trust Fund (Trustees) to manage an additional 4.18 acres of submerged land located adjacent to The Barnacle Historic State Park. The Division of Recreation and Parks (DRP) was to manage this new property specifically for public safety and protection and as a water recreation area. Presently, the park comprises approximately 9.43 acres.

The Trustees hold fee simple title to The Barnacle Historic State Park. On September 21, 1973, the Trustees leased The Barnacle Historic State Park to the DRP under Lease No. 2690. This lease is for a period of ninety-nine (99) years, which will expire on September 20, 2072.

The Barnacle Historic State Park is designated as a single-use property to provide resource-based public outdoor recreation, other related uses and for public safety and protection and as a water recreation area.

Purpose and Significance of the Park

The purpose of The Barnacle Historic State Park is to provide for the perpetual preservation of The Barnacle, and to provide cultural resource interpretation and outdoor based recreation for the benefit of the people of Florida. The park protects The Barnacle, home to yacht designer Commodore Ralph M. Munroe, as well as other structures associated with the house and history of the site.

Park Significance

- The Barnacle Historic State Park protects The Barnacle, home to yacht designer Commodore Ralph M. Munroe, a prominent early settler in the village of Coconut Grove in Miami-Dade County. In its historical presence, the site is one of only a few structures remaining from the earliest period of development of Coconut Grove.
- The structure, built in 1891, is significant for its innovative architecture, decorative detail, and overall design which promotes natural ventilation, an adaptation well-suited to the South Florida environment in which it was constructed. The house is listed on the National Register of Historic Places.
- The historic site represents the time period of Ralph Munroe's occupancy and early pioneer life along Biscayne Bay (1887-1933). The Barnacle is considered one of the most significant buildings in Miami-Dade County.
- The park protects one of the last remaining rare tropical hardwood forest areas, known as Rockland hammock that can be found in Dade County.

Purpose and Scope of the Plan

This plan serves as the basic statement of policy and direction for the management of The Barnacle Historic State Park as a unit of Florida's state park system. It identifies the goals, objectives, actions and criteria or standards that guide each aspect of park administration, and sets forth the specific measures that will be implemented to meet management objectives and provide balanced public utilization. The plan is intended to meet the requirements of Sections 253.034 and 259.032, Florida Statutes, Chapter 18-2, Florida Administrative Code, and is intended to be consistent with the State Lands Management Plan. Upon approval, this management plan will replace the 2003 approved plan.

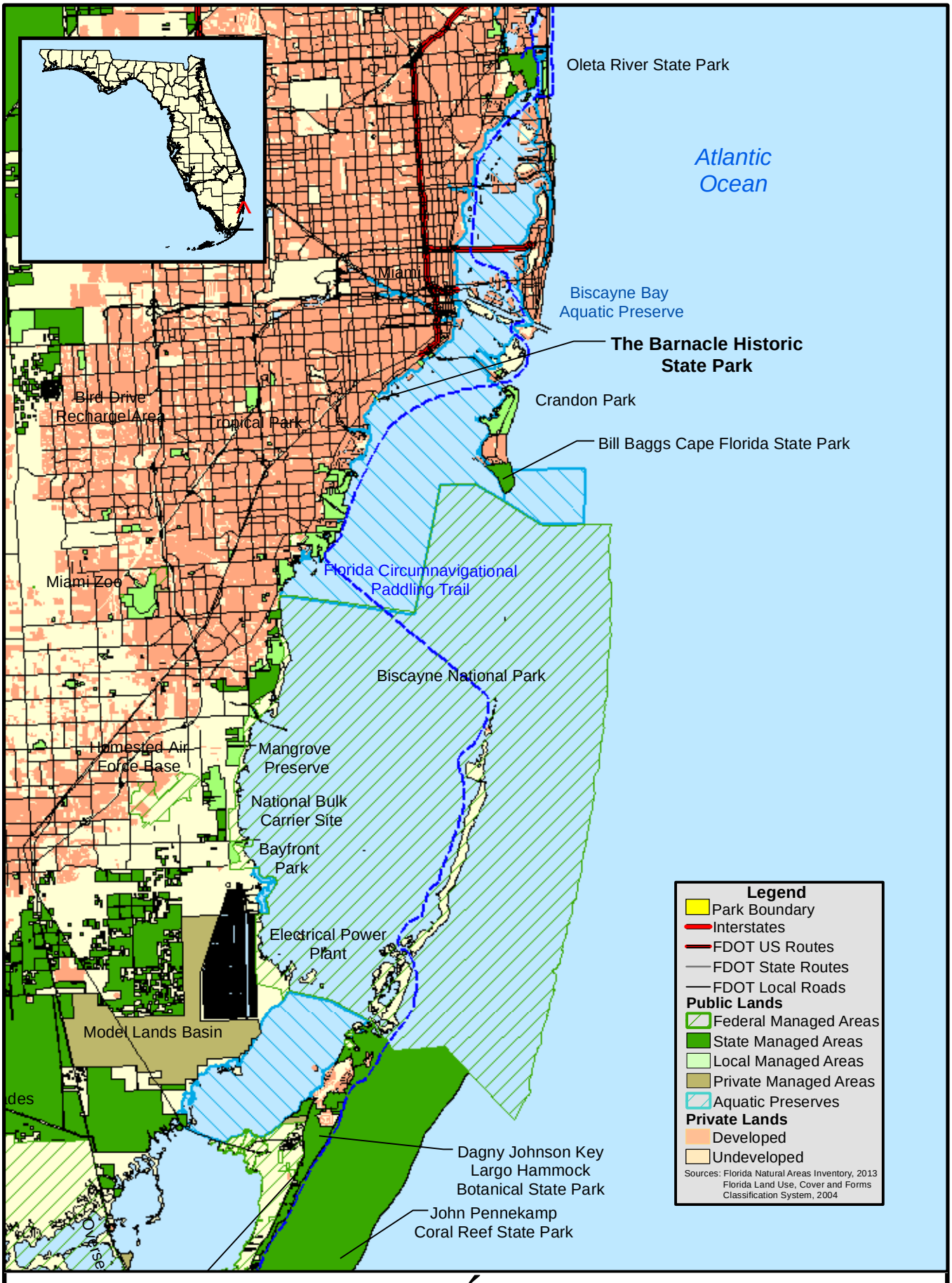
The plan consists of three interrelated components: the Resource Management Component, the Land Use Component and the Implementation Component. The Resource Management Component provides a detailed inventory and assessment of the natural and cultural resources of the park. Resource management problems and needs are identified, and measurable management objectives are established for each of the park's management goals and resource types. This component provides guidance on the application of such measures as prescribed burning, exotic species removal, imperiled species management, cultural resource management and restoration of natural conditions.

The Land Use Component is the recreational resource allocation plan for the park. Based on considerations such as access, population, adjacent land uses, the natural and cultural resources of the park, current public uses and existing development. Measurable objectives are set to achieve the desired allocation of the physical space of the park. These objectives identify use areas and propose the types of facilities and programs as well as the volume of public use to be provided.

The Implementation Component consolidates the measurable objectives and actions for each of the park's management goals. An implementation schedule and cost estimates are included for each objective and action. Included in this table are (1) measures that will be used to evaluate the DRP's implementation progress, (2) timeframes for completing actions and objectives, (3) estimated costs to complete each action and objective.

All development and resource alteration proposed in this plan is subject to the granting of appropriate permits, easements, licenses, and other required legal instruments. Approval of the management plan does not constitute an exemption from complying with the appropriate local, state or federal agencies.

In the development of this plan, the potential of the park to accommodate secondary management purposes was analyzed. These secondary purposes were considered within the context of the DRP's statutory responsibilities and the resource needs and values of the park. This analysis considered the park's natural and cultural resources, management needs, aesthetic values, and visitation and visitor experience. For this park, it was determined that no secondary purposes could be accommodated in a manner that would not interfere with the primary purpose of resource-based outdoor recreation and conservation. Uses such as water

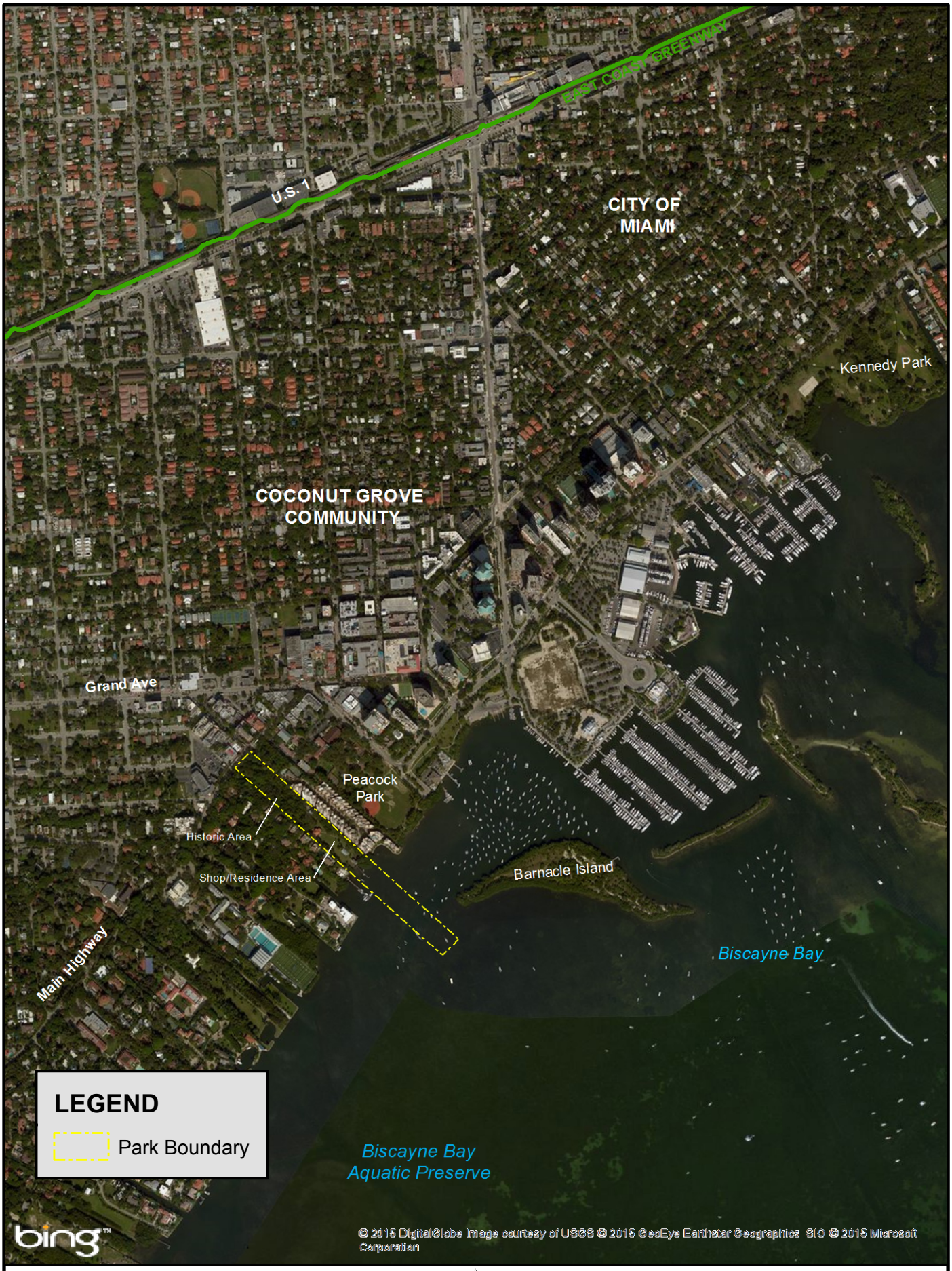


THE BARNACLE HISTORIC STATE PARK

0 1.25 2.5 5 Miles

Florida Department of Environmental Protection
Division of Recreation and Parks

VICINITY MAP



THE BARNACLE HISTORIC STATE PARK

N

0 350 700 1,400 Feet

Florida Department of Environmental Protection
Division of Recreation and Parks
Date of aerial; 2011

REFERENCE MAP

resource development projects, water supply projects, stormwater management projects, linear facilities and sustainable agriculture and forestry (other than those forest management activities specifically identified in this plan) are not consistent with this plan.

The potential for generating revenue to enhance management was also analyzed. Visitor fees and charges are the principal source of revenue generated by the park. It was determined that multiple-use management activities would not be appropriate as a means of generating revenues for land management. Instead, techniques such as entrance fees, concessions and similar measures will be employed on a case-by-case basis as a means of supplementing park management funding.

The DRP may provide the services and facilities outlined in this plan either with its own funds and staff or through an outsourcing contract. Private contractors may provide assistance with natural resource management and restoration activities or a concessionaire may provide services to park visitors in order to enhance the visitor experience. For example, a concessionaire could be authorized to sell merchandise and food and to rent recreational equipment for use in the park. A concessionaire may also be authorized to provide specialized services, such as interpretive tours, or overnight accommodations when the required capital investment exceeds that which the DRP can elect to incur. Decisions regarding outsourcing, contracting with the private sector, the use of concessionaires, etc. are made on a case-by-case basis in accordance with the policies set forth in the DRP's Operations Manual (OM).

Management Program Overview

Management Authority and Responsibility

In accordance with Chapter 258, Florida Statutes, and Chapter 62D-2, Florida Administrative Code, the Division of Recreation and Parks (Division) is charged with the responsibility of developing and operating Florida's recreation and parks system. These are administered in accordance with the following policy:

It shall be the policy of the Division of Recreation and Parks to promote the state park system for the use, enjoyment, and benefit of the people of Florida and visitors; to acquire typical portions of the original domain of the state which will be accessible to all of the people, and of such character as to emblemize the state's natural values; conserve these natural values for all time; administer the development, use and maintenance of these lands and render such public service in so doing, in such a manner as to enable the people of Florida and visitors to enjoy these values without depleting them; to contribute materially to the development of a strong mental, moral, and physical fiber in the people; to provide for perpetual preservation of historic sites and memorials of statewide significance and interpretation of their history to the people; to contribute to the tourist appeal of Florida.

The park boundary includes approximately 4 acres of submerged resources that are managed by the DRP in accordance with the policy stated above. A number of

specific management activities are conducted within this area of the park, including protection from future dredging, runoff and pollution, and from invasion by exotic plants. Further detail regarding management of submerged resources is provided in the Resource Management Component.

Many operating procedures are standardized system-wide and are set by internal direction. These procedures are outlined in the OM that covers such areas as personnel management, uniforms and personal appearance, training, signs, communications, fiscal procedures, interpretation, concessions, public use regulations, resource management, law enforcement, protection, safety and maintenance.

Park Management Goals

The following park goals express DRP's long-term intent in managing the state park:

- Provide administrative support for all park functions.
- Protect water quality and quantity in the park, restore hydrology to the extent feasible and maintain the restored condition.
- Restore and maintain the natural communities/habitats of the park.
- Maintain, improve or restore imperiled species populations and habitats in the park.
- Remove exotic and invasive plants and animals from the park and conduct needed maintenance-control.
- Protect, preserve and maintain the cultural resources of the park.
- Provide public access and recreational opportunities in the park.
- Develop and maintain the capital facilities and infrastructure necessary to meet the goals and objectives of this management plan.

Management Coordination

The park is managed in accordance with all applicable laws and administrative rules. Agencies having a major or direct role in the management of the park are discussed in this plan.

The Florida Fish and Wildlife Conservation Commission (FWC) assists staff in the enforcement of state laws pertaining to wildlife, freshwater fish and other aquatic life existing within the park. In addition, the FWC aids DRP with wildlife management programs, including imperiled species management. The Florida Department of State (FDOS), Division of Historical Resources (DHR) assists staff to ensure protection of archaeological and historical sites.

Public Participation

DRP provided an opportunity for public input by conducting a public workshop and Advisory Group meetings to present the draft management plan to the public. These meetings were held on July 7, 2016 and July 8, 2016, respectively. Meeting notices were published in the Florida Administrative Register, Volume 42, Number 124, June 27, 2016, included on the Department Internet Calendar, posted in clear

view at the park, and promoted locally. The purpose of the Advisory Group meeting is to provide the Advisory Group members an opportunity to discuss the draft management plan (see Addendum 2).

Other Designations

The Barnacle Historic State Park is not within an Area of Critical State Concern as defined in Section 380.05, Florida Statutes, and it is not presently under study for such designation. The park is a component of the Florida Greenways and Trails System, administered by the Division's Office of Greenways and Trails.
All waters within the unit have been designated as Outstanding Florida Waters, pursuant to Chapter 62-302, Florida Administrative Code. Surface Waters in the unit are also classified as Class III Waters by DEP. This unit is adjacent to the Biscayne Bay Aquatic Preserve, an aquatic preserve as designated under the Florida Aquatic Preserve Act of 1975 (section 258.35, Florida Statutes).

RESOURCE MANAGEMENT COMPONENT

Introduction

The Florida Department of Environmental Protection (DEP), Division of Recreation and Parks (DRP) in accordance with Chapter 258, Florida Statutes, has implemented resource management programs for preserving for all time the representative examples of natural and cultural resources of statewide significance under its administration. This component of the unit plan describes the natural and cultural resources of the park and identifies the methods that will be used to manage them. Management measures expressed in this plan are consistent with the DRP's overall mission in ecosystem management. Cited references are contained in Addendum 3.

The DRP's philosophy of resource management is natural systems management. Primary emphasis is placed on restoring and maintaining, to the degree possible, the natural processes that shaped the structure, function and species composition of Florida's diverse natural communities as they occurred in the original domain. Single species management for imperiled species is appropriate in state parks when the maintenance, recovery or restoration of a species or population is complicated due to constraints associated with long-term restoration efforts, unnaturally high mortality or insufficient habitat. Single species management should be compatible with the maintenance and restoration of natural processes, and should not imperil other native species or seriously compromise park values.

The DRP's management goal for cultural resources is to preserve sites and objects that represent Florida's cultural periods, significant historic events or persons. This goal often entails active measures to stabilize, reconstruct or restore resources, or to rehabilitate them for appropriate public use.

Because park units are often components of larger ecosystems, their proper management can be affected by conditions and events that occur beyond park boundaries. Ecosystem management is implemented through a resource management evaluation program that assesses resource conditions, evaluates management activities and refines management actions, and reviews local comprehensive plans and development permit applications for park/ecosystem impacts.

The entire park is divided into management zones that delineate areas on the ground that are used to reference management activities (see Management Zones Map). The shape and size of each zone may be based on natural community type, burn zone, and the location of existing roads and natural fire breaks. It is important to note that all burn zones are management zones; however, not all management zones include fire-dependent natural communities. Table 1 reflects the management zones with the acres of each zone.

Table 1 The Barnacle Historic State Park Management Zones			
Management Zone	**Acreage**	**Managed with Prescribed Fire**	**Contains Cultural Resources**
BA-1	2.45	N	Y
BA-2	2.69	N	Y
BA-3	4.05	N	Y

RESOURCE DESCRIPTION AND ASSESSMENT

Natural Resources

Topography

The Barnacle Historic State Park is situated on the Miami Rock Ridge, which parallels the shore of Biscayne Bay. When sea levels were higher than present day, surface water from the Everglades flowed through transverse glades that bisected the rock ridge and formed distinct islands. As sea levels dropped, these islands became part of one landmass. The maximum elevation is approximately 18 feet in the rockland hammock, and rapidly slopes down to the shoreline, which is 60 yards long. The site is typical of the geological formations existing along Biscayne Bay until massive development destroyed the bluffs and ridges.

Geology

The geological formation at The Barnacle is known as the Miami Rock Ridge. The rock ridge is composed of Miami oolite, a white porous sedimentary limestone of Pleistocene origin that formed through the precipitation and deposition of layers of calcite. Calcite is a form of calcium carbonate that forms around small particles such as sand grains. The limestone is pitted with numerous solution holes. This rocky substrate is exposed in the clearing, the hammock, and along the shoreline.

Soils

According to the soil survey conducted by the United States Department of Agriculture, there are two soil types at The Barnacle boathouse (see soils map). Matecumbe muck is the shallow, moderately drained soil of the rockland hammock on the Miami Rock Ridge. This is typically a thin layer of decaying leaf litter forming organic soil over the oolitic rock. The remaining upland area gently slopes down to the shore of Biscayne Bay and has been cleared and sodded to make it possible to maintain a lawn. This area is the Udorthents-Urban land complex. The Udorthents soil types are areas of lawns, vacant lots, and playgrounds, whereas the urban land includes parking lots, roads, buildings and other areas where soil has been covered. The submerged bay bottom, which extends for 1,000 feet east of the mean high water (MHW) line, is calcareous sand and mud.

THE BARNACLE HISTORIC STATE PARK

0 125 250 500 Feet

MANAGEMENT ZONES MAP

Florida Department of Environmental Protection
Division of Recreation and Parks
Date of aerial; 2011

THE BARNACLE HISTORIC STATE PARK

0 125 250 500 Feet

Florida Department of Environmental Protection
Division of Recreation and Parks
Date of aerial; 2011

SOILS MAP

Minerals

Other than the Miami oolite limestone, there are no other minerals at The Barnacle.

Hydrology

The primary source of fresh water in Miami-Dade County is the Biscayne Aquifer, which is fed by rainwater. The amount of rainwater is determined by the season. The wet season begins in June and extends to the end of November. Historically (prior to drainage activities), surface water flowed from Lake Okeechobee southward through the Everglades, following a slight incline to the southwest into Florida Bay. Subsurface water generally flowed in a southeasterly direction.

The Barnacle Historic State Park is subject to unusually high tides during certain times of the year. This should be taken into account as it relates to adding any structures or programs in the park. Unless there is some major unforeseen future disturbance on this site, no changes are anticipated in the hydrology of the site. No hydrological issues can be addressed to improve natural communities in the park.

Natural Communities

This section of the management plan describes and assesses each of the natural communities found in the state park. It also describes the desired future condition (DFC) of each natural community and identifies the actions that will be required to bring the community to its desired future condition. Specific management objectives and actions for natural community management, exotic species management, imperiled species management and restoration are discussed in the Resource Management Program section of this component.

The system of classifying natural communities employed in this plan was developed by the Florida Natural Areas Inventory (FNAI). The premise of this system is that physical factors such as climate, geology, soil, hydrology and fire frequency generally determine the species composition of an area, and that areas that are similar with respect to those factors will tend to have natural communities with similar species compositions. Obvious differences in species composition can occur, however, despite similar physical conditions. In other instances, physical factors are substantially different, yet the species compositions are quite similar. For example, coastal strand and scrub—two communities with similar species compositions—generally have quite different climatic environments, and these necessitate different management programs. Some physical influences, such as fire frequency, may vary from FNAI's descriptions for certain natural communities in this plan.

When a natural community within a park reaches the desired future condition, it is considered to be in a "maintenance condition." Required actions for sustaining a community's maintenance condition may include, maintaining optimal fire return intervals for fire dependent communities, ongoing control of non-native plant and animal species, maintaining natural hydrological functions (including historic water flows and water quality), preserving a community's biodiversity and vegetative structure, protecting viable populations of plant and animal species (including those that are imperiled or endemic), and preserving intact ecotones linking natural communities across the landscape.

The park contains 4 distinct natural communities as well developed areas (see Natural Communities Map). A list of known plants and animals occurring in the park is contained in Addendum 5.

Rockland Hammock

Desired Future Condition: Rockland hammock is a rare tropical hardwood forest on upland sites and occurs on a thin layer of highly organic soil covering limestone. This habitat does not regularly flood but it is often dependent upon a high water table to maintain reservoirs in solution features of the limestone and to keep humidity levels high. Organic acids can dissolve the surface limestone causing collapsed depressions in the surface rock called solution holes.

Rockland hammocks will typically have larger more mature trees in the interior, while the margins are dense with growth of smaller shrubs, trees, and vines. There are differences in species composition between rockland hammocks found on the mainland and in the Florida Keys. Even within the Florida Keys there is variation and some species are found only in the upper keys, while others will be found only in the lower keys. This is due to elevation, geologic and rainfall differences between the two regions. The advanced successional stage of the hammock is evident by the presence of remnant pineland species such as South Florida slash pine (*Pinus ellioattii var. densa*) and the Florida coontie (*Zamia integrifolia*). Typical canopy and understory species will include gumbo limbo (*Bursera simaruba*), live oak (*Quercus viginiana*), red bay (*Persea borbonia*), mastic (*Mastichodendron foetidissimum*), strangler fig (*Ficus aurea*), several species of stoppers (*Eugenia spp.*), marlberry (*Ardisia escallonioides*), wild coffee (*Psychotria nervosa*), and white indigo berry (*Randia aculeata*). Vines and herbaceous vegetation such as greenbrier (Smilax ssp.) are less common and epiphytic orchids, ferns, and bromeliads can be found on larger trees.

Description and Assessment: The rockland hammock at The Barnacle Historic State Park is in fair condition due mainly to Hurricane Andrew, which severely impacted the site in August 1992, and Hurricane Wilma in 2005. Since Hurricane Andrew, exotic species invasion has been a major threat to the hammock. The hammock has also been affected by the properties to the north and south. These communities sit right on the property line with the exotic plants that are on the balconies providing a constant seed source to the hammock. The park drive also bisects the hammock, resulting in even further fragmentation and edge effect.

General Management Measures: Invasive plant management is the primary management tool needed to maintain the rockland hammock. Many Category I invasive plants in the hammock are now in a maintenance condition, including rosary pea (*Abrus pecatorius*), winged yam (*Dioscorea alata*) and arrowhead vine (Syngonium podophyllum). Other than the invasive species, the hammock is in fairly good shape with no other management measures needed at this time.

THE BARNACLE HISTORIC STATE PARK

0 125 250 500 Feet

Florida Department of Environmental Protection
Division of Recreation and Parks
Date of aerial; 2011

NATURAL COMMUNITIES MAP

Mangrove Swamp

Desired Future Condition: This natural community is typically a dense forest occurring along relatively flat, low wave energy, marine and estuarine shorelines. The dominant over story includes red mangrove (*Rhizophora mangle*), black mangrove (*Avicennia germinans*), white mangrove (*Laguncularia racemosa*), and buttonwood (*Conocarpus erectus*). These four species can occur either in mixed stands or often in differentiated, monospecific zones based on varying degrees of tidal influence, levels of salinity, and types of substrate. Red mangroves typically dominate the deepest water, followed by black mangrove in the intermediate zone, and white mangroves and buttonwood in the highest, least tidally influenced zone. Mangroves typically occur in dense stands (with little to no understory) but may be sparse, particularly in the upper tidal reaches where salt marsh species predominate. Shrub species such as seaside oxeye (*Borrichia arborescens, B. frutescens*) may be present in addition to vines like gray nicker (*Caesalpinia bonduc*), coinvine (*Dalbergia ecastaphyllum*), and rubbervine (*Rhabdadenia biflora*), and herbaceous species such as saltwort (*Batis maritime*), shoregrass (*Monanthocloe littoralis*), perennial glasswort (*Sarcocornia perennis*), and giant leather fern (*Acrostichum danaeifolium*). Soils are generally anaerobic and are saturated with brackish water at all times, becoming inundated at high tides. Mangrove swamps occur on a wide variety of soils, ranging from sands and mud to solid limestone rock. Soils in South Florida are primarily calcareous marl muds or calcareous sands and along Central Florida coastlines, siliceous sands. In older mangrove swamps containing red mangroves, a layer of peat can build up over the soil from decaying plant material (primarily red and black mangrove roots).

Description and Assessment: Two clusters of red mangroves can be found along The Barnacle's shoreline and are in a maintenance phase. These mangroves will be trimmed and maintained in order to preserve the historic view of Biscayne Bay from the house and lawn and to make the waters in front of the boathouse navigable by the park's small historic boats.

General Management Measures: The mangrove clusters need to be trimmed for historical purposes, but other than that they are in good shape with little management needed to maintain them. A permit has been issued by Dade County Department of Environmental Resource Management for this task.

Marine Seagrass Bed

Desired Future Condition: Marine seagrass beds are typically characterized as expansive stands of vascular plants and are one of the most productive communities in the world. Seagrass beds occur in clear, coastal waters where wave energy is moderate. The three most common species of seagrasses in Florida are turtle grass, (*Thalassia testudinum*), manatee grass, (*Syringodium filiforme*), and shoal grass (*Halodule wrightii*). Other seagrasses of the genus Halophila may be intermingled with the other seagrasses, but species of this genus are considerably less common. Seagrass beds require unconsolidated substrate in order to establish their underground biomass root structure. They are typically found in waters

ranging from 20° to 30°C (68° to 86°F) and require clear water for photosynthesis. Seagrass beds will not thrive where nutrient levels are high because of increased turbidity and competition of undesirable algal species. They provide important habitat for a host of commercially and recreationally important species. Most species spend part or all of their life cycle in seagrass, which provides food, oxygen, and shelter. Seagrass blades trap suspended sediment in the water allowing for clear water to be transported to offshore coral reefs during tidal movement.

Description and Assessment: The submerged land at The Barnacle extends seaward from the MHW line to approximately 1,000 feet. It supports turtle grass shoal grass beds at a depth of approximately 2.5 feet. A large number of invertebrate and fish species common to Biscayne Bay can be found in this submerged area. The grass beds are in good to excellent shape, with little to no prop scars.

General Management Measures: The Barnacle Historic State Park discourages access to the park via the bay, which limits damage to the grass beds. This continued practice should help to maintain the park's seagrass beds in good condition. Occasional historic boat launches are done from the park, but they are infrequent and do not damage the seagrass beds.

Marine Composite Substrate

Desired Future Condition: Composite substrate consists of a combination of natural communities including seagrass beds, consolidated substrate and unconsolidated substrate. Because composite substrate is a combination of community types, floral and faunal components from any of these communities may be found in the composite substrate habitat, so species diversity is often times greater than the surrounding habitats.

Description and Assessment: The Barnacle includes submerged land extending 1,000 feet from the MHW line. The bottom consists of mud and sand and extends to a channel paralleling the shore. This community supports a number of flora including green and brown algae, manatee grass (*Syringodium filiforme*), and turtle grass (*Thalassia testudinum*). Marine fauna includes horseshoe crab (*Limulus polyphemus*), yellow spotted stingray (*Urolophus jamaicensis*), upside jellyfish (*Cassiopeia xamachana*), mullet (*Mugil spp*.) and mojarra (*Gerres cinereus*). In general, the composite substrate is in good condition with the biggest threat coming from the deterioration of Biscayne Bay.

General Management Measures: The Barnacle discourages access to the park via the bay, which limits damage to the composite substrate. This continued practice should help to maintain the composite substrate community. Occasional historic boat launches are done from the park, but they are infrequent and do not damage this community. Boats on the bay and within the park boundary do dump sewage and other trash into the bay and this could be having an effect on all the marine communities within. The park staff clears the shoreline of trash on a daily basis. Even if boats are not within the park boundary, their trash still gets washed ashore and park staff must remove it.

Marine Unconsolidated Substrate

Desired Future Condition: This natural area consists of expansive unvegetated, open areas of mineral based substrate composed of shell, coralgal, marl, mud, and/or sand (sand beaches). Desired conditions include preventing soil compaction, dredging activities, and disturbances such as the accumulation of pollutants.

Description and Assessment: The Barnacle includes submerged land extending 1,000 feet from the MHW line. The bottom consists of mud and sand and extends to a channel paralleling the shore. This community supports a number of flora including green and brown algae, manatee grass (*Syringodium filiforme*), and turtle grass (*Thalassia testudinum*). Marine fauna includes horseshoe crab (*Limulus polyphemus*), yellow spotted stingray (Urolophus jamaicensis), upside jellyfish (Cassiopeia xamachana), mullet (Mugil *spp.*) and mojarra (*Gerres cinereus*).

General Management Measures: The marine unconsolidated substrate has achieved its desired future condition and needs to be maintained as is. This includes preventing dredging activities, boat groundings and the accumulation of pollutants.

Developed

Desired Future Condition: The developed areas within the park are now within their desired future condition and will be maintained as an attractive amenity to the park that contains historic structures visitors can tour and learn about area history.

Description and Assessment: The developed areas include staff residence, maintenance buildings, historic and service facilities. The majority of the structures and facilities are located in the center of the park in Management Zone BA-02.

General Management Measures: Control of FLEPPC Category I and II species in this area is the major management measure. The primary plants of concern are the winged yam (*Dioscorea alata*), Brazilian jasmine (*Jasminum fluminens*), lead tree (*Leucaena leucocephala*), and arrowhead vine (*Syngonium podophyllum*). These occur at higher concentrations than most of the other exotic plants in the park.

Clearing

Desired Future Condition: This cleared area will be managed to maintain the lawn and minimize impacts to archaeological sites located beneath the lawn. This area is an attractive amenity that allows visitors to enjoy the serenity of the grounds and the view of Biscayne Bay.

Description and Assessment: The cleared area is mainly the lawn that runs from The Barnacle down to the edge to the bay. The majority of this area is located in the center of the park in Management Zone BA-02.

General Management Measures: Maintaining the lawn and preventing disturbance there is priority. Control of FLEPPC Category I and II species here is also a management measure that is a priority for staff. Primary exotic invasive plants of concern are winged yam (*Dioscorea alata*), Brazilian jasmine (*Jasminum fluminens*), lead tree (*Leucaena leucocephala*), and arrowhead vine (*Syngonium*

podophyllum), which occur at higher concentrations than most other exotic plants in the park.

Imperiled Species

Imperiled species are those that are (1) tracked by FNAI as critically imperiled (G1, S1) or imperiled (G2, S2), or (2) listed by the U.S. Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FFWCC) or the Florida Department of Agriculture and Consumer Services (FDACS) as endangered, threatened or of special concern.

All of the imperiled plants species are native to the rockland hammock habitat that has virtually disappeared from southeast Florida, particularly from Miami-Dade County. Their populations are currently in good shape at The Barnacle, though the hammock is small, which leaves all populations there susceptible to extirpation due to many external threats. These threats include invasive plants and animals, major disturbances like hurricanes, or even poaching of plants. Continued management of invasive plants and vigilance on possible invasions by animals, like the giant African land snail (GALS), is the best management for all the listed plants at the park.

All of the birds listed in the imperiled species table are associated with the mangroves and the marine unconsolidated substrate. They are foraging in the park and not nesting, so the major concern is trash that floats in with the tides.

The West Indian manatee is an occasional visitor to the park in the seagrass and marine unconsolidated substrate. Boat traffic is currently the major threat to manatees, and though boat traffic is rare up to the dock area in the park, it does occur in the outer reaches of the marine park boundary. Enforcement is a major issue and the park has little ability to enforce park rules beyond its shoreline.

Due to the size and location of The Barnacle, many larger imperiled species that may be in rockland hammocks are no longer found in the park's small isolated habitat. However, smaller classes of imperiled species like butterflies may flourish there. To date, only the Florida atala is known to be found at the park, but there is a need for more extensive surveys to determine if more imperiled butterfly species are present.

Table 2 contains a list of all known imperiled species within the park and identifies their status as defined by various entities. It also identifies the types of management actions that are currently being taken by the DRP staff or others and identifies the current level of monitoring effort. The codes used under the column headings for management actions and monitoring level are defined following the table. Explanations for federal and state status as well as FNAI global and state rank are provided in Addendum 6.

Table 2: Imperiled Species Inventory						
Common and Scientific Name	**Imperiled Species Status**				**Management Actions**	**Monitoring Level**
	FWC	**US FWS**	**FDACS**	**FNAI**		
PLANTS						
Satinleaf *Chrysophyllum olivaeforme*			LT		2,10	
Silver palm *Coccothrinax argentata*			LT	G3, S3	2,10	
Redbay stopper *Eugenia confusa*			LE	G3G5, S1	2,10	
Florida peperomia, pepperface *Peperomia obtusifolia*			LE	G5, S2	2,10	
Blackbead *Pithecellobium keyense*			LT		2,10	
Snout bean *Rhynchosia parvifolia*			LT		2,10	
Greenbrier *Smilax havanensis*			LT		2,10	
Florida thatch palm *Thrinax radiata*			LE	G4,G5, S2	2,10	
Common wild pine; Common air plant *Tillandsia fasciculata*			LE		2,10	
Twisted air plant, Giant wild pine; *Tillandsia utriculata*			LE		2,10	
BIRDS						
Little blue heron *Egretta caerulea*	SSC	N		S4	13	Tier 1
Snowy egret *Egretta thula*	SSC			G5,S4	13	

Table 2: Imperiled Species Inventory						
Common and Scientific Name	**Imperiled Species Status**				**Management Actions**	**Monitoring Level**
	FWC	**US FWS**	**FDACS**	**FNAI**		
Tricolored heron; Louisiana heron *Egretta tricolor*	SSC			G5,S4	13	
Brown pelican *Pelecanus occidentalis*	SSC			G4,S3	13	
MAMMALS						
West Indian manatee *Trichechus manatus latirostris*	LE	FE		G2,S2	10,13	Tier 1
REPTILES						
Loggerhead Sea Turtle *Caretta caretta*	T	T		G3, S3	10, 13	Tier 1
INVERTEBRATES						
Florida atala *Eumaeus atala florida*				G4,S2	10,12,13	Tier 1

Management Actions:

1. Prescribed Fire
2. Exotic Plant Removal
3. Population Translocation/Augmentation/Restocking
4. Hydrological Maintenance/Restoration
5. Nest Boxes/Artificial Cavities
6. Hardwood Removal
7. Mechanical Treatment
8. Predator Control
9. Erosion Control
10. Protection from visitor impacts (establish buffers)/law enforcement
11. Decoys (shorebirds)
12. Vegetation planting
13. Outreach and Education
14. Other [If referenced in table, provide discussion in narrative]

Monitoring Level:

Tier 1. Non-Targeted Observation/Documentation: Includes documentation of species presence through casual/passive observation during routine park activities (i.e. not conducting species-specific searches). Documentation may be in the form of Wildlife Observation Forms or other district specific methods used to communicate observations.

Tier 2. Targeted Presence/Absence: Includes monitoring methods/activities that are specifically intended to document presence/absence of a particular species or suite of species.

Tier 3.	Population Estimate/Index: An approximation of the true population size or population Index based on a widely accepted method of sampling.
Tier 4.	Population Census: A complete count of an entire population with demographic analysis, including mortality, reproduction, emigration, and immigration.
Tier 5.	Other: May include habitat assessments for a particular species or suite of species or any other specific methods used as indicators to gather information about a particular species.

Detailed management goals, objectives and actions for imperiled species in this park are discussed in the Resource Management Program section of this component and the Implementation Component of this plan.

Exotic and Nuisance Species

Exotic species are plants or animals not native to Florida. Invasive exotic species are able to out-compete, displace or destroy native species and their habitats, often because they have been released from the natural controls of their native range, such as diseases, predatory insects, etc. If left unchecked, invasive exotic plants and animals alter the character, productivity and conservation values of the natural areas they invade.

Exotic animal species include non-native wildlife species, free ranging domesticated pets or livestock, and feral animals. Because of the negative impacts to natural systems attributed to exotic animals, the DRP actively removes exotic animals from state parks, with priority being given to those species causing the greatest ecological damage.

In some cases, native wildlife may also pose management problems or nuisances within state parks. A nuisance animal is an individual native animal whose presence or activities create special management problems. Examples of animal species from which nuisance cases may arise include raccoons, venomous snakes, and alligators that are in public areas. Nuisance animals are dealt with on a case-by-case basis in accordance with the DRP's Nuisance and Exotic Animal Removal Standard.

Detailed management goals, objectives and actions for management of invasive exotic plants and exotic and nuisance animals are discussed in the Resource Management Program section of this component.

Though not in the park yet, the giant African land snail is a nearby threat and has been found in Miami-Dade and in neighborhoods near The Barnacle. The giant African land snail (*Lissachatina fulica*) is considered an agricultural pest. Although it is illegal to own in Florida, it has been known in the pet trade. The snail is a voracious eater that does extensive damage to agricultural plants and will also damage ornamentals. It has even been known to eat tree bark, paint and stucco. The Barnacle has a mix of ornamental plants that are historic to the site along with one the few places in Miami-Dade County with an intact rockland hammock. The snail could have a huge impact not only on the plants but possibly even the historic structure of The Barnacle itself. The last time the GALS invaded the Miami area in the 1970s, it took ten years and over $1 million dollars to eradicate them.

The exotic plant species in the park exist in approximately 2 acres of rockland hammock. There are a number of different plant species but many do not occur at

high levels of infestation. The primary concerns are from winged yam (*Dioscorea alata*), Brazilian jasmine (*Jasminum fluminens*), lead tree (*Leucaena leucocephala*), and arrowhead vine (*Syngonium podophyllum*), which are occurring at higher concentrations than most of the other exotic plants. Level of infestation does not require the services of a contractor, but the limited park staff and density of the hammock makes treatment of these exotics difficult. The hammock has been treated at least once since the last plan was written, but consistent retreatment is needed.

Table 3 contains a list of the Florida Exotic Pest Plant Council (FLEPPC) Category I and II invasive, exotic plant species found within the park (FLEPPC 2013). The table also identifies relative distribution for each species and the management zones in which they are known to occur. An explanation of the codes is provided following the table. For an inventory of all exotic species found within the park, see Addendum 5.

Table 3: Inventory of FLEPPC Category I and II Exotic Plant Species

Common and Scientific Name	FLEPPC Category	Distribution	Management Zone (s)
PLANTS			
Rosary pea *Arbus precatorius*	I	2	BA-1
Red Sandalwood *Adenanthera pavonia*	II	2	BA-1
Woman's Tongue *Albizia lebbeck*	1	2	BA-1
Paper mulberry *Broussonetia papyrifera*	II	2	BA-1
Coconut palm *Cocos nucifera*	II	2	BA-2
Lather leaf *Colubrina asiatica*	I	2	BA-1
Winged yam *Dioscorea alata*	I	3	BA-1
Air potato *Dioscorea bulbifera*	I	2	BA-1
Pothos *Epipremnum pinnatum*	II	2	BA-1
Suriam cherry *Eugenia uniflora*	I	2	BA-1
Governor's plum *Flacourtia indica*	II	2	BA-1
Gold Coast jasmine *Jasminum dichotomum*	I	2	BA-1

Table 3: Inventory of FLEPPC Category I and II Exotic Plant Species			
Common and Scientific Name	**FLEPPC Category**	**Distribution**	**Management Zone (s)**
Brazilian jasmine *Jasminum fluminense*	I	2	BA-1
Lead tree *Leucaena leucocephala*	II	2	BA-1
Sapodilla *Manilkarra zapota*	I	2	BA-1
Orange jasmine *Murray paniculata*	II	2	BA-1
Sword fern *Nephrolepis cordifolia*	I	2	BA-1
Burma Reed *Neyraudia reynaudian*	I	2	BA-1
Guava *Psidium guajava*	I	2	BA-1
Bowstring hemp *Sansevieria hyancinthoides*	II	2	BA-1
Brazilian pepper *Schinus terebinthifolius*	I	2	BA-1
Umbrella tree *Shefflera actinophylla*	I	2	BA-1
Wedelia *Sphagneticola trilobata*	II	2	BA-1
Arrowhead vine *Syngonium podophyllum*	I	2	BA-1
Tropical almond *Terminalia catappa*	II	2	BA-1
Seaside mahoe *Thespesia populnea*	I	2	BA-1
Oyster plant *Tradescantia spathacea*	II	2	BA-1
Caesar's weed *Urena lobata*	I	2	BA-1
Washington palm *Washingtonia robusta*	II	2	BA-1

Distribution Categories:

0 No current infestation: All known sites have been treated and no plants are currently evident.
1 Single plant or clump: One individual plant or one small clump of a single species.
2 Scattered plants or clumps: Multiple individual plants or small clumps of a single species scattered within the gross area infested.
3 Scattered dense patches: Dense patches of a single species scattered within the gross area infested.
4 Dominant cover: Multiple plants or clumps of a single species that occupy a majority of the gross area infested.

5 Dense monoculture: Generally, a dense stand of a single dominant species that not only occupies more than a majority of the gross area infested, but also covers/excludes other plants.

6 Linearly scattered: Plants or clumps of a single species generally scattered along a linear feature, such as a road, trail, property line, ditch, ridge, slough, etc. within the gross area infested.

Special Natural Features

There are no special natural features in the park.

Cultural Resources

This section addresses the cultural resources present in the park that may include archaeological sites, historic buildings and structures, cultural landscapes and collections. The Florida Department of State (FDOS) maintains the master inventory of such resources through the Florida Master Site File (FMSF). State law requires that all state agencies locate, inventory and evaluate cultural resources that appear to be eligible for listing in the National Register of Historic Places. Addendum 7 contains the FDOS, Division of Historical Resources (DHR) management procedures for archaeological and historical sites and properties on state-owned or controlled properties, the criteria used for evaluating eligibility for listing in the National Register of Historic Places, and the Secretary of Interior's definitions for the various preservation treatments (restoration, rehabilitation, stabilization and preservation). For the purposes of this plan, significant archaeological site, significant structure and significant landscape mean those cultural resources listed or eligible for listing in the National Register of Historic Places. The terms archaeological site, historic structure or historic landscape refer to all resources that will become 50 years old during the term of this plan.

Condition Assessment

Evaluating the condition of cultural resources is accomplished using a three-part evaluation scale, expressed as good, fair and poor. These terms describe the present condition, rather than comparing what exists to the ideal condition. Good describes a condition of structural stability and physical wholeness, where no obvious deterioration other than normal occurs. Fair describes a condition in which there is a discernible decline in condition between inspections, and the wholeness or physical integrity is and continues to be threatened by factors other than normal wear. A fair assessment is usually a cause for concern. Poor describes an unstable condition where there is palpable, accelerating decline, and physical integrity is being compromised quickly. A resource in poor condition suffers obvious declines in physical integrity from year to year. A poor condition suggests immediate action is needed to reestablish physical stability.

Level of Significance

Applying the criteria for listing in the National Register of Historic Places involves the use of contexts as well as an evaluation of integrity of the site. A cultural resource's significance derives from its historical, architectural, ethnographic or archaeological context. Evaluation of cultural resources will result in a designation of NRL (National Register or National Landmark Listed or located in an NR district), NR (National Register eligible), NE (not evaluated) or NS (not significant) as indicated in the table at the end of this section.

There are no criteria for use in determining the significance of collections or archival material. Usually, significance of a collection is based on what or whom it may represent. For instance, a collection of furniture from a single family and a particular era in connection with a significant historic site would be considered highly significant. In the same way, a high quality collection of artifacts from a significant archaeological site would be of important significance. A large herbarium collected from a specific park over many decades could be valuable to resource management efforts. Archival records are most significant as a research source. Any records depicting critical events in the park's history, including construction and resource management efforts, would all be significant.

The following is a summary of the FMSF inventory. In addition, this inventory contains the evaluation of significance.

Prehistoric and Historic Archaeological Sites

Desired Future Condition: All significant archaeological sites within the park that represent Florida's cultural periods or significant historic events or persons are preserved in good condition in perpetuity, protected from physical threats and interpreted to the public.

Description: The Florida Master Site File indicates that one prehistoric site, DA 00010, is located to the southeast of the park. This Glades II-III period midden site was discovered and recorded in 1941 (John Goggin 1941:25; 1944:27). It is situated under the manicured lawn. Many artifacts from this site were collected by Munroe and are still maintained in collections storage. Additional artifacts recovered include shells, tools, bones, and shark teeth.

Condition Assessment: Over the years prior to The Florida Park Service maintaining the site, the prehistoric site had been greatly disturbed. The site today is under a manicured lawn and is considered to be in good condition due to disturbances only happening in the past.

Level of Significance: Although the Munroe (DA00010) site has been altered by previous land disturbance, subsequent examinations of the site which have occurred since its initial discovery by John Goggin have recommended additional ground testing to determine its boundaries and the effect that previous land disturbance has had on the subsurface layers. Recent updates to the FMSF indicate that the site may potentially be eligible for the National Register; however, it has not been formally evaluated by the State Historic Preservation Officer (SHPO).

General Management Measures: The Munroe (DA00010) site will be managed using preservation as the treatment standard. The open lawn provides protection from erosion by natural causes and human damage caused by looting. Resource management and construction activities will be carefully monitored to assure no additional adverse impacts to the site. The lawn does provide good protection from the public and natural impacts and no further management action is needed.

Historic Structures

Desired future condition: All significant historic structures and landscapes that represent Florida's cultural periods or significant historic events or persons are

preserved in good condition in perpetuity, protected from physical threats and interpreted to the public.

Description: The Barnacle Historic State Park has four historic structures that have been identified in the Florida Master Site File: The Barnacle (DA00174), the boathouse (DA12415), the garage/apartment (DA12414), and the marine railway (DA12416).

The main house structure is listed on the National Register of Historic Places. It was the home of yacht designer Ralph Munroe, who named the house he built in 1891 "The Barnacle." The developed portion of the park property includes the main house (The Barnacle), the landscaped area between the house and Biscayne Bay, the two-story boathouse rebuilt in 1927, and the 1927 garage/apartment, which currently contains park offices, storage, gift shop and the Park Manager's residence. The historic site is being preserved to represent the time period of Ralph Munroe's occupancy and early pioneer life along Biscayne Bay (1887-1933). Artifacts are on display in both the main house and the boathouse.

Edmund "Alligator" Beasley was a Union solider who settled in the Coconut Grove area in the mid-nineteenth century. Possibly the only remnant from Beasley's time is a well that was cut into the limestone rock just northeast of the house. Although the well is fenced off for safety and to prevent unauthorized access, it is still visible to the public and is part of the ground's interpretative program.

Ralph Munroe purchased 40 acres of the Beasley homestead in 1886 and built his home, "The Barnacle," there in 1891. When Munroe originally built The Barnacle, it was a single story structure; however, in 1908, he raised the house using railroad jacks and added a new first floor. Munroe utilized his shipbuilding knowledge and incorporated passive cooling techniques into the architecture of his house.

The Barnacle is considered one of the most significant buildings in Miami-Dade County. It is interpreted as a historic house museum. Therefore, its condition and the condition of the collections in the house are dependent on the number and frequency of interpretive tours conducted there.

Condition Assessment: The Barnacle is in fair condition with some restoration needed; including window, chimney, porch and roof repairs. The DEP, Office of Operations Bureau of Design and Construction (BDC) has submitted a plan to address these issues. Even with these repairs, there are still a number of items in the house that need additional attention in order for the house to reach the monitoring phase. Because of the age of the structure and location of the park, staff will continually monitor the house for signs of deterioration.

The associated boathouse has experienced some foundation and wood deterioration but remains in fair condition. The boathouse needs preservation work on metal in the boathouse and metal artifacts stored or on display. The boathouse also needs repairs done to the wood rot impacting the structure.

The garage/apartment is in good condition, although much of the interior of the garage portion has been altered to fit the needs as a park office and the gift shop.

The marine railway is in fair condition. Some of the railway is in the water and is exposed to saltwater, wave action and changing tides. The unsubmerged portion was severely damaged during Hurricane Wilma in 2005 and has since been reconstructed and is historically accurate and safe.

Level of Significance: The Barnacle (DA00174) is listed on the National Register of Historic Places and is significant for its innovative architecture, its decorative detail, an overall design which promotes natural ventilation, and an adaptation well-suited to the South Florida environment in which it was constructed. Its significance also lies in its association with Commodore Ralph M. Munroe, a prominent early settler of the village of Coconut Grove in Miami-Dade County, and in its historical presence as one the few structures remaining from the earliest period of the development of Coconut Grove.

The Barnacle is a locally designated historic structure under the Miami-Dade Historic Preservation Ordinance. A certificate of appropriateness is required for any work that would change the exterior appearance of the structure. An HC-1 zoning overlay district, which encompasses the entire park, requires review and approval of proposed physical changes to the property by city staff in the case of minor improvements and by the Miami-Dade Historic and Environmental Preservation Board (HEPB) for more extensive work. This review includes any proposed work to all major exterior surfaces, including all four facades of The Barnacle and all surfaces of all other existing improvements to the site including landscape features.

The boathouse (DA-12415), the garage/apartment (DA-12414), and the marine railway (DA-12416), are recorded to the FMSF. However, it is believed that all three structures are potentially eligible for their historical association with The Barnacle (DA00174) and Ralph Munroe.

General Management Measures: The Barnacle (DA00174) will be managed using restoration as the treatment standard since it is a house museum and maintaining historic accuracy is critical in its interpretation. The repair of the house is currently underway. The BDC has developed a plan and funds have been allocated to address some of the areas and items in the house that need repair. Even with these proposed repairs, the house is still has a number of items that need attention. The park staff has assessed the house and developed a detailed list of items that still need to be addressed, even after the current round of repairs are completed. These include repair/metal conservation on numerous metal fixtures throughout the house, window and screen repair, wood rot, additional roof repair, various issues in the larder, issues with the cistern, repair to ceilings, flooring and paint in various rooms and additional repairs to the porch and steps. The house is also in need of an onsite fire suppression system since access to the house for emergency vehicles is limited and difficult. The boathouse and the garage/apartment will be managed using a combination of preservation and rehabilitation treatments. The exterior of the buildings will be preserved to reflect their historic appearance, while their

interiors will be adapted when necessary to meet modern functions and current building codes. At a minimum, the boathouse will need wood rot repair, the side door replaced, and will need to be painted. Preservation work is needed on many of the metal artifacts stored or on display in the boathouse. The marine railway will be managed using a combination of preservation and reconstruction treatments. The historic boat wench will be preserved and the reconstructed portion of the railway will be maintained for interpretive purposes.

Collections

Desired Future Condition: All historic, natural history, and archaeological objects within the park that represent Florida's cultural periods, significant historic events or persons, or natural history specimens are preserved in good condition in perpetuity, protected from physical threats and interpreted to the public.

Description: The park maintains and exhibits highly significant collections of objects which serve to interpret The Barnacle as it was from 1887 to 1933, the time period when Ralph Munroe was in residence. These include furnishings, food preparation/serving items, miscellaneous household décor items, books and archival materials, some textiles, and tools. Many are original to the Munroe family from when they lived at The Barnacle and were donated by the family when the house and property were sold to the state in 1973. Others are from that time period and most are in good condition. There are over 6,000 objects in the collections and approximately 10,000 cubic feet of archival materials. About 80% of these items are on exhibit in The Barnacle or the boathouse, and the rest are stored on site in a climate-controlled collections facility. Additionally, historic artifacts have been recovered through archaeological surveys. These include nails, windowpane fragments, and bottle glass from the early 20th century, as well as a few mid-19th century artifacts believed to be related to the Beasley homestead. Of these artifacts, about 85% are stored by the Division of Historical Resource's (DHR) Bureau of Archaeological Research (BAR) in Tallahassee, with the remainder stored at the park.

Condition Assessment: Most of The Barnacle's collections are in good condition. There are a few furniture and household items which require repairs. These repairs call for skills and expertise of a knowledgeable conservator. Of greater concern are the conditions of the metal objects. The deterioration of the outside firewood door of The Barnacle and the tools in the boathouse are rapid and alarming. These objects must be assessed and treated by a professional conservator. The reason for this deterioration is simply the environment. The Barnacle and boathouse are not air conditioned and heat, humidity, salt air, and dust add to the challenges of maintaining clean and stable artifacts. The Barnacle and boathouse undergo regular pest control treatments, but neither is climate controlled. The only objects kept in a climate-controlled environment are those in the park's collections facility and The Barnacle library, which is the one room in the house that is air conditioned. Pests are kept at a minimum due to regular housekeeping and monthly pest control treatments. Annual inspections for termite infestations are scheduled. The house and boathouse are armed by a monitored security system whenever unoccupied.

Level of Significance: The most significant of The Barnacle's collection items are those that belonged to Ralph Middleton Munroe. Commodore Munroe was a seaman, naturalist, photographer, and early pioneer to Biscayne Bay. His yacht designs are credited with opening up Biscayne Bay for navigation. As an amateur photographer, he provided photo-documentation of early Miami and Coconut Grove. He was also one of the founding members of Biscayne Bay Yacht Club and its original Commodore, a position he held for 22 years. His cameras and photographic equipment are part of The Barnacle's collections. Collection items not original to The Barnacle are not necessarily insignificant. Many of the antiques decorating The Barnacle are authentic and highly valued. There are also a number of period-appropriate props that were purchased to complete the effect of The Barnacle as a family home. All collections objects, large and small, work together to restore the ambiance of the interpretative period, from construction of the house in 1891 up to the time of Commodore Munroe's death in 1933.

The Barnacle itself is a crown jewel in the study of vernacular architecture and has been the subject of many articles, books, and television documentaries. Ralph Munroe's yacht designs routinely show up in periodicals such as *Wooden Boat* magazine. There was also a historic structures report created by Reinker Eich Parks Architects in December 2003.

General Management Measures: Currently, the park has an informal scope of collection statement, a partial catalog of collections, housekeeping manual, record-keeping system, pest control, specially trained staff, and a limited climate control area and monitoring system. Developing a formal scope of collections, completing the park's collections catalog and entering it into PastPerfect, improving the climate controlled area, and installation of a fire suppression system are some of the greatest needs for the vast collection that exists at The Barnacle. The greatest need regarding the collections at The Barnacle is to complete/correct the park's collections catalog and enter it into PastPerfect.

Because of the size of the collections and need to complete and correct cataloging and enter everything into the PastPerfect system, a curator or museum registrar dedicated to collections cataloging and care of the structures and artifacts would be the ideal situation for a site such as The Barnacle.

Detailed management goals, objectives and actions for the management of cultural resources in this park are discussed in the Cultural Resource Management Program section of this component. Table 4 contains the name, reference number, culture or period, and brief description of all the cultural sites within the park that are listed in the Florida Master Site File. The table also summarizes each site's level of significance, existing condition and recommended management treatment. An explanation of the codes is provided following the table.

Table 4: Cultural Sites Listed in the Florida Master Site File					
Site Name and FMSF #	**Culture/Period**	**Description**	**Significance**	**Condition**	**Treatment**
DA00010 Glades II-III period midden	Historic/ Unspecified	Archaeological Site	NE	G	P
DA00174 The Barnacle	Historic/1892-1933	Historic Structure	NRL	G	RS
DA12415 Boathouse	Historic/1927-1933	Historic Structure	NR	F	RS
DA12414 Garage Apartment	Historic/1927-1933	Historic Structure	NR	G	RH
DA12416 Marine Railway	Historic/1892-1933	Historic Structure	NR	F	P

Significance:

NRL	National Register listed
NR	National Register eligible
NE	not evaluated
NS	not significant

Condition

G	Good
F	Fair
P	Poor
NA	Not accessible
NE	Not evaluated

Recommended Treatment:

RS	Restoration
RH	Rehabilitation
ST	Stabilization
P	Preservation
R	Removal
N/A	Not Applicable

RESOURCE MANAGEMENT PROGRAM

Management Goals, Objectives and Actions

Measurable objectives and actions have been identified for each of the DRP's management goals for The Barnacle Historic State Park. Please refer to the Implementation Schedule and Cost Estimates in the Implementation Component of this plan for a consolidated spreadsheet of the recommended actions, measures of progress, target year for completion and estimated costs to fulfill the management goals and objectives of this park.

While the DRP utilizes a ten-year management plan to serve as the basic statement of policy and future direction for each park, a number of annual work plans provide more specific guidance for DRP staff to accomplish many of the resource management goals and objectives of the park. Where such detailed planning is appropriate to the character and scale of the park's natural resources, annual work plans are developed for prescribed fire management, exotic plant management and imperiled species management. Annual or longer-term work plans are developed for natural community restoration and hydrological restoration. The work plans provide DRP with crucial flexibility in its efforts to generate and implement adaptive resource management practices in the state park system.

The work plans are reviewed and updated annually. Through this process, the DRP's resource management strategies are systematically evaluated to determine their effectiveness. The process and information collected is used to refine techniques, methodologies and strategies, and ensures that each park's prescribed management actions are monitored and reported as required by Sections 253.034 and 259.037, Florida Statutes.

The goals, objectives and actions identified in this management plan will serve as the basis for developing annual work plans for the park. The ten-year management plan is based on conditions that exist at the time the plan is developed and the annual work plan provides the flexibility needed to adapt to future conditions as they change during the ten-year management planning cycle. As the park's annual work plans are implemented through the ten-year cycle, it may become necessary to adjust the management plan's priority schedules and cost estimates to reflect these changing conditions.

Natural Resource Management

Hydrological Management

Goal: Protect water quality and quantity in the park, restore hydrology to the extent feasible and maintain the restored condition.

The natural hydrology of most state parks has been impaired prior to acquisition to one degree or another. This park is a small historic park that contains a historic house with a large lawn area and accompanying structures. The site has a small natural area of rockland hammock and is built out for all intents and purposes. Unless there is some major unforeseen future disturbance on this site, no changes are anticipated in the hydrology of the site. No hydrological issues can be addressed

to improve natural communities in the park. There are, however, erosion issues that may need addressing around The Barnacle house itself. Intensive foot traffic from the park area down to the boathouse has exposed soils and increased water runoff during heavy rains. The grass' root structure mostly maintains the integrity of the soil. Though, grass seed and/or sod will be added periodically to control runoff. Park staff will monitor the erosion near the historic home annually.

Objective A: Conduct/obtain an assessment of the park's hydrological restoration needs.

Action 1 Monitor the erosion along both sides of The Barnacle annually.

Natural Communities Management

Goal: Restore and maintain the natural communities/habitats of the park.

The DRP practices natural systems management. In most cases, this entails returning fire to its natural role in fire-dependent natural communities. Other methods to implement this goal include large-scale restoration projects as well as smaller scale natural communities' improvements. Following are the natural community management objectives and actions recommended for the state park.

Natural Communities Restoration: There is currently no need for large-scale natural community restoration at this park. The 2.4 acre natural community within the park is a small remnant of rockland hammock that is not fire maintained and does not need restoration activities. It is in maintenance condition and only needs exotic plant and animal control in order to maintain its viability. There is no prescribed fire management or natural communities restoration required for this site.

Natural Communities Improvement: Improvements are similar to restoration but on a smaller, less intense scale. This typically includes small-scale vegetative management activities or minor habitat manipulation. What remains of the park's small, isolated rockland hammock continues to be influenced by exotic plants from adjoining urban development. The most applicable improvement activities or habitat protection for the park's upland natural communities are the removal of invasive exotic plant species. Regular surveys and treatments are needed; which are discussed in Exotic Species Management below.

Imperiled Species Management

Goal: Maintain, improve or restore imperiled species populations and habitats in the park.

DRP strives to maintain and restore viable populations of imperiled plant and animal species primarily by implementing effective management of natural systems. Single species management is appropriate in state parks when the maintenance, recovery or restoration of a species or population is complicated due to constraints associated with long-term restoration efforts, unnaturally high mortality or insufficient habitat. Single species management should be compatible with the maintenance and restoration of natural

processes, and should not imperil other native species or seriously compromise park values.

In the preparation of this management plan, DRP staff consulted with staff of the FWC's Imperiled Species Management or that agency's Regional Biologist and other appropriate federal, state and local agencies for assistance in developing imperiled animal species management objectives and actions. Likewise, for imperiled plant species, DRP staff consulted with FDACS. Data collected by the USFWS, FWC, FDACS and FNAI as part of their ongoing research and monitoring programs will be reviewed by park staff periodically to inform management of decisions that may have an impact on imperiled species at the park.

Ongoing inventory and monitoring of imperiled species in the state park system is necessary to meet DRP's mission. Long-term monitoring is also essential to ensure the effectiveness of resource management programs. Monitoring efforts must be prioritized so that the data collected provides information that can be used to improve or confirm the effectiveness of management actions on conservation priorities. Monitoring intensity must at least be at a level that provides the minimum data needed to make informed decisions to meet conservation goals. Not all imperiled species require intensive monitoring efforts on a regular interval. Priority must be given to those species that can provide valuable data to guide adaptive management practices. Those species selected for specific management action and those that will provide management guidance through regular monitoring are addressed in the objectives below.

Objective A: Update baseline imperiled species occurrence inventory lists for plants and animals.

Action 1	Develop a monitoring protocol to identify and update the imperiled species list.
Action 2	Continue to monitor the Florida atala butterfly, while developing a more extensive survey protocol to determine if more imperiled butterfly species can be found in the park.

The park has a limited number of imperiled species, but additional species inventory, especially focusing on butterflies, could improve the list and lead to better management. Without a more comprehensive species list, imperiled species could be in the park with no management for those species taking place. This adds to the need for additional inventory.

Exotic Species Management

Goal: Remove exotic and invasive plants and animals from the park and conduct needed maintenance control.

The DRP actively removes invasive exotic species from state parks, with priority being given to those causing the most ecological damage. Removal techniques may include mechanical treatment, herbicides or biocontrol agents.

Objective A: Annually treat 0.5 acres of exotic plant species in the park.

Action 1 Implement a work plan by treating 0.5 acres of exotic plants in park annually, and continuing maintenance and follow-up treatments, as needed.

The park has approximately 2 acres of rockland hammock that is infested with a number of exotic plants. The rockland hammock is in relatively good condition and the natural community benefits from exotic plant removal. This natural community is surrounded by development and exists merely as a remnant of the larger community as a whole. With that said, it is functioning quite well as a rockland hammock with exotic plants being the only major impediment to that function. The park is too small to develop a complete exotic plant management work plan, but staff time dedicated to invasive exotic plant removal and then retreatment could make a big impact on the invasive plant population in the hammock.

Objective B: Monitor for the possible introduction of the giant African land snail (Achatina fulica).

Action 1 Develop a plan for bi-monthly monitoring for the giant African land snail.

The giant African land snail is extremely destructive to plants and can be harmful to humans. Infestations have been as close to one mile from the park and a bimonthly monitoring for the snails should ensure a speedy eradication if the snails should enter the park. If the snail is found in the park, the park will follow the protocol developed by Miami-Dade County to eradicate them.

Cultural Resource Management

Cultural resources are individually unique, and collectively, very challenging for the public land manager whose goal is to preserve and protect them in perpetuity. DRP is implementing the following goals, objectives and actions, as funding becomes available, to preserve the cultural resources found in The Barnacle Historic State Park.

Goal: Protect, preserve and maintain the cultural resources of the park.

The management of cultural resources is often complicated because these resources are irreplaceable and extremely vulnerable to disturbances. The advice of historical and archaeological experts is required in this effort. All activities related to land clearing, all ground disturbing activities, and all major repairs or additions to historic structures listed or eligible for listing in the National Register of Historic Places must be submitted to the FDOS, Division of Historical Resources (DHR) for review and comment prior to undertaking the proposed project. Recommendations may include, but are not limited to, concurrence with the project as submitted, monitoring of the project site by a qualified professional archaeologist, a cultural resource assessment survey by a qualified professional archaeologist, and modifications to the proposed project to avoid or mitigate potential adverse effect.

In addition, any demolition or substantial alteration to any historic structure or resource must be submitted to DHR for consultation, and the DRP must demonstrate that there is no feasible alternative to removal and must provide a strategy for documentation or salvage of the resource. Florida law further requires that the DRP must consider the reuse of historic buildings in the park in lieu of new construction and undertake a cost comparison of new development versus rehabilitation of a building before electing to construct a new or replacement building. This comparison must be accomplished with the assistance of DHR.

Objective A: Assess and evaluate 3 of 5 recorded cultural resources in the park.

Action 1	Update the priority preservation treatments set out in the 2003 historic structures plan for the three major structures in the report.
Action 2	Develop a monitoring plan for the three major structures listed in the park.

The last historic structures report was completed in 2003 for The Barnacle, the boathouse and the garage/apartment. Since that report was finished, the site has experienced another hurricane and over ten years of wear. An update to the historic structures report for the three structures needs to be done; a complete new report is not necessary.

No additional assessments of the archaeological site should be needed unless some form of ground breaking or disturbance occurs at the park.

Objective B: Compile reliable documentation for all recorded historic and archaeological resources.

Action 1	Ensure all known sites are recorded or updated in the Florida Master Site File.
Action 2	Pursue National Register status for the boathouse, garage/apartment and marine railway. Consider modifying the 1972 nomination to include the other historic structures that are within the Park.
Action 3	Retain a curator or museum registrar to oversee the completion of the cataloging of the park's collections and entering them into PastPerfect.
Action 4	Develop a formal scope of collections for the park and a written standardized monitoring plan for the park's collections.
Action 5	Conduct additional research into the nautical history of the Munroe designed yachts.
Action 6	Conduct oral history interviews of the surviving relatives of Ralph Munroe.

Additional research should be conducted on the nautical history of the 56 yachts designed by Ralph Munroe to better interpret that aspect of the park's history. Oral history interviews should be conducted with the grandchildren of Ralph Munroe to gain a better understanding of the genealogical history of the Munroe family.

A written monitoring plan should be developed for the over 6,000 pieces in the park's collections to standardize and guarantee daily collections care. A written monitoring plan is especially helpful if various people are working to care for the collections, such as staff and volunteers. Because of the large size of the collections and need to complete and correct the cataloging and enter all into PastPerfect, a curator or museum registrar dedicated to collections cataloging and the care of the collections is needed for a site like The Barnacle.

The garage/apartment, boathouse, and marine railway should be nominated for inclusion into the National Register of Historical Places. The 1972 listing could be updated to include these three additional historic structures.

***Objective C:* Bring 2 of 5 recorded cultural resources into good condition.**

Action 1	Complete repairs needed on the boathouse.
Action 2	Complete preservation work on the metal objects stored in the boathouse.
Action 3	Develop and implement a plan to address the needed repairs to The Barnacle.
Action 4	Install a fire suppression system in The Barnacle in order to protect the structure from fire.
Action 5	Develop and implement a plan to refresh the content of the exhibits in The Barnacle. The plan should address rotating some of the exhibits and adding some seasonal exhibits.

Metal restoration to parts of The Barnacle, boathouse, and collections should be a major priority. As metal in coastal Florida is always subject to deterioration, regular monitoring of all recorded metal cultural resources in The Barnacle and the boathouse should be implemented. Conservation treatments on 20% of metal cultural resources every year should bring the metal artifacts into good condition and maintain it.

The boathouse has experienced some foundation deterioration but remains in fair condition. This is a working boathouse and is currently being used for a program that teaches school students boat building. It will need wood rot repair, the side replaced and will need to be painted. Preservation work is needed on many of the metal artifacts stored on display in the boathouse.

The Barnacle is currently in need of repair. The BDC has developed a plan and funding has been secured to address some of the areas and items in the house that need repair. Even with these proposed repairs, the house is still has a number of items that need attention. Park staff has developed a comprehensive list of needed repairs. The house is also in need of an onsite fire suppression system since access to the house for emergency vehicles is limited and difficult.

A plan to refresh the content of the exhibits in The Barnacle needs to be developed and implemented. The plan should include adding some seasonal exhibits and should also address alternating and rotating artifacts from storage into the house.

Special Management Considerations

Timber Management Analysis

A timber management analysis was not conducted for this park since its total acreage is below the 1,000-acre threshold established by statute. Timber management will be re-evaluated during the next revision of this management plan.

Coastal/Beach Management

DRP manages over 100 miles of sandy beach, which represents one-eighth of Florida's total sandy beach shoreline. Approximately one-quarter of Florida's state parks are beach-oriented parks and account for more than 60 percent of statewide park visitation. The management and maintenance of beaches and their associated systems and processes is complicated by the presence of inlets and various structures (jetties, groins, breakwaters) all along the coast. As a result, beach restoration and nourishment have become increasingly necessary and costly procedures for protecting valuable infrastructure. All of these practices affect beaches for long distances on either side of a particular project. DRP staff needs to be aware of and participate in the planning, design and implementation of these projects to ensure that park resources and recreational use are adequately considered and protected.

The Barnacle Historic State Park has 60 feet of beach-like coastline along Biscayne Bay. That coastline is fairly well protected with mangroves on either side of it and erosion has not been an issue. Various wading birds, manatee and other marine life have been seen in the waters off the shores of The Barnacle. The boundary of the park extends out 1,000 feet into the bay and includes sea grass beds, marine unconsolidated and composite substrate along with two pockets of mangroves on either edge of the coastline. The public rarely uses the park coastline as an access point for either entrance into Biscayne Bay or from the bay into the park, so overuse is not an issue. Boats have been known to anchor within the park boundary and have also emptied boat septic tanks into the park's portion of Biscayne Bay. Despite this, the marine systems appear to be in good condition with little disturbance.

Arthropod Control Plan

All DRP lands are designated as "environmentally sensitive and biologically highly productive" in accordance with Ch. 388 and Ch. 388.4111 Florida Statutes. If a local mosquito control district proposes a treatment plan, the DRP works with the local mosquito control district to achieve consensus. By policy of the DEP since 1987, treatment plans may not include aerial adulticiding but typically allow larviciding. DRP policy also allows park managers to request typical truck spraying (adulticide fogging) in public use areas even in the absence of a treatment plan. The DRP does not authorize new physical alterations of marshes through ditching or water control structures. Mosquito control plans temporarily may be set aside under declared threats to public or animal health, or during a Governor's Emergency Proclamation. No arthropod control plan has ever been proposed for The Barnacle.

Sea Level Rise

Potential sea level rise is now under study and will be addressed by Florida's residents and governments in the future. The DRP will stay current on existing research and predictive models, in coordination with other DEP programs and federal, state and local agencies. The DRP will continue to observe and document the changes that occur to the park's shorelines, natural features, imperiled species populations, and cultural resources. This ongoing data collection and analysis will inform the Division's adaptive management response to future conditions, including the effects of sea level rise, as they develop.

Resource Management Schedule

A priority schedule for conducting all management activities that is based on the purposes for which these lands were acquired, and to enhance the resource values, is located in the Implementation Component of this management plan.

Land Management Review

Section 259.036, Florida Statutes, established land management review teams to determine whether conservation, preservation and recreation lands titled in the name of the Board of Trustees are being managed for the purposes for which they were acquired and in accordance with their approved land management plans. DRP considered recommendations of the land management review team and updated this plan accordingly.

The Barnacle Historic State Park is under 1,000 acres and does not require a land management review.

LAND USE COMPONENT

Introduction

Land use planning and park development decisions for the state park system are based on the dual responsibilities of the Florida Department of Environmental Protection (DEP), Division of Recreation and Parks (DRP). These responsibilities are to preserve representative examples of original natural Florida and its cultural resources, and to provide outdoor recreation opportunities for Florida's citizens and visitors.

The general planning and design process begins with an analysis of the natural and cultural resources of the unit, and then proceeds through the creation of a conceptual land use plan that culminates in the actual design and construction of park facilities. Input to the plan is provided by experts in environmental sciences, cultural resources, park operation and management. Additional input is received through public workshops, and through environmental and recreational-user groups. With this approach, the DRP objective is to provide quality development for resource-based recreation throughout the state with a high level of sensitivity to the natural and cultural resources at each park.

This component of the unit plan includes a brief inventory of the external conditions and the recreational potential of the unit. Existing uses, facilities, special conditions on use, and specific areas within the park that will be given special protection, are identified. The land use component then summarizes the current conceptual land use plan for the park, identifying the existing or proposed activities suited to the resource base of the park. Any new facilities needed to support the proposed activities are expressed in general terms.

External Conditions

An assessment of conditions that exist beyond the boundaries of the unit can identify any special development problems or opportunities that exist because of the unit's unique setting or environment. This also provides an opportunity to deal systematically with various planning issues such as location, regional demographics, adjacent land uses and park interaction with other facilities.

The Barnacle Historic State Park is located on the southeast coast of Miami-Dade County in Miami, Florida. The park is in the historic village of Coconut Grove and bounded to the east by Biscayne Bay. Access to the park entrance is on Main Highway. Approximately 3.5 million people live within 30 miles of the park (U.S. Census 2010).

The population of Miami-Dade County is predominantly young, working class, and culturally diverse. According to U.S. Census Data, just over half of county residents are foreign born. A significant majority, more than 60%, of residents identify as Hispanic or Latino, while one-fifth identify as black, and one-fifth as non-Hispanic white. More than half of the population is under the age of 40, and only one-fifth is over the age of 60. Nearly two-thirds of the population is of working age (16 to 65) (U.S. Census Bureau 2013). In 2013, the per capita

personal income for Miami-Dade County was $39,880, slightly lower than the statewide average of $41,497 (U.S. Bureau of Economic Analysis 2013).

The park is located in the Southeast Vacation Region, which includes Broward, Miami-Dade, Monroe, and Palm Beach counties (Visit Florida 2013). According to the 2013 Florida Visitor Survey, approximately 17.3% of domestic visitors to Florida visited this region. Roughly 87% visitors to the region traveled to the Southeast for leisure purposes. The top activities for domestic visitors were beach/waterfront and culinary/dining experiences. Summer was the most popular travel season, but visitation was generally spread throughout the year. Most visitors traveled by air (60%), reporting an average of 4.4 nights and spending an average of $186 per person per day (Visit Florida 2013).

Many opportunities for resource-based outdoor recreation exist within a few miles of the park. Bill Baggs Cape Florida State Park is located 11 miles away from the park on the island of Key Biscayne. This state park offers beach access, canoeing and kayaking, fishing, bicycling, picnicking, swimming, and tours of the historic Cape Florida Lighthouse. The alternative route of the Florida Circumnavigational Saltwater Paddling Trail runs along the park's east coast. The trail provides opportunities for saltwater paddling and is accessible from the kayak launch area. The East Coast Greenway trail is less than a mile west of the park boundary.

Biscayne National Park is located just south of Bill Baggs Cape Florida State Park in Biscayne Bay. The national park provides opportunities for wildlife viewing and nature study, picnicking, walking, guided tours, motorized and non-motorized boating, fishing and lobstering, camping, snorkeling and SCUBA diving. The national park also offers the Maritime Heritage Trail, an underwater archaeological trail that includes six shipwreck sites from the late nineteenth to mid-twentieth centuries. Oleta River State Park, Hugh Taylor Birch State Park, and John U. Lloyd Beach State Park offer cycling and hiking trails, camping, paddling, and saltwater beach activities, including fishing and swimming.

Two historic estates, Vizcaya Museum and Gardens and Deering Estate, are located in close proximity to the park. Both estates are managed by Miami-Dade County, and include historic homes and grounds, numerous historical collections, and significant natural areas. Vizcaya Museum and Gardens also includes an ornamental garden. Fairchild Tropical Botanical Garden and Montgomery Botanical Center are located within five miles of the park. Each offers extensive collections of rare and endemic plants, as well as guided walking and tram tours and educational and research programs.

Several municipal parks and preserves offering resource-based recreation activities, including Tropical Park and A.D. "Doug" Barnes Park, are located within a few miles of the state park. These parks provide picnicking facilities, shared-use trails, and water-based activities, such as fishing, boating, paddling or beach activities. Crandon Park, located just north of the Village of Key Biscayne, offers shared-use trails, self-guided walking tours, and guided tram

tours through the park's natural areas. The park also provides opportunities for saltwater beach activities. Matheson Hammock Park, located fewer than five miles of the park, has a series of nature and bike trails throughout the property in addition to a beach and marina.

Florida's Statewide Comprehensive Outdoor Recreation Plan (SCORP) indicates that participation rates in this region for saltwater beach activities, visiting archaeological and historic sites, nature study, picnicking, and bicycle riding are higher than the state average with demand for additional facilities increasing through 2020 (FDEP 2013).

Existing Use of Adjacent Lands

Along Main Highway, which fronts the park, there are numerous restaurant and retail options. This area of Coconut Grove experiences heavy traffic flow but is also designed to accommodate pedestrians. Several commercial opportunities line the street which draws pedestrians along the corridor. There are also residential uses within the area that range from multifamily structures to single family residential uses. Multifamily apartment/condominium residential uses adjoining the park on either side.

Nearby population centers include Miami, Hialeah, and Fort Lauderdale. In 2010, more than 4.5 million people resided within 50 miles of the park boundary (U.S. Census Bureau 2010). Despite the number of resource-based outdoor recreational opportunities offered in the area, visitor demand for park facilities is extremely high.

Planned Use of Adjacent Lands

Out of Florida's 67 counties, Miami-Dade ranks first and fourth in total population and population density, respectively (BEBR 2010). More than 2.5 million people lived in the county in 2009, accounting for nearly 14% of the statewide population (U.S. Census Bureau 2010). Census information indicates that between 2000 and 2009, the population of Miami-Dade grew by approximately 11% (U.S. Census Bureau 2010). This rate is slower than the statewide average of 16% during the same period, but congruent with medium to high population projection estimates (BEBR 2010). If the county continues to grow at the current rate, the population will exceed three million by the year 2030 (BEBR 2010).

The areas immediately adjacent to the north and south boundary of the park are designated Low Density Residential (LDR) on the future land use map, allowing a maximum of six dwelling units per acre. Lots to the west of the park are designated for Business and Office to accommodate a full range of sales and service activities along Main Highway.

Miami 21 Zoning is a form-based code, employing transect zones to determine appropriate uses. The Barnacle is bounded to the east by Biscayne Bay. Adjacent lots north and south of the property are within a suburban transect

allowing single-family and two-family residential units (T3-R). The western lot is an urban center transect zone consisting of higher density mixed use buildings (T5). The lot to the southwest of the park boundary is zoned for Civic (C) uses and is currently the site of the Coconut Grove Playhouse.

Florida Greenways and Trails System (FGTS)

The Florida Greenways and Trails System (FGTS) is made up of existing, planned and conceptual non-motorized trails and ecological greenways that form a connected, integrated statewide network. The FGTS serves as a green infrastructure plan for Florida, tying together the greenways and trails plans and planning activities of communities, agencies and non-profit organizations throughout Florida. Trails include paddling, hiking, biking, multi-use and equestrian trails. The Office of Greenways and Trails maintains a priority trails map and gap analysis for the FGTS to focus attention and resources on closing key gaps in the system.

In some cases, existing or planned priority trails run through or are adjacent to state parks, or they may be in close proximity and can be connected by a spur trail. State parks can often serve as trailheads, points-of-interest, and offer amenities such as camping, showers and laundry, providing valuable services for trail users while increasing state park visitation. The Barnacle Historic State Park is a designated component of the Florida Greenways and Trails System.

Property Analysis

Effective planning requires a thorough understanding of the unit's natural and cultural resources. This section describes the resource characteristics and existing uses of the property. The unit's recreation resource elements are examined to identify the opportunities and constraints they present for recreational development. Past and present uses are assessed for their effects on the property, compatibility with the site, and relation to the unit's classification.

Recreation Resource Elements

This section assesses the unit’s recreation resource elements, those physical qualities that, either singly or in certain combinations, supports the various resource-based recreation activities. Breaking down the property into such elements provides a means for measuring the property's capability to support potential recreation activities. This process also analyzes the existing spatial factors that either favor or limit the provision of each activity.

Land Area

The Barnacle Historic State Park is 9.43 acres in size and located in the village of Coconut Grove, off Main Highway, and fronts Biscayne Bay. The northern part of the park contains one of the last remnants of the Rockland hammock natural community, a rare tropical hardwood forest located on upland sites that once was very prevalent in south Florida. The southern part of the park

contains a number of historic structures from the time that Ralph Munroe owned and lived on the property. The entire park is designated as a protection zone and there is limited potential for further recreation development.

Shoreline

The park is located directly on Biscayne Bay and has approximately 200 feet of shoreline that supports a small area of mangrove swamp. The Barnacle also includes about 1,000 feet of submerged land out into the bay that supports marine composite substrate and marine seagrass beds. Opportunities for access to the park via the bay will be explored for personal watercraft. Coordinating with regional blueways to incorporate the park into trail signage and informational materials will improve shoreline access for park visitors.

Natural Scenery

Because of the park's location on Biscayne Bay and the remaining Rockland hammock, the park offers views of unique vegetation and tropical plants as well as sweeping views from the house down to Biscayne Bay. The park offers several areas to relax and enjoy the view of Biscayne Bay, much as it was in the 1890s when the house was built.

Archaeological and Historical Features

The park contains archaeological sites as well as historic structures. The park is focused on The Barnacle and structures associated with the Munroe family, and Commodore Munroe's boat building. Exhibits also interpret life in south Florida from the 1890s to the early 1930s when Ralph Munroe built the house and lived there. There are issues with the house and associated structures that need to be addressed and repaired in order to maintain the interpretive heart of the park.

The house contains exhibits that depict the life of the Munroe family, items belonging to the family, and the history of early Miami/Coconut Grove and south Florida. The exhibits need to be refurbished and a plan should be developed to rotate the collections for exhibition.

A prehistoric site (DA 00010) is located to the southeast of the park. Recent updates to the FMSF indicate that the site may be potentially eligible for the National Register, which should be pursued.

Assessment of Use

All legal boundaries, significant natural features, structures, facilities, roads and trails existing in the unit are delineated on the base map (see Base Map). Specific uses made of the unit are briefly described in the following sections.

Past Uses

The park site and surroundings on Biscayne Bay has been inhabited for thousands of years. The park property was purchased around 1886 by Mr.

Munroe from Edmund “Alligator” Beasely who had settled in the area in the mid-nineteenth century following the Civil War. The park portion of the property remained the Munroe family home until it was sold to the state in 1973. It is one of the oldest remaining original homes in Miami-Dade County.

Future Land Use and Zoning

The DRP works with local governments to establish designations that provide both consistency between comprehensive plans and zoning codes and permit typical state park uses and facilities necessary for the provision of resource-based recreation.

The current future land use is Low Density Residential (LDR) with a Neighborhood Conservation District overlay (NCD-3). The purpose of the Coconut Grove Neighborhood Conservation District is to protect the historic single-family neighborhood character from commercial intrusion or incompatible infill. The park’s current zoning designation is in the natural transect zone (T1). The overlay regulations place stricter development guidelines upon the existing transect regulations included with the district boundaries.

The property and adjacent lots are also within a high probability archaeological zone and environmental preservation district. The archaeological zone requires approval from the Historic and Environmental Preservation Board before any ground disturbances occur. A certification to dig is required for events like tree removal, new landscaping, or construction. The environmental preservation district protects existing tree canopy, number of trees on site, and manmade geological features. A certification of approval is required prior to action to ensure valuable features are not disturbed. There are no expected conflicts between future land use or zoning designations and typical state park land uses.

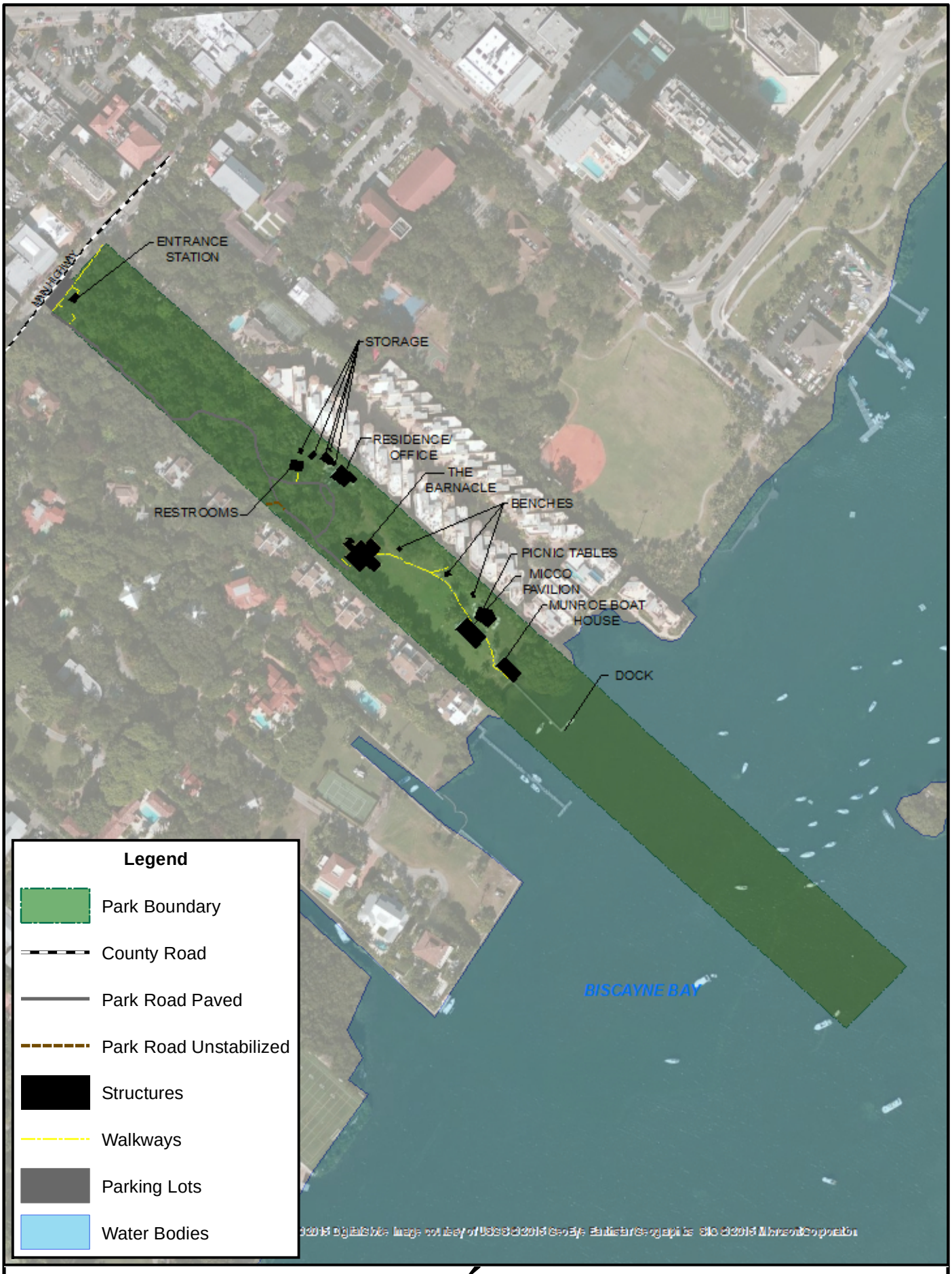
Current Recreational Use and Visitor Programs

Historic interpretation is the primary recreational use at The Barnacle Historic State Park. Visiting and touring The Barnacle and associated structures are the primary activities at the park. Passive recreational uses such as picnicking, concerts, and educational activities are also permitted in the park. The park educates visitors about the history of The Barnacle, Munroe family, and life in south Florida when Ralph Munroe lived at The Barnacle from 1887 to 1933.

The Barnacle Historic State Park recorded 103,396 visitors in FY 2013/2014. By DRP estimates, FY 2013/2014 visitors contributed $7,909,400 in direct economic impact, the equivalent of adding 111 jobs to the local economy (FDEP 2014).

Other Uses

There are no other uses in the park other than historic interpretation and passive recreation.



THE BARNACLE HISTORIC STATE PARK

0 125 250 500 Feet

Florida Department of Environmental Protection
Division of Recreation and Parks
Date of aerial; 2011

BASE MAP

Protected Zones

A protected zone is an area of high sensitivity or outstanding character from which most types of development are excluded as a protective measure. Generally, facilities requiring extensive land alteration or resulting in intensive resource use, such as parking lots, camping areas, shops or maintenance areas, are not permitted in protected zones. Facilities with minimal resource impacts, such as trails, interpretive signs and boardwalks are generally allowed. All decisions involving the use of protected zones are made on a case-by-case basis after careful site planning and analysis.

At The Barnacle Historic State Park, all natural communities, archaeological sites, and developed areas are within the protected zone. This zone encompasses the entire park.

Existing Facilities

Recreation Facilities

The existing recreation facilities at The Barnacle Historic State Park include The Barnacle, boathouse, carriage house/garage, marine railway, large pavilion and other resources located in the park (see Base Map).

The Barnacle
Boathouse
Garage/apartment
Marine railway
Boat dock
Micco pavilion
Stone well
Interpretive kiosk
Interpretive signs (12)

Support Facilities

The existing support facilities at the park consist of a group of storage buildings near the garage/apartment which serves as a residence and office, restrooms, an entrance station, an honor box, and several park benches and picnic tables. The park has an ADA compliant paved trail that leads visitors from the entrance through the rock hammock natural community to the park office and The Barnacle. As a small, urban park, parking areas for park visitors are not provided. Parking is provided through on-street parking on the surrounding street grid and at public parking facilities in the neighborhood. Parking for special events could be coordinated with community associations or municipal entities in the future.

Storage buildings (4)
Residence/park office
Restrooms
Entrance Station
Honor box
Benches (10)
Picnic tables (6)
Paved multi-use path

Conceptual Land Use Plan

The following narrative represents the current conceptual land use proposal for this park. The conceptual land use plan is the long-term, optimal development plan for the park, based on current conditions and knowledge of the park's resources, landscape

and social setting (see Conceptual Land Use Plan). The conceptual land use plan is modified or amended, as new information becomes available regarding the park's natural and cultural resources or trends in recreational uses, in order to adapt to changing conditions. Additionally, the acquisition of new parkland may provide opportunities for alternative or expanded land uses. The DRP develops a detailed development plan for the park and a site plan for specific facilities based on this conceptual land use plan, as funding becomes available.

During the development of the conceptual land use plan, the DRP assessed the potential impact of proposed uses or development on the park resources and applied that analysis to determine the future physical plan of the park as well as the scale and character of proposed development. Potential resource impacts are also identified and assessed as part of the site planning process once funding is available for facility development. At that stage, design elements (such as existing topography and vegetation, sewage disposal and stormwater management) and design constraints (such as imperiled species or cultural site locations) are investigated in greater detail. Municipal sewer connections, advanced wastewater treatment or best available technology systems are applied for on-site sewage disposal. Creation of impervious surfaces is minimized to the greatest extent feasible in order to limit the need for stormwater management systems, and all facilities are designed and constructed using best management practices to limit and avoid resource impacts. Federal, state and local permit and regulatory requirements are addressed during facility development. This includes the design of all new park facilities consistent with the universal access requirements of the Americans with Disabilities Act (ADA). After new facilities are constructed, park staff monitors conditions to ensure that impacts remain within acceptable levels.

Potential Uses

Public Access and Recreational Opportunities

Goal: Provide public access and recreational opportunities in the park.

The existing recreational activities and programs of this state park are appropriate to the natural and cultural resources contained in the park and should be continued. New and improved activities and programs are also recommended and discussed below.

Objective A: Maintain the park's current recreational carrying capacity of 120 users per day.

Historic interpretation is the primary recreational use at The Barnacle Historic State Park. Picnicking, concerts, and educational activities are also popular passive recreational uses at the park.

Objective B: Expand the park's recreational carrying capacity by 10 users per day.

The plan recommends developing an interpretive sign plan for the park to better inform visitors walking around about the history of the park. Capacity is

THE BARNACLE HISTORIC STATE PARK

N

0 85 170 340 Feet

Florida Department of Environmental Protection
Division of Recreation and Parks
Date of aerial; 2011

CONCEPTUAL LAND USE PLAN

mainly anticipated to increase as a result of new interpretive and educational programming that will draw visitors to the park.

Objective C: Continue to provide the current repertoire of one interpretive, and four educational and recreational programs on a regular basis.

The park currently offers guided of The Barnacle and self-guided tours of the grounds six days a week. It also offers a number of special events and educational events during the year that include concerts, a boat regatta, movies, Earth Day, a celebration of Ralph Munroe's birthday, and a Fourth of July celebration.

Objective D: Develop 2 new interpretive, educational, and recreational program.

Develop an interpretive signage plan and place additional information panels throughout the park. Better interpretive signage is needed on the park grounds, especially for visitors who do not wish to take the guided tour. Existing signage needs to be replaced with signs that are better designed to resist the effects of the bay weather and salt water. In addition, signage providing information about the Biscayne Bay Aquatic Preserve should be located that will share information about the preserve with park visitors.

The Barnacle Society (CSO) has undertaken a new program to teach Miami-Dade County students the traditional style of boat building as was done by Ralph Munroe when he lived at The Barnacle. The students learn the traditional art and skills associated with boat building and afterwards, the boats are sold. The money from the sale of the boats finances the next boat and continuation of the program. Park staff will assist the CSO in determining a suitable location to construct a 26' X 18' boat shed to house and display the boats they are working on. This shed should not interfere with the view-shed from the house to the bay or otherwise negatively impact the historic nature of the park. The CSO will finance, staff, and manage the program.

Proposed Facilities

Capital Facilities and Infrastructure

Goal: Develop and maintain the capital facilities and infrastructure necessary to implement the recommendations of the management plan.

The existing facilities of this state park are appropriate to the natural and cultural resources contained in the park and should be maintained. New construction, as discussed further below, is recommended to improve the quality and safety of the recreational opportunities that visitors enjoy while in the park, to improve the protection of park resources, and to streamline the efficiency of park operations. The following is a summary of improved renovated and new facilities needed to implement the conceptual land use plan for The Barnacle Historic State Park.

Objective A: Maintain all public and support facilities in the park.

All capital facilities, trails and roads within the park will be kept in proper condition through the daily or regular work of park staff and/or contracted help.

Objective B: Improve or repair 2 existing facilities in the park.

Because of the age and location of the park there are constantly items associated with the structures in the park that need repair or improvement.

The dock that was damaged in previous weather events is currently not safe for use and repair or replacement is recommended. The dock should remain the same size and in the same location and is not intended for public use, but for occasional use for park special events and as an interpretive asset.

The Micco pavilion is generally in good condition but will need the roof replaced and an upgrade to the electrical wiring. This pavilion is used extensively and could better accommodate requests for use if the electrical system was upgraded.

Objective C: Construct 3 new facilities.

The park is in need of a two-bay shop, office space, and storage facilities to replace the old collection of structures currently located in a fenced compound adjoining the garage apartment. A preliminary sketch plan of the needed facilities has been developed. This new facility would supply the climate controlled storage space required for the park's collections as well as office space for staff and a two bay maintenance shop. This would open the lower area in the garage apartment for other uses.

The existing entrance pavilion area could be repurposed into a small office for fee collection, the sale of house tour tickets, and a gift shop. This would allow other interpretive uses of the space in the garage/apartment, allow for collection of the fee to enter the park, and provide a greater visual presence to the park from the street. This would need to be done without impacting any of the existing Rockland hammock natural community at the park entrance. The building should be designed to fit within the existing area and comply with all required guidelines.

Construct a 26' X 18' boat shed to house and display the boats that are being worked on through the traditional boat building project run by The Barnacle Society CSO. This shed should not interfere with the viewshed from the house to the bay or otherwise negatively impact the historic nature of the park.

Facilities Development

Preliminary cost estimates for these recommended facilities and improvements are provided in the Ten-Year Implementation Schedule and Cost Estimates (Table 6) located in the Implementation Component of this plan. These cost estimates are based on the most cost-effective construction standards available

at this time. The preliminary estimates are provided to assist the division in budgeting future park improvements, and may be revised as more information is collected through the planning and design processes. New facilities and improvements to existing facilities recommended by the plan include:

Historic Structures
Repair The Barnacle
Update exhibits
Repair and paint the boathouse

Park Entrance
Small office/gift shop

Historic Grounds
Small boat shed
New roof and electrical upgrade to Micco pavilion
Interpretive signage
Replace/repair dock
Two-bay shop with office/storage

Recreational Carrying Capacity

Carrying capacity is an estimate of the number of users a recreation resource or facility can accommodate and still provide a high quality recreational experience and preserve the natural values of the site. The carrying capacity of a unit is determined by identifying the land and water requirements for each recreation activity at the unit, and then applying these requirements to the unit's land and water base. Next, guidelines are applied which estimate the physical capacity of the unit's natural communities to withstand recreational uses without significant degradation. This analysis identifies a range within which the carrying capacity most appropriate to the specific activity, the activity site and the unit's classification is selected (see Table 5).

The recreational carrying capacity for this park is a preliminary estimate of the number of users the unit could accommodate after the current conceptual development program has been implemented. When developed, the proposed new facilities would approximately increase the unit's carrying capacity as shown in Table 5 on the next page.

Table 5. Recreational Carrying Capacity

	Existing Capacity*		Proposed Additional Capacity		Estimated Recreational Capacity	
Activity/Facility	**One Time**	**Daily**	**One Time**	**Daily**	**One Time**	**Daily**
The Barnacle Tours	10	40			10	40
Historic Grounds	20	120			20	120
Picnicking	16	32			16	32
Boathouse			10	10	10	10
TOTAL	**46**	**192**	**10**	**10**	**56**	**202**

*Existing capacity revised from approved plan according to DRP guidelines. No carrying capacity is established for special events, therefore estimated capacity may be exceeded on occasion.

Optimum Boundary

The optimum boundary map reflects lands considered desirable for direct management by the DRP as part of the state park. These parcels may include public or privately owned land that would improve the continuity of existing parklands, provide the most efficient boundary configuration, improve access to the park, provide additional natural and cultural resource protection or allow for future expansion of recreational activities. Parklands that are potentially surplus to the management needs of DRP are also identified. As additional needs are identified through park use, development, and research, and as land use changes on adjacent property, modification of the park's optimum boundary may be necessary.

At this time, no additional property is needed to support the resources or operations of the park. There are no lands considered surplus.

IMPLEMENTATION COMPONENT

The resource management and land use components of this management plan provide a thorough inventory of the park's natural, cultural and recreational resources. They outline the park's management needs and problems, and recommend both short and long-term objectives and actions to meet those needs. The implementation component addresses the administrative goal for the park and reports on the Division of Recreation and Parks (DRP) progress toward achieving resource management, operational and capital improvement goals and objectives since approval of the previous management plan for this park. This component also compiles the management goals, objectives and actions expressed in the separate parts of this management plan for easy review. Estimated costs for the ten-year period of this plan are provided for each action and objective, and the costs are summarized under standard categories of land management activities.

MANAGEMENT PROGRESS

Since the approval of the last management plan for The Barnacle Historic State Park in 2003, significant work has been accomplished and progress made towards meeting the DRP's management objectives for the park. These accomplishments fall within three of the five general categories that encompass the mission of the park and the DRP.

Park Administration and Operations

- The park continues to actively work with organizations and members of the public that wish to volunteer their time. The park consistently hosts *National Public Lands Day* and *Make a Difference Day* volunteer work days.
- The Park has a very active and successful Citizen Support Organization (CSO), The Barnacle Society, Inc. and maintains an ongoing relationship with the Munroe Family.
- Park staff is actively involved in outreach for volunteer recruitment with local schools, colleges, and universities, as well as civic clubs and organizations.

Resource Management

Natural Resources

- Park staff has worked to maintain the natural resources in the park through protection, enhancement, and public education.
- Staff has worked to protect the small remnant natural Rockland hammock community by removing invasive exotic plants and monitoring for other invasive pest, such as the giant African snail.
- The park staff has worked to remove invasive exotic species from the historic landscape around The Barnacle and the grounds.

Cultural Resources

- The park staff has worked to protect and maintain the Glades II-III midden (DA-00010) archaeological site in the park.

- Staff has worked to protect and maintain the historic structures listed in the FMSF, which include The Barnacle (Munroe House), garage/apartment, boathouse, and the marine railway.
- Staff has worked to maintain and catalogue the extensive collections in the park totaling over 6,000 artifacts.
- Numerous items have been fixed or repaired in The Barnacle ranging from the roof, gutters, living room ceiling, decking on the second floor, the breezeway, floors, beams, kitchen chimney, and many other items.
- Armor Screen has been placed on all three historic buildings at the park, providing greater hurricane protection.
  Boathouse and marine railway were restored after 2005 hurricane season.
- The Barnacle Society (CSO) assisted staff in creating climate controlled artifact and archival storage space.
- An interpretive kitchen garden was established near The Barnacle's kitchen.
- Items not deemed appropriate for The Barnacle were transferred to the Division of Recreation and Parks Central Collections and Archives Facility in Tallahassee, Florida.
- The historic structures are now monitored electronically for security and fire.

Recreation and Visitor Services

- Many new programs and events have been implemented by both park staff and the CSO. The park has implemented *Yoga by the Sea*; *Owloween*; *Earth Day Celebration, Hot Chili Cool Cars*, *Shakespeare in the Park* and *Old Time Dances,* and the *Barnacle, Books, Birds, and Boats* literacy event.
- The CSO has implemented a number of events at the park which include *Starlight Movie Classics, Up Past Bedtime* kids' movie series, *Hitchcock Film Festival, Woofstock*, and *Cars & Cigars Father's Day* event.
- Standard programs and events were revamped and expanded, including: *The Barnacle under Moonlight Concerts, Washington's Birthday Regatta, Commodore's Birthday Party*, and *Old-Fashioned Fourth of July Picnic.*
- The park offers extended hours on Thursdays from 9 a.m. to 7 p.m. and the popular Micco pavilion is now available for daytime rental.
- The restrooms have been renovated to make them ADA-compliant.
- The CSO assisted the park staff with the expansion of the gift shop.
- The park is building partnerships with community organizations to offer expanded programming and events.

Park Facilities

- A new security gate and new fencing has been installed at park entrance.
- The concrete pathway into the park has been repaired, with some areas replaced with water-permeable pavers. ADA-compliant handrails were installed at the park's entrance ramp.
- A sidewalk connecting the park pathway to restroom porch was installed and restroom roof was replaced.
- The roof and flooring have been replaced on the Micco pavilion.

- A number of items have been repaired or replaced on the garage/apartment. They include the ceilings, insulation, plumbing, security doors for the residence, and historic window repair.
- Water and sewer pipes within the park have been replaced.
- Pathway lights were replaced after the 2005 hurricane season.

MANAGEMENT PLAN IMPLEMENTATION

This management plan is written for a timeframe of ten years, as required by Section 253.034 Florida Statutes. The Ten-Year Implementation Schedule and Cost Estimates (Table 6) summarizes the management goals, objectives and actions that are recommended for implementation over this period, and beyond. Measures are identified for assessing progress toward completing each objective and action. A time frame for completing each objective and action is provided. Preliminary cost estimates for each action are provided and the estimated total costs to complete each objective are computed. Finally, all costs are consolidated under the following five standard land management categories: Resource Management, Administration and Support, Capital Improvements, Recreation Visitor Services and Law Enforcement.

Many of the actions identified in the plan can be implemented using existing staff and funding. However, a number of continuing activities and new activities with measurable quantity targets and projected completion dates are identified that cannot be completed during the life of this plan unless additional resources for these purposes are provided. The plan's recommended actions, time frames and cost estimates will guide the DRP's planning and budgeting activities over the period of this plan. It must be noted that these recommendations are based on the information that exists at the time the plan was prepared. A high degree of adaptability and flexibility must be built into this process to ensure that the DRP can adjust to changes in the availability of funds, improved understanding of the park's natural and cultural resources, and changes in statewide land management issues, priorities and policies.

Statewide priorities for all aspects of land management are evaluated each year as part of the process for developing the DRP's annual legislative budget requests. When preparing these annual requests, the DRP considers the needs and priorities of the entire state park system and the projected availability of funding from all sources during the upcoming fiscal year. In addition to annual legislative appropriations, the DRP pursues supplemental sources of funds and staff resources wherever possible, including grants, volunteers and partnerships with other entities. The DRP's ability to accomplish the specific actions identified in the plan will be determined largely by the availability of funds and staff for these purposes, which may vary from year to year. Consequently, the target schedules and estimated costs identified in Table 6 may need to be adjusted during the ten-year management planning cycle.

Table 6
The Barnacle Historic State Park
Ten-Year Implementation Schedule and Cost Estimates

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.

Goal I: Provide administrative support for all park functions.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10 years)**
Objective A	**Continue day-to-day administrative support at current levels.**	**Administrative support ongoing**	**C**	**$18,000**
Objective B	**Expand administrative support as new lands are aquired, new facilities are developed,or as other needs arise**	**Administrative support expanded**	**C**	**$1,000**
Goal II: Protect water quality and quantity in the park, restore hydrology to the extent feasible, and maintain the restored condition.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10 years)**
There are no hydrological restoration needs for this park.				
Goal III: Restore and maintain the natural communities/habitats of the park.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10 years)**
There are no natural community/habait restoration needs for this park.				
Goal IV: Maintain, improve or restore imperiled species populations and habitats in the park.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10 years)**
Objective A	**Update baseline imperiled species occurrence inventory lists for plants and animals in the park.**	**Update List**	**ST**	**$8,700**
Action 1	Develop a monitoring protocal to identify and update the imperiled species list.	List updated	ST	**$1,500**
Action 2	Continue to monitor the Florida Atala butterfly, while developing a more extensive survey protocol to determine if more imperiled butterfly species can be found in the park.	Protocal developed and species monitored	ST	**$7,200**
Goal V: Remove exotic and invasive plants and animals from the park and conduct needed maintenance-control.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10 years)**
Objective A	**Annually treat 0.5 acres of exotic plant species in the park.**	**# Acres treated**	**LT**	**$40,000**
Objective B	**Monitor for the possible introduction of the giant African land snail (*Achatina fulica*).**	**# Species for which control measures implemented**	**C**	**$15,000**

* 2015 Dollars
ST = actions within 2 years
LT = actions within 10 years
C = long term or short term actions that are continuous or cyclical
UFN = currently unfunded need

Table 6
The Barnacle Historic State Park
Ten-Year Implementation Schedule and Cost Estimates

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.

Goal VI: Protect, preserve and maintain the cultural resources of the park.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10 years)**
Objective A	**Assess and evaluate three of five recorded cultural resources in the park.**	**Documentation complete**	**LT**	**$70,000**
Action 1	Update the priority presevation treatments in the 2003 historic structures plan for the three major structures in the report	**Update complete**	**UFN**	$8,000
Action 2	Develop and implement a monitoring plan for the three major structures in the park.	**Plan developed and implemented**	**C**	$62,000
Objective B	**Compile reliable documentation for all recorded historic and archaeological sites.**	**Documentation complete**	**LT**	**$934,500**
Action 1	Ensure all known sites are recorded or updated in the Florida Master Site File. No additional assesment of archa	**# Sites recorded or upda**	**C**	$62,000
Action 2	Pursue a National Register historic district listing for The Barnacle property to include the house, garage/ apartment, boathouse, and marine railway.	**Applications submitted**	**UFN**	$10,000
Action 3	Retain a curator or museum registrar to oversee the completion of the cataloging of the park's collections, and entering them into PastPerfect.	**Curator hired**	**UFN**	$850,000
Action 4	Develop and adopt a formal scope of collections for the park and a written standardized monitoring plan for the park's collections.	**SOC developed and in place**	**C**	$2,500
Action 5	Conduct additional research into the nautical history of the Munroe designed yachts.	**research complete**	**UFN**	$5,000
Action 6	Conduct oral history interviews of the surviving Ralph Munroe relatives	**# of interviews completed**	**UFN**	$5,000
Objective C	**Bring 2 of 5 recorded cultural resources into good condition**	**# sites in good condition**	**LT**	**$336,600**
Action 1	Complete repairs needed on the boathouse.	Repairs completed/metal objects preserved	UFN	$42,000
Action 2	Complete preservation work on the metal objects stored in the boathouse.	Repairs completed/metal objects preserved	UFN	$20,000
Action 3	Develop and implement a plan to address the needed repairs to the Barnacle.	Repairs compllteted	UFN	$62,000
Action 4	Install a fire suppression system in The Barnacle in order to protect the structure from fire.	Fire Protection Installed	ST	$107,600
Action 5	Develop and implement a plan to refresh the content of the exhibits in The Barnacle. The plan should address i	Plan developed and implemented	C	$105,000

* 2015 Dollars
ST = actions within 2 years
LT = actions within 10 years
C = long term or short term actions that are continuous or cyclical
UFN = currently unfunded need

Table 6
The Barnacle Historic State Park
Ten-Year Implementation Schedule and Cost Estimates

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.

Goal VII: Provide public access and recreational opportunities in the park.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10-years)**
Objective A	**Maintain the park's current recreational carrying capacity of 192 users per day**	**#Recreation/visitors**	**C**	**$615,000**
Objective B	**Expand the park's recreational carrying capacity by 10 users per day.**	**#Recreation/visitors**	**C**	**$32,000**
Objective C	**Continue to provide the current repertoire of 1 interpretive, educational and recreational programs on a regular basis.**	**#Interpretive/educational programs**	**C**	**$355,680**
Objective D	**Develop 2 new interpretive, educational and recreational programs.**	**#Interpretive/educational programs**	**ST**	**$34,500**
Goal VIII: Develop and maintain the capital facilities and infrastructure necessary to meet the goals and objectives of this management plan.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10-years)**
Objective A	**Maintain all public and support facilities in the park.**	**Facilities Maintained**	**C**	**$440,000**
Objective B	**Continue to implement the park's transition plan to ensure facilities are accessible in accordance w**	**Plan Implemented**	**C**	**$155,000**
Objective C	**Improve and/or repair two existing facilities, as identified in the Land Use Component.**	**Facilities improved or repaired**	**LT**	**$310,000**
Objective D	**Construct three new facilities as identified in the Land Use Component.**	**# of facilities complted**	**LT**	**$1,250,000**
Objective E	**Expand maintenance activities as existing facilities are improved and new facilities are developed.**	**Facilities Maintained**	**C**	**$25,000**

Summary of Estimated Costs

Management Categories		**Total Estimated Manpower and Expense Cost* (10-years)**
Resource Management		**$1,405,000**
Administration and Support		**$19,000**
Capital Improvements		**$1,585,000**
Recreation Visitor Services		**$647,000**
Law Enforcement Activities[1]	1Note: Law enforcement activities in Florida State Parks are conducted by local Miami Police Department and other local law enforcement agencies.	

* 2015 Dollars
ST = actions within 2 years
LT = actions within 10 years
C = long term or short term actions that are continuous or cyclical
UFN = currently unfunded need

Addendum 1—Acquisition History

Purpose of Acquisition:

The Board of Trustees of the Internal Improvement Trust Fund of the State of Florida (Trustees) purchased this house, now known as The Barnacle Historic State Park, to commemorate Commodore Ralph Middleton Munroe, who lived in there from the time of its construction in 1891 until his death in 1933. The Commodore was not only one of the earliest pioneers of Coconut Grove, but he also helped to found the community of Coconut Grove and spent the rest of his life watching over and contributing to its growth and development by establishing a library, post office, churches, and schools in the community.

Sequence of Acquisition:

The Trustees purchased The Barnacle, a 5.25-acre property, from the family of Ralph Middleton Munroe on June 8, 1973. The purchase was funded under the Land Acquisition Trust Fund (LATF) program. On April 7, 1981, the State of Florida Department of Natural Resources, predecessor in interest to the State of Florida Department of Environmental Protection, Division of Recreation and Parks (DRP), entered into Management Agreement No. 745-0002 with the Trustees to manage 4.18-acres of submerged land located adjacent to The Barnacle Historic State Park as part of the park. The DRP was to manage this new property specifically for public safety and protection and as a water recreation area. Presently the park comprises approximately 9.43 acres.

Title Interest:

The Trustees hold fee simple title to The Barnacle Historic State Park.

Lease Agreement:

On September 21, 1973, the Trustees leased The Barnacle Historic State Park to DRP under Lease No. 2690. This lease is for a period of ninety-nine (99) years, which will expire on September 20, 2072.

According to the Trustees lease No. 2690, DRP manages The Barnacle Historic State Park for the purpose of preserving, developing, improving, operating, and maintaining and otherwise managing said lands for public outdoor recreational, park, conservation and related purposes.

Special Conditions on Use:

The Barnacle Historic State Park is designated as a single-use property to provide resource-based public outdoor recreation, other related uses and for public safety and protection and as a water recreation area.

Outstanding Reservations:

There are no known outstanding rights, reservations, or encumbrances that apply to The Barnacle Historic State Park.

Addendum 2—Advisory Group Members and Report

Elected Officials
The Honorable Tomás Regalado, Mayor
City of Miami

Agency Representatives
Katrina Boler, Park Manager
The Barnacle Historic State Park

S. Cooper McMillan, Chairman
South Dade Soil and Water Conservation District

Mike Wisenbaker, Supervisor
Division of Historical Resources

Eric Buck, Manager
Biscayne Bay Aquatic Preserve

Tourism / Economic Development Representatives
Bruno Barreiro, Chairperson
Tourist Development Council

Howard Kane, Executive Director
Coconut Grove Chamber of Commerce

Environmental Representatives
Joe Barros, President
Tropical Audubon Society

Bruce Matheson, Director
Friends of Biscayne Bay

Recreational Representatives
Sean Reichart, President
Coconut Grove Garden Club

John Palenchar, President
Traditional Small Craft Association

Cultural Resource Representative
Eilleen Ellman, President
The Villagers

Local Private Property Owner
Bill Munroe, Local Property Owner
The Barnacle Historic State Park

Citizen Support Organization
Alyn Pruett, President
The Barnacle Society, Inc.

The Advisory Group meeting to review the proposed unit management plan (UMP) for The Barnacle Historic State Park was held in the city of Miami in City Hall on Friday, July 8th, 2016 at 9:00 AM.

Pat Santangelo represented the office of Mayor Tomás Regalado and Gary Milano represented Joe Barros with the Tropical Audubon Society. Julia Duggins submitted comments on behalf of Mike Wisenbaker from the Division of Historical Resources. Mr. S. Cooper McMillan, Mr. Bill Munroe, Mr. Bruce Matheson, and Mr. Bruno Barreiro were not in attendance. All other appointed Advisory Group members were present.

Attending Division of Recreation and Parks (DRP) staff members were Brian Miller, Katrina Boler, Don Bergeron, and Eric Pate.

Mr. Pate began the meeting by explaining the purpose of the Advisory Group and reviewing the meeting agenda. He provided a brief review of comments received the previous evening, shared comments received in writing from representatives of Advisory Group members, and gave an overview of the DRP's planning process. Mr. Pate then asked each member of the Advisory Group to express his or her comments on the draft plan. After all comments were shared, Mr. Pate described the next steps for drafting the plan and the meeting was adjourned.

Summary of Advisory Group Comments

Gary Milano (Representing Joe Barros of the Tropical Audubon Society) In response to the comments received from the public hearing the night before, Mr. Milano stated that it would be difficult to remove or trim the existing mangroves along the shoreline due to existing protections. He suggested that the park should organize a meeting with regulators to discuss mangrove trimming and improvements to the dock. Mr. Milano suggested that the state could consider raising the boathouse and other facilities and that improvements to the entrance area will be an important component to the plan update. He also recommended that the state conduct a topographic survey of the property to aide in sea level rise discussions. Mr. Milano also submitted written comments summarizing his comments made during the meeting.

Howard Kane (Coconut Grove Chamber of Commerce) Mr. Kane explained that The Barnacle Historic State Park is an essential economic driver for Coconut Grove. He went on to state that entrance area improvements are critical to enhancing the relationship between the park and surrounding community. He suggested that a partnership between the park and tour bus companies can attract additional visitors by locating a bus stop at the park. Mr. Kane acknowledged the importance of staffing needs at the park and stressed that planning efforts should consider the impacts of sea level rise more than they have. He also stressed the need to adopt a multi-lingual approach to interpretation efforts at the park.

Eilleen Ellman (The Villagers) Ms. Ellman mentioned that a partnership with the Coconut Grove Chamber of Commerce could help improve the relationship between local businesses and the park. Ms. Ellman expressed concern that a lack of resources hinders efforts to preserve the park's cultural resources and that there was a need for additional park staff. She then expressed support for a redesign of the park entrance area. Ms. Ellman mentioned that a partnership with the University of Miami School of Architecture would be beneficial to both the state and university when redesigning the entrance area. She supported the idea to look into establishing a tour bus stop at the park entrance. Ms. Ellman expressed concern with the impacts of sea level rise on the park's archaeological resources and then inquired into the ability of the park to prioritize the improvements identified within the plan. She also stated that the park signage at the entrance was in need of updating and hoped that the ability to rent the Micco pavilion after hours would be restored.

Pat Santangelo (Representing the Office of Mayor Tomás Regalado) Mr. Santangelo stated that he did not have any comments and meant to observe the discussion amongst advisory group members.

Alyn Pruett (The Barnacle Society, Inc.) Mr. Pruett explained that there was a need for additional discussion of sea level rise and that planning for sea level rise was critical to the future of the park. Mr. Pruett asked that the plan include direction to measure sea level rise at the park. In reference to the staffing needs discussion, Mr. Pruett suggested that the park calculate the number of visitors to staff to help advocate for additional resources. He outlined the need to prioritize the protection of the parks cultural resources and restore the historic viewshed and agreed that a meeting with regulators will help the park understand what is needed to better manage the existing mangroves. Mr. Pruett explained the extent of inundation in the park during high tide events and endorsed efforts to develop a topographic study of the park. Mr. Pruett concurred with Ms. Eldridge that additional signage showcasing the aquatic preserve is important and should be pursued. He went on to state that personal watercraft should be allowed to access the park from Biscayne Bay and the plan should incorporate language that does not restrict access for paddlers. Mr. Pruett brought attention to his concern regarding the removal of derelict vessels from within the park boundary. Mr. Pruett suggested a formal review of the plan 5 years after the adoption of the plan update to allow for the ability to address park management issues every 5 years. In written comments he summarized some of the above comments and expressed concern over the development of carrying capacity formulas in addition to the makeup of the implementation component spreadsheet and outlined his suggestions for improvements. He also stated that additional project planning should be undertaken regarding improvements to the Micco pavilion and a more detailed approach to parking management be included in the plan.

John Palenchar (Ralph Middleton Munroe Chapter of the Traditional Small Craft Association) In regards to the existing mangrove stand on the shoreline, Mr. Palenchar stated that a significant amount of shoreline is now inaccessible due to mangrove encroachment. Mr. Palenchar suggested an approach to shoreline reclamation in which the mangroves are cut back in stages, first trimming the mangroves from around historic structures, and then moving forward with additional permitting. Mr. Palenchar highlighted the important role that the park's shoreline has played in the past as an accessible shoreline for Coconut Grove. In addition, Mr. Palenchar suggested that the state should work more closely with the county's sea level rise planning efforts. He then expressed concern over the impacts of termites in the historic boathouse. Mr. Palenchar suggested the possibility of pursuing off-site mangrove mitigation in other area parks managed by the DRP to aid efforts to trim the existing mangroves in the Barnacle Historic State Park. Mr. Palenchar brought up his concerns with the new concrete channel markers. He also went on to explain the need for reviewing the siting of the proposed interpretive facility. He also inquired into whether the number of additional shop bays proposed in the plan was adequate for the needs of the park. Mr. Palenchar also brought up the potential for a combined visitor center for the Barnacle and the Marjorie Stoneman Douglas house at the entrance area of The Barnacle.

Eric Buck (Biscayne Bay Aquatic Preserve) Mr. Buck expressed interest in improving public access between the park and the bay. He explained that additional information should be gathered through scientific studies on the potential impact of removing the mangroves on the surrounding natural communities. Laura Eldridge, also with the Biscayne Bay Aquatic Preserve, went on to suggest that increased communication between the aquatic preserve and the park is important in cases of damage caused to surrounding seagrass beds from boaters. In addition Ms. Eldridge mentioned that the aquatic preserve was interested in working with the park to use signage to help raise awareness of the aquatic preserve amongst park visitors, she went on to suggest additional marketing efforts to promote the park as a point of interest along Bicayne Bay paddling trails would help to attract personal watercraft users to the park. She also explained that protecting and promoting living shorelines is a priority for the aquatic preserve. Ms. Eldridge shared that internship opportunities have helped the aquatic preserve address staffing needs in the past and that the park could look into partnerships with area universities.

Katrina Boler (Park Manager at The Barnacle Historic State Park) Ms. Boler stated that locating a tour bus stop at the park entrance has been the subject of discussions in the past. She explained that the park has worked with marketing and hospitality students in the past with internship opportunities and will continue the effort. Ms. Boler acknowledged that the mangroves along the shoreline have helped during storm events and contribute to a desirable buffer between adjacent development and the park. Ms. Boler suggested the installation of a system of buoys along the park boundary to assist local and state law enforcement delineate

between jurisdictions and enforce applicable laws. Ms. Boler concurred with Mr. Palenchar on the idea of constructing a joint visitor center for both the Barnacle Historic State Park and the Marjorie Stoneman Douglas house located offsite. Ms. Boler also mentioned her support for acquiring the vacant building across Main Hwy from the park entrance to utilize as a visitor center.

Summary of Written Comments

Julia Duggins via email (Representing Mike Wisenbaker with the Division of Historical Resources(DHR)) Ms. Duggins stated that the DHR commends the park for preserving important aspects of the historic landscape, including the viewshed from the house to the water. She encouraged the park to manage the mangroves through trimming and continue to protect the historic viewshed. Ms. Duggins highlighted a discrepancy in the number of historic structures listed in the plan and the number of historic structures listed in the Florida Master Site File. She also offered the assistance of the Bureau of Archaeological Research to assist with the conservation of metal objects from the park and suggested that the park apply for a Historical Resources Grant to help with costs. Ms. Duggins also mentioned that the remainder of historical artifacts at the park, around 6,000 items, that have not been submitted to the Bureau of Archaeological Resources, be submitted in order to make them available to researchers. Ms. Duggins recommended that the DA10 site be upgraded from “fair” to “good.” She concluded the written comments advising that the DHR web links be updated in the plan.

Staff Recommendations

Suggestions received from the Advisory Group meeting resulted in the following modifications to the draft management plan:

- Language restricting public access at the shoreline will be replaced with language allowing the exploration of opportunities for personal watercraft from the bay.
- Language will be incorporated to address general parking management guidelines.
- Language related to the trimming of mangroves will highlight need for trimming to prevent impacts to cultural resources, maintain waterway access, and to help preserve the historic viewshed.
- Language will be added to the plan regarding the intent to maintain the existing footprint of the dock when replaced.
- Language will be added that specifies the need for interpretive signage that communicates information about the Biscayne Bay Aquatic Preserve to park visitors.
- The DRP will continue to follow an adaptive management approach to concerns regarding sea level rise and continue to observe and measure any

impacts to the park's shorelines, natural features, imperiled species populations, and cultural resources.

Additional revisions were made throughout the document to address editorial corrections, consistency of spelling and notations, and other minor corrections.

Notes on Composition of the Advisory Group

Florida Statutes Chapter 259.032 Paragraph 10(b) establishes a requirement that all state land management plans for properties greater than 160 acres will be reviewed by an Advisory Group:

"Individual management plans required by s. 253.034(5), for parcels over 160 acres, shall be developed with input from an Advisory Group. Members of this Advisory Group shall include, at a minimum, representatives of the lead land managing agency, co-managing entities, local private property owners, the appropriate soil and water conservation district, a local conservation organization, and a local elected official."

Advisory Groups that are composed in compliance with these requirements complete the review of State park management plans. Additional members may be appointed to the groups, such as a representative of the park's Citizen Support Organization (if one exists), representatives of the recreational activities that exist in or are planned for the park, or representatives of any agency with an ownership interest in the property. Special issues or conditions that require a broader representation for adequate review of the management plan may require the appointment of additional members. The Division's intent in making these appointments is to create a group that represents a balanced cross-section of the park's stakeholders. Decisions on appointments are made on a case-by-case basis by Division of Recreation and Parks staff.

Addendum 3—References Cited

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Addendum 4—Soil Descriptions

10. Udorthents, limestone substratum - Urban land complex – 55 percent of this map unit consists of Udorthents and similar soils in open areas and 35 percent consists of Urban land, or areas covered by concrete and buildings and 10 percent of minor components. The Udorthents and Urban land occur as areas so intermixed, or so small that mapping them is impractical. Slopes are 0 to 2 percent.

The Udorthents are in areas of lawns, vacant lots, parks and playgrounds. The Urban land consists of streets, driveways, sidewalks, parking lots, buildings and other structures in areas where the soil is covered and cannot be readily observed.

Typically, the Udothents consists of fill material that is light grey and white extremely stony loam about 55 inches thick. The fill material is underlain by hard, porous limestone bedrock. Included in this map unit are small areas of Krome and Cardsound soils and areas in which the fill material is less than 8 inches or more than 80 inches thick. Also included are areas where a few inches of marl is between the fill and the limestone and areas where 2 to 4 inches of marloverlies the stony fill. Included soils make up 10 percent or less of any one area. Cardsound or Krome soils are in positions on the landscape similar to those of the Udorthents. They are very shallow over the limestone bedrock.

The water table in areas of the Udorthents is within the limestone bedrock. Permeability is moderate in the stony fill material.

This map unit is not used as cropland. The Udorthents consist mostly of stony limestone fragments used as fill material in low areas. The fill material improves the suitability of the low areas for building site development or other urban uses. If lawns or other ornamental plants are to be established and maintained on the soils in the map unit, a layer of good topsoil about 6 inches thick is needed. Proper watering and regular applications of fertilizer also are needed. No capability classification is assigned.

Addendum 5—Plant and Animal List

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
PTERIDOPHYTES		
Pine fern	*Anemia adiantifolia*	
Narrow swordfern*	*Nephrolepis cordifolia*	
Monarch fern*	*Phymatosorus scolopendria*	
Resurrection fern	*Pleopeltis polypodioides var. michauxiana*	
Whisk fern	*Psilotum nudum*	
Brake fern*	*Pteris vittata*	
GYMNOSPERMS		
King sago palm*	*Cycas revolute*	
South Florida slash pine	*Pinus elliottii var. densa*	
Coontie	*Zamia integrifolia*	
ANGIOSPERMS		
Monocots		
Common asparagus fern*	*Asparagus setaceus*	
Bamboo*	*Bambusa vulgaris*	
Fishtail palm*	*Caryota mitis*	
Silver palm	*Coccothrinax argentata*	RH
Coconut palm*	*Cocos nucifera*	
Dayflower*	*Commelina diffusa var. diffusa*	
Umbrella sedge*	*Cyperus involucratus*	
Winged yam*	*Dioscorea alata*	
Air potato*	*Dioscorea bulbifera*	
Saltgrass	*Distichlis spicata*	
Cane palm*	*Dypsis lutescens*	
Goose grass*	*Eleusine indica*	
Butterfly orchid	*Encyclia tampensis*	
Pothos*	*Epipremnum pinnatum*	
Hurricane grass	*Fimbristylis cymosa*	
Shoal grass	*Halodule wrightii*	
Shortleaf spikesedge	*Kyllinga brevifolia*	
Wild bamboo	*Lasiacis divaricata*	
Burma reed*	*Neyraudia reynaudian*	
Ground orchid*	*Oeceoclades maculate*	
Common screwpine*	*Pandanus utilis*	
Salt joint grass	*Paspalum vaginatum*	
Senegal date palm*	*Phoenix reclinata*	
Royal palm	*Roystonea regia*	
Cabbage palm	*Sabal palmetto*	
Bowstring hemp*	*Sansevieria hyacinthoides*	
Tall nutgrass	*Scleria triglomerata*	
Saw palmetto	*Serenoa repens*	
Greenbrier	*Smilax havanensis*	
St. Augustine grass*	*Stentotaphrum secundatum*	

The Barnacle Historic State Park Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Arrowhead vine*	*Syngonium podophyllum*	
Turtle grass	*Thalassia testudinum*	
Florida thatch palm	*Thrinax radiate*	RH
Stiff-leaved wild pine	*Tillandsia fasciculate var. densispica*	RH
Ball moss.	*Tillandsia recurvata*	
Spanish moss	*Tillandsia usneoides*	
Giant wild pine	*Tillandsia utriculata*	RH
Oyster plant*	*Tradescantia spathacea*	
Inchplant*	*Tradescantia zebrine*	
Browntop millet*	*Urochloa ramose*	
Signal grass*	*Urochloa subquadripara*	
Washington palm*	*Washingtonia robusta*	
	Dicots	
Rosary pea*	*Abrus precatorius*	
Red sandalwood*	*Adenanthera pavonia*	
Woman's tongue*	*Albizia lebbeck*	
Candlenut*	*Aleurites moluccana*	
Alice-clover*	*Alysicarpus vaginalis*	
Common ragweed	*Ambrosia artemisiifolia*	
Shoe-button ardisia*	*Ardisia elliptica*	
Marlberry.	*Ardisia escallonioides*	
Ganges primrose*	*Asystasia gangetica*	
Black mangrove	*Avicennia germinanas*	
Salt bush	*Baccharis halimifolia*	
Water hyssop	*Bacopa monnieri*	
Crested Philippine violet*	*Barleria cristata*	
Spanish needle	*Bidens alba var. radiata*	
Samphire	*Blutaparon vermiculare*	
Red spiderling	*Boerhavia diffusa*	
Sea ox-eye daisy	*Borrichia aborescens*	
Sea oxeye	*Borrichia frutescens*	
Paper mulberry*	*Broussonetia papyrifera*	
Gumbo limbo	*Bursera simaruba*	
Gray nicker-bean	*Caesalipinia bonduc*	
Beautyberry	*Callicarpa americana*	
Sea daisy*	*Calyptocarpus vialis*	
Papaya*	*Carica papaya*	
Madagascar periwinkle*	*Catharanthus roseus*	
Sugarberry	*Celtis laevigata*	
Blodgett's spurge	*Chamaesyce blodgettii*	
Hairy spurge	*Chamaesyce hirta*	
Snowberry	*Chiococca alba*	
Pineland snowberry	*Chiococca parvifolia*	
Cocoplum	*Chrysobalanus icaco*	
Satinleaf	*Chrysophyllum oliviforme*	RH
Stickbush*	*Clerodendrum chinese*	

The Barnacle Historic State Park Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Pigeon plum	*Coccoloba diversifolia*	
Seagrape	*Coccoloba uvifera*	
Croton*	*Codiaeum variegatum*	
Lather leaf*	*Colubrina asiatica*	
Silver buttonwood	*Conocarpus erecta f. sericea*	
Royal poinciana*	*Delonix regia*	
Beggarweed.	*Desmodium incanum*	
Threeflower ticktrefoil*	*Desmodium triflorum*	
Ponyfoot	*Dichondra carolinensis*	
Philippine tea*	*Ehretia microphylla*	
Loquat*	*Eriobotrya japonica*	
Coral bean	*Erythrina herbacea*	
White stopper	*Eugenia axillaris*	
Redberry stopper	*Eugenis confuse*	RH
Spanish stopper	*Eugenia foetida*	
Surinam cherry*	*Eugenia uniflora*	
Inkwood	*Exothea paniculata*	
Strangler fig	*Ficus aurea*	
Shortleaf fig	*Ficus citrifolia*	
Governor's plum*	*Flacourtia indica*	
Milk-pea	*Galactia volubilis*	
Lignum vitae	*Guaiacum sanctum*	
Everglades velvetseed	*Guettarda elliptica*	
Firebush	*Hamelia patens*	
Scorpion tail	*Heliotropium angiospermun*	
Seaside heliotrope	*Heliotropium curassavicum*	
Day lily*	*Hemerocallis fulva*	
Redwing*	*Heteropterys brachiata*	
Hibiscus*	*Hibiscus rosa-sinensis*	
Marsh pennywort	*Hydrocotyle umbellate*	
Spider lily	*Hymenocallis latifolia*	
Wild indigo*	*Indigofera spicata*	
Indigo*	*Indigofera suffruticosa*	
Scarlet creeper	*Ipomoea hederifolia*	
Morning glory	*Ipomoea indica var. acuminate*	
Railroad vine	*Ipomoea pes-caprae ssp. Brasiliensis*	
Gold Coast jasmine*	*Jasminum dichotomum*	
Jasminum*	*Jasminum fluminense*	
Dwarf dandelion	*Krigia virginica*	
Black ironwood.	*Krugiodendron ferreum*	
White mangrove….	*Languncularia racemose*	
Lead tree*…	*Leucaena leucocephala*	
Mango*..	*Mangifera indica*	
Sapodilla*	*Manilkara zapota*	
Marsh elder..	*Melanthera nivea*	
Poisonwood.	*Metopium toxiferum*	
Wild balsam apple*	*Momordica charantia*	

The Barnacle Historic State Park Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Hunter's robe*	*Monstera deliciosa*	
Cheeseweed	*Morinda royoc*	
Orange jasmine*	*Murraya paniculata*	
Lancewood	*Ocotea coriacea*	
Lady's sorrel	*Oxalis corniculata*	
Pellitory	*Parietaria floridana*	
Virginia creeper	*Parthenocissus quinquefolia*	
Passionfruit*	*Passiflora edulis*	
Corky-stemmed passionflower	*Passiflora suberosa*	
Pepper-face	*Peperomia obtusifolia*	RH
Avocado*	*Persea americana*	
Redbay	*Persea borbonia var. borbonia*	
Creeping charlie	*Phyla nodiflora*	
Mascarene island leafflower*	*Phyllanthus tenellus*	
Ground cherries	*Physalis walteri*	
Pokeweed	*Phytolacca americana*	
Cockspur	*Pisonia aculeata*	
Blackbead	*Pithecellobium keyense*	RH
Cheesewood*	*Pittosporum pentandrum*	
Frangipani*	*Plumeria alba*	
Wild poinsettia	*Poinsettia cyathophora*	
Pongam*	*Pongamia pinnata*	
Purslane	*Portulaca oleracea*	
Guava*	*Psidium guajava*	
Wild coffee	*Psychotria nervosa*	
Live oak	*Quercus virginiana*	
White indigo-berry	*Randia aculeate*	
Red mangrove	*Rhizophora mangle*	
Snout bean	*Rhynchosia parvifolia*	CL
Rougeberry	*Rivina humilis*	
Rose*	*Rosa sp.*	
Umbrella tree*	*Schefflera actinophylla*	
Brazilian pepper*	*Schinus terebinthifolius*	
Gulf graytwig	*Schoepfia chrysophylloides*	
Sea purslane	*Sesuvium maritimum*	
Broomweed	*Sida acuta*	
Mastic	*Sideroxylon foetidissimum*	
Willow bustic	*Sideroxylon salicifolium*	
Paradise tree	*Simarouba glauca*	
Seaside goldenrod	*Solidago sempervirens*	
West Indian dropseed*	*Sporobolus indicus var. pyramidalis*	
Pencil flower	*Stylosanthes hamata*	
West Indian mahogany	*Swietenia mahagoni*	
Tropical almond*	*Terminalia catappa*	
Seaside mahoe*	*Thespesia populnea*	
Clock vine*	*Thunbergia fragrans*	
Poison ivy	*Toxicodendron radicans*	

The Barnacle Historic State Park Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Florida trema	*Trema micrantha*	
Burweed*	*Triumfetta semitriloba*	
Ceasar weed*	*Urena lobata*	
Frostweed	*Verbesina virginica*	
Ironweed*	*Vernonia cinerea*	
Muscadine grape	*Vitis rotundifolia*	
Wedelia	*Wedelia trilobata*	
Japanese youngia*	*Youngia japonica*	
Wild lime	*Zanthoxylum fagara*	

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
FISH		
Sergeant major	*Abudefduf saxatilis*	MS, MSGB, MUS, MCS
Spotted eagle ray	*Aetobatus narinari*	MSGB, MUS, MCS
Sheepshead	*Archosargus probatocephalus*	MS, MSGB, MUS, MCS
Southern stingray	*Dasyatis Americana*	MSGB, MUS, MCS
Mosquitofish	*Gambusia holbrooki*	MCS
Yellowfin mojarra	*Gerres cinerus*	MS, MSGB, MUS, MCS
Nurse shark	*Ginglymostoma cirratum*	MSGB, MUS, MCS
Bluestriped grunt	*Haemulon sciurus*	MS, MSGB, MUS, MCS
Pinfish	*Lagodon rhomboids*	MS, MSGB, MUS, MCS
Gray snapper	*Lutjanus cephalus*	MS, MSGB, MUS, MCS
Mangrove snapper	*Lutjanus griseus*	MS, MSGB, MUS, MCS
Atlantic tarpon	*Megalops atlanticus*	MSGB, MUS
White mullet	*Mugil curema*	MS, MSGB, MUS, MCS
Lookdown	*Selene vomer*	MS, MSGB, MUS, MCS
Checkered puffer	*Sphoeroides testudineus*	MSGB, MUS
Greater barracuda	*Sphyraena barracuda*	MSGB, MUS
Atlantic needlefish	*Strongylura marina*	MSGB, MUS
Redfin needlefish	*Strongylura notate*	MSGB, MUS
AMPHIBIANS		
Greenhouse frog*.	*Eleutherodactylus planirostris*	RH, DV, CL
Green tree frog	*Hyla cinereal*	RH
Squirrel tree frog	*Hyla squirella*	RH, DV
Cuban tree frog*	*Osteopilus septentrionalis*	RH, DV, CL
REPTILES		
Cuban green anole*	*Anolis porcatus*	RH, DV, CL
Green anole	*Anolis carolinensis*	RH, DV, CL
Puerto Rican crested anole*	*Anolis cristatellus*	RH, DV, CL
Bark anole*	*Anolis distichus*	RH, DV, CL
Knight anole*	*Anolis equestris equestris*	RH, DV, CL
Brown anole*	*Anolis sagrei*	RH, DV, CL
Six-lined racerunner	*Cnemidophorus sexlineatus*	RH, DV, CL
Southeastern five-lined skink	*Eumeces inexpectatus*	RH, DV, CL
Indo-Pacific gecko*	*Hemidactylus garnotii*	RH, DV, CL
Tropical house gecko*	*Hemidactylus mabouia*	RH, DV, CL
Great green iguana*	*Iguana iguana*	RH, DV, CL
Northern curlytail lizard*	*Leiocephalus carinatus armour*	RH, DV, CL
Reef gecko	*Sphaerodactylus notatus*	CL
Everglades racer	*Coluber constrictor paludicola*	RH, DV, CL
Southern ringneck snake	*Diadophis punctatus punctatus*	RH, DV, CL
Corn snake (red rat snake)	*Elaphe guttata guttate*	RH, DV, CL

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Yellow rat snake	*Elaphe obsoleta quadrivittata*	RH, DV, CL
Brahminy blind snake*	*Ramphotyphlops braminus*	RH, DV, CL
Rim rock crowned snake	*Tantilla oolitica*	RH, DV, CL
Loggerhead Sea Turtle	*Caretta caretta*	MSGB

BIRDS

Magnificent frigatebird	*Fregata magnificens*	MSGB
Brown pelican	*Pelecanus occidentalis*	MCS, MUS
Double-crested cormorant	*Phalacrocorax auritus*	MCS, MUS, MSGB
Great blue heron	*Ardea herodias Herodias*	MCS, MS
Great egret	*Ardea alba*	MCS, MS
Green heron	*Butorides virescens*	MCS, MS
Little blue heron	*Egretta caerulea*	MCS, MS
Snowy egret	*Egretta thula*	MCS, MS
Tricolored heron	*Egretta tricolor*	MCS, MS
White ibis	*Eudocimus albus*	MCS, MS, CL, MUS
Yellow-crowned night-heron	*Nyctanassa violacea*	MCS, MS
Cooper's hawk	*Accipiter cooperii*	RH, CL, MS
Red-shouldered hawk	*Buteo lineatus*	RH, CL, MS
Osprey	*Pandion haliaetus*	RH, CL, MS
Merlin	*Falco columbarius*	RH, CL, MS
American kestrel	*Falco sparverius*	RH, CL, MS
Turkey vulture	*Cathartes aura*	RH, CL, MS
Black vulture	*Coragyps atratus*	RH, CL, MS
Common peafowl*	*Pavo cristatus*	CL
Spotted sandpiper	*Actitus macularia*	MS, MCS
Common Loon	*Gavia immer*	MS, MCS, MUS
Laughing gull	*Larus atricilla*	MS, MSGB, MUS, MCS
Herring gull	*Larus argentatus*	MS, MSGB, MUS, MCS
Common ground dove	*Columbina passerine*	RH, CL
White-crowned pigeon	*Patagioenas leucocephala*	RH, CL
Eurasian collared dove*	*Streptopelia decaocto*	RH, CL
Mourning dove	*Zenaida macroura*	RH, CL
Blue-and-yellow macaw*	*Ara ararauna*	CL, RH
Monk parakeet*	*Myiopsitta monachus*	RH, CL
Yellow-billed cuckoo	*Coccyzus americanus*	MCS
Eastern screech owl	*Megascops asio*	RH
Great horned owl	*Bubo virginianus*	RH
Chuck-will's-widow	*Caprimulgus carolinensis*	RH, CL
Red-bellied woodpecker	*Melanerpes carolinus*	RH, CL
Fish crow	*Corvus ossifragus*	CL, MCS
Blue jay	*Cyanocitta cristata*	RH, CL
Great-crested flycatcher	*Myiarchus crinitus*	RH
Barn swallow	*Hirundo rustica*	RH, CL

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Blue-gray gnatcatcher	*Polioptila caerulea*	RH, CL
Gray catbird	*Dumetella carolinensis*	RH, CL
Northern Mockingbird	*Mimus polyglottos*	RH, CL
White-eyed vireo	*Vireo griseus*	CL, MCS, RH
Red-eyed vireo	*Vireo olivaceous*	CL, MCS, RH
Black-throated blue warbler	*Dendroica caerulescens*	CL, MCS, RH
Prairie warbler	*Dendoirca discolor*	CL, MCS, RH
Yellow-throated warbler	*Dendroica dominica*	CL, MCS, RH
Cape May warbler	*Dendroica tigrine*	CL, MCS, RH
Common yellowthroat	*Geothlypis trichas*	CL, MCS, RH
Worm-eating warbler	*Helmitheros vermivorus*	CL, MCS, RH
Black-and-white warbler	*Mniotilta varia*	CL, MCS, RH
Northern parula	*Parula Americana*	CL, MCS, RH
Ovenbird	*Seiurus aurocapillus*	CL, MCS, RH
Northern waterthrush	*Seiurus noveboracensis*	CL, MCS, RH
Hooded warbler	*Setophaga citrina*	CL, MCS, RH
American redstart	*Setophaga ruticilla*	CL, MCS, RH
Hill mynah*	*Gracula religiosa*	CL, MCS, RH
Common grackle	*Quiscalus quiscula*	CL, MCS, RH
Northern cardinal	*Cardinalis cardinalis*	CL, MCS, RH
House sparrow*	*Passer domesticus*	CL, MCS, RH
MAMMALS		
Brazilian free-tailed bat	*Tadarida brasiliensis*	CL, MCS, RH
Opossum	*Didelphis marsupialis*	CL, RH
Black Rat*	*Rattus rattus*	RH, CL, DV
Eastern Gray Squirrel	*Sciurus carolinensis*	RH, CL, DV
Raccoon	*Procyon lotor*	RH, CL
Gray Fox	*Urocyon cinereoargenteus*	RH, CL
West Indian Manatee	*Trichechus manatus*	MS, MCS, MUS, MSGB
INSECTS		
Great Pondhawk	*Erythemis vesiculosa*	RH, CL
Rambur's Forktail	*Ischnura ramburii*	RH, CL
Needham's Skimmer	*Libellula needhami*	RH, CL
Leaf-footed Bug	*Leptoglossus phyllopus*	RH, CL
White Peacock	*Anartia iatrophe*	RH, CL
Polyphemus Moth	*Antheraea Polyphemus*	RH, CL
Monk Skipper	*Asbolis capucinus*	RH, CL
Black Witch Moth	*Ascalapha odorata*	RH, CL
Great Southern White	*Ascia monuste*	RH, CL
Io Moth	*Automeris io*	RH, CL
Monarch	*Danaus plexippus*	RH, CL
Julia Heliconian	*Dryas iulia largo*	RH, CL

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Fulvous Hairstreak	*Electrostrymon angelia*	RH, CL
Mournful Sphinx Moth	*Enyo lugubris*	RH, CL
Horace's Duskywing	*Erynnis horatius*	RH, CL
Atala	*Eumaeus atala*	RH, CL
Banded Sphinx	*Eumorpha fasciata*	RH, CL
Dina Yellow	*Eurema dina*	RH, CL
Little Yellow	*Eurema lisa*	RH, CL
Zebra Heliconian	*Heliconius charitonius*	RH, CL
Cassius Blue	*Leptotes cassius*	RH, CL
Southern Flannel Moth	*Megalopyge opercularis*	RH, CL
Giant Swallowtail	*Papilio cresphontes*	RH, CL
Black Swallowtail	*Papilio polyxenes*	RH, CL
Spicebush Swallowtail	*Papilio Troilus*	RH, CL
Mangrove Skipper	*Phocides pigmalion*	RH, CL
Large Orange Sulphur	*Phoebis agarithe*	RH, CL
Cloudless Sulphur	*Phoebis sennae*	RH, CL
Phaon Crescent	*Phyciodes phaon*	RH, CL
Baracoa skipper	*Polites baracoa*	RH, CL
Hammock Skipper	*Polygonus leo*	RH, CL
American Lady	*Vanessa virginiensis*	RH, CL
Pluto Sphinx	*Xylophanes Pluto*	RH, CL
CHELICERATES		
Orbweaver species	*Allocyclosa bifurca*	RH, CL
Silver Garden Orbweave	*Argiope argentata*	RH, CL
Spiny Orbweaver	*Gasteracantha cancriformis*	RH, CL
Orchard Orbweaver	*Leucauge venusta*	RH, CL
Tailless Whip Scorpion	*Phrynus marginemaculatus*	RH, CL
Horseshoe Crab	*Limulus Polyphemus*	MSGB, MUS
DIPLOPODS		
Yellow-banded millipede*	*Anadenobolus monilicornis*	RH, CL
CNIDARIANS		
Upsidedown Jellyfish	*Cassiopea xamachana*	MUS
MOLLUSKS		
Guadeloup Snail*	*Bulimulus guadeloupensis*	RH
Banded Caracol*	*Caracolus marginella*	RH
Four-toothed nerite	*Nerita versicolor*	RH
ScrubSnail species	*Practicolella sp*	RH
Garden Zachrysia*	*Zachrysia provisoria*	RH

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)

CRUSTACEANS

Mangrove Tree Crab	*Aratus pisonii*	MCS, MS
Great Land Crab	*Cardisoma guanhumi*	CL, MCS
Common Blue Crab	*Callinectes sapidus*	MCS, MS
Southern Spider Crab	*Libinia dubia*	MCS, MS
Fiddler crab species	*Uca sp*	MCS, MS

RH – Rockland Hammock
MS – Mangrove Swamp
MSGB – Marine Seagrass Bed
MCS – Marine Composite Substrate
MUS – Marine Unconsolidated Substrate
CL – Clearing
DV – Developed

Addendum 6—Imperiled Species Ranking Definitions

The Nature Conservancy and the Natural Heritage Program Network (of which FNAI is a part) define an element as any exemplary or rare component of the natural environment, such as a species, natural community, bird rookery, spring, sinkhole, cave or other ecological feature. An element occurrence (EO) is a single extant habitat that sustains or otherwise contributes to the survival of a population or a distinct, self-sustaining example of a particular element.

Using a ranking system developed by The Nature Conservancy and the Natural Heritage Program Network, the Florida Natural Areas Inventory assigns two ranks to each element. The global rank is based on an element's worldwide status; the state rank is based on the status of the element in Florida. Element ranks are based on many factors, the most important ones being estimated number of Element occurrences, estimated abundance (number of individuals for species; area for natural communities), range, estimated adequately protected EOs, relative threat of destruction, and ecological fragility.

Federal and State status information is from the U.S. Fish and Wildlife Service; and the Florida Fish and Wildlife Conservation Commission (animals), and the Florida Department of Agriculture and Consumer Services (plants), respectively.

FNAI GLOBAL RANK DEFINITIONS

G1 ..... Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or fabricated factor.

G2 ..... Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.

G3 ..... Either very rare or local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction of other factors.

G4 ..... apparently secure globally (may be rare in parts of range)

G5 ..... demonstrably secure globally

GH ..... of historical occurrence throughout its range may be rediscovered (e.g., ivory-billed woodpecker)

GX ..... believed to be extinct throughout range

GXC ..... extirpated from the wild but still known from captivity or cultivation

G#? ..... Tentative rank (e.g.,G2?)

G#G# ..... range of rank; insufficient data to assign specific global rank (e.g., G2G3)

G#T# ..... rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g., G3T1)

G#Q..... rank of questionable species - ranked as species but questionable whether it is species or subspecies; numbers have same definition as above (e.g., G2Q)
G#T#Q..... same as above, but validity as subspecies or variety is questioned.
GU ..... due to lack of information, no rank or range can be assigned (e.g., GUT2).
G?..... Not yet ranked (temporary)
S1..... Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
S2..... Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
S3..... Either very rare or local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction of other factors.
S4..... apparently secure in Florida (may be rare in parts of range)
S5..... demonstrably secure in Florida
SH ..... of historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker)
SX..... believed to be extinct throughout range
SA..... accidental in Florida, i.e., not part of the established biota
SE..... an exotic species established in Florida may be native elsewhere in North America
SN ..... regularly occurring but widely and unreliably distributed; sites for conservation hard to determine
SU ..... due to lack of information, no rank or range can be assigned (e.g., SUT2).
S?..... Not yet ranked (temporary)
N ..... Not currently listed, nor currently being considered for listing, by state or federal agencies.

LEGAL STATUS

FEDERAL

(Listed by the U. S. Fish and Wildlife Service - USFWS)

LE ..... Listed as Endangered Species in the List of Endangered and Threatened Wildlife and Plants under the provisions of the Endangered Species Act. Defined as any species that is in danger of extinction throughout all or a significant portion of its range.
PE ..... Proposed for addition to the List of Endangered and Threatened Wildlife and Plants as Endangered Species.
LT ..... Listed as Threatened Species. Defined as any species that is likely to become an endangered species within the near future throughout all or a significant portion of its range.

PT ..... Proposed for listing as Threatened Species.
C ..... Candidate Species for addition to the list of Endangered and Threatened Wildlife and Plants. Defined as those species for which the USFWS currently has on file sufficient information on biological vulnerability and threats to support proposing to list the species as endangered or threatened.
E(S/A) ..... Endangered due to similarity of appearance.
T(S/A) ..... Threatened due to similarity of appearance.
EXPE, XE..... Experimental essential population. A species listed as experimental and essential.
EXPN, XN .... Experimental non-essential population. A species listed as experimental and non-essential. Experimental, nonessential populations of endangered species are treated as threatened species on public land, for consultation purposes.

STATE

ANIMALS .. (Listed by the Florida Fish and Wildlife Conservation Commission - FWC)

FE ..... Federally-designated Endangered

FT ..... Federally-designated Threatened

FXN..... Federally-designated Threatened Nonessential Experimental Population

FT(S/A) ..... Federally-designated Threatened species due to similarity of appearance

ST..... Listed as Threatened Species by the FWC. Defined as a species, subspecies, or isolated population, which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat, is decreasing in area at a rapid rate and therefore is destined or very likely to become an endangered species within the near future.
SSC..... Listed as Species of Special Concern by the FWC. Defined as a population which warrants special protection, recognition or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance or substantial human exploitation that, in the near future, may result in its becoming a threatened species.

PLANTS .... (Listed by the Florida Department of Agriculture and Consumer Services - FDACS)

LE ..... Listed as Endangered Plants in the Preservation of Native Flora of Florida Act. Defined as species of plants native to the state that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue, and includes all species determined to be endangered or threatened pursuant to the Federal Endangered Species Act of 1973,as amended.

LT ..... Listed as Threatened Plants in the Preservation of Native Flora of Florida Act. Defined as species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in such number as to cause them to be endangered.

Addendum 7—Cultural Information

These procedures apply to state agencies, local governments, and non-profits that manage state-owned properties.

A. General Discussion

Historic resources are both archaeological sites and historic structures. Per Chapter 267, Florida Statutes, '*Historic property' or 'historic resource' means any prehistoric district, site, building, object, or other real or personal property of historical, architectural, or archaeological value, and folklife resources. These properties or resources may include, but are not limited to, monuments, memorials, Indian habitations, ceremonial sites, abandoned settlements, sunken or abandoned ships, engineering works, treasure trove, artifacts, or other objects with intrinsic historical or archaeological value, or any part thereof, relating to the history, government, and culture of the state."*

B. Agency Responsibilities

Per State Policy relative to historic properties, state agencies of the executive branch must allow the Division of Historical Resources (Division) the opportunity to comment on any undertakings, whether these undertakings directly involve the state agency, i.e., land management responsibilities, or the state agency has indirect jurisdiction, i.e. permitting authority, grants, etc. No state funds should be expended on the undertaking until the Division has the opportunity to review and comment on the project, permit, grant, etc.

State agencies shall preserve the historic resources which are owned or controlled by the agency.

Regarding proposed demolition or substantial alterations of historic properties, consultation with the Division must occur, and alternatives to demolition must be considered.

State agencies must consult with Division to establish a program to location, inventory and evaluate all historic properties under ownership or controlled by the agency.

C. Statutory Authority

Statutory Authority and more in depth information can be found at:
http://www.flheritage.com/preservation/compliance/guidelines.cfm

D. Management Implementation

Even though the Division sits on the Acquisition and Restoration Council and approves land management plans, these plans are conceptual. Specific information regarding individual projects must be submitted to the Division for review and recommendations.

Managers of state lands must coordinate any land clearing or ground disturbing activities with the Division to allow for review and comment on the proposed project. Recommendations may include, but are not limited to: approval of the project as submitted, cultural resource assessment survey by a qualified professional archaeologist, modifications to the proposed project to avoid or mitigate potential adverse effects.

Projects such as additions, exterior alteration, or related new construction regarding historic structures must also be submitted to the Division of Historical Resources for review and comment by the Division's architects. Projects involving structures fifty years of age or older, must be submitted to this agency for a significance determination. In rare cases, structures under fifty years of age may be deemed historically significant. These must be evaluated on a case by case basis.

Adverse impacts to significant sites, either archaeological sites or historic buildings, must be avoided. Furthermore, managers of state property should make preparations for locating and evaluating historic resources, both archaeological sites and historic structures.

E. Minimum Review Documentation Requirements

In order to have a proposed project reviewed by the Division, certain information must be submitted for comments and recommendations. The minimum review documentation requirements can be found at: http://dos.myflorida.com/media/31392/minimum_review_documentation_requirements.pdf.

* * *

Questions relating to the treatment of archaeological and historic resources on state lands should be directed to:

Deena S. Woodward
Division of Historical Resources
Bureau of Historic Preservation
Compliance and Review Section
R. A. Gray Building
500 South Bronough Street
Tallahassee, FL 32399-0250

Phone: (850) 245-6425

Toll Free: (800) 847-7278
Fax: (850) 245-6435

The criteria to be used for evaluating eligibility for listing in the National Register of Historic Places are as follows:

1) Districts, sites, buildings, structures, and objects may be considered to have significance in American history, architecture, archaeology, engineering, and/or culture if they possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- **a)** are associated with events that have made a significant contribution to the broad patterns of our history; and/or
- **b)** are associated with the lives of persons significant in our past; and/or
- **c)** embody the distinctive characteristics of type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; and/or
- **d)** have yielded, or may be likely to yield, information important in prehistory or history.

2) Ordinarily cemeteries, birthplaces, or graves of historical figures; properties owned by religious institutions or used for religious purposes; structures that have been moved from their original locations; reconstructed historic buildings; properties primarily commemorative in nature; and properties that have achieved significance within the past 50 years shall not be considered eligible for the *National Register*. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:

- **a)** a religious property deriving its primary significance from architectural or artistic distinction or historical importance; or
- **b)** a building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or
- **c)** a birthplace or grave of an historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life; or
- **d)** a cemetery which derives its primary significance from graves of persons of transcendent importance, from age, distinctive design features, or association with historic events; or

e) a reconstructed building, when it is accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and no other building or structure with the same association has survived; or a property primarily commemorative in intent, if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or

f) a property achieving significance within the past 50 years, if it is of exceptional importance.

Restoration is defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project.

Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations and additions while preserving those portions or features that convey its historical, cultural or architectural values.

Stabilization is defined as the act or process of applying measures designed to reestablish a weather resistant enclosure and the structural stability of an unsafe or deteriorated property while maintaining the essential form as it exists at present.

Preservation is defined as the act or process of applying measures necessary to sustain the existing form, integrity and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.