

BAHIA HONDA STATE PARK
UNIT MANAGEMENT PLAN

APPROVED PLAN

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Division of Recreation and Parks

MAY 23, 2003



Department of Environmental Protection

Jeb Bush
Governor

Marjorie Stoneman Douglas Building
3900 Commonwealth Boulevard, MS 140
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David B. Struhs
Secretary

May 23, 2003

Ms. BryAnne White
Government Operations Consultant II
Office of Park Planning
Division of Recreation and Parks

Bahia Honda State Park

Lease Number: # 3609

Dear Ms. White:

The Division of State Lands has completed the review of Bahia State Park Land Management Plan and find that it fulfills all the requirements of Rule 18-2.021, F.A.C., and ss. 253.034 and 259.032, F.S. Therefore, on May 23, 2003, the Office of Environmental Services, acting as agent for the Board of Trustees of the Internal Improvement Trust Fund approves this plan. The plan's five-year update will be due in May 2008.

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.

Sincerely,

Delmas T. Barber

Delmas T. Barber, OMC Manager
Office of Environmental Services
Division of State Lands

"More Protection, Less Process"

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TABLE OF CONTENTS

INTRODUCTION	1
PURPOSE AND SCOPE OF PLAN	1
MANAGEMENT PROGRAM OVERVIEW	3
Management Authority And Responsibility	3
Park Goals And Objectives	4
Management Coordination	5
Public Participation	6
Other Designations	6
 RESOURCE MANAGEMENT COMPONENT	
INTRODUCTION	7
RESOURCE DESCRIPTION AND ASSESSMENT	7
Natural Resources	7
Cultural Resources	16
RESOURCE MANAGEMENT PROGRAM	16
Special Management Considerations	16
Management Needs And Problems	17
Management Objectives	17
Management Measures For Natural Resources	18
Management Measures For Cultural Resources	19
Research Needs	20
Resource Management Schedule	20
Land Management Review	20

LAND USE COMPONENT

INTRODUCTION	21
EXTERNAL CONDITIONS	21
Existing Use Of Adjacent Lands	21
Planned Use Of Adjacent Lands	21
PROPERTY ANALYSIS	21
Recreation Resource Elements	22
Assessment Of Use	23
CONCEPTUAL LAND USE PLAN	25
Potential Uses And Proposed Facilities	25
Facilities Development	27
Existing Use And Optimum Carrying Capacity	27
Optimum Boundary	27

TABLE

TABLE 1 - Existing Use And Optimum Carrying Capacity	28
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LIST OF ADDENDA

ADDENDUM 1

Acquisition History and Advisory Group List	A 1 - 1
---	---------

ADDENDUM 2

References Cited	A 2 - 1
------------------	---------

ADDENDUM 3

Soil Descriptions	A 3 - 1
-------------------	---------

ADDENDUM 4

Plant And Animal List	A 4 - 1
-----------------------	---------

ADDENDUM 5

Designated Species List	A 5 - 1
-------------------------	---------

ADDENDUM 6

Priority Schedule and Cost Estimates	A 6 - 1
--------------------------------------	---------

MAPS

Vicinity Map	2
Soils Map	9
Natural Communities Map	10
Base Map	24
Conceptual Land Use Plan	26
Optimum Boundary Map	29

INTRODUCTION

Bahia Honda State Park is located in Monroe County approximately 120 miles south of Miami. Access to the park is by U.S. Highway 1 at Mile Marker 37 (see Vicinity Map). The park includes Bahia Honda Key and Little Bahia Honda Island, which is one half mile to the southwest and can be accessed only by boat. The vicinity map also reflects significant land and water resources existing near the park.

For this plan, park acreage has been calculated based on the composition of natural communities, in addition to ruderal and developed areas. Currently the park contains 138.5 upland acres in addition to 352.5 acres of submerged land.

At Bahia Honda State Park, public outdoor recreation and conservation is the designated single use of the property (see Addendum 1). There are no legislative or executive directives that constrain the use of this property. The park was acquired by donation (see Addendum 1).

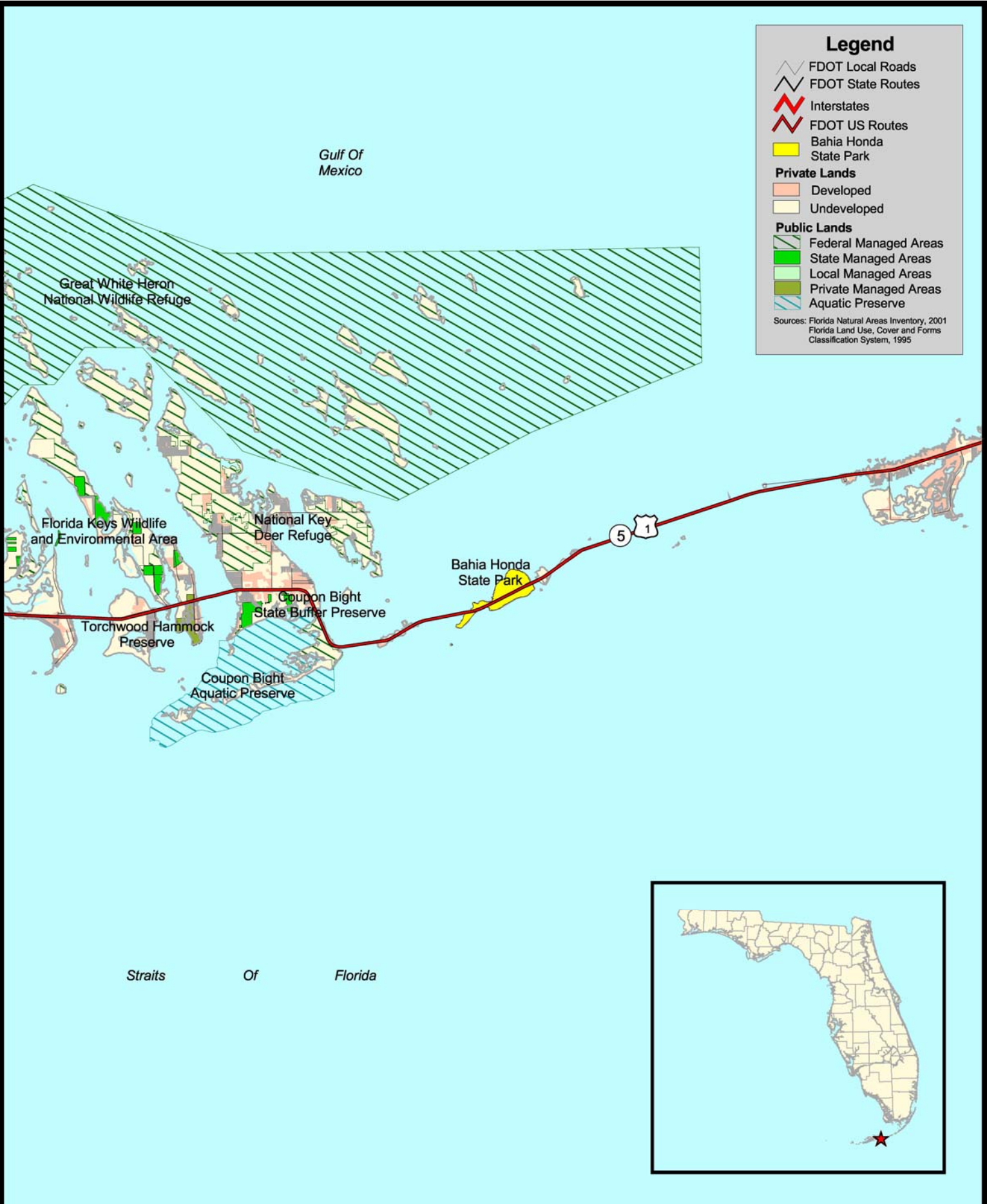
PURPOSE AND SCOPE OF THE PLAN

This plan serves as the basic statement of policy and direction for the management of Bahia Honda State Park as a unit of Florida's state park system. It identifies the objectives, criteria and standards that guide each aspect of park administration, and sets forth the specific measures that will be implemented to meet management objectives. The plan is intended to meet the requirements of Sections 253.034 and 259.032, Florida Statutes, Chapter 18-2, Florida Administrative Code, and intended to be consistent with the State Lands Management Plan. With approval, this management plan will replace the current approved plan of May 29, 1997. All development and resource alteration encompassed in this plan is subject to the granting of appropriate permits; easements, licenses, and other required legal instruments. Approval of the management plan does not constitute an exemption from complying with the appropriate local, state or federal agencies. 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.

The plan consists of two interrelated components. Each component corresponds to a particular aspect of the administration of the park. The resource management component provides a detailed inventory and assessment of the natural and cultural resources of the park. Resource management problems and needs are identified, and specific management objectives are established for each resource type. This component provides guidance on the application of such measures as prescribed burning, exotic species removal, and restoration of natural conditions.

The land use component is the recreational resource allocation plan for the unit. Based on considerations such as access, population, and adjacent land uses, an optimum allocation of the physical space of the park is made, locating use areas and proposing types of facilities and volume of use to be provided.

In the development of this plan, the potential of the park to accommodate secondary management purposes ("multiple uses") was analyzed. These secondary purposes were considered within the context of the Division's statutory responsibilities and an analysis of 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.



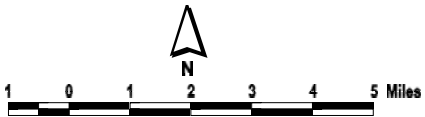
Legend

- FDOT Local Roads
- FDOT State Routes
- Interstates
- FDOT US Routes
- Bahia Honda State Park
- Private Lands**
- Developed
- Undeveloped
- Public Lands**
- Federal Managed Areas
- State Managed Areas
- Local Managed Areas
- Private Managed Areas
- Aquatic Preserve

Sources: Florida Natural Areas Inventory, 2001
Florida Land Use, Cover and Forms Classification System, 1995



**Bahia Honda State Park
Vicinity Map**



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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 the 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 or the management purposes of the park.

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

The use of private land managers to facilitate restoration and management of this unit was also analyzed. Decisions regarding this type of management (such as mitigation projects, management and/or removal of timber for resource protection, restoration, or enhancement, removal of exotic species, etc.) will be made on a case-by-case basis as necessity dictates.

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 have also granted management authority of certain sovereign submerged lands to the Division 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 impact public recreational uses.

Many operating procedures are standard system wide and are set by policy. These procedures are outlined in the Division **Operations Procedures Manual** (OPM) and cover

such areas as personnel management, uniforms and personal appearance, training, signs, communications, fiscal procedures, interpretation, concessions, camping regulations, resource management, law enforcement, protection, safety and maintenance.

In the management of Bahia Honda 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.

Park Goals and Objectives

The following park goals and objectives express the Division's long-term intent in managing the state park. At the beginning of the process to update this management plan, the Division reviewed the goals and objectives of the previous plan to determine if they remain meaningful and practical and should be included in the updated plan. This process ensures that the goals and objectives for the park remain relevant over time.

Estimates are developed for the funding and staff resources needed to implement the management plan based on these goals, objectives and priority management activities. Funding priorities for all state park management and development activities are reviewed each year as part of the Division's legislative budget process. The Division prepares an annual legislative budget request based on the priorities established for the entire state park system. The Division also aggressively pursues a wide range of other funds and staffing resources, such as grants, volunteers and partnerships with agencies, local governments and the private sector, for supplementing normal legislative appropriations to address unmet needs. The ability of the Division to implement the specific goals, objectives and priority actions identified in this plan will be determined by the availability of funding resources for these purposes.

Natural and Cultural Resources

1. Develop a plan and obtain funding to restore the mangrove wetland adjacent to the Buttonwood campground.
2. Implement feasibility study to improve surface water circulation in the impounded mangrove areas. This includes restoring the wetland next to the ranger residence area by removing the berm and the exotic vegetation, and improving the existing culverts.
3. Plan to restore tidal flow between the two parts of the interior lagoon that was separated by the construction of US Highway 1.
4. Pursue a maintenance dredging policy for the marina.
5. Using best management practices, pursue stormwater containment for the parking lots along the beach.
6. Continue with yellow wood (*Zanthoxylum flavum*) project.
7. Provide habitat protection and preservation in order to protect the flora and fauna, particularly those that are endemic to the site, as well as those that are listed as threatened or endangered.
8. Continue with exotic removal program.
9. Provide maximum resource protection while allowing visitor use in safe and resource-compatible areas.

10. Improve interpretation of natural communities through signs and brochures.
11. Maintain, protect and interpret existing archaeological sites and their associated artifactual assemblage from vandalism, erosion and other forms of encroachment.
12. Conduct ground-disturbing activities in accordance with Division policy.
13. Develop a phased plan for managing the currently identified cultural resources in the context of their surroundings.
14. Regularly assess the condition of recorded and unrecorded cultural resources and monitor the condition of sites in poor condition using photopoints.
15. Patrol sites for vandalism and discourage casual trails through interpretative signage where appropriate.
16. Pursue funding for a Phase I archaeological survey.

Recreational goals

17. Continue to provide quality resource based outdoor recreation and interpretive programs and facilities at Bahia Honda.
18. Maintain and increase if necessary the number of buoys which designate the swimming area from the windsurfing area.
19. Increase the number of outdoor programs offered to park visitors including snorkeling, beach walks, nature trail walks, bird walks and guided canoe and kayak tours.
20. Improve nature trail with interpretive signs, displays and new brochures.
21. Continue to expand and upgrade the facilities and displays in the Nature Center. This would also include interpretive programs.
22. Seek funding to expand recreational and interpretive opportunities through the improvement of programs and the development of new use areas and facilities, as outlined in this management plan.
23. Seek funding through partnerships with other agencies such as SeaGrant, Florida Keys National Marine Sanctuary, Reef Relief and Coupon Bight Aquatic Preserve. In light of the "Clean Marina" designation, this could include funding for buoys, oil spill kit and fish cleaning tables.
24. Work with the Park's concession to reduce the cost of supplies such as snorkeling equipment, and canoe and kayak rentals when used in a Ranger guided program.

Park Administration/Operations

25. In order to implement the goals and objectives for Bahia Honda, the number of FTE positions will need to be increased to accommodate the increase to visitor services. These additions in the number of staff will also allow the Nature Center to be open during operating hours.

Management Coordination

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

The Department of Agriculture and Consumer Services, Division of Forestry (DOF), assists DRP staff in the development of wildfire emergency plans and provides the authorization required for prescribed burning. The Florida Fish and Wildlife Conservation Commission (FFWCC), assists staff in the enforcement of state laws pertaining to wildlife, freshwater fish and other aquatic life existing within park boundaries. In addition, the

FFWCC aids the Division with wildlife management programs, including the development and management of Watchable Wildlife programs. The Department of State, Division of Historical Resources (DHR) assists staff to assure protection of archaeological and historical sites. The Department of Environmental Protection (DEP), Office of Coastal and Aquatic Managed Areas (CAMA) aids staff in aquatic preserves management programs. The DEP, Bureau of Beaches and Wetland Resources aid staff in planning and construction activities seaward of the Coastal Construction Line. In addition, the Bureau of Beaches and Wetland Resources aid staff in the development of erosion control projects. Emphasis is placed on protection of existing resources as well as the promotion of compatible outdoor recreational uses.

Public Participation

The Division provided an opportunity for public input by conducting an advisory group meeting. A DEP Advisory Group meeting was held on Thursday, March 20, 2003. The purpose of this meeting was to provide the Advisory Group members the opportunity to discuss this draft management plan. Addendum 1 contains the list of advisory group members and the meeting staff report.

Other Designations

Bahia Honda State Park, as part of the Florida Keys, 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.

All waters within the unit have been designated as Outstanding Florida Waters, pursuant to Chapter 62-302 Florida Administrative Code. Surface waters in this unit are also classified as Class III waters by DEP. This unit is not adjacent to an area designated as an aquatic preserve under provision of the Florida Aquatic Preserve Act of 1975 (section 258.35, Florida Statutes).

RESOURCE MANAGEMENT COMPONENT

INTRODUCTION

The Division of Recreation and Parks 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. The stated management measures in this plan are consistent with the Department's overall mission in ecosystem management. Cited references are contained in Addendum 2.

The Division's philosophy of resource management is natural systems management. Primary emphasis is on restoring and maintaining, to the degree practicable, the natural processes that shape the structure, function and species composition of Florida's diverse natural communities as they occurred in the original domain. Single species management may be implemented when the recovery or persistence of a species is problematic provided it is compatible with natural systems management.

The management goal of cultural resources is to preserve sites and objects that represent all of Florida's cultural periods as well as significant historic events or persons. This goal may entail 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 is often affected by conditions and occurrences beyond park boundaries. Ecosystem management is implemented through a resource management evaluation program (to assess resource conditions, evaluate management activities, and refine management actions), review of local comprehensive plans, and review of permit applications for park/ecosystem impacts.

RESOURCE DESCRIPTION AND ASSESSMENT

Natural Resources

Topography

Bahia Honda is part of the physiographic region of high coral keys with maximum elevation of eight to ten feet, and less than three feet on Little Bahia Honda Key. The edge of the continental shelf parallels the Keys approximately seven miles offshore. Much of the park's total area is submerged land or intertidal, with depths that do not exceed ten feet.

Some of the topography of both the uplands and submerged communities has been altered by human activity. Dredging of the present day marina basin began in the 1930's when U.S. Highway 1 was being constructed. Additional dredging and filling of wetlands occurred in the 1960's, mostly on the southwest side of the island.

Geology

The geologic formation of the Florida Keys from Soldier Key to Bahia Honda is Key Largo limestone. Built by the coral polyps of ancient coral reef formations, these remains are similar to the present living coral reefs offshore. As sea level has fluctuated over time, the land mass of South Florida has alternately been submerged and exposed above the level of the water.

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 the 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 170 feet in an area on Grassy Key (Hoffmeister, 1974).

Soils

Information published in the U.S. Department of Agriculture's Classification and Correlation of the Soils of Monroe County Keys Area Florida identifies eight soil types at Bahia Honda State Park (see Soils Map). They are Matecumbe muck, Key Largo muck, Udorthents-Urban land complex, Rock outcrop-Cudjoe complex, Lignumvitae marl, Bahiahonda fine sand, Key West marl, and Beaches.

Matecumbe muck can be found at the lower elevations that are subject to occasional flooding. It is moderately well drained and can be found in association with the poorly drained Cudjoe, Lignumvitae and Key West soils. Key Largo muck, Rock outcrop-Cudjoe complex, Lignumvitae and Key West marl are associated with mangrove tidal swamps. Bahiahonda fine sand is associated with the upland habitats at Bahia Honda. It is subject to flooding only during tropical storm events. Beaches are areas that are constantly being reworked by wind and tides. They consist of about 16 inches of sand underlain by approximately 44 inches of fine sand. Soils here are poorly drained. Udorthents-Urban land complex includes constructed upland areas where land has been altered by dredging and filling for development. Addendum 3 contains detailed soil descriptions.

Management activities will comply with those practices that will best prevent erosion in order to conserve the soil resources of this site, and the offshore water resources of the Florida Keys National Marine Sanctuary.

Minerals

Other than Key Largo limestone, there are no minerals at Bahia Honda State Park.

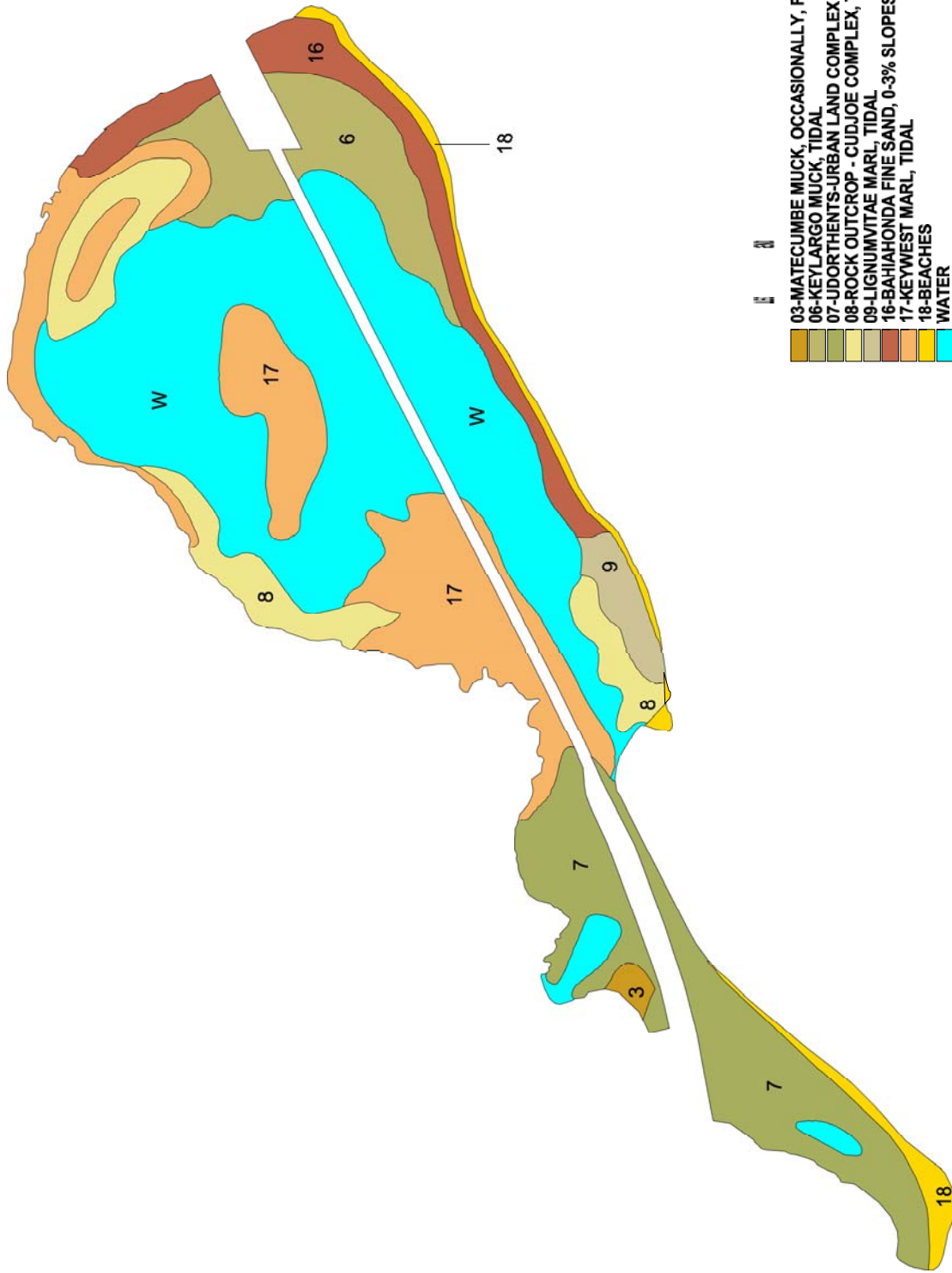
Hydrology

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 salt-water intrusion into the Biscayne Aquifer and changed the regional hydrology. Only on the larger islands such as Big Pine Key is rainwater retained for an extended period. Due to the porosity of the Key Largo limestone substrate, this is not the case in most areas at Bahia Honda. There is, however, a narrow freshwater marsh between the primary and secondary dune at the southeast end of the park that holds freshwater during the rainy season. It supports freshwater herbaceous plant species and provides an important source of freshwater to wading birds and invertebrates.

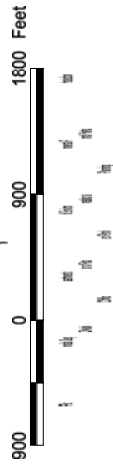
Natural Communities

The system of classifying natural communities employed in this plan was developed by the Florida Natural Areas Inventory (FNAI) FNAI Descriptions. 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 which are similar with respect to these factors will tend to have natural communities with similar species compositions. Obvious differences in species composition can occur, 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.

The park contains nine distinct natural communities (see Natural Communities Map) in



- 03-MATECUMBE MUCK, OCCASIONALLY, FLOODED
- 06-KEYLARGO MUCK, TIDAL
- 07-JDORTHENTS-URBAN LAND COMPLEX
- 08-ROCK OUTCROP - CUDJOE COMPLEX, TIDAL
- 09-LIGNUMVITAE MARL, TIDAL
- 16-BAHIAHONDA FINE SAND, 0-3% SLOPES
- 17-KEYWEST MARL, TIDAL
- 18-BEACHES
- WATER





LEGEND

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addition to ruderal and developed areas. Park specific assessments of the existing natural communities are provided in the narrative below. A list of plants and animals occurring in the unit is contained in Addendum 4.

Beach dune. Much of the shoreline at Bahia Honda where it is not lined with mangroves consists of beaches and low sandy berm. The sand is organic in nature, composed of calcium carbonate particles derived from calcareous algae, corals and mollusks.

The beach dune was severely impacted in September 1998 when Hurricane Georges swept over the island. Most of the vegetation on the beach and primary dune was lost except at the southeast end of the island that has a well-developed primary and secondary dune system. Even there, the vegetation was seriously pruned, and tree species particularly seagrape (*Coccoloba uvifera*), were blown away. Because of this loss of vegetation, the size of the beach increased. Through the efforts of park staff and natural recruitment, the beach dune recovered in less than one year's time and species such as railroad vine (*Ipomoea pes-caprae* ssp. *brasiliensis*), bay cedar (*Suriana maritima*), sea daisy (*Borrchia* spp.), sea oats (*Uniola paniculata*) and sea lavender (*Argusia gnaphalodes*) reestablished. However, in October 1999, Bahia Honda was impacted by Hurricane Irene. This hurricane was a less intense storm than Hurricane Georges was, and the beach dune did not sustain as much damage. Dune vegetation was either covered over by sand or burned by salt spray. Over the course of the weeks following this hurricane, there were changes to the dynamics of the beach at the southeast end of the island shifting sands and creating shallow tidal pools.

A narrow freshwater marsh is located between the primary and secondary dunes at the southeast end of the island. This interdunal swale is a unique component of the beach dune and is an unusual occurrence in the Keys. A flora of freshwater species can be found here including saw grass (*Cladium jamaicensis*) and cattail (*Typha domingensis*). Freshwater levels fluctuate depending upon the season, being particularly low or dry during the winter months. Although this habitat was impacted by the recent hurricanes, salinity has returned to almost 0 ppt. and vegetative recovery is evident.

The well-developed secondary dunes at the southeast end of the island support the largest remaining silver palm (*Coccothrinax argentata*) hammock in the Keys. Other rare species found here are dune lily thorn (*Catesbaea parviflora*), Cuban jacquemontia (*Jacquemontia havanensis*) and rhacoma (*Crossopetalum rhacoma*).

The beach dune at Bahia Honda supports a host of shorebirds that forage on animals found in the wrack line. Quarterly shorebird surveys result in 15 to 20 different species with numbers ranging in the hundreds. Species include black-bellied plover (*Pluvialis squatarola*), laughing gull (*Larus atricilla*), ruddy turnstone (*Arenaria interpres*), semipalmated plover (*Charadrius semipalmatus*), piping plover (*Charadrius melodus*), sanderling (*Calidris alba*) and short-billed dowitcher (*Limnodromus griseus*). Other common animals found on the beach dune include ghost crab (*Ocypode quadrata*), Southeastern five-lined skink (*Eumeces inexpectatus*) and nesting sea turtles such as the loggerhead turtle (*Caretta caretta*) and the hawksbill turtle (*Eretmochelys imbricata*).

The beach on the Gulf of Mexico side is adjacent to the parking lot and marina. There are no dunes, and erosion has been a problem particularly around several coconut palm (*Cocos nucifera*) trees that were planted as part of the landscaping plan of the park.

Coastal berm. Most of what is described in this plan as Coastal Berm had been referred to as Rockland Hammock in the previous Unit Management Plan. This designation was re-evaluated and the decision was made to classify this Natural Community as a Coastal

Berm. Although the underlying substrate of Bahia Honda is Key Largo limestone, the depth and composition of the substrate as well as the presence of the rare yellow wood trees (*Zanthoxylum flavum*), makes Coastal Berm the accurate habitat classification. The hammocks of Dagny Johnson Key Largo Hammock Botanical State Park, Windley Key Fossil Reef Geologic State Park, and Lignumvitae Key Botanical State Park are representatives of a rockland hammock.

The coastal berm at Bahia Honda can be found in several different areas of the park. The present condition of the coastal berm depends upon its location due to impacts sustained during the recent hurricanes.

The coastal berm on the south side of U.S. Highway 1 is fragmented due to park development including the park drive and Sandspur campground. This community and the one at the southeast end of the island are in good condition, although they were impacted by both Hurricane George and Irene. During Hurricane George, much of the vegetation on the south side of the Sandspur campground road was destroyed. This exposed the vegetation on the north side of the road, which became inundated with saltwater and sand. Many beach species recruited into the interior of the coastal berm but will eventually be shaded out when the canopy recovers. During Hurricane Irene, the vegetation in this section of the coastal berm was impacted by salt spray due to the absence of the vegetation on the south side of the road.

The coastal berm communities found on the north side of U.S. Highway 1 are isolated from the use areas of the park. These are smaller habitats that are located on higher elevations adjacent to the interior lagoon and surrounded by marine tidal swamp.

Typical plants in the coastal berm at Bahia Honda include gumbo-limbo (*Bursera simaruba*), Spanish stopper (*Eugenia foetida*), pigeon plum (*Coccoloba diversifolia*), poisonwood (*Metopium toxiferum*), strangler fig (*Ficus aurea*) and milkbark (*Drypetes diversifolia*). The rare yellow wood tree is also found in the coastal berm community at Bahia Honda. Typical animals include white-crowned pigeon (*Columba leucocephala*), white-eyed vireo (*Vireo griseus*), red rat snake (*Elaphe guttata guttata*) and green anole (*Anolis carolinensis*).

Coastal rock barren. Coastal rock barren is a very rare community, occurring in scattered patches along a few shorelines in the Florida Keys. A coastal rock barren occurs on Little Bahia Honda Key, a small island located just southwest of Bahia Honda. The substrate is exposed cap rock pitted with small solution holes, grading into a shoreline of jagged Key Largo limestone in the splash zone above the high water line.

The plants of the coastal rock barren are adapted to salt spray and salt inundation. Plants once found in this community on Little Bahia Honda Key include; black mangrove (*Avicennia germinans*), bay cedar and railroad vine. However, the island was severely impacted by Hurricane Georges in 1998, and little vegetation remains except for a couple of black mangrove trees.

Little Bahia Honda Key historically supported least tern (*Sterna antillarum*) nesting habitat. However, as the island became a popular spot for boaters and kayak rentals, disturbance significantly altered the tern's ability to successfully nest on the island. Due to the impact from Hurricane Georges, Little Bahia Honda Key is currently not a suitable nesting site for this species.

Estuarine and marine composite substrate (not mapped). A composite substrate community extends along the north side of Bahia Honda. This community forms a mosaic

with the other submerged communities. This mosaic is a result of substrate composition and depth, which then determines the floral and faunal composition. At Bahia Honda, the composite substrate is in excellent condition with a diverse array of species including anemones, tube-dwelling worms, sponges, soft and hard corals, and a variety of algal species.

Estuarine and marine consolidated substrate (not mapped). The consolidated substrate community, also known as the hardbottom community, is found on the southwest shore of Little Bahia Honda Key. The marine consolidated substrate community consists of Key Largo limestone with minimal sediment accumulation. This is an important community because it provides a foundation for the development of other marine communities. Seagrasses do not thrive here; instead, it is dominated by algal species such as *Penicillus* spp. and *Halimeda* spp. Other species common in this community include sea urchins, starfish (*Echinaster sentus*), queen conch (*Strombus gigas*) and a variety of fish common in the shallow waters off the Florida Keys. These include grunt (*Haemulon* spp.), snapper (*Lutjanus* spp.), barracuda (*Sphyraena barracuda*), tarpon (*Megalops atlanticus*) and small reef fish.

Estuarine and marine seagrass bed. The submerged land on the outer edge of the unconsolidated substrate is marine seagrass bed. This community is in good condition, although it is impacted by propeller scarring from boat traffic, especially near the marked channels. Patches of seagrasses are also mixed in with the unconsolidated substrate in the interior lagoons. Turtle grass (*Thalassia testudinum*) is the predominant species at Bahia Honda, but shoal grass (*Halodule wrightii*) and manatee grass (*Syringodium filiforme*) are found in small numbers.

Seagrass beds are important to the health of the surrounding marine communities including the coral reef offshore. Seagrasses stabilize sediment, cycle nutrients and serve as feeding grounds for several species of fish and invertebrates. These organisms migrate between the coral reefs, seagrass beds and mangroves on a diurnal and seasonal pattern. In addition to the numerous fish species found here, seagrass beds play an important role in the life cycle of the Florida spiny lobster (*Panulirus argus*) and the queen conch. Loggerhead, green (*Chelonia mydas*) and hawksbill (*Eretmochelys imbricata*) turtles as well as bottlenose dolphin (*Tursiops truncatus*) also utilize the seagrass beds.

Estuarine and marine tidal marsh. The marine tidal marsh communities at Bahia Honda are located north and east of the interior lagoon on the north side of U.S. Highway 1. They are characterized by expanses of grasses at slightly higher elevations than the adjacent lagoon. Common plant species found here include sea oxeye daisy (*Borrchia arborescens*), sea daisy (*Borrchia frutescens*), saltmeadow cordgrass (*Spartina patens*) and prickly cordgrass (*Spartina spartinae*). The tidal marshes are dotted with mangrove islands. Vegetation on these islands includes buttonwood, black mangrove and white mangrove trees. Typical animals found in the tidal marsh at Bahia Honda include marsh rabbit (*Sylvilagus palustris*), fiddler crabs (*Uca* sp.) and a variety of spiders.

Estuarine and marine tidal swamp. The three species of mangroves found in marine tidal swamp are red mangrove (*Rhizophora mangle*), typically found along the shoreline, and black and white mangrove that are found inland of the red mangrove fringe. The mangrove tidal swamp is an important community because it provides storm protection, stabilizes the shoreline, and traps sediment that is detrimental to coral. Mangroves provide a nursery ground for many species of fish, shrimp and lobster, some of which are important both recreationally and commercially once they migrate to the waters offshore. This community also supports wading bird populations as feeding grounds and as roosting and

nesting habitat. The mangrove leaf litter provides an important source of organic material to the complex food chain.

At Bahia Honda, mangrove tidal swamp is found along the shore where the beach dune community is not present. In addition, an extensive mangrove forest lines the interior lagoons.

Estuarine and marine unconsolidated substrate. The interior lagoons at Bahia Honda are composed of unconsolidated substrate habitat that is primarily unvegetated loose sand and marl depositions. This habitat type can also be found surrounding most of the island, and grades into marine grass bed. This seemingly barren area supports a diverse array of infaunal organisms including worms, mollusks, shrimps and crabs. Seagrasses are found here, although they are not a prominent feature of this habitat. Because the unconsolidated substrate exists in close association with the mangrove community, large numbers of fish species are present. This in turn, provides an excellent feeding ground for wading birds.

Before the development of U.S. Highway 1 through Bahia Honda, one large lagoon existed in the interior of the island. The division of this lagoon has had an impact on the quality of tidal flow, particularly for the lagoon on the north side of the highway that has become overgrown with mangroves. A study to determine tidal flow in the two lagoons was completed, with the conclusion that circulation would not be significantly improved if this area was culverted. However, habitat degradation is a concern, and efforts need to be undertaken to connect the two lagoons to improve the tidal flow.

Ruderal and developed. Most of the ruderal and developed areas in Bahia Honda State Park are located on the west side of the park and include two borrow pits. One of the borrow pits is the marina where the concession operates their tour boats. A narrow pass connects this marina to the other side of the old borrow pit. This smaller marina supports the Florida Keys National Marine Sanctuary facility. There is a Memorandum of Understanding between the Division and the Office of Coastal and Aquatic Managed Areas (CAMA) as to the upkeep and maintenance responsibilities of this facility. Along the west bank of the second borrow pit are six cabins which were built as additional visitor facilities. Other developed areas include the Park Administration building, concession building, Education Center, Sandspur campground, Buttonwood campground, residence facilities, and restroom facilities.

Designated Species

Designated species are those that are listed by the Florida Natural Areas Inventory (FNAI), U.S. Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FFWCC), and the Florida Department of Agriculture and Consumer Services (FDA) as endangered, threatened or of special concern. Addendum 5 contains a list of the designated species and their designated status for this park. Management measures will be addressed later in this plan.

Located in the coastal berm east and west of the Sandspur campground are two endangered yellow wood trees. The historic range of yellow wood includes the lower Keys to the Marquesas, through the West Indies including the Bahamas, Cuba, Puerto Rico to St. Lucia into the Greater Antilles, and Bermuda. Due to habitat destruction and the use of the wood for furniture production, yellow wood is now a rare tree and is found in its natural habitat only on Bahia Honda and on an island west of Key West. This species is dioecous, male and female fruits being borne on separate trees. The trees at Bahia Honda are both female, so efforts are underway to augment this population through a cooperative partnership between staff of the Division and Fairchild Tropical Garden. The goal of the project is to have a self-sustaining population at Bahia Honda, in addition to learning about the biology,

morphology, phenology and seed storage capabilities of this species. Seeds have been collected from two sources over the past several years, and maintained at the nursery at Fairchild Tropical Garden. In July 1999, twelve saplings were outplanted at Bahia Honda. Additional saplings were outplanted in 2001 and 2002. These plants are monitored on a quarterly schedule.

The beach dune on the southeast end of the island supports several listed species of plants including the largest stand of silver palm trees in the Keys, dune lily thorn and Cuban jacquemontia. The beach dune also supports a host of wading birds including reddish egret (*Egretta rufescens*), piping plover, and yellow-crowned night heron (*Nyctanassa violacea*). The threatened loggerhead turtle utilizes the beach dune for nesting.

The spits on either side of the borrow pit on the northwest side of the island provide least tern nesting habitat. This area is closed to the public from April to September to minimize disturbance to the birds. Little Bahia Honda Island once provided suitable habitat for least tern nesting, however human disturbance in recent years has prevented the birds from successfully nesting on the island. Hurricane Georges in 1998 severely affected the island, and it is now unsuitable for least tern nesting.

The West Indian manatee (*Trichechus manatus*) is found in park waters during the winter months.

Around the time of Hurricane Irene in October 1999, a Key deer (*Odocoileus virginianus clavium*) was spotted in a couple of locations in the park. Bahia Honda does not have the appropriate habitat to support this species, so it is unusual that it was on the island. No evidence of a deer was found on U.S. Highway 1 or on any of the park roads, so it is assumed that the deer swam back to more suitable habitat on Big Pine Key or No Name Key.

Listed on an emergency basis by the U.S. Fish and Wildlife Service as an endangered species, the Miami blue butterfly (*Hemiargus thomasi bethunebakeri*) has recently been sighted at Bahia Honda. Historically, the Miami blue butterfly is known to occur from Stock Island to Adams Key, the mainland of south Florida, and is host specific to balloon vine (*Cardiospermum corindum*). However, the population at Bahia Honda appears to be using nickerbean (*Caesalpinia bonduc*) as a host plant, which is common throughout Bahia Honda and the Keys. Balloon vine is not present at Bahia Honda, but is a more common species in the upper Keys.

The location of this population is a disturbed site that has been impacted by recent storm events and minor construction activities. Nickerbean is a weedy, thorny native plant that spreads quickly both vegetatively as well as by seed. It is considered by some to have invasive tendencies since it successfully out competes surrounding vegetation. The presence of nickerbean throughout Bahia Honda suggests the potential for the presence of the Miami blue butterfly in other locations in the park. Protection of this species is a top priority for park management and district staff.

Special Natural Features

The beach dune habitat is the special natural feature at Bahia Honda. It includes the largest silver palm hammock in the Keys and provides habitat for several listed species including dune lily thorn, Cuban jacquemontia, and Garber's spurge (*Chamaesyce garberi*). Located between the primary and secondary dunes at the southeast end of the island is a freshwater interdunal swale, which is a unique occurrence in the Florida Keys.

Cultural Resources

The Florida Master Site File lists two archaeological sites in the park. The Old Bahia Honda Bridge (MO01131C) connects Bahia Honda Key with Spanish Harbor Key (See Cultural Resources Map). The bridge was built between 1909-1912, the same period as the original seven-mile bridge. The structure is approximately 5,050 feet in length and is a truss span/concrete pier construction. The bridge is included in the Overseas Highway and Railway Bridges thematic nomination, which was listed in the National Register of Historic Places on August 13, 1979. The bridge was constructed over one of the deepest channels in the Keys. This is the reason for the long through truss span, which enabled the foundation piers to be spaced further apart. Spanning long distances between piers was considered uneconomical with the deck-plate girder or the concrete arch type construction.

After the 1935 Labor Day Hurricane destroyed Flagler's railroad, the bridge was converted to a road. Unlike the cutting of the truss span in the seven mile bridge, the Bahia Honda truss spans were too large and too many in number to allow the cutting and reinforcing for the twenty-foot roadway. The engineering solution to this problem was to utilize the existing steel spans by going over the top of them. The spans had been designed for railroad locomotive loadings and were strong enough to allow this over-the-top adaptation. The approaches to the bridge were constructed with conventional steel pile trestles and on the south end; the plate girder spans were elevated to the new gradient. The original crossing of the Bahia Honda Channel was an engineering marvel in 1912. The utilization of the structure for a highway bridge on the top of the trusses was also an engineering accomplishment because of the roadway on top of the trusses.

In the 1970s, maintenance cost and the demands of modern traffic made it clear that a replacement bridge was needed. After the completion of the new bridge, the old bridge became a historic structure.

The second archaeological site is a shipwreck (MO01196) just along the shoreline at the southeast end of the park. Although broken glass and fasteners of American origin were found at this site, it appears to be insignificant wreckage. Due to the recent hurricanes, it is believed that much of this site has been buried under additional sediment. Therefore, the condition of this shipwreck is presently unknown.

RESOURCE MANAGEMENT PROGRAM

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 Division'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 early successional communities such as sand pine scrub and coastal strand.

During the development of this plan, an analysis was made regarding the feasibility of timber management activities for this park. It was then determined that the primary management objectives of the unit could be met without conducting timber management activities for this 5-year management plan cycle. Timber management will be reevaluated during the next 5-year revision of this management plan.

Additional Considerations

Management of natural communities is often enhanced by physically restoring areas that have been disturbed or otherwise manipulated by people. Such management is often achieved in the course of hydrologic, scenic, or other restoration measures, such that two or more management goals can often be achieved simultaneously.

The priority areas in this park include restoring the impounded mangrove wetland adjacent to the Buttonwood campground; restoring the mangrove wetland by the ranger residence area by removing the berm, the exotic vegetation, and improving the existing culverts; and restoring tidal flow between the interior lagoons.

Management Needs and Problems

The primary goal for natural resource management at Bahia Honda State Park is to protect and preserve the fragile ecosystems of the park. Before Hurricane Georges in 1998, the dunes were subjected to a maze of spur trails. The protection of this endangered plant community, the endangered plants and the interdunal freshwater swale are of primary concern. Park restoration after the hurricane included re-doing the nature trail and placing a barricade along the trail in areas of open vegetation. This has aided in the vegetative recovery of the spur trails.

Erosion of the beach on the Gulf of Mexico side of the island is a concern. The beach at this swimming area is very narrow, and does not have a natural system of dunes. It has always been a problem area for erosion; however, the two recent hurricanes have caused considerable damage around picnic structures and coconut palm trees.

Exotic vegetation can be found in certain areas of the park. Due to the efforts by park management and staff, the exotic problem at Bahia Honda is a minor one, and exotics are removed as they are discovered. After Hurricane Georges, several species of exotics including Australian pine (*Casuarina equisetifolia*), tomato (*Lycopersicon esculentum*) and yellow alder (*Turnera ulmifolia*) were found scattered along the beach. Of additional concern is the laurel tree (*Ficus microcarpa*). The pollinator for this species is now found in south Florida. Most of these trees have been removed, but a few are still in the park. They need to be removed before they begin naturalizing throughout the island.

Bahia Honda is a highly productive and environmentally sensitive resource. Application of mosquito spraying is permitted only during peak mosquito periods by the request of the park manager. Approved designated locations are the campgrounds, shop area and residence area. Aerial application is not permitted at Bahia Honda.

Management Objectives

The resources administered by the Division are divided into two principal categories: natural resources and cultural resources. The Division primary objective in natural resource management is to maintain and restore, to the extent possible, to the conditions that existed before the ecological disruptions caused by man. The objective for managing cultural resources is to protect these resources from human-related and natural threats. This will arrest deterioration and help preserve the cultural resources for future generations to enjoy.

The main objective at Bahia Honda State Park consists of maintaining and protecting the native plant communities. This includes restoring the mangrove wetland adjacent to the Buttonwood campground, obtaining funding for culverting under U.S. Highway 1 to restore tidal flow between the two lagoons, continuing with the exotic removal program, protecting the submerged communities from propeller damage by proper signage, and continuing with endangered species protection particularly the yellow wood project.

Management Measures for Natural Resources

Hydrology

When U.S. Highway 1 was constructed, the highway bisected a lagoon in the interior of the island, creating two separate systems with no connecting culverts. A study was conducted to measure tidal flow in the two lagoons, and it was determined that no significant circulation would be gained by using culverts. Despite this conclusion, the two lagoons need to be connected to create natural tidal flow and prevent habitat degradation.

The interdunal swale between the primary and secondary dunes on the southeast end of the island needs to be protected. This can be accomplished by preventing foot traffic to this end of the island.

The mangrove wetland adjacent to the Buttonwood campground needs to be restored by opening up the access to the Gulf and allowing better tidal flow.

The mangrove wetlands by the ranger residence area need to be restored by improving the existing culverts, removing the berm and removing the exotic vegetation. These actions will provide better tidal flow to this wetland.

Management activities will include maintaining or improving the water quality at Bahia Honda State Park. Measures will be taken to prevent soil erosion or other adverse impacts to the water resources of the park and the Florida Keys National Marine Sanctuary.

Prescribed Burning

The objectives of prescribed burning are to create those conditions that are most natural for a particular community, and to maintain ecological diversity within the unit's natural communities. To meet these objectives, the park is partitioned into burn zones, and burn prescriptions are implemented for each zone. The park burn plan is updated annually to meet current conditions. All prescribed burns are conducted with authorization from the Department of Agriculture and Consumer Services, Division of Forestry (DOF). Wildfire suppression activities will be coordinated between the Division and the DOF.

Prescribed burning is not an applicable resource management tool at this site.

Designated Species Protection

The welfare of designated species is an important concern of the Division. In many cases, these species will benefit most from proper management of their natural communities. At times, however, additional management measures are needed because of the poor condition of some communities, or because of unusual circumstances that aggravate the particular problems of a species. The Division will consult and coordinate with appropriate federal, state and local agencies for management of designated species.

The designated species at this site require the protection of the habitat to ensure their survival. Sea turtle nestings are recorded on a daily basis during the season and nests are properly marked. Least tern nesting areas are properly marked and barriers are erected during nesting season. Additional interpretive signs may be needed to educate the park visitors of the need to stay away from these areas during nesting season. Queen conch and all coral are protected by Florida Statutes and collecting is prohibited.

Exotic Species Control

Exotic species are those plants or animals that are not native to Florida, but were introduced because of human-related activities. Exotics have fewer natural enemies and may have a higher survival rate than do native species, as well. They may also harbor diseases or parasites that significantly affect non-resistant native species. Consequently, it is the strategy of the Division to remove exotic species from native natural communities.

The threat of exotic plant infestations at Bahia Honda comes from species found on the island including the ranger residence area and the DOT right-of-way, and from those spread by natural means (i.e.: birds, wind, and water). The most serious exotic plant threats to Bahia Honda are laurel fig, Brazilian pepper (*Schinus terebinthifolius*), portia (*Thespesia populnea*), leadtree (*Leucaena leucocephala*) and scaevola (*Scaevola sericea*). Native species found outside of their natural range (West Indian Mahogany (*Swietenia mahagoni*), which was not historically found south of Long Key) pose a threat to the natural communities at this park. An exotic removal plan is currently being written and will be on file at the park and in the District 5 Office in Key Largo.

The exotic animals found in the park include Norway rat (*Rattus norvegicus*), black rat (*Rattus rattus*), domestic cats (*Felis domesticus*), Cuban brown anole (*Anolis sagrei*) and Cuban tree frog (*Hyla septentrionalis*). An active removal program is ongoing using traps or poisons depending upon the species. Fire ants (*Solenopsis spp.*) pose a problem to nesting sea turtle eggs. Exotic bird species including rock dove (*Columba livia*) and Eurasian collared dove (*Streptopelia decaocto*) are pests near the concession building and the picnic areas. Park visitors need to be educated to not feed any wildlife in the park.

Problem Species

Problem species are defined as native species whose habits create specific management problems or concerns. Occasionally, problem species are also a designated species, such as alligators. The Division will consult and coordinate with appropriate federal, state and local agencies for management of designated species that are considered a threat or problem.

There are no problem animal species at this site. However, several plant species are of concern where the public is likely to encounter them due to their poisonous nature or their sharp spines. These include poisonwood, manchineel (*Hippomane mancinella*) and nickerbean (*Caesalpinia bonduc*).

Management Measures for Cultural Resources

The management of cultural resources is often complicated because these resources are irreplaceable and extremely vulnerable to disturbances. The advice of historical and archaeological experts is required in this effort. Approval from Department of State, Division of Historical Resources (DHR) must be obtained before taking any actions, such as development or site improvements that could affect or disturb the cultural resources on state lands (see **DHR Cultural Management Statement**).

Actions that require permits or approval from DHR include development, site excavations or surveys, disturbances of sites or structures, disturbances of the substrate, and any other actions that may affect the integrity of the cultural resources. These actions could damage evidence that would someday be useful to researchers attempting to interpret the past.

Aside from the Old Bahia Honda Bridge, very little in the way of cultural resources can be found at this park. Information about the bridge and the history of the Flagler railroad is interpreted by park staff on a regular basis.

Because of the likelihood for materials from the shipwreck site to surface along the shoreline at the southeast end of the park, the area should be visited regularly by park staff to ensure protection against vandalism.

Vandalism should be discouraged using interpretive signage that includes warnings against collecting artifacts in both terrestrial and aquatic environments. This signage should be placed at access points or areas of high visitor concentration rather than at sites themselves.

Research Needs

Natural Resources

Any research or other activity that involves the collection of plant or animal species on park property requires a collecting permit from the Department of Environmental Protection. Additional permits from the Florida Fish and Wildlife Conservation Commission, the Department of Agriculture and Consumer Services, or the U.S. Fish and Wildlife Service may also be required.

Research needs at Bahia Honda State Park include the following:

1. Update all designated plant species maps in 2006 (initially mapped in 2001 by district staff).
2. Continue yellow wood project.
3. Continue erosion measurements along the oceanside and bayside, including photo plots.
4. Continue monitoring least tern nesting activity and determine the feasibility of improving nesting habitat.
5. Continue monitoring sea turtle nesting activity.
6. Continue monitoring the water quality in the marina.
7. Inventory submerged communities.

Cultural Resources

There are no prehistoric sites and only two historic sites recorded in the Florida Master Site File for the park. The park has not been subjected to a systematic cultural resource assessment survey. Because of the known archaeological resources in the vicinity, management measures for cultural resources at Bahia Honda include drafting a proposal for a Phase I archaeological survey.

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 contained in Addendum 6. Cost estimates for conducting priority management activities are based on the most cost effective methods and recommendations currently available (see Addendum 6).

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 of the Internal Improvement Trust Fund (board) are being managed for the purposes for which they were acquired and in accordance with a land management plan adopted pursuant to s. 259.032, the board of trustees, acting through the Department of Environmental Protection (department). The managing agency shall consider the findings and recommendations of the land management review team in finalizing the required 5-year update of its management plan.

Bahia Honda State Park was subject to a land management review on January 25, 2000. The review team made the following determinations:

1. The land is being managed for the purpose for which it was acquired.
2. The actual management practices, including public access, were in compliance 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 Division of Recreation and Parks. These responsibilities are to preserve representative examples of original natural Florida and its cultural resources, and to provide outdoor recreation opportunities for Florida's citizens and visitors.

The general planning and design process begins with an analysis of the natural and cultural resources of the unit, and then proceeds through the creation of a conceptual land use plan that culminates in the actual design and construction of park facilities. Input to the plan is provided by experts in environmental sciences, cultural resources, park operation and management, through public workshops, and environmental groups. With this approach, the Division's 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 described and located 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, adjacent land uses and the park interaction with other facilities.

Existing Use of Adjacent Lands

Existing land uses near Bahia Honda Key consist of a mixed commercial and RV camping development to the northeast, on Missouri Key. The islands immediately southwest of Bahia Honda, Spanish Harbor Keys, are uninhabited. Big Pine Key lies further south, with residential development and portions of the Key Deer National Wildlife Refuge located on the northeastern portion of the island.

Planned Use of Adjacent Lands

The Sunshine Key development, located on Missouri Key, is planning to remove recreational vehicle camping facilities and convert their business to time-share and rental units in the future. The development of the Florida Keys Overseas Heritage Trail State Park will have a greater affect of on Bahia Honda State Park by increasing the numbers of visitors arriving at the park.

PROPERTY ANALYSIS

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

Recreation Resource Elements

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

Land Area

The state park contains nearly 500 acres of uplands, wetlands and submerged lands. The average elevation of the park is approximately 5 feet above the mean sea level, with scattered mounds to slightly higher elevations. The major portion of the interior of the island is tidal marsh, tidal swamp and a lagoon with several types of submerged communities, to which visitor access is not provided. US Highway 1 bisects the park along the long northeast to southwest axis.

Over 60 acres of coastal berm and beach dune communities and the surrounding submerged areas are the primary recreational attractions of Bahia Honda State Park. The park contains the largest of the few sandy beaches to be found in the Florida Keys. The Florida Department of Transportation used the southwestern end of the island as a marina and staging area for construction of the new U.S. Highway 1 bridge across Bahia Honda Channel. Subsequently, the marina areas and the previously developed area at the foot of the old Bahia Honda Bridge were used for development of park facilities.

Water Area

The clear aquamarine waters of the Atlantic Ocean and Florida Bay are the primary recreational attraction for visitors to the park. Public access is provided at the park's three beach use areas, including an area providing rental kayaks, through the marina on the ocean side, and at a scenic overlook at the southern end of the Old Bahia Honda Bridge.

Shoreline

As mentioned above, over 8,000 feet of shoreline at the state park is sand beach providing a rare beach recreation opportunity in the Florida Keys. Mangroves inhabit the sheltered shorelines along Florida Bay and throughout the interior lagoon system of the island. Canoeing, kayaking and snorkeling recreation is available along the ocean and bayside shorelines of the state park.

Natural Scenery

The outstanding visual resource at Bahia Honda State Park is its view of the Atlantic Ocean, Florida Bay and the channels north and south of the island. Views of the historic Bahia Honda Bridge from the southwestern end of the island are attractive to park visitors and highway travelers alike. Most of the disturbed uplands of the island were once covered by Australian pines. An ongoing program of exotic removal, coupled with extensive planting of native species has eradicated nearly all exotic plant species on the island, and restored a natural landscape the contains unique and enjoyable viewing subjects for the park's visitors.

Significant Wildlife Habitat

The beaches on Bahia Honda Key are important nesting areas for sea turtles. Nesting terns uses portions of the island. Measures to exclude public disturbances of the areas during nesting periods are standard procedures in the park's visitor management activities.

Natural Features

The expanse of the Atlantic Ocean beach and dunes are the unit's most prominent natural features. Stands of native Silver palms located on the northern third of the island are also considered outstanding features of this park.

Archaeological and Historical Features

The history of the Flagler Railroad is a physical feature of the state park due to the presence of the Old Bahia Honda Bridge connecting the state park to the Spanish Harbor Keys. The bridge is listed on the National Register of Historic Places. Spanning approximately 6,700 feet with steel truss structures across widely-spaced concrete piers, the Bahia Honda bridge is unlike any of the other railroad bridges constructed for Flagler's Overseas Railroad in its route from Miami to Key West. Adding to the unusual nature of the Bahia Honda Bridge, is the placement of the original US Highway 1 over the tops of the railroad trusses. Today, weathering and deterioration of the bridge structure, primarily that portion added to convert the bridge from railroad to highway uses, is causing hazards to fishermen, as pieces of the bridge frequently fall to the ocean below it.

The Division of Recreation and Parks in cooperation with the Department of Transportation renovated the upper 600 feet of the Bahia Honda Bridge in the mid-1980s to make it useable by the public as a popular scenic overlook.

Assessment of Use

All legal boundaries, significant natural features, structures, facilities, roads, trails and easements 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

Before state acquisition, Monroe County owned portions of Bahia Honda Key and developed a wayside park at the south end of the island.

Recreational Uses

Swimming, fishing, camping, boating, canoeing and kayaking, picnicking and nature appreciation are the recreational activities provided at Bahia Honda State Park. A park concessionaire operates snorkel tours, a gift shop and snack bar from the park's boat basin and provides rental kayaks from an oceanside location adjacent to the concession building. Six rental cabins and an efficiency apartment provide additional overnight accommodations at the park.

Other Uses

The right of way of U.S. Highway 1 occupies the central corridor of the state park. The Florida Keys Overseas Heritage Trail State Park will extend a separate bicycle-pedestrian facility along that right of way in the future. A variety of state and federal resource management and law enforcement vessels operate from the park's boat basin as needed.

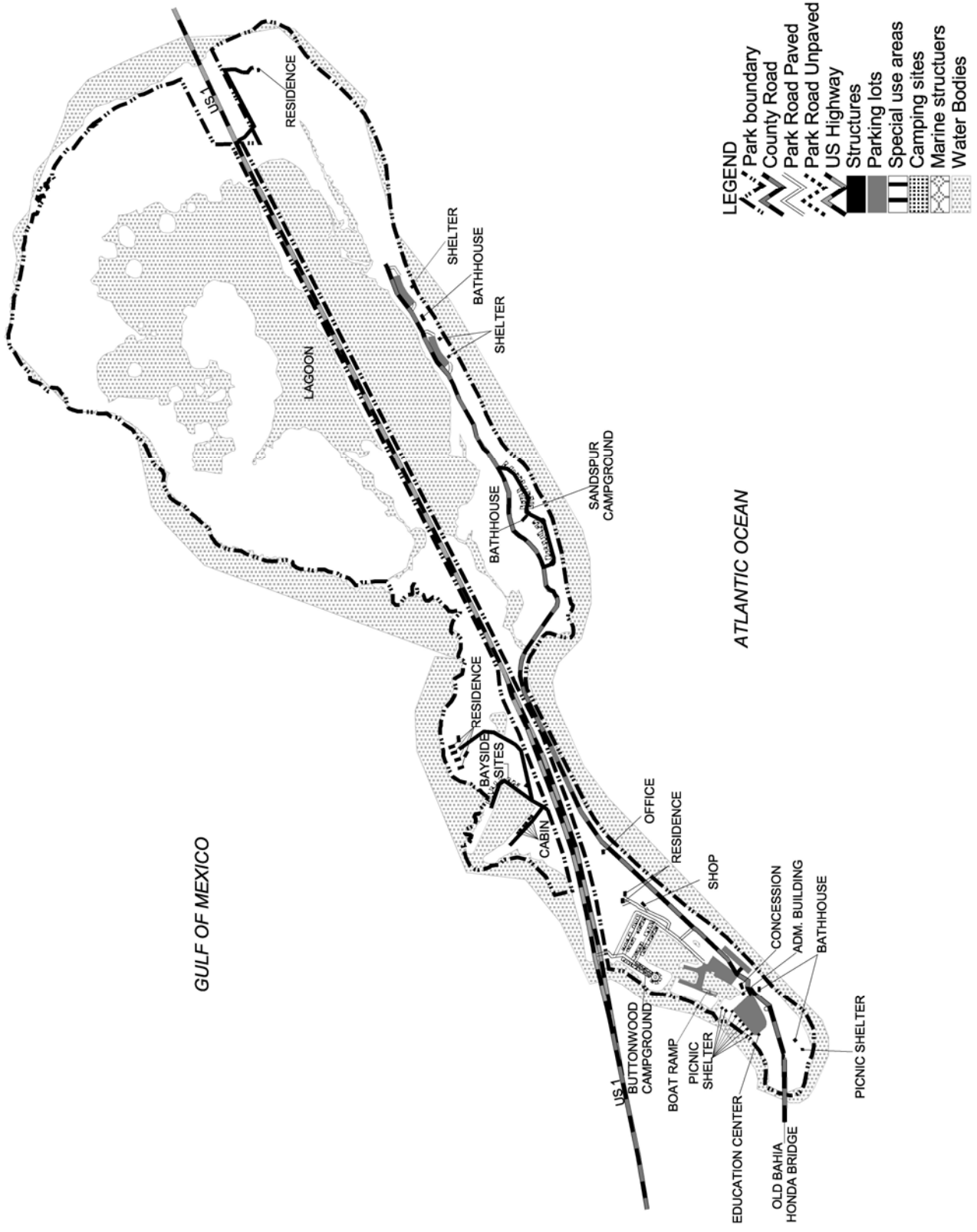
Protected Zones

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.

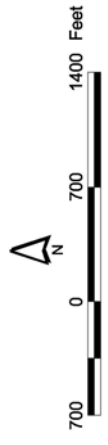
At Bahia Honda State Park, all undeveloped areas have been designated as protected zones as delineated on the Conceptual Land Use Plan.

Existing Facilities

Recreation facilities. Recreation facilities at the east beach use area include boardwalks, a nature trail and picnic shelters. The west beach use area contains picnic shelters, an interpretive center, a nature trail and the Old Bahia Honda Bridge overlook. The Sandspur



- LEGEND**
- Park boundary
 - County Road
 - Park Road Paved
 - Park Road Unpaved
 - US Highway
 - Structures
 - Parking lots
 - Special use areas
 - Camping sites
 - Marine structures
 - Water Bodies



Florida Department of Environmental Protection
 Division of Recreation and Parks
 Office of Park Planning



Camping Area provides 24 tent sites, and the Buttonwood camping area provides 48 standard campsites accommodating RV, popup and tent campers. Two boat basins serve the standard camping area and day use boaters, including boats used in the park's concession operation. Three duplex cabins are located north of U.S. Highway 1 on a fill site surrounding another borrow pit left from highway construction. Eight additional tent campsites are located along the borrow pit opposite the cabins.

Support facilities. Support facilities at Bahia Honda State Park include restrooms at the east and west beach use areas, parking for 156 vehicles at the east and 196 vehicles at the west beach use areas, campers bathhouses at each camping area, maintenance facilities, and park staff residences at three locations. Sewage disposal at the park is accomplished through small wastewater treatment plants, hybrid aerobic batch treatment systems and composting disposal technology with a greywater drainfield at the Sandspur camping area.

CONCEPTUAL LAND USE PLAN

The following narrative represents the current conceptual land use proposal for this park. As new information is provided regarding the environment of the park, cultural resources, recreational use, and as new land is acquired, the conceptual land use plan may be amended to address the new conditions (see Conceptual Land Use Plan). A detailed development plan for the park and a site plan for specific facilities will be developed based on this conceptual land use plan, as funding becomes available.

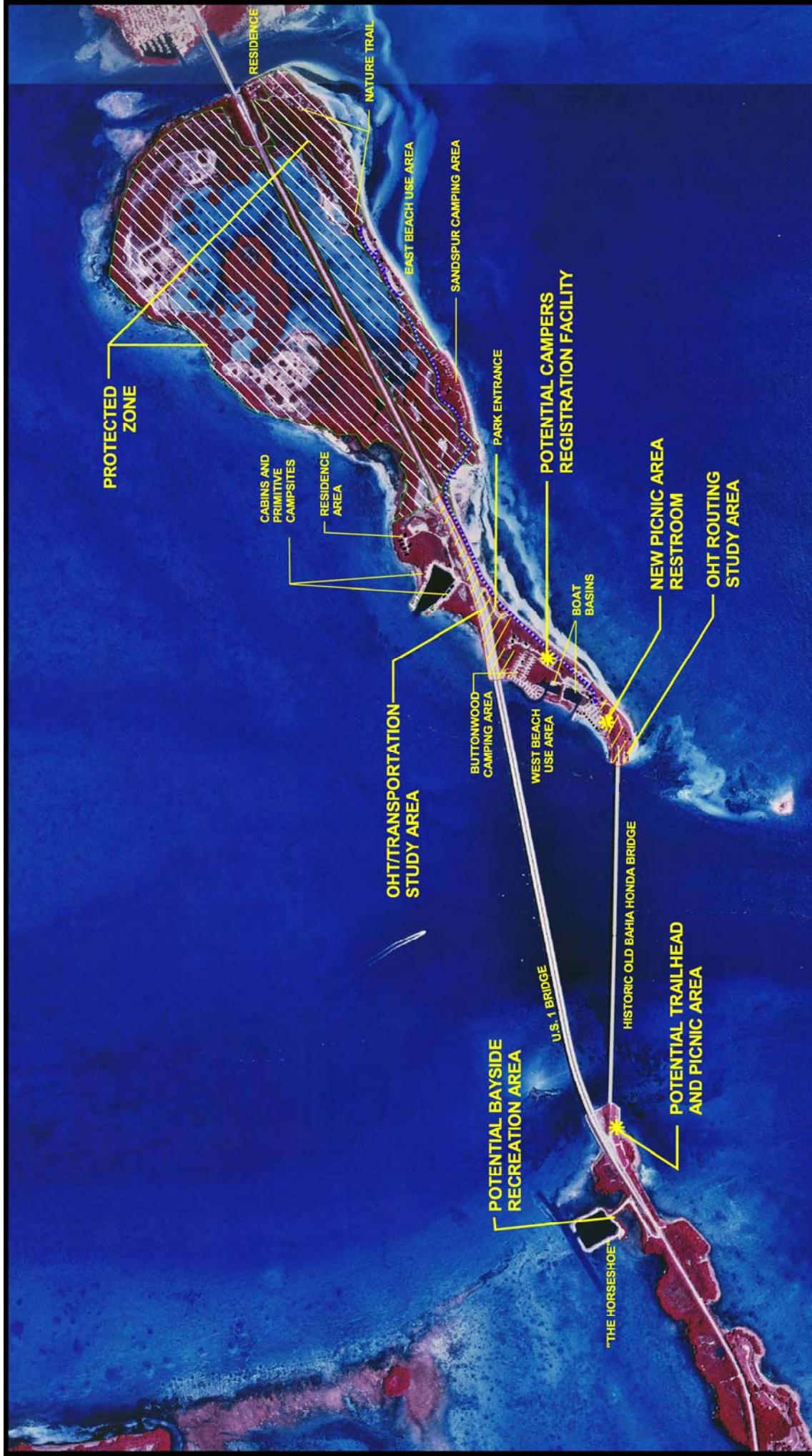
During the development of the unit management plan, the Division assesses potential impacts of proposed uses on the resources of the property. Uses that could result in unacceptable impacts are not included in the conceptual land use plan. Potential impacts are more thoroughly identified and assessed through the site planning process once funding is available for the development project. At that stage, design elements, such as sewage disposal and stormwater management, and design constraints, such as designated species or cultural site locations, are more thoroughly investigated. Advanced wastewater treatment or best available technology systems are applied for on-site sewage disposal. Stormwater management systems are designed to minimize impervious surfaces to the greatest extent feasible, and all facilities are designed and constructed using best management practices to avoid impacts and to mitigate those that cannot be avoided. Federal, state and local permit and regulatory requirements are met by the final design of the projects. 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, the park staff monitors conditions to ensure that impacts remain within acceptable levels.

Potential Uses and Proposed Facilities

Bahia Honda State Park is one of the most popular parks in the Florida's state park system. It is considered optimally developed at this time. No new recreation facilities are proposed within the existing park boundaries, with the exception of the shared use trail facilities that will be constructed in the park and along the U.S. Highway 1 right of way with development of the Florida Keys Overseas Heritage Trail State Park (OHT).

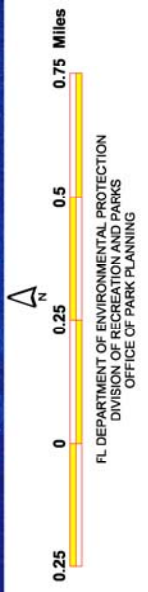
Engineering studies are needed to determine the route of the OHT through the state park. If possible, the Old Bahia Honda Bridge, a historic structure listed on the National Register of Historic Places, should be adapted to use for the shared use trail, and a route through the park created that protects the park's resources, unique habitat areas and existing patterns of use. If the old bridge cannot be used, then the trail will cross between islands on the new highway bridge, and entrance for trail users will be provided along the main park entrance.

A comprehensive study of traffic management in the park is needed to address existing



CONCEPTUAL LAND USE PLAN

BAHIA HONDA STATE PARK



traffic congestion during peak times as well as the expected increase in bicycle and other non-vehicular arrivals at the park with the arrival of the OHT. The DEP and the Florida Department of Transportation should collaborate on a study of all options for handling these present and future transportation and recreation demands. The study and eventual construction of new transportation facilities in the park should also address best management practices for stormwater management, and potential wetland restoration projects along the highway corridor through the park.

Recreation Facilities

With the exception of development of the Florida Keys Overseas Heritage Trail discussed above, no new recreational facilities in the state park are recommended by this plan. Additional interpretive kiosks should be provided to upgrade the park's interpretive and educational programs.

Support Facilities

An additional restroom is needed to serve the volume of use that occurs at the west beach use area of the park. An RV camper's registration facility separate from the park entrance station should be considered to address traffic congestion problems that frequently occur at the park entrance. This small facility, including parallel parking for two or 3 oversized vehicles and a registration booth, may be located along the access road to the standard camping area, or an alternative location may be incorporated in the redesign of transportation and entrance facilities, discussed above.

Facilities Development

Preliminary cost estimates for the following list of proposed facilities are provided in Addendum 6. These cost estimates are based on the most cost-effective construction standards available at this time. The preliminary estimates are provided to assist the Division in budgeting future park improvements, and may be revised as more information is collected through the planning and design processes.

Existing Use and Optimum 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 1).

The optimum 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 1.

Optimum Boundary

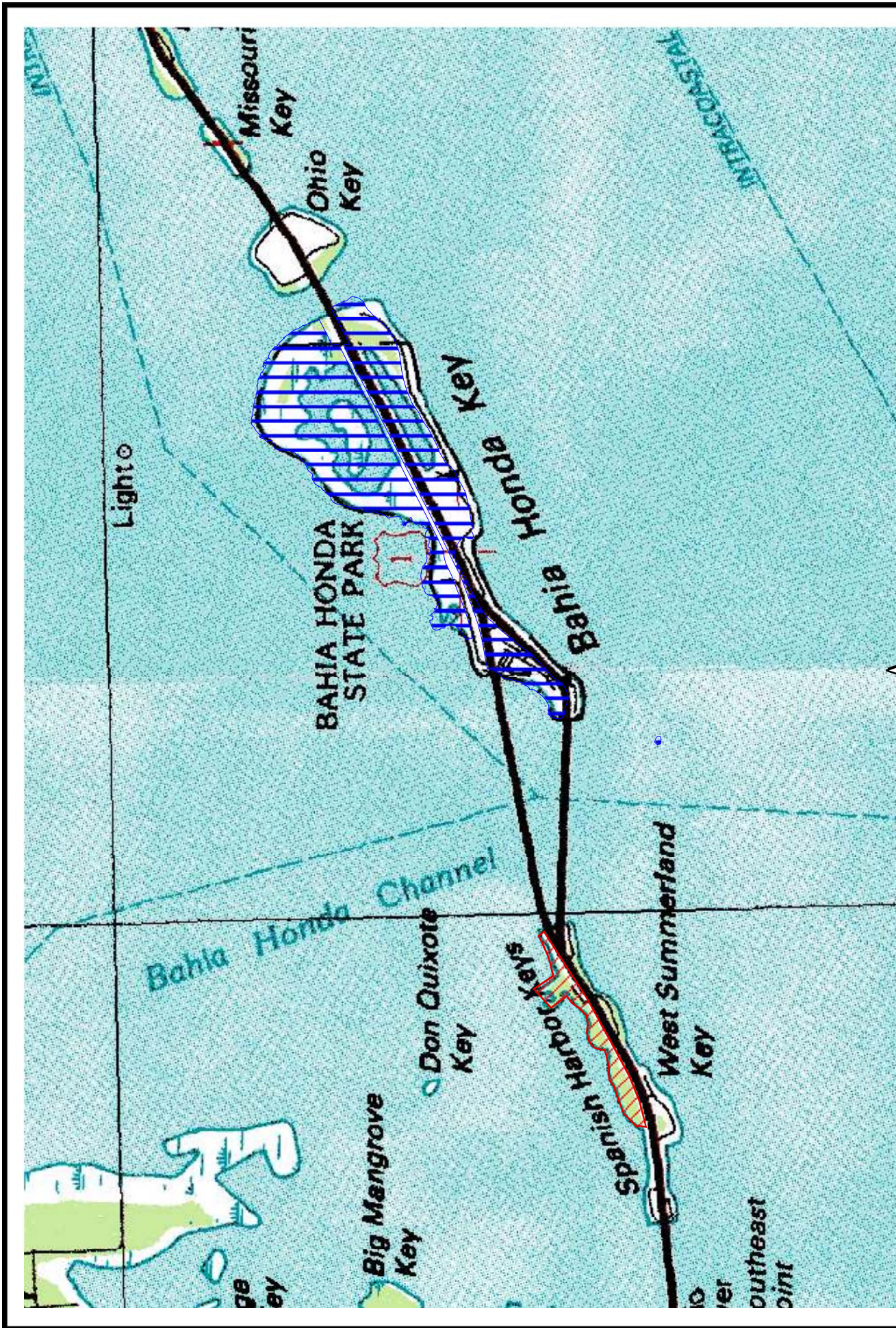
As additional needs are identified through park use, development, research, and as adjacent land uses change on private properties, modification of the unit's optimum boundary may occur for the enhancement of natural and cultural resources, recreational values and management efficiency. Identification of lands on the optimum boundary map is solely for planning purposes and not for regulatory purposes. A property's identification on the optimum boundary map is not for use by any party or other government body to reduce or restrict the lawful right of private landowners. Identification on the map does not empower

Table 1--Existing Use and Optimum Carrying Capacity

Activity/Facility/Use Area	Existing Capacity		Proposed Additional Capacity		Estimated Optimum Capacity	
	One Time	Daily	One Time	Daily	One Time	Daily
Camping						
Standard Camping Area	192	192			192	192
Sandspur Camping Area	96	96			96	96
Primitive Camping Area	32	32			32	32
Cabins	48	48			48	48
Picnicking/Swimming						
East Beach Use Area	468	936			468	936
West Beach Use Area	588	1,176			1,176	1,176
Fishing						
Shoreline	50	100			50	100
Boating						
Canoeing/Kayaking	30	60			30	60
Boating	105	210			105	210
Snorkel Tours						
Trails						
Nature/hiking	20	80			20	80
TOTAL	1,629	2,930	0	0	2,217	2,930

or require any government entity to impose additional or more restrictive environmental land use or zoning regulations. Identification is not to be used as the basis for permit denial or the imposition of permit conditions. No lands are considered to be surplus to the needs of the park. The optimum boundary map reflects lands identified as desirable for direct management by the Division as part of Bahia Honda State Park. These parcels may include public as well as privately owned lands that improve the continuity of existing park lands, provide additional natural and cultural resource protection, and/or allow for future expansion of recreational activities.

The proposed addition to the state park is land currently administered by the Florida Department of Transportation at the eastern end of Spanish Harbor Key. The oceanside portion of this area was a roadside rest area constructed as part of the original State Road A1A, which included the historic Old Bahia Honda Bridge. A coquina-block restroom building and shoreline bulkheads are remnants of that development. The bayside parcel is the location of stone jetties known as “The Horseshoe”, which may have been used as staging area during construction of the new highway bridge. In all, 52 acres of waterfront land with great potential for expanding the recreational opportunities at the state park are recommended for addition to the park boundary. The additional recreational facilities that these areas may provide in the future may be critical, as completion of the Florida Keys Overseas Heritage Trail State Park brings additional visitors to Bahia Honda State Park, a unit that frequently reaches its capacity for recreational use. If acquired, both parcels on Spanish Harbor Key would provide needed rest, recreation and restroom facilities for users of the OHT, and the oceanside parcel could be directly linked to the existing state park facilities over a renovated Old Bahia Honda Bridge, if that renovation proves feasible.



Addendum 1—Acquisition History and Advisory Group Information

**Bahia Honda State Park
Acquisition History**

Purposes and sequence of Acquisition

The State of Florida acquired Bahia Honda State Park to develop, operate and maintain the property for outdoor recreational, park, conservation, historic and related purposes.

On September 21, 1961, the State obtained title the property constituting Bahia Honda State Park. Monroe County donated the property to the State. Since this donation, the state has acquired additional parcels under Save Our Coast and Land Acquisition Trust Fund programs and added them to Bahia Honda State Park.

On January 23, 1968, the Board of Trustees of the Internal Improvement Trust Fund (Trustees) conveyed management authority of Bahia Honda State Park to Department of Environmental Protection, Division of Recreation and Parks (Division) under Lease No. 2324. The lease is for a period of ninety-nine (99) and will expire on January 22, 2067. In 1988, the Trustees assigned a new lease number, Lease No. 3609, to Bahia Honda State Park without making any changes to the terms and conditions of Lease No. 2324.

According to the lease, the Division manages the property only for the development, conservation and protection of natural and cultural resources, and for resource-based public outdoor recreation that is compatible with the conservation and protection of the property.

Title Interest:

The Trustees hold fee simple title to Bahia Honda State Park.

Special Conditions on Uses

Bahia Honda State Park is designated single-use to provide resource-based public outdoor recreation and other related uses. 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 or the management purposes of the park.

Outstanding Reservations

Following is a listing of outstanding rights, reservations, and encumbrances that apply to Bahia Honda State Park.

Instrument:	Deed
Instrument Holder:	Monroe County
Beginning Date:	September 21, 1961
Ending Date:	There is no specific ending date.
Outstanding Rights, Uses, Etc.	If the property is not used for the purposes stated in the deed, the title interest will revert to Monroe County.

Instrument:	Deed
Instrument Holder:	Monroe County
Beginning Date:	December 11, 1962
Ending Date:	There is no specific ending date.
Outstanding Rights, Uses, Etc.	If the property is not used for the purposes stated in the deed, the title interest will revert to Monroe County.

Instrument:	Corrective Deed
Instrument Holder:	Monroe County
Beginning Date:	January 16, 1970
Ending Date:	There is no specific ending date.
Outstanding Rights, Uses, Etc.	If the property is not used as a state park, the title interest will revert to the instrument holder.

**Bahia Honda State Park
Acquisition History**

Instrument: Easement
Instrument Holder: Department of Environmental Protection
Beginning Date: October 15, 1980
Ending Date: Coterminous with the term of Lease No. 3609
Outstanding Rights, Uses, Etc. The easement allows the Department of Transportation to construct and maintain a swale and culvert on a portion of the park.

Instrument: Easement
Instrument Holder: Board of Trustees
Beginning Date: April 6, 1982
Ending Date: When the subject property is not used for the purpose stated in the easement
Outstanding Rights, Uses, Etc. The easement will enable Utility Board of the City of Key West to improve the layout of the electricity transmission lines serving facilities in the state park.

Instrument: QuitClaim Deed
Instrument Holder: Monroe County
Beginning Date: October 14, 1983
Ending Date: There is no specific ending date.
Outstanding Rights, Uses, Etc. If the property is not used as a state park, the title interest will revert to the instrument holder.

Instrument: Corrective Quit -Claim Deed
Instrument Holder: Monroe County
Beginning Date: March 8, 1984
Ending Date: There is no specific ending date.
Outstanding Rights, Uses, Etc. If the property is not used as a state park, the title interest will revert to the instrument holder.

**Bahia Honda State Park
DEP Advisory Group Members**

The Honorable Dixie Spehar, Mayor
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Noble Hendrix, Chair
South Dade Soil and Water
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Mr. Frank Woll
Florida Bay Outfitters
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Key Largo, Florida 33037

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**Bahia Honda State Park
DEP Advisory Group Staff Report**

The Advisory Group appointed to review the draft management plan update for Bahia Honda State Park met at the park on Thursday, March 20, 2003. Mr. Dennis Henize represented Tina Henize. Mayor Spehar, Mr. Hendrix, Ms. Jetton, Ms. Wheeler, Ms. Sprunt, Mr. Woll and Mr. Fives did not attend. All other appointed Advisory Group members attended the meeting. Attending staff included Danny Jones, Edgar Crum, Steve Eibl, Janice Duquesnel and Lew Scruggs.

Mr. Scruggs began the meeting by explaining the purpose of the management plan and the advisory group, and explaining the procedure for the Advisory Group's review of the draft plan. He also provided a brief overview of the Division's planning process. Ms. Duquesnel described the natural and cultural resources of the park, and outlined resource management goals, objectives and management activities. Mr. Scruggs gave a brief explanation of the land use component of the plan, focusing on the future alignment of the Overseas Heritage Trail and the proposed addition of land on West Summerland Key to the park boundary. Mr. Scruggs then asked each member of the advisory group to provide individual comments on the plan.

Summary Of Advisory Group Comments

Dr. Daniels explained that a second colony of Miami Blue butterflies has been found on the eastern end of the island. He noted that both colonies are doing well, and that all existing habitat within the park should be protected from impacts from resource management activities or development in the future. He reported that the park staff's protection efforts have been very effective, and that interpretive programs now being developed will support protection of the endangered species. The facts that balloon vine, the butterfly's natural host plant, does not grow in the state park, and that the species appears to have shifted to nickerbean plants in this location was discussed. Dr. Daniels offered his assistance in reviewing any plans for trimming or removal of nickerbean in the park in the future. Dr. Daniels and Division staff suggested that a request be made to the Monroe County Mosquito Control District (MCD) to include mapping of all nickerbean locations in the Keys in the MCD's balloon vine mapping project. Current park protocols for mosquito spraying were discussed. Spraying occurs only when mosquito populations are high, and only within the public use areas of the park. Dr. Daniels stated that he believes these procedures are sufficiently protective of the Miami Blue butterfly populations in the park, and would only be concerned if the areas being sprayed were expanded in the future.

Mr. Grau asked if the park maintains an arthropod control plan. Park staff replied that no written plan is maintained, but that the protocols discussed above have been established between the park and the Mosquito Control District. Mr. Grau asked if there were observed problems with fire ant predation on the butterflies or on turtle or bird nests in the park, and suggested that fire ant control should be mentioned in the management plan in that context. He recommended that stormwater management control practices should be carefully designed to avoid wetland impacts within the park. He suggested consideration of allowing the marginal saltwater wetland area associated with mosquito ditches adjacent to the US 1 corridor at the west end of the park to become freshwater, since the efficient restoration of tidal connection to the area is greatly complicated by the disturbance of the highway embankment.

Mr. Berg noted that the Mosquito Control District is applying mosquito larvicide to backcountry areas in the Key, and that this may decrease the need for spraying within the park in the future. He discussed research and restoration efforts for wetland communities, and suggested that the plan should consider opening the bayside outlet of the park's interior lagoon area to increase tidal flushing. Mr. Berg supported the recommendation that Division staff map the submerged natural communities lying within the park's 400 foot submerged land management authority. He also supported a recommendation to establish canoe and kayaking trails at the park.

Mr. McKee contributed to much of the discussion regarding resource management activities, the measures being taken by park staff to protection of the endangered butterflies and their habitat. He outlined operational concerns related to the development of the Overseas Heritage Trail. He noted that the park entrance frequently becomes very congested with arriving automobiles and campers,

Bahia Honda State Park
DEP Advisory Group Staff Report

and that construction of the bike path under the US 1 bridge may be very difficult and may create visitor safety problems and security concerns. Discussion of these problems and the environmental constraints involved in any new construction adjacent to the park entrance road and in the location proposed for a camper registration building indicates that additional study is needed for decisions on the alignment of the Overseas Heritage Trail.

Staff Recommendation

A number of good suggestions were received from the Advisory Group discussion, and minor changes and corrections have been made to the contents of the draft management plan.

The major change to the draft plan is revision of the conceptual land use plan and text to remove the alternative routes for the overseas heritage trail. The text of the land use component will be revised recommend that a master plan and engineering study be conducted to consider all alternatives for the alignment of the trail, and to address the circulation of automobiles and campers through the park entrance. That study should investigate the potential reconstruction of a portion of US 1 to help accommodate the continued high volume of vehicular traffic into and out of the park, coupled with a high volume of bicycle traffic that is anticipated with the completion of the Overseas Heritage Trail. The study will include an examination and possible improvement of stormwater management practices along the US 1 corridor through the park, and other wetland issues related to the highway embankment.

With these changes, staff recommends approval of the proposed management plan for Bahia Honda State Park.

Addendum 2—References Cited

Bahia Honda State Park
References Cited

- Dickel Terhune S., 1991. Checklist for Lepidoptera of Bahia Honda State Park, unpublished.
- Florida Natural Areas Inventory and the Florida Department of Natural Resources, 1990. Guide to the Natural Communities of Florida. Tallahassee, Florida. 111 pp.
- Florida Natural Areas Inventory, 1998. Florida Conservation Lands.
- Florida Natural Areas Inventory, 1999. Tracking List of Rare, Threatened, and Endangered Plants and Animals and Natural Communities of Florida. 74 pp.
- Hoffmeister, John E., 1974. Land from the Sea. University of Miami Press.
- Littler, D.S., M.M. Littler, K.E. Bucher, and J.N. Norris, 1989. Marine Plants of the Caribbean, A Field Guide from Florida to Brazil. Washington, D.C. Smithsonian Institution Press.
- Long, R.W. and O. Lakela, 1978. A Flora of Tropical Florida. Miami, Florida: Banyan Books.
- Nelson, Gil, 1994. The Trees of Florida. Sarasota, Florida: Pineapple Press, Inc.
- Ray, G.C., and C.R. Robins, 1985. A field guide to Atlantic coast fishes of North America. Houghton Mifflin Company, 512pp.
- United States Department of Agriculture, Natural Resources Conservation Service, 1995. Soil Survey of Monroe County, Keys Area, Florida.
- Voss, Gilbert L. 1976. Seashore life of Florida and the Caribbean. Miami, Fl: E.A. Seemann Publishing, Inc.
- Wunderlin, Richard P. 1998. Guide to the vascular plants of Florida. Univeristy Press of Florida.

Addendum 3—Soil Descriptions

Bahia Honda State Park
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 of decomposition. Slopes are 0 to 1 percent. The taxonomic class is Euic, isohyperthermic 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 palm, satinleaf, paradise tree, and stopper.

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

(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 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 Keylargo soil are the very poorly drained, organic Islamorada and Tavernier soils in landscape positions similar to those of the Keylargo soil; the poorly drained, marly Cudjoe, Lignumvitae, and Keywest soils in the slightly higher positions 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 recreational use. Characteristic vegetation for the soils in the survey areas include; red mangrove and black mangrove.

Bahia Honda State Park
Soil Descriptions

(7) Udorthents-Urban land complex. This map unit is in 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 the 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 that 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. Elevations 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 the map 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 on 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.

Bahia Honda State Park
Soil Descriptions

(9) Lignumvitae marl, tidal. The Lignumvitae series consists of poorly drained soils that are moderately deep to rippable coral or oolitic limestone bedrock. The depth to bedrock is dominantly 25 to 35 inches but can range from 20 to 40 inches. These soils formed in calcareous marl. They are in tidal areas. Slopes are 0 to 1 percent. The taxonomic class is coarse-silty, carbonatic, isohyperthermic Tropic Fluvaquents.

This soil is dominantly on the middle and lower keys in mangrove swamps. Individual areas are frequently flooded by tides. Elevations are dominantly at 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.

The Lignumvitae 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 Lignumvitae soils 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 landscape positions similar to those of the Lignumvitae soil; and the poorly drained, organic Islamorada, Keylargo, and Tavernier soils in the lower positions on the landscape.

The Lignumvitae 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 soil 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 include; black mangrove, red mangrove, white mangrove, buttonwood, glasswort, and wild tamarind.

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

(16) Bahiahonda fine sand, 0 to 3 percent slopes. The Bahiahonda series consists of moderately well drained soils that are deep to rippable coral limestone bedrock. The depth to bedrock is 60 to 90 inches. These soils formed in sandy marine material and shells overlying the limestone bedrock. They are on uplands. Slopes range from 0 to 3 percent. The taxonomic class is Isohyperthermic, uncoated Aquic Quartzipsamments.

This soil is on coastal strands and tropical hammocks in the uplands on Bahia Honda Key and Long Key. Individual areas are subject to rare flooding from hurricanes and other tropical storms. Elevations are dominantly 4 to 7 feet above sea level, according to National Geodetic Vertical Datum of 1929.

The Bahiahonda soil is dominant in this map unit. Soils in areas on Long Key are wetter than the Bahiahonda soil and have slightly more limitations. They have a high water table at a depth of 1.5 to 2.5 feet. Areas that have different uses and interpretations are rare and generally are adjacent to the boundaries of this map unit.

Soils that are associated with the Bahiahonda soil are moderately well drained, organic Matecumbe soils in landscape positions similar to those of the Bahiahonda soil; the poorly drained, marly Cudjoe soils in the slightly lower positions on the landscape; and the very poorly drained, organic Islamorada and Keylargo soils and Beaches in the significantly lower position on the landscape.

The Bahiahonda soil is moderately well drained. It has a seasonal high water table at a depth of 2.5 to 3.5 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. A few areas have been developed for recreational use. Some areas support invader, or exotic, species.

Bahia Honda State Park
Soil Descriptions

These invader species are dominantly Australian pine. Characteristic vegetation for the soils in this survey include; poisonwood, crabwood, wild tamarind, gumbo limbo, stopper, and Buccaneer palm.

The wetness, the flooding, and seepage are severe limitations affecting most uses of this soil, including most kinds of building site and recreational development and sanitary facilities.

(17) Keywest marl, tidal. The Keywest series consists of poorly drained soils that are deep to rippable coral or oolitic limestone bedrock. The depth to bedrock is more than 50 inches. These soils formed in calcareous marl. They are in tidal areas. Slopes are 0 to 1 percent. The taxonomic class is coarse-silty, carbonatic, isohyperthermic Thapto-Histic Tropic Fluvaquents.

This soil is dominantly on the lower keys in mangrove swamps. Individual areas are frequently flooded by tides. Elevations are dominantly 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.

The Keywest soil is dominant in this map unit. Soils in areas on Boot Key do not have a layer of muck; whereas, the Keywest soil generally has a layer of muck. The difference, however, does not affect the uses and interpretations of the soils. Areas that have different uses and interpretations are rare and generally are adjacent to the boundaries of this map unit.

Soils that are associated with the Keywest 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 and the very poorly drained, organic Islamorada, Keylargo, and Tavernier soils in the lower positions on the landscape.

The Keywest 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 soil 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 this soil survey include; black mangrove, red mangrove, white mangrove, buttonwood, and glasswort.

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

(18) Beaches. This map unit consists of barren areas adjacent to the Atlantic Ocean on the lower keys. Individual areas are subject to shallow flooding by tides and to deep flooding from hurricanes and other tropical storms. Elevations are at or near sea level, according to National Geodetic Vertical Datum of 1929.

The Beaches are miscellaneous areas that have been reworked by the tides. They commonly consist of about 16 inches of sand underlain by about 44 inches of fine sand. The fine sand is underlain by muck and other soil or nonsoil material at a depth of about 60 inches. The width and shape of the Beaches can change during each major storm.

The Beaches are adjacent to Bahiahonda soils. They are also adjacent to Urban land and water. The Bahiahonda soils and the Urban land are in the higher positions on the landscape.

This map unit is poorly drained. It has a seasonal high water table at the surface. Permeability is rapid or very rapid. Most areas of this map unit are not vegetated. The Beaches are used for recreational activities, such as sunbathing and fishing, and as access areas for swimming and wading.

Because of the unique location of the Beaches and their value for recreational activities, other uses are not practical and interpretations have not been provided.

Addendum 4—Plant And Animal List

Bahia Honda State Park

Plants

Common Name	Scientific Name	Habitat Codes (for designated species)
flat spikerush	<i>Abildgaardia ovata</i>	
sweet acacia	<i>Acacia farnesiana</i>	
barb-wire cactus	<i>Acanthocereus tetragonus</i>	
giant leather fern	<i>Acrostichum danaeifolium</i>	
false foxglove	<i>Agalinis maritima</i>	
	<i>Agave americana</i> *	
false sisal	<i>Agave decipiens</i>	
sisal hemp	<i>Agave sisalana</i> *	
woman's tongue	<i>Albizia lebbek</i> *	
notch-leaved amaranth	<i>Amaranthus blitum</i> *	
common ragweed	<i>Ambrosia artemisiifolia</i>	
torchwood	<i>Amyris elemifera</i>	
bushy bluestem	<i>Andropogon glomeratus</i> var. <i>pumilus</i>	
sea lavender	<i>Argusia gnaphalodes</i>	1
arrowfeather	<i>Aristida purpurascens</i>	
aster	<i>Aster subulatus</i>	
sand atriplex	<i>Atriplex pentandra</i>	
black mangrove	<i>Avicennia germinans</i>	
salt bush	<i>Baccharis halimifolia</i>	
saltwort	<i>Batis maritima</i>	
Spanish needle	<i>Bidens alba</i> var. <i>radiata</i>	
green shrimp plant	<i>Blechum pyramidatum</i> *	
samphire	<i>Blutaparon vermiculare</i>	
red spiderling	<i>Boerhavia diffusa</i>	
sea ox-eye daisy	<i>Borrichia aborescens</i>	
sea oxeye	<i>Borrichia frutescens</i>	
bougainvillea	<i>Bougainvillea glabra</i> *	
gumbo limbo	<i>Bursera simaruba</i>	
locustberry	<i>Byrsonima lucida</i>	1, 3
gray nicker-bean	<i>Caesalpinia bonduc</i>	
southern sea rocket	<i>Cakile lanceolata</i>	
sea daisy	<i>Calyptocarpus vialis</i> *	
bay-bean	<i>Canavalia rosea</i>	
Jamaica caper	<i>Capparis cynophallophora</i> .	
goatweed	<i>Capraria biflora</i>	
love vine	<i>Cassytha filiformis</i>	
small-flowered lilythorn	<i>Catesbaea parviflora</i>	1
Madagascar periwinkle	<i>Catharanthus roseus</i> *	
southern sandbur	<i>Cenchrus echinatus</i>	
coastal sandbur	<i>Cenchrus incertus</i>	
butterfly pea	<i>Centrosema virginianum</i>	
	<i>Chaemecrista nictitans</i> var. <i>aspera</i>	
Blodgett's spurge	<i>Chamaesyce blodgettii</i>	
Garber's spurge	<i>Chamaesyce garberi</i>	1
hairy spurge	<i>Chamaesyce hirta</i>	
	<i>Chamaesyce hypericifolia</i>	
seaside spurge	<i>Chamaesyce mesembryanthemifolia</i>	
eyebane	<i>Chamaesyce ophthalmica</i>	
blackweed	<i>Chamaesyce prostrata</i>	

* Non-native Species

Bahia Honda State Park

Plants

Common Name	Scientific Name	Habitat Codes (for designated species)
cocoplum	<i>Chrysobalanus icaco</i>	
watermelon	<i>Citrullus lanatus</i> *	
saw grass	<i>Cladium jamaicensis</i>	
pitch apple	<i>Clusia rosea</i> *	
pigeon plum	<i>Coccoloba diversifolia</i>	
seagrape	<i>Coccoloba uvifera</i>	
silver palm	<i>Coccothrinax argentata</i>	1,3
coconut palm	<i>Cocos nucifera</i> *	
coffee colubrina	<i>Colubrina arborescens</i> *	
dayflower	<i>Commelina diffusa</i>	
day flower	<i>Commelina erecta</i>	
buttonwood	<i>Conocarpus erecta</i>	
silver buttonwood	<i>Conocarpus erecta f. sericea</i>	
dwarf horseweed	<i>Conyza canadensis var. pusilla</i>	
geiger tree	<i>Cordia sebestena</i> *	
rhacoma	<i>Crossopetalum rhacoma</i>	3
milkweed	<i>Cynanchum angustifolium</i>	
fragrant milkweed	<i>Cynanchum northropiae</i>	
Bermuda grass	<i>Cynodon dactylon</i> *	
umbrella sedge	<i>Cyperus croceus</i>	
yellow nutgrass	<i>Cyperus esculentus</i> *	
	<i>Cyperus involucratus</i> *	
false saw grass	<i>Cyperus ligularis</i>	
umbrella sedge	<i>Cyperus planifolius</i>	
umbrella sedge	<i>Cyperus polystachyos</i>	
	<i>Cyperus rotundus</i> *	
Egyptian grass	<i>Dactyloctenium aegyptium</i> *	
Coinvine	<i>Dalbergia ecastophyllum</i>	
virgate mimosa	<i>Desmanthus virgatus</i>	
beggarweed	<i>Desmodium incanum</i>	
Florida begger weed	<i>Desmodium tortuosum</i> *	
Asia crabgrass	<i>Digitaria bicornis</i> *	
	<i>Digitaria dolichophylla</i>	
annual wallrocket	<i>Diplotaxis muralis</i> *	
milkbark	<i>Drypetes diversifolia</i>	3
	<i>Eclipta prostrata</i>	
goose grass	<i>Eleusine indica</i> *	
pothos	<i>Epipremnum pinnatum</i> *	
lovegrass	<i>Eragrostis elliottii</i>	
black torch	<i>Erithalis fruticosa</i>	
beach creeper	<i>Ernodea littoralis</i>	
Spanish stopper	<i>Eugenia foetida</i>	
dog fennel	<i>Eupatorium capillifolium</i>	
grassleaf spurge	<i>Euphorbia graminea</i> *	
finger grass	<i>Eustachys petraea</i>	
seaside gentian	<i>Eustoma exaltatum</i>	
strangler fig	<i>Ficus aurea</i>	
India rubber tree	<i>Ficus elastica</i> *	
laurel fig	<i>Ficus microcarpa</i> *	

* Non-native Species

Bahia Honda State Park

Plants

Common Name	Scientific Name	Habitat Codes (for designated species)
hurricane grass	<i>Fimbristylis cymosa</i>	
chestnut sedge	<i>Fimbristylis spadicea</i>	
yellowtop	<i>Flaveria linearis</i>	
stalkless yellowtop	<i>Flaveria trinervia</i>	
milk pea	<i>Galactia striata</i>	
milk-pea	<i>Galactia volubilis</i>	
southern gaura	<i>Gaura angustifolia</i>	
seven-year apple	<i>Genipa clusiifolia</i>	
lignum vitae (cultivated)	<i>Guaiacum sanctum</i>	81
blolly	<i>Guapira discolor</i>	
crabwood	<i>Gymnanthes lucida</i>	
	<i>Hedyotis corymbosa</i> *	
scorpion tail	<i>Heliotropium angiospermum</i>	
seaside heliotrope	<i>Heliotropium curassavicum</i>	
bladder mallow	<i>Herissantia crispa</i>	
hibiscus	<i>Hibiscus rosa-sinensis</i> *	
manchineel	<i>Hippomane mancinella</i>	3
spider lily	<i>Hymenocallis latifolia</i>	
wild indigo	<i>Indigofera spicata</i> *	
moon-flower	<i>Ipomoea alba</i>	
morning glory	<i>Ipomoea imperati</i>	
morning glory	<i>Ipomoea indica var. acuminata</i>	
railroad vine	<i>Ipomoea pes-caprae ssp. brasiliensis</i>	
moonvine	<i>Ipomoea violaceae</i>	
beach elder	<i>Iva imbricata</i>	
Cuban jacquemontia	<i>Jacquemontia havanensis</i>	1
joewood	<i>Jacquinia keyensis</i>	1,3
devil's backbone	<i>Kalanchoe daigremontiana</i> *	
life plant	<i>Kalanchoe pinnata</i> *	
salt marsh mallow	<i>Kostelutzkya virginica</i>	
white mangrove	<i>Languncularia racemosa</i>	
wild lantana	<i>Lantana involucrata</i>	
wild bamboo	<i>Lasiacis divaricata</i>	
peppergrass	<i>Lepidium virginicum</i>	
lead tree	<i>Leucaena leucocephala</i> *	
tomato	<i>Lycopersicon esculentum</i> *	
	<i>Macroptilium atropurpureus</i> *	
red jumbie bean	<i>Macroptilium lathyroides</i> *	
false mallow	<i>Malvastrum corchorifolium</i>	
wild dilly	<i>Manilkara jaimiqui</i>	3
marsh elder	<i>Melanthera nivea</i>	
poisonwood	<i>Metopium toxiferum</i>	
cheeseweed	<i>Morinda royoc</i>	
horseradish tree	<i>Moringa oleifera</i> *	
wax myrtle	<i>Myrica cerifera</i>	
Tex-Mex tobacco	<i>Nicotiana plumbaginifolia</i> *	
Cochineal cactus	<i>Opuntia cochenillifera</i> *	
prickly-pear cactus	<i>Opuntia stricta</i>	
lady's sorrel	<i>Oxalis corniculata</i>	

* Non-native Species

Bahia Honda State Park

Plants

Common Name	Scientific Name	Habitat Codes (for designated species)
beach grass	<i>Panicum amarum</i>	
blue paspalum	<i>Paspalum caespitosum</i>	
salt joint grass	<i>Paspalum setaceum</i>	
salt joint grass	<i>Paspalum vaginatum</i>	
corky-stemmed passionflower	<i>Passiflora suberosa</i>	
chicken weed	<i>Pectis prostrata</i>	
devil's backbone	<i>Pedilanthus tithymaloides</i> *	
wild allamanda	<i>Pentalinon luteum</i>	
	<i>Phoenix sp.</i>	
creeping charlie	<i>Phyla nodiflora</i>	
	<i>Phyllanthus amarus</i> *	
	<i>Phyllanthus tenellus</i> *	
ground cherries	<i>Physalis walteri</i>	
artillery plant	<i>Pilea microphylla</i>	
Jamaica dogwood	<i>Piscidia piscipula</i>	
blackbead	<i>Pithecellobium keyense</i>	
bushy fleabane	<i>Pluchea carolinensis</i>	
marsh fleabane	<i>Pluchea odorata</i>	
wild poinsettia	<i>Poinsettia cyathophora</i>	
milkwort	<i>Polygala grandiflora</i>	
purslane	<i>Portulaca oleracea</i> *	
white indigo-berry	<i>Randia aculeata</i>	
darling plum	<i>Reynosa septentrionalis</i>	
red mangrove	<i>Rhizophora mangle</i>	
least snoutbean	<i>Rhynchosia minima</i>	
rougeberry	<i>Rivina humilis</i>	
cabbage palm	<i>Sabal palmetto</i>	
annual glasswort	<i>Salicornia bigelovii</i>	
woody glasswort	<i>Salicornia perennis</i>	
bowstring hemp	<i>Sansevieria hyacinthoides</i> *	
inkberry	<i>Scaevola plumieri</i>	
beach naupaka	<i>Scaevola sericea</i> *	
umbrella tree	<i>Schefflera actinophylla</i> *	
Brazilian pepper	<i>Schinus terebinthifolius</i> *	
	<i>Schizachyrium gracile</i>	
bluestem	<i>Schizachyrium sanguineum</i>	
coffeweed	<i>Senna obtusifolia</i>	
sea purslane	<i>Sesuvium portulacastrum</i>	
foxtail grass	<i>Setaria parviflora</i>	
broomweed	<i>Sida acuta</i>	
	<i>Sida ciliaris</i>	
saffron plum	<i>Sideroxylon celastrina</i>	
greenbrier	<i>Smilax havanensis</i>	
American black nightshade	<i>Solanum americanum</i>	
Bahama nightshade	<i>Solanum bahamense</i>	
mullein nightshade	<i>Solanum verbascifolium</i>	
necklace-pod	<i>Sophora tomentosa</i>	
saltmeadow cordgrass	<i>Spartina patens</i>	
prickly cordgrass	<i>Spartina spartinae</i>	

* Non-native Species

Bahia Honda State Park

Plants

Common Name	Scientific Name	Habitat Codes (for designated species)
large leaf buttonweed	<i>Spermacoce assurgens</i>	
buttonweed	<i>Spermacoce verticillata</i> *	
coral dropseed grass	<i>Sporobolus domingensis</i>	
dropseed	<i>Sporobolus indicus</i> var. <i>indicus</i> *	
	<i>Sporobolus indicus</i> var. <i>pyramidatus</i> *	
coastal dropseed	<i>Sporobolus virginicus</i>	
blue porterweed	<i>Stachytarpheta jamaicensis</i>	
porterweed	<i>Stachytarpheta urticifolia</i> *	
St. Augustine grass	<i>Stenotaphrum secundatum</i> *	
pencil flower	<i>Stylosanthes hamata</i>	
sea blite	<i>Suaeda linearis</i>	
bay-cedar	<i>Suriana maritima</i>	
West Indian mahogany (cultivated)	<i>Swietenia mahagoni</i>	81
tropical almond	<i>Terminalia catappa</i> *	
portia	<i>Thespesia populnea</i> *	
Key thatch	<i>Thrinax morrisii</i>	3
Florida thatch palm	<i>Thrinax radiata</i>	3
soldier bush	<i>Tournefortia volubilis</i>	
oyster plant	<i>Tradescantia spathacea</i> *	
puncture weed	<i>Tribulus cistoides</i> *	
Mexican daisy	<i>Tridax procumbens</i> *	
yellow alder	<i>Turnera ulmifolia</i> *	
southern cattail	<i>Typha domingensis</i>	
sea oats	<i>Uniola paniculata</i>	
Dominican panicum	<i>Urochloa adspersa</i>	
cow-pea	<i>Vigna luteola</i>	
waltheria	<i>Waltheria indica</i>	
hog-plum	<i>Ximenia americana</i>	
Spanish bayonet	<i>Yucca aloifolia</i> *	
yellow wood	<i>Zanthoxylum flavum</i>	3
turf grass	<i>Zoysia matrella</i> var. <i>tenuifolia</i> *	

MARINE PLANTS

Mermaid's wine glass	<i>Acetabularia calyculus</i>	
	<i>Avrainvillea</i> sp.	
	<i>Batrophea oerstedii</i>	
	<i>Caulerpa</i> sp.	
	<i>Dasycladus vermicularis</i>	
	<i>Halimeda</i> sp.	
Shoal grass	<i>Halodule wrightii</i>	
Shaving brush algae	<i>Penicillus</i> sp.	
Sargassum	<i>Sargassum</i> sp.	
Manatee grass	<i>Syringodium filiforme</i>	
Turtle grass	<i>Thalassia testudinum</i>	
	<i>Udotea flabellum</i>	

* Non-native Species

Bahia Honda State Park

Animals

Common Name	Scientific Name	Habitat Codes (for all species)
FISH		
Sergeant m ajor	<i>Abudefduf saxatilis</i>	68,69,71,77
Eagle ray	<i>Aetobatus narinari</i>	68,69,71,77
Bonefish	<i>Albula vulpes</i>	68,69,71,77
Porkfish	<i>Anisotremus virginicus</i>	68,69,71,77
Trumpetfish	<i>Aulostomus maculatus</i>	68,69,71,77
Blue runner	<i>Caranx crysos</i>	68,69,71,77
Bar jack	<i>Caranx ruber</i>	68,69,71,77
Reef shark	<i>Carcharhinus springeru</i>	68,69,71,77
Snook	<i>Centropomus undecimalis</i>	68,69,71,77
Atlantic spadefish	<i>Chaetodiperus faber</i>	68,69,71,77
Foureye butterflyfish	<i>Chaetodon capistratus</i>	68,69,71,77
Spotfin butterflyfish	<i>Chaetodon ocellatus</i>	68,69,71,77
Banded butterflyfish	<i>Chaetodon striatus</i>	68,69,71,77
Dolphin	<i>Coryphaena hippurus</i>	68,69,71,77
Southern stingray	<i>Dasyatis americana</i>	68,69,71,77
Porcupinefish	<i>Diodon hystrix</i>	68,69,71,77
Spotted drum	<i>Equetus punctatus</i>	68,69,71,77
Yellowfin mojarra	<i>Gerres cinereus</i>	68,69,71,77
Nurse shark	<i>Ginglymostoma cirratum</i>	68,69,71,77
White grunt	<i>Haemulon plumieri</i>	68,69,71,77
Bluestriped grunt	<i>Haemulon sciurus</i>	68,69,71,77
Blue anglefish	<i>Holacanthus bermudensis</i>	68,69,71,77
Queen anglefish	<i>Holacanthus ciliaris</i>	68,69,71,77
Bermuda chub	<i>Kyphosus sectatrix</i>	68,69,71,77
Hogfish	<i>Lachnolaimus maximus</i>	68,69,71,77
Spotted trunkfish	<i>Lactophrys bicaudalis</i>	68,69,71,77
Honeycomb cowfish	<i>Lactophrys polygonia</i>	68,69,71,77
Mutton snapper	<i>Lutjanus analis</i>	68,69,71,77
Schoolmaster	<i>Lutjanus apodus</i>	68,69,71,77
Gray snapper	<i>Lutjanus griseus</i>	68,69,71,77
Dog snapper	<i>Lutjanus jocu</i>	68,69,71,77
Lane snapper	<i>Lutjanus synagris</i>	68,69,71,77
Tarpon	<i>Megalops atlanticus</i>	68,69,71,77
Yellowtail snapper	<i>Ocyurus chrysurus</i>	68,69,71,77
Gray anglefish	<i>Pomacanthus arcuatus</i>	68,69,71,77
French anglefish	<i>Pomacanthus paru</i>	68,69,71,77
Dusky damselfish	<i>Pomacentrus fuscus</i>	68,69,71,77
Beaugregory	<i>Pomacentrus leucostictus</i>	68,69,71,77
Bicolor damselfish	<i>Pomacentrus partitus</i>	68,69,71,77
Cocoa damselfish	<i>Pomacentrus variabilis</i>	68,69,71,77
Spotted goatfish	<i>Pseudupeneus maculatus</i>	68,69,71,77
Stoplight parrotfish	<i>Sparisoma viride</i>	68,69,71,77
Barracuda	<i>Sphyraena barracuda</i>	68,69,71,77
Yellow stingray	<i>Urolophus jamaicensis</i>	68,69,71,77
CORALS		
Rose coral	<i>Mancinia areolata</i>	68, 69,71
Finger coral	<i>Porites porties</i>	68, 69, 71

* Non-native Species

Bahia Honda State Park

Animals

Common Name	Scientific Name	Primary Habitat Codes (for all species)
ARTHROPODS		
Spider	<i>Argiope sp.</i>	3,4, 81, 82
Blue crab	<i>Callinectes sapidus</i>	68, 69, 71, 76,77
Land hermit crab	<i>Coenobita clypeatus</i>	3,4, 81, 82
Junk spider	<i>Cyclosa sp.</i>	3,4, 81, 82
Crab spider	<i>Gaaseracantha cancriformis</i>	3,4,75,76, 81, 82
Fiddler crab	<i>Uca sp.</i>	75, 77
Horseshoe crab	<i>Limulus polyphemus</i>	68, 69, 71, 77
Golden orb weaver	<i>Nephila clavipes</i>	3,4,75,76, 81, 82
Spiny lobster	<i>Panulirus argus</i>	68, 69, 71,76, 77
MOLLUSKS		
Black horn shell	<i>Batillaria minima</i>	68, 69, 71, 76, 77
Chiton	<i>Chiton sp.</i>	68, 69, 71, 77
Tulip shell	<i>Fasciolaria hunteria</i>	68, 69, 71, 77
Bleeding tooth	<i>Nerita peloronta</i>	68, 76
Checkered nerite	<i>Nerita tessellata</i>	68, 76
Queen conch	<i>Strombus gigas</i>	71
ECHINODERMS		
Thorny starfish	<i>Echinaster sentus</i>	68,69,71,77
Florida sea cucumber	<i>Holothuria floridana</i>	68,69,71,77
West Indian sea biscuit	<i>Meoma ventricosa</i>	68,69,71,77
MARINE		
Atlantic loggerhead	<i>Caretta caretta</i>	1, 68,69,71,77
Atlantic green turtle	<i>Chelonia mydas</i>	68,69,71,77
Hawksbill turtle	<i>Eretmochelys imbricata</i>	68,69,71,77
TERRESTRIAL		
green anole	<i>Anolis carolinensis</i>	3,81,82
Cuban anole	<i>Anolis sagrei</i> *	1,3,81,82
six-lined racerunner	<i>Cnemidophorus s. sexlineatus</i>	3
Southern black racer	<i>Coluber constrictor priapus</i>	1,3,81,82
red rat snake	<i>Elaphe guttata guttata</i>	3,81,82
southeastern five-lined skink	<i>Eumeces inexpectatus</i>	3,4,81,82
Florida Keys mole skink	<i>Eumeces e. ergregius</i>	3
green tree frog	<i>Hyla cinerea</i>	3
Cuban tree frog	<i>Hyla septentrionalis</i> *	3,81,82
ground skink	<i>Leiopisma laterale</i>	3,81,82
mangrove water snake	<i>Natrix fasciata compressicauda</i>	71,76
Ashy gecko	<i>Sphaerodactylus cinereus</i>	3,81,82
Reef gecko	<i>Sphaerodactylus n. aotatus</i>	3,81,82
Florida box turtle	<i>Terrapene carolina bauri</i>	3
BIRDS		
Common Loon	<i>Gavia immer</i>	Migratory
Brown Pelican	<i>Pelecanus occidentalis</i>	68,69,71,76,77
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	4,68,69,71,76,77
Magnificent frigatebird	<i>Fregata magnificens</i>	OF

* Non-native Species

Bahia Honda State Park

Animals

Common Name	Scientific Name	Primary Habitat Codes (for all species)
Great Blue Heron	<i>Ardea herodias</i>	1,4,69,76,77
Great White Heron	<i>Ardea herodias</i>	1,4, 69,76,77
Wurdemann's heron	<i>Ardea wurdemanni</i>	1,4,69,76,77
Cattle Egret	<i>Bubulcus ibis</i>	81
Great Egret	<i>Casmerodius albus</i>	1,4,69,76,77
Snowy Egret	<i>Egretta thula</i>	1,4,69,76,77
Little Blue Heron	<i>Egretta caerulea</i>	1,4,69,76,77
Reddish Egret	<i>Egretta rufescens</i>	69,77
Tricolored Heron	<i>Egretta tricolor</i>	4,69,76,77
Green Heron	<i>Butorides virescens</i>	4,76
Yellow-crowned Night-Heron	<i>Nycticorax violaceus</i>	4,76
Roseate Spoonbill	<i>Ajaia ajaja</i>	69,76,77
White Ibis	<i>Eudocimus albus</i>	4,69,76,77,81
Red-breasted Merganser	<i>Mergus serrator</i>	Migratory
Blue-winged teal	<i>Anas discors</i>	Migratory
Lesser scaup	<i>Aythya affinis</i>	Migratory
Turkey vulture	<i>Cathartes aura</i>	OF
Black vulture	<i>Coragyps atratus</i>	OF
Sharp-shinned hawk	<i>Accipiter striatus</i>	Migratory
Red-tailed hawk	<i>Buteo jamaicensis</i>	Migratory
Red-shouldered hawk	<i>Buteo lineatus</i>	Migratory
Broad-winged hawk	<i>Buteo platypterus</i>	Migratory
Northern harrier	<i>Circus cyaneus hudsonius</i>	OF
Osprey	<i>Pandion haliaetus</i>	OF
Bald eagle	<i>Haliaeetus leucocephalus</i>	OF
Merlin	<i>Falco columbarius</i>	Migratory
American Kestrel	<i>Falco sparverius</i>	Migratory
Peregrine falcon	<i>Falco peregrinus</i>	Migratory
Black-bellied Plover	<i>Pluvialis squatarola</i>	1
Semi-palmated plover	<i>Charadrius hiaticula semipalmatus</i>	1
Wilson's plover	<i>Charadrius wilsonia</i>	1,81
Killdeer	<i>Charadrius vociferus</i>	1
Ruddy Turnstone	<i>Arenaria interpres</i>	1
Spotted sandpiper	<i>Actitis macularia</i>	1
Solitary sandpiper	<i>Tringa solitaria</i>	1
Willet	<i>Catoptrophorus semipalmatus</i>	1
Sanderling	<i>Calidris alba</i>	1
Shortbilled dowitcher	<i>Limodromus</i>	1
Lesser Yellowlegs	<i>Tringa flavipes</i>	1
Great Yellowlegs	<i>Tringa melanoleuca</i>	1
Least sandpiper	<i>Totanus flavipes</i>	1
Semi-palmated sandpiper	<i>Ereunetes pusillus</i>	1
Western sandpiper	<i>Ereunetes mauri</i>	1
Black-necked stilt	<i>Himantopus mexicanus</i>	68,77
Laughing Gull	<i>Larus atricilla</i>	1,4,69,77
Ring-billed Gull	<i>Larus delawarensis</i>	1,4,69,77
Herring Gull	<i>Larus argentatus</i>	1,4,69,77
Royal Tern	<i>Sterna maxima</i>	1,4,69,77
Least Tern	<i>Sterna antillarum</i>	4,69,77

* Non-native Species

Bahia Honda State Park

Animals

Common Name	Scientific Name	Primary Habitat Codes (for all species)
Common Tern	<i>Sterna hirundo</i>	1,4,69,77
Caspian tern	<i>Sterna caspia</i>	1,4,69,77
Forster tern	<i>Sterna forsteri</i>	1,4,69,77
Sandwich tern	<i>Sterna sandvicensis</i>	69,77
Common Ground-Dove	<i>Columbina passerina</i>	1,4,81
White-crowned pigeon	<i>Columba leucocephala</i>	3,76
Mourning dove	<i>Zenaidura macroura</i>	1,81
Ringed turtle dove	<i>Streptopelia risoria</i> *	81,82
Eurasian collared dove	<i>Streptopelia decaocto</i> *	81,82
Rock dove	<i>Columba livia</i> *	1,81,82
Red-bellied woodpecker	<i>Centurus carolinus</i>	1,3
Eastern kingbird	<i>Tryannus tryannus</i>	3,81
Gray kingbird	<i>Tryannus dominicensis</i>	3,81
Belted Kingfisher	<i>Ceryle alcyon</i>	76
Barn swallow	<i>Hirundo rustica</i>	OF
Rough-winged swallow	<i>Stelgidopteryx ruficollis</i>	OF
Mockingbird	<i>Mimus polyglottos</i>	3,81,82
Gray catbird	<i>Dumetella carolinensis</i>	3
Brown thrasher	<i>Toxostoma rufum</i>	3
Blue-gray gnatcatcher	<i>Polioptila caerulea</i>	3
White-eyed vireo	<i>Vireo griseus</i>	3
Black-and-white warbler	<i>Mniotilta varia</i>	3
Northern parula	<i>Parula americana</i>	3
Kirtland's warbler	<i>Dendroica kirtlandii</i>	Migratory
Cape May warbler	<i>Dendroica tigrina</i>	3
Black-throated blue warbler	<i>Dendroica caerulescens</i>	3
Yellow-rumped warbler	<i>Dendroica coronata</i>	3
Yellow-throated warbler	<i>Dendroica dominica</i>	3
Prairie warbler	<i>Dendroica discolor</i>	1,3
Palm warbler	<i>Dendroica palmarum</i>	1,3
American redstart	<i>Setophaga ruticilla</i>	3
Common grackle	<i>Quiscalus quiscula</i>	3,81
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	1,3,76
Seminole bat	<i>Lasiurus seminolus</i>	81,82
MAMMALS		
Marsh Rabbit	<i>Sylvilagus palustris</i>	3,4,81,82
Key Deer	<i>Odocoileus virginianus clavium</i> +	3,77
West Indian Manatee	<i>Trichechus manatus latirostris</i>	68,69,71,77
Atlantic bottlenose dolphin	<i>Tursiops truncatus</i>	68,69,71,77
Black rat	<i>Rattus rattus</i> *	81, 82
Norway rat	<i>Rattus norvegicus</i> *	81,82
LEPEOPTERA		
	<i>Acrolophus sp.</i>	
	<i>Tildenia sp.</i>	
	<i>Lactura pupula</i>	
	<i>Yponomeuta calcarata</i>	
	<i>Hemiargus thomasi bethunebakeri</i>	

* Non-native Species

Bahia Honda State Park

Animals

Common Name	Scientific Name	Primary Habitat Codes (for all species)
	<i>Episimus augmentanus</i>	
	<i>Strepsicrates smithiana</i>	
	<i>Cydia palmetum</i>	
	<i>Ecdytolopha desotana</i>	
	<i>Ptycholoma peritana</i>	
	<i>Platynota rostrana</i>	
	<i>Polygonus leo</i>	
	<i>Calpodes ethlius</i>	
	<i>Panoquina ocola</i>	
	<i>Leptotes cassius theonus</i>	
	<i>Megalopyge opercularis</i>	
	<i>Alarodia slossoniae</i>	
	<i>Parapoynx allionealis</i>	
	<i>Microtheoris ophionalis</i>	
	<i>Hellula kempae</i>	
	<i>Aethiophysa delicata</i>	
	<i>Plumegesta largalis</i>	
	<i>Dicymolomia metalophota</i>	
	<i>Oenobotys vinotinctalis</i>	
	<i>Achyra rantalis</i>	
	<i>Uresiphita reversalis</i>	
	<i>Pyrausta tyralis</i>	
	<i>Lineodes integra</i>	
	<i>Erecta vittata</i>	
	<i>Diacme mopsalis</i>	
	<i>Samea ecclesialis</i>	
	<i>Desmia divisalis</i>	
	<i>Hymenia perspectalis</i>	
	<i>Diasemiodes janassialis</i>	
	<i>Steniodes mendica</i>	
	<i>Penestola bufalis</i>	
	<i>Blepharomastix achroalis</i>	
	<i>Blepharomastix differentialis</i>	
	<i>Blepharomastix hamptoni</i>	
	<i>Synclera jarbusalis</i>	
	<i>Glyphodes floridalis</i>	
	<i>Diaphania hyalinata</i>	
	<i>Omiodes indicata</i>	
	<i>Omiodes rufescens</i>	
	<i>Polygrammodes elevata</i>	
	<i>Phaedropsis stictigrama</i>	
	<i>Microthyris anormalis</i>	
	<i>Asciodes gordialis</i>	
	<i>Psara obsuralis</i>	
	<i>Bicilia iarchasalis</i>	
	<i>Pilocrocis ramentalis</i>	
	<i>Cryptobotys zoilusalis</i>	
	<i>Syngama florella</i>	
	<i>Marasmia cochrusalis</i>	

Bahia Honda State Park

Animals

Common Name	Scientific Name	Primary Habitat Codes (for all species)
	<i>Prionapteryx serpentella</i>	
	<i>Crambus satrapellus</i>	
	<i>Parapediasia decorella</i>	
	<i>Euchromius ocellus</i>	
	<i>Haimbachia floridalis</i>	
	<i>Pyralis manihotalis</i>	
	<i>Parachma ochracealis</i>	
	<i>Macalla phaeobasalis</i>	
	<i>Jocara trilinearis</i>	
	<i>Tetralopha floridella</i>	
	<i>Tetralophy sp.</i>	
	<i>Galleria mellonella</i>	
	<i>Thyridopyralis gallaerandialis</i>	
	<i>Anypsipyla univetella</i>	
	<i>Scorylus cubensis</i>	
	<i>Fundella pellucens</i>	
	<i>Davara caricae</i>	
	<i>Sarasota plumigerella</i>	
	<i>Atheloca subrufella</i>	
	<i>Zamagiria asutralella</i>	
	<i>Zamagiria laidion</i>	
	<i>Etiella zinckenella</i>	
	<i>Ufa rubedinella</i>	
	<i>Elasmopalpus lignosellus</i>	
	<i>Divitiaca ochrella</i>	
	<i>Ocala dryadella</i>	
	<i>Palatka nymphaeella</i>	
	<i>Bema neuricella</i>	
	<i>Unadilla erronella</i>	
	<i>Cactoblastis cactorum</i>	
	<i>Lascelina canens</i>	
	<i>Australephestiodes stictella</i>	
	<i>Moodnodes plorella</i>	
	<i>Caudellia floridensis</i>	
	<i>Maruca testulalis</i>	
	<i>Hexeris enhydris</i>	
	<i>Banisia furva fracta</i>	
	<i>Hyblaea puera</i>	
	<i>Lioptilodes parvus</i>	
	<i>Adaina buscki</i>	
	<i>Almodes terraria</i>	
	<i>Semiothisa punctolineata</i>	
	<i>Sphacelodes vulneraria</i>	
	<i>Oxydia cubana</i>	
	<i>Sericoptera virginaria</i>	
	<i>Synchlora herbaria</i>	
	<i>Synchlora cupedinaria</i>	
	<i>Eueana niveociliaria</i>	
	<i>Chloropteryx paularia</i>	

Bahia Honda State Park

Animals

Common Name	Scientific Name	Primary Habitat Codes (for all species)
	<i>Lobocleta plemyraria</i>	
	<i>Idaea minuta</i>	
	<i>Idaea insulensis</i>	
	<i>Idaea pervertipennis</i>	
	<i>Pleuroprucha insulsaria</i>	
	<i>Cyclophora myrtaria</i>	
	<i>Scopula aemulata</i>	
	<i>Leptostales laevitaria</i>	
	<i>Pterocypha floridata</i>	
	<i>Camptogramma australata</i>	
	<i>Disclisioprocta stellata</i>	
	<i>Antiplecta sp. nova</i>	
	<i>Artace cribraria</i>	
	<i>Automeris io lilit</i>	
	<i>Agrius cingulata</i>	
	<i>Manduca sexta</i>	
	<i>Protambulyx carteri</i>	
	<i>Erinnyis alope</i>	
	<i>Erinnyis ello</i>	
	<i>Errinyis obscura</i>	
	<i>Madoryx pseudothyreus</i>	
	<i>Aellopos tantalus</i>	
	<i>Enyo lugubris</i>	
	<i>Eumorpha fasciata</i>	
	<i>Cautethia grotei</i>	
	<i>Xylophanes pluto</i>	
	<i>Xylophanes tersa</i>	
	<i>Nystalea eutalanta</i>	
	<i>Heterocampa cubana</i>	
	<i>Heterocampa zayasi</i>	
	<i>Afrida ydatodes</i>	
	<i>Hyphantria cunea</i>	
	<i>Ecpantheria scribonia</i>	
	<i>Grammia phalerata</i>	
	<i>Halysidota cinctipes</i>	
	<i>Leucanopsis longa</i>	
	<i>Cisseps fulvicollis</i>	
	<i>Lymire edwardsii</i>	
	<i>Horama panthalon texana</i>	
	<i>Tetanolita mynesalis</i>	
	<i>Bleptina inferior</i>	
	<i>Bleptina hydrillalis</i>	
	<i>Bleptina sp. nova</i>	
	<i>Lascoria orneodalis</i>	
	<i>Macristis geminipunctalis</i>	
	<i>Schrankia macula</i>	
	<i>Hypena subidalis</i>	
	<i>Ophiuche minualis</i>	
	<i>Ophiuche degasalis</i>	

Bahia Honda State Park

Animals

Common Name	Scientific Name	Primary Habitat Codes (for all species)
	<i>Ophiuche sp.</i>	
	<i>Hemeroplanis scopulepes</i>	
	<i>Hemeroplanis habitalis</i>	
	<i>Phytometra ernestinana</i>	
	<i>Hormoschista latipalpis</i>	
	<i>Ommatochila mundula</i>	
	<i>Mursa subrufa</i>	
	<i>Anomis erosa</i>	
	<i>Anomis illita</i>	
	<i>Litoprosopus futilis</i>	
	<i>Litoprosopus bahamensis</i>	
	<i>Litoprosopus haitiensis</i>	
	<i>Diphthera festiva</i>	
	<i>Eulepidotis metamorpha</i>	
	<i>Metallata absumens</i>	
	<i>Anticarsia gemmatalis</i>	
	<i>Azeta repugnalis</i>	
	<i>Antiblemma filaria</i>	
	<i>Antiblemma concinnula</i>	
	<i>Ephyrodes cacata</i>	
	<i>Epidromia fergusonii</i>	
	<i>Epidromia pannosa</i>	
	<i>Epidromia pyraliformis</i>	
	<i>Melipotis fasciolaris</i>	
	<i>Melipotis januaris</i>	
	<i>Melipotis famelica</i>	
	<i>Melipotis contorta</i>	
	<i>Melipotis prolata</i>	
	<i>Melipotis jucunda</i>	
	<i>Hypocala andremona</i>	
	<i>Boryzops purissima</i>	
	<i>Ascalapha odorata</i>	
	<i>Tyrissa multilinea</i>	
	<i>Lesmone hinna</i>	
	<i>Lesmone formularis</i>	
	<i>Selenisa sueroides</i>	
	<i>Zale sp. nova Franc.</i>	
	<i>Mocis latipes</i>	
	<i>Mocis marcida</i>	
	<i>Mocis disserverans</i>	
	<i>Mocis cubana</i>	
	<i>Ptichodis vinculum</i>	
	<i>Ptichodis immunis</i>	
	<i>Argyrogramma verruca</i>	
	<i>Trichoplusia ni</i>	
	<i>Pseudoplusia includens</i>	
	<i>Paectes burserae</i>	
	<i>Paectes acutangula</i>	
	<i>Paectes obrotunda (?)</i>	

Bahia Honda State Park

Animals

Common Name	Scientific Name	Primary Habitat Codes (for all species)
	<i>Characoma nilotica</i>	
	<i>Motya abseuzalis</i>	
	<i>Collomena filifera</i>	
	<i>Nola sp.</i>	
	<i>Thioptera sp.</i>	
	<i>Amyna bullula</i>	
	<i>Amyna octo</i>	
	<i>Eumestleta cinnamonea</i>	
	<i>Eumestleta recta</i>	
	<i>Fruva fasciatella</i>	
	<i>Acontia tetragona</i>	
	<i>Bagisara repanda</i>	
	<i>Euscirrhopterus poeyi</i>	
	<i>Bellura densa</i>	
	<i>Dypterygia patina</i>	
	<i>Speocropia trichoma</i>	
	<i>Callopietria floridensis</i>	
	<i>Magusa orbifera</i>	
	<i>Micrathetis triplex</i>	
	<i>Spodoptera exigua</i>	
	<i>Spodoptera frugiperda</i>	
	<i>Spodoptera ornithogalli</i>	
	<i>Spodoptera latifascia</i>	
	<i>Spodoptera dolichos</i>	
	<i>Spodoptera eridania</i>	
	<i>Spodoptera albula</i>	
	<i>Elaphria nuciocolora</i>	
	<i>Elaphria agrotina</i>	
	<i>Elaphria chalcedonia</i>	
	<i>Elaphria deltoides</i>	
	<i>Platysenta mobilis</i>	
	<i>Platysenta concisa</i>	
	<i>Platysenta sutor</i>	
	<i>Condica confederata</i>	
	<i>Amolita fessa</i>	
	<i>Catabena vitrina</i>	
	<i>Trichoclea florida</i>	
	<i>Pseudaletia unipuncta</i>	
	<i>Pseudaletia sequax</i>	
	<i>Leucania latiuscula</i>	
	<i>Leucania scirpicola</i>	
	<i>Leucania infatuans</i>	
	<i>Leucania dorsalis</i>	
	<i>Leucania humidicola</i>	
	<i>Leucania senescens</i>	
	<i>Leucania subpunctata</i>	
	<i>Marilopteryx lutina</i>	
	<i>Zanthopastis timais</i>	
	<i>Agrotis malefinda</i>	

Bahia Honda State Park

Animals

Common Name	<i>Scientific Name</i>	Primary Habitat Codes (for all species)
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Agrotis ipsilon
Agrotis subterranea
Anicla infecta
Anicla cemolia
Peridroma saucia
Heliothis zea
Schima trifascia

Habitat Codes

Terrestrial

1. Beach Dune
2. Bluff
3. Coastal Berm
4. Coastal Rock Barren
5. Coastal Strand
6. Dry Prairie
7. Maritime Hammock
8. Mesic Flatwoods
9. Coastal Grasslands
10. Pine Rockland
11. Prairie Hammock
12. Rockland Hammock
13. Sandhill
14. Scrub
15. Scrubby Flatwoods
16. Shell Mound
17. Sinkhole
18. Slope Forest
19. Upland Glade
20. Upland Hardwood Forest
21. Upland Mixed Forest
22. Upland Pine Forest
23. Xeric Hammock

Palustrine

24. Basin Marsh
25. Basin Swamp
26. Baygall
27. Bog
28. Bottomland Forest
29. Depression Marsh
30. Dome
31. Floodplain Forest
32. Floodplain Marsh
33. Floodplain Swamp
34. Freshwater Tidal Swamp
35. Hydric Hammock
36. Marl Prairie
37. Seepage Slope
38. Slough
39. Strand Swamp
40. Swale
41. Wet Flatwoods
42. Wet Prairie

Lacustrine

43. Clastic Upland Lake
44. Coastal Dune Lake
45. Coastal Rockland Lake

Lacustrine

46. Flatwood/Prairie Lake
47. Marsh Lake
48. River Floodplain Lake
49. Sandhill Upland Lake
50. Sinkhole Lake
51. Swamp Lake

Riverine

52. Alluvial Stream
53. Blackwater Stream
54. Seepage Stream
55. Spring-Run Stream

Estuarine

56. Estuarine Composite Substrate
57. Estuarine Consolidated Substrate
58. Estuarine Coral Reef
59. Estuarine Grass Bed
60. Estuarine Mollusk Reef
61. Estuarine Octocoral Bed
62. Estuarine Sponge Bed
63. Estuarine Tidal Marsh
64. Estuarine Tidal Swamp
65. Estuarine Unconsolidated Substrate
66. Estuarine Worm Reef

Marine

67. Marine Algal Bed
68. Marine Composite Substrate
69. Marine Consolidated Substrate
70. Marine Coral Reef
71. Marine Grass Bed
72. Marine Mollusk Reef
73. Marine Octocoral Bed
74. Marine Sponge Bed
75. Marine Tidal Marsh
76. Marine Tidal Swamp
77. Marine Unconsolidated Substrate
78. Marine Worm Reef

Subterranean

79. Aquatic Cave
80. Terrestrial Cave

Miscellaneous

81. Ruderal
 82. Developed
- MTC** Many Types
Of Communities
- OF** Overflying

Addendum 5—Designated Species List

**Rank Explanations
For FNAI Global Rank, FNAI State Rank,
Federal Status And State Status**

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 Game and Freshwater Fish 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 man-made 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 and 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 and 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

**Rank Explanations
For FNAI Global Rank, FNAI State Rank,
Federal Status And State Status**

- SU = determine
= due to lack of information, no rank or range can be assigned (e.g., SUT2).
S? = not yet ranked (temporary)

LEGAL STATUS

- N = Not currently listed, nor currently being considered for listing, by state or federal agencies.

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.

STATE

Animals (Listed by the Florida Fish and Wildlife Conservation Commission - FFWCC)

- LE = Listed as Endangered Species by the FFWCC. Defined as a species, subspecies, or isolated population which is so rare or depleted in number or so restricted in range of habitat due to any man-made or natural factors that it is in immediate danger of extinction or extirpation from the state, or which may attain such a status within the immediate future.
- LT = Listed as Threatened Species by the FFWCC. 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 as a consequence is destined or very likely to become an endangered species within the foreseeable future.
- LS = Listed as Species of Special Concern by the FFWCC. 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 which, in the foreseeable 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.

Bahia Honda State Park

Designated Species

Plants

Common Name/ Scientific Name	Designated Species Status		
	FDA	USFWS	FNAI
Sea lavender <i>Argusia gnaphalodes</i>	E		G4,S3
Locustberry <i>Byrsonima lucida</i>	T		G3,S3
Small-flowered lilythorn <i>Catesbaea parviflora</i>	E		G2,G3,S1
Garber's spurge <i>Chamaesyce garberi</i>	E	T	G1S1
Silver palm <i>Coccothrinax argentata</i>	T		G3,S2?
Rhacoma <i>Crossopetalum rhacoma</i>	E		G5,S3
Milkbark <i>Drypetes diversifolia</i>	E		G3,G4,S2
Lignum vitae (cultivated) <i>Guaiacum sanctum</i>	E		G4,G5,S2
Manchineel <i>Hippomane mancinella</i>	E		G5,S2
Cuban jacquemontia <i>Jacquemontia havanensis</i>	E		G5,S1
Joewood <i>Jacquinia keyensis</i>	T		G4,S3
Wild dilly <i>Manilkara jaimiqui</i>	T		G4Q,S3
West Indian Mahogany (cultivated) <i>Swietenia mahagoni</i>	E		G3,G4,S2
Brittle thatch palm <i>Thrinax morrisii</i>	E		G4,G5,S3
Florida thatch palm <i>Thrinax radiata</i>	E		G4,G5,S2
Satinwood <i>Zanthoxylum flavum</i>	E		G3?,S1

Bahia Honda State Park

Designated Species

Animals

Common Name/ Scientific Name	Designated Species Status		
	FFWCC	USFWS	FNAI
REPTILES			
Atlantic loggerhead turtle <i>Caretta caretta</i>	T	T	G3,S3
Green turtle <i>Chelonia mydas</i>	E	E	G3,S2
Hawksbill turtle <i>Eretmochelys imbricata</i>	E	E	G3,S1
Florida Keys mole skink <i>Eumeces e. egregius</i>		SSC	G4T2,S2
BIRDS			
Roseate spoonbill <i>Ajaia ajaja</i>	SSC		G5,S2S3
Great egret <i>Ardea alba</i>			G5, S4
Great white heron <i>Ardea herodias occidentalis</i>			G5T2,S2
Piping plover <i>Charadrius melodus</i>	T	T	G3,S2
White-crowned pigeon <i>Columba leucocephala</i>	T		G3,S3
Kirtland's warbler <i>Dendroica kirtlandii</i>	E	E	G1,S1
Little blue heron <i>Egretta caerulea</i>	SSC		G5,S4
Reddish egret <i>Egretta rufescens</i>	SSC		G4,S2
Snowy egret <i>Egretta thula</i>	SSC		G5,S4
Tricolored heron <i>Egretta tricolor</i>	SSC		G5,S4
White ibis <i>Eudocimus albus</i>	SSC		G5,S4
Merline <i>Falco columbarius</i>			G4,SU
Peregrine falcon <i>Falco peregrinus</i>	E	E	G4,S2
American kestrel <i>Falco sparverius</i>	T		G5T3T4,S3?
Magnificent frigatebird <i>Fregata magnificens</i>			G5,S1
Bald eagle <i>Haliaeetus leucocephalus</i>	T	T	G4,S3
Yellow-crowned night heron <i>Nyctanassa violacea</i>			G5,S3?

Bahia Honda State Park

Designated Species

Animals

Common Name/ Scientific Name	Designated Species Status		
	FFWCC	USFWS	FNAI
Osprey <i>Pandion haliaetus</i>			G5,S3,S4
Brown pelican <i>Pelecanus occidentalis</i>	SSC		G4,S3
American redstart <i>Setophaga ruticilla</i>			G5,S3
Least tern <i>Sterna antillarum</i>	T		G4,S3
Caspian tern <i>Sterna caspia</i>			G5,S2?
Royal tern <i>Sterna maxima</i>			G5,S3
Sandwich tern <i>Sterna sandvicensis</i>			G4,S2
MAMMALS			
Key deer <i>Odocoileus virginianus clavium</i>	E	E	G5T1,S1
West Indian manatee <i>Trichechus manatus</i>	E	E	G2,S2
LEPIDOPTERA			
Miami blue butterfly <i>Hemiargus thomasi bethunebakeri</i>		E	(emergency listing)

Addendum 6—Priority Schedule And Cost Estimates

**Bahia Honda State Park
Priority Schedule And Cost Estimates**

Estimates are developed for the funding and staff resources needed to implement the management plan based on goals, objectives and priority management activities. Funding priorities for all state park management and development activities are reviewed each year as part of the Division's legislative budget process. The Division prepares an annual legislative budget request based on the priorities established for the entire state park system. The Division also aggressively pursues a wide range of other funds and staffing resources, such as grants, volunteers, and partnerships with agencies, local governments and the private sector for supplementing normal legislative appropriations to address unmet needs. The ability of the Division to implement the specific goals, objectives and priority actions identified in this plan will be determined by the availability of funding resources for these purposes.

1. Restore the mangrove wetland by the Buttonwood campground. **Estimated Cost: \$100,000.**
2. Restore the wetland by the ranger residence area. This would include removing the berm and the exotic vegetation to allow tidal flow back into the wetland. **Estimated Cost: \$25,000.**
3. Restore the interior lagoons that were separated by the construction of US Highway 1. **Estimated Cost: \$200,000.**
4. Continue exotic removal program. **Estimated Cost: \$15,000 with an estimated \$5,000/year for follow-up treatment.**
5. Improve interpretation of Silver Palm nature trail through signs and brochures. **Estimated Cost: \$10,000.**
6. Conduct a Level I archaeological survey of the park. **Estimated Cost: \$20,000.**
Increase staffing. **Estimated Cost: \$35,000.**

TOTAL ESTIMATED COST: \$430,000

**Bahia Honda State Park
Priority Schedule And Cost Estimates**

Item	Quantity	Unit	Unit Price	Multiplier	Amount
Recreation Facilities					
Interpretive Display / Kiosk	3.000	ea.	\$20,000.00	1.50	\$90,000.00
Support Facilities					
Engineering studies	1.000	ea.	\$100,000.00		\$100,000.00
Entrance Booth	1.000	ea.	\$9,000.00	1.50	\$13,500.00
Large Picnic Restroom, off-grade	1.000	ea.	\$141,300.00	1.50	\$211,950.00
West Summerland Picnic Area					
Interpretive Display / Kiosk	1.000	ea.	\$20,000.00	1.50	\$30,000.00
Medium Area Native Plant Buffer Landscape	1.000	LS	\$50,000.00	1.50	\$75,000.00
Medium Picnic Restroom, off-grade	1.000	ea.	\$113,400.00	1.50	\$170,100.00
Medium Picnic Shelter, off-grade	3.000	ea.	\$43,200.00	1.50	\$194,400.00
New Paved Parking (10 Car)	2.500	per 10	\$12,000.00	1.50	\$45,000.00
Renovate Coquina Rock Bldg. for Concession	1.000	LS	\$75,000.00	1.50	\$112,500.00
				Sub-Total	<u>\$942,450.00</u>
				20 Percent Contingency Fee	<u>\$188,490.00</u>
				Total	\$1,230,940.00

NOTE: These preliminary cost estimates, based on Divisions standards, do not include costs for site-specific elements not evident at the conceptual level of planning. Additional costs should be investigated before finalizing budget estimates.