Curry Hammock State Park

APPROVED
Unit Management Plan

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Division of Recreation and Parks
December 2016

Florida Department of Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Jonathan P. Steverson
Secretary

December 19, 2016

Ms. Sine Murray
Division of Recreation and Parks
Department of Environmental Protection
3900 Commonwealth Boulevard, MS 525
Tallahassee, Florida 32399-3000

RE: Long Key State Park (Lease #3672)
Curry Hammock State Park (Lease #3983)
Suwannee River State Park (Lease #3643)
Little Manatee River State Park (Lease #2806)

Dear Ms. Murray:

On **December 16, 2016**, the Acquisition and Restoration Council recommended approval of the above management plans. Therefore, 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 above mentioned management plans. The next management plan update for these plans is due December 16, 2026.

Approval of this land 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,

Raymond V. Spaulding
Office of Environmental Services
Division of State Lands
Department of Environmental Protection

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INTRODUCTION

Curry Hammock State Park is located in Monroe County within the city of Marathon (see Vicinity Map). Access to the park is from U.S. Highway 1, also known as the Overseas Highway, at Mile Marker 56.2 (see Reference Map). The Vicinity Map also reflects significant land and water resources existing near the park.

Curry Hammock State Park was initially acquired on September 10, 1991 with funds from the Conservation and Recreation Lands (CARL) program. Currently, the park comprises 1,112.5 acres. The Board of Trustees of the Internal Improvement Trust Fund (Trustees) hold fee simple title to the park and on December 6, 1991, the Trustees leased (Lease Number 3938) the property to DRP under a 50-year lease. The current lease will expire on December 5, 2041.

Curry Hammock State Park is designated single-use to provide public outdoor recreation and other park-related uses. There are no legislative or executive directives that constrain the use of this property (see Addendum 1).

Purpose and Significance of the Park

The purpose of Curry Hammock State Park is to protect rare natural communities, and the numerous listed plants and animals they support, on the largest undeveloped parcel of land in the area while providing exceptional passive, resource-based recreation opportunities for Florida residents and visitors.

Park Significance

- Among the few undisturbed upland sites remaining in the Middle Keys, the park contains one of the largest populations of thatch palm *(Thrinax radiata)* in the United States. Unusual geological formations help contribute to the variety and uniqueness of the numerous natural features present within the park.

- Extensive and productive sea grass beds present in the park are essential components of the larger Keys ecosystem, ensuring healthy water quality for offshore coral reefs and supporting a crucial nursery for many important species of fish and crustaceans that, in turn, provide rich feeding grounds for many wading and diving birds.

- The park is an important stopping point for migratory birds, particularly raptors, and hosts a long-term, annual observation effort to study and document the number and species of migratory birds passing through the park.

- The unique ecosystems of Curry Hammock State Park provide opportunities to enjoy a variety of outstanding resource-based recreation activities including camping, fishing, snorkeling, birding, star gazing, hiking, and paddling. With the Florida Keys Overseas Heritage Trail passing through the park, it is a popular stopping point for cyclists and trail users.

Curry Hammock State Park is classified as a State Park in the DRP's unit classification system. In the management of a State Park, A balance is sought between the goals of maintaining and enhancing natural conditions and providing various recreational opportunities. Natural resource management activities are aimed at management of natural systems. Development in the park is directed toward providing public access to and within the park, and to providing recreational facilities, in a reasonable balance, that are both convenient and safe. Program emphasis is on interpretation on the park's natural, aesthetic and educational attributes.

Purpose and Scope of the Plan

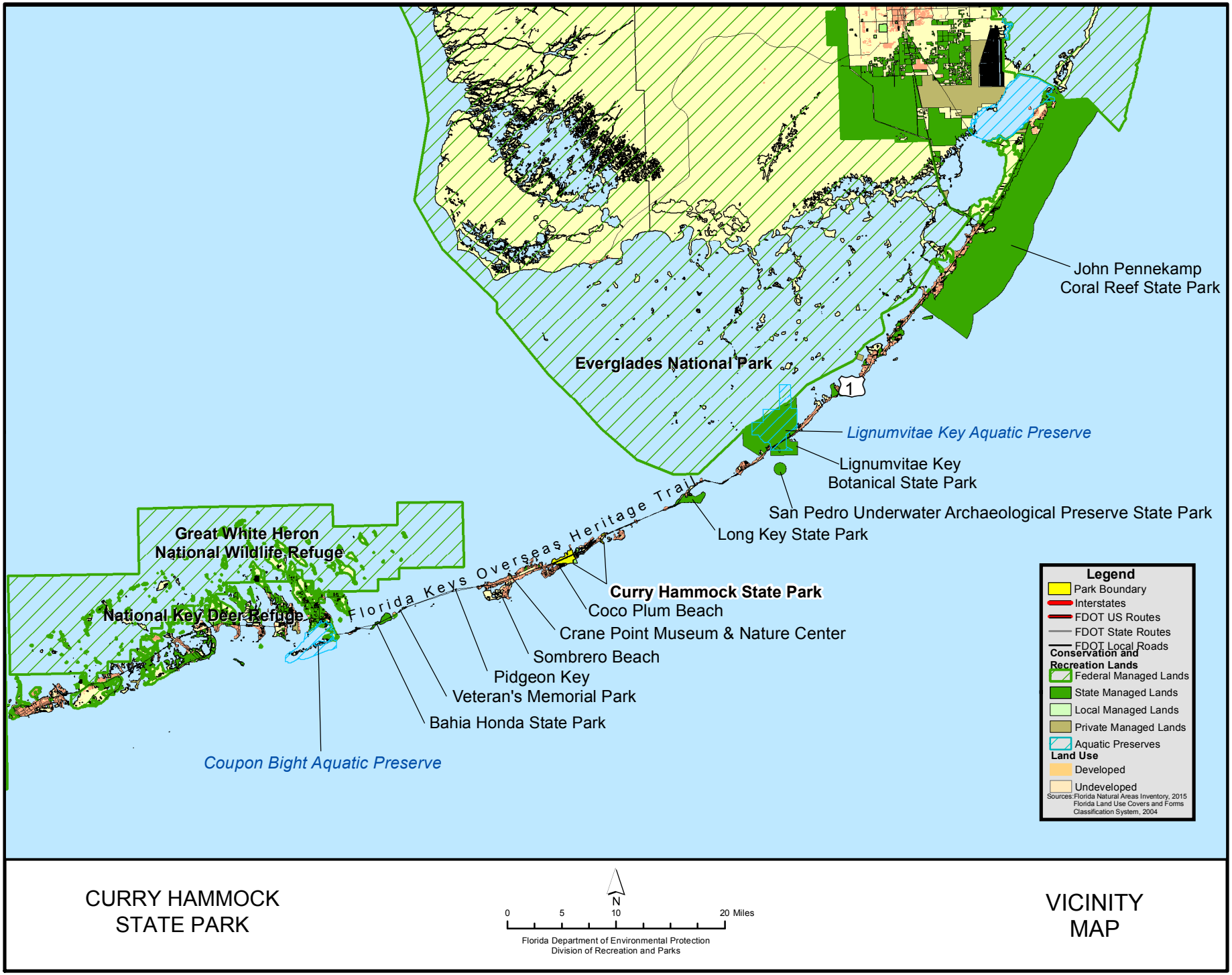
This plan serves as the basic statement of policy and direction for the management of Curry Hammock State Park as a unit of Florida's state park system. It identifies the goals, objectives, actions and criteria or standards that guide each aspect of park administration, and sets forth the specific measures 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. With approval, this management plan will replace the 2005 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 needs and issues 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 and (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



CURRY HAMMOCK
STATE PARK

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0 5 10 20 Miles

Florida Department of Environmental Protection
Division of Recreation and Parks

VICINITY
MAP

CURRY HAMMOCK
STATE PARK

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0 0.75 1.5 3 Miles

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

REFERENCE MAP

from complying with the appropriate local, state or federal agencies. This plan is also intended to meet the requirements for beach and shore preservation, as defined in Chapter 161, Florida Statutes, and Chapters 62B-33, 62B-36 and 62R-49, Florida Administrative Code.

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 natural and cultural resources, management needs, aesthetic values, visitation and visitor experiences. 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 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.

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 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 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 (DRP) 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 Trustees granted management authority of certain sovereign submerged lands to the DRP under Management Agreement MA 68-086 (as amended January 19, 1988). The management area includes a 400-foot zone from the edge of mean high water where a park boundary borders sovereign submerged lands fronting beaches, bays, estuarine areas, rivers or streams. Where emergent wetland vegetation exists, the zone extends waterward 400 feet beyond the vegetation. The agreement is intended to provide additional protection to resources of the park and nearshore areas and to provide authority to manage activities that could adversely affect public recreational uses.

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, marine 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. The Florida Department of Environmental Protection (DEP), Florida Coastal Office (FCO) aids staff in aquatic preserves management programs. The DEP, Bureau of Beaches and Coastal Systems aids staff in planning and construction activities seaward of the Coastal Construction Control Line (CCCL). In addition, the Bureau of Beaches and Coastal Systems aid the staff in the development of erosion control projects.

Public Participation

The DRP provided an opportunity for public input by conducting a public workshop and an Advisory Group meeting to present the draft management plan to the public. These meetings were held on June 9th and June 10th, 2016, respectively. Meeting notices were published in the Florida Administrative Register, Volume 42, Number 106, June 1, 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

Curry Hammock is within an Area of Critical State Concern as defined in Section 380.05, Florida Statutes. The park is a component of the Florida Greenways and Trails System, administered by the Department's Office of Greenways and Trails.

All waters within the park have been designated as Outstanding Florida Waters, pursuant to Chapter 62-302, Florida Administrative Code. Surface waters in this park are also classified as Class III waters by the Department. This park is not within or adjacent to an aquatic preserve as designated under the Florida Aquatic Preserve Act of 1975 (Section 258.35, Florida Statutes). However, the park is within the Florida Keys National Marine Sanctuary.

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 DEP'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: Curry Hammock State Park Management Zones			
Management Zone	**Acreage**	**Managed with Prescribed Fire**	**Contains Known Cultural Resources**
CU-01	40.49	N	N
CU-02	8.50	N	N
CU-03	13.58	N	Y
CU-04	30.82	N	N
CU-05	27.81	Y	N
CU-06	288.02	N	N
CU-07	19.49	N	N
CU-08	192.41	N	N
CU-09	32.11	N	N
CU-10	148.26	N	N
CU-11	248.88	N	N

RESOURCE DESCRIPTION AND ASSESSMENT

Natural Resources

Topography

Curry Hammock State Park consists of an aggregation of several small islands in the Middle Florida Keys including a portion of Grassy Key (zones CU-01, CU-02, CU-03, CU-04), all of Little Crawl Key (zone CU-09) and Deer Key (CU-07), a portion of Fat Deer Key (zones CU-08, CU-10) and a portion of Long Point Key (CU-05, CU-11). These islands are part of the geographic region of high coral keys with maximum elevations of ten to twelve feet in the rockland hammock, then grading to sea level towards the shoreline. The intertidal and submerged areas of the park are less than ten feet below mean sea level. The edge of the continental shelf parallels the Florida Keys approximately seven miles offshore.

Natural topographic changes in elevation develop when the limestone substrate is dissolved by rainfall and percolates into the porous limestone substrate. These depressions are known as solution holes and are a common component of the rockland hammock and to a lesser extent, the Keys tidal rock barren. They can be a few inches in depth to very large, deep holes scattered throughout the hammock. Prior to the lowering of the Biscayne Aquifer, solution holes would have retained freshwater even during the dry season, providing an important resource to wildlife as well as maintaining the humidity level within the hammock. Most of the solution holes within Curry Hammock do not retain freshwater due to the hydrological alterations. In some areas within the rockland hammock, the solution holes are several feet in depth.

The majority of Curry Hammock has not been topographically altered by human influences. However, prior to state ownership, Little Crawl Key (zone CU-09) had been partially developed as a subdivision. The seagrass beds offshore of Little Crawl Key in zone CU-06 were dredged to create the land at the eastern end of Little

CURRY HAMMOCK STATE PARK

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MANAGEMENT ZONES MAP

Crawl Key connecting this island to Long Point Key in zones CU-05 and CU-11. A road was constructed down the center of Long Point Key and mosquito ditches were dredged on the south side of Long Point Key north of U.S. Highway 1. Mosquito ditches were also dredged in zone CU-03. A borrow pit approximately 35 feet in depth was dredged in CU-11 adjacent to the hammock nature trail. The mangrove tidal creeks between Fat Deer Key, Long Point Key and Little Crawl Key (zones CU-08, CU-09, CU-10 and CU-11) were filled in during the construction of Henry Flagler's railroad and the subsequent construction of U.S. Highway 1.

Geology

The upper layer geologic formation of the Florida Keys from soldier Key to Bahia Honda Key is Key Largo limestone. Built by the coral polyps of ancient coral reef formations, these fossilized remains are similar to the present living coral reefs offshore. As sea levels have fluctuated over time, the land mass of South Florida has alternately been submerged and exposed above the level of the water. Sea level has been as much as twenty-five feet higher than current levels and as much as three hundred feet lower than current levels. During the last interglacial ice age, approximately 120,000 years ago, sea level dropped close to its present level, exposing the coral and allowing for the formation of the islands of the Florida Keys. When the area of the Keys is submerged, the limestone from ancient coral reefs provides the necessary substrate for new growth of coral formations and coral reefs. Subsequently, the Key Largo limestone is quite thick, as much as 145 feet in some areas of the upper Keys (Hoffmeister, 1974).

Soils

Information published in the U.S. Department of Agriculture's (USDA) Classification and Correlation of the Soils of Monroe County keys Area Florida identifies five soil types at Curry Hammock State Park. They are Matecumbe muck, Islamorada muck, Keylargo muck, Udorthents-Urban complex, and Rock outcrop-Cudjoe complex (see Soils Map). Matecumbe muck is the soil type of rockland hammock. It is found at elevations of no more than fifteen feet above sea level, and is subject to occasional flooding during storm events. Matecumbe muck soils are well drained. Islamorada muck, Keylargo muck and Rock outcrop Cudjoe complex are associated with mangrove tidal swamps and are subject to daily flooding by tides. These soils are poorly drained. Udorthents-Urban land complex includes constructed upland areas where land has been altered by dredging and filling for development (United State Department of Agriculture, Natural Resources Conservation Service). Addendum 3 contains detailed soil descriptions for the park.

The submerged resources of the park are subject to erosion from propeller scarring and boat grounding events that cut the seagrass rhizomes, and in some cases, significantly alters the topography of the seagrass flat. In addition to the physical damage to the seagrass, these injuries also cause suspended sediment in the water column that then affects the water quality of the nearshore and offshore waters. Measures will be taken to prevent soil erosion or other adverse impacts to the submerged resources of Curry Hammock State Park surrounding and the Florida Keys National Marine Sanctuary. This includes minimizing, to the extent possible,

erosion along the shoreline by maintaining beach/dune vegetation, and using best management practices when discussing potential beach restoration projects.

Minerals

Key Largo limestone is the major mineral deposit at Curry Hammock. Minor mineral deposits in the park include calcite and halite.

Hydrology

The primary natural source of freshwater in the Florida Keys is rain. Historically, early settlers collected rainwater in cisterns or used water from wells and solution holes that tapped the small, shallow freshwater lenses. These lenses form in the limestone above sea level during the rainy season. Until recently, nearshore freshwater upwelling, an extension of the Biscayne Aquifer, occurred in at least one location on northern Key Largo. Drainage of the Everglades and the subsequent canalization of southeast Florida (including canals in the Florida Keys) resulted in saltwater intrusion into the Biscayne Aquifer and changed the regional hydrology. Only on the larger islands such as Key Largo and Big Pine Key is rainwater retained for any length of time.

Natural Communities

This section of the management plan describes and assesses each of the natural communities found in the state park. It also describes of 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 population 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

CURRY HAMMOCK STATE PARK

N

0 500 1,000 2,000 Feet

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SOILS MAP

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 unique ecosystems of the Florida Keys often vary from one island to the next. This can be attributed to many factors including elevation, substrate, rainfall, proximity to water, and the geographic barriers inherent across the Florida Keys. These effects, over time, have shaped one of the most biologically diverse regions in the United States. Natural habitats in the Keys are either unique to the Keys or are rare throughout their limited distribution of the Keys and the southern tip of the mainland of Florida. These unique habitats support a suite of plant and animal species that can also be rare and limited throughout their range. The study of species abundance and distribution across island ecosystems, or island biogeography, influences resource management efforts throughout the Florida Keys.

Conservation lands in the Florida Keys provide a last stronghold for many plant and animal species that are found nowhere else either in the United States, or in the world. Within the state parks in the Keys, maintaining the uniqueness and diversity of the historical distributions of species is paramount to preserving the biological diversity of the natural communities. In an effort to facilitate the interpretation of the unique impacts of island biogeography throughout the Florida Keys, efforts to control the range of certain species may be undertaken. In instances of listed plant and animal species, efforts to manage populations will be evaluated on a case-by-case basis by park and district personnel.

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

Beach Dune

Desired Future Condition: A coastal mound or ridge of unconsolidated sediments found along shorelines with moderate to high energy waves. Vegetation will consist of herbaceous dune forming grass species such as sea oats (*Uniola paniculata*) and beach panicum (*Panicum amarum*). Other typical species may include sea rocket (*Cakile lanceolata*.), railroad vine (*Ipomea pes-caprae*), blue paspalum (*Paspalum caespitosum*), beach morning glory (*Ipomea imperati*), bay bean (*Canavalia rosea*), and sea purslane (*Sesuvium portulacastrum*). Occasionally shrubs such as beach elder (*Iva imbricata*), inkberry (*Scaevola plumieri*), bay cedar (*Suriana maritima*), and sea lavender (*Argusia gnaphalodes*) may be scattered within the herbaceous vegetation.

Description and Assessment: A small, man-made beach dune is located at the southern end of Crawl Key in zone CU-09. This section of the park was submerged land until the nearshore waters were dredged for the subdivision that was planned prior to state ownership. When Curry Hammock became a state park, the beach was compacted substrate, and not desirable as a beach for recreational use. In

2007 a beach renourishment project was completed, the old substrate was removed and beach quality sand comprised of silica material was installed to create a beach dune ecosystem.

Once restoration was completed, beach dune vegetation was installed. Sea oats (*Uniola paniculata*), sea daisy (*Borrichia frutescens*), yellow top (*Flaveria linearis*), saltgrass (*Distichlis spicata*) and seagrape (*Coccoloba uvifera*) are now abundant on the dune. Although beach dynamics results in fluctuations of sand accumulation, the beach dune at Curry Hammock is in great condition.

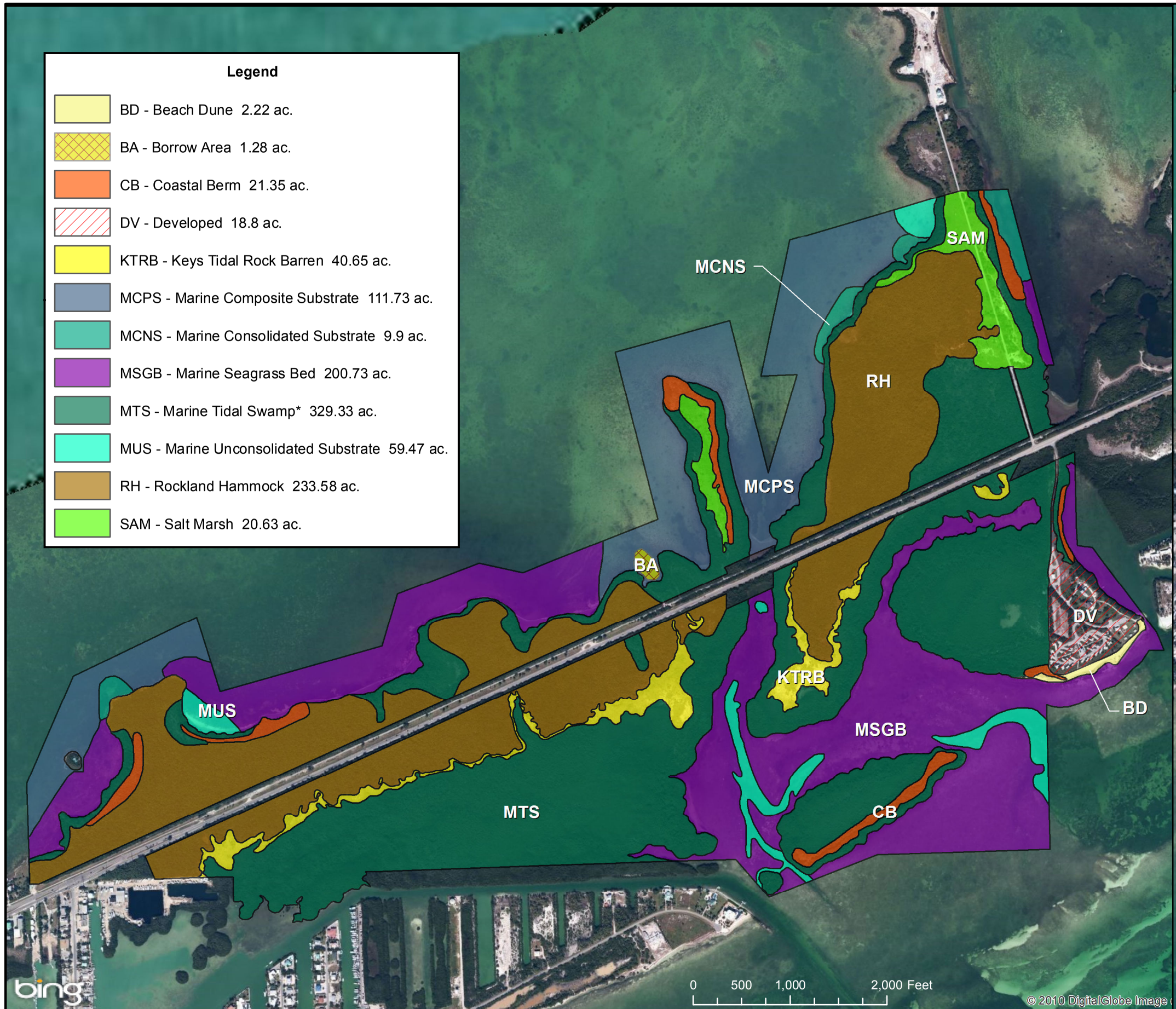
Nesting loggerhead turtles (*Caretta caretta*) have been documented on the beach at Curry Hammock although a minimal number utilize the beach for nesting due to its small size.

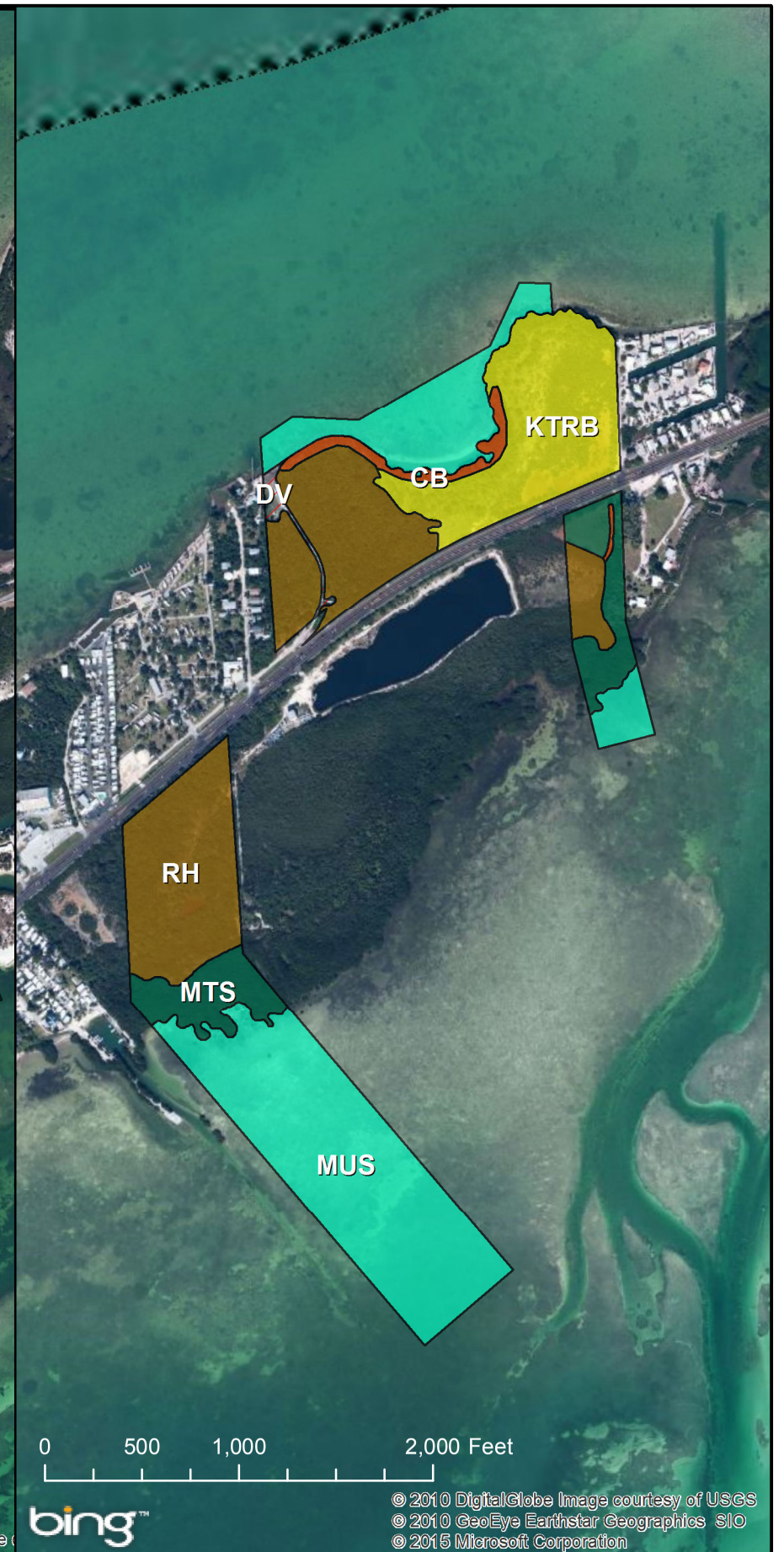
Shorebirds are an important component of the beach at Curry Hammock. Species observed foraging and loafing include Western sandpiper (*Calidris mauri*), laughing gull (*Larus atricilla*), least tern (*Sternulla antillarum*), spotted sandpiper (*Actitis macularius*), ruddy turnstone (*Arenaria interpres*), sanderling (*Calidris alba*), and semipalmated plover (*Charadrius semipalmatus*). Quarterly shorebird surveys are currently not conducted but piping plover (*Charadrius melodus*) surveys are conducted annually as part of the U.S. Fish and Wildlife Census survey. Nesting shorebird surveys will be conducted in the future.
General Management Measures: The beach dune at Curry Hammock is in the desired future condition, however in order to maintain this condition, non-native plant species particularly beach naupaka (*Scaevola sericea*) need to be removed when found. Beach naupaka is a popular coastal landscape plant whose seeds float so the beach will always need consistent monitoring to eliminate recruits germinating on the beach dune.

Coastal Berm
Desired Future Condition: Coastal berms are found on the seaward edge or landward edge of the mangroves or further inland depending on the height of the storm surge that formed them. Elevations range in height from one to ten feet. Structure and composition of the vegetation is variable depending on the height of the berm and the time since the last storm event. Coastal berm consists of a mixture of tropical herbs, shrubs and trees and is defined by its substrate of coarse, calcareous, storm-deposited sediment forming long narrow ridges that parallel the shore. The most stable berms may share some tree species with rockland hammocks, but generally have a greater proportion of shrubs and herbs. Tree species may include blolly (*Guapira bicolor*), gumbo limbo (*Bursera simaruba)*, and poisonwood (*Metopium toxiferum*). Characteristic tall shrub and short tree species include Spanish stopper (*Eugenia foetida*), hog plum (*Ximenia americana*), white indigo berry (*Randia aculeata*), seven year apple (*Genipa clusiifolia*), blackbead (*Pithecellobium keyense*) and saffron plum (*Sideroxylon salicifolium*). Short shrubs and herbs include spider lily (*Hymenocallis latifolia*), limber caper (*Capparis flexuosa*), lantana (*Lantana involucrata*) and rouge berry (*Rivina humilis*). More seaward berms, or those recently affected by storm deposition, may support a suite of plants similar to beaches, including sea purslane (*Sesuvium portulastrum*),

Legend

- BD - Beach Dune 2.22 ac.
- BA - Borrow Area 1.28 ac.
- CB - Coastal Berm 21.35 ac.
- DV - Developed 18.8 ac.
- KTRB - Keys Tidal Rock Barren 40.65 ac.
- MCPS - Marine Composite Substrate 111.73 ac.
- MCNS - Marine Consolidated Substrate 9.9 ac.
- MSGB - Marine Seagrass Bed 200.73 ac.
- MTS - Marine Tidal Swamp* 329.33 ac.
- MUS - Marine Unconsolidated Substrate 59.47 ac.
- RH - Rockland Hammock 233.58 ac.
- SAM - Salt Marsh 20.63 ac.





CURRY HAMMOCK STATE PARK

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Date of aerial; 2011

NATURAL COMMUNITIES MAP

cordgrass (*Spartina* spp.), and seashore dropseed (*Paspalum* spp.), or dense shrub thickets with buttonwood (*Conocarpus erectus*), black mangrove (*Avicennia germinans*) red mangrove (*Rhizophora mangle*), white mangrove (*Laguncularia racemosa*), joewood (*Jacquinia keyensis*), and sea ox-eye daisy (*Borrichia arborescens*).

Description and Assessment: A small coastal berm is located on the east side of Little Crawl Key (zone CU-09) east of the entrance drive into the park. This coastal berm is likely a remnant of the dredging that took place to develop Little Crawl Key, and as a result, exotic species were a problem. Brazilian pepper (*Schinus terebinthifolius*) and Australian pine (*Casuarina equisetifolia*) were targeted for removal so that native vegetation including blackbead, poisonwood, and seagrape, could reestablish. This berm is in great condition and grades into mangrove swamp on the east side and the entrance road on the west side.

A coastal berm is located in CU-02 and is a narrow strip of uplands bordered on the east by a cleared field and on the south and west by mangroves. Australian pines used to dominate this hammock but were removed in mid-2000. Native species including Spanish stopper (*Eugenia foetida*), rougeberry (*Rivina humilus*), and poisonwood have become established on this berm.

A naturally occurring coastal berm is located on the west side of zone CU-09 surrounded by mangrove swamp. This small, narrow berm consists of slightly elevated ground within the lower elevation mangroves and includes seagrape, rougeberry, buttonwood, *Cyperus* spp., and black mangrove. This coastal berm is in good condition, but is subject to flotsam and jetsam that gets washed in by the tides and storm events.

On the east side of Long Point Key in zone CU-05 a narrow coastal berm is situated directly behind the mangrove swamp and grades to the west into disturbed marine tidal marsh habitat. Australian pine trees dominated this berm but numerous exotic removal projects have been conducted to remove all exotic species. This berm is in great condition although it is impacted by flotsam and jetsam that gets washed in by tides and storm event. Native species including blolly, seagrape, poisonwood, and blackbead are the predominate species.

A narrow coastal berm is located on the south side of Deer Key in zone CU-07. This slightly elevated habitat has also been subject to several exotic removal projects, although latherleaf, Portia and Australian pine are still persisting. However, native herbaceous vegetation including railroad vine (*Ipomoea pes-caprae*), and blue mist flower (*Ageratum littoralis*) are abundant as well as scattered Florida thatch palm (*Thrinax radiata)* trees. Despite the presence of the exotic species and the large amount of debris that is washed in by the tides, this coastal berm is in good condition.

Coastal berm habitat is scattered along the shoreline on the north side of the park on Fat Deer Key (zone CU-11) and on Grassy Key (zone CU-01). These areas are interspersed with mangroves to the north and grade into rockland hammock to the

south. A small coastal berm is found along the north border of the salt marsh in the northeast end of zone CU-11. All of these areas have been treated for invasive exotic species including Australian pine, Brazilian pepper, and Portia (*Thespesia populnea*). Native vegetative components include Bahama nightshade (*Solanum bahamensis*), Florida thatch palm, rougeberry, poisonwood, blackbead as well as herbaceous vegetation.

All of the coastal berm habitats in the park support a host of animal species including white crowned pigeon (*Patagioenas leucocephala*), land hermit crab (*Coenobita clypeatus*), Eastern screech owl (*Megascops asio*), black-throated blue warbler (*Setophaga caerulescens*), silver argiope (*Argiope argentata*), fiddler crab (*Uca pugilator*) and a variety of butterfly species.

General Management Measures: The coastal berm habitats in Curry Hammock are in good to great condition. In order to achieve and/or maintain the desired future condition, exotic removal projects will need to be an ongoing resource management objective. It will also be necessary to remove the debris that washes ashore by tides and storm events.

Rockland Hammock

Desired Future Conditions: 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 dissolve the surface limestone creating eroded depressions in the rock called solution holes.

Rockland hammocks 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 are found only in the lower Keys. This is due to elevation, geologic and rainfall differences between the two regions. Typical canopy and understory species include, gumbo limbo, wild tamarind (*Lysiloma latisiliquum*), pigeon plum (*Coccoloba diversifolia*), mastic (*Sideroxylon foetidissimum*), strangler fig (*Ficus aurea*), poisonwood, several species of stoppers (*Eugenia* spp.), thatch palms (*Thrinax* spp.), torchwood (*Amyris elemifera*), marlberry (*Ardisia escallonioides*), satinleaf (*Chrysophyllum oliviforme*), and blackbead. Vines and herbaceous vegetation are less common and include greenbrier (*Smilax havanensis*) and bamboo (*Lasiacis divaricata*). Epiphytes, including orchids, ferns, and bromeliads can be found on larger trees.

Description and Assessment: The rockland hammock at Curry Hammock is located in management zones CU-01, CU-03, CU-10 and CU-11. All areas of this habitat type in the park are in great condition despite impacts from the 2004/2005 hurricane seasons. Unlike the rockland hammock ecosystem of the upper Keys, the middle and lower Keys hammocks have lower tree canopy, smaller tree diameter and persist at lower elevations. The main canopy species at Curry Hammock include gumbo limbo, poisonwood, pigeon plum, milkbark (*Drypetes diversifolia*), and black

ironwood (*Krugiodendron ferreum*). Understory species common throughout the rockland hammock include Spanish stopper, white stopper *(Eugenia axillaris*), barbwire cactus (*Acanthocereus tetragonus*), and torchwood. A significant population of Florida thatch palm persists in zone CU-11 particularly towards the middle of the management zone where the nature trail is located. Also in zone CU-11 is a population of the imperiled false boxwood (*Gyminda latifolia*). This species is limited in its distribution to just a few locations in the middle and lower Florida Keys. This section of the rockland hammock was impacted by the 2004/2005 hurricane seasons. Canopy damage, saltwater inundation and wind damage impacted the hammock, but it was the false boxwood and the poisonwood trees that were the most affected and most individuals in that area died. Due to the amount of submerged substrate that was washed in by the hurricanes, the canopy became sparse and salt tolerant herbaceous groundcover became established. Over time as the canopy has recovered, the habitat rebalanced and the salt tolerant groundcover has not persisted. Another major influence with these two heavy storm years was the increase in the population of papaya (*Carica papaya*). At the time it was considered to be a non-native species and was actively removed from the hammock. It has only been in recent years that botanists believe that papaya is native to Florida. Papaya does not persist in the hammock for long periods of time and appears to be a species that becomes abundant due to disturbance, but is then shaded out by canopy recovery. Due to the impacts to the population of false boxwood, an updated mapping project is planned to determine current population distribution and abundance at Curry Hammock.

The rockland hammock in zone CU-10 is a narrow strip of habitat that is interspersed with mangrove swamp towards the west end of the zone. As the elevation decreases to the south, the hammock grades to a mixture of mangrove swamp and Keys tidal rock barren. It is bordered on the north by the cleared Florida Department of Transportation right-of-way.

The parcels on Grassy Key, zones CU-01, CU-03 and CU-04 are recent additions to Curry Hammock since the Unit Management Plan was approved in February 2005. Rockland hammock occurs in zone CU-01 and comprises the majority of this parcel. A portion of this site had been cleared for five homes but upon state purchase, the buildings and some of the associated debris was removed. Several exotic species removal projects have been conducted at this site and park and district staff continue with follow-up to keep it in a maintenance phase. There is a dense population of Florida thatch palm in the northwest corner of this management zone.

The rockland hammock in zone CU-03 is a transitional hammock buttonwood habitat and various grass species are still persisting although hammock species are becoming more abundant. This zone has been impacted by mosquito ditches that were dredged in the 1940s and 1950s as a way to control the mosquito population in the Florida Keys. Most of the ditches are partially filled in and no longer retain water. Mosquito ditches are also found in the salt marsh zone in zone CU-06.

A 1 ¼ mile nature trail winds through the rockland hammock in zone CU-11. Careful consideration on the development of this trail was taken in order to

minimize vegetative loss particularly since this is habitat contains a dense stand of Florida thatch palm. The trail is accessed from the Florida Keys Overseas Heritage Trail. Recent construction along U.S. Highway 1 resulted in the development of a small parking area which enables safe access to the nature trail and the bike path.

A number of solution holes are scattered throughout the rockland hammock in the park. Historically solution holes provided important habitat for organisms that relied on the microhabitat in the solution holes. Retention of freshwater is minimal due to the altered water table and the porous limestone substrate; however, some of the solution holes support red mangroves. Unfortunately, solution holes are also prone to exotic species infestation particularly Brazilian pepper and Portia.

The rockland hammock in Curry Hammock provides important habitat for a variety of animals and migratory birds. The year-round residents found in this habitat include the imperiled white-crowned pigeon (*Patagioenas leucocephala*), Chuck-will's-widow (*Caprimulgus carolinensis*), *Liguus* tree snail, land crab (*Cardisoma guanhumi*), hermit crab, and a variety of butterflies including gulf fritillary (*Argraulis vanillae*), zebra heliconia (*Heliconius charitonius*), and great southern white (*Ascia monuste*). Migratory species include perrigrine falcon (*Falco peregrinus*), Cooper's hawk (*Accipiter cooperii*), short-tailed hawk (*Buteo brachyurus*), and numerous species of warblers.

General Management Measures: The rockland hammock at Curry Hammock is in good condition. The largest threat to the habitat is exotic plant and animal species, so in order to achieve the desired future condition it will be necessary to maintain an exotic removal program to prevent alteration to the habitat. Along hammock edges, unauthorized dumping of both vegetative material and debris has been an issue so regular sweeps to remove discarded items is necessary. Park boundary signs need to be installed where they are absent, and current signs need to be maintained in order to ensure the protection the park's resources.

Keys Tidal Rock Barren

Desired Future Condition: Keys tidal rock barren is a flat rockland in the supratidal zone with much exposed and eroded limestone and a sparse cover of stunted halophytic herbs and shrubs, and it is inundated by salt water only during the extreme spring high tides. Patches of low, salt-tolerant herbaceous species include sea ox-eye daisy, perennial glasswort, saltwort, Keys grass (*Monanthochloe littoralis*), saltgrass and seashore dropseed. Buttonwood is the dominant woody plant. It varies from stunted, sprawling, multi-stemmed shrubs to tree size. Other typical woody species are red mangrove, black mangrove, white mangrove and Christmas berry (*Lycium carolinianum*). At the transition to upland vegetation, buttonwood may be joined by a variety of shrubs and stunted trees of inland woody species including saffron plum, wild cotton (*Gossypium hirsutum*), blackbead, wild dilly (*Manilkara jaimiqui* ssp. *emarginata*), poisonwood and joewood.

Keys tidal rock barren occurs above the daily tidal range, but is subject to flooding by spring tides and storm events. Salt spray from coastal winds, as well as shallow soils, may limit height growth of woody plants. Aside from bare rock substrate,

discontinuous patches of thin marl soils may be present. Depressions with deeper peat and mud soils support tidal swamp and tidal marsh communities, dominated respectively by mangroves or Gulf cordgrass (*Spartina spartinae*).

Description and Assessment: Keys tidal rock barren is a rare community, occurring in scattered patches along a few shorelines in the Florida Keys. The substrate is exposed cap rock pitted with small solution holes, grading into a shoreline of jagged Key Largo limestone or as an ecotonal community between the rockland hammock and the mangrove swamp. At Curry Hammock, the Keys tidal rock barren occurs on the south end of management zone CU-10 between the rockland hammock and the mangrove swamp; in zone CU-11 between the rockland hammock and the mangrove swamp; and on the north and northeast side of zone CU-01 between the rockland hammock and mangrove swamp. In zones CU-10 and CU-11 there are two low-lying areas found in association with the Keys tidal rock barren that are best described as overwash plains or saltpans. These areas consist of exposed caprock with thick marl deposits and algal mats in the depressions. The soil over the Key Largo limestone is sandy marl mixed with shell debris and coral fragments. The higher ground is sparsely vegetated with salt tolerant shrubs, including saltwort, glasswort and keys grass (*Monanthochloe littoralis*). These saltpans are inundated at high tide and provide important habitat for wading birds including herons, egrets, spoonbills (*Ajaia ajaja*) and ibis (*Eudocimus albus*).

The Keys tidal rock barren in zone CU-10 has been subject to an increase in inundation from tidal events. As a result, mangrove vegetation has recruited into the historical footprint of the Keys tidal rock barren, and the Keys tidal rock barren habitat has become a narrower ecotone community.

Typical animal species found in this habitat include great egret, white ibis, little blue heron, golden orb weaver (*Nephila clavipes*), silver argiope (*Argiope argentata*), zebra heliconia (*Heliconius charitonius*), fiddler crab (*Uca pugilator*), and hermit crab (*Coenobita clypeatus*).

*General Management Measures***:** The Keys tidal rock barren at Curry Hammock has achieved its desired future condition. In order to maintain this condition, regular surveys for exotic species infestations will be necessary.

In the management plan for Curry Hammock State Park approved in February 2005, this habitat was described as coastal rock barren. The 2010 Florida Natural Areas Inventory Guide to Natural Communities updated habitat descriptions and further defined coastal rock barren as either Keys tidal rock barren, which is tidally influenced, or as Keys Cactus barren, which is an upland plant community that may only be influenced during extreme high tides or storm events

Mangrove Swamp

Desired Future Condition: Mangrove swamp is typically a dense forest occurring along relatively flat, low wave energy, marine and estuarine shorelines. The dominant overstory includes red mangrove, black mangrove, white mangrove, and buttonwood. 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 dominated 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. When present, shrub species can include seaside oxeye, gray nicker (*Caesalpinia bonduc*), coinvine (*Dalbergia ecastaphyllum*), vines including rubbervine (*Rhabdadenia biflora*), and herbaceous species such as saltwort (*Batis maritima*), shoregrass, perennial glasswort (*Salicornia 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: The mangrove swamp at Curry Hammock is in excellent condition and can be found throughout the park. It is found in conjunction with Keys tidal rock barren, coastal berm and in low elevation areas along the edge of zone CU-11 where it is intermixed with rockland hammock. The mangrove swamp is located on the north and east side of zone CU-01; on the south side of zones CU-02 and CU-03 where it interfaces with the submerged resources; on the east and south sides of zone CU-05; surrounding zone CU-07; in zone CU-08; on the west, east and north sides of zone CU-09; on the north and south side of zone CU-10; and on the north side of zone CU-11. Red mangroves are also found in some of the solution holes in the rockland hammock in zones CU-01 and CU-11 where elevation differences allow for the establishment of wetland vegetation. The mangrove swamp is an important community because it provides storm protection, stabilizes the shoreline, traps sediment, and filters the water to improve water quality

Typically, red mangroves are the dominant cover as they are most adapted to growing with their roots in the water. Black and white mangrove can be found inland of the shoreline along with mangrove associates including saltwort and glasswort. Only in areas where the mangrove swamp is infrequently inundated by storm surges or tidal events will you find a greater diversity of species including spider lily, nickerbean, buttonwood, orchids and bromeliads. This is the area, however, that is most prone to invasion of exotic species, particularly Brazilian pepper, Australian pine, beach naupaka, latherleaf, and Portia.

Found in association with the red mangrove roots are a host of animal species living attached to or amongst the mangrove roots. These species include barnacles (*Lepas anatifera*), oysters (*Isognomon alatus*), mangrove crab (*Goniopsis cruentata*), shrimp, nudibranchs, mollusks, lobster and a variety of fish. Other species found here include white-crowned pigeon, black whiskered vireo (*Vireo altiloquus*), snowy

egret (*Egretta thula*), brown pelican (*Pelecanus occidentalis*), white ibis (*Eudocimus albus*), and roseate spoonbill.

General Management Measures: The mangrove swamp at Curry Hammock has achieved it desired future condition. However, this habitat, like other coastal ecosystems, is subject to material that is washed in by tides and storm events. In order to maintain the desired future condition, the mangrove swamp needs to be regularly monitored and treated for exotic plant species infestation, and efforts should be made to remove debris that has washed ashore.

Salt Marsh

Desired Future Condition: A largely herbaceous community that occurs in the portion of the coastal zone affected by tides and seawater and protected from large waves. Salt marsh typically has distinct zones of vegetation based on water depth and tidal fluctuations. Saltmarsh cordgrass (*Spartina alterniflora*) dominates the seaward edge; the areas most frequently inundated by tides. Needle rush (*Juncus roemerianus*) dominates the higher, less frequently flooded areas. Other characteristic species include Carolina sea lavender (*Limonium carolinianum*), perennial saltmarsh aster (*Symphyotrichum tenuifolium*), wand loosestrife (*Lythrum lineare*), marsh fimbry (*Fimbristylis spadicea*), and shoreline seapurslane (*Sesuvium portulacastrum*). A landward border of salt-tolerant shrubs including groundsel tree (*Baccharis halimifolia*), saltwater falsewillow (*Baccharis angustifolia*), marshelder (*Iva frutescens*), and Christmasberry (*Lycium carolinianum*) may exist. Soil salinity and flooding are the two major environmental factors that influence salt marsh vegetation. While there is little data on natural fire frequency in salt marshes, fire probably occurred sporadically and with a mosaic pattern, given the patchiness of the fuels intermixed with creeks, salt flats, etc.

Description and Assessment: Two areas of salt marsh are found at Curry Hammock one in zone CU-05 and one in zone CU-11. Both are characterized by expanses of grasses at slightly higher elevation than the adjacent mangrove swamp. The salt marsh in zone CU-05 is located on the east and west side of Burnt Point Rd which leads to a private residence. The marsh on the west side of the road is in good condition although it had been subject to encroachment by rockland hammock species once the parcel was purchased and regular mowing by the former owner ceased. Mosquito ditches were dredged in this zone in the 1940s and 1950s in both the salt marsh and in the rockland hammock. Hammock species have recruited onto the berms created by the ditching and most of the mosquito ditches are partially filled in with sediment. Restoration of these ditches is not planned for the park.

In order to restore the salt marsh on the west side of Burnt Point Rd., a prescribed burn was conducted in 2008 in partnership with park and District staff and staff from The Nature Conservancy. This burn achieved the goal of reducing and/or eliminating hardwood species from the marsh. The three-acre parcel is not contiguous as a naturally higher area of elevation persists in between the two salt marshes. However, post burn the salt marsh quickly recovered with species including saltmeadow cordgrass (*Spartina patens*), prickly cordgrass (*Spartina spartinae*), false foxglove (*Agalinis maritima*), sea oxeye daisy, and sea daisy.

Animals found in this habitat include marsh rabbit (*Sylvilagus palustris*), fiddler crab (*Uca pugilator*), Northern harrier (*Circus cyaneus*), Broad-winged hawk (*Buteo platypterus*) and a variety of spiders.

On the east side of Burnt Point Rd. is a disturbed salt marsh ecosystem that has been impacted by unauthorized access, fill material, hardwood species encorachment, and invasive exotic species. This habitat is bordered on the east by a coastal berm and on the south by mangrove swamp. This area consists of slightly higher elevation in sections of the salt marsh. Species diversity include sea oxeye daisy, sea daisy, poisonwood, green buttonwood, false foxglove and seagrape. A single sea lavender plant has recruited on the spoil pile from the beach renourishment project.

In 2010 a hydrological survey was conducted in the salt marsh on both sides of Burnt Point Rd. in zone CU-05 to determine if hydrological restoration was necessary, including the installation of culverts under the road. No such restoration was determined to be necessary and the accumulation of sedimentation particulary in the west salt marsh was considered to be a natural event. Prescribed burning will continue to be a management tool used to maintain the salt marsh on the west side of Burnt Point Rd.

A salt marsh is also found on zone CU-11 and comprises the center section of landmass that juts into Florida Bay. This salt marsh is regularly inundated by tidal events and is surrounded by mangrove swamp and coastal berm. Exotic plant species removal projects had been conducted at the northern end of this section of zone CU-11 where it grades to coastal berm so continual follow-up is necessary to prevent the establishment of species including Australian pine, Portia and Brazilian pepper. This salt marsh is in excellent condition and consists of Key grass (*Monanthochloe littoralis*), *Spartina* spp., and is dotted with green buttonwood and white mangrove trees. A variety of butterflies and spiders are found in this habitat as well as marsh rabbit and Key Vaca Raccoon (*Procyon lotor auspicatus*).

General Management Measures: In order to maintain the desired future condition of the salt marsh in zone CU-05 on the west side of Burnt Point Rd., a regular interval of prescribed fire will be necessary to eliminate encroachment by hardwood species. Manual removal of hardwood trees underneath of the powerlines needs to be completed and regular exotic removal surveys will need to be conducted.

In order to achieve the desire future condition of the salt marsh on the east side of Burnt Point Rd., the spoil pile needs to be removed and the area graded to the natural wetland elevation. Regular exotic removal surveys will need to be conducted in order to prevent the establishment of invasive plant species, and unauthorized access into this wetland needs to be prevented.

The salt marsh in zone CU-11 is in its desired future condition. In order to maintain this state, regular surveys for exotic plant species need to be coordinated.

Marine Composite Substrate

Desired Future Condition: Marine 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 marine composite community forms a mosaic with associated submerged communities representing an ecotonal community where plant and animal species diversity is high. The marine composite substrate in Curry Hammock is located in zones CU-06 and CU-04. This habitat is in excellent condition and consists of a mixture of seagrass, macroalgae, and open, sandy substrate. Species found in this habitat include rose coral (*Manicina areolata*), golfball coral (*Favia fragum*), finger coral (*Porites furcata*), knobby star coral (*Solenastrea hyades*), *Sargassum* spp., shaving brush algae (*Penicillus* spp.), oatmeal algae (*Halimeda* spp.), Florida sea cucumber (*Holothuria floridana*), rock boring urchin (*Echinometra lucunter*), queen conch (*Strombus gigas*), tulip snail (*Fasciolaria tulipa*), juvenile fish, shrimp and crab. Due to the proximity of the marine composite substrate to the shoreline of the park, it is not subject to major impacts from vessels and is therefore, in excellent condition.

*General Management Measures***:** Although this habitat is subject to impacts from water quality, the potential presence of exotic marine species, and climatic changes resulting in coral bleaching events and increasing coral disease, the marine composite substrate at Curry Hammock has achieved its desired future condition. In order to maintain this condition, preventing impacts from motorized vessels and other physical damage needs to be a management priority. No Motor Zone signs have been installed in the submerged land on the ocean side of the park from the channel marker to the east of zone CU-09 west around zone CU-07 to prevent vessel traffic from entering the shallow waters of the park. Periodic surveys will be required to monitor for damage to the submerged resources including impacts from park visitors, vessel impacts, the short-term and long-term impacts from coral bleaching events, and exotic marine species.

Marine Consolidated Substrate

Desired Future Condition: Marine consolidated substrate is characterized by Key Largo limestone substrate with minimal sediment accumulation. This habitat is also known as hardbottom and often time consists of a combination of macroalgae, octocoral and stony coral species. Because there is minimal sediment accumulation, seagrass do not thrive in this environment.

Description and Assessment: The marine consolidated substrate at Curry Hammock is located on the northwest corner of zone CU-06 and in zone CU-04. This habitat is in excellent condition. It is dominated by macroalgae including; shaving brush algae, oatmeal algae, fern algae (*Caulerpa sertularioides*), and mermaid's wine cup (*Acetabularia* spp.); stony corals including finger coral, rose coral, knobby star coral (*Solenastrea hyades*), and lesser starlet coral (*Siderastrea radians*); and octocorals

including sea whips (*Pterogorgia* spp.). Other species found in this habitat include a variety of fish common in the shallow waters of the Florida Keys, sea urchins, thorny starfish (*Echinaster sentus*), and spiny lobster (*Panulirus argus*).

General Management Measures: Although the marine consolidated substrate has achieved its desired future condition, it is subject to the same potential impacts as the other submerged resources in the park. These include impacts from water quality, the potential presence of exotic marine species, and climatic changes resulting in coral bleaching events and increasing coral disease. As with the other submerged resources in the park, in order to maintain the desired future condition of the marine consolidated substrate, it will be necessary to prevent impacts from motorized vessels and other physical damage by park visitors. Periodic surveys will be required to monitor for physical impact to this community as well as for the presence of exotic marine species and the short-term and long-term impacts of coral bleaching events.

Seagrass Bed

Desired Future Condition: 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*). Johnson's grass (*Halophila* spp.) may be intermingled with the other seagrasses, but species of this genus are considerably less common in the Florida Keys.

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 do not thrive where nutrient levels are high because of increased turbidity and competition of undesirable algae species.

Seagrass beds provide important habitat for a host of commercially and recreationally important species including the Florida spiny lobster, queen conch, stone crab (*Menippe mercenaria*) and shrimp. All of these species rely on the marine grass bed for part or all of their life cycle. Larger predators such as the loggerhead turtle (*Caretta caretta*), green turtle (*Chelonia mydas*), hawksbill turtle (*Eretmochelys imbricata*), West Indian manatee (*Trichechus manatus*), and bottlenose dolphin (*Tursiops truncatus*) utilize the seagrass beds.

Most species migrate between the coral reef, seagrass beds and mangrove communities on a diurnal, seasonal or life cycle pattern. Seagrass stabilize sediment, cycle nutrients, and the seagrass blades trap suspended sediment in the water allowing clear water to be transported to the offshore coral reefs during tidal movement.

Description and Assessment: The three species of seagrass found in the park are turtle grass, shoal grass, and manatee grass. Turtle grass is the climax species

while shoal grass and manatee grass are the pioneer species and first to colonize into open and/or disturbed sites. Shoal grass has a greater tolerance for salinity and temperature fluctuations and is therefore typically found in areas where extreme conditions occur nearshore and in areas of minimal water depth. The morphology of its root structure enables shoal grass to effectively colonize open or disturbed areas stabilizing the sediment for the heavier rooted turtle grass. Manatee grass can be found in association with the other two species but is far less common in the park.

Macroalgae are found in association with the seagrass community although they are not as abundant in a climax seagrass bed that is predominantly a monoculture of turtle grass. These include shaving brush algae, oatmeal algae, fan algae (*Udotea* sp.), mermaid's wine cup, and fern algae. Several non-reef building species of coral can be found in this habitat including finger coral, rose coral, golfball coral, and knobby star coral. Although these species are found in the offshore coral reef habitat, they are able to persist in the seagrass beds because they are adapted to the higher salinity and temperature conditions of a seagrass bed, and are able to survive in water with higher suspended sediment in the water column. Other organisms found in the seagrass include echinoderms, Florida lobster, crabs, shrimp, fish, worms, sponges, and epiphytic species that attach themselves to the turtle grass blades.

The seagrass beds at Curry Hammock cover the majority of the submerged land and are in excellent condition except directly south of zone CU-09. Since the beach renourishment project was completed in 2007 access to the nearshore waters from the beach has denuded the seagrass coverage resulting in an unconsolidated habitat. Otherwise, the dense seagrass beds provide important habitat for a host of organisms as well as being functionally important for the protection of the coral reef ecosystem offshore (Engeman et. al. 2008).

General Management Measures: The seagrass beds in the park have achieved their desired future condition. In order to maintain this state it will be necessary for park staff to be proactive in their protection. No Motor Zone Markers are a resource management tool used to protect the habitats of the nearshore waters.

Marine Unconsolidated Substrate

Desired Future Conditions: Marine unconsolidated substrates are characterized as expansive, relatively open areas of subtidal, intertidal, and supratidal zones that lack dense populations of sessile plant species. Unconsolidated substrates are unsolidified material and include coral, algae, marl, mud, mud/sand, sand or shell. This community may support a large population of infaunal organisms as well as a variety of transient planktonic and pelagic organisms. While these areas may seem relatively barren, the densities of infaunal organisms in subtidal zones can be quite numerous, making this habitat an important feeding ground for many bottom feeding fish. Unconsolidated substrates are important because they form the foundation for the development of other marine communities.

Description and Assessment: The unconsolidated substrate at Curry Hammock is located directly offshore of the beach in zone CU-09, and in scattered locations in zone CU-06, CU-04 and CU-02. Although this habitat type appears barren, it supports a diverse array of infaunal organisms including echinoderms, worms, mollusks, shrimp and crabs providing an important feeding ground for bottom-dwelling fish, invertebrates and, in nearshore areas, wading birds.

General Management Measures: The unconsolidated substrate at Curry Hammock has achieved its desired future condition. In order to maintain this state, impacts from public use need to be monitored to prevent the degradation of the habitat particularly directly offshore of zone CU-09 where the beach grades into the submerged resources.

Clearing

Desired Future Condition: The cleared areas within the park will be managed to remove priority invasive plant species (FLEPPC Category I and II species). Other management measures include limited restoration efforts designed to minimize the effect of the cleared areas on adjacent natural areas. Cost-effectiveness, return on investment and consideration of other higher priority restoration projects within the park will determine the extent of restoration measures in cleared areas.

Description and Assessment: Not all of the land that is part of Curry Hammock is contiguous. These disjunct parcels are in zones CU-01, CU-02 and CU-03. These edge areas create a challenge to management as they are often subject to unauthorized access, dumping and exotic species infestations.

The cleared areas in the park include the south end of zone CU-01(location of the former buildings); the north side of zone CU-01 (location of former building); the southeast side of zone CU-05 where the fill pile is located in the salt marsh; and the retention pond north of the campground.

General Management Measures: In order for the cleared areas to be in their desired future condition exotic removal projects must remain a priority to prevent their spread into the natural communities of the park.

In addition, regular inspections of all of the properties within the park should be conducted in order to monitor for unauthorized access, dumping or exotic species infestations. Park Boundary signs need to be maintained to ensure that the public is aware that the properties are part of Curry Hammock. Fencing disjunct parcels would assist in protecting remote resources.

Developed

Desired Future Condition: The developed areas within the park will be managed to minimize the effect of the developed areas on adjacent natural areas. Priority invasive plant species (FLEPPC Category I and II species) will be removed from all developed areas.

Description and Assessment: The developed area of the park is concentrated in zone CU-09. Located in this zone is the main park entrance including the Ranger Station and offices, park shop, two residences, campground, and the day use area which consists of the beach, picnic pavilions, kayak launch, playground and two bathroom facilities. Burnt Point Rd is located in zone CU-05 and leads to a private residence.

The Florida Keys Overseas Heritage Trail is adjacent to the park between the park and the FDOT right-of-way in zone CU-11.

General Management Measures: Maintenance of exotic species will be necessary in order to maintain the desired future condition of the developed areas of the park. Efforts to minimize light pollution from park facilities will be pursued.

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 (FWC) or the Florida Department of Agriculture and Consumer Services (FDACS) as endangered, threatened or of special concern. A portion of the park is designated by the USFWS as critical habitat for the federally endangered Elkhorn and Staghorn coral

All naturally occurring imperiled plant species have been mapped using a Trimble GPS unit. These were recorded either as individual occurrences, or as polygons occurring within a natural community. An updated mapping project will be conducted when significant alterations to the habitat occur such as tropical storm or hurricane events.

The population of false boxwood (*Gyminda latifolia*) was impacted during the 2004/2005 hurricane season so the current distribution and abundance of the species is unknown. An updated GPS survey will be conducted. A sea lavender plant has recruited on to the spoil pile in zone CU-05. In order to restore the salt marsh habitat on the east side of the road, removing the spoil pile and grading to the elevation of the wetland is the desired future condition. Relocating the sea lavender will not be feasible.

The Hawk Watch program was initiated at Curry Hammock over fifteen years ago and has been conducted annually with the exception of one year. This program was established by the Audubon Society as a method of documenting the migratory patterns of hawk species. Surveyors maintain watch on the second level of the campground bath facility from 8:00am – 5:00pm from mid-September to early November. Expert birders provide a comprehensive list of species that migrate through Curry Hammock, illustrating trends and documenting the critical role the park and the rest of the Florida Keys play in migration. The endangered West Indian manatee occurs in the nearshore waters of the parks. Sea turtles including loggerhead, green, Atlantic leatherback and hawksbill are found in the nearshore waters of the park. Since the completion of the beach renourishment project in 2007, nesting activity has been documented in the park. Regular patrols by park

staff are conducted during nesting season. Annual piping plover surveys are conducted as part of the USFWS census project. Smalltooth sawfish (*Pristis pectinata*), listed as endangered by the Endangered Species Act, have been observed in zone CU-06.

As roseate terns face extirpation in the Florida Keys, innovative solutions to provide suitable nesting habitat should be examined on a case by case basis. Provided that current cleared or developed areas in the park are not under any constraints by restoration permits and/or restoration funding sources, these areas may be considered for the enhancement or establishment of suitable shorebird nesting habitat.

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 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 & Scientific Name	Imperiled Species Status				Management Actions	Monitoring Level
	FWC	USFWS	FDACS	FNAI		
PLANTS						
Blue-mist flower *Ageratum littorale*		N	LE	G2G3, S2	2,10	Tier 3
Sea lavender *Argusia gnaphalodes*		N	LE	G4,S3	2,10	Tier 4
Milkbark *Drypetes diversifolia*		N	LE	G4,S2	2,10	Tier 3
False boxwood *Gyminda latifolia*		N	LE	G4,S2	2, 10	Tier 4
Sky blue morning glory *Jacquemontia pentanthos*		N	LE	G4G5, S2	2,10	Tier3
Joewood *Jacquinia keyensis*		N	LT	G4,S3	2,10	Tier3
Wild dilly *Manilkara jaimiqui* subsp. *Emarginata*		N	LT	G4,S3	2,10	Tier 3

Table 2: Imperiled Species Inventory						
Florida thatch palm *Thrinax radiata*		N	LE	G4G5, S2	2,10	Tier 3
FISH						
Smalltooth sawfish *Pristis pectinata*		LE			13	Tier1
REPTILES						
Loggerhead turtle *Carretta carretta*	FT	LT		G3,S3	10, 13	Tier 2
Atlantic green turtle *Chelonia mydas*	FT	LE		G3,S2	10, 13	Tier 2
Atlantic leatherback turtle *Dermochelys coriacea*	FE	LE		G2,S2	10, 13	Tier 2
Eastern indigo snake *Drymarchon corais cooperi*	FT	LT		G3,S3	10, 13	Tier 1
Hawksbill turtle *Eretmochelys imbricata*	FE	LE		G3,S1	10, 13	Tier 2
Mangrove terrapin *Malaclemys terrapin rhizophorarum*	N	N		G4T2Q,S2	10, 13	Tier 1
Kemp's ridley turtle *Lepidochelys kempii*	FE	LE		G1,S1	10, 13	Tier 2
BIRDS						
Great white heron *Ardea herodias occidentalis*	N	N		G5T2, S2	10, 13	Tier 2
Short-tailed hawk *Buteo brachyurus*	N	N		G4G5, S1	10, 13	Tier 4
Piping plover *Charadrius melodus*	FT	LT		G3,S2	10, 13	Tier 2
Snowy plover *Charadrius alexandrinus*	ST	N		G4,S1	10, 13	Tier 2
Little blue heron *Egretta caerulea*	SSC	N		G5,S4	10, 13	Tier 2
Reddish egret *Egretta rufescens*	SSC	N		G4,S2	10, 13	Tier 2
Snowy egret *Egretta thula*	SSC	N		G5,S3	10, 13	Tier 2
Tricolored heron *Egretta tricolor*	SSC	N		G5,S4	10, 13	Tier 2
Swallow-tailed kite *Elanoides forficatus*	N	N		G5,S2	10, 13	Tier 4
White ibis *Eudocimus albus*	SSC	N		G5,S4	10, 13	Tier 2
Merlin *Falco columbarius*	N	N		G5,S2	10, 13	Tier 4

Table 2: Imperiled Species Inventory						
Peregrine falcon *Falco peregrinus*	N	N		G4,S2	10, 13	Tier 4
Magnificent frigatebird *Fregata magnificens*	N	N		G5,S1	10, 13	Tier 1
Caspian tern *Hydroprogne caspia*	N	N		G5,S2	10, 13	Tier 2
Wood stork *Mycteria americana*	FE	LE		G4,S2	10, 13	Tier 1
Osprey *Pandion haliaetus*	SSC*	N		G5,S3 S4	10, 13	Tier 4
White-crowned pigeon *Patagioenas leucocephala*	ST	N		G3,S3	10, 13	Tier 1
Brown pelican *Pelecanus occidentalis*	SSC	N		G4,S3	10, 13	Tier 1
Roseate spoonbill *Platalea ajaja*	SSC	N		G5,S2	10, 13	Tier 1
American avocet *Recurvirostra americana*	N	N		G5,S2	10, 13	Tier 1
Snail kite *Rostrhamus sociabilis*	FE	LE		G4G5 T2,S2	10, 13	Tier 4
Black skimmer *Rynchops niger*	SSC	N		G5,S3	10, 13	Tier 1
Roseate tern *Sterna dougallii*	FT	LT		G4,S1	10, 13	Tier 2
Least tern *Sternulla antillarum*	ST	N		G4,S3	10,13	Tier2
Sandwich tern *Thalasseus sandvicensis*	N	N		G5,S2	10, 13	Tier 2
MAMMALS						
Key Vaca Raccoon *Procyon lotor auspicatus*	N	N		G5T2, S2	10, 13	Tier 1
Florida manatee *Trichechus manatus latirostris*	FE	LE		G2,S2	10, 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 & Education
14.... Other

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 venomous snakes or raccoons 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.

Numerous exotic plant removal projects have been conducted at Curry Hammock State Park through funding from the FWC Invasive Plant Management program, by

the Keys Resource Management Team projects, and in-house by park and District staff. Periodic surveys to monitor for and retreat infestations is ongoing. Since the approval of the 2005 Management Plan, 79.51-acres have been treated at Curry Hammock State Park.

The population of green iguanas throughout the Florida Keys has significantly increased in the last five years. The concern with this population explosion is the potential impacts on the native plant recruitment if iguanas eat flowers, thus preventing fruits from forming. This is especially critical for the imperiled species within the park. Feral and domestic cats are also prevalent in the Florida Keys and adversely impact songbirds and nesting birds. Black rats are abundant throughout the Keys and are found in the park. Curly-tailed lizards are increasing in their abundance in the Florida Keys but to date, only one has been sighted in the park and was removed. When exotic animals are observed in the park, they are removed according to the protocols established in the Operations Manual.

Although Gambian pouched rats (*Cricetomys gambianus*) are found on Grassy Key, they have not been observed in Curry Hammock. The US Department of Agriculture conducts regular trapping on most properties where the rat is known to inhabit.

A Madagascar day gecko (*Phelsuma madagascariensis madagascariensis*) was observed on the nature trail in February 2015 during a Florida International University field trip to the park. This is a new record for the park and represents a southern migration of this species from the upper Keys.

Twenty-eight nuisance animals and 407 exotic animals have been removed from Curry Hammock since the approval of the 2005 Management Plan.

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, 2015). 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
PLANTS			
Green shrimp plant *Blechum pyramidatum*	II	0	CU-01
Australian pine *Casuarina equestifolia*	I	2	CU-03, CU-07, CU-09
Coconut palm *Cocos nucifera*	II	2	CU-09
Latherleaf *Colubrina asiatica*	I	2	CU-11

Table 3: Inventory of FLEPPC Category I and II Exotic Plant Species			
Common and Scientific Name	**FLEPPC Category**	**Distribution**	**Management Zone**
Egyptian grass *Dactyloctenium aegyptium*	II	2	CU-01, CU-09
Lantana *Lantana camara*	I	0	CU-01
Lead tree *Leucaena leucocephala*	II	2	CU-01, CU-03, CU-11
Natal grass *Melinis repens*	I	2	CU-01
Guinea grass *Panicum maximum*	II	2	CU-01
Bowstring hemp *Sansevieria hyacinthoides*	II	2	CU-01
Beach naupaka *Scaevola taccada*	I	2	CU-09
Brazilian pepper *Schinus terebinthifolius*	I	2	CU-01, CU-05, CU-09, CU-11
Wedelia *Sphagneticola trilobata*	II	1	CU-09
Portia *Thespesia populnea*	I	2	CU-01, CU-11
Oyster plan *Tradescantia spathacea*	II	2	CU-01
ANIMALS			
Brown anole *Anolis sagrei*			All upland
Rock dove *Columba livia*			Developed
Domestic cat *Felis catus*			All upland
Madagascar day gecko *Phelsuma madagascariensis madagascariensis*			CU-11
Green iguana *Iguana iguana*			All upland
Northern curly-tailed lizard *Leiocephalus carinatus armouri*			Developed
Cuban tree frog *Osteopilus septentrionalis*			All upland
Black rat *Rattus rattus*			All upland
Fire ant *Solenopsis invicta*			All upland

Table 3: Inventory of FLEPPC Category I and II Exotic Plant Species			
Common and Scientific Name	**FLEPPC Category**	**Distribution**	**Management Zone**
Eurasian collared dove *Streptopelia decaocto*			Developed
Cuban garden snail *Zachrysia provisoria*			All upland

Distribution Categories (FNAI):

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

The Special Natural Feature at Curry Hammock is the rockland hammock. This natural community is significant because it is one of the largest rockland hammock communities in the middle Florida Keys, it supports a large population of Florida thatch palm, and supports a population of the rare false boxwood. The Florida Keys are an important migratory route for birds and large tracts of intact hammock provide critical wildlife corridors for migration.

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 means 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 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 historical, architectural, ethnographic or archaeological context. Evaluation 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 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.

Pre-Historic 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 lists one archaeological site within the park boundary of Curry Hammock State Park. The site lies within one of additional parcels added to the park boundary since the last management plan was approved and is located within the boundary of management zone CU-03. Resource group MO3433, Old State Road 4a, also touches the easternmost portions of the park.

An archaeological sensitivity model (predictive model) was developed for Curry Hammock State Park in 2013. This model included factors that took in a variety of environmental and cultural variables that account for the presence of sites through time and space and account for the variability of site types known to occur within the park as demonstrated through previous surveys or recordation of sites within the park vicinity. Matrix variables used in the evaluation for this park model included factors relating to coastal relationship, topography and relative elevation, and historic land use activities. Negative factors that are associated with drainage and landform modification were also applied.

The archaeological sensitivity model was completed for the upland portions of Curry Hammock State Park and excluded the submerged resources of the park. A digital elevation model (DEM) was incorporated from aerial LiDAR data in order to determine the potential for additional cultural resources. Ground-truthing surveys were then conducted using GPS and camera equipment in order to determine prospective cultural resources.

The analysis of LiDAR and ground-truthing enabled the survey team to update the position and extent of site 8MO3497 in zone CU-03. Additionally the NOAA Costal Survey maps from 1857 show a large portion of land fill activities across Curry Hammock State Park, especially near Fat Deer Key. For this reason, additional archaeological testing should be limited to landform areas that were present pre-fill modification in this locale.

A number of predictive models are useful in the examination of locations within the Florida Keys. Notable are the works of John Mann Goggin who conducted excavations and numerous reconnaissance and site reconnoitering trips, recording a large number of sites in the region (Goggin, 1944). According to Goggin, sites in the upper Keys are often located bayside and in the lower Keys the principal channels separating the islands are also of site selection importance.

There is only one recorded 20th Century site location with Curry Hammock, but the sensitivity model shows areas of high sensitivity for approximately 30% of the park or 152.41 acres. These areas correlate to previous environmental variables associated with prehistoric site location strategies, as well as historic land use. Of the 657.89 acres of Curry Hammock State Park, zero acres were in the medium sensitivity area and 505.48 or 69.85% were in low sensitivity area (Collins, et.al 2013

Site 8MO3497 is a World War II era mosquito ditch that runs parallel to U.S. Highway 1 and is located in zone CU-03 on Grassy Key. There are no fragments, shell scatter, or refuse located at this site, it consists strictly of the mosquito ditch.

Condition Assessment: Mosquito ditches are not an uncommon feature in certain areas of the Florida Keys. Site 8MO3497 is in good condition and is typical of the narrow ditches that were dredged in the Keys to control the mosquito population.

General Management Measures: Over time, mosquito ditches fill in with sediment or are impacted by vegetative growth as the surrounding habitat expands. In the lower Keys, land managers have filled in mosquito ditches in order to restore the natural hydrological flow. Site 8MO3497 is in the desired future condition.

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 Florida Master Site File lists one historic structure within Curry Hammock State Park. The Ferry House (8MO1938) was recorded by park staff in 2009. The building was reputedly used in the by the ferry system that linked Lower Matecumbe Key to Grassy Key in the period between the destruction of the Overseas Railroad in 1935 by hurricane and the completion of the Overseas Highway in 1928. The building was located on Grassy Key on property recently added to the park boundary. At the time the building was recorded, it was substantially altered with incompatible modern material and in poor condition beyond repair. After consultation with DHR in which the building was determined to be not significant due to its alterations and condition, the building was demolished to clear the parcel for additional park housing.

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: There are no collections at Curry Hammock State Park.

Table 4: Cultural Sites Listed in the Florida Master Site File

SITE NAME & FMSF #	CULTURE/ PERIOD	DESCRIPTION	SIGNIFICANCE	CONDITION	TREATMENT
Mosquito Ditch (8MO3497)	Early 20th Century	Archeological Site	NE	G	P
Ferry House (8MO1938)	Early 20th Century	Historic Structure (removed 2009)	NS	NA	R

Significance

NRL.....National Register listed
NR.....National Register eligible
LS.....Locally Significant
NE.....Not evaluated
NS.....Not significant

Condition

G.....Good
F.....Fair
P.....Poor

Recommended Treatment

RS.....Restoration
RH.....Rehabilitation
ST.....Stabilization
P.....Preservation
R.....Removal

RESOURCE MANAGEMENT PROGRAM

Management Goals, Objectives and Actions

Measurable objectives and actions have been identified for each of the DRP's management goals for Curry Hammock 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 the 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 the 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 the 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 Chapters 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 plans provide 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. Florida's native habitats are precisely adapted to natural drainage patterns and seasonal water level fluctuations, and variations in these factors frequently determine the types of natural communities that occur on a particular site. Even minor changes to natural hydrology can result in the loss of plant and animal species from a landscape. Restoring state park lands to original natural conditions often depends on returning natural hydrological processes and conditions to the park. This is done primarily by filling or plugging ditches, removing obstructions to surface water "sheet flow," installing culverts or low-water crossings on roads, and installing water control structures to manage water levels.

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

A hydrological assessment of the salt marsh in zone CU-05 was conducted in 2010 to determine if hydrological restoration was feasible or necessary. The report indicated that the salt marsh on the west side of Burnt Point Rd. did not need hydrological restoration, that the accumulation of sediment was a natural function of the habitat. The salt marsh is inundated with saltwater during storm events and will be maintained using prescribed fire as a resource management tool. Due to the hydrological functions of the salt marsh on either side of Burnt Point Rd. it was determined that the road did not present enough of a physical barrier to warrant installing culverts. The mosquito ditches in this area are not functional and attempts at restoring the ditches back to their natural elevation would result in more habitat damage than would be warranted.

Objective: Restore natural hydrological conditions and functions to approximately 4 acres of salt marsh and mangrove swamp natural communities.

Action 1: Design a plan to restore hydrological functions in the salt marsh and mangrove swamp communities in the park.
Action 2: Implement hydrological restoration.

Hydrological restoration of the salt marsh on the east side of Burnt Point Rd. in zone CU-05 at Curry Hammock will require removing the spoil pile and the adjacent road, and grading to the historical elevation.

Restoration of the flow through two mangrove tidal creeks requires constructing culverts under U.S. Highway 1 to reconnect the tidal creeks that were separated during the construction of the highway. This will require collaborating with The

Florida Department of Transportation in order to accomplish this objective. However current techniques including directional boring may make this project more feasible once funding and permits are secured. Park staff will also work with the Office of Imperiled Species Management to ensure that appropriate steps are taken to help prevent manatees from entering the culverts.

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.

Prescribed Fire Management: Prescribed fire is used to mimic natural lightning-set fires, which are one of the primary natural forces that shaped Florida's ecosystem. Prescribed burning increases the abundance and health of many wildlife species. A large number of Florida's imperiled species of plants and animals are dependent on periodic fire for their continued existence. Fire-dependent natural communities gradually accumulate flammable vegetation; therefore, prescribed fire reduces wildfire hazards by reducing these wild land fuels. All prescribed burns in the Florida state park system are conducted with authorization from the FDACS, Florida Forest Service (FFS). Wildfire suppression activities in the park are coordinated with the FFS.

Objective: Within 10 years, have 3 acres of the park maintained within the optimum fire return interval.

Action 1: Develop/update annual burn plan.
Action 2: Manage fire dependent communities by burning the salt marsh in zone CU-05 every 3-5 years.

Sediment accumulation in three acres of the salt marsh in zone CU-05 has prevented the natural functionality of this ecosystem. A hydrological assessment determined that there was no hydrological restoration that could be conducted at this site in order to restore the natural processes. To prevent encroachment of hardwood species, prescribed burning has been successfully used as a management tool. This small parcel requires regular burn intervals of 3-5 years, and since no other burn community exists in the park, an annual target acreage goal does not apply.

Table 5 contains a list of all fire-dependent natural communities found within the park, their associated acreage and optimal fire return interval, and the annual average target for acres to be burned.

Table 5: Prescribed Fire Management		
Natural Community	**Acres**	**Optimal Fire Return Interval (Years)**
Salt marsh	3	3-5-years
Annual Target Acreage	0.6	

Prescribed fire is planned for each burn zone on the appropriate interval. The park's burn plan is updated annually because fire management is a dynamic process. To provide adaptive responses to changing conditions, fire management requires careful planning based on annual and very specific burn objectives. Each annual burn plan is developed to support and implement the broader objectives and actions outlined in this ten-year management plan.

The salt marsh on the west side of the road in zone CU-05 is the only habitat within Curry Hammock that is to be managed using prescribed fire to maintain the habitat in the achieved desired future condition. The optimal fire return frequency is a three-five year interval in order to prevent hardwood species from recruiting into the salt marsh. Where saltwater inundation impacts the salt marsh due to storm events or unnaturally high tides, the fire frequency interval may be greater than the optimal interval. Because of the presence of natural barriers and a road, the only area to be maintained as a firebreak is on the north side adjacent to a private landowner. This area is a 10-foot wide mowed section south of the fence line.

Safety preparations include managing the fire on the east side of the burn zone where power lines lead to the private residence, ensuring the prescription does not place smoke on U.S. 1 which is approximately ¼ mile to the south, or towards the residence which is approximately 1 mile to the north.

This burn zone is bisected by a slightly elevated area where hardwood species persist. Prescribed fire is a necessary resource management tool in this zone to prevent the recruitment of hardwood species into the salt marsh, outcompeting the herbaceous vegetation. This habitat supports marsh rabbits, migratory raptors, snakes and butterflies that rely on the herbaceous vegetation for food and habitat. In order to track fire management activities, the DRP maintains a statewide burn database. The database allows staff to track various aspects of each park's fire management program including individual burn zone histories and fire return intervals, staff training/ experience, backlog, if burn objectives have been met, etc. The database is also used for annual burn planning which allows the DRP to document fire management goals and objectives on an annual basis. Each quarter the database is updated and reports are produced that track progress towards meeting annual burn objectives.

Natural Community Restoration: In some cases, the reintroduction and maintenance of natural processes is not enough to reach the natural community desired future conditions in the park, and active restoration programs are required. Restoration of altered natural communities to healthy, fully functioning natural landscapes often requires substantial efforts that may include mechanical treatment

of vegetation or soils and reintroduction or augmentation of native plants and animals. For the purposes of this management plan, restoration is defined as the process of assisting the recovery and natural functioning of degraded natural communities to desired future condition, including the re-establishment of biodiversity, ecological processes, vegetation structure and physical characters.

Examples that would qualify as natural communities' restoration, requiring annual restoration plans, include large mitigation projects, large-scale hardwood removal and timbering activities, roller-chopping and other large-scale vegetative modifications. The key concept is that restoration projects will go beyond management activities routinely done as standard operating procedures such as routine mowing, the reintroduction of fire as a natural process, spot treatments of exotic plants, small-scale vegetation management.

Following are the natural community/habitat restoration and maintenance actions recommended to create the desired future conditions in the seagrass community.

Objective: Conduct habitat/natural community restoration activities on two acres of seagrass bed natural community.

Action 1: Develop restoration plan.
Action 2: Implement restoration of the borrow pit.

Restoration of the borrow pit in zone CU-11 will restore approximately 2-acres of seagrass habitat. This borrow pit is approximately 35 feet in depth and is enclosed by mangrove swamp on two sides and Keys tidal rock barren on the third side. Similar restoration has been conducted at Dagny Johnson Key Largo Hammock Botanical State Park.

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. Following are the natural community/habitat improvement actions recommended at the park.

The natural communities at Curry Hammock State Park do not require habitat improvement in order to achieve their desired future condition. Instead, the park will focus on restoration and exotic removal in order to achieve the desired future conditions for these natural communities.

Imperiled Species Management

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

The 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 the 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: Update baseline imperiled species occurrence inventory lists for plants and animals.

Objective: Monitor and document twelve selected imperiled animal species in the park.

Action 1: Implement monitoring protocols for piping plover, short-tailed hawk, wood stork, osprey, least tern, roseate tern, snail kite, merlin, peregrine falcon, white-crowned pigeon, sandwich tern, Caspian tern, snail kite, great white heron.

The Hawk Watch International Program continues to document migratory patterns of raptors by conducting daily eight-hour observations at Curry Hammock between mid-September through early-November. Annual piping plover surveys are conducted as U.S. Fish and Wildlife Service project. Nesting shorebirds will be conducted between March and August as part of the Florida Fish and Wildlife Conservation Commission's Florida Shorebird Alliance Project. Staff conduct daily surveys during sea turtle nesting season to monitor for nesting or false crawl activity.

Objective: Monitor and document all imperiled plant species in the park.

Action 1: Implement monitoring protocols to document imperiled plant species.

All naturally occurring imperiled species have been mapped using a Trimble GPS unit. These were recorded either as individual occurrences, or as polygons occurring within a natural community. This data will need to be updated when significant events occur such as a tropical storm or hurricane, which would potential impact population distribution and density.

The population of false boxwood (Gyminda latifolia) was impacted during the 2004/2005 Hurricane seasons. This population needs to be remapped in order to determine the current status of its abundance and distribution at Curry Hammock.

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 ecological damage. Removal techniques may include mechanical treatment, herbicides or biocontrol agents.

Objective: Annually treat 25 acres of exotic plant species in the park.

Action 1: Implement protocols to treat invasive exotic plant species in the park.

Approximately twenty-five acres of exotic plant species at Curry Hammock will be treated annually. Periodic surveys for exotic infestation will be conducted by park staff and through the Keys-wide Resource Management Team project to treat exotic species that have either sprouted or have recruited into the site after previous exotic removal treatments.

Objective: Implement control measures on six nuisance and exotic animal species in the park.

Action 1: Implement exotic removal protocols to control invasive exotic animal species in the park.

When black rats, green iguanas, curly-tailed lizards, chickens, and feral or free roaming cats are observed in the park, they will be removed. Staff will monitor the submerged resources in the park for the presence of lionfish (*Pterois volitans*).

Gambian pouched rat is not found within the boundaries of Curry Hammock, but they do occur on Grassy Key in land that is near the park boundaries. However, the park will continue to partner with USDA on the removal of the Gambian pouched rat which will hopefully insure that it does not invade into the park.

Special Management Considerations

Timber Management Analysis

Chapters 253 and 259, Florida Statutes, require an assessment of the feasibility of managing timber in land management plans for parcels greater than 1,000 acres if the lead agency determines that timber management is not in conflict with the primary management objectives of the land. The feasibility of harvesting timber at this park during the period covered by this plan was considered in context of the

DRP's statutory responsibilities and an analysis of the park's resource needs and values. The long-term management goal for forest communities in the state park system is to maintain or re-establish old-growth characteristics to the degree practicable, with the exception of those communities specifically managed as early successional.

During the development of this plan, an analysis was made regarding the feasibility of timber management activities in the park. It was determined that the primary management objectives of the unit could be met without conducting timber management activities for this management plan cycle. Timber management will be re-evaluated during the next revision of the management plan.

Coastal/Beach Management

The 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.

Curry Hammock supports 0.25 miles of beach on the Atlantic ocean in zone CU-05. Erosion of beach material is problematic during major storm events both from the Oceanside but also from a narrow gully that funnels water from the campground. Additional dune stabilization along the length of the beach will minimize beach loss. A beach renourishment project was completed at Curry Hammock in 2010. Future renourishment projects will likely be necessary, however selection of beach material should consider local, native sources of calcium carbonate sediment. The beach at Curry Hammock supports nesting sea turtles and shorebirds.

The nearshore waters off the beach at Curry Hammock were once lush seagrass beds. However, once the beach renourishment project was completed and visitor activity increased, the cumulative impacts of use have denuded the seagrass and this areas is now unconsolidated substrate.

The beach in the campground provides a popular tourist destination. Since many campgrounds in the Florida Keys closed in the mid-2000s, camping has become a premium commodity putting more pressure on those campgrounds that are still in existence. This heavy use impacts natural resources including shorebird disturbance, damage to dune buffer vegetation, damage to seagrass beds, and unauthorized collection of marine organisms.

In addition to management of the beach at Curry Hammock, the park also manages the submerged land from the mean high water mark to the 400-foot boundary. This management area includes zones CU-02, CU-04 and CU-06. Although the submerged resources are in excellent condition, potential impacts from boat access have the capacity to damage the submerged resources of the park, particularly the seagrass beds in the nearshore waters. No Motor Zone signs are in place on the oceanside of zone CU-06, and could be installed in zones CU-02 and CU-04 in order to protect the submerged resources if determined to be appropriate. The bayside submerged communities are not likely to be impacted by vessels due to their shallow depth.

Arthropod Control Plan

Mosquito control for treatment of adult mosquitoes is applied in the park by ground spraying and under the park manager's discretion. Approved areas for application are the park shop, campground, and residence areas. Aerial spraying occurs throughout the Florida Keys so incidental drift does occur on state lands and over state waters. An Arthropod Control Plan has been developed for Curry Hammock State Park.

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. Treatment methods including larviciding and ground adulticiding (truck spraying in public use areas) are typically allowed. Aerial adulticiding can be allowed through an agreed upon control 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.

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. The DRP considered recommendations of the land management review team and updated this plan accordingly.

Curry Hammock State Park was subject to a land management review on November 09, 2010. The review team made the following determinations:

- The land is being managed for the purpose for which it was acquired.
- The actual management practices, including public access, complied with the management plan for this site.

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) 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 and 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 the 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

Curry Hammock State Park is located within Monroe County in the City of Marathon, about 20 miles south of Islamorada, in the Florida Keys.

The population of Monroe County is relatively diverse in terms of demographic characteristics. According to the U.S. Census Data (Census 2013), approximately 32% of residents in the county identify as black, Hispanic or Latino, or another minority group. Over one-third (39%) of residents can be described as youth or seniors (Census 2013). 71% of the population is of

working age (16 to 65) (Census 2013). Monroe County ranked 3rd statewide in per capita personal income at $57,829 (above the statewide average of $41,497) (U.S. Bureau of Economic Analysis 2014).

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% of 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).

The table below identifies significant resource-based recreation opportunities within 15 miles of Curry Hammock State Park.

Table 6. Resource-Based Recreational Opportunities Near Curry Hammock State Park

Name	Biking	Hiking	Swim / Beach Access	Boating / Paddling	Fishing	Wildlife Viewing	Overnight Stay
Long Key State Park (FDEP)		✓	✓	✓	✓	✓	✓
Coco Plum Beach (Marathon)			✓			✓	
Sombrero Beach (Marathon)			✓				
Pigeon Key (Monroe County)			✓	✓	✓	✓	
Veteran's Memorial Park (Monroe County)			✓		✓		✓
Great White Heron National Wildlife Refuge (FWS)				✓	✓	✓	

Crane Point Museum and Nature Center (Private)		✓		✓		✓	
Florida Keys Overseas Heritage Trail (FDEP)	✓				✓	✓	

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. To address these needs, beach access, interpretation, and an improved connection between the park and the Florida Keys Overseas Heritage Trail will be provided (FDEP 2013).

Existing Use of Adjacent Lands

Curry Hammock State Park is located within the City of Marathon, which has a population of around 8,708 (Census 2014). The park is comprised of four keys, Little Crawl Key, Long Point Key, Fat Deer Key, and Deer Key and is located to the northern end of the group of keys that make up Marathon. Like most of the inhabited keys, the park is connected to the surrounding community only by the Overseas Highway, which bisects the park from east to west with the Gulf of Mexico to the north and the Atlantic Ocean to the south. On the northeast side of the park, low-density county government support facilities, Monroe County managed conservation lands, and sparsely developed residential areas are present. To the southwest is the more densely developed section of Marathon with water oriented residential and commercial developments in an auto-dependent layout characteristic of the Florida Keys. A large residential property is located at the northern end of Long Point Key across from the main park entrance.

Planned Use of Adjacent Lands

Monroe County is a relatively small county in terms of population in Florida with around 74,000 residents and is projected to increase by only a small amount to 75,000 by 2040 (BEBR). Current efforts to manage development in the unique environment of the Florida Keys has discouraged the number of new developments seen by the rest of the state. Development of adjacent privately owned lands to maximum allowable densities and uses should be anticipated. Future land use designations to the northeast include commercial, conservation, and mixed use commercial. To the southwest, mixed use commercial and industrial uses along with high density residential designations will continue to allow for the majority of future growth in Marathon.

The vulnerability of the Florida Keys to tropical storm events has encouraged officials to address evacuation efforts throughout Monroe County. By managing growth in Monroe County and thereby preventing too much pressure on the Overseas Highway as the main means of evacuation, officials hope to ensure safe evacuation times for County residents and visitors when threatened by a tropical storm event. County officials have adopted a series of land use regulations that aim to focus growth in areas that are in a better position to support more development. In addition, these regulations deter future growth from occurring in sensitive natural areas that protect numerous listed plant and animal species. This approach also supports efforts to maintain and enhance water quality throughout the Florida Keys National Marine Sanctuary (Monroe County 2000).

Migration to, and tourism in, the Florida Keys is expected to remain popular, and the impacts of residential and resort development, including loss of wildlife habitat, water quality impacts, noise, and traffic congestion along U.S. Highway 1 will continue to affect the state park. Division staff should be involved in the development of the City of Marathon's comprehensive plan, future land use map and land development ordinances. Staff should also stay well informed about development plans in the surrounding community. Staff will request to be included by the local planning agency in the review of development proposals that may affect the natural, cultural, or recreational resources of the state park.

Greenways and Trails

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.

Curry Hammock State Park is a component of the Florida Greenways and Trails System, administered by the Department’s Office of Greenways and Trails.

Other Trail Networks

The Florida Keys Overseas Heritage Trail (FKOHT) is a multi-use trail that extends from MM 106.5 in Key Largo to MM 0 in Key West parallel to the Overseas Highway. The majority of the trail is located in FDOT right of way while the trail is routed across the Florida Keys Historic Bridges, originally constructed by Henry Flagler as part of the East Coast Railroad in the early 1900's, when possible.

The FKOHT is the southernmost segment of the East Coast Greenway, with the northern terminus located in Calais, Maine and the southern terminus in Key West, Florida. The FKOHT passes by numerous exceptional and unique natural communities including rockland hammock, mangroves, Keys tidal rock barren and lagoons. The FKOHT is managed by the DRP in partnership with the FDOT and Monroe County, in addition to each community through which the trail passes.

The FKOHT is a critical component of local transportation infrastructure, and is still in development. Additions, expansions, trail widening projects, and bridge rehabilitation efforts are currently underway. Where there is a gap in the trail, the trail then merges with the Overseas Highway shoulder.

In addition, the park is also located along the Florida Circumnavigational Saltwater Paddling Trail that traverses the entire Florida coastline from Perdido Key State Park in Escambia County on the Gulf coast to Fort Clinch State Park in Fernandina Beach on the Atlantic coast.

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.

Recreational Resource Elements

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

Land Area
The majority of Curry Hammock State Park consists of mangrove swamp and other sensitive wetlands that limit access for passive recreation opportunities. There are however, significant sections of rockland hammock that do support exceptional hiking and wildlife viewing along an existing nature trail. The main developed section of the park on Little Crawl Key includes a 28-site campground and beachfront day use area behind a beach dune community along the parks only sandy shoreline. There is potential for improving the connection between the park and the Florida Keys Overseas Heritage Trail and thereby allowing additional bicycling opportunities for park visitors.

Water Area
Curry Hammock State Park is located between the Atlantic Ocean to the south and the Gulf of Mexico to the north. Opportunities for saltwater passive recreation activities are prevalent such as snorkeling, swimming, and paddling. Windsurfing is another activity that attracts a significant number of visitors. Paddling is a popular activity on waters around the park, which contain a segment of the Florida Circumnagivational Saltwater Paddling Trail.

Shoreline
The vast majority of the shoreline of Curry Hammock State Park consists of mangroves, and thus are inaccessible for resource-based recreational activities. The existing sandy beach areas of the park are popular beach access areas; however, they are receding due to a variety of factors that have induced significant coastal erosion.

Natural Scenery
Scenic resources are generally elements of the landscape and built environment that are visually pleasing as determined by visitor preferences and consensus. The range of scenic resources in Florida state parks is wide and varied. Scenic views include such features as topography and landform; vegetation and natural communities; water bodies (oceans, estuaries, lakes, rivers, and springs); historic and cultural features (buildings, archaeological sites, and working landscapes); travel corridors (roads, rivers, and trails); or any combination of these. Views can be distant, proximate, panoramic or discrete. A scenic resource may be an individual view, as from a single overlook, or a sequence of views as experienced from a trail, river or road.

As a unique marine and coastal environment, the Florida Keys are intrinsically attractive to the public and offer countless views of both the Gulf of Mexico and the Atlantic Ocean. Curry Hammock State Park itself provides outstanding views of the Atlantic Ocean in the day use section of the park on Little Crawl Key. The tropical hardwood hammock and palm hammock areas on both sides of the

Overseas Highway are very scenic and provide an excellent example of the natural environment of the middle keys.

Significant Habitat

The park contains excellent examples of rare Keys tidal rock barren, Rockland hammock, mangrove tidal swamp and seagrass bed natural communities. These communities create valuable opportunities for wildlife viewing and nature study. Care will need to be taken to prevent excessive pressure from visitor use in these sensitive areas.

The shallow waters surrounding the property function as nursery and feeding grounds for juvenile and adult fishes and invertebrates, wading birds, and turtles. The West Indian manatee frequents the shallow waters around the park, especially during the winter. Many resident and migratory bird species including white-crowned pigeons can be found throughout the extensive quality natural communities within the park. Predatory hawks and falcons are regular visitors to the park on their spring and fall migrations. Hawk watching is an outstanding recreational and interpretive element at the park, and should be accommodated with appropriate facilities where possible.

Natural Features

Curry Hammock represents the most complete remaining example of the natural communities of the Middle Florida Keys. The unit contains an outstanding example of a rockland hammock, a plant community that only exists in scattered remnants in the middle Florida Keys. The hammock provides unique opportunities for wildlife viewing and hiking and serves as an important stop for migratory raptors.

Archaeological and Historical Features

There are no significant archaeological or historical features known to exist within the park that would provide opportunities for interpretation.

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

Human activity in Curry Hammock State Park has been relatively limited prior to becoming a state park. The territory of the Calusa people at times reached the Florida Keys and were politically influential when not in direct control. About 30% of the park, or around 152 acres, is considered an area of high sensitivity for prehistoric activity from the most recent predictive model conducted for the

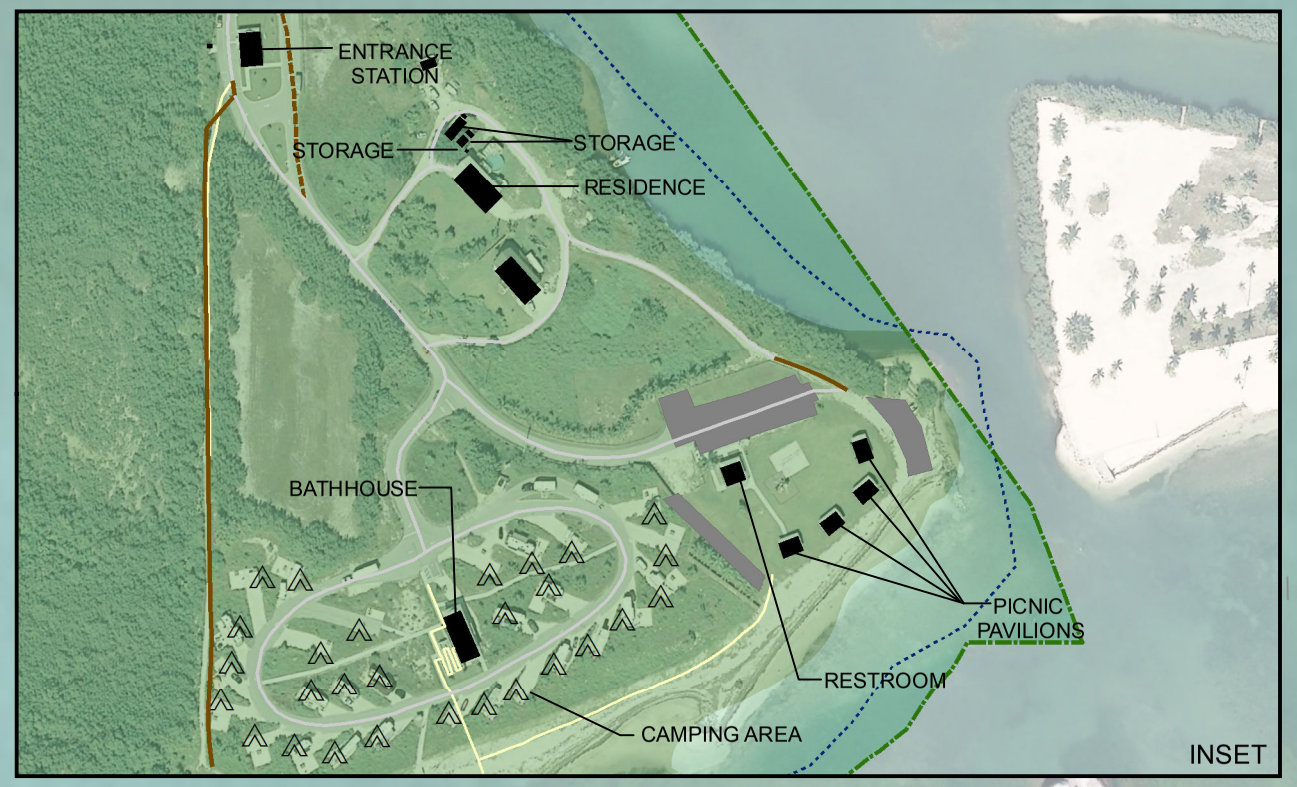
park in 2013. The park is renowned for its exceptional natural communities that help support the larger ecosystem of the Middle Keys. Historically, as with the majority of the inhabited islands of the Florida Keys, the Flagler railroad passed through the park parallel to the existing stretch of U.S. Highway 1. NOAA Costal Survey maps from 1857 show a large portion of land fill activities across the park, especially near Fat Deer Key.

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 allow typical state park uses and facilities necessary for the provision of resource-based recreation.

The Future Land Use designations at Curry Hammock State Park include Conservation, Recreation, and Mixed-Use Commercial. The purpose of the Conservation category is to preserve natural and historic resources and permit passive resource-based recreational uses. Low-density residential, public uses, and utilities are permissible under the Conservation category. The intended purpose of the Recreation future land use category is to provide for both activity-based and resource-based parks and recreational facilities. Residential caretaker uses are also permitted. The Mixed Use Commercial category is intended to provide for commercial zoning districts where various types of commercial and residential uses including water-oriented light industrial and commercial, retail, storage, employee housing, and RV parks are encouraged (City of Marathon 2013).

Existing zoning designations at Curry Hammock State Park include Conservation Native Area (C-NA), Conservation Off-shore Island (C-OI), Parks and Recreation (PR), and Mixed-Use (MU). Conservation Native Area (C-NA) and Conservation Off-shore Island (C-OI) are used for properties that have natural limitations to development because of their sensitive environmental character. Certain low-density residential uses are permitted. The Parks and Recreation zoning designation identifies public or private parks and other recreational uses and allows certain residential and recreation support facilities. The Mixed-Use designation is a broad category that includes a wide variety of residential and commercial permitted uses that are designed to support a walkable urban environment along the U.S. Highway 1 corridor (City of Marathon 2015).



Legend

- Park Boundary
- US Highway
- Park Road Paved
- Park Road Stabilized
- Park Road Unstabilized
- Walkways
- Hiking Trail
- Paddling Trail
- Structures
- Camping Sites
- Parking Lots

CURRY HAMMOCK STATE PARK

N

0 500 1,000 2,000 Feet

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

BASE MAP

Current Recreational Use and Visitor Programs

The primary recreational activities at the park are camping and the use of the waterfront picnic area and sandy beach in the Day Use Area. The park is popular amongst windsurfers, anglers, and provides opportunities for snorkeling, hiking, and swimming. The nature trails at the park provide exceptional wildlife viewing opportunities and the park's status as part of the Great Florida Birding and Wildlife Trail attracts many visitors. The park hosts the Florida Keys Hawkwatch, a group popular amongst birders that studies the migration of birds of prey over Curry Hammock State Park. The campground bathhouse is a popular location for birdwatching and can become crowded at times.

The FKOHT passes through the park alongside U.S. Highway 1 and will continue to bring an increasing number of visitors to the park by bicycle as additional trail improvements are made.

Curry Hammock State Park recorded 147,142 visitors in FY 2014/2015. By DRP estimates, the FY 2014/2015 visitors contributed $12,885,523 million in direct economic impact, the equivalent of adding 206 jobs to the local economy (FDEP 2015).

Other Uses

The right of way of U.S. Highway 1, which includes the FKOHT, bisects the boundary of the park.

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 Curry Hammock State Park all wetlands as well as seagrass beds and known imperiled species habitat have been designated as protected zones. The park's current protected zone is delineated on the Conceptual Land Use Plan.

Existing Facilities

Facilities at Curry Hammock State Park are of relatively new construction having been built after 2004. Recreation facilities are grouped into two use

areas including the Day Use Area, which encompasses the sandy beach and waterfront picnic area with four small picnic pavilions, a canoe/kayak launch, one restroom, and a playground, and the Family Camping Area, which includes a 28-site campsite and bathhouse. Outside of the main use areas, the park has a 1.5 mile hiking trail that runs through the hammock and along the mangrove shoreline with a trailhead located on the FKOHT north of U.S. Highway 1.

Park support facilities are located within three main use areas; the Shop Area, which contains a recently constructed elevated shop facility, the Entrance Area, which is home to the ranger station and main entranceway, and the Residence area, with two park staff residences and a fixed dock located near the Shop Area and Entrance Area (see Base Map).

Recreation Facilities

Day Use Area
Small Picnic Pavilion (4)
Restroom
Playground
Parking Area (35 spaces)
Canoe/Kayak Launch

Family Camping Area
Bathhouse
Campsites (28)

Parkwide
Hiking Trail (1.5 miles)
Paddling Trail (1.5 miles)

Support Facilities

Entrance Area
Ranger Station

Shop Area
Elevated Shop

Residence Area
Staff Residences (2)
Fixed Dock

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.

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: Maintain the park's current recreational carrying capacity of 987 users per day.

The park will continue to provide opportunities for beach access, shoreline fishing, paddling, camping, picnicking, hiking, and nature observation. Interpretive exhibits and programs will continue to be offered at the park. The park's ability to accommodate current visitation levels will be enhanced by working to improve the relationship between the park itself and the FKOHT by adding signage and improving the existing trailhead on the FKOHT.

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

Three interpretive programs are offered at Curry Hammock State Park; these include a Ranger-guided nature walk, beach walk, and kayak tour showcasing the unique natural resources at the park and fostering an appreciation of those resources amongst the general public.

Proposed Facilities

Capital Facilities and Infrastructure

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

At Curry Hammock State Park, future development will be guided by changes in the local environment and shoreline and the existing realities of low-lying land in an area that is heavily influenced by surrounding bodies of water. Additional park support facilities will be needed to provide staff support and allow DRP to efficiently manage its conservation and recreation lands.

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, to improve the protection of park resources, and to streamline the efficiency of park operations. The following is a summary of renovated facilities needed to implement the conceptual land use plan for Curry Hammock State Park:

Objective: 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: Improve/repair two existing facilities.

Major repair projects for park facilities may be accomplished within the ten-year term of this management plan, if funding is made available. These include the modification of existing park facilities to bring them into compliance with the Americans with Disabilities Act (a top priority for all facilities maintained by DRP). The following discussion of other recommended improvements and repairs are organized by use area within the park.

Residence Area

Within the Residence Area, the existing dock will be improved to provide greater access to lands managed by DRP in the area. The existing wooden dock is subject to damage from the elements and is at maximum capacity.

Day Use Area

User groups will be encouraged to conduct outreach and interpretation efforts within the Day Use Area to avoid negative impacts from congestion within the campground bathhouse. The addition of facilities that will support outreach activities will be explored in this area.

CURRY HAMMOCK
STATE PARK

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

CONCEPTUAL LAND USE PLAN

Objective: Construct one new facility.

Additional staff housing should also be provided in a new residence area to the east of the main portion of the park at MM 59.5 on Dorsett Drive. The addition of new residences could take advantage of the existing building foundations already present as well as the several cleared sites on the property.

Facilities Development

Preliminary cost estimates for these recommended facilities and improvements are provided in the Ten-Year Implementation Schedule and Cost Estimates (Table 7) 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 DRP 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:

Family Camping Area
Bathhouse deck

Parkwide
Staff Residences

Residence Area
Fixed dock

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 7).

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 7.

Table 7. Recreational Carrying Capacity

Activity / Facility	Existing Capacity*		Proposed Additional Capacity		Estimated Recreational Capacity	
	One Time	Daily	One Time	Daily	One Time	Daily
Camping						
Standard	224	224			224	224
Hiking	15	60			15	60
Picnicking	48	96			48	96
Fishing	30	60			30	60
Paddling	25	50			25	50
Swimming	249	498			249	498
TOTAL	**591**	**987**			**591**	**987**

*Existing capacity revised from approved plan according to DRP guidelines.

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.

Identification of parcels on the optimum boundary map is intended solely for planning purposes. It is not to be used in connection with any regulatory purposes. Any party or governmental entity should not use a property's identification on the optimum boundary map to reduce or restrict the lawful rights of private landowners. Identification on the map does not empower or suggest that any government entity should impose additional or more restrictive environmental land use or zoning regulations. Identification should not be used as the basis for permit denial or the imposition of permit conditions.

Several parcels, including submerged lands in both Florida Bay and the Atlantic Ocean, totaling around 127 acres, are identified within the optimum boundary for Curry Hammock State Park. These include parcels adjacent to the main park and a few parcels along the Atlantic Ocean side of U.S. Highway 1 on the northern portion of Grassy Key between MM 59.5 and MM 59.8. Acquisition of these parcels would provide opportunities to expand recreational opportunities and allow park staff to manage these areas as part of the larger park property through continued exotic species management, natural resource protection and restoration, and monitoring of visitor activities and impacts within the park.

CURRY HAMMOCK STATE PARK

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0 500 1,000 2,000 Feet

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

OPTIMUM BOUNDARY MAP

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 Curry Hammock State Park in 2005, 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.

Acquisition

- An additional 49.648 acres have been incorporated into the park since the approval of the previous unit management plan in 2005.

Resource Management

Natural Resource Management

- Efforts to remove exotic plants within the park have continued since the approval of the previous unit management plan in 2005.
- A record number of peregrine falcons were counted in a single day and over the two month observation season through our partnership with Hawk Watch International.

Recreation and Visitor Services

- Park staff instituted Junior Ranger Program.
- Installed native landscaping at the Park entrance to enhance habitat and aesthetic appeal of the park.
- Provide paddle board rentals in addition to kayak rentals for park visitors.
- Installed Coke machine in the day use area to provide easy access for park visitors.

Park Facilities

- Constructed ADA path from the campground to the day use area.

- Worked with FDOT to provide authorized parking area for access to nature trail and install new park highway signs along U.S. Highway 1.
- Completed construction of three bay shop.
- Septic system was decommissioned and the park was connected to the Marathon central sewage system.

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 8) 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 8 may need to be adjusted during the ten-year management planning cycle.

Table 8
Curry Hammock State Park Ten-Year Implementation Schedule
and Cost Estimates Sheet 1 of 3

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	**$1,200,000**
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)**
Objective A	**Restore natural hydrological conditions and function to approximately four acres of salt marsh and mangrove swamp natural communities.**	# of acres restored	UFN	**$2,015,000**
Action 1	Remove spoil pile and the adjacent road in zone CU-05 and grade to historic salt marsh elevation.	# of acres restored	UFN	$15,000
Action 2	Install culverts under U.S. Highway 1 to reconnect the tidal creeks.	# of culverts installed	UFN	$2,000,000
Goal III: Restore and maintain the natural communities/habitats of the park.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10-years)**
Objective A	**Within 10 years have three acres of the park maintained within optimal fire return interval.**	# of acres maintained	LT	**$10,000**
Action 1	Develop/update annual burn plan.	Plan updated	C	$500
Action 2	Manage fire dependent communities for ecosystem function, structure, and processes by burning three acres every three - five years.	# of acres burned/3-5 years	C	$9,500
Objective B	**Conduct habitat/natural community restoration activities on two acres of seagrass community.**	# of acres restored	LT	**$55,000**
Action 1	Develop restoration plan to fill in the borrow pit and restore approximately two acres of seagrass habitat.	Develop restoration plan	ST	$5,000
Action 2	Implement restoration plan.	Implement restoration plan	LT	$50,000

* 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 8
Curry Hammock State Park Ten-Year Implementation Schedule
and Cost Estimates Sheet 2 of 3

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 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, as needed.**	List updated	C	**$500**
Objective B	**Monitor and document twelve selected imperiled animal species in the park.**	# of species monitored	C	**$5,000**
Action 1	Implement monitoring protocols for twelve imperiled animal species.	# of species monitored	C	$5,000
Objective C	**Monitor and document eight selected imperiled plant species in the park.**	# of species monitored	C	**$3,500**
Action 2	Implement monitoring protocols for eight imperiled species including milkbark, false boxwood, blue-mist flower, sea lavender, sky blue morning glory, joewood, wild dilly, and Florida Thatch palm.	# of species monitored	C	$2,500
Action 3	The population of false boxwood was impacted during the 2004/2005 hurricane season and needs to be remapped.	# of sites mapped	C	$1,000

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 twenty-five acres of exotic plant species in the park.**	# of acres treated	C	**$40,000**
Action 1	Annually update exotic plant management work plan.	Plan updated	C	$100
Action 2	Implement annual work plan by treating twenty-five acres in park, annually, and continuing maintenance and follow-up treatments, as needed.	Plan implemented	C	$39,900
Objective B	**Implement control measures on six exotic and nuisance animal species in the park.**	# of species controlled	C	**$5,000**
Action 1	Implement exotic removal protocols to control black rat, green iguana, curly-tailed lizard, chickens, and feral and free roaming cats.	# of species removed	C	$5,000

* 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 8
Curry Hammock State Park Ten-Year Implementation Schedule
and Cost Estimates Sheet 3 of 3

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 987 users per day.**	# Recreation/visitor	C	**$1,200,000**
Objective B	**Continue to provide the current repertoire of three interpretive, educational and recreational programs on a regular basis.**	# Interpretive/education programs	C	**$15,000**
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	**$1,120,000**
Objective B	**Improve one existing facility as identified in the Land Use Component.**	# Facilities	LT	**$150,000**
Objective D	**Construct one new facility as identified in the Land Use Component.**	# Facilities	LT	**$4,175,000**
Summary of Estimated Costs				
	Management Categories			**Total Estimated Manpower and Expense Cost* (10-years)**
	Resource Management			**$2,134,000**
	Administration and Support			**$1,200,000**
	Capital Improvements			**$5,445,000**
	Recreation Visitor Services			**$1,215,000**
	Law Enforcement Activities	Note: Law enforcement activities in Florida State Parks are conducted by the FWC Division of Law Enforcement and by 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

Curry Hammock State Park Acquisition History

LAND ACQUISITION HISTORY REPORT	
Park Name	Curry Hammock State Park
Date Updated	9/17/2015
County	Monroe
Trustees Lease Number	3938
Current Park Size	1112.50 acres
Purpose of Acquisition	To preserve and protect the natural and cultural resources of the park and provide outdoor recreation opportunities to the public.

Acquisition History

Parcel Name or Parcel DM-ID	Date Acquired	Initial Seller	Initial Purchaser	Size in acres	Instrument Type
MDID-3938	9/10/1991	The School of the Ozarks	State of Florida, TIITF	514	Warranty Deed
MDID-864	9/12/1991	Lamar Louise Curry	State of Florida, TIITF	157.87	Warranty Deed
MDID-865	9/12/1991	Lamar Louise Curry	State of Florida, TIITF	260.117	Quit Claim Deed
MDID-863	5/20/1992	Little Crawl Key Limited Partnership	State of Florida, TIITF	114.73	Warranty Deed
MDID-10792	5/26/1996	Lottie Bruenn	State of Florida, TIITF	100.154	Warranty Deed
MDID-343604	10/31/2005	Harry Franks, Paul E. Franks, and Daniel V. Franks	State of Florida, TIITF	43.564	Warranty Deed
MDID-346747	1/23/2007	Paul J. Mitchell, individually and as successor Trustee of the Margarita Lacedonia Mitchell Declaration of Trust dated August 31, 2001	State of Florida, TIITF	49.648	Warranty Deed

Management Lease

Parcel Name or Lease Number	Date Leased	Initial Lessor	Initial Lessee	Current Term	Expiration Date
Lease Number 3938	12/6/1991	Trustees	State of Florida Department of Environmental	50	12/5/2041

Outstanding Issue	Type of Instrument	Brief Description of the Outstanding Issue	Term of the Outstanding Issue
There is no known deed-related oustanding issue that applies to this park.			

Addendum 2—Advisory Group Members and Report

Elected Officials

The Honorable Norman Anderson
Mayor
City of Layton

The Honorable Mark Senmartin, Mayor
City of Marathon

The Honorable Heather Carruthers
Mayor
Monroe County Board of County Commissioners

Agency Representatives

Mark Duncan, Park Manager
Long Key State Park

Kenneth Troisi, Park Manager
Curry Hammock State Park

Eric Kiefer, Park Manager
Bahia Honda State Park

Cooper McMillan, Chairman
South Dade Soil and Water Conservation District

Mark Torok, County Forester
Florida Forest Service

Jeanette Parker, Regional Biologist
Florida Fish and Wildlife Conservation Commission

Capt. David Dipre, Regional Commander
Florida Fish and Wildlife Commission

Rebecca Jetton, Administrator
Florida Keys Area of Critical State Concern

Sean Morton, Superintendent
Florida Keys National Marine Sanctuary

Tourism/Economic Development Representative

Harold Wheeler, Director
Monroe County Tourism Development Council

Environmental Representatives

Dr. Jerry Lorenz, Director
Audubon of Florida Everglades Science Center

Chris Bergh, Director
Nature Conservancy Coastal and Marine Resilience

Rita Irwin, President
Dolphin Research Center

Recreational Representatives

Rafael Gálvez, Coordinator
Florida Keys Hawkwatch

Jay Elliot, Coordinator
Florida Keys Astronomy Club

Duane Baker, Commodore
Florida Keys Fishing Guides Association

Cultural Resource Representative

Barbara Edgar, President
Matecumbe Historical Trust

Local Private Property Owners

John Fusco, Local Property Owner
Long Key State Park

John Morris, Local Property Owner
Curry Hammock State Park

Doug Sposito, Local Property Owner
Bahia Honda State Park

Citizen Support Organizations

Diane Rullen, Director
Friends of Bahia Honda State Park

Citizen Support Organizations Cont.

Karen Sunderland, President
Friends of the Islamorada Area State Parks

The Advisory Group meeting to review the proposed unit management plan (UMP) for Long Key, Curry Hammock, and Bahia Honda State Parks was held in the city of Marathon in the Marathon Government Center on Friday, June 10, 2016 at 9:00 AM.

Skip Haring represented the City of Layton. Chuck Kean represented John Morris, a local property owner. Vicki Weagley represented the Friends of Bahia Honda State Park. Katherine Becker represented Dr. Jerry Lorenz. Beth Dieveney represented the Florida Keys National Marine Sanctuary. Heather Carruthers, Cooper McMillan, Capt. David Dipre, Rita Irwin, Rafael Gálvez, Duane Baker, and Harold Wheeler were not in attendance. All other appointed Advisory Group members were present.

Attending Division of Recreation and Parks (DRP) staff members were Janice Duquesnel, Kenneth Troisi, Mark Duncan, Meredith Kruse, Eric Kiefer, Martha Robinson, 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 and 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

Beth Dieveney (Representing Sean Morton with the Florida Keys National Marine Sanctuary) expressed that the time given to Advisory Group members to review the draft Unit Management Plans limited the ability of Advisory Group members to adequately review and address the plans at the meeting. Ms. Dieveney explained the management philosophy shared by the Florida Keys National Marine Sanctuary (FKNMS) managers, the prioritization of natural resource management while allowing for human access through recreational opportunities, and acknowledged the difference in management philosophies with the DRP, seeking an appropriate balance between resource protection and the provision of recreational opportunities. She then stressed the need for additional consideration of the impacts of sea level rise to be incorporated into the planning process for state parks in the Florida Keys. Ms. Dieveney stated that the FKNMS enjoys a great working relationship with the DRP and hopes to continue this relationship into the future. She also asked about the potential for collaboration with the U.S. Fish and Wildlife Service with prescribed burning efforts at Curry Hammock State Park.

Caitlin Lustic (Representing Chris Bergh with The Nature Conservancy) highlighted the extensive working relationship between The Nature Conservancy (TNC) and the DRP. Ms. Lustic brought to the attention of the Advisory Group her concern with the level of attention given to high-profile invasive plants through current resource management efforts and the lack of attention given to lower-profile invasive plants. Ms. Lustic cautioned the DRP to not focus solely on high-profile invasive plants at

the expense of expending sufficient resources to control the spread of low-profile invasive plants.

Jay Elliot (Florida Keys Astronomy Club) emphasized the importance of acting to minimize the effects of light pollution whenever possible. Mr. Elliot identified the relatively low amount of light-pollution compared to the mainland as an important characteristic of the Florida Keys. He then elaborated on the economic benefits of efforts to reduce light pollution derived from the associated sustainable revenue generated from ecotourism. Mr. Elliot stressed the importance of aesthetic decisions when installing lighting on support facilities in state parks, he noted that harsh, bright lights can significantly increase light pollution and can often be easily addressed.

Rebecca Jetton (Florida Department of Economic Opportunity Florida Keys Area of Critical State Concern) referenced her extensive experience with conservation lands management throughout Monroe County. Ms. Jetton emphasized the need to work collaboratively to effectively control the alarming increase in the iguana population in the Florida Keys. She then noted that the DRP would face the same land use and development regulations that private developers work under in Monroe County, in particular working within the Rate-of-Growth Ordinance (ROGO) process. She did mention that DRP would be able to apply for affordable housing allowances. Ms. Jetton then stressed the importance of evacuation procedures and then inquired about how the DRP addresses the evacuation of overnight visitors and staff in the case of tropical storm events. She then inquired into how each park dealt with sewage. Ms. Jetton emphasized the negative impact of invasive animal species, such as iguanas and the Gambian pouched rat, and encouraged DRP staff to adequately address the issue.

Chuck Kean (Representing Local Property Owner, John Morris) acknowledged his role on the Advisory Group and stated that he didn't have comments but meant to observe the Group's discussion.

Mayor Mark Senmartin (Mayor of Marathon, FL) concurred with the comments and concerns brought by Rebecca Jetton. He went on to explain that the City of Marathon shares many concerns with Monroe County and have worked to responsibly manage development pressures through similar land use regulations. Mayor Senmartin brought attention to land administration issues that could potentially involve the expansion of the optimum boundary for Curry Hammock State Park. Mayor Senmartin also took the opportunity to bring up the possibility of an organized iguana "round-up" similar to efforts meant to control the spread of lionfish. He went on to inquire as to how state parks in Monroe County control the iguana population and identified the need to work collaboratively across municipal and county boundaries, and conservation lands in order to adequately address the spread of invasive animal species. Ms. Duquesnel commented on the proposed

iguana “round-up” by stating that efforts should incorporate public education programs to inform residents of proper methods of exterminating iguanas, in a manner that does not harm natural communities in the process.

Mark Torok (Florida Forest Service) offered assistance to the DRP to conduct prescribed burning at Curry Hammock State Park. Mr. Torok then inquired into the processes followed when working to control and eradicate invasive species by park staff. Mr. Torok also mentioned the state champion tree program and inquired into whether or not the parks could be eligible to collaborate in order to showcase important specimens.

Doug Sposito (Local Property Owner near Bahia Honda State Park) stated he believed that current natural resource management efforts were not accommodating to the large number of visitors to the parks. He expressed confusion over why park staff would seek to remove plants that are considered exotic on certain keys when they are considered native on other keys, such as lignumvitae at Bahia Honda State Park. In addition, Mr. Sposito noted that many visitors to the Florida Keys expect certain types of trees, such as coconut palms, and believed that the DRP should not remove these trees in order to accommodate visitor preferences. Ms. Duquesnel stressed the importance of acknowledging the historic role of island biogeography throughout the Florida Keys and the need for its incorporation into the natural resource management philosophy of conservation lands managers. Ms. Duquesnel also mentioned that efforts to manage natural resources are developed with political realities in mind. As an example, she stated that DRP staff did not intend to remove coconut palms in a beach day use area unless they posed a hazard to park visitors.

John Fusco (Local Property Owner near Long Key State Park) acknowledged his role on the Advisory Group as a representative local property owner in the City of Layton and deferred comments to the City of Layton representative, Skip Haring.

Skip Haring (Representing Mayor Norman Anderson of the City of Layton) acknowledged that he has been working with DRP staff regarding the Unit Management Plan updates over the past several months and thanked DRP staff for their work on the plans. Mr. Haring went on to mention that the City of Layton and the DRP will remain in conversation about the potential for the City of Layton to annex Long Key State Park. Mr. Haring also brought up the importance of public education on negative human impacts to the environment, as an example he mentioned the role that Long Key State Park played in educating residents of Layton on responsible mosquito population management.

Katharine Becker (Representing Dr. Jerry Lorenz with Audubon of Florida Everglades Science Center) stated that she has been studying conditions of the Florida Bay ecosystem and was pleased to see that the Seagrass Bed natural

community at Bahia Honda State Park was considered in good condition. Ms. Becker also brought up the issue of crowding on the deck of the Curry Hammock State Park campground restroom when utilized by the Florida Keys Hawkwatch.

Vicki Weagley (Representing Diane Rullan with Friends of Bahia Honda State Park) mentioned that she was thankful for the opportunity to be included in the Advisory Group for the updates to the unit management plans and expressed support for the proposed improvements included in the draft plans.

Barbara Edgar (Matecumbe Historical Trust) expressed that she agreed with comments made by Mr. Doug Sposito regarding opposition to the removal of certain species of exotic plants that visitors to Monroe County expect to find in a tropical setting, specifically the coconut palm. Ms. Edgar also commented that she did not have enough time to review the draft unit management plans. In addition, Ms. Edgar asked if DRP staff considers the timing on prescribed burns with bird migration patterns.

Karen Sunderland (Friends of Islamorada Area State Parks) took the opportunity to state her support for the draft unit management plans and, in particular, maintaining a focus on the preservation of natural communities and current resource management efforts. Ms. Sunderland cautioned the Advisory Group members that efforts to remove iguanas may prove to be politically sensitive because some area residents view them favorably. She also inquired into the relationship between DRP staff and the FDOT as it relates to landscaping in the U.S. right-of-way and working to exclude the introduction of exotic plant species. In response to Ms. Sunderland's question regarding the working relationship between DRP and FDOT when landscaping in the U.S. 1 right-of-way, Ms. Duquesnel mentioned that she has consulted with FDOT staff in regards to avoiding the introduction of exotic plant species and hopes to continue the relationship.

Kenneth Troisi (Park Manager, Curry Hammock State Park) acknowledged the role that efforts to facilitate the evacuation of overnight visitors play in the provision of overnight camping facilities in Monroe County. In regard to iguana population control, Mr. Troisi mentioned that proper disposal of iguanas once caught is necessary; he went on to state that he has taken iguanas to the Wild Bird Center. He expressed support for efforts to reduce the impacts of light pollution and for acting to accommodate the Florida Keys Hawkwatch group that utilizes the park. In regards to the removal of certain exotic plants, in particular the coconut palms, Mr. Troisi stated that there are no plans to remove the trees from the beach/day use areas that are heavily visited, but does intend to act to remove exotic plants from the protected areas of the park that see less visitor use. When conducting prescribed burning at the park, Mr. Troisi say they will consider all impacts the fire may have on the surrounding environment, including potential impacts to bird migration.

Mark Duncan (Park Manager, Long Key State Park) stressed that DRP staff and park visitors are required to evacuate during Phase 1 evacuations or when called to by District 5 administration, whichever comes first. Mr. Duncan emphasized that the DRP does what it can to not increase evacuation times along U.S. 1. Mr. Duncan also mentioned the importance of public outreach and education about natural resource management throughout Monroe County.

Eric Kiefer (Park Manager, Bahia Honda State Park) referenced successful efforts of DRP staff to control the spread of iguanas in state parks when adding on to Mayor Senmartin's suggestion of a possible iguana "round-up." Mr. Kiefer also explained that he considers acting to reduce the impacts of light pollution an important task. In addition, he elaborated on the discussion surrounding the removal of exotic species, in particular the coconut palm, stating that coconut palms will remain in the beach areas and other day use area unless they pose a threat to visitor safety.

Staff Recommendations

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

- DRP staff will act to reduce the impacts of light pollution on park facilities.
- In order to appropriately manage the park's natural communities, efforts to remove exotic plants, including the coconut palm, will continue in the protected areas of the parks away from heavy visitor use. Coconut palm trees in heavy use areas such as beaches or picnic areas may be kept unless the tree poses a risk to visitor safety or is diseased.
- Language will be incorporated to highlight the issue of Island Biogeography and its role in natural resource management in state parks.

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.

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Addendum 4—Soil Descriptions

(3) Matecumbe muck, occasionally flooded - The Matecumbe series consists of moderately well drained soils that are very shallow to rippable coral or oolitic limestone bedrock. The depth to limestone or coral limestone bedrock is 2 to 9 inches. These soils formed in organic material in varying stages o decomposition. Slopes are 0 to 1 percent. The taxonomic class is Euic, isohyperthemric Lithic Tropofolists.

This soil is on tropical hammocks in the uplands throughout the keys. Individual areas are subject to occasional flooding from hurricanes and other tropical storms. Elevations are less than 15 feet above sea level, according to National Geodetic Vertical Datum of 1929. The mean temperature ranges from 74 to 78 degrees F, and the mean annual precipitation ranges from 50 to 65 inches.

The Matecumbe soil is dominant in this map unit. Areas that have different uses and interpretations are rare and generally are adjacent to the boundaries of the map unit.

Soils that are associated with the Matecumbe soil are the well drained, mineral Keyvaca and Pennekamp soils in the higher positions on the landscape; the somewhat poorly drained, marly Saddlebunch soils in the landscape positions similar to those of the Matecumbe soil; and the poorly drained, marly Cudjoe, Keywest, and Lignumvitae soils and very poorly drained, organic Islamorada, Keylargo, and Tavernier soils in the lower positions on the landscape.

The Matecumbe soil is moderately well drained. It has a seasonal high water table at a depth of 1.5 to 3.0 feet during the wet periods of most years. Permeability is rapid.

Most areas of this soil support native vegetation and are used as habitat for woodland wildlife. Some areas have been developed for residential, urban, or recreational use. Characteristic vegetation for the soils in the survey area include; poisonwood, wild tamarind, mahogany, tree cactus, crabwood, thatch palms, satinleaf, paradise tree, and stopper.

Depth to bedrock, the flooding, and an excessive amount of humus are severe limitation affecting most uses of this soil, including most kinds of building site and recreational development and sanitary facilities.

(5) Islamorada muck, tidal – The Islamorada series consists of very poorly drained soils that are moderately deep to rippable coral or oolitic limestone bedrock. The depth to bedrock is 20 to 50 inches. These soils formed in sapic material. Slopes are less than 1 percent. Taxonomic class is Euic, isohyperthermic Lithic Troposaprists.

This soil is dominantly on the upper keys in mangrove swamps. Individual areas are subject to daily flooding by tides. Elevations are dominantly at or below sea level, according to National Geodetic Vertical Datum of 1929. The mean annual

temperature is about 75 degrees F, and the mean annual precipitation is about 50 inches.

The Islamorada soil is dominant in this map unit. Areas of the Tavernier soils are also included. These soils have bedrock within a depth of 20 inches. Other areas that have different uses and interpretations are rare and generally are adjacent to the boundaries of the map unit.

Soils that are associated with the Islamorada soils are the very poorly drained, organic Key Largo and Tavernier soils in landscape positions similar to those of the Islamorada soil; the poorly drained, marly Cudjoe, Lignumvitae, and Keywest soils in the slightly higher position on the landscape; and the moderately drained, organic Matecumbe soils and somewhat poorly drained, marly Saddlebunch soils in the significantly higher positions on the landscape.

The Islamorada soil is very poorly drained. The seasonal high water table is at or near the surface during much of the year. Permeability is rapid.

Most areas of this soil support native vegetation and are used as habitat for wetland wildlife. Some areas have been developed for residential or recreation use. Characteristic vegetation for the soils in the survey area include; red and black mangrove.

The wetness, the flooding, and depth to bedrock are severe limitations affecting most uses of this soil, including most kinds of building site and recreational development.

(6) Keylargo muck, tidal – The Keylargo series consists of very poorly drained soils that are deep to rippable coral or oolitic limestone bedrock. The depth to bedrock is 50 to 90 inches. These soils formed in sapric material. Slopes are less than 1 percent. The taxonomic class is Euic, isohyperthermic Typic Troposaprists.

This soil is dominantly on the upper keys but can occur throughout the keys. It is in mangrove swamps. Individual areas are subject to daily flooding by tides. Elevations are dominantly at or below sea level, according to National Geodetic Vertical Datum of 1929. The mean annual temperature is about 75 degrees F, and the mean annual precipitation is about 50 inches.

The Keylargo soil is dominant in the map unit. Areas that have different uses and interpretations are rare and generally are adjacent to the boundaries of the map unit.

Soils that are associated with the Keylargo soils are the very poorly drained, organic Islamorada and Tavernier soils in the landscape positions similar to those of the Keylargo soil; the poorly drained, marly Cudjoe, Lignumvitae and Keywest soils in the slightly higher position on the landscape; and the moderately well drained, organic Matecumbe soils and somewhat poorly drained, marly Saddlebunch soils in the significantly higher positions on the landscape.

The Keylargo soil is very poorly drained. The seasonal high water table is at or near the surface during much of the year. Permeability is rapid.

Most areas of this soil support native vegetation and are used as habitat for wetland wildlife. A few areas have been developed for residential or recreation use. Characteristic vegetation for the soils in the survey areas include; red and black mangrove.

The wetness, an excessive amount of humus, and the flooding are severe limitations affecting most uses of this soil, including most kinds of building site and recreational development.

(7) Udorthents-Urban land complex - This map unit is constructed upland areas adjacent to areas of water throughout the keys. Individual areas are subject to rare flooding from hurricanes and other tropical storms. Elevations vary, depending on the thickness of the fill material, but they are dominantly 3 to 10 feet above sea level, according to National Geodetic Vertical Datum of 1929.

The Udorthents dominantly consist of crushed oolitic limestone or coral bedrock that has been spread over the original soil material. They commonly are about 32 inches of extremely gravelly sand underlain by about 40 inches of marl. The marl is underlain by coral bedrock. Other areas of soils are underlain by muck and other soil material. Houses and other urban structures cover up to 40 percent of most areas of the Udorthents; however, the soils can still be observed. Soils that are associated in this map unit are all of the other soils that are in the Keys.

The Udorthents are moderately well drained. They have a seasonal high water table at a depth of 2 to 4 feet during wet periods of most years. Permeability is variable.

This map unit generally supports no vegetation. The stones and droughtiness are severe limitations affecting any kind of landscaping activity. The Udorthents were developed for urban use, and many areas are being used for this purpose.

The stones, seepage, and the wetness are moderate or severe limitations affecting most uses of this map unit, including most kinds of building site and recreational development.

(8) Rock outcrop-Cudjoe complex, tidal - The Cudjoe series consists of poorly drained soils that are shallow to rippable coral or oolitic limestone bedrock. The depth to bedrock is 3 to 20 inches. These soils formed in calcareous marl. The taxonomic class is Loamy, carbonatic, isohyperthermic, shallow Tropic Fluvaquents.

This map unit is in mangrove swamps throughout the Keys. Individual areas are frequently flooded by tides. Elevation are 0 to 1 foot above sea level, according to National Geodetic Vertical Datum of 1929. The mean annual temperature ranges from 75 to 78 degrees F, and the mean annual precipitation ranges from 40 to 50 inches.

Approximately 60 percent of this map unit consists of areas of exposed bedrock. These areas are dominantly 1 to 4 inches above the surface of the surrounding soil and range from approximately 2 feet to more than 200 feet in diameter. The

Cudjoe soil is dominant in about 40 percent of this map unit. Areas that have different uses and interpretations are rare and generally are adjacent to the boundaries of this unit.

Soils that are associated with the Cudjoe soil are the well drained, mineral Keyvaca and Pennekamp soils, moderately well drained, organic Matecumbe soils and somewhat poorly drained, marly Saddlebunch soils in the higher positions on the landscape; the poorly drained marly Keywest and Lignumvitae soils in landscape positions similar to those of the Cudjoe soil; and the very poorly drained, organic Islamorada, Keylargo, and Tavernier soils in the lower positions in the landscape.

The Cudjoe soil is poorly drained. The seasonal high water table is within a depth of 6 inches during the wet periods of most years. Permeability is moderate or moderately rapid.

Most areas of this map unit support native vegetation and are used as habitat for wetland wildlife. Some areas have been developed for residential, urban, or recreational use. Characteristic vegetation for the soils in the survey area include; red mangrove, black mangrove, saltwort and glasswort.

The flooding, the depth to bedrock, and the wetness are severe limitations affecting most uses of this map unit, including most kinds of building site and recreational development and sanitary facilities.

Addendum 5—Plant and Animal List

Curry Hammock State Park Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
PTERIDOPHYTES		
Giant leather fern	*Acrostichum danaeifolium*	
MONOCOTS		
False sisal	*Agave decipiens*	
Bushy bluestem	*Andropogon glomeratus var. pumilus*	
Hillsborough threeawn	*Aristida purpurascens var. tenuispica*	
Pitted bluestem	*Bothriochloa pertusa* *	
Payaya	*Carica papaya*	
Southern sandbur	*Cenchrus echinatus*	
Coastal sandbur	*Cenchrus incertus*	
Sandbur	*Cenchrus tribuloides*	
Peruviun apple cactus	*Cereus repandus* *	
Coconut palm	*Cocos nucifera* *	
Bermuda grass	*Cynodon dactylon* *	
False saw grass	*Cyperus ligularis*	
Umbrella sedge	*Cyperus planifolius*	
Bearded flatsedge	*Cyperus squarrosus*	
Egyptian grass	*Dactyloctenium aegyptium* *	
Saltgrass	*Distichlis spicata*	
Goosegrass	*Eleusine indica* *	
Gophertail lovegrass	*Eragrostis ciliaris* *	
Lovegrass	*Eragrostis elliottii*	
Finger grass	*Eustachys petrea*	
Hurricane grass	*Fimbristylis cymosa* *	
Chestnut sedge	*Fimbristylis spadicea*	
Spider lily	*Hymenocallis latifolia*	
Wild bamboo	*Lasiacis divaricate*	
Green sprangle top	*Leptochloa dubia*	
Natal grass	*Melinis repens* *	
Key grass	*Monanthochloe littoralis*	
Ground orchid	*Oeceolclades maculata**	
Fall panicum	*Panicum dichotomiflorum var. bartowense*	
Guinea grass	*Panicum maximum* *	
Tufted Paspalum	*Paspalum blodgetii*	
Paspalum	*Paspalum laxum*	
Salt joint grass	*Paspalum setaceum*	
Salt joint grass	*Paspalum vaginatum*	
Bowstring hemp	*Sansevieria hyacinthoides* *	
Wire bluestem	*Schizachyrium gracile*	
Bluestem	*Schizachyrium sanguineum*	
Florida Keys nutrush	*Scleria lithosperma*	
Foxtail grass	*Setaria macrosperma*	
Foxtail grass	*Setaria parviflora*	
Saltmeadow cordgrass	*Spartina patens*	
Prickly cordgrass	*Spartina spartinae*	

* Non-native Species

Curry Hammock State Park Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Coral dropseed grass	*Sporobolus domingensis*	
West Indian dropseed	*Sporobolus indicus var. pyramidalis* *	
Coastal dropseed	*Sporobolus virginicus*	
St. Augustine grass	*Stenotaphrum secundatum* *	
Florida thatch palm	*Thrinax radiata*	CB,RH
Oyster plant	*Tradescantia spathacea* *	
Sea oats	*Uniola paniculata*	
Dominican panicum	*Urochloa adspersa*	
Turf grass	*Zoysia tenuifolia**	

DICOTS

Barbed wire cactus	*Acanthocereus tetragonus*	
False foxglove	*Agalinis maritime*	
Blue-mist flower	*Ageratum littorale*	KTRB
Chaff flower	*Alternanthera flavescens*	
Alice-clover	*Alysicarpus vaginalis* *	
Common ragweed	*Ambrosia artemisiifolia*	
Torchwood	*Amyris elemifera*	
Marlberry	*Ardisia escallonioides*	
Sea lavender	*Argusia gnaphalodes*	CB
Brace's aster	*Aster bracei*	
Sand atriplex	*Atriplex cristata*	
Black mangrove	*Avicennia germinans*	
Salt bush	*Baccharis halimifolia*	
Water hyssop	*Bacopa monnieri*	
Saltwort	*Batis maritime*	
Spanish needle	*Bidens alba* var. *radiate*	
Green shrimp plant	*Blechum pyramidatum* *	
Samphire	*Blutaparon vermiculare*	
Red spiderling	*Boerhavia diffusa*	
Sea ox-eye daisy	*Borrichia arborescens*	
Sea oxeye	*Borrichia frutescens*	
Bougainvillea	*Bougainvillea glabra* *	
Bahama strongbark	*Bourreria succulent*	
Blueheart	*Buchnera americana*	
Gumbo limbo	*Bursera simaruba*	
Gray nickerbean	*Caesalpinia bonduc*	
Southern sea rocket	*Cakile lanceolata*	
Bay-bean	*Canavalia rosea*	
Jamaica caper	*Capparis cynophallophora*	
Limber caper	*Capparis flexuosa*	
Goatweed	*Capraria biflora*	
Love vine	*Cassytha filiformis*	
Australian pine	*Casuarina equisetifolia* *	
Madagascar periwinkle	*Catharanthus roseus* *	
Sensitive pea	*Chamaecrista nictitans var. aspera*	

* Non-native Species

Curry Hammock State Park Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Blodgett's spurge	*Chamaesyce blodgettii*	
Hairy spurge	*Chamaesyce hirta*	
Graceful sandmat	*Chamaesyce hypericifolia*	
Seaside spurge	*Chamaesyce mesembryanthemifolia*	
Snowberry	*Chiococca alba*	
Pigeon plum	*Coccoloba diversifolia*	
Seagrape	*Coccoloba uvifera*	
Latherleaf	*Colubrina asiatica* *	
Buttonwood	*Conocarpus erecta*	
Dwarf horseweed	*Conyza canadensis var. pusilla*	
Geiger tree	*Cordia sebestena*	
Dodder	*Cuscuta pentagona*	
Milkweed	*Cynanchum angustifolium*	
Fragrant cynanchum	*Cynanchum northropiae*	
Virgate mimosa	*Desmanthus virgatus*	
Beggerweed	*Desmodium incanum*	
Florida begger weed	*Desmodium tortuosum* *	
Threeflower ticktrefoil	*Desmodium triflorum* *	
False-mint	*Dicliptera sexangularis*	
Milkbark	*Drypetes diversifolia*	RH
Devil's potato	*Echites umbellate*	
False daisy	*Eclipta prostrata* *	
Black torch	*Erithalis fruticosa*	
Beach creeper	*Ernodea littoralis*	
White stopper	*Eugenia axillaris*	
Spanish stopper	*Eugenia foetida*	
Dog fennel	*Eupatorium capillifolium*	
Dog fennel	*Eupatorium serotinum* *	
Seaside gentian	*Eustoma exaltatum*	
Inkwood	*Exothea paniculata*	
Strangler fig	*Ficus aurea*	
Shortleaf fig	*Ficus citrifolia*	
Yellow top	*Flaveria linearis*	
Milk pea	*Galactia striata*	
Milk pea	*Galactia volubilis*	
Southern gaura	*Gaura angustifolia*	
Seven year apple	*Genipa clusiifolia*	
Chewstick	*Gouania lupuloides*	
Blolly	*Guapira discolor*	
False boxwood	*Gyminda latifolia*	RH
Scorpion tail	*Heliotropium angiospermum*	
Seaside heliotrope	*Helioptropium curassavicum*	
Bladder mallow	*Herissantia crispa*	
Wild indigo	*Indigofera spicata* *	
Indigo	*Indigofera suffruticosa* *	
Moon flower	*Ipomoea alba*	

* Non-native Species

Curry Hammock State Park Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Morning glory	*Ipomoea indica var. acuminate*	
Railroad vine	*Ipomoea pes-caprae ssp. Brasiliensis*	
Moonvine	*Ipomoea violaceae*	
Bloodleaf	*Iresine diffusa*	
Beach elder	*Iva imbricate*	
Ixora	*Ixora coccinea* *	
Sky blue morning glory	*Jacquemontia pentanthos*	CL, KTRB
Joewood	*Jacquinia keyensis*	KTRB
Black ironwood	*Krugiodendron ferreum*	
White mangrove	*Languncularia racemosa*	
Wild lantana	*Lantana involucrate*	
Wild lettuce	*Launaea intybacea* *	
Peppergrass	*Lepidium virginicum*	
Lead tree	*Leucaena leucocephala* *	
Sea lavender	*Limonium carolinianum*	
Christmas berry	*Lycium carolinianum*	
Red jumbie bean	*Macroptilium lathyroides* *	
Wild dilly	*Manilkara jaimiqui subsp. emarginata*	KTRB, RH
Mayten	*Maytenus phyllanthoides*	
Marsh elder	*Melanthera nivea*	
Poisonwood	*Metopium toxiferum*	
Cheeseweed	*Morinda royoc*	
Prickly-pear cactus	*Opuntia stricta*	
Lady's sorrel	*Oxalis corniculata*	
Corky stemmed passionflower	*Passiflora suberosa*	
Wild allamanda	*Pentalinon luteum*	
Creeping Charlie	*Phyla nodiflora*	
Gale of wind	*Phyllanthus amarus* *	
Jamaica dogwood	*Piscidia piscipula*	
Cockspur	*Pisonia aculeate*	
Blackbead	*Pithecellobium keyense*	
Plantain	*Plantago major* *	
Wild poinsettia	*Poinsettia cyathophora*	
Miklwort	*Polygala grandiflora*	
Rustweed	*Polypremum procumbens*	
Purslane	*Portulaca oleracea*	
White indigo berry	*Randia aculeate*	
Darling plum	*Reynosia septentrionalis*	
Red mangrove	*Rhizophora mangle*	
Least snoutbean	*Rhynchosia minima*	
Rougeberry	*Rivina humilis*	
Annual glasswort	*Salicornia bigelovii*	
Woody glasswort	*Salicornia perennis*	
Water pimpernel	*Samolus ebracteatus*	
Milkweed vine	*Sarcostemma clausum*	
Beach naupaka	*Scaevola taccada* *	

* Non-native Species

Curry Hammock State Park Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Brazilian pepper	*Schinus terinthifolius* *	
Bahama senna	*Senna mexicana var. chapmanii*	
Sea purslane	*Sesuvium portulacastrum*	
Spreading fan petals	*Sida abutifolia*	
Broomweed	*Sida acuta*	
Fringed fanpetals	*Sida ciliaris*	
Saffron plum	*Sideroxylon celastrinum*	
Greenbriar	*Smilax havanensis*	
American black nightshade	*Solanum americanum*	
Bahama nightshade	*Solanum bahamense*	
Potato tree	*Solanum erianthum*	
Necklace pod	*Sophora tomentosa var. occidentalis* *	
Necklace pod	*Sophora tomentosa var. truncate*	
Large leaf buttonweed	*Spermacoce assurgens*	
Buttonweed	*Spermacoce verticillata* *	
Wedelia	*Sphagneticola trilobata* *	
Pencil flower	*Stylosanthes hamate*	
Sea blite	*Suada linearis*	
Bay cedar	*Suriana maritime*	
Portia	*Thespesia populnea* *	
Florida trema	*Trema micranthum*	
Puncture weed	*Tribulus cistoides* *	
Waltheria	*Waltheria indica*	
Hog plum	*Ximenia americana*	

MARINE PLANTS

Mermaid's wine glass	*Acetablularia calyculus*	
Mermaid's wine glass	*Acetablularia crenulata*	
Fan algae	*Avrainvillea nigricans*	
Green algae	*Batophora oerstedii*	
Fern algae	*Caulerpa sertularioides*	
Dead man's fingers	*Codium isthmocladum*	
Dead man's fingers	*Codium repens*	
Green bubble weed	*Dictyosphaeria cavernosa*	
Oatmeal algae	*Halimeda incrassate*	
Oatmeal algae	*Halimeda monile*	
Oatmeal algae	*Halimeda opuntia*	
Oatmeal algae	*Halimda tuna*	
Shoal grass	*Halodule wrightii*	
Red algae	*Laurencia sp.*	
Brown algae	*Padina sanctae-crucis*	
Shaving brush algae	*Penicillus capitatus*	
Shaving brush algae	*Penicillus dumetosus*	
Sargassum weed	*Sargassum fluitans*	
Sargassum weed	*Sargassum natans*	
Manatee grass	*Syringodium filiforme*	

* Non-native Species

Curry Hammock State Park Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Turtle grass	*Thalassia tetudinum*	
Stiff fan algae	*Udotea flabellum*	

* Non-native Species

Curry Hammock State Park Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
SPONGES		
Tube sponge	*Callyspongia vaginalis*	MCPS,MCNS,MSGB
Green sponge	*Haliclona viridis*	MCPS,MCNS,MSGB
Vase sponge	*Ircinia campana.*	MCPS,MCNS,MSGB
Cake sponge	*Ircinia strobilina*	MCPS,MCNS,MSGB
Sprawling sponge	*Neopetrosia longleyi*	MCPS,MCNS,MSGB
Loggerhead sponge	*Spheciospongia vesparium*	MCPS,MCNS,MSGB
Candle sponge	*Verongia fistularis*	MCPS,MCNS,MSGB
HYDROZOANS		
Fire coral	*Millepora alcicornis*	MCNS
Portuguese man-of-war	*Physalia physalis*	MTC
By-the-wind sailor	*Velella velella*	MTC
JELLYFISH		
Moon jellyfish	*Aurelia aurita*	MTC
Upside-down jellyfish	*Cassiopeia xamachana*	MSGB
CNIDARIANS		
Pale anemone	*Aiptasia tagetes*	MCNS
Ringed anemone	*Bartholomea annulata*	MCNS
Pinked tipped anemone	*Condylactis gigantea*	MCNS
CORALS		
Octocorals		
Sea whip	*Pterogorgoia* sp.	MCNS
Stony Corals		
Golfball coral	*Favia fragum*	MCNS,MSGB
Common rose coral	*Manicina areolata*	MCNS,MSGB
Finger coral	*Porites furcata*	MCNS,MSGB
Lesser starlet coral	*Siderastrea radians*	MCNS,MSGB
Knobby star coral	*Solenastrea hyades*	MCNS,MSGB
CHITONS		
West Indian fuzzy chiton	*Acanthopleura granulata*	KTRB,MCNS
GASTROPODS		
Black horn snail	*Batillaria minima*	BD,KTRB,MCPS,MCNS,MSGB
Peanut snail	*Cerion incanum*	MTM
Ladderhorn snail	*Cerithium scalariformis*	KTRB,MCPS,MCNS,MSGB
Periwinkle	*Littorina* sp.	MCPS,MCNS,MSGB
Multilined tree snail	*Drymaeus multilineatus*	CL,RH
Rosy predator snail	*Euglandina rosea*	RH
Tulip snail	*Fasciolaria tulipa*	MCPS,MCNS,MSGB,MUS
Florida tree snail	*Liguus fasciatus*	RH

* Non-native Species

Curry Hammock State Park Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Coffeebean snail	*Melampus coffeus*	MS
Bleedingtooth nerite	*Nerita peloronta*	KTRB,MS
Queen conch	*Strombus gigas*	MCR,MSGB
Cuban garden snail	*Zachrysia provisoria**	MTC
BIVALVES		
Tree-oyster	*Isognomon alatus*	MS
Purse-oyster	*Isognomon radiatus*	MS
Spiny fileclam	*Lima lima*	MSGB,MS
Rough fileclam	*Lima scabra*	MCPS,MCNS,MSGB,MUS
Pen shell	*Pinna carnea*	MCPS,MCNS,MSGB,MUS
SEGMENTED WORMS		
Southern lugworm	*Arenicola cristata*	MUS
Black-spotted feather duster	*Branchiomma nigromaculata*	MCNS,MCPS
Medusa worm	*Loimia medusa*	MSGB,MUS
Banded feather duster	*Sabella melanostigma*	MCNS,MCPS
Magnificent feather duster	*Sabellastarte magnifica*	MCNS,MCPS
ARTHROPODS		
Yellow banded millipede	*Anadenobolus monilicornis*	CL,DV
Palmetto bug	*Eurycotis floridana*	CL,DV,RH,CB
American cockroach	*Periplaneta americana*	CL,DV,RH,CB
CRUSTACEANS		
Mangrove crab	*Aratus pisonii*	MS
Ivory barnacle	*Balanus eburneus*	MCPS,MCNS,MSGB,MUS
Common blue crab	*Callinectes sapidus*	MCPS,MCNS,MSMSGB
Great land crab	*Cardisoma guanhumi*	CB,RH,MS
Fragile barnacle	*Chthamalus fragilis*	MCPS,MCNS,MSGB,MUS
Common land hermit crab	*Coenobita clypeatus*	CB,RH,MS
Mangrove crab	Goniopsis cruentata	MS
Goose-neck barnacles	*Lepas anatifera*	MCPS,MCNS,MS,MSGB,MUS
Sea roach	*Ligia exotica*	MS,MUS
Horseshoe crab	*Limulus polyphemus*	MSGB,MUS
Stone crab	*Menippe mercenaria*	MCPS,MCNS,MSGB,MUS
Spiny lobster	*Panulirus argus*	MCPS,MCNS,MS,MSGB,MUS
Pink shrimp	*Penaens duorarum*	MCPS,MSGB
Mantis shrimp	*Pseudosquilla* sp.	MCPS,MCNS,MSGB
Snapping shrimp	*Synalpheus brevarpus*	MCPS,MCNS,MSGB
Fiddler crab	*Uca pugilator*	MS
DRAGONFLIES		
Common green darner	*Anax junius*	MTC
Four-spotted pennant	*Brachymesia gravida*	MTC

* Non-native Species

Curry Hammock State Park Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
STICK INSECTS		
Two-striped walkingstick	*Anisomorpha buprestoides*	CL,RH
TRUE BUGS, CICADAS, HOPPERS AND KIN		
Seaside cicada	*Diceroprocta viridifascia*	MTC
Thorn bug	*Umbonia crassicornis*	MTC
BEETLES		
Click beetle	*Lanelator sallei*	MTC
BUTTERFLIES AND MOTHS		
Gulf fritillary	*Agraulis vanillae*	MTC
Great southern white	*Ascia monuste*	MTC
Orange barred sulphur	*Colias eurytheme*	MTC
Julia heliconian	*Dryas iulia largo*	MTC
Zebra heliconian	*Heliconius charitonius*	MTC
Cassius blue	*Leptotes cassius*	MTC
Giant swallowtail	*Papilio cresphontes*	MTC
Mangrove skipper	*Phocides pigmalion*	MTC
Cloudless sulphur	*Phoebis sennae*	MTC
Orange-barred sulphur	*Phoebis philea*	MTC
Large orange sulphur	*Phoebis agarithe*	MTC
Hammock skipper	*Polygonus leo*	MTC
Buckeye butterfly	*Precis coenia*	MTC
Long-tailed skipper	*Urbanus proteus*	MTC
Black witch moth	*Ascalapha odorata*	MTC
Florida io moth	*Automeris io lilith*	MTC
Faithful beauty	*Composia fidelissima*	MTC
Melonworm moth	*Diaphania hyalinata*	MTC
Puss moth	*Megalopyge opercularis*	MTC
ANTS, BEES AND WASPS		
Carpenter ant	*Camponotus floridanus*	CB,CL,RH
Florida carpenter ant	*Camponotus planatus*	CB,CL,RH
Fire ant	*Solenopsis geminata*	CB,CL,RH
Fire ant	*Solenopsis invicta**	CB,CL,RH
Eastern Saltmarsh Mosquito	*Aedes sollicitans*	MTC
Black saltmarsh mosquito	*Aedes taeniorhychus*	MTC
SPIDERS		
Silver argiope	*Argiope argentata*	RH
Spiny orb-weaver	*Gasteracantha cancriformis*	RH
Golden silk orbweaver	*Nephila clavipes*	RH
SEA URCHINS AND SAND DOLLARS		
Long-spined urchin	*Diadema antillarum*	MCPS,MCNS,MSGB

* Non-native Species

Curry Hammock State Park Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Thorny starfish	*Echinaster sentus*	MCPS,MCNS,MSGB
Rock-boring urchin	*Echinometra lucenter*	MCPS,MCNS,MSGB
Florida sea cucumber	*Holothuria floridana*	MCPS,MCNS,MSGB,MUS
Variegated urchin	*Lytechinus variegatus*	MCPS,MCNS,MSGB
Cushion star	*Oreaster reticulatus*	MCPS, MCNS, MSGB, MUS
West Indian sea egg	*Tripneustes ventricosus*	MSGB,
TUNICATES		
Black tunicate	*Ascidia nigra*	MCPS,MCNS,MSGB
Mangrove tunicate	*Ecteinascidia trubinata*	MS
SHARKS, RAYS		
Southern stingray	*Dasyatis americana*	MCPS,MCNS,MSGB,MUS
Nurse shark	*Ginglymostoma cirratum*	MCPS,MCNS,MSGB,MUS
Smalltooth sawfish	*Pristis pectinata*	MCPS,MCNS,MSGB,MUS
Bonnethead shark	*Sphyrna tiburo*	MCPS,MCNS,MSGB,MUS
Yellow stingray	*Urolophus jamaicensis*	MCPS,MCNS,MSGB,MUS
BONY FISHES		
Sergeant major	*Abudefduf saxatilis*	MCPS,MCNS,MSGB,MUS
Bonefish	*Albula vulpes*	MCNS,MSGB,MUS
Porkfish	*Anisotremus virginicus*	MCPS,MCNS,MSGB,MUS
Conch fish	*Astrapogon stellatus*	MCPS,MCNS,MSGB
Common snook	*Centropomus undecimalis*	MCPS,MCNS,MSGB,MUS
Shortfin pipefish	*Cosmocampus elucens*	MCPS,MCNS,MSGB,MUS
Sea trout	*Cynoscion nebulosus*	MCPS,MCNS,MSGB,MUS
Spottail pinfish	*Diplodus holbrooki*	MCPS,MCNS,MSGB,MUS
Sharksucker	*Echeneis naucrates*	MCPS,MCNS,MSGB,MUS
Sailfin blenny	*Emblemaria pandionis*	MCPS,MCNS,MSGB,MUS
Mosquitofish	*Gambusia affinis*	MCPS,MCNS,MSGB,MUS
Mangrove gambusia	*Gambusia rhizophorae*	MSGB,MS
Yellowfin mojarra	*Gerres cinereus*	MCPS,MCNS,MSGB,MUS
French grunt	*Haemulon flavolineatu*m	MCPS,MCNS,MSGB,MUS
White grunt	*Haemulon plumier*i	MCPS,MCNS,MSGB,MUS
Bluestriped grunt	*Haemulon sciurus*	MCPS,MCNS,MSGB,MUS
Ballyhoo	*Hemiramphus brasiliensis*	MCPS,MCNS,MSGB,MUS
Lined seahorse	*Hippocampus erectus*	MCPS,MCNS,MSGB,MUS
Sargassumfish	*Histrio histrio*	MSGB
Bermuda chub	*Kyphosus sectartrix*	MCPS,MCNS,MSGB,MUS
Spotted trunkfish	*Lactophrys bilaudalis*	MCPS,MCNS,MSGB,MUS
Honeycomb cowfish	*Lactophrys polygonia*	MCPS,MCNS,MSGB,MUS
Scrawled cowfish	*Lactophrys quadricornis*	MCPS,MCNS,MSGB,MUS
Trunkfish	*Lactophrys triqueter*	MCPS,MCNS,MSGB,MUS
Pinfish	*Lagodon rhomboids*	MCPS,MCNS,MSGB,MUS
Tripletail	*Lobotes surinamensis*	MCPS,MCNS,MSGB,MUS
Mutton snapper	*Lutjanus analis*	MCPS,MCNS,MSGB,MUS

* Non-native Species

Curry Hammock State Park Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Schoolmaster	*Lutjanus apodus*	MCPS,MCNS,MSGB,MUS
Mangrove snapper	*Lutjanus griseus*	MCPS,MCNS,MSGB,MUS
Tarpon	*Megalops atlanticus*	MCPS,MCNS,MSGB,MUS
Yellowtail snapper	*Ocyurus chrysurus*	MCPS,MCNS,MSGB,MUS
Great barrucuda	*Sphyraena barracuda*	MCPS,MCNS,MSGB,MUS
Atlantic needlefish	*Strongylura marina*	MCPS,MCNS,MSGB,MUS
AMPHIBIANS		
Green tree frog	*Hyla cinerea*	CB,RH
Narrow-mouthed toad	*Gastrophryne carolinensis*	CB,RH
Cuban treefrog	*Osteopilus septentrionalis**	CL,DV,RH
REPTILES		
Loggerhead turtle	*Caretta caretta*	MCPS,MCNS,MSGB,MUS
Green turtle	*Chelonia mydas*	MCPS,MCNS,MSGB,MUS
Atlantic leatherback turtle	*Dermochelys coriacea*	MCPS,MCNS,MSGB,MUS
Atlantic hawksbill turtle	*Eretmochelys imbricata*	MCPS,MCNS,MSGB,MUS
Mangrove terrapin	*Malaclemys terrapin rhizophorarum*	MS
Florida box turtle	*Terrapene carolina bauri*	RH, MS
Green anole	*Anolis carolinensis*	CB,CL,DV,RH
Brown anole	*Anolis sagrei**	CB,CL,DV,RH
Six-lined racerunner	*Aspidoscelis sexlineata*	CB,RH
Southeastern five-lined skink	*Plestiodon inexpectatus*	CB,RH
Madagascar day gecko	*Phelsuma madagascariensis madagascariensis* *	RH
Great green iguana	*Iguana iguana**	MTC
Northern curly tailed lizard	*Leiocephalus carinatus armouri**	CL,DV
Florida reef gecko	*Sphaerodactylus notatus*	CB,CL,RH
Cottonmouth	*Agkistrodon piscivorus contanti*	KTRB,MS,RH
Southern black racer	*Coluber constrictor priapus*	CB,RH
Eastern diamondback snake	*Crotalus adamanteus*	CB,RH
Southern ringneck snake	*Diadophis punctatus*	CB,RH
Eastern indigo snake	*Drymarchon corais couperi*	CB,RH
Corn snake	*Pantherophis guttatus*	CB,CL,RH
Atlantic saltmarsh snake	*Nerodia clarkii compressicauda*	MS
Florida rough green snake	*Opheodrys aestivus carinatus*	CB,CL,RH
DeKay's snake	*Storeria dekayi*	CB,RH
BIRDS		
Common loon	*Gavia immer*	MTC
Double-crested cormorant	*Phalacrocorax auritus*	MTC
Northern shoveler	*Anas clypeata*	OF
Green-winged teal	*Anas crecca*	OF
Blue-winged teal	*Anas discors*	OF
Red breasted merganser	*Mergus serrator*	OF
Common gallinule	*Gallinula galeata*	OF
American white pelican	*Pelecanus ertyhrorhynchos*	MTC

* Non-native Species

Curry Hammock State Park Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Brown pelican	*Pelecanus occidentalis*	MTC
Northern gannet	*Morus bassanus*	Offshore
Brown booby	*Sula leucogaster*	OF
Anhinga	*Anhinga anhinga*	OF
Magnificent frigatebird	*Fregata magnificens*	OF
Black tern	*Chilodonias niger*	MTC
Gull-billed tern	*Gelochelidon nilotica*	MTC
Caspian tern	*Hydroprogne caspia*	MTC
Herring gull	*Larus argentatus*	MTC
Ring-billed gull	*Larus delawarensis*	MTC
Lesser black-backed gull	*Larus fuscus*	MTC
Great black-backed gull	*Larus marinum*	MTC
Bonaparte's gull	*Larus philadelphia*	MTC
Laughing gull	*Leucophaeus atricilla*	MTC
Roseate tern	*Sterna dougallii*	MTC
Forster's tern	*Sterna forsteri*	MTC
Common tern	*Sterna hirundo*	MTC
Least tern	*Sternulla antillarum*	MTC
Royal tern	*Thalasseus maxima*	MTC
Sandwich tern	*Thalasseus sandvicensis*	MTC
Black skimmer	*Rynchops niger*	OF
Great egret	*Ardea alba*	CL,MSGB,MS,MUS
Great blue heron	*Ardea herodias*	MSGB,MS,MUS
Great white heron	*Ardea herodias occidentalis*	MSGB,MS,MUS
American bittern	*Botaurus lentiginosus*	MS
Cattle egret	*Bubulcus ibis*	CL,MSGB,MS,MUS
Green heron	*Butorides striatus*	MSGB,MS,MUS
Little blue heron	*Egretta caerulea*	MSGB,MS,MUS
Reddish egret	*Egretta rufescens*	BD,MSGB,MS,MUS
Snowy egret	*Egretta thula*	MSGB,MS,MUS
Tricolored heron	*Egretta tricolor*	MSGB,MS,MUS
Black-crowned night heron	*Nyctanassa nycticorax*	MS
Yellow-crowned night-heron	*Nyctanassa violacea*	MSGB,MS
White ibis	*Eudocimus albus*	CL,DV,MSGB,MS,MUS
Roseate Spoonbill	*Platalea ajaja*	MSGB,MS,MUS
Glossy ibis	*Plegadis flacinellus*	MSGB, MS, MUS
Wood stork	*Mycteria americana*	MSGB,MS,MUS
Turkey vulture	*Cathartes aura*	OF
Black vulture	*Coragyps atratus*	OF
Greater flamingo	*Phoenicopterus ruber*	OF
Bald eagle	*Haliaeetus leucocephalus*	OF
Osprey	*Pandion haliaetus*	MTC
Cooper's hawk	*Accipiter cooperii*	OF
Sharp-shinned hawk	*Accipiter striatus*	OF
Zone-tailed hawk	*Buteo albonotatus*	OF
Short-tailed hawk	*Buteo brachyurus*	OF

* Non-native Species

Curry Hammock State Park Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Red-tailed hawk	*Buteo jamaicensis*	OF
Red-shouldered hawk	*Buteo lineatus*	OF
Broad-winged hawk	*Buteo platypterus*	OF
Swainson's hawk	*Buteo swainsoni*	OF
Northern harrier	*Circus cyaneus*	OF
Swallow-tailed kite	*Elanoides forficatus*	OF
White-tailed kite	*Elanus leucurus*	OF
Mississippi kite	*Ictinia mississippiensis*	OF
Snail kite	*Rostrhamus sociabilis*	OF
Merlin	*Falco columbarius*	OF
Peregrine falcon	*Falco peregrinus*	OF
American kestrel	*Falco sparverius*	OF
Sora rail	*Porzana caroilna*	MS
Clapper rail	*Rallus crepitans*	MS
Virginia rail	*Rallus limicola*	MS
Snowy plover	*Charadrius alexandrinus*	BD
Piping plover	*Charadrius melodus*	BD
Semipalmated plover	*Charadrius semipalmatus*	BD
Killdeer	*Charadrius vociferus*	BD
Wilson's plover	*Charadrius wilsonia*	BD
American golden plover	*Pluvialis dominica*	BD
Black-bellied plover	*Pluvialis squatarola*	BD
Black-necked stilt	*Himantopus mexicanus*	MUS
Avocet	*Recurvirostra americana*	MUS
Spotted sandpiper	*Actitis macularius*	BD
Ruddy turnstone	*Arenaria interpres*	BD
Sanderling	*Calidris alba*	BD
Dunlin	*Calidris alpine*	MUS
Red knot	*Calidris canutus*	BD
Western sandpiper	*Calidris mauri*	BD
Pectoral sandpiper	*Calidris melanotos*	BD,MUS
Least sandpiper	*Calidris minutilla*	BD
Semipalmated sandpiper	*Calidris pusilla*	BD
Wilson's snipe	*Gallinago delicata*	MUS
Short-billed dowitcher	*Limnodromus griseus*	BD
Long-billed dowitcher	*Limnodromus scolopaceus*	BD
Long-billed curlew	*Numenius americanus*	MUS
Whimbrel	*Numenius phaeopus*	CL,OF
Lesser yellowlegs	*Tringa glavipes*	MUS
Greater yellowlegs	*Tringa melanoleuca*	MUS
Willet	*Tringa semipalmatus*	BD
Solitary sandpiper	*Tringa solitaria*	BD
Rock dove	*Columba livia**	CL,DV
Common ground-dove	*Columbina passerina*	CL,RH
White-crowned pigeon	*Patagioenas leucocephala*	RH
Eurasian collared dove	*Streptopelia decaocto**	MTC

* Non-native Species

Curry Hammock State Park Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
White-winged dove	*Zenaida asiatica*	CL,RH
Mourning dove	*Zenaida macroura*	CL,RH
Yellow-billed cuckoo	*Coccyzus americanus*	RH,MS
Black-billed cuckoo	*Coccyzus erythropthalmus*	RH,MS
Mangrove cuckoo	*Coccyzus minor*	RH,MS
Short-eared owl	*Asio flammeus*	OF
Burrowing owl	*Athene cunicularia*	CL,MTM
Eastern screech-owl	*Megascops asio*	RH
Chuck-will's-widow	*Caprimulgus carolinensis*	RH
Common nighthawk	*Chordeiles minor*	OF
Chimney swift	*Chaetura pelagica*	OF
Ruby-throated hummingbird	*Archilochus colubris*	CL,RH
Belted kingfisher	*Megaceryle alcyon*	MS
Flicker	*Colapes auratus*	RH
Red-bellied woodpecker	*Melanerpes carolinus*	RH
Yellow-bellied sapsucker	*Sphyrapicus varius*	RH
Olive-sided flycatcher	*Contopus cooperi*	RH
Eastern wood pewee	*Contopus virens*	RH
Least flycatcher	*Empidonax minimus*	RH
Scissor-tailed flycatcher	*Muscivora forficate*	CL,RH
Great-crested flycatcher	*Myiarchus crinitus*	CL,RH
Eastern phoebe	*Sayornis phoebe*	RH
Gray kingbird	*Tyrannus dominicensis*	CL,RH
Scissor-tailed flycatcher	*Tyrannus forficatus*	RH
Eastern kingbird	*Tyrannus tyrannus*	CL,RH
Western kingbird	*Tyrannus verticalis*	RH
Cassin's kingbird	*Tyrannus vociferans*	RH
Loggerhead shrike	*Lanius ludovicannus*	CL,RH
Black-whiskered vireo	*Vireo altiloquus*	RH
Yellow-throated vireo	*Vireo flavifrons*	RH
White-eyed vireo	*Vireo griseus*	RH
Red-eyed vireo	*Vireo olivaceus*	RH
Blue-headed vireo	*Vireo solitarius*	RH
House wren	*Thryothorus aedon*	RH
Barn swallow	*Hirundo rustica*	OF
Cave swallow	*Petrochelidon fulva*	OF
Cliff swallow	*Petrochelidon pyrrhonota*	OF
Bank swallow	*Riparia riparia*	OF
Purple martin	*Progne subis*	OF
Northern rough-winged swallow	*Stelgidopteryx serripennis*	OF
Tree swallow	*Tachycineta bicolor*	OF
Bahama swallow	*Tachycineta cyaneoviridis*	OF
American crow	*Corvus brachyrhynochos*	OF
Blue Jay	*Cyanocitta cristata*	CL
Blue-gray gnatcatcher	*Polioptila caerulea*	RH
Gray catbird	*Dumetella carolinensis*	RH

* Non-native Species

Curry Hammock State Park Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Northern mockingbird	*Mimus polyglottos*	CL,DV,MTM,RH
Brown thrasher	*Toxostoma rufum*	CL,RH
Veery	*Catharus fuscescens*	RH
Hermit thrush	*Catharus guttatus*	RH
Gray-cheeked thrush	*Catharus minimus*	RH
Swainson's thrush	*Catharus ustulatus*	RH
Wood thrush	*Hylocichla mustelina*	RH
Canada warbler	*Cardellina canadensis*	CB,RH
Wilson's warbler	*Cardellina pusilla*	CB,RH
Common yellowthroat	*Geothlypis trichas*	CB,RH
Worm-eating warbler	*Helmitheros vermivorous*	CB,RH
Black-and-white warbler	*Mniotilta varia*	CB,RH
Kentucky warbler	*Oporornis formosus*	CB,RH
Mourning warbler	*Oporornis philadelphia*	CB,RH
Orange-crowned warbler	*Oreothlypis celata*	CB,RH
Tennessee warbler	*Oreothlypis peregrina*	CB,RH
Nashville warbler	*Oreothlypis ruficapilla*	CB,RH
Louisiana waterthrush	*Parkesia motacilla*	CB,RH
Northern waterthrush	*Parkesia noveboracensis*	CB,RH
Prothonotary warbler	*Protonotaria citrea*	CB,RH
Ovenbird	*Seiurus aurocapilla*	CB,RH
Northern parula	*Setophaga americana*	CB,RH
Black-throated blue warbler	*Setophaga caerulescens*	CB,RH
Bay-breasted warbler	*Setophaga castanea*	CB,RH
Hooded warbler	*Setophaga citrina*	CB,RH
Yellow-rumped warbler	*Setophaga coronata*	RH
Prairie warbler	*Setophaga discolor*	CB,RH
Yellow-throated warbler	*Setophaga dominica*	CB,RH
Blackburnian warbler	*Setophaga fusca*	CB,RH
Magnolia warbler	*Setophaga magnolia*	CB,RH
Palm warbler	*Setophaga palmarum*	CB,RH
Chestnut-sided warbler	*Setophaga pensylvanica*	CB,RH
Yellow warbler	*Setophaga petechia*	CB,RH
Pine warbler	*Setophaga pinus*	CB,RH
American redstart	*Setophaga ruticilla*	CB,RH
Blackpoll warbler	*Setophaga striata*	CB,RH
Cape May warbler	*Setophaga trigrina*	CB,RH
Black-throated green warbler	*Setophaga virens*	CB,RH
Green-winged warbler	*Vermivora chrysoptera*	RH
Blue-winged warbler	*Vermivora cyanoptera*	CB,RH
Northern cardinal	*Cardinalis cardinalis*	KTRB,CB,RH
Blue grosbeak	*Passerina caerulea*	CL
Painted bunting	*Passerina ciris*	CL,RH
Indigo bunting	*Passerina cyanea*	CL,RH
Rose-breasted grosbeak	*Pheucticus ludovicianus*	CL
Scarlet tanager	*Piranga olivacea*	CL,RH

* Non-native Species

Curry Hammock State Park Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Summer tanager	*Piranga rubra*	CL,RH
Dickcissel	*Spiza americna*	CL
Grasshopper sparrow	*Ammodramus savannarum*	CL
Lark sparrow	*Chondestes grammacus*	CL
Savannah sparrow	*Passerculus sandwichensis*	CL,MTM
Clay-colored sparrow	*Spizella pallida*	CL
Red-winged blackbird	*Agelaius phoeniceus*	CL,BD,MS
Bobolink	*Dolichonyx oryzivorus*	CL
Baltimore oriole	*Icterus galbula*	CL
Brown-headed cowbird	*Molothrus ater*	CL
Shiny cowbird	*Molothrus bonariensis*	CL
Common grackle	*Quiscalus quiscula*	CL,BD,RH
Eastern meadowlark	*Sturnella magna*	CL
Blackbird	*Xanthocephalus xanthocephalus*	CL
American goldfinch	*Carduelis tristis*	CL
Purple finch	*Haemorhous purpureus*	CL
MAMMALS		
Virginia opossum	*Didelphis virginiana*	CL,RH
Marsh rabbit	*Slyvilagus palustris*	KTRB,MTM
Black rat	*Rattus rattus* *	MTC
Cotton rat	*Sigmodon hispidus insulicola*	KTRB
Domestic cat	*Felis domesticus* *	MTC
Key Vaca Raccoon	*Procyon lotor auspicatus*	MTC
Florida manatee	*Trichechus manatus latirostri*	MTC.
Bottle-nosed dolphin	*Tursiops truncatus*	MCPS,MCNS,MSGB,MUS

* Non-native Species

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://www.flheritage.com/preservation/compliance/docs/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.

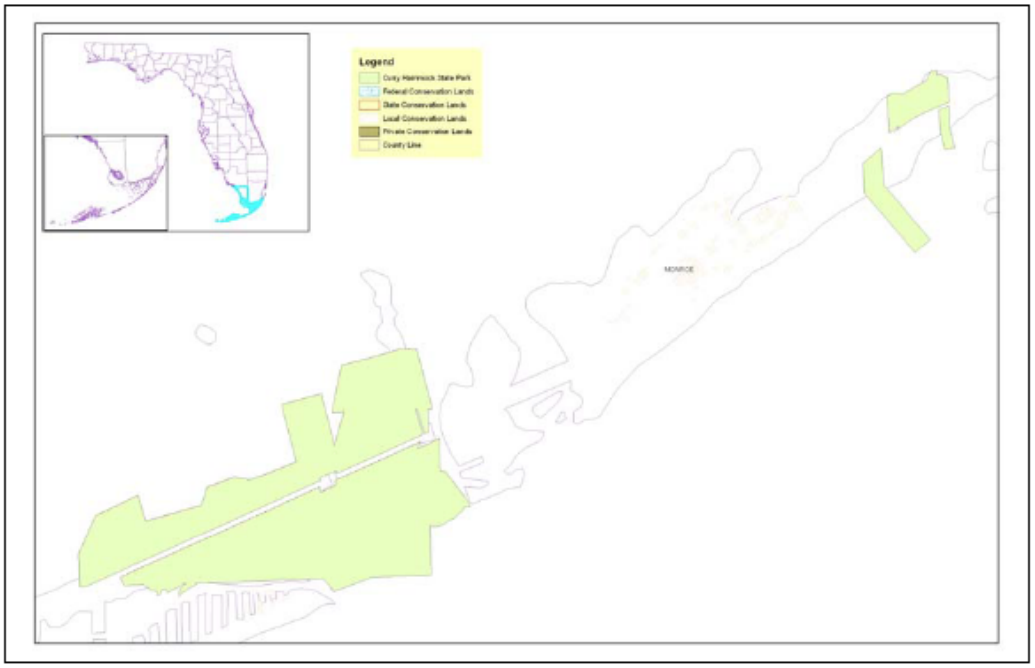
Addendum 8 — Land Management Review

Name of Site: Curry Hammock State Park **County:** Monroe County

Managed by: Department of Environmental Protection
Division of Recreation and Parks

Acres: 1,019.12 Acres
Area Reviewed: Entire Tract

Review Date: 11/09/10 **Management Plan Approval Date:** 07/26/05



Review Team Determination

Managed in accordance with acquisition purpose? Yes = 6, No = 0

Management practices, including public access, in compliance with the management plan? Yes =6, No = 0

Categories	Management Plan Review	Field Review
Natural Communities	0.78	4.87
Listed Species	0.70	3.97
Natural Resource Survey	0.65	4.33
Cultural Resources	1.00	4.40
Prescribed Fire	0.22	4.58
Restoration	0.83	4.13
Exotic Species	0.47	4.21
Hydrology	1.00	4.29
Resource Protection	0.38	3.00
Adjacent Property Concerns	0.65	4.00
Public Access & Education	0.57	3.98
Management Resources	N/A	5.00
Managed Area Uses	1.00	N/A
Buildings, Equipment, Staff & Funding	N/A	3.13

Consensus Commendations to the Managing Agency

The following commendations resulted from discussion and vote of the review team members.

1. The team commends the Park Service on the execution of the campground and day-use area. The result has been a beautiful recreation site. (VOTE: 6+, 0-)

2. The team commends the Park Service on the creation and restoration of the beach and coastal dune area. (VOTE: 6+, 0-)

3. The team commends the Park Service on the installation of the solar panels and the composting toilets at their campground bathhouse. (VOTE: 6+, 0-)

4. The team commends the staff for the cleanliness and well maintained quality of the park. (VOTE: 6+, 0-)

5. The team commends the staff for the vigilance on exotics removal and maintenance of natural areas within the park, including introducing prescribed fire to the tidal marsh. (VOTE: 6+, 0-)

Consensus Recommendations to the Managing Agency

The following recommendations resulted from a discussion and vote of review team members. The management plan must include responses to the recommendations identified below.

1. The team recommends that DRP reevaluate the current optimum management boundary and map to include desirable properties, including non-contiguous properties. (VOTE: 6+, 0-)

Managing Agency Response: Agree.

2. The team recommends that DRP work with DOT and OGT to resolve public access and parking issues on the north side of US 1. (VOTE: 6+, 0-)

Managing Agency Response: Agree. We have discussed this with DOT before but will follow up again. Effective July 1, 2011 OGT was transferred to the Division.

Field Review Checklist Findings

The following items received high scores on the review team checklist, which indicates that management actions exceeded expectations.

- Natural Communities, regarding coastal berm, coastal rock barren, rockland hammock, marine composite substrate, marine consolidated substrate, marine grass bed, marine tidal marsh, marine tidal swamp, marine unconsolidated substrate, and coastal dunes.
- Listed Species, regarding animal inventory, plant inventory, and false boxwood.
- Natural Resource Survey, regarding listed species or habitat monitoring, other non-game species or habitat monitoring, fire effects monitoring, and invasive species survey/monitoring.
- Cultural Resources, regarding cultural resource survey, protection and preservation.
- Resource Management, regarding area being burned, frequency and quality.
- Restoration of Ruderal Areas, regarding tidal marsh, borrow pit, and beach/ coastal dune.
- Non-Native, Invasive & Problem Species, regarding prevention and control of plants, animals and pests/pathogens.

- Hydrologic/Geologic Function, regarding roads, culverts/ditches, hydro-period alteration and beach nourishment.
- Resource Protection, regarding boundary survey, gates and fencing.
- Adjacent Property Concerns, regarding expanding development, marina, and inholdings/additions.
- Public Access & Education, regarding roads, boat access, wildlife, invasive species, habitat management activities, interpretive facilities and signs, recreational opportunities, and management of visitor impacts.
- Management Resources, regarding waste disposal, sanitary facilities, buildings and equipment.

Items Requiring Improvement Actions in the Management Plan

The following items received low scores on the review team checklist, which indicates that the text noted in the Management Plan Review does not sufficiently address this issue (less than .5 score on average.). Please note that overall good scores do not preclude specific recommendations by the review team requiring remediation. The management plan must include responses to the checklist items identified below:

1. Discussion in the management plan regarding Natural Communities, specifically the coastal rock barren and coastal dunes.
Managing Agency Response: Agree. The coastal dune will be a new habitat description since the beach re-nourishment project. The coastal rock barren has succeeded in some areas into mangrove tidal swamp, and that too will be addressed in the updated plan.

2. Discussion in the management plan regarding Natural Resources, specifically fire effects monitoring.
Managing Agency Response: Agree. This aspect of resource management is a recent development since the last UMP was written.

3. Discussion in the management plan in reference to Resource Management, regarding the areas being burned, the frequency and quality.
Managing Agency Response: Agree. Same as above.

4. Discussion in the management plan regarding Non-Native, Invasive & Problem Species, including the prevention of plants, animals and pests/pathogens, as well as the control of pests/pathogens.
Managing Agency Response: Agree. This is more specific in the new UMP boilerplate.

5. Discussion in the management plan regarding Hydrologic/Geologic Function, specifically beach nourishment.
Managing Agency Response: Agree. This two is a recent development since the approved UMP.

6. Discussion in the management plan regarding Resource Protection, involving boundary surveys, gates/fencing, signage and law enforcement presence.
Managing Agency Response: Agree. The management plan update will address this and law enforcement needs. The Division must request additional assistance through the Division of Law Enforcement or from a local law enforcement agency. However, no new law enforcement can be assigned to this or any other park unit unless they are appropriated by the Legislature or reassigned from other units. Funding is determined annually by the Florida Legislature.

7. Discussion in the management plan on Public Access & Education, regarding parking, boat access and habitat management activities.
Managing Agency Response: Agree. The parking issue with the DOT right-of way is discussed above. Boat access is not applicable since there is no dock or place for a dock, only the canoe/kayak launching area.

Items Requiring Improvement Actions in the Field

The following items received low scores on the review team checklist, which indicates that management actions noted during the Field Review were not considered sufficient (less than 2.5 score on average). Please note that overall good scores do not preclude specific recommendations by the review team requiring remediation. The management plan must include responses to the checklist items identified below:

1. The need for more Resource Protection, specifically law enforcement presence, with documentation in the management plan.
Managing Agency Response: Agree. The management plan update will address law enforcement needs. The Division must request additional assistance through the Division of Law Enforcement or from a local law enforcement agency. However, no new law enforcement can be assigned to this or any other park unit unless they are appropriated by the Legislature or reassigned from other units. Funding is determined annually by the Florida Legislature.

2. Discussion regarding Public Access & Education, specifically parking with documentation in the management plan.
Managing Agency Response: Agree. See above response above related this issue.

3. The need for more Management Resources, specifically staff and funding, with documentation in the management plan.
Managing Agency Response: Agree. If it is determined that additional staff are needed at the time of the next unit management plan revision, it will be included in the plan. However, no new staff can be assigned to this or any other park unit unless they are appropriated by the Legislature or reassigned from other units. Funding is determined annually by the Florida Legislature.

Division of Recreation and Parks Manager and Key Staff Present:

- Ken Troisi, Manager
- Janice Duquesnel, Park Biologist