

LAND MANAGEMENT PLAN COMPLIANCE CHECKLIST

→ Required for State-owned conservation lands over 160 acres ←

Instructions for managers:

Complete each item and fill in the applicable correlating **page numbers and/or appendix** where the item can be found within the land management plan (LMP). If an item does not apply to the subject property, please describe that fact on a correlating page number of the LMP. Do not mark an "N/A" for any items below.

For more information, please visit the stewardship portion of the Division of State Lands' website at:
<http://www.dep.state.fl.us/lands/stewardship.htm>.

Section A: Acquisition Information Items

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
1.	The common name of the property.	18-2.018 & 18-2.021	1, Ad.1
2.	The land acquisition program, if any, under which the property was acquired.	18-2.018 & 18-2.021	1, Ad.1
3.	Degree of title interest held by the Board, including reservations and encumbrances such as leases.	18-2.021	1, Ad.1
4.	The legal description and acreage of the property.	18-2.018 & 18-2.021	1, Ad.1
5.	A map showing the approximate location and boundaries of the property, and the location of any structures or improvements to the property.	18-2.018 & 18-2.021	47
6.	An assessment as to whether the property, or any portion, should be declared surplus. <i>Provide Information regarding assessment and analysis in the plan, and provide corresponding map.</i>	18-2.021	57
7.	Identification of other parcels of land within or immediately adjacent to the property that should be purchased because they are essential to management of the property. <i>Please clearly indicate parcels on a map.</i>	18-2.021	59
8.	Identification of adjacent land uses that conflict with the planned use of the property, if any.	18-2.021	45
9.	A statement of the purpose for which the lands were acquired, the projected use or uses as defined in 253.034 and the statutory authority for such use or uses.	259.032(10)	1, Ad.1
10.	Proximity of property to other significant State, local or federal land or water resources.	18-2.021	3,17,45

Section B: Use Items

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
11.	The designated single use or multiple use management for the property, including use by other managing entities.	18-2.018 & 18-2.021	1, 9
12.	A description of past and existing uses, including any unauthorized uses of the property.	18-2.018 & 18-2.021	7,43,45
13.	A description of alternative or multiple uses of the property considered by the lessee and a statement detailing why such uses were not adopted.	18-2.018	7
14.	A description of the management responsibilities of each entity involved in the property's management and how such responsibilities will be coordinated.	18-2.018	9
15.	Include a provision that requires that the managing agency consult with the Division of Historical Resources, Department of State before taking actions that may adversely affect archeological or historical resources.	18-2.021	9, 38, Ad. 7
16.	Analysis/description of other managing agencies and private land managers, if any, which could facilitate the restoration or management of the land.	18-2.021	7
17.	A determination of the public uses and public access that would be consistent with the purposes for which the lands were acquired.	259.032(10)	43-57

18.	A finding regarding whether each planned use complies with the 1981 State Lands Management Plan, particularly whether such uses represent "balanced public utilization," specific agency statutory authority and any other legislative or executive directives that constrain the use of such property.	18-2.021	7
19.	Letter of compliance from the local government stating that the LMP is in compliance with the Local Government Comprehensive Plan.	BOT requirement	45
20.	An assessment of the impact of planned uses on the renewable and non-renewable resources of the property, including soil and water resources, and a detailed description of the specific actions that will be taken to protect, enhance and conserve these resources and to compensate/mitigate damage caused by such uses, including a description of how the manager plans to control and prevent soil erosion and soil or water contamination.	18-2.018 & 18-2.021	17, 18, 28, 33, 38, 41
21.	*For managed areas larger than 1,000 acres, an analysis of the multiple-use potential of the property which shall include the potential of the property to generate revenues to enhance the management of the property provided that no lease, easement, or license for such revenue-generating use shall be entered into if the granting of such lease, easement or license would adversely affect the tax exemption of the interest on any revenue bonds issued to fund the acquisition of the affected lands from gross income for federal income tax purposes, pursuant to Internal Revenue Service regulations.	18-2.021 & 253.036	7
22.	If the lead managing agency determines that timber resource management is not in conflict with the primary management objectives of the managed area, a component or section, prepared by a qualified professional forester, that assesses the feasibility of managing timber resources pursuant to section 253.036, F.S.	18-021	42
23.	A statement regarding incompatible use in reference to Ch. 253.034(10).	253.034(10)	7

*The following taken from 253.034(10) is not a land management plan requirement; however, it should be considered when developing a land management plan: The following additional uses of conservation lands acquired pursuant to the Florida Forever program and other state-funded conservation land purchase programs shall be authorized, upon a finding by the Board of Trustees, if they meet the criteria specified in paragraphs (a)-(e): water resource development projects, water supply development projects, storm-water management projects, linear facilities and sustainable agriculture and forestry. Such additional uses are authorized where: (a) Not inconsistent with the management plan for such lands; (b) Compatible with the natural ecosystem and resource values of such lands; (c) The proposed use is appropriately located on such lands and where due consideration is given to the use of other available lands; (d) The using entity reasonably compensates the titleholder for such use based upon an appropriate measure of value; and (e) The use is consistent with the public interest.

Section C: Public Involvement Items

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
24.	A statement concerning the extent of public involvement and local government participation in the development of the plan, if any.	18-2.021	9
25.	The management prospectus required pursuant to paragraph (9)(d) shall be available to the public for a period of 30 days prior to the public hearing.	259.032(10)	9
26.	LMPs and LMP updates for parcels over 160 acres shall be developed with input from an advisory group who must conduct at least one public hearing within the county in which the parcel or project is located. <i>Include the advisory group members and their affiliations, as well as the date and location of the advisory group meeting.</i>	259.032(10)	9, Ad. 2
27.	Summary of comments and concerns expressed by the advisory group for parcels over 160 acres	18-2.021	Ad. 2
28.	During plan development, at least one public hearing shall be held in each affected county. Notice of such public hearing shall be posted on the parcel or project designated for management, advertised in a paper of general circulation, and announced at a scheduled meeting of the local governing body before the actual public hearing. <i>Include a copy of each County's advertisements and announcements (meeting minutes will suffice to indicate an announcement) in the management plan.</i>	253.034(5) & 259.032(10)	9
29.	The manager shall consider the findings and recommendations of the land management review team in finalizing the required 10-year update of its management plan. <i>Include manager's replies to the team's findings and recommendations.</i>	259.036	43, Ad. 8

30.	Summary of comments and concerns expressed by the management review team, if required by Section 259.036, F.S.	18-2.021	43, Ad. 8
31.	If manager is not in agreement with the management review team's findings and recommendations in finalizing the required 10-year update of its management plan, the managing agency should explain why they disagree with the findings or recommendations.	259.036	43, Ad. 8

Section D: Natural Resources

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
32.	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding soil types. <i>Use brief descriptions and include USDA maps when available.</i>	18-2.021	15, 19
33.	Insert FNAI based natural community maps when available.	ARC consensus	21
34.	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding outstanding native landscapes containing relatively unaltered flora, fauna, and geological conditions.	18-2.021	19-28
35.	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding unique natural features and/or resources including but not limited to virgin timber stands, scenic vistas, natural rivers and streams, coral reefs, natural springs, caverns, and large sinkholes.	18-2.018 & 18-2.021	19-28
36.	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding beaches and dunes.	18-2.021	19-28
37.	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding mineral resources, such as oil, gas and phosphate, etc.	18-2.018 & 18-2.021	17
38.	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding fish and wildlife, both game and non-game, and their habitat.	18-2.018 & 18-2.021	19-28
39.	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding State and Federally listed endangered or threatened species and their habitat.	18-2.021	29-33
40.	The identification or resources on the property that are listed in the Natural Areas Inventory. <i>Include letter from FNAI or consultant where appropriate.</i>	18-2.021	19-28
41.	Specific description of how the managing agency plans to identify, locate, protect, and preserve or otherwise use fragile, nonrenewable natural and cultural resources.	259.032(10)	11-42
42.	Habitat Restoration and Improvement	259.032(10) & 253.034(5) ↓	
42-A.	Describe management needs, problems and a desired outcome and the key management activities necessary to achieve the enhancement, protection and preservation of restored habitats and enhance the natural, historical and archeological resources and their values for which the lands were acquired.		28
42-B.	Provide a detailed description of both short (2-year planning period) and long-term (10-year planning period) management goals, and a priority schedule based on the purposes for which the lands were acquired and include a timeline for completion.		28
42-C.	The associated measurable objectives to achieve the goals.		28
42-D.	The related activities that are to be performed to meet the land management objectives and their associated measures. <i>Include fire management plans - they can be in plan body or an appendix.</i>		28, 63-67
42-E.	A detailed expense and manpower budget in order to provide a management tool that facilitates development of performance measures, including recommendations for cost-effective methods of accomplishing those activities.		63-67
43.	***Quantitative data description of the land regarding an inventory of forest and other natural resources and associated acreage. <i>See footnote.</i>	253.034(5)	47

44.	Sustainable Forest Management, including implementation of prescribed fire management	18-2.021, 253.034(5) & 259.032(10) ↓	
44-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		28
44-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		28, 63-67
44-C.	Measurable objectives (see requirement for #42-C).		28, 63-67
44-D.	Related activities (see requirement for #42-D).		28, 63-67
44-E.	Budgets (see requirement for #42-E).		63-67
45.	Imperiled species, habitat maintenance, enhancement, restoration, or population restoration	259.032(10) & 253.034(5) ↓	
45-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		29, 33
45-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		33, 63-67
45-C.	Measurable objectives (see requirement for #42-C).		33, 63-67
45-D.	Related activities (see requirement for #42-D).		33, 63-67
45-E.	Budgets (see requirement for #42-E).		63-67
46.	***Quantitative data description of the land regarding an inventory of exotic and invasive plants and associated acreage. <i>See footnote.</i>	253.034(5)	35, 37
47.	Place the Arthropod Control Plan in an appendix. If one does not exist, provide a statement as to what arrangement exists between the local mosquito control district and the management unit.	BOT requirement via lease language	42
48.	Exotic and invasive species maintenance and control	259.032(10) & 253.034(5) ↓	
48-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		35-37
48-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		37, 63-67
48-C.	Measurable objectives (see requirement for #42-C).		37, 63-67
48-D.	Related activities (see requirement for #42-D).		37, 63-67
48-E.	Budgets (see requirement for #42-E).		63-67

Section E: Water Resources

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
49.	A statement as to whether the property is within and/or adjacent to an aquatic preserve or a designated area of critical state concern or an area under study for such designation. <i>If yes, provide a list of the appropriate managing agencies that have been notified of the proposed plan.</i>	18-2.018 & 18-2.021	9, 45
50.	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding water resources, including water classification for each water body and the identification of any such water body that is designated as an Outstanding Florida Water under Rule 62-302.700, F.A.C.	18-2.021	17, 18, 42, 45
51.	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding swamps, marshes, and other wetlands.	18-2.021	19-28
52.	***Quantitative description of the land regarding an inventory of hydrological features and associated acreage. <i>See footnote.</i>	253.034(5)	21
53.	Hydrological Preservation and Restoration	259.032(10) & 253.034(5) ↓	
53-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		17
53-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		18, 63-67

53-C.	Measurable objectives (see requirement for #42-C).		18, 63-67
53-D.	Related activities (see requirement for #42-D).		18, 63-67
53-E.	Budgets (see requirement for #42-E).		63-67

Section F: Historical, Archeological and Cultural Resources

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
54.	**Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding archeological and historical resources. <i>Include maps of all cultural resources except Native American sites, unless such sites are major points of interest that are open to public visitation.</i>	18-2.018, 18-2.021 & per DHR's request	38, 41
55.	***Quantitative data description of the land regarding an inventory of significant land, cultural or historical features and associated acreage.	253.034(5)	38
56.	A description of actions the agency plans to take to locate and identify unknown resources such as surveys of unknown archeological and historical resources.	18-2.021	38, 41
57.	Cultural and Historical Resources	259.032(10) & 253.034(5) ↓	
57-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		38, 63-67
57-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		63-67
57-C.	Measurable objectives (see requirement for #42-C).		63-67
57-D.	Related activities (see requirement for #42-D).		63-67
57-E.	Budgets (see requirement for #42-E).		63-67

**While maps of Native American sites should not be included in the body of the management plan, the DSL urges each managing agency to provide such information to the Division of Historical Resources for inclusion in their proprietary database. This information should be available for access to new managers to assist them in developing, implementing and coordinating their management activities.

Section G: Facilities (Infrastructure, Access, Recreation)

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
58.	***Quantitative data description of the land regarding an inventory of infrastructure and associated acreage. <i>See footnote.</i>	253.034(5)	63-67
59.	Capital Facilities and Infrastructure	259.032(10) & 253.034(5) ↓	
59-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		50-51
59-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		50-51, 63-67
59-C.	Measurable objectives (see requirement for #42-C).		50-51, 63-67
59-D.	Related activities (see requirement for #42-D).		50-51, 63-67
59-E.	Budgets (see requirement for #42-E).		63-67
60.	*** Quantitative data description of the land regarding an inventory of recreational facilities and associated acreage.	253.034(5)	47, 50-55
61.	Public Access and Recreational Opportunities	259.032(10) & 253.034(5) ↓	
61-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		9
61-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		63-67
61-C.	Measurable objectives (see requirement for #42-C).		50-55

61-D.	Related activities (see requirement for #42-D).		50-55
61-E.	Budgets (see requirement for #42-E).		63-67

Section H: Other/ Managing Agency Tools

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
62.	Place this LMP Compliance Checklist at the front of the plan.	ARC and managing agency consensus	Front
63.	Place the Executive Summary at the front of the LMP. Include a physical description of the land.	ARC and 253.034(5)	Front
64.	If this LMP is a 10-year update, note the accomplishments since the drafting of the last LMP set forth in an organized (categories or bullets) format.	ARC consensus	59-62
65.	Key management activities necessary to achieve the desired outcomes regarding other appropriate resource management.	259.032(10)	59-62
66.	Summary budget for the scheduled land management activities of the LMP including any potential fees anticipated from public or private entities for projects to offset adverse impacts to imperiled species or such habitat, which fees shall be used to restore, manage, enhance, repopulate, or acquire imperiled species habitat for lands that have or are anticipated to have imperiled species or such habitat onsite. The summary budget shall be prepared in such a manner that it facilitates computing an aggregate of land management costs for all state-managed lands using the categories described in s. 259.037(3) which are resource management, administration, support, capital improvements, recreation visitor services, and law enforcement activities.	253.034(5)	63-67
67.	Cost estimate for conducting other management activities which would enhance the natural resource value or public recreation value for which the lands were acquired, include recommendations for cost-effective methods in accomplishing those activities.	259.032(10)	63-67
68.	A statement of gross income generated, net income and expenses.	18-2.018	46

*** = The referenced inventories shall be of such detail that objective measures and benchmarks can be established for each tract of land and monitored during the lifetime of the plan. All quantitative data collected shall be aggregated, standardized, collected, and presented in an electronic format to allow for uniform management reporting and analysis. The information collected by the DEP pursuant to s. 253.0325(2) shall be available to the land manager and his or her assignee.

Fort Pierce Inlet State Park

Acquisition and Restoration Council Draft Unit Management Plan

**STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**Division of Recreation and Parks
August 2021**





FORT PIERCE INLET STATE PARK

Unit Management Plan Executive Summary

Purpose and Significance of the Park

Park Interpretive Themes

Park History

Fort Pierce Inlet State Park was initially acquired on August 10, 1973 with funds from the Environmentally Endangered Lands (EEL) program. The park is 713.60 acres.

Park Significance

During World War Two, the grounds of Fort Pierce Inlet were used as training grounds for thousands of U.S Navy Frogmen (present day Navy Seals). Dynamite Point, located on the western end of the Inlet, receiving its name as the spot was used for activities by the Navy Underwater Demolition Team who were trained to explode ammunition. Currently the park preserves those sites that proved to be very important for the war effort.

Fort Pierce's location within a highly urbanized area of St. Lucie County provides nearly half a mile of ocean front along the Atlantic for salt water-based outdoor recreation such as surfing which is popular among the local community. Additional recreational opportunities, such as fishing can be found along the parks inlet. The park protects important sea grass beds that is the habitat for various fish species and marine animals in the area.





FORT PIERCE INLET STATE PARK

Unit Management Plan Executive Summary

Purpose and Significance of the Park

Park Interpretive Themes

Central Park Theme

More than a surfer's dream, Fort Pierce Inlet State Park historic beachfront and twisted mangrove forests are also a bastion for threatened wildlife species.

Primary Interpretive Themes

Historic Beachfront

Hidden beneath the waves at Fort Pierce Inlet State Park, thousands of men trained in the dangerous task of underwater demolition during World War II.

Connections

The Fort Pierce Inlet waterways continues to serve as a vital connection for local access to the bountiful water of the Atlantic Ocean.

Regional Wildlife

Located along the biologically rich Indian River Lagoon, endangered sea turtles and other marine life depend on Fort Pierce Inlet State Park for survival.

Resilient Natural Communities

An amazing example of resiliency, the native plants and wildlife species of Fort Pierce Inlet State Park thrive among the altered landscapes of constructed jetties and recovered spoil.





FORT PIERCE INLET STATE PARK

Unit Management Plan Executive Summary

Park Quick Facts

Natural Community Composition

- ♦ **Agency:** Department of Environmental Protection - Division of Recreation and Parks
- ♦ **Acreage :** 713.6
- ♦ **Location:** St. Lucie County
- ♦ **Lease Management Agreement Number(s):** 2742
- ♦ **Use:** Single
- ♦ **Designated Land Use:** Public Outdoor recreation and conservation
- ♦ **Responsibility:** Public Outdoor Recreation and Conservation
- ♦ **Sublease:** None
- ♦ **Encumbrances:** See Appendix 1 for details
- ♦ **Public Involvement:** See Appendix 2 for details
- ♦ **Optimum Boundary:** Approximately 60.16 acres
- ♦ **Surplus Lands:** None

Natural Communities	Acreage	Percentage of the Property
Mangrove Swamp	491.0	69%
Spoil Area	104.6	15%
Maritime Hammock	35.7	5%
Estuarine Composite Substrate	23.8	3%
Costal Strand	21.2	3%
Developed	17.9	2%
Beach Dune	14.4	2%
Estuarine Unconsolidated Substrate	3.5	<1%
Estuarine Seagrass Bed	3.2	<1%
Total Acreage	713.6	100%



FORT PIERCE INLET STATE PARK

Unit Management Plan Executive Summary

Park Accomplishments: 2006 — 2020

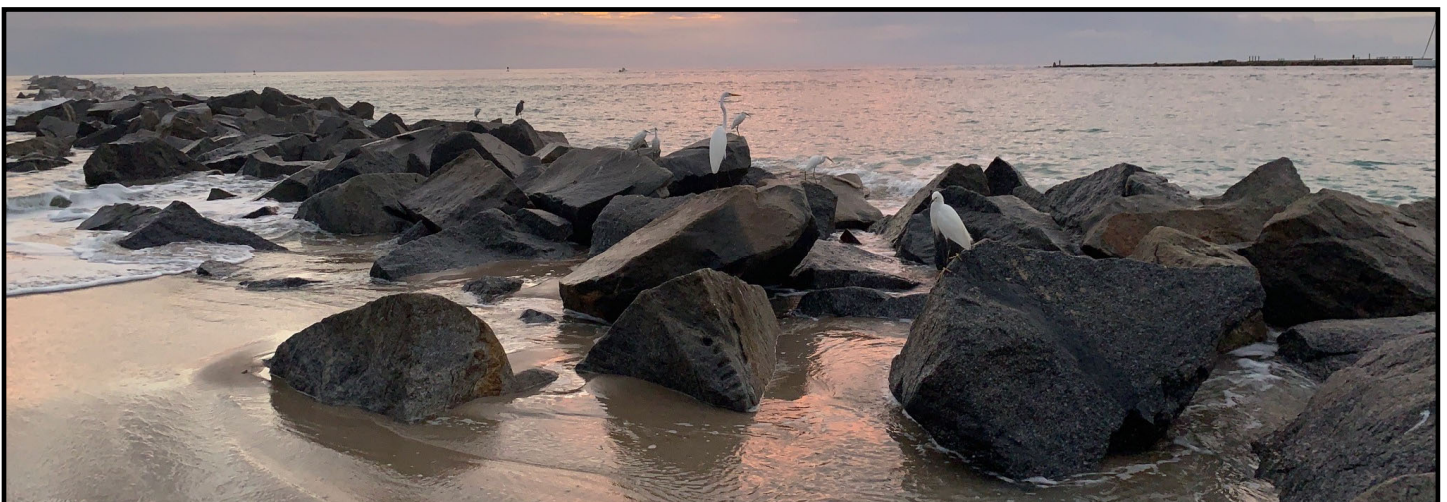
Ten-Year Planning Period Objectives

Previous Accomplishments

Since the 2006 Unit Management Plan for Fort Pierce Inlet , the park has made significant accomplishments in terms of resource management and continued protection of the park. A motor exclusion zone was delineated for Tucker Cove after it was acquired within the park boundary, 90 % of exotic Australian Pine was removed with the level of invasive plants at Jack Island currently at maintenance level. Additionally, an archaeological survey was completed in 2013.

Future Objectives

Moving forward throughout the next 10 years of this Unit Management Plan, the park plans to continue resource management efforts by maintaining all spoil areas in hopes to reintroduce native vegetation, protection of the three species of sea turtles who utilize the parks shoreline for yearly nesting. To continually improve the visitor experience, improvements will be made to all use areas including redesigning the main picnic area which is steps from the Atlantic Shoreline and to develop an overnight camping area for glamping, tents, or raised platforms.





FORT PIERCE INLET STATE PARK

Unit Management Plan Executive Summary

Selected Imperiled Species

Current Management Initiatives

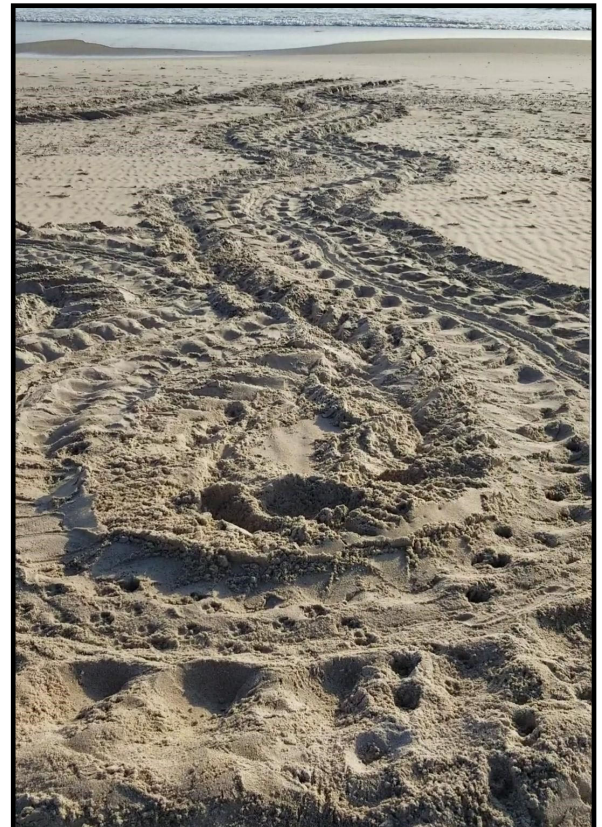
Marine Sea Turtles and Gopher Tortoises

Fort Pierce Inlet State Park provides habitat for three sea turtles, the loggerhead, green, and leatherback. The park is an active participant in the statewide marine turtle monitoring program established by the Florida Fish and Wildlife Commission (FWC). These sea turtles use the beach for nesting during the months of May to October with surveys conducted by park staff on a daily basis.

The Gopher tortoise can be found within the parks spoil areas, costal strands, and beach dunes. District and park staff will continue to implement existing monitoring protocols established by FWC in order to observe population trends. Throughout the next 10 years of this plan, the park plans to implement monitoring protocols for the 3 species of sea turtles along with the gopher tortoise .

Shorebirds

While historically shorebirds have not nested at Fort Pierce Inlet, the beach serves as an important loafing and feeding area for shorebirds such as the black skimmer and royal tern especially during the summer months. Shorebird nesting activities are monitored and documented on a monthly basis during March through August.





FORT PIERCE INLET STATE PARK

Unit Management Plan Executive Summary

Resource Management — Imperiled Species Ten-Year Goals and Objectives

Imperiled Species Management

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

Objective: Monitor and document 1 selected imperiled plant species.

Johnson's seagrass is a documented estuarine community at Fort Pierce Inlet State Park, primarily within Tucker Cove. Surveys to locate and document Johnson's seagrass are conducted in partnership with the St Johns River Water Management and FDEP.

The park should be surveyed on a regular basis for the emergence of new seagrass. Along with the Johnson's seagrass, other types of seagrass should be monitored and recorded including: paddle, star, manatee and shoal. The park also protects 7 other imperiled plant species including:

- ♦ Crested coralroot
- ♦ Simpson's Stopper
- ♦ Prickly pear cactus
- ♦ Beach Star
- ♦ Inkberry
- ♦ Common wild pine
- ♦ Giant wild pine





FORT PIERCE INLET STATE PARK

Unit Management Plan Executive Summary

Resource Management Goals and Objectives

Natural Community, Exotic Species, Cultural Sites

Natural Community Restoration

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

Objective: Restore 105 acres of spoil area.

Spoil Area restoration will focus on the removal of invasive exotic vegetation such as cogon grass and the continued maintenance of the area. Once the spoil areas are in maintenance condition there should be efforts to reintroduce native vegetation that may be found in natural maritime hammocks. These steps are the best course of action to provide a community that is close to maritime hammock.

Exotic Species Management

Goal: Remove exotic species from the park and conduct needed maintenance control.

Objective: Annually treat 50 acres of exotic plant species in the park.

Areas of treatment will be identified annually, with priority given to areas where previous removal of exotics had previously taken place and where re-treatment is needed especially at the costal strand and maritime hammock communities. Additionally, the spoil area will be a top priority area as it undergoes restoration. The goal is to keep areas treated in maintenance condition.

Cultural Resource Management

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

Objective: Assess and evaluate 4 of 4 recorded cultural resources.

As of this unit management plan, the park has 3 historic structure from the 1950s and 1970s and 1 archeological site. Within the span of this plan, 11 additional structures will become historic and will need to become assessed and recorded if needed.



FORT PIERCE INLET STATE PARK

Unit Management Plan Executive Summary

Recreational Use and Infrastructure

Ten-Year Facility Improvement and Development

Recreation and Facilities Management

Goal: Develop and maintain use areas and support infrastructure

Objective: Improve 6 existing use areas

Currently, the park has multiple use areas that are popular with visitors. Plans for the next 10 years are focused on improving these day use areas by upgrading infrastructure and the overall aesthetics of the main picnic area.

Park Entrance

- Pave main park road
- Mitigate stormwater issues

Support Area

- Build New Residence

Multi—Use Pathway

- Repave Shared Use Trail (1.2 miles)
- Landscape Park Road Median

Inlet Picnic Area

- Improve Landscaping
- Explore concession opportunities

Main Day Use Area

- Improve Landscaping
- Redesign picnic area
- Explore concession opportunities

Atlantic Beach Access Area

- Replace North & South Bathrooms
- Improve Pedestrian Access

Objective: Construct 1 new use area

On the east shore of Tucker Cove, the existing group camp area is underutilized throughout the year. This area would serve well as an overnight camping area. Potential overnight opportunities could include glamping, tents, or raised platforms. RV campgrounds or cabins will not be considered at this time.

TABLE OF CONTENTS

INTRODUCTION	1
PURPOSE AND SIGNIFICANCE OF THE PARK	1
PARK INTERPRETATION	2
PURPOSE AND SCOPE OF THE PLAN	7
ACQUISITION HISTORY	7
UNIT CLASSIFICATION	8
PUBLIC PARTICIPATION	9
MANAGEMENT PROGRAM OVERVIEW	9
RESILIENCY PLANNING	10
NATURAL RESOURCES	11
Topography	12
Geology	12
Soils	17
Minerals	17
Hydrology.....	17
Hydrological Management	18
Natural Communities and Altered Landcover.....	19
Natural Communities Management	28
Imperiled Species	29
Imperiled Species Management.....	33
Exotic and Nuisance Species.....	35
Exotic Species Management	37
CULTURAL RESOURCES	38
Cultural Resource Management.....	41
SPECIAL MANAGEMENT CONSIDERATIONS	42
Timber Management Analysis	42
Arthropod Control Plan	42
Sea Level Rise.....	43
LAND MANAGEMENT REVIEW	43
ASSESSMENT OF USE	43
Past Uses	45
Future Land Use and Zoning	45
Current Recreation Use and Visitor Programs	46
Protected Zones	46
EXISTING FACILITIES	49
Recreation Facilities	49
Support Facilities	49
CONCEPTUAL LAND USE PLAN	50
Public Access and Recreational Opportunities	50
Capital Facilities and Infrastructure.....	51
VISITOR USE MANAGEMENT	55
RESILIENCY PLANNING	56
OPTIMUM BOUNDARY	57
IMPLEMENTATION COMPONENT	59
Resource Management	61
Cultural Resources	61
Park Facilities.....	61
Park Administration and Operations	61
Recreation and Visitor Services	61
MANAGEMENT PLAN IMPLEMENTATION.....	62

TABLES

TABLE 1 – Fort Pierce Inlet State Park Management Zones	11
TABLE 2 – Natural Communities and Altered Landcover Types	19
TABLE 3 – Imperiled Species Inventory	31
TABLE 4 – Inventory of FLEPPC Category I and II Exotic Plant Species	36
TABLE 5 – Cultural Sites Listed in the Florida Master Site File.....	40
TABLE 6 – Implementation Schedule and Cost Estimates.....	63

MAPS

Vicinity Map	3
Reference Map	5
Management Zones Map	13
Soils Map	15
Natural Communities Map	21
Base Map	47
Conceptual Land Use Plan	53
Optimum Boundary Map	59

LIST OF ADDENDA

ADDENDUM 1

Acquisition History	A 1 - 1
---------------------------	---------

ADDENDUM 2

Advisory Group Members and Report	A 2 - 1
---	---------

ADDENDUM 3

References Cited.....	A 3 - 1
-----------------------	---------

ADDENDUM 4

Soil Descriptions.....	A 4 - 1
------------------------	---------

ADDENDUM 5

Plant and Animal List.....	A 5 - 1
----------------------------	---------

ADDENDUM 6

Imperiled Species Ranking Definitions	A 6 - 1
---	---------

ADDENDUM 7

Cultural Information	A 7 - 1
----------------------------	---------

ADDENDUM 8

Local Government Comprehensive Plan.....	A 8 - 1
--	---------

Introduction

Settled in the middle of a highly urbanized area of St. Lucie County, Florida. Fort Pierce Inlet State Park's waters hold various meanings of significance from providing recreational opportunities for visitors surfing along the nearly half mile Atlantic Ocean coastline. Fishing along the parks man-made jetty. To protecting sea grass beds critical for the survival of in-shore and off-shore fish species and a host of other marine animals. Additionally, during World War II, the park and adjacent waters were the birthplace and training grounds for U.S Navy Frogmen, forerunners of today's Navy Seals.

The park's 713 acres is a combination of intertwined mangrove swamps, maritime hammocks, beach dunes, and various seagrass beds in Tucker Cove. Providing habitat to many of Florida's important native and imperiled species such as the gopher tortoise, roseate spoonbill, inkberry, and Johnsons seagrass and the endangered beach star.



Park Interpretation

Interpretation is a mission-based communication process that forges emotional and intellectual connections between the interests of the audience and meanings inherent in the resource. Interpretive themes are the key concepts for communicating the meanings inherent in a Florida State Park. A central park theme is a short, dynamic interpretive statement that reflects the significance of a park by highlighting distinctive features and essential visitor experiences. The central park theme answers the questions: "What is unique about this park?" and "Why should visitors care about its protection?" In addition, each park has primary interpretive themes. Interpretive themes may change over time as a reflection of ongoing management needs or shifting historical context. Further interpretive planning can branch off from these themes but should ultimately help reinforce the main interpretive messages of the park.

Central Park Theme

More than a surfer's dream, Fort Pierce Inlet State Park's historic beachfront and twisted mangrove forests are a bastion for threatened wildlife species.

Primary Interpretive Themes

Historic Beachfront

Hidden beneath the waves at Fort Pierce Inlet State Park, thousands of men trained in the dangerous task of underwater demolition during World War II.

Connections

The Fort Pierce Inlet waterway continues to serve as a vital connection for local access the bountiful waters of the Atlantic Ocean.

Regional Wildlife

Located along the biologically rich Indian River Lagoon, endangered and threatened sea turtles and other marine life depend on Fort Pierce Inlet State Park for survival.

Resilient Natural Communities

An amazing example of resiliency, the native plants and wildlife species of Fort Pierce Inlet State Park thrive among the altered landscapes of constructed jetties and recovered spoil.

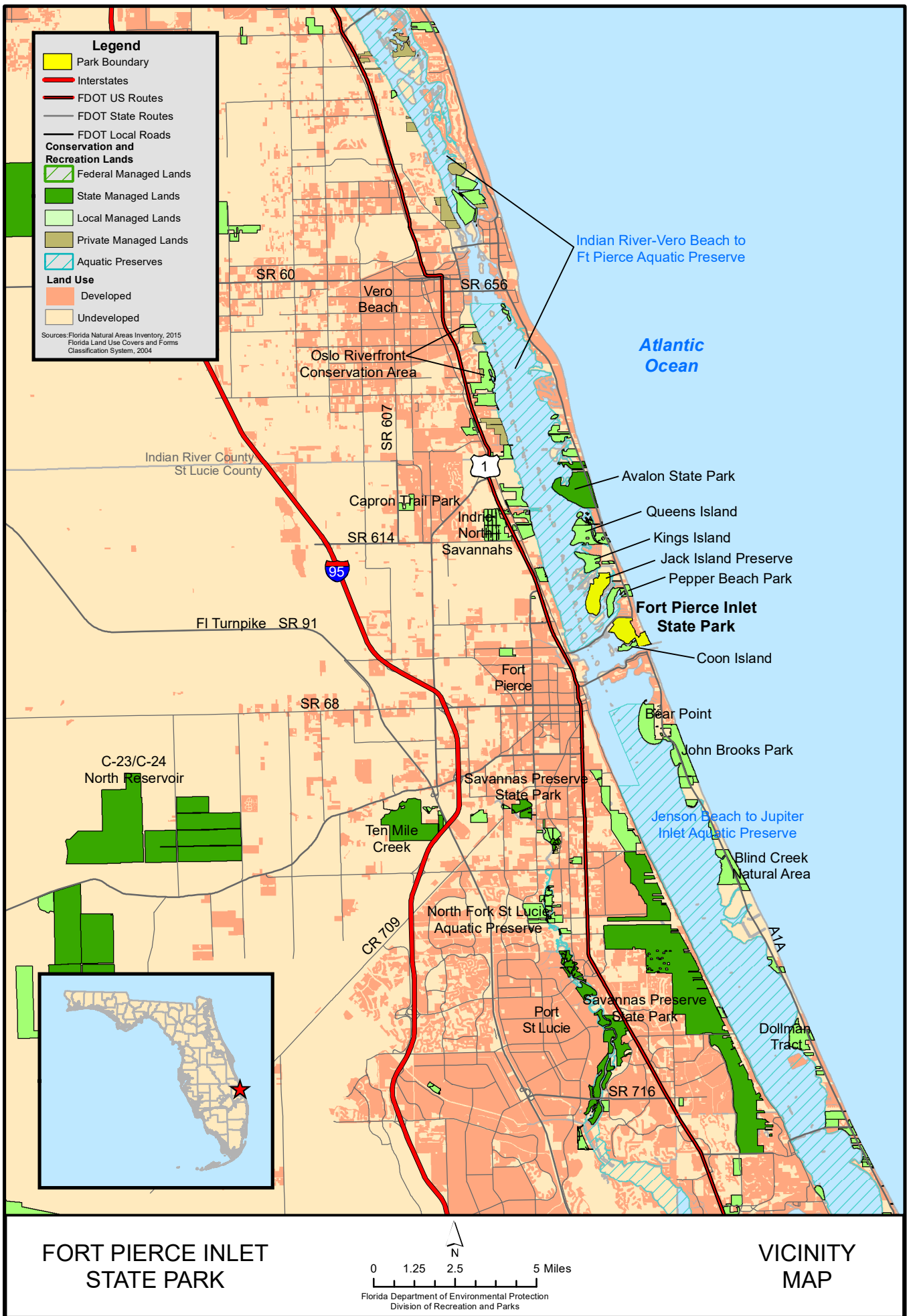
Interpretive Application

Interpretation is a DRP priority for the inherent value of visitor engagement and as a tool for promoting stewardship and conservation. Interpretation also plays an important role in achieving many other park management objectives.

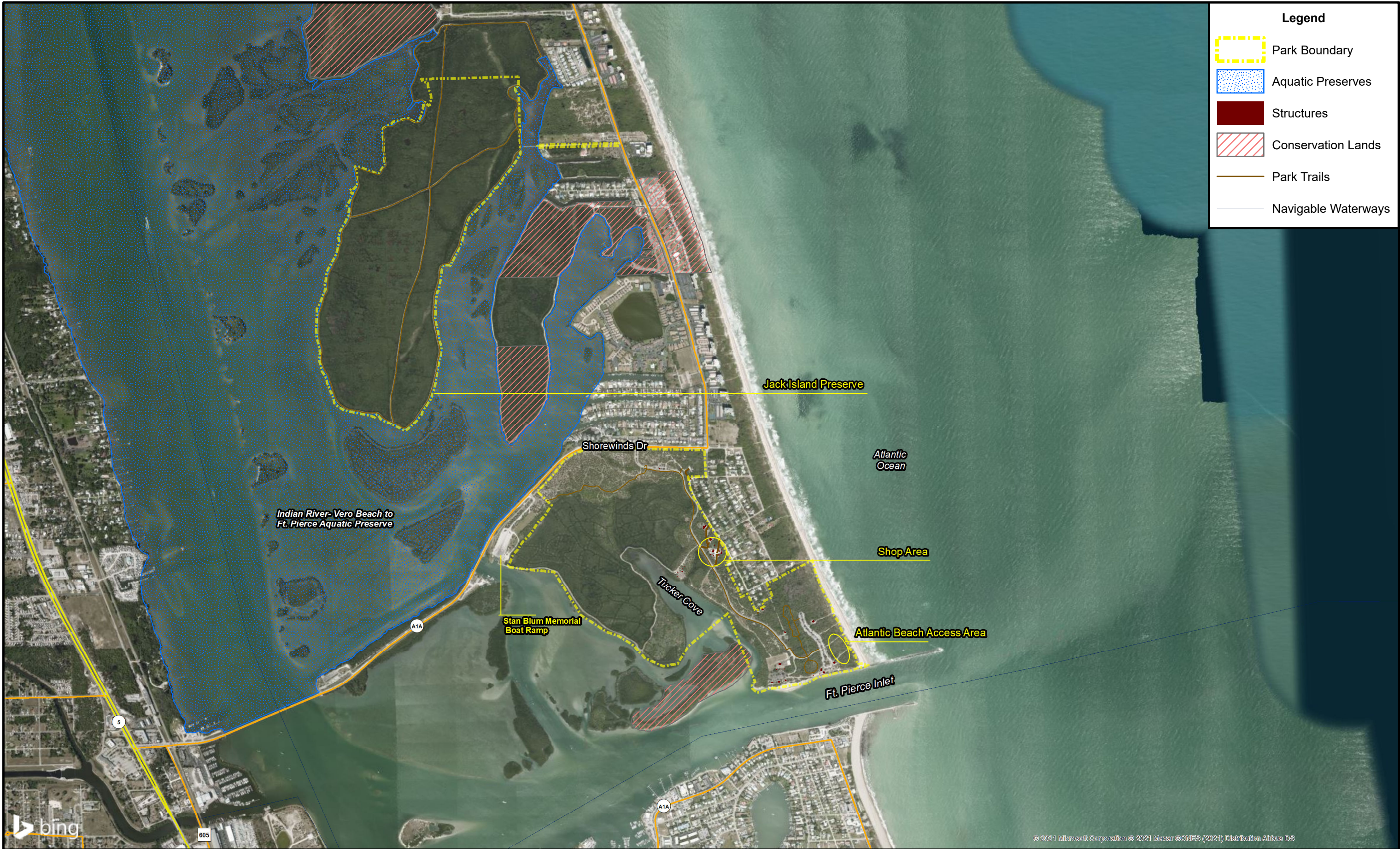
Non-Personal Interpretation

Interpretive elements which do not require a person to deliver a message (signs, exhibits, brochures, kiosks, etc.).

Personal Interpretation One person or persons providing interpretation to another person or persons. It can be planned or impromptu.



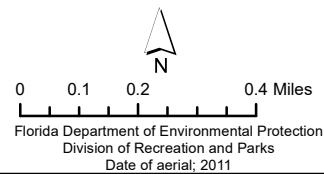
Back of Vicinity Map



Legend

- Park Boundary
- Aquatic Preserves
- Structures
- Conservation Lands
- Park Trails
- Navigable Waterways

FORT PIERCE INLET STATE PARK



REFERENCE MAP

Purpose and Scope of the Plan

This plan serves as the basic statement of direction for the management of Fort Pierce Inlet State Park as a unit of Florida's state park system. It identifies the goals, objectives, and actions 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 is intended to be consistent with the State Lands Management Plan. The plan consists of three interrelated components: The Resource Management Component, the Land Use Component and the Implementation Component. Upon approval, this management plan will replace the 2005 approved plan.

The Resource Management Component provides a detailed inventory and assessment of the natural and cultural resources of the park. Resource management needs and issues are identified, and measurable management objectives are established for each of the park's management goals and resource types.

The Land Use Component is the recreational resource allocation plan for the park. Based on considerations such as current public uses and existing development, measurable objectives are set to achieve the desired allocation of the physical space of the park. These objectives identify use areas and propose the types of facilities and programs recommended.

The Implementation Component consolidates the measurable objectives and actions for each of the park's management goals. The implementation schedule and cost estimates includes measures that will be used to evaluate the DRP's implementation progress, timeframes for completion, and estimated costs to complete each action and objective.

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

Acquisition History

Fort Pierce Inlet State Park was initially acquired on August 10, 1973 with funds from the Environmentally Endangered Lands (EEL) program. Currently, the park comprises 713.60 acres. The Board of Trustees of the Internal Improvement Trust Fund (Trustees) hold fee simple title to the park and on March 4, 1974, the Trustees leased (Lease Number 2742) the property to DRP under a ninety-nine-year lease. The current lease will expire on March 13, 2067.

Fort Pierce Inlet State Park is designated single use to provide public outdoor recreation and conservation. There are no legislative or executive directives that constrain the use of this property (see Addendum 1). A legal description of the park property can be made available upon request to the Florida Department of Environmental Protection.

Unit Classification

Fort Pierce Inlet State Park is classified as a recreation area in the DRP's unit classification system. In the management of a recreation area, 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. Emphasis is on interpretation on the park's natural, aesthetic, and educational attributes.

General Park Management Goals

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

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

Secondary and Incompatible Uses

In accordance with 253.034(5) F.S., the potential of the park to accommodate secondary management purposes was analyzed. These secondary purposes were considered within the context of DRP's statutory responsibilities and the resource needs and values of the park. This analysis considered the park's natural and cultural resources, management needs, aesthetic values, visitation and visitor experiences. For this park, it was determined that no secondary purposes could be accommodated in a manner that would not interfere with the primary purpose of resource-based outdoor recreation and conservation.

DRP has determined that 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) would not be consistent with this plan or the management purposes of the park and should be discouraged.

In accordance with 253.034(5) F.S. 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.

Contract Services

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

Public Participation

DRP provided an opportunity for public input by conducting a public workshop and an Advisory Group meeting to present the draft management plan to the public. These meetings were held on June 2, 2021 and June 3, 2021, respectively. Meeting notices were published in the Florida Administrative Register, [47/99], included on the Department Internet Calendar, posted in clear view at the park, and promoted locally. The purpose of the Advisory Group meeting is to provide the Advisory Group members an opportunity to discuss the draft management plan (see Addendum 2).

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 Board of Trustees of the Internal Improvement Trust Fund (Trustees) has granted management authority of certain sovereign submerged lands to the DRP under Management Agreement MA 68-086 (as amended January 19, 1988). The management area includes a 400-foot zone from the edge of mean high water where a park boundary borders sovereign submerged lands fronting beaches, bays, estuarine areas, rivers or streams. Where emergent wetland vegetation exists, the zone extends waterward 400 feet beyond the vegetation. The agreement is intended to provide additional protection to

resources of the park and nearshore areas and to provide authority to manage activities that could adversely affect public recreational uses.

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

Management Coordination

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

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

Other Designations

Fort Pierce Inlet State Park is not within an Area of Critical State Concern as defined in Section 380.05, Florida Statutes, and it is not presently under study for such designation. The park is a component of the Florida Greenways and Trails System, administered by the Department's Office of Greenways and Trails.

All waters within the park have been designated as Outstanding Florida Waters, pursuant to Chapter 62-302, Florida Administrative Code. Surface waters in this park are also classified as Class III waters by the Department. This park is adjacent to the Indian River – Vero Beach to Fort Pierce Aquatic Preserve designated under the Florida Aquatic Preserve Act of 1975 (Section 258.35, Florida Statutes).

Resiliency Planning

Climate-related shocks and stressors present new challenges to the Florida Park Service mission of providing resource-based recreation while preserving, interpreting, and restoring natural and cultural resources.

Parks will adapt to climate threats with prescriptive strategies to minimize and manage the impacts of more severe storms and droughts, sea-level rise, invasive organisms, and other emerging environmental disturbances. Resilience strategies will be incorporated in all park plans and resource management decisions.

RESOURCE MANAGEMENT COMPONENT

The DRP has implemented resource management programs for the perpetual preservation of representative examples of the state's significant natural and cultural resources. This component of the plan describes the natural and cultural resources of the park and identifies the methods that will be used to manage them. Management measures expressed in this plan are consistent with the DRP's overall mission in natural systems management.

The DRP's resource management philosophy is guided by the principles of natural systems management. Primary emphasis is placed on restoring and maintaining the natural processes that shaped the structure, function, and species composition of Florida's diverse natural communities as they occurred in the original domain. Single species management for imperiled species can be accommodated on a case-by-case basis and should be compatible with the maintenance and restoration of natural processes.

The DRP's management goal for cultural resources is to preserve sites and objects that represent Florida's cultural periods, significant historic events, or persons contributing to the history of Florida. This goal often entails active measures to stabilize, reconstruct, restore, or rehabilitate cultural resources. Appropriate public use of cultural resources will be considered according to the park's unit classification and the sensitivity of the resources.

Park units are often components of larger ecosystems, and their proper management can be affected by conditions that occur beyond park boundaries. Ecosystem management is implemented through a program that assesses resource conditions, refines management activities, and reviews local and regional development permit applications for park impacts.

The entire park is divided into management zones that delineate areas on the ground that are used to coordinate management activities (see Management Zones Map). The shape and size of each zone may be based on natural community type, burn zone, and the location of existing roads and fire breaks. Table 1 reflects the park's management zones.

Table 1. Fort Pierce Inlet State Park Management Zones				
Management Zone	Acreage	Managed with Prescribed Fire	Contains Known Cultural Resources	Contains Invasive Species
FP-01	28.73	Y	N	Y
FP-02	23.32	N	N	Y
FP-03A	33.83	N	N	Y
FP-03B	8.65	N	N	Y
FP-03C	7.31	N	N	Y
FP-03D	9.57	N	N	Y
FP-04	19.72	N	N	Y
FP-05	153.21	N	Y	Y
FP-06	20.29	N	N	Y
FP-07	0.96	N	N	Y
FP-08	13.98	N	N	Y
FP-09	6.50	N	N	Y
FP-10	13.06	N	Y	Y
FP-11	23.83	N	N	N
FP-13	146.08	N	N	Y
FP-14	96.58	N	N	Y

Table 1. Fort Pierce Inlet State Park Management Zones				
Management Zone	Acreage	Managed with Prescribed Fire	Contains Known Cultural Resources	Contains Invasive Species
FP-15	56.44	N	N	Y
FP-16	49.70	N	N	Y
FP-17	1.81	N	N	Y

Management Goals, Objectives, and Actions

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

Topography

The elevation at Fort Pierce Inlet State Park ranges from mean high water (MHW) to 10 feet above MHW. This area is part of the Atlantic Coastal Ridge physiographic region and the Atlantic Beach Ridges and Barrier Chain subzone. The topography of this beach system is influenced by the presence of nearby inlets and sand deposition by wind and water. The present inlet was built in 1921. A shallow natural inlet was once located northeast of Jack Island (approximately two miles north of the current inlet). This naturally occurring inlet closed in the early 1900s due the opening of the man-made St. Lucie Inlet, 21 miles to the south, which reduced tidal volume and increased shoaling. The beach dune ridge at Fort Pierce Inlet is similar to the beach proper due to water borne sediment being deposited onto the beach. This results from the impoundment of sand by the north jetty of Fort Pierce Inlet and the net movement of littoral transported sand from north to south.

Much of the small-scale topography has been strongly affected by the deposition of spoils from different sources. Spoils were piled throughout the park's uplands between two to six feet in depth. Jack Island consists primarily of mosquito impoundments created by the construction of dikes around a tidal mangrove estuarine area in the Indian River.

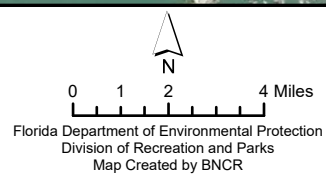
Geology

There are two major geologic formations underlying this area. The base rock is called the Anastasia Formation and is a coquinoid-quartz-limestone combination formed in the Pleistocene. Pamlico Sand is on top of this formation with its more recent features having Holocene origins. The term "perched barrier island" is used to describe this formation.



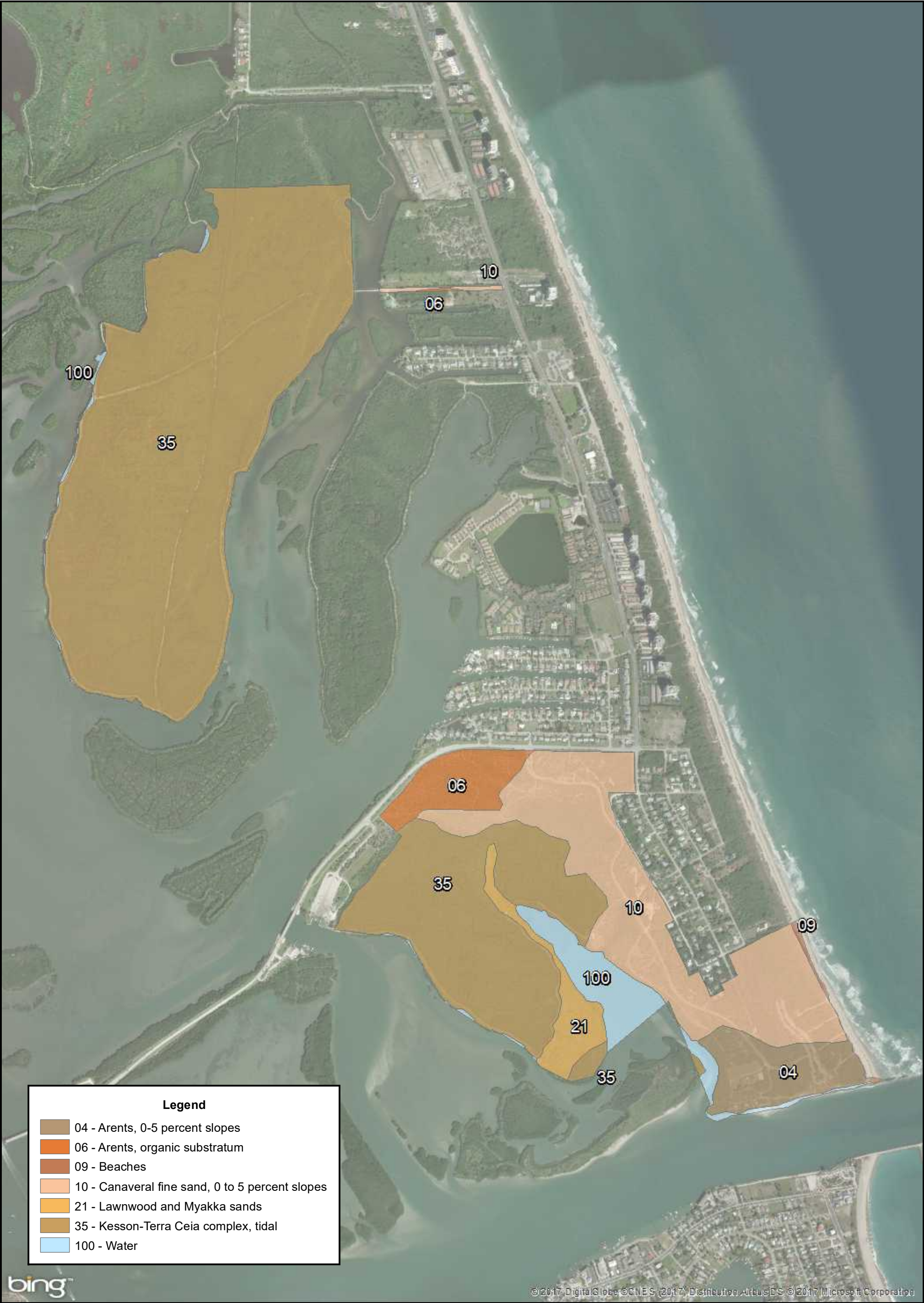
State of Florida, Maxar

FORT PIERCE INLET STATE PARK



MANAGEMENT ZONES MAP

Back of Management Zone Map



BACK SOILS MAP

Toward the end of the Pleistocene Epoch approximately 20,000 years ago, sea level experienced a severe drop. During this cooler time, the formation of sand dunes and beaches began. A new mainland shore was established inside of this dune region, with a subsequent sea level rise. Thus, an offshore barrier was formed. This dynamic system is very evident on the high-energy beaches of eastern Florida. Fort Pierce Inlet State Park is located on the north side of Ft. Pierce Inlet, which has been stabilized with a jetty by the Army Corps of Engineers. Along most of Florida's east coast there is a net southward migration of sand. Hence, by being on the north side of the inlet, Fort Pierce Inlet State Park beaches are slowly deposited with water-borne sediments.

Soils

The natural soils of the park are relatively recent due to the young age of the barrier island on which it is located. They are primarily composed of sand, quartz and shell fragments. There are 6 soil types found in this unit as described in the Soil Survey of St. Lucie County (1980) (see soils map). These soils include beaches, Canaveral Fine Sand, Lawnwood Sand, Pompano Variant-Kaliga Variant Association, Arents (0-5 percent slopes) and Arents (organic substratum) (USDA 1980). Arents are soils derived from spoil material and occur through much of the park in the uplands. The spoils have a depth of 20 – 80 inches in many places. The dikes on the mosquito impoundments are also spoil materials. The soil map shown differs from the county's soil survey, but cores were examined with the United States Department of Agriculture, Soil Conservation Service which helped more precisely define spoil areas. The northern section of the park currently labeled Canaveral Fine Sands (10) (See soils map) has a cap of spoils. Where surface spoils are less than 20 inches deep, areas are classified by the natural soil that exists below. Erosive forces acting on the beach are storms from the northeast and hurricanes or tropical storms. Subsequent rebuilding of the dune system is quite slow after a severe storm of this type affects the area. The dune system is protected from foot traffic by dune crossovers. Other areas are unaffected by significant soil erosion due to the small amount of elevation change and vegetative cover.

Minerals

There are no known mineral deposits of commercial value located in this unit.

Hydrology

Fort Pierce Inlet State Park is located within the South Florida Water Management District. All drainage within this unit flows into the Indian River Lagoon and the Atlantic Ocean. Indian River Lagoon, a shallow estuary located between the mainland and the barrier island, flows from Volusia County south to Palm Beach County. The Lagoon is one of the most biologically diverse estuaries in the United States (Harbor Branch Consortium 1975). However, due to canalization to Indian River, water quality has been degraded. Increased surface water run-off has raised organic pesticide loads and other pollutants in the river. Fort Pierce Inlet State Park has a thin underlying freshwater lens. This lens is principally fed by the approximately 52 inches of rainfall the area receives annually. Most rainfall percolates into the surficial aquifer, although there is a fair amount of surface run-off into the Atlantic Ocean and Indian River Lagoon. The surface waters in the area adjacent to the unit are classified as Class III by the Department of Environmental Protection. The waters around Fort Pierce Inlet State Park are designated as Outstanding Florida Waters, and are included in the Indian River - Vero Beach to Fort Pierce Aquatic Preserve.

Hydrological Management

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

The natural hydrology of most state parks has been impaired prior to acquisition to one degree or another. Florida's native habitats are precisely adapted to natural drainage patterns and seasonal water level fluctuations, and variations in these factors frequently determine the types of natural communities that occur on a particular site. Even minor changes to natural hydrology can result in the loss of plant and animal species from a landscape. Restoring state park lands to original natural conditions often depends on returning natural hydrological processes and conditions to the park. This is done primarily by filling or plugging ditches, removing obstructions to surface water "sheet flow," installing culverts or low-water crossings on roads, and installing water control structures to manage water levels.

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

- Action 1 Conduct a hydrological assessment of the mangrove swamp communities in the park within the mosquito impoundments.

Both Jack Island and the Fort Pierce Inlet parcels both contain significant areas of mangrove swamp within mosquito impoundments. St. Lucie County Mosquito Control has made improvements to the hydrological conditions within the mosquito impoundments and attempt to improve circulation within the mangrove swamp community. An updated assessment needs to be completed to capture the current conditions within these areas and to identify what can be done to improve them further. The goal being to allow as much natural circulation of water from the surrounding estuary into the mosquito impoundments. Park and district staff should collaborate with St. Lucie County Mosquito Control staff to optimize tidal flushing and rotational management of these impoundments.

Objective B: Monitor and analyze water resources at the park.

- Action 1 Maintain communication with DEP Indian River Lagoon Aquatic Preserve staff to stay abreast of recent water quality test results.
- Action 2 Park and district staff should assist in the development, review, and comment of local government comprehensive plans, developments of regional impact and existing and proposed land use activities that could affect the environmental integrity of park waters.

An important responsibility for surface water management at the park is to maintain and, if feasible, improve the estuarine nursery grounds and reduce nutrient input into surrounding waters. All of the hydrological features that influence the park's ecosystem extend beyond the boundaries and jurisdiction of the park. Park and district staff work in partnership with other agencies to ensure that the water quality of the park is maintained at acceptable levels.

Objective C: Improve water quality and wildlife habitat within Tucker Cove

- Action 1 Enhance naturally occurring eastern oyster populations (*Crassostrea virginica*) by adding substrate appropriate for oyster colonization.

Natural eastern oyster beds (*Crassostrea virginica*) occur throughout the Indian River Lagoon (IRL), including within Tucker Cove, a shallow 16-acre estuary which is an indentation of the IRL just to the north of Fort Pierce Inlet. Oysters occur in low densities as loose shell clusters along shallow firm substrate shorelines, and on mangrove roots. Low density at this site may be due in part to limited substrate, as the northern third of the cove consists of soft, mucky. bottom.

Enhancement the existing natural oyster reef beds within Tucker Cove at Fort Pierce Inlet State Park by adding hard substrate will provide numerous ecological benefits, including improvement of water quality, habitat and food for wildlife, and erosion control. These substrate-limited natural beds will benefit from the addition of hard substrate for oysters to colonize.

Natural Communities and Altered Landcovers

This section of the management plan describes and assesses each of the natural communities found at the park. It also describes of the desired future condition (DFC) of each natural community and identifies the actions that will be required to bring the community to its desired future condition. The system of classifying natural communities employed in this plan was developed by the Florida Natural Areas Inventory (FNAI). The premise of this system is that physical factors such as climate, geology, soil, hydrology, and fire frequency generally determine the species composition of an area, and that areas that are similar will tend to have natural communities with similar species compositions. Obvious differences in species composition can occur, however, despite similar physical conditions. In other instances, physical factors are substantially different, yet the species compositions are quite similar. Some physical influences, such as fire frequency, may vary from FNAI's descriptions for certain natural communities in this plan.

Table 2. Natural Communities and Altered Landcover Types		
Natural Communities	Acreage	Percentage
Mangrove Swamp	491	68.81%
Maritime Hammock	35.7	5.0%
Estuarine Composite Substrate	23.83	3.33%
Coastal Strand	21.28	2.98%
Beach Dune	12.43	1.74%
Estuarine Unconsolidated Substrate	3.59	0.50%
Estuarine Seagrass Bed	3.23	0.45%
Altered Landcovers	Acreage	Percentage
Spoil Area	104.62	14.66%
Developed	17.92	2.5%
Total Acreage	713.60	

Beach Dune - 12.43 acres

Desired future condition: Beach dune is a coastal mound or ridge of unconsolidated sediments found along shorelines with high energy waves. Vegetation will consist of herbaceous dune forming grass species such as sea oats (*Uniola paniculata*) and sand cordgrass (*Spartina alterniflora*). Other typical species may include sea rocket (*Cakile* spp.), railroad vine (*Ipomea pes-caprae*), seashore paspalum (*Paspalum vaginatum*), beach morning glory (*Ipomea imperati*) and beach sunflower (*Helianthus debilis*, along the Atlantic coast). Occasionally shrubs such as seagrape (*Coccoloba uvifera*) may be scattered within the herbaceous vegetation.

Description and assessment: The beach dune community is confined to the eastern edge of the unit running from the inlet north to the park boundary along the ocean. This community is presently in fair condition. The dunes are low and not well developed most likely because of foot and vehicular traffic prior to acquisition. Dune crossovers and the roping off of these areas have helped protect this community from further erosion by foot traffic. This community contains the endangered beach star (*Remiera maritima*), inkberry (*Scaevola plumieri*) and gopher tortoises. Exotic plant infestation is confined to scattered plants, specifically small patches of beach naupaka (*Scaevola taccada*).

General Management Measures: Management of the beach dune system relies primarily on the continued protection from erosion due to human activity. Keeping foot traffic to designated paths will prevent any unnecessary erosion from taking place. Following the division's beach driving guidelines and keeping vehicle traffic below the wrack line and away from the dune area will help to protect endangered beach star and other dune vegetation, further protecting against erosion. Exotic species management will require occasional treatments to keep the small patches from spreading and in maintenance.

Coastal Strand - 21.28 acres

Desired future condition: Coastal strand can be characterized as stabilized, wind-deposited coastal dunes that are thickly vegetated with evergreen salt-tolerant shrubs. Coastal Strand is an ecotonal community that generally lies between beach dune and Maritime hammock. It may also grade into Scrub, and it often shares many of the same species that occur in Coastal Berm. Fire may reduce succession towards Maritime Hammock. However, maritime influences alone will often suffice to inhibit succession to forest. Coastal strand dunes will contain deep, well drained sands that are generally quite stable but become susceptible to severe damage if the vegetation is significantly disturbed. Along the Atlantic coast, species composition of coastal strand changes from north to south. South of Cape Canaveral, tropical species are more prevalent, including seagrape (*Coccoloba uvifera*), swamp privet (*Forestiera segregata*), myrsine (*Rapanea punctata*), buttonsage (*Lantana involucrata*), white indigoberry (*Randia aculeata*), snowberry (*Chiococca alba*) Spanish stopper (*Eugenia foetida*), blolly (*Guapira discolor*), wild lime (*Zanthoxylum fagara*), coco plum (*Chrysobalanus icaco*), coinvine (*Dalbergia ecastaphyllum*), yellow necklacepod and gray nicker. Typical animals include gopher tortoise, six-lined racerunner, southern hognose snake, coachwhip snake, diamondback rattlesnake, and beach mouse. Smooth domed canopies will develop as the taller vegetation is "pruned" by the windblown salt spray that kills the outer buds. This process is not as prevalent on the west coast of Florida or on the leeward side of islands due to prevailing easterly winds. Significant debate exists over the relative occurrence of natural fires compared to inland pyric communities.



Legend

- BD - Beach Dune - 12.43 ac.
- CS - Coastal Strand - 21.28 ac.
- ECPS - Estuarine Composite Substrate - 23.83 ac.
- ESGB - Estuarine Seagrass Bed - 3.23 ac.
- EUS - Estuarine Unconsolidated Substrate - 3.59 ac.
- MAH - Maritime Hammock - 35.7 ac.
- MS - Mangrove Swamp - 491.0 ac.
- DV - Developed - 17.92 ac.
- SA - Spoil Area - 104.62 ac.

© 2019 Microsoft Corporation © 2019 DigitalGlobe ©CNES (2019) Distribution Airbus DS

BACK OF NAT COM MAP

Description and assessment: Coastal Strand is one of the most rapidly disappearing communities in Florida. It is most extensive along the Atlantic Coast where, being elevated and next to the coast, it is prime resort or residential property. Coastal Strand originally occurred as a nearly continuous band along the Atlantic shorelines. Now it occurs largely as broken and isolated small stretches. In south Florida, it has also been disturbed by invasions of exotic species, principally Brazilian pepper and Australian pine. Along with other coastal communities, Coastal Strand protects inland communities from the severe effects of storms and provides an important stopover area for migratory birds. The coastal strand community at Fort Pierce Inlet State Park occurs as a band along the eastern edge of the park between the beach dune and maritime hammock communities. The community is in good condition. This community was previously labeled as being coastal grassland. The community over time has seen more and more plant species indicative of coastal strand move into this area. Due to this change in species composition, the natural community classification has been changed. The western portion (secondary dunes) of this community previously contained many Australian pine and Brazilian pepper trees that have all been removed. After removal, additional coastal strand plant species recruited in the areas previously occupied by exotic plants. The coastal strand community provides storm protection to the mainland and provides an important resting area for migratory birds. This community also provides habitat for a variety of different wildlife species, including the ground skink, gopher tortoise, southern ring-necked snake and cotton rat.

General Management Measures: The main management measure to be taken in this community, other than protecting it from activities which would impact it, is the continuation of exotic plant removal activities. Large numbers of Brazilian pepper and Australian pines were removed from this area in the past and continued exotic plant removals sweeps should regularly be performed, on an annual basis at minimum. Native plant recruitment has been successful since the original exotic treatments.

Maritime Hammock - 35.7 acres

Desired future condition: Maritime hammock is a coastal evergreen hardwood forest occurring in narrow bands along stabilized coastal dunes. Canopy species will typically consist of live oak (*Quercus virginiana*), red bay (*Persea borbonia*), and cabbage palm (*Sabal palmetto*). The canopy will typically be dense and often salt-spray pruned. Understory species may consist of yaupon holly (*Ilex vomitoria*), saw palmetto (*Serenoa repens*), and/or wax myrtle (*Myrica cerifera*). Herbaceous groundcover will be very sparse or absent. Variation in species composition exists along the coast with tropical species becoming more prevalent farther south.

Description and assessment: This community includes a mixture of warm-temperate and tropical vegetation. Warm-temperate plant species (live oak, scrub hickory and red bay) dominate, but there are also several common tropical species including gumbo limbo, black ironwood, blolly, stoppers, wild coffee, cocoplum and Florida privet. This community is in good condition. Previously, the major problem was encroachment of exotic plant species on the Fort Pierce Inlet portion, particularly Brazilian pepper. Exotic plant removal has taken place through much of the hammock improving its quality. Some red bays in the hammock have died due to laurel wilt caused by fungus (*Raffaelea lauricola*) that is spread to the trees by an exotic insect, the redbay ambrosia beetle (*Xyleborus glabratus*). The park has taken significant steps in the past to protect the red bays by treating them with a fungicide, attempting to add protection against infection from the fungus. The park had previously

treated 115 red bays with fungicide to prevent laurel wilt. Unfortunately, all of the previously treated trees have since died. Currently, a new generation of red bay trees have sprouted, and as of August of 2018 approximately 70 young trees have taken root. Expansion of the hammock is limited by soil quality. Currently, the hammock covers a portion of the park that has natural soils. The edge of the hammock often marks a change in soil from natural to spoil.

General Management Measures: The main priority for the maritime hammock is the continued maintenance of exotic plants. Almost all of the initial treatment of exotic plants has taken place within this area. Continued annual maintenance must take place for the long-term management of exotics. Isolated patches of large Brazilian pepper trees remain scattered in the community especially in the northern boundary of the hammock. These areas should be treated and become part of the maintenance program.

Mangrove Swamp - 491 acres

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

Description and assessment: The mangrove swamp located in the park is in good condition. Most of the mangroves run along the outer edge of the mosquito impoundments or occur in small pockets. The western portion of Fort Pierce Inlet and all of Jack Island are mosquito impoundments. The mosquito impoundments have all three mangrove species and they appear to be healthy, covering 90-95 percent of the impoundments. St. Lucie County Mosquito Control District has removed the majority of exotic plants on the dikes and wetlands of impounded areas. However, the impoundments are not functioning like undisturbed tidal swamps. Mosquito impoundments were created in order to reduce mosquito breeding, particularly in high marshes by keeping water levels in these areas constant. Due to the physical alteration, the condition of the managed swamp/marshes is considered suboptimal. Various fish and bird species utilize the area, but it is no longer functioning like a non-impounded system. Water levels are kept within a narrower range than tidal swamps without dikes, so oxygen levels in the water and in sediments can

become low. The impoundment of mangroves prevents the normal exchange of nutrients between tidal swamp and estuary, making the mosquito impoundments of the park contribute less to the overall productivity of the local estuarine system than a natural system. Mosquito control has adopted a rotational management system to improve the circulation of water and the exchange between the swamp and surrounding estuary. These efforts have helped the fish and wildlife species that utilize the mangrove swamp, but the community still does not function entirely as a natural system.

General Management Measures: Previous treatments of exotic plants throughout this community have been completed. Annual maintenance of these areas should take place to ensure the long-term success of the exotic plant treatments. The areas of mangrove swamp that are impounded could be improved by having additional areas for natural tidal exchange. This could involve culverts in the dikes or removing sections of the dike. For this system to return to a fully functioning mangrove swamp with a natural level of tidal exchange, the dike should be removed completely. Coordination will be needed with St. Lucie County Mosquito Control to identify areas where tidal exchange can be improved.

Estuarine Seagrass Bed - 3.23 acres

Desired future condition: Marine seagrass beds are typically characterized as expansive stands of vascular plants and are among the most productive community types in the world. Seagrass beds will occur in clear, coastal waters where wave energy is moderate. The three most common species of seagrasses in Florida are turtle grass, (*Thalassia testudinum*), manatee grass (*Syringodium filiforme*), shoalweed (*Halodule wrightii*), and paddle grass (*Halophila*). Other seagrasses of the genus *Halophila* may also occur but will be considerably less common. Seagrass beds require unconsolidated substrate in order to establish their root structure. They will typically be found in waters ranging from 20° to 30°C (68° to 86°F) and require clear water for photosynthesis. Seagrass beds will not thrive where nutrient levels are high because of increased turbidity and competition with algal species.

Description and assessment: Seagrass beds are present throughout the submerged lands located within the unit. Many of these areas have been mapped to provide baseline data for possible future management decisions. This community is in good condition. The reduction of seagrass beds has been documented in the Indian River as well as other major estuaries in Florida. This trend is caused by several variables, including pollutants, increased turbidity, prop-scarring by boats, and degradation of adjacent habitats.

General Management Measures: Continued surveys should be conducted in order to continue to monitor the health of this community. Motor exclusion zones in appropriate areas will help to protect sensitive seagrass beds from destructive prop scars. These exclusion zones must be clearly posted and visible to boaters to be enforced.

Estuarine Unconsolidated Substrate - 3.59 acres

Desired future condition: Estuarine unconsolidated substrate will consist of expansive unvegetated, open areas of uncompacted mineral based substrate composed of shell, coralgall, marl, mud and/or sand (sand beaches). Healthy estuarine unconsolidated substrate may support large populations of infaunal, transient planktonic and pelagic organisms (e.g., tube worms, sand dollars, mollusks, isopods, amphipods, burrowing

shrimp, and an assortment of crabs providing an important feeding area for many shorebird, invertebrate and fish species. Desired conditions are dependent upon the prevention of soil compaction, pollution and habitat destruction.

Description and assessment: This natural community is located within the Ft Pierce Inlet portion of the unit. Marine unconsolidated substrate is found along the Atlantic shoreline extending from the intertidal zone seaward through the subtidal zone. The substrate within a majority of this area is soft sand bottom. Unconsolidated substrate is also found within the inlet.

General Management Measures: Research and water quality monitoring is needed to assess the effects of contaminants from stormwater runoff, non-source point pollution from community uses such as agriculture, urban and industrial use and recreation, and other impacts to water quality within the lagoon. Park staff will assist in the development, review, and comment of local government comprehensive plans, developments of regional impact and existing and proposed land use activities that could affect the environmental integrity of park waters. Staff will monitor conditions of park waters to help ensure compliance with the water quality standards and will also work cooperatively with state and local agencies to minimize the impacts of necessary dredging activities within park waters.

Estuarine Composite Substrate - 23.83 acres

Desired future condition: Marine composite substrate consists of a combination of natural communities including seagrass beds, algae, and unconsolidated substrate. Because composite substrate is a combination of community types, floral and faunal components from any of these communities may be found in the composite substrate habitat, so species diversity is often times greater than the surrounding habitats. Desired future condition includes an increase in seagrass beds within Tucker Cove.

Description and Assessment: This community is found within Tucker Cove as a combination of estuarine unconsolidated substrate, algal and seagrass bed. Seagrasses, including *Halophila*, *Thalassia* and *Halodule*, are strewn sparsely throughout the unconsolidated substrate. The June 2019 survey showed a 3.5% coverage of seagrasses within the cove, with 80% bare ground and the remainder being assorted algae species. Turbidity and siltation resulting from outfalls from the adjacent mosquito impoundment culverts likely affect seagrass growth within the cove, particularly on the north and east side.

General Management Measures: The 2014 acquisition of Tucker Cove on the western portion of the park allowed for additional protection of the seagrass with the park waters. Subsequently, the area became closed to all combustion engine operation with the appropriate signage installed at the head of the cove. In October 2019, permits were secured for additional signage on the southern eastern portion of Tucker Cove.

Spoil Area - 104.62 acres

Desired future condition: This community currently does not have the defining characteristic for it to be classified as any typical natural community. Ideally this area would be able through enhancement to be defined as maritime hammock with the typical species associated with that community. Species that would be present would include live

oak (*Quercus virginiana*), red bay (*Persea borbonia*), cabbage palm (*Sabal palmetto*), yaupon holly (*Ilex vomitoria*), saw palmetto (*Serenoa repens*) and/or wax myrtle (*Myrica cerifera*). Herbaceous groundcover will be very sparse or absent.

Description and assessment: Much of the Fort Pierce portion of the park has spoil-derived soils. Portions of the spoil area are infested with exotic vegetation, whereas other portions contain a mixture of exotics and native herbaceous species, with dense growth of cabbage palms, seagrape and winged sumac. A long-term effort should be made to remove non-native vegetation and to reintroduce native species commonly found within maritime hammock to the degree which the spoil allows growth. The spoil varies in depth and quality and is the limiting factor for plant community recruitment and succession.

General Management Measures: To completely restore the spoil areas, all deposited spoil would have to be removed to uncover the natural soils beneath. Such a large area of spoil would make this both expensive and disruptive to the native plants and wildlife that currently inhabit this area and is therefore not practical or feasible. The continued removal of exotic plants will allow for additional native plant recruitment to take place. Although this is not a fire dependent community, prescribed fire has been used in the past with good results to help wildlife species that utilize this area. Continued introduction of prescribed fire will further this effort. A plan will be developed to identify areas that are most likely to respond to restoration efforts. Native plantings should also take place to help with species diversity and abundance within the community and should mimic growth that would naturally occur in a maritime hammock.

Developed - 17.92 acres

Desired future condition: The developed areas within the park will be managed to minimize the effect of the developed areas on adjacent natural areas. Priority invasive exotic plant species (FLEPPC Category I and II species) will be removed from developed areas. Other management measures include proper stormwater management and development guidelines that are compatible with prescribed fire management in adjacent natural areas.

Description and assessment: There are just under 18 acres of developed area, including a paved multi-use trail, a beach use area, a picnic area, a primitive group camp, and support facilities. The paved bicycle/pedestrian path spans 1.2 miles from the southern boundary north to the northern boundary of the park. The beach use area includes 2 bathhouses, outside showers, a paved parking area with 261 spaces, and beach access cross-overs. The picnic area contains large and small picnic shelters, grills and a large playground with a restroom and paved and unpaved parking. The primitive group camp offers small picnic shelters, a fire ring and outdoor showers. Jack Island contains an observation tower, interpretive kiosk, paved parking and a foot bridge. Support facilities include the entrance station, shop area and staff residences.

General Management Measures: Staff will continue to control invasive exotic plant species in developed areas of the park. Defensible space will be maintained around all structures in areas managed with prescribed fire or at risk of wildfires.

Natural Communities Management

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

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

Prescribed Fire Management

Prescribed fire is used to mimic natural lightning-set fires, which are one of the primary natural forces that shaped Florida's ecosystem. Prescribed burning increases the abundance and health of many wildlife species. A large number of Florida's imperiled species of plants and animals are dependent on periodic fire for their continued existence. Fire-dependent natural communities gradually accumulate flammable vegetation; therefore, prescribed fire reduces wildfire hazards by reducing these wild land fuels.

All prescribed burns in the Florida state park system are conducted with authorization from the FDACS, Florida Forest Service (FFS). Wildfire suppression activities in the park are coordinated with the FFS.

Objective A: Assess the need for fire within the spoil areas and burn on an as needed basis

- | | |
|----------|---|
| Action 1 | Assess fuel build-up and condition of gopher tortoise habitat within spoil areas. |
| Action 2 | Manage spoil areas with fire if it is deemed beneficial to reduce fuels and improve habitat for gopher tortoises. |

Prescribed fire will be planned for each burn zone if need for fire has been determined. To provide adaptive responses to changing conditions, fire management requires careful planning based on annual and very specific burn objectives.

The only natural community in the park that may benefit from occasional prescribed fire is the spoil areas. Fire within the spoil areas would reduce fuel loads, improve habitat for gopher tortoises, and help to control exotic plants. Fire would allow for open sandy areas to remain accessible for the tortoises to make their burrows, prevent vegetation from becoming too dense, and promote new growth, which is important for the tortoise's diet. The eastern indigo snake would in turn benefit from fire as they winter in tortoise burrows.

In order to track fire management activities, the DRP maintains a statewide burn database. The database allows staff to track various aspects of each park's fire management program including individual burn zone histories and fire return intervals, staff training and experience, backlog, etc. The database is also used for annual burn planning which allows the DRP to document fire management goals and objectives on an annual basis. Each quarter the database is updated, and reports are produced that track progress towards meeting annual burn objectives.

Natural Community Restoration

In some cases, the reintroduction and maintenance of natural processes is not enough to reach the desired future conditions for natural communities in the park, and active restoration programs are required. Restoration of altered natural communities to healthy, fully functioning natural landscapes often requires substantial efforts that may include mechanical treatment of vegetation or soils and reintroduction or augmentation of native plants and animals. For the purposes of this management plan, restoration is defined as the process of assisting the recovery and natural functioning of degraded natural communities to desired future condition, including the re-establishment of biodiversity, ecological processes, vegetation structure and physical characters.

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

Objective B: Conduct habitat/natural community restoration activities on 105 acres of spoil area natural community

- | | |
|----------|---|
| Action 1 | Remove and maintain invasive exotic vegetation. |
| Action 2 | Reintroduce native maritime hammock vegetation. |

The large areas of spoil located in the park do not function as natural community types. Traditionally, such areas would have contained combinations of maritime hammock in the upland portions and mangrove swamp near the estuary. In order to restore the spoil areas to a true maritime hammock, the layer of spoil soils would need to be removed. The impacts of complete soil removal to native flora and fauna currently inhabiting the spoil areas would be too great, and therefore complete restoration is not practical. Currently, exotic vegetation, including an infestation of cogon grass, is the main obstacle to creating the desired future condition within the spoil area community. Based on its current condition, exotic plant removal and maintenance, along with reintroduction of native hammock species, is the best course of action to provide a community that is as close as possible to maritime hammock.

Imperiled Species

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

Table 4 contains a list of all known imperiled species within the park and identifies their status as defined by various entities. It also identifies the types of management actions that are currently being taken by DRP staff or others and identifies the current level of monitoring effort. The codes used under the column headings for management actions and monitoring level are defined following the table. Explanations for federal and state status as well as FNAI global and state rank are provided in Addendum 6.

There are eight designated plant species including the endangered beach star (*Cyperus pedunculatus*) and 24 designated animal species including the manatee, gopher tortoise and sea turtles. Fort Pierce Inlet State Park is an active participant in the statewide marine turtle-monitoring program. Three species of marine turtles -- loggerhead (*Caretta caretta*), green (*Chelonia mydas*) and leatherback (*Dermochelys coriacea*) use the beach within the park for nesting. The park serves as a state index and survey beach for nesting marine turtles. During the nesting season, park staff conducts daily surveys of the beach recording the previous night's activities including number of crawls, false crawls, species identification and number of nests. The data collected from the park is used by state and federal agencies to formulate policy on nesting marine turtles. If population of nesting marine turtles is stable and has historically followed statewide trends. If the population of nesting loggerhead turtles was in decline statewide, fewer turtles were found to nest in the park. Major threats to nesting marine turtles, their nests and turtle hatchlings at the park are predation from natural and introduced predators and disorientation from artificial lighting.

A tidal flat site of critical importance to Johnson's seagrass (*Halophila johnsonii*) is located near the park waters and this endangered seagrass is found throughout the area. Johnson's seagrass does not reproduce by seed (only vegetative), protection of large contiguous areas such as the one found near park waters is vital to its survival. In general, all seagrasses are vital to the health and productivity of nearshore coastal waters and those found near inlets harbor the greatest diversity of organisms, including juvenile offshore and inshore species.

The West Indian manatee is commonly observed in the park. Tucker Cove and Shorty's Slough are two areas where manatees are often seen. Tucker Cove has been posted as closed to combustible engines. This will help protect the manatees and decrease the amount of wake and prop-scarring damage on the grass beds.

Gopher tortoises (*Gopherus polyphemus*) have done well in the beach dune, coastal strand and spoil area. The park has a moderate concentration of tortoises of all size classes. Continued monitoring of gopher tortoises within the park is recommended in order to assess the population and inform potential prescribed fire decisions within spoil areas.

A 1988 live-trapping program revealed the presence of the southeastern beach mouse (*Peromyscus polionotus niveiventris*) in the coastal grassland/dune community. However, all subsequent work, including an FWC live trapping project in February of 2014 and February of 2018, and a USFWS live trapping project in June of 2018 has shown that the beach mouse has been extirpated from the park. A periodic assessment of beach mouse presence/absence is recommended. Any decision regarding reintroduction will be made through close collaboration with USFWS and FWC.

The estuarine wetland areas within Jack Island and Fort Pierce Inlet are host to a range of wading and shore birds. Many of these birds are designated species. The protection of these estuarine wetland communities is important as they provide food, shelter and nesting areas for these avian species.

The designated plant species at the park occur in the beach dune and maritime hammock communities. The major threat to the species located in the beach dune is disturbance resulting from human foot traffic and from UTV traffic from park, lifeguard and law enforcement staff. Interpretation of these resources and the adherence to the division's

Beach Driving Guidelines will help to protect these imperiled plant species. Species located in the maritime hammock are threatened primarily by exotic plant infestation.

Table 3: Imperiled Species Inventory						
Common & Scientific Name	Imperiled Species Status				Management Actions	Monitoring Level
	FWC	USFWS	FDACS	FNAI		
PLANTS						
Johnson's seagrass <i>Halophila johnsonii</i>		LT		G2,S2	10	Tier 2
Crested coralroot <i>Hexalectris spicata</i>			LE		2	Tier 1
Simpson's stopper <i>Myrcianthes fragrans</i>			LT		2	Tier 1
Prickly pear cactus <i>Opuntia stricta</i>			LT		2	Tier 1
Beach star <i>Remirea maritima</i>			LE		2,9,10	Tier 1
Inkberry <i>Scaevola plumieri</i>			LT		2,9,10	Tier 1
Common wild pine <i>Tillandsia fasciculata</i>			LE		2	Tier 1
Giant wild pine <i>Tillandsia utriculata</i>			LE		2	Tier 1
REPTILES						
Atlantic loggerhead turtle <i>Caretta caretta</i>	FT	LE,LT		G3,S3	10,13	Tier 4
Atlantic green turtle <i>Chelonia mydas</i>	FE	LE		G3,S2	10,13	Tier 4
Leatherback turtle <i>Dermochelys coriacea</i>	FE	LE		G2,S2	10,13	Tier 4
Eastern indigo snake <i>Drymarchon couperi</i>	FT	LT		G3,S3	1,2,13	Tier 1
Gopher tortoise <i>Gopherus polyphemus</i>	ST	LT		G3,S3	1,2,13	Tier 1
BIRDS						
Roseate spoonbill <i>Ajaja ajaja</i>	ST			G5,S2	13	Tier 1
Great egret <i>Ardea alba</i>				G5,S4	13	Tier1
Piping plover <i>Charadrius melodus</i>	FT	LT		G3,S2	13	Tier1 Tier2
Little blue heron <i>Egretta caerulea</i>	ST			G5,S4	13	Tier1
Reddish egret <i>Egretta rufescens</i>	ST			G4,S2	13	Tier1

Table 3: Imperiled Species Inventory						
Common & Scientific Name	Imperiled Species Status				Management Actions	Monitoring Level
	FWC	USFWS	FDACS	FNAI		
Snowy egret <i>Egretta thula</i>				G5,S3	13	Tier 1
Tricolored heron <i>Egretta tricolor</i>	ST			G5,S4	13	Tier 1
White Ibis <i>Eudocimus albus</i>				G5,S4	13	Tier 1
Merlin <i>Falco columbarius</i>				G5,S2	13	Tier 1
American oystercatcher <i>Haematopus palliatus</i>	ST			G5,S2	13	Tier1 Tier2
Wood stork <i>Mycteria Americana</i>	FT	LT		G4,S2	13	Tier 1
Osprey <i>Pandion haliaetus</i>	SSC			G5,S3,S4	13	Tier 1
Brown pelican <i>Pelecanus occidentalis</i>				G4,S3	13	Tier1
Black skimmer <i>Rynchops niger</i>	ST			G5,S3	13	Tier1 Tier2
American redstart <i>Setophaga ruticilla</i>				G5,S2	13	Tier 1
Least tern <i>Sterna antillarum</i>	ST			G4,S3	13	Tier1 Tier2
Royal tern <i>Thalasseus maximus</i>				G5,S3	13	Tier1 Tier2
MAMMALS						
Florida manatee <i>Trichechus manatus</i>	FT	LT		G2,S2	10,13	Tier 1

Management Actions:

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

Monitoring Level:

- Tier 1. Non-Targeted Observation/Documentation includes documentation of species presence through casual/passive observation during routine park activities. Documentation may be in the form of Wildlife Observation Forms, or other district specific methods.
- Tier 2. Targeted Presence/Absence includes monitoring methods/activities that are specifically intended to document presence/absence of a particular species or suite of species.
- Tier 3. Population Estimate/Index: an approximation of the true population size or population index based on a widely accepted method of sampling.
- Tier 4. Population Census: A complete count of an entire population with demographic analysis, including

mortality, reproduction, emigration, and immigration.

Tier 5. Other: may include habitat assessments for a particular species or suite of species or any other

specific methods used as indicators to gather information about a particular species.

Imperiled Species Management

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

The DRP strives to maintain and restore viable populations of imperiled plant and animal species primarily by implementing effective management of natural systems. Single species management is appropriate in state parks when the maintenance, recovery or restoration of a species or population is complicated due to constraints associated with long-term restoration efforts, unnaturally high mortality or insufficient habitat. Single species management should be compatible with the maintenance and restoration of natural processes and should not imperil other native species or seriously compromise park values.

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

Ongoing inventory and monitoring of imperiled species in the state park system is necessary to meet the DRP's mission. Long-term monitoring is also essential to ensure the effectiveness of resource management programs. Monitoring efforts must be prioritized so that the data collected provides information that can be used to improve or confirm the effectiveness of management actions on conservation priorities. Monitoring intensity must at least be at a level that provides the minimum data needed to make informed decisions to meet conservation goals. Priority must be given to those species that can provide valuable data to guide adaptive management practices.

Objective A: Update baseline imperiled species occurrence inventory lists.

Park staff and district biologists will continue to develop partnerships with other agencies and academic institutions to assist with the updates of inventory lists for additional imperiled species. Numerous agencies currently conduct research projects in the park that occasionally lead to the discovery of additional species.

Objective B: Monitor and document 5 selected imperiled animal species.

- Action 1 Implement monitoring protocols for 5 selected imperiled animal species, including all imperiled shorebirds documented.
- Action 2 Implement monitoring protocols for 4 imperiled animal species including the gopher tortoise, loggerhead, green, and leatherback sea turtles.

Although shorebirds have not historically nested at Fort Pierce Inlet State Park, the beach serves as an important loafing and feeding area for shorebirds such as the black skimmer and royal tern, particularly during winter months. Currently, colonial nesting birds, seabirds

and shorebirds are managed in accordance with guidelines provided by FPS Shorebird and Seabird Management as well as the Florida Shorebird Alliance Posting Guidelines.

Shorebird nesting activities are monitored and documented on a monthly basis within standardized count windows during March through August. A winter shorebird count is conducted each year during the second week of February in accordance with Florida Shorebird Alliance protocol. The International Piping Plover Winter Census takes place every five years. Fort Pierce Inlet State Park is an active participant in the statewide marine turtle monitoring program. Monitoring protocols have been established by FWC. Three species of sea turtles use the beach for nesting. The park serves as a state index and survey beach for nesting marine turtles. During the nesting season, park staff conduct daily surveys of the beach recording the previous night's activities including the number of crawls, false crawls, species identification and the number of nests. A representative sample of nests are designated for nest productivity analysis to help determine the number of hatchlings produced from the park. In addition to the daily surveys, the park also participates in the state's marine turtle stranding and salvage program that collects data on stranded, injured or dead marine turtles. The data collected from the park are used by state and federal agencies to formulate policy on nesting sea turtles.

Maintaining long term data on the nesting activity of sea turtles is important to monitor long term nesting trends and address management activities such as beach nourishment and protection from predators. Gopher tortoises can be found within spoil areas, coastal strand and beach dune areas within the park. District and park staff will implement existing monitoring protocols established by FWC in order to observe population trends.

Objective C: Monitor and document 1 selected imperiled plant species in the park.

- | | |
|----------|---|
| Action 1 | Develop monitoring and survey protocol for 1 imperiled plant species. |
| Action 2 | Implement monitoring and survey protocols for Johnson's seagrass. |

Johnson's seagrass has been documented in the estuarine community. Since the first sighting of Johnson's seagrass was recorded, additional surveys have been conducted by St Johns River Water Management District and FDEP to establish the baseline areas where seagrasses are present. With the information from these surveys, DRP biologists will conduct surveys in areas where seagrasses are present in the park to confirm if Johnson's seagrass is present and determine its distribution. If present, the seagrass will be mapped, and a monitoring program will be designed to follow some of the actions outlined in the 2002 Final Recovery Plan for Johnson's seagrass by the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service. Areas that are in danger of being damaged by boaters will have signs put up to help mitigate against seagrass damage. Many of the recovery actions are beyond the resources of the park. If Johnson's seagrass is found, NOAA will be notified so that the park will be included in the distribution map as critical habitat for the recovery of this listed species.

In 2014 Tucker Cove was deeded to DRP and was subsequently posted as a no combustion engine zone. Tucker Cove should be surveyed on a regular basis for the emergence of seagrass in the area as a result of motor exclusion. Seagrass beds of other species, including paddle grass, star grass, manatee grass and shoal grass should also be mapped and monitored. In August of 2018 Tucker Cove was divided into 10~1-hectare sections and surveyed for seagrass using a modified Braun-Blanquet method. Miniscule amounts of

paddle grass and *Halodule* were found, yielding an estimated seagrass coverage of .125%. Bare ground was estimated at 75% and algae coverage, mainly *Caulerpa*, was estimated at 11.4%. The June 2019 survey showed a 3.5% coverage of seagrasses within the cove, with 80% bare ground and the remainder being assorted algae species. DRP staff aims to survey Tucker Cove annually to monitor any changes of seagrass distribution and abundance within the cove.

Exotic and Nuisance Species

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

Exotic animal species include non-native wildlife species, free ranging domesticated pets or livestock, and feral animals. Because of the negative impacts to natural systems attributed to exotic animals, the DRP actively removes exotic animals from state parks, with priority being given to those species causing the greatest ecological damage. In some cases, native wildlife may also pose management problems or nuisances within state parks. A nuisance animal is an individual native animal whose presence or activities create special management problems. Examples of animal species from which nuisance cases may arise include venomous snakes or raccoons and alligators that are in public areas. Nuisance animals are dealt with on a case-by-case basis in accordance with the DRP's Nuisance and Exotic Animal Removal Standard.

Most of the park has reached a maintenance level control of exotic plants since the previous management plan update in 2006. 270 acres of exotic plants were treated. In the summer and early fall of 2019 contractors treated Cogon grass, Guinea grass and Brazilian jasmine in all zones west of the park main park drive. The contracted work additionally focused on treating large strands of Brazilian pepper that were found throughout the maritime hammock. Also, a significant amount of Australian pine located mainly in the mangrove swamp areas of the mosquito impoundments were removed.

Park staff continuously conducts maintenance sweeps of previously treated areas, as well as initial treatments in various locations. Within the maritime hammock, this entails treating new Brazilian pepper seedlings and saplings before reaching maturity to produce seed. The upland spoil areas of the park are more significantly infested with exotics, due to the vulnerability of the disturbed soils. Nearly all of the larger hardwood exotic species have been treated but constant maintenance is needed. New seedlings and saplings are present throughout the spoil community. The beach dune community is relatively free of exotic plants, except for patches of beach naupaka that occur throughout the dune system.

Nuisance raccoons and feral cats have been removed from the park in the past. Raccoons (*Procyon lotor*) are an abundant native species that impact sea turtle conservation at many Florida beaches through nest depredation (Stancyk, 1982). Compounding the problem, raccoon populations flourish in association with humans because they often receive artificial support through refuse or direct feeding (Smith and Engeman, 2002). Other animals which may predate turtle nests include opossum, nine-banded armadillo and coyote. DRP staff use a predator trap and removal program to maintain predation levels at or below the

required ten percent that was established by the FWC. Non-native green iguanas have been found in low numbers as recently as August of 2019. Early detection and rapid response efforts should be made to remove iguanas from the park before they gain a foothold.

Table 4: Inventory of FLEPPC Category I and II Exotic Plant Species			
Common and Scientific Name	FLEPPC Category	Distribution	Management Zone(s)
PLANTS			
Arbus precatorious Rosary pea	I	2	FP-03D, FP-06, FP-08
Albizia lebbeck Women's tongue	I	1	FP-03A
Asparagus aethiopicus Sprenger's asparagus- fern	I	1	FP-02, FP-03C, FP-09
Cupaniopsis anacardioides Carrotwood	I	2	FP-01, FP-02, FP-03A, FP-03D, FP-06, FP-08, FP-09, FP-10
Dactyloctenium aegyptium Durban crowfootgrass	II	2	FP-03A, FP-08
Dioscorea bulbifera Air potato	I	2	FP-03D, FP-09, FP-10
Epipremnum pinnatum Pathos	II	1	FP-10
Eugenia uniflora Surinam cherry	I	2	FP-01, FP-02, FP-08, FP-09, FP-10
Hyparrhenia rufa Jaragua	II	2	FP-03A, FP-06, FP-09
Imperata cylindrica Cogon grass	I	2	FP-03B, FP-08
Jasminum fluminense Brazilian jasmine	I	2	FP-05, FP-03A, FP-10, FP-01, FP-02
Lantana camara Lantana	I	2	FP-03D, FP-04, FP-05
Melia azedarach Chinaberry	II	1	FP-02
Melinis repens Natal Grass	I	2	FP-03A, FP-09, FP-10
Momordica charantia Balsampear	II	1	FP-01, FP-03A
Panicum maximum Guinea grass	II	2	FP-02, FP-03B, FP-03C, FP-03D, FP-08, FP-09, FP-03A, FP-10
Phoenix reclinata Senegal date palm	II	2	FP-02, FP-14, FP-03C, FP-03D
Sansevieria hyacinthoides Bowstring hemp	II	2	FP-01, FP-03C, FP-10
Scaevola taccada Beach naupaka	I	1	FP-01

Table 4: Inventory of FLEPPC Category I and II Exotic Plant Species			
Common and Scientific Name	FLEPPC Category	Distribution	Management Zone(s)
PLANTS			
<i>Schefflera actinophylla</i> Schefflera	I	2	FP-01, FP-02, FP-03C, FP-03D, FP-08, FP-10
<i>Schinus terebinthifolius</i> Brazilian pepper	I	2	FP-01, FP-02, FP-03A, FP-03B, FP-03C, FP-03D, FP-04, FP-05, FP-06, FP-08, FP-09, FP-10, FP-13, FP-12, FP-14, FP-15, FP-16
<i>Sphagneticola trilobata</i> Wedelia	II	2	FP-03D, FP-08, FP-09, FP-10
<i>Ayagus romanzoffianum</i> Queen palm	II	1	FP-03D
<i>Syzygium cumini</i> Java plum	I	2	FP-05, FP-06, FP-08
<i>Terminalia catappa</i> Tropical almond	II	1	FP-08
<i>Thespesia popunea</i> Seaside mahoe	I	1	FP-02, FP-04
<i>Urena lobate</i> Ceaser's weed	I	2	FP-10
<i>Vitex trifolia</i> Simple-lead chaste tree	II	1	FP-03D

Distribution Categories:

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

Exotic Species Management

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

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

Objective A: Annually treat 50 gross acres of exotic plants in the park

- Action 1 Annually develop/update exotic plant management work plan.
- Action 2 Implement annual work plan by treating 50 acres in park, annually, and continuing maintenance and follow-up treatments, as needed.

Park staff will annually identify areas where exotic treatment will take place. Priority will be given to areas where previous removal has taken place and re-treatment/maintenance is

communities since they are in the best condition. As spoil areas undergo restoration, they will be added to the priority list for treatment. Note that gross acres treated means total area walked or covered by staff or contractors. Infested area means the total coverage of exotic plants within the gross acreage. DRP sets goals and tracks treatment of gross and infested acreage treatment via the Natural Resources Tracking System.

Cultural Resources

The Florida Department of State (FDOS) maintains the master inventory of such resources through the Florida Master Site File (FMSF). State law requires that all state agencies locate, inventory and evaluate cultural resources that appear to be eligible for listing in the National Register of Historic Places. Addendum 7 contains the management procedures for cultural resources on state-managed properties. For the purposes of this plan, significant cultural resources means those cultural resources listed or eligible for listing in the National Register of Historic Places. The terms archaeological site, historic structure or historic landscape refer to all resources that will become 50 years old during the term of this plan.

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

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

Significance of a collection is based on what or whom it may represent. For instance, a collection of furniture from a single family and a particular era in connection with a significant historic site would be considered highly significant. In the same way, a high-quality collection of artifacts from a significant archaeological site would be of important significance. A large herbarium collected from a specific park over many decades could be valuable to resource management efforts. Archival records are most significant as a research source. Any records depicting critical events in the park's history, including construction and resource management efforts, would all be significant.

Cultural Resource Sites

Desired future condition: All significant archaeological sites within the park are preserved in good condition in perpetuity, protected from physical threats and interpreted to the public.

Description: The Florida Master Site File lists one known archaeological site in the park, SL12, North Beach Fort Pierce. In addition to SL12, several other archaeological sites are recorded in the immediate vicinity of the park, which suggests the presence of unrecorded sites in the park. These sites are likely to be small or covered with spoil deposits, and therefore easily overlooked. In June of 1960, F.W. Hardon described the site as a sand burial mound located in a fill area. During the initial survey of the site both human and animal bones were found as well as 3 sherds and a shark vertebrae. These findings further the idea that this was a prehistoric burial mound. The site is classified as occurring in the historic context of Malabar I and Malabar II, covering the time period of ca. 750 B.C.-A.D. 1750. Observation during the cultural resource management evaluation in April 2001, confirmed previous findings by the Division of Historical Resources that neither a discernible mound nor exposed artifacts are apparent. The area appears highly disturbed due to past development activities, especially the repeated deposition of fill material.

In 2013, The Archeological Resource Sensitivity Modeling took place. Findings from the modeling stated that less than 18% of the park property has been designated as high and medium sensitivity. The proximity to the Indian River Lagoon, which was used heavily during prehistoric times, suggests that other sites are likely to exist within the park. As much of the surrounding area has been developed, many nearby cultural sites have been lost, which raises the significance of those sites preserved in the park (Carr & Pepe 2000).

Condition Assessment: It is very likely that this mound was destroyed or at least buried during the draining and filling of the mangrove swamp which must have occurred shortly after Hardon's visit and to which he alludes in the site file form (Carr & Pepe 2000). Since there has been no sign of the burial mound observed since Harden in 1960 and it is unknown whether the mound has been destroyed or buried it is difficult to assess the condition as anything other than poor. The preservation quality was listed as possibly 6 (buried by fill), but probably 5 (destroyed) (Carr & Pepe 2000).

General Management Measures: This site is possibly covered with fill but has most likely been destroyed. The management recommendation is to monitor for any signs of the burial mound and to preserve if traces are found.

Historic Structures

Desired future condition: All significant historic structures and landscapes are preserved in good condition in perpetuity, protected from physical threats and interpreted to the public.

Description: There are currently three historic structures at the park. Building (SL03284) was built in 1950 and currently used as a staff residence, the mower storage (SL03318) and Fort Pierce Inlet Office (SL03317) were both built in 1970. During World War II, the property of Ft. Pierce Inlet State Park was used as a training facility for the Navy Underwater Demolition Team. In addition to the current historic structures, eleven structures are scheduled to become historic within the next ten years:

Ranger Residence Shed

- BL106028 (1974)

Mechanic Shop

- BL106036 (1978)

Flammable Storage

- BL106038 (1980)

North Restroom

- BL106034 (1978)

South Restroom

- BL106035 (1978)

Park Manager Residence

- BL106031 (1977)

APM Residence

- BL106032 (1977)

Administration Office

- BL106033 (1978)

Picnic Area Restroom

- BL106039 (1981)

Pavilion 4

- BL106040 (1981)

Pavilion 5

- BL106041 (1981)

Condition Assessment: As of October 2016, the structures in the park are in good condition. The structures that are being used for residences and office space are continually maintained to be in good working order. The storage structure is also well-maintained and does not show signs of deterioration.

General Management Measures: As of October of 2016, no structures at the park have been significantly damaged since original construction. Routine maintenance is recommended to ensure that the structures are preserved

Table 5. Cultural Sites Listed in the Florida Master Site File

Site Name & FMSF #	Culture/Period	Description	Significance	Condition	Treatment
North Beach Fort Pierce SL12	Malabar I & II	Archaeological Site	NE	G	ST
Fort Pierce Inlet Office SL03317	1970	Historic Structure	NE	G	P
Fort Pierce Inlet Mower Storage SL03318	1970	Historic Structure	NE	G	P
Staff Residence SL03284	1950	Historic Structure	NE	G	P

Significance:

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

Condition

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

Recommended Treatment:

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

Cultural Resource Management

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

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

The management of cultural resources is often complicated because these resources are irreplaceable and extremely vulnerable to disturbances. The advice of historical and archaeological experts is required in this effort. All activities related to land clearing, ground disturbing activities, major repairs or additions to historic structures listed or eligible for listing in the National Register of Historic Places must be submitted to the FDOS, Division of Historical Resources (DHR) for review and comment prior to undertaking the proposed project. Recommendations may include but are not limited to concurrence with the project as submitted, pre-testing of the project site by a certified archaeological monitor, cultural resource assessment survey by a qualified professional archaeologist, modifications to the proposed project to avoid or mitigate potential adverse effect. In addition, any demolition or substantial alteration to any historic structure or resource must be submitted to the DHR for consultation and the DRP must demonstrate that there is no feasible alternative to removal and must provide a strategy for documentation or salvage of the resource. Florida law further requires that DRP consider the reuse of historic buildings in the park in lieu of new construction and must undertake a cost comparison of new development versus rehabilitation of a building before electing to construct a new or replacement building. This comparison must be accomplished with the assistance of the DHR.

Objective A: Assess and evaluate 4 of 4 recorded cultural resources in the park.

- | | |
|----------|--|
| Action 1 | Complete 1 assessment/evaluation of archaeological site. |
| Action 2 | Complete 4 Historic Structures Reports (HSR's) for historic buildings and cultural landscape. Prioritize stabilization, restoration and rehabilitation projects. |

The one archaeological site located in the park currently does not have immediate threats as it is likely buried under fill. An assessment needs to be done of what the site condition is currently and what measures need to take place to ensure it preserved long term. All of the historic buildings are in good condition with little work that needs to be done. A report will be completed to identify any projects that need to take place to restore and preserve the structures.

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

- | | |
|----------|--|
| Action 1 | Ensure all known sites are recorded or updated in the Florida Master Site File, if any significant changes are done. |
| Action 2 | Record historic structures as needed |

Objective C: Bring 3 of 4 recorded cultural resource into good condition.

- | | |
|----------|--|
| Action 1 | Design and implement regular monitoring programs for all 4 cultural resources. |
| Action 2 | Create and implement a cyclical maintenance program for 3 cultural resource. |

A maintenance plan for 3 cultural resources including the Mower Storage (SL03318), Park Residence (SL03284), and Office (SL03317) needs to be developed.

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 was considered in context of the DRP's statutory responsibilities and an analysis of the park's resource needs and values.

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

Coastal/Beach Management

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

Fort Pierce Inlet State Park is located on the southern tip of North Hutchinson Island and has 0.43 miles of beach. Due to its location on the north side of the inlet the park's beach does not experience erosion issues. The beach is an important sea turtle nesting site, with Loggerhead, Green and Leatherback turtles using the beach to lay their eggs. The park has improved access trails to the beach to allow a greater volume of visitors while at the same time protecting the beach dune from disturbance from foot traffic.

Arthropod Control Plan

All DRP lands are designated as "environmentally sensitive and biologically highly productive" in accordance with Ch. 388 and Ch. 388.4111 Florida Statutes. If a local

mosquito control district proposes a treatment plan, the DRP works with the local mosquito control district to achieve consensus. By policy of DEP since 1987, aerial adulticiding is not allowed, but larviciding and ground adulticiding is typically allowed. The DRP does not authorize new physical alterations of marshes through ditching or water control structures. Mosquito control plans may be temporarily set aside under declared threats to public or animal health, or during a Governor's Emergency Proclamation.

Fort Pierce Inlet has an arthropod control plan that was developed in accordance with St. Lucie County Mosquito Control in 1987. The plan states that during the summer months the impoundments on Jack Island and Ft. Pierce Inlet will have rotational management. During this time culverts to the adjacent estuary will be closed and the impoundments will be flooded to the lowest possible level necessary to control mosquito breeding. This is done in conjunction with aerial larvicide application during the beginning of the spring and after the impoundments have been closed for a period of time.

Sea Level Rise

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

Land Management Review

Section 259.036, Florida Statutes, established land management review teams to determine whether conservation, preservation and recreation lands titled in the name of the Board of Trustees are being managed for the purposes for which they were acquired and in accordance with their approved land management plans. The DRP considered recommendations of the land management review team and updated this plan accordingly. Fort Pierce Inlet State Park was subject to a land management review on June 15, 2009. The review team made the following determinations:

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

Land Use Component

Land use planning and park development decisions for the state park system are based on the dual responsibilities of the DRP. These responsibilities are to preserve representative examples of original natural Florida and its cultural resources, and to provide outdoor recreation opportunities for Florida's citizens and visitors. These dual responsibilities inform all recreational and infrastructure development considerations. Balancing equitable access to recreational facilities and preservation of Florida's resources is the main priority when developing recreation and land use proposals.

The general planning and land use planning process begins with an analysis of the natural and cultural resources of the unit, proceeds through the creation of a conceptual land use plan, and culminates in the actual design and construction of park facilities. Input to the plan is provided by experts in environmental sciences, cultural resources, park operation, and management. Additional input is received through public meetings and advisory groups with key stakeholders. With this approach, the DRP's objective is to provide high-quality facilities 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 management plan includes an inventory and brief description of the existing recreational uses, facilities, and special conditions on use. Specific areas within the park that will be given special protection are also identified. The Land Use Component then summarizes the Conceptual Land Use Plan (CLUP) for the park and identifies large-scale repair and renovation projects, new building and infrastructure projects, and/or new recreational amenities that are recommended to be implemented over the next ten-year planning period. Any adjacent lands that should be acquired to improve management of the park are also identified as a part of the park's Optimum Boundary.

Assessment of Use

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

Past Uses

The most notable past use of the property was the location of the original Underwater Demolition Training facility of the U.S. Navy during World War II. Stylistic reference to this past use is made by the bunker-like design of some buildings in park. Park lands have served as a dredge spoil site and were modified for the purposes of mosquito control.

Future Land Use and Zoning

Future land use designation for the park is Conservation-Public (CPUB). This category is applied to federal, state, regional, or local conservation lands. No residential or commercial development is allowed other than that typically related to park service and security functions (St. Lucie County, 2016). Park lands are zoned Institutional (St. Lucie County, 2016). Existing land use and zoning designations are consistent with current and projected future uses of the park.

Florida Greenways and Trails System (FGTS)

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

The Florida Circumnavigational Saltwater Paddling Trail (CT) spans 1,515 miles along Florida's coast, from Pensacola to Fort Clinch State Park in northeastern Nassau County. Segment 21 of the CT, a 47.5 mile stretch from Fort Pierce Inlet State Park to Front Street Park in Melbourne, starts at the park and travels north along the Intracoastal Waterway. Restroom facilities, potable water, and a kayak launch can be accessed at the park.

The East Coast Greenway runs along North Causeway Drive and A1A adjacent to the park property (East Coast Greenway Alliance 2016). The Florida spine of the East Coast Greenways is 600 miles long. Segment 12 runs through St. Lucie County, which is being developed in coordination with the county as a part of their Bicycle, Pedestrian, Greenways and Trails Master Plan (St. Lucie County 2008).

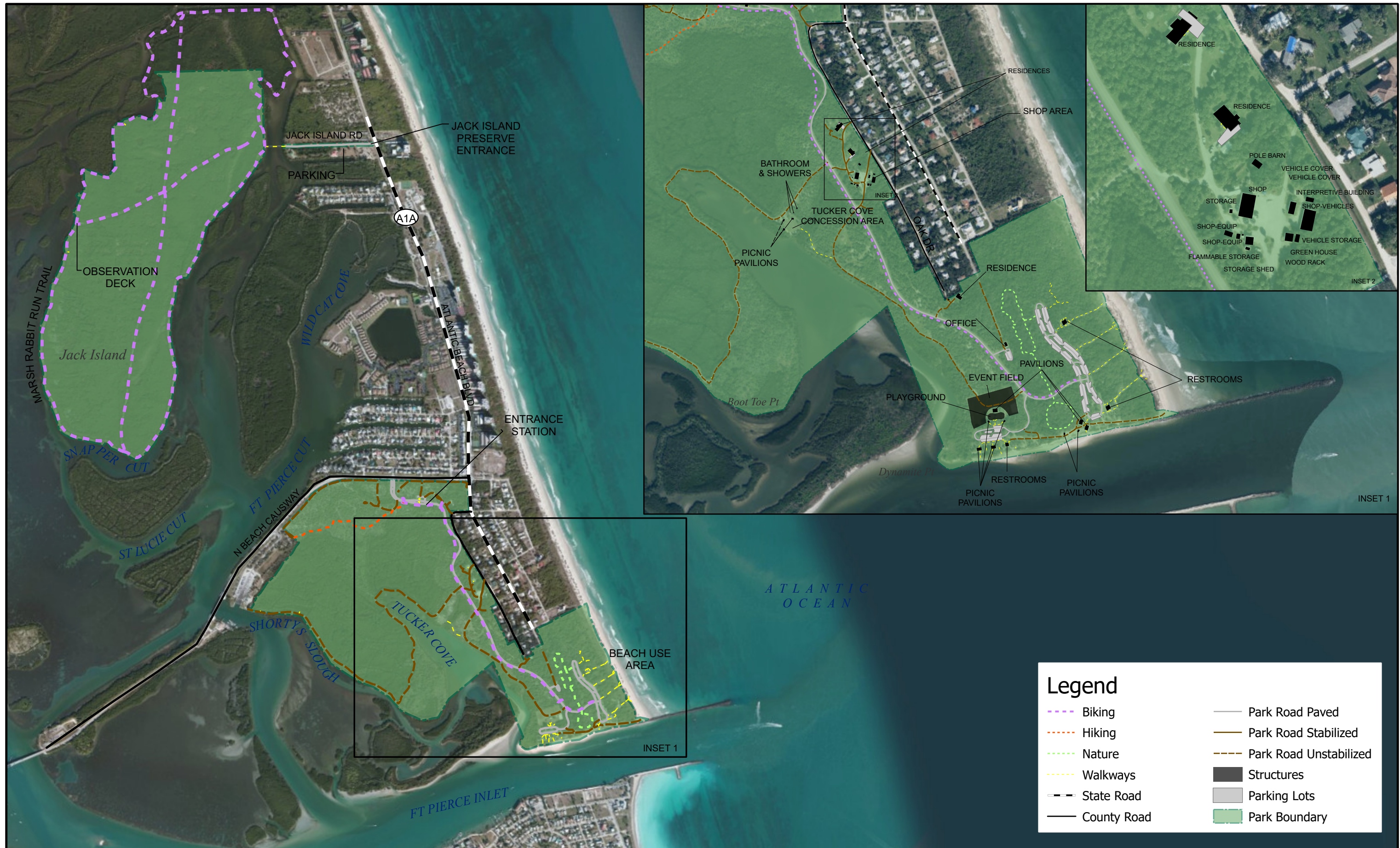
Current Recreational Use and Visitor Programs

Recreational activities at Fort Pierce Inlet State Park are dependent on the surrounding waters of the Indian River and Atlantic Ocean. Surfing and fishing are a major focus of recreational activity at the park. The beach is also popular for swimming, sunning and beachcombing. A high level of recreational boating occurs in park and adjacent waters, although motorized boats are not able to launch from within the park. Birding is popular along the park shorelines and the hammocks of the park. The park's picnic and playground facilities receive heavy use. Primitive camping is available for groups and several miles of trails provide opportunities for hiking, biking and nature study. The park offers a variety of personal interpretive and recreational programs that include guided walks, talks and all-day special events. Park staff also provide onsite Jr. Ranger programs and off-site educational programs for area schools. Additionally, the park also hosts annual surfing events.

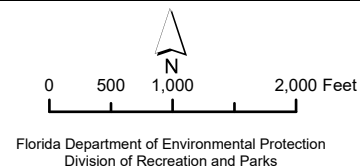
Fort Pierce Inlet State Park recorded 207,243 visitors in FY 2019/2020. By DRP estimates, the FY 2019/2020 visitors contributed \$18.7 million in direct economic impact, the equivalent of adding 262 jobs to the local economy (FDEP 2020).

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.



FORT PIERCE INLET STATE PARK



BASE MAP

Existing Facilities

Existing recreation facilities are located primarily on the Fort Pierce Inlet parcel. The beach use area provides multiple crushed shell walkways, picnic facilities, restrooms, showers and parking to support beach use. A nature trail allows controlled exploration of the adjacent maritime hammock. The picnic area contains a large playground, covered picnic shelters and restrooms along the inlet. The Tucker Cove Concession Area provides individuals and organized groups with a paddling launch area as well as a small picnic pavilion and scattered picnic tables.

Use areas are linked by a separate paved asphalt bicycle/pedestrian path along the park entrance road. Support facilities include an entrance station, assorted shop buildings, three residences and two administrative offices. The park is on central water with wastewater treated through onsite septic systems.

A small parking area and footbridge provide access to miles of hiking and off-road biking trails along the dikes of Jack Island. All existing facilities are in satisfactory condition. The following is a listing of recreation and support facilities at Fort Pierce Inlet State Park (see Base Map).

Recreation Facilities

Atlantic Beach Access

- Large Picnic Pavilion (2)
- Small Picnic Pavilion (2)
- Scattered Picnic Tables
- Crushed Shell Walkways (4)
- Bathhouses (2)
- Outdoor Showers
- Interpretive Panels
- Paved Parking (261 spots)

Inlet Picnic Area

- Large Picnic Pavilion (1)
- Medium Picnic Pavilion (2)
- Small Picnic Pavilion (2)
- Scattered Picnic Tables/Grills
- Playground
- Restroom/Outdoor Showers
- Paved Parking (50 spots)
- Event Field

Support Facilities

Residence/Shop Area

- Four-bay Shop (2)
- Shop Office
- Residence (3)
- Administrative Office
- Flammable Storage

Jack Island

- Observation Deck
- Interpretive Kiosk
- Foot Bridge
- Paved Parking

Tucker Cove – Concession Area

- Small Picnic Pavilion
- Paddling Launch
- Scattered Picnic Tables
- Paddling Launch
- Composting Restroom (1)
- Fire Ring
- Outdoor Shower

Trails

- Jack Island Shared-Use (6 miles)
- Coastal Hammock Nature Trail (0.5 miles)
- Paved shared use trail (1.2 miles)

Entrance Area

- Ranger Station
- Park Road
- Paved Parking

Conceptual Land Use Plan

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

During the development of the conceptual land use plan, the DRP assessed the potential impact of proposed uses or development on the park resources. Potential resource impacts are also identified and assessed as part of the site planning process once funding is available for facility development. At that stage, design elements and design constraints are investigated in greater detail. Municipal sewer connections, advanced wastewater treatment or best available technology systems are applied for on-site sewage disposal.

New impervious surfaces are minimized to the extent feasible in order to limit the need for stormwater management systems, and all facilities are designed and constructed using best management practices to limit and avoid resource impacts. Federal, state and local permit and regulatory requirements are addressed during facility development. This includes the design of all new park facilities consistent with the universal access requirements of the Americans with Disabilities Act (ADA). After new facilities are constructed, park staff monitors conditions to ensure that impacts remain within acceptable levels.

Public Access and Recreational Opportunities

Goal: Provide public access and recreational/interpretive opportunities.

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

Objective A: Maintain the park's current public access points and recreational uses.

The park will continue to provide opportunities for hiking, picnicking, interpretive tours, wildlife viewing, and beach access.

Objective B: Continue current interpretive programs.

Throughout the year, Fort Pierce Inlet offers many interpretive opportunities to visitors such as ranger led guided hikes along the beach and through the park's Coastal Hammock Trail, which provides an opportunity to learn about the plants and animals at the park.

Located in the main day use area is an interpretive panel on prescribed fire. The park has a history of using prescribed fire for resource management. Recreational clinics are offered to the community and provides lessons on fishing and surfing, one of the most popular clinics is the Wounded Warrior Surf Day for local veterans.

Objective C: Develop 2 new interpretive, educational and recreational programs.

The park plans on developing two new interpretive programs regarding the park's connection to World War II and the Navy, as a former WW II training site.

Within the next ten-year planning period, the park plans to develop interpretive panels regarding the importance of sea turtles and gopher tortoise. There will be expanded opportunities for kayaking and paddling tours that will focus on the park's unique natural communities found in Tucker Cove with collaboration from the park's concessionaire.

Capital Facilities and Infrastructure

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

Proposed improvements and new developments at Fort Pierce Inlet State Park are intended to enhance the park's capacity to provide public beach access and interpretation of maritime hammock, while also offering new recreational opportunities. Proposed new developments include exploring concessionaire opportunities for providing overnight accommodation and paddling access on Tucker Cove.

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

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

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

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

Objective B: Improve 6 existing use areas

Park Entrance

- Pave main park road
- Mitigate stormwater issues

The entrance of the park road needs repaving with improved stormwater drainage, as no current drainage system is in place. Portions of Shorewinds Drive, the main road along the park's entrance has been repaved to an elevated grade causing water to flow and stay into the park's entrance. This area floods frequently and soils remains wet for extended periods, causing asphalt to subside. Pavement should be regraded to a pitch that drains into

existing city stormwater conveyances. Any improvements for storm drainage should be done in agreement with local government.

Support Area

- Build New Residence

There is a need for one additional residence on park property. The proposed residence should be built off-grade, if necessary, and located in the support area in management zone FP-09. This developed area already supports two residences.

Multi-Use Pathway

- Repave Shared Use Trail (1.2 miles)
- Landscape Park Road Median

The shared-use bicycle/pedestrian path, extending one mile from the park entrance to Atlantic Beach Access Area, should be repaved as needed. Asphalt is fracturing and requires frequent patching. Potential connection with the future East Coast Greenway should be considered when repaving. The greenspace median between the multiuse pathway and the main park entrance road should be vegetated with native plants or trees to the area and park, such as saw palmetto, cabbage palm or the coco plum. This will add aesthetic appeal to the path and provide shade for visitors in the summer months when the asphalt tends to increase the temperature of the area.

Atlantic Beach Access Area

- Replace North & South Bathroom
- Improve Pedestrian Access

Currently, the north and south bathrooms are closed due to failing infrastructure. The two new bathrooms will be installed in the same footprint as the current ones. To alleviate the current issue of visitors walking in the traffic of the main parking lot, a plan for improved pedestrian access should be developed for the park.

Main Day Use Picnic Area

- Improve Landscaping
- Redesign picnic area
- Explore concession opportunities

A proposed complete redesign of the main day use picnic area will focus on the reintroduction of the native sea grape plant to the area. In order to maintain consistency, the same rope lined boardwalk and shell crushed pavement would lead from the other similar pavements to the main use area. The open space in this area should be revegetated with native grasses to help reduce erosion issues currently experienced. Up to four small covered picnic pavilions should be considered for the development in this area.

Due to its central location, there is potential for establishment of a new concession opportunity at the main day use area. The existing large pavilion could be converted to support either a food concessionaire or retail shop. This location has benefits that include an existing large structure, readily available electrical connections, and access to the central hub of activity at the park.



Inlet Picnic Area

- Redesign Picnic Area
- Explore concession opportunities

To maintain uniformity throughout the entire park, all pathways leading to any waterfront should mimic the design the current pathways throughout the park. The border will delineate proper walkway paths for visitors, prevent any further erosion, and protect the existing sea grape. Additionally, a redesign of the picnic areas is proposed.

If the new concession operations are not pursued at the main day use area, the open field behind the Inlet Picnic Area could be an alternative location for a concession opportunity to provide rentals or refreshments.

Objective C: Develop 1 new use area

Overnight Camping Area

- Develop overnight use camping area
- Explore concession opportunities

On the east shore of Tucker Cove, is an existing group camp area. This area would serve well as a low impact overnight camping area. Potential overnight opportunities could include up to glamping, tents or up to 4 raised platforms to be operated by the park's concessionaire. RV campgrounds or cabins will not be considered at this time.

A natural existing 10-foot-wide clearing along Tucker Cove would provide an ideal paddling launch area for paddlers traveling along the Florida Circumnavigational Saltwater Paddling Trail and for guests utilizing the overnight camping area. To prevent future erosion, the launch area should be stabilized with crushed shell.

Visitor Use Management

The DRP manages visitor use to sustain the quality of park resources and the visitor experience, consistent with the purposes of the park. The dynamic nature of visitor use requires a deliberate and adaptive approach to managing resource impacts from recreational activity.

To manage visitor use, the DRP will rely on a variety of management tools and strategies, potentially including modes of access and limits on the number of people within certain areas of the park. Achieving balance between resource protection and public access is fundamental to the provision of resource-based recreation and interpretation. The premise of a visitor use management strategy is to protect the park's significant natural and cultural resources. A strategy may include site-specific indicators and thresholds selected to monitor resource conditions and visitor experience. By monitoring conditions over time and clearly documenting when conditions become problematic, the DRP can implement actions to prevent unacceptable resource conditions.

Levels of visitation, patterns of recreational use, and varieties of available recreational activities are routinely monitored parkwide. Indicators have shown that this park is operating sustainably for its resources and offers high quality experiences for its visitors.

Resource indicators to be considered during the next planning period include:

- Erosion along trails through sensitive natural communities
- Trampling of dune vegetation and wildlife landward of the beach wrack line
- Deterioration of significant submerged resources along the park beach
- Erosion or disturbance of vegetation along the shoreline of Tucker Cove.

Quality of visitor experience indicators to be considered during the next ten-year planning period include:

- Congestion of day use areas by visitors at one time
- Insufficient visitor amenities to safely support the activities of a use area
- Obstruction of viewsheds through scenic areas of the park
- Interruption of serenity in areas intended for passive interpretive experience

Thresholds are defined as the minimally acceptable conditions for each indicator and represent the point at which resource impacts will require a change in management strategy or actions to improve resource conditions. Thresholds are assigned based on the desired resource conditions, the data on existing conditions, relevant research studies, management experience, and current visitor use patterns. It is important to note that identified thresholds still represent acceptable resource conditions and not degraded or impaired conditions. Management actions may also be taken prior to reaching the thresholds.

Specific thresholds for resource conditions and experiential quality have not yet been established for Fort Pierce Inlet State Park. As monitoring continues, collected data may be used to determine baseline and desired conditions, thereby establishing thresholds.

Resiliency Planning

Climate-related shocks and stressors present new challenges to the Florida Park Service mission of providing resource-based recreation while preserving, interpreting and restoring natural and cultural resources. Parks will adapt to climate threats with prescriptive strategies to minimize and manage the impacts of more severe storms and droughts, sea-level rise, invasive organisms, and other emerging environmental disturbances. Resilience strategies will be incorporated in all park plans and resource management decisions. Specific effects of sea-level rise at this park are not yet known, however, changes to the parks natural and landscapes are predictable.

Known flooding at the park occurs at the Main Day Use Area after a heavy rain fall or storm period. Future studies would need to be conducted in order to address the issue of flooding and how it may affect the future of the day use area and its current infrastructure, such as the restrooms and pavilions

Currently, the main day use area near the Atlantic Ocean and Intracoastal Waterway is the only known area to flood for an extended period. Further observations will be needed to access future flooding at the park and where their locations may be.

At this stage in resiliency planning process, no specific developments, renovations, landscape alterations, or augmentations are proposed.

Optimum Boundary

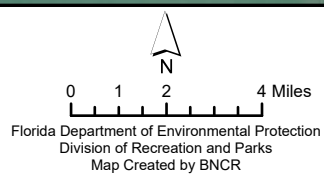
The optimum boundary map reflects lands considered desirable for direct management by the DRP as part of the state park. These parcels may include public or privately-owned land that would improve the continuity of existing parklands, provide the most efficient boundary configuration, improve access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

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

An area of land is considered for the optimum boundary for Fort Pierce Inlet State Park. Acquisition of the north end of Jack Island, approximately 60 acres, would provide resource management to the remainder of the island up to an existing private road.



FORT PIERCE INLET STATE PARK



OPTIMUM BOUNDARY MAP

Back of OB Map

IMPLEMENTATION COMPONENT

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

Resource Management

- Motor exclusion zone delineated for Tucker Cove
- Invasive plants reduced to maintenance status
- 90% of Australian Pine removed
- Boundary fence replaced parkwide

Cultural Resources

- Archaeological survey completed in 2013

Park Facilities

- Replaced wood beach access boardwalks with on-grade shell walkways
- Renovated restrooms at Inlet Picnic Area (Dynamite Point)
- Repaved parking lot for access to Jack Island
- Red Bay trail developed for nature walks
- Addition of two volunteer campsites
- New bridge Constructed to Jack Island

Park Administration and Operations

- UTV and ATV purchased for enhanced resource management capabilities
- Increased park volunteer base
- Installation of honor fee station at Jack Island

Recreation and Visitor Service

- Fort Pierce Outdoor concession services were established.
- New concessioner established in 2021

Acquisition

- Tucker Cove acquired and incorporated within the park property for improved protection of park seagrass.

Management Plan Implementation

This management plan is written for a timeframe of ten years, as required by Section 253.034 Florida Statutes. The Ten-Year Implementation Schedule and Cost Estimates (Table 8) summarizes the management goals, objectives and actions that are recommended for implementation over this period, and beyond. Measures are identified for assessing progress toward completing each objective and action. A time frame for completing each objective and action is provided. Preliminary cost estimates for each action are provided and the estimated total costs to complete each objective are computed. Finally, all costs are consolidated under the following five standard land management categories: Resource Management, Administration and Support, Capital Improvements, Recreation Visitor Services and Law Enforcement.

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

Statewide priorities for all aspects of land management are evaluated each year as part of the process for developing the DRP's annual legislative budget requests. When preparing these annual requests, the DRP considers the needs and priorities of the entire state park system and the projected availability of funding from all sources during the upcoming fiscal year. In addition to annual legislative appropriations, the DRP pursues supplemental sources of funds and staff resources wherever possible, including grants, volunteers and partnerships with other entities. The DRP's ability to accomplish the specific actions identified in the plan will be determined largely by the availability of funds and staff for these purposes, which may vary from year to year. Consequently, the target schedules and estimated costs identified in Table 8 may need to be adjusted during the ten-year management planning cycle

Table 6. Ten-Year Implementation Schedule and Cost Estimates				
Goal I: Provide administrative support for all park functions.		Measure	Planning Period	Estimated Cost
<u>Objective A</u>	Continue administrative support at current levels	Administrative support ongoing	C	\$514,000
Goal II: Protect water quality and quantity, restore hydrology, and maintain the restored condition.		Measure	Planning Period	Estimated Costs
<u>Objective A</u>	Conduct/obtain an assessment of the park's hydrological needs	# acres restored or within restoration underway	LT	\$80,000
Action 1	Conduct a hydrological assessment of the mangrove swamp communities within the mosquito impoundments	Plan Developed	UNF	\$80,000
<u>Objective B</u>	Monitor and analyze water resources at the park	# acres restored or with restoration underway	UNF	\$10,000
Action 1	Maintain communication with DEP Indian River Lagoon Aquatic Preserve staff to track recent water quality test results		UNF	\$5,000
Action 2	Park and district staff should continue to monitor land use activities that could affect park water		UNF	\$5,000

<u>Objective C</u>	Improve water quality and wildlife habitat within Tucker Cove	# of oysters recruited on substrate	UNF	\$60,000
Goal III: Restore and maintain natural communities/habitats		Measure	Planning Period	Estimated Costs
<u>Objective A</u>	Assess the need for fire within the spoil areas and burn on a as needed basis	# Acres within fire return interval target	LT	\$55,000
Action 1	Assess fuel buildup and condition of gopher tortoise habitat within spoil areas	Plan update	C	\$10,000
Action 2	Manage spoil areas with fire if it is deemed beneficial to reduce fuels and improve habitat for gopher tortoise			\$45,000
<u>Objective B</u>	Conduct habitat/community restoration activities on 105 acres of spoil area natural community	# acres restored or with restoration underway	LT	\$190,000
Action 1	Remove and maintain invasive exotic vegetation	Plan developed/updated	ST	\$140,000

Action 2	Reintroduce native maritime hammock vegetation	#Acres with restoration underway	LT	\$50,000
Goal IV: Maintain, improve or restore imperiled species populations and habitats		Measure	Planning Period	Estimated Cost
<u>Objective A</u>	Update baseline imperiled species occurrence inventory for plants and animals	List updated	C	\$8,000
<u>Objective B</u>	Monitor & document 5 selected imperiled animal species	# species for which control measures implemented	C	\$50,000
Action 1	Implement monitoring protocols for 5 imperiled animal species	# Protocols Developed	ST	\$10,000
Action 2	Implement monitoring protocols for 4 imperiled animal species	# Species monitored	C	\$40,000
<u>Objective C</u>	Monitor and document 1 selected imperiled plant species	# Species Monitored	C	\$6,000
Action 1	Develop monitoring protocols and surveys for 1 selected imperiled plant species	# Protocols developed	ST	\$3,000
Action 2	Implement monitoring and survey protocols for Johnson's seagrass	# Species Monitored	C	\$3,000
Goal V: Remove exotic and invasive plants and animals and conduct maintenance control		Measure	Planning Period	Estimated Costs
<u>Objective A</u>	Annually treat 50 acres of exotic plants species	# Acres treated	C	\$140,000
Action 1	Annually update exotic plant management work plan	Plan developed/updated	C	\$20,000

Action 2	Implement work plan by treating 50 acres	Plan implemented	C	\$120,000
Goal VI: Protect, preserve and maintain cultural resources		Measure	Planning Period	Estimated Costs
<u>Objective A</u>	Assess and evaluate 4 of 4 recorded cultural resources in the park	Documentation complete	LT	\$90,000
Action 1	Conduct Level 1 archaeological survey for priority identified by predictive model	Assessment conducted	LT	\$85,000
Action 2	Complete 4 Historic Structure Reports for historic building and cultural landscapes.	Reports and priority lists completed	LT	\$5,000
<u>Objective B</u>	Compile reliable documentation for all recorded historical and archaeological sites	Documentation complete	LT	\$81,2000
Action 1	Ensure all known sites are recorded or updated in the Florida Master Site File	# Sites recorded or updated	ST	\$1,200
Action 2	Record structures as they become historic	Sites recorded or updated	ST	\$50,000
<u>Objective C</u>	Bring 3 of 4 recorded cultural resources into good condition	# Sites in good condition	LT	\$25,000
Action 1	Design and implement regular monitoring programs for all 4 cultural resources	# Sites monitored	C	\$2,000
Action 2	Create and implement a cyclical maintenance program for 3 cultural resources	Programs implemented	C	\$23,000

Goal VII: Provide public access and recreational opportunities		Measure	Planning Period	Estimated Costs
<u>Objective A</u>	Maintain the park's current public access points and recreational uses	#Recreation/visitor	C	\$1,293,000
<u>Objective B</u>	Continue current interpretive programs	#Interpretive/education programs	ST	\$10,000
<u>Objective C</u>	Develop 2 new interpretive, educational, and recreational programs	#Interpretive/education programs	ST	\$10,000
Goal VIII: Develop and maintain the capital facilities		Measure	Planning Period	Estimated Costs
Objective A	Maintain all public and support facilities in the park	Facilities maintained	C	\$1,293,000
Objective B	Improve / repair 6 use areas and 1.2 miles of road	#Facilities/ Miles of Trails/Miles of Roads	LT	\$1,250,000
Objective C	Construct 1 new use area	#Facilities/ Miles of Trails/Miles of Roads	LT	\$1,300

Total Ten – Year Estimated Costs	
Administrative and Support	\$541,000
Resource Management	\$655,200
Recreational Visitor Services	\$1,313,000
Infrastructure Improvements	\$2,544,300
Total	\$5,053,500

Addendum 1—Acquisition History

Fort Pierce Inlet State Park Acquisition History

LAND ACQUISITION HISTORY REPORT	
Park Name	Fort Pierce Inlet State Park (Includes Jack Island)
Date Updated	2/17/2020
County	St. Lucie County, Florida
Trustees Lease Number	The Trustees lease number is 2742
Current Park Size	713.60 acres
Purpose of Acquisition	The Florida Board of Parks and Historical Memorials, on behalf of the State of Florida, acquired Fort Pierce Inlet State Park to use the property only for public park and recreation purposes.

Fort Pierce Inlet State Park Acquisition History

Acquisition History (include acquisition of a parcel or parcels with 10 acres or more)					
Parcel Name or Parcel DM-ID	Date Acquired	Initial Seller	Initial Purchaser	Size in acres	Instrument Type
DMID 11974	2/3/1965	The Trustees of the Internal Improvement Fund of State of Florida	Florida Board of Parks and Historic Memorials	564.252	Dedication
DMID 6939	8/10/1973	Gordon S. Nutt	State of Florida Board of Trustees of the Internal Improvement Trust Fund	349.029	Warranty Deed
DMID 4481	5/7/1964	City of Fort Pierce	State of Florida Board of Parks and Historic Memorials	121.64	Special Warranty Deed
DMID 11976	9/10/1963	Trustees of the Internal Improvement Fund of the State of Florida	Florida Board of Parks and Historic Memorials	55.66	Dedication

Addendum 2—Advisory Group Members and Report

Fort Pierce Inlet State Park Advisory Group Members and Report

Local Government

The Honorable Linda Hudson, Mayor
City of Ft. Pierce

The Honorable Cathy Townsed
Martin County Commission, District 5

Mark Lynch, Deputy Director
Martin County Parks & Recreation

Glenn Henderson, Director
St. Lucie County Mosquito Control

Ed Matthews, Director
St. Lucie County Parks and Recreation

Matt Baum, Assistant Director
St. Lucie County Parks and Recreation

Will Redden, Division Regional Manager
St. Lucie County Parks and Recreation

Partnering State Agencies
Jason O'Donoghue, Ph.D.
Division of Historical Resources

**Jason Love, State Lands
Management Coordinator**
Florida Forest Service

Richardo Zambrano, Biologist
Florida Fish & Wildlife Commission

Irene Arpayoglou, Manager
Indian River – Vero Beach to Ft. Pierce
Aquatic Preserve

Environmental Organizations

Gene Colwell
South Florida Water Management District

Ellen Lynch, President
St. Lucie Audubon Society

Philip Gates, Jr, Chair
St. Lucie County Soil & Water
Conservation District

Shari Anker, President
Conservation Alliance of St. Lucie County

Linda Smithe, Group Chair
Sierra Club, Loxahatchee Group

Park Management
Cassandra Meadows, Park Manager
Florida Park Service

Adjacent Landowners
Pastor Eddy Fredryk
Jean Casale, Volunteer

Mike Riodran, President
North Beach Association

Local Stakeholder Groups

Alex Hafner
Spunkys Surf Shop

Fort Pierce Inlet State Park Advisory Group Members and Report

The Advisory Group meeting to review the proposed unit management plan (UMP) for Fort Pierce Inlet State Park was held on virtually on June 3rd, 2021 from 9:00 AM to 12:00 PM.

Appointed members unable to attend include: The Honorable Linda Hudson, Mark Lynch, Glenn Henderson, Ed Matthews, Will Redden, Jason O'Donoughue, Jason Love, Irene Arpayoglou, Gene Colwell, Ellen Lynch, Philip Lynch, Jene Casale, Mike Riodran.

Attending Division of Recreation and Parks (DRP) staff members from the park, district Office and the Office of Park Planning: Yasmine Armaghani, Kevin Jones, Cassandra Meadows, Daniel Osbourne and Scott Tedford.

Ms. Armaghani began the meeting by explaining the purpose of the advisory group and thanking the advisory group members for their time and participation in the meeting. Ms. Armaghani then asked each member of the advisory group to express their comments on the draft management plan. After all the comments were shared, Ms. Armaghani described the next steps for drafting the plan and then the meeting was adjourned.

Summary of Advisory Group Comments

Alex Hafner (Spunky's Surf Shop) – Mr. Hafner asked about how the park plans to increase its connection with the local surfing community and how to bring more surfers into the park in general. Park Manager Cassandra Meadows responded by expressing the importance of the surfing community to the park. She continued by saying they hope to improve beach access when the condemned restrooms are replaced, which will allow more visitors to the park. Ms. Meadows also commented on the possibility of bringing back surfing competition and surfing camps.

Cathey Townsed (Martin County Commission) – Commissioner Townsed provided support for the plan.

Diane Goldberg (St. Lucie Audubon Society) – Ms. Goldberg began by addressing the Plant and Animals Species List noting that many of them have not been vouchered by the Florida Plant Atlas and asked if there is anyone who will be participating in future plant vouchering. District biologist, Scott Tedford, responded to Ms. Goldberg's question by noting that currently there is not anyone involved with plant vouchering and the park service relies on university researchers and individuals seeking permits for vouchering.

Additionally, Ms. Goldberg inquired about the plans for exotic removal at the park. She noted that the draft plan only proposes to treat 50 acres per year. Mr. Tedford responded to Ms. Goldberg's comment by saying that the 50 acres is a baseline for acres to be treated and often the park goes over its goal for yearly exotic removal.

Jackie Coleman (North Beach Association) – Ms. Coleman began by asking if this plan will be increasing park capacity. Ms. Meadows noted that park capacity is more than vehicles and it also depends on the resources at the park and being able to maintain their desired conditions. Mrs. Coleman also inquired about the concession opportunities at the park. Ms. Meadows responded that potential opportunities for the future include kayaking, paddle boarding, overnight accommodations and a food service vendor.

Fort Pierce Inlet State Park Advisory Group Members and Report

Linda Smithe (Sierra Club) – Ms. Smithe inquired about several resource management objectives in the plan. Regarding the plan for exotic removal, Ms. Smithe noted the length of time it would take to fully treat the entirety of the park considering that the plan proposes only 50 acres of exotics are to be treated annually. She asked about the process to determine areas of priority of exotics to be treated. Ms. Smithe also asked about possible reintroduction of any native plants or animals at the park.

Park Manager Cassandra Meadows responded by stating that the 50 acres is a baseline or minimum for removal, and the park does plan to reach the baseline and go above that number for exotic removal. District Biologist, Scott Tedford, responded to both questions adding that plans for exotic priority are a combination of giving priority to certain areas as well as keeping previously treated areas in continued maintenance condition. Regarding possible reintroduction. Mr. Tedford added that there would be a possibility of reintroducing the Southeastern Beach Mouse to the park based on recommendations from U.S Fish and Wildlife and FWC, but there is nothing specific in the plan regarding the reintroduction of the beach mouse at this time.

In addition to the resource management objectives, Ms. Smithe inquired about the proposed developments at the park including the multi-use path and considerations for providing shade along the trail and benches for rest. Ms. Meadows noted that there are current plans for the addition of benches, and Ms. Armaghani added the current draft plan includes language to add native vegetation that will also provide shade for visitors along the pathway. Regarding the park's multi-use pathway, Ms. Smithe also suggested the use of permeable pavement to mitigate any stormwater drainage issues.

Ms. Smithe also encouraged the use of additional interpretive panels throughout the park on various subjects such as the Navy Frogmen History and the impact of local stormwater run-off on the park. Adding to the development of interpretive programs, Ms. Smithe inquired about the possible location of those programs. Assistant Park Manager Daniel Osbourne responded that possible locations for the future interpretive programs include the park's half mile costal hammock trail and along the park's beach dune.

Matt Baum (St. Lucie County Parks and Recreation) – Mr. Baum inquired about any developments on Jack Island for this unit management plan. Ms. Armaghani responded to Mr. Baum saying that all the proposed developments for this plan are focused on the main area of the park. Park Manager Cassandra Meadows also added that any developments at Jack Island are more difficult due to the foot bridge to access to the island. Overall, Mr. Baum noted support for the plan and willingness to work with the Florida Park Service in the future.

Shari Anker (Conservation Alliance of St. Lucie County) – Ms. Anker began by suggesting the addition of language within the plan to acknowledge the efforts of the local community to get the property (Fort Pierce) designated as a state park. Regarding the proposed developments, Ms. Anker Inquired about alternative materials to be used instead of asphalt for the sidewalk paving and if there were other permeable options.

Ms. Anker also inquired about the reasoning behind introducing camping to the park and expressed concern that it may negatively affect sea turtles and nesting shorebirds. Ms. Meadows responded to Ms. Anker's concerns noting that the area chosen for the proposed

Fort Pierce Inlet State Park Advisory Group Members and Report

camping area is not anywhere near the beach or any other sensitive habitats. Additionally, Ms. Meadows stated that the reasoning to introduce overnight camping to the park is to give visitors additional resource-based recreational experiences. Mr. Osbourne also added that the park itself is along the Florida Circumnavigable Paddling Trail and the proposed camping area would be able to accommodate overnight opportunities for that user group.

Additionally, Ms. Anker asked about possible coordination with other agencies in the state to assist with the current changes to native flora and fauna. Mr. Tedford added that recently the Florida Oceanographic Society requested to monitor mangroves and the University of Florida have offered to help monitor native flora in relation to sea level change.

Summary of Written Comments from Advisory Group Members

Irene Arpayoglou was unable to attend the meeting but submitted editorial comments.

Mike Edwards, representing the Florida Forest Service, commented that the draft unit management plan was written well and comprehensive. Additionally, Mr. Edwards suggested more information to be added into the plan regarding resource protection such as the discussion of law enforcement, gates/signage, and boundary survey.

Summary of Written Public Comments

- No public comments were received

Staff Recommendations

The staff recommends approval of the proposed management plans for Fort Pierce Inlet State Park as presented, with the following significant changes:

- No additional changes were recommended to the draft plan

**Fort Pierce Inlet State Park
Advisory Group Members and Report**

Notes on Composition of the Advisory Group

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

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

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

Addendum 3—References Cited

**Fort Pierce Inlet State Park
References Cited**

- Engeman, Richard M., R. Erik Martin, Henry T. Smith, John Woolard, Carrie K. Crady, Bernice Constantin, Margo Stahl and N. Paige Groninger. 2006. "Impact on predation of sea turtle nests when predator control was removed midway through the nesting season." *Wildlife Research*, 2006, 33, 187–192.
- Florida Department of Environmental Protection. 2013. *Outdoor Recreation in Florida 2013*. Tallahassee, Florida.
- Florida Department of Environmental Protection. 2015. *Florida State Park System Economic Impact Assessment for Fiscal Year 2014/2015*. Tallahassee, FL.
- Florida Natural Areas Inventory. 2011. *FNAI - Element Tracking Summary of Rare, Threatened, and Endangered Plants and Animals and The Natural communities of Florida*. Florida Natural Areas Inventory. Tallahassee, FL.
- Smith, H.T. & Engeman, R.M. 2002. *An Extraordinary Raccoon Density at an Urban Park in Florida*. *Canadian Field Naturalist*, 116, 636–639.
- St. Lucie County. 2002. *St. Lucie County Comprehensive Plan*. St. Lucie County, Florida.
- Stancyk, S.E. 1982. *Non-human Predators of Sea Turtles and Their Control*. In *Biology and Conservation of Sea Turtles* (ed. K.A. Bjorndal), pp. 139–152. Smithsonian Institution Press, Washington, DC, USA.
- University of Florida, Bureau of Economic and Business Research (UFL BEBR). 2015. *Florida Population Studies 2015*.
- U.S. Department of Commerce, Bureau of Economic Analysis. 2014. 2014 *Personal Income Summary/Per Capital Personal Income*. <http://www.bea.gov/itable/>.
- U.S. Census Bureau. 2014. *State and County Quickfacts*. <http://quickfacts.census.gov/qfd/index.html>, 2014.
- Visit Florida! 2014. *2014 Florida Visitor Survey*. Tallahassee, Florida.

Addendum 4—Soil Descriptions

Fort Pierce Inlet State Park Soils Descriptions

(4) Arents, 0 – 5 % slopes. This soil is made up of a mixture of soil dug from several areas with different kinds of soils. It is used to fill low areas above their natural ground level. In most areas, the Arents soil is made up of loose sandy mineral material and if derived from marine sites can contain shell material. This soil is a variable mixture of lenses, streaks and pockets that occur in close proximity to each other. Arents have severe limitations for cultivated plants because of periodic wetness and low fertility.

(6) Arents, organic substratum. This soil is made up of a mixture of soil dug from several areas with different kinds of soils that have been spread over muck in marshes and mangrove swamps. The slope ranges from 0 – 2%. The Arents soil is made up of loose sandy mineral material and if derived from marine sites can contain shell material. This soil is a variable mixture of lenses, streaks and pockets that occur in close proximity to each other. The water table in the Arents soil is within a depth of 50 inches for most of the year. Arents have severe limitations for cultivated plants because of periodic wetness and low fertility.

(9) Beaches. Beaches consist of narrow strips of tide washed very rapidly permeable sand along the Atlantic Coast line. Beaches are frequently mixed by waves, with firm sand near the water and drier, looser sand farther back. The soil is made up of pale brown to light gray, uncoated quartz sand grains mixed with shell fragments.

(10) Canaveral Fine Sand, 0- 5 % slopes. This soil is moderately well drained to somewhat poorly drained and has a level to convex slope on low dune-like ridges. The surface layer typically is dark brown fine sand, which changes to pale brown to grayish sand with increasing depth. This soil has low water capacity and has little natural fertility.

(21) Lawnwood Sand. The sand is poorly drained and is nearly level (0 – 2% slope). The upper surface is about eight inches with black sand in the upper half and dark gray sand in the lower half. Sand particles get lighter in color as depth increases. This soil has very severe limitations for some plants because of wetness.

(35) Pompano Variant- Kaliga Variant Association. This soil is typical of very poorly drained areas in tidal mangrove swamps in the Indian River. Kaliga Variant soils are generally in the center of the swamps where organic material is thickest, and Pompano Variant soils are on the outer edges. The Pompano Variant soils make up about 65 % of the association and are covered over with about an inch of undecomposed leaves and twigs. Underneath the undecomposed materials are fine gray sands. The Kaliga Variant makes up about 25% of the association and is made up of muck with a depth of around 35 inches. Other soils make up the remaining 10%.

Addendum 5—Plant and Animal List

Fort Pierce Inlet State Park Plants

Primary Habitat

Codes

Common Name **Scientific Name**
(designated species)

FERNS

giant leather fern *Acrostichum danaeifolium* MAH
Boston fern *Nephrolepis exaltata*
golden polypody *Phlebodium aureum*
resurrection fern *Pleopeltis polypodioides*
var. *michauxiana*
shoestring fern *Vittaria lineata*

GYMNOSPERMS AND CYCADS

coontie *Zamia pumila*

MONOCOTS

southern sandbur *Cenchrus echinatus*
sandspur *Cenchrus tribuloides*
day flower *Commelina erecta*
beach star *Cyperus pedunculatu* BD
saltgrass *Distichlis spicata*
butterfly orchid *Encyclia tampensis* MAH
feather lovegrass *Eragrostis amabilis* *
shoalgrass *Halodule wrightii*
Johnson's seagrass *Halophila johnsonii* ESGB, MUS,
crested coralroot *Hexalectris spicata* MAH
spider lily *Hymenocallis latifolia*
cogon grass *Imperata cylindrica* *
beach grass *Panicum amarum*
white-top sedge *Rhynchospora colorata*
cabbage palm *Sabal palmetto*
saw palmetto *Serenoa repens*
greenbriar *Smilax auriculata*
smooth cord grass *Spartina alterniflora*
saltmeadow cordgrass *Spartina patens*
seashore dropseed grass.. *Sporobolus virginicus*
manatee grass *Syringodium filiforme*
turtlegrass *Thalassia testudinum*
common wild pine *Tillandsia fasciculata* MAH
ball moss *Tillandsia recurvata*
needle-leaved air plant *Tillandsia setacea*
Spanish moss *Tillandsia usneoides*

Fort Pierce Inlet State Park Plants

Primary Habitat

Codes

Common Name **Scientific Name**
(designated species)

giant wild pine *Tillandsia utriculata* MAH
sea oats *Uniola paniculata*
Spanish bayonet *Yucca aloifolia*

DICOTS

Bowstring hemp *Dracaena hyacinthoides* *
rosary pea *Abrus precatorius* *
chaff flower *Alternanthera flavescens*
common ragweed *Ambrosia artemisiifolia*
torchwood *Amyris elemifera*
marlberry *Ardisia escallonioides*
sandwort *Arenaria lanuginosa*
black mangrove *Avicennia germinans*
salt bush *Baccharis halimifolia*
water hyssop *Bacopa monnieri*
saltwort *Batis maritima*
Spanish needle *Bidens alba* var. *radiata*
sapphire *Blutaparon vermiculare*
sea oxeye *Borrichia frutescens*
blueheart *Buchnera americana*
gumbo limbo *Bursera simaruba*
gray nicker-bean *Caesalpinia bonduc*
southern sea rocket *Cakile lanceolata*
beautyberry *Callicarpa americana*
bay-bean *Canavalia rosea*
scrub hickory *Carya floridana*
Australian pine *Casuarina equisetifolia* *
sugarberry *Celtis laevigata*
partridge pea *Chamaecrista fasciculata*
sand dune spurge *Chamaesyce bombensis*
hairy spurge *Chamaesyce hirta*
graceful sandmat *Chamaesyce hypericifolia*
hyssopleaf sandmat *Chamaesyce hyssopifolia*
seaside spurge *Chamaesyce mesembryanthemifolia*
lamb's quarters *Chenopodium ambrosioides* *
snowberry *Chiococca alba*
cocoplum *Chrysobalanus icaco*
stinging nettle *Cnidoscolus stimulosus*
seagrape *Coccoloba uvifera*
buttonwood *Conocarpus erecta*

Fort Pierce Inlet State Park Plants

Primary Habitat

Codes

Common Name **Scientific Name**
(designated species)

dwarf horseweed	<i>Conyza canadensis</i> var. <i>pusilla</i>
tickseed.....	<i>Coreopsis leavenworthii</i>
rattle box	<i>Crotalaria pallida</i> *
rattlebox	<i>Crotalaria pumila</i>
croton	<i>Croton glandulosus</i> var. <i>glandulosus</i>
beach croton	<i>Croton punctatus</i>
coin vine.....	<i>Dalbergia ecastophyllum</i>
beggarweed	<i>Desmodium incanum</i>
buttonweed.....	<i>Diodia virginiana</i>
varnish leaf	<i>Dodonaea viscosa</i>
false daisy	<i>Eclipta prostrata</i>
fireweed	<i>Erechtites hieracifolia</i>
southern fleabane	<i>Erigeron quercifolius</i>
Baldwin's eryngo.....	<i>Eryngium baldwinii</i>
coral bean	<i>Erythrina herbacea</i>
white stopper	<i>Eugenia axillaris</i>
Spanish stopper	<i>Eugenia foetida</i>
dog fennel	<i>Eupatorium serotinum</i>
seaside gentian	<i>Eustoma exaltatum</i>
inkwood	<i>Exothea paniculata</i>
strangler fig	<i>Ficus aurea</i>
yellowtop	<i>Flaveria linearis</i>
Florida privet.....	<i>Foresteria segregata</i>
blanket flower	<i>Gaillardia pulchella</i> *
milk-pea	<i>Galactia volubilis</i>
bedstraw	<i>Galium hispidulum</i>
southern gaura.....	<i>Gaura angustifolia</i>
coastal muck vervain	<i>Glandularia maritima</i>
cudweed.....	<i>Gnaphalium falcatum</i>
rabbit tobacco	<i>Gnaphalium obtusifolium</i>
globe amaranth	<i>Gomphrena serrata</i> *
blolly	<i>Guapira discolor</i>
toothed habernaria.....	<i>Habenaria floribunda</i>
innocence.....	<i>Hedyotis procumbens</i>
beach sunflower.....	<i>Helianthus debilis</i> var. <i>debilis</i>
scorpion tail	<i>Heliotropium angiospermum</i>
seaside heliotrope	<i>Heliotropium curassavicum</i>
camphor weed.....	<i>Heterotheca subaxillaris</i>
water pennywort.....	<i>Hydrocotyle bonariensis</i>
moon-flower	<i>Ipomoea alba</i>
morning glory	<i>Ipomoea indica</i> var. <i>acuminata</i>

Fort Pierce Inlet State Park Plants

Primary Habitat

Codes

Common Name **Scientific Name**
(designated species)

railroad vine.....	<i>Ipomoea pes-caprae</i> ssp. <i>brasiliensis</i>	
amaranth, blood leaf	<i>Iresine canescens</i>	
beach elder	<i>Iva imbricata</i>	
jasminum	<i>Jasminum fluminense</i> *	
black ironwood.....	<i>Krugiodendron ferreum</i>	
wild lettuce	<i>Lactuca graminifolia</i>	
white mangrove	<i>Languncularia racemosa</i>	
wild lantana	<i>Lantana involucrata</i>	
peppergrass	<i>Lepidium virginicum</i>	
gopher apple	<i>Licania michauxii</i>	
sea lavender.....	<i>Limonium carolinianum</i>	
blue toadflax	<i>Linaria canadensis</i>	
bay lobelia.....	<i>Lobelia feayana</i>	
pineland lobelia.....	<i>Lobelia homophylla</i>	
Christmas berry.....	<i>Lycium carolinianum</i>	
marsh elder	<i>Melanthera nivea</i>	
creeping cucumber.....	<i>Melothria pendula</i>	
poorman's patch	<i>Mentzelia floridana</i>	
Florida Keys hempvine	<i>Mikania cordifolia</i>	
horsemint.....	<i>Monarda punctata</i>	
red mulberry	<i>Morus rubra</i>	
Simpson's stopper.....	<i>Myrcianthes fragrans</i>	MAH
wax myrtle	<i>Myrica cerifera</i>	
seaside evening primrose.	<i>Oenothera humifusa</i>	
prickly-pear cactus.....	<i>Opuntia stricta</i>	BD,SA
pellitory.....	<i>Parietaria floridana</i>	
virginia creeper	<i>Parthenocissus quinquefolia</i>	
corky-stemmed passionflower	<i>Passiflora suberosa</i>	
redbay	<i>Persea borbonia</i> var. <i>borbonia</i>	
creeping charlie	<i>Phyla nodiflora</i>	
drummond's leafflower	<i>Phyllanthus abnormis</i>	
ground cherries.....	<i>Physalis walteri</i>	
pokeweed.....	<i>Phytolacca americana</i>	
plantain.....	<i>Plantago major</i> *	
marsh fleabane	<i>Pluchea odorata</i>	
wild poinsettia	<i>Poinsettia cyathophora</i>	
milkwort.....	<i>Polygala grandiflora</i>	
rustweed	<i>Polypremum procumbens</i>	
guava	<i>Psidium guajava</i> *	
wild coffee	<i>Psychotria nervosa</i>	
mock bishopweed	<i>Ptilimnium capillaceum</i>	

Fort Pierce Inlet State Park Plants

Primary Habitat

Codes

Common Name..... **Scientific Name**
(designated species)

pokeweed.....	<i>Phytolacca pilosa</i>	
Chapman's oak.....	<i>Quercus chapmanii</i>	
live oak	<i>Quercus virginiana</i>	
white indigo-berry	<i>Randia aculeata</i>	
myrsine	<i>Rapanea punctata</i>	
red mangrove.....	<i>Rhizophora mangle</i>	
sumac	<i>Rhus copallina</i>	
castor bean	<i>Ricinus communis</i> *	
rougeberry	<i>Rivina humilis</i>	
water pimpernel.....	<i>Samolus ebracteatus</i>	
glasswort	<i>Salicornia bigelovii</i>	
glasswort	<i>Salicornia perennis</i>	
milkweed vine	<i>Funastrum clausum</i>	
inkberry	<i>Scaevola plumieri</i>	BD
umbrella tree	<i>Schefflera actinophylla</i> *	
Brazilian pepper	<i>Schinus terebinthifolius</i> *	
gulf graytwig.....	<i>Schoepfia chrysophylloides</i>	
sweet broom	<i>Scoparia dulcis</i>	
butterweed	<i>Senecio glabellus</i>	
sea purslane.....	<i>Sesuvium portulacastrum</i>	
broomweed	<i>Sida acuta</i>	
tough buckhorn.....	<i>Sideroxylon tenax</i>	
paradise tree.....	<i>Simarouba glauca</i>	
greenbrier	<i>Smilax auriculata</i>	
pinebarren goldenrod.....	<i>Solidago fistulosa</i>	
spiny-leaved thistle.....	<i>Sonchus asper</i> *	
necklace-pod.....	<i>Sophora tomentosa</i>	
pencil flower	<i>Stylosanthes hamata</i>	
sea blite	<i>Suaeda linearis</i>	
dandelion	<i>Taraxacum officinale</i> *	
poison ivy.....	<i>Toxicodendron radicans</i>	
forked blue curls	<i>Trichostema dichotomum</i>	
frostweed.....	<i>Verbesina virginica</i>	
vetch	<i>Vicia acutifolia</i>	
cow-pea	<i>Vigna luteola</i>	
simpleleaf chastetree	<i>Vitex trifolia</i> *	
Calusa grape	<i>Vitis shuttleworthii</i>	
wedelia	<i>Wedelia trilobata</i> *	
Hercules club	<i>Zanthoxylum clava-herculis</i>	
wild lime	<i>Zanthoxylum fagara</i>	MAH,CS

Fort Pierce Inlet State Park Plants

Primary Habitat

Codes

Common Name **Scientific Name**
(designated species)

SPONGES

Chicken liver sponge..... *Chondrilla nucula*
Red boring sponge.....*Cliona lampa*
Black ball sponge.....*Ircinia strobilina*
Stinker sponge..... *Ircinia felix*
Fire sponge..... *Tedania ignis*

COELENTERATES

Orange fan gorgonian *Lophogorgia hebes*
Colonial anemone..... *Palythoa caribaea*
Star coral *Siderastrea siderea*
Octocoral *Telesto riisei*

ECHINODERMS

Sea cucumber..... *Holothuroidea spp*
Florida sea cucumber *Isostichopus badionotus*
Variable sea urchin *Lytechinus variegatus*
Reef urchin..... *Echinometra viridis*
Rock urchin *Echinometra lucunter*
Pencil urchin *Eucidaris tribuloides*

ARTHROPODS

Mangrove tree crab.....*Aratus pisonii*
Blue land crab.....*Cardisoma guanhumi*
Cuban Stone Crab.....*Menippe nodifrons*
Porcelain Crab.....*Pachycheles monilifer*
Mottled Shore Crab.....*Pachygrapsus transversus*
Pistol shrimp *Synalpheus fritzmuelleri*
Fiddler crab *Uca*

Bivalves

Eastern oyster..... *Crassostrea virginica*

Fort Pierce Inlet State Park

Animals

Primary Habitat

Codes

Common Name **Scientific Name**
(designated species)

FISHES

Bonefish	<i>Albula vulpes</i>
Cuban anchovy	<i>Anchoa cubana</i>
Striped anchovy	<i>Anchoa hepsetus</i>
Bigeye anchovy	<i>Anchoa lamprotaenia</i>
Bay anchovy	<i>Anchoa mitchilli</i>
Longnose anchovy.....	<i>Anchoa nasuta</i>
Sheepshead	<i>Archosargus probatocephalus</i>
Silver perch.....	<i>Bairdiella chrysoura</i>
Yellowfin menhaden.....	<i>Brevoortia smithi</i>
Common snook.....	<i>Centropomus undecimalis</i>
Spotted seatrout	<i>Cynoscion nebulosus</i>
Pompano	<i>Diapterus olisthostomus</i>
Ladyfish	<i>Elops saurus</i>
Spotfin mojarra	<i>Eucinostomus argenteus</i>
Silver jenny	<i>Eucinostomus gula</i>
Gulf killifish.....	<i>Fundulus grandis</i>
Longnose killifish	<i>Fundulus similis</i>
Code goby	<i>Gobiosoma robustum</i>
Sailors choice	<i>Haemulon parrai</i>
Scaled sardine.....	<i>Harengula pensacolae</i>
Pinfish	<i>Lagodon rhomboides</i>
Spot	<i>Leiostomus xanthurus</i>
Mutton snapper	<i>Lutjanus analis</i>
Gray snapper.....	<i>Lutjanus griseus</i>
Lane snapper.....	<i>Lutjanus synagris</i>
Rough silverside.....	<i>Membras martinica</i>
Inland silverside	<i>Menidia beryllina</i>
Planehead filefish.....	<i>Monacanthus hispidus</i>
White mullet	<i>Mugil curema</i>
Striped mullet	<i>Mugil cephalus</i>
Atlantic thread herring	<i>Opisthonema oglinum</i>
Pigfish	<i>Orthopristis chrysoptera</i>
Sardine.....	<i>Sardinella anchovia</i>
Great barracuda	<i>Sphyraena barracuda</i>
Tumucu	<i>Strongylura timucu</i>
Chain pipefish	<i>Syngnathus louisianae</i>

Fort Pierce Inlet State Park

Animals

Codes	Primary Habitat
Common Name (designated species)	Scientific Name

Permit *Trachinotus falcatus*

Amphibians

Southern toad	<i>Bufo terrestris</i>
Green treefrog	<i>Hyla cinerea</i>
Squirrel treefrog	<i>Hyla squirella</i>
Cuban treefrog	<i>Osteopilus septentrionalis</i> *

Turtles and Tortoises

Green Turtle	<i>Chelonia mydas</i>	MSGB,MUS,MSPB
Loggerhead	<i>Caretta caretta</i>	MSGB,MUS,MSPB
Leatherback	<i>Dermochelys coriacea</i>	MSGB,MUS,MSPB
Gopher Tortoise	<i>Gopherus polyphemus</i>	SA,MAH,CS
Florida East Coast Terrapin	<i>Malaclemys terrapin</i> teques	
Florida Box Turtle.....	<i>Terrapene carolina bauri</i>	

Lizards

green anole	<i>Anolis carolinensis</i>
Cuban knight anole.....	<i>Anolis equestris equestris</i>
brown anole.....	<i>Anolis segrei</i> *
six-lined racerunner	<i>Cnemidophorus sexlineatus</i>
Southeastern five-lined skink.....	<i>Eumeces inexpectatus</i>
ground skink	<i>Scincella lateralis</i>

Snakes

Southern Black Racer	<i>Coluber constrictor priapus</i>
Southern Ring-necked Snake	<i>Diadophis punctatus punctatus</i>
Red Rat Snake.....	<i>Elaphe guttata guttata</i>
Scarlet kingsnake.....	<i>Lampropeltis triangulum</i>
Eastern Coachwhip.....	<i>Masticophis flagellum flagellum</i>
Eastern coral snake.....	<i>Micrurus fulvus</i>
Rough Green Snake.....	<i>Opheodrys aestivus</i>
Dusky Pigmy Rattlesnake.	<i>Sistrurus miliarius barbouri</i>
Eastern Garter Snake	<i>Thamnophis sirtalis sirtalis</i>

Fort Pierce Inlet State Park

Animals

Primary Habitat

Codes

Common Name **Scientific Name**
(designated species)

BIRDS

Common Loon	Gavia immer	
Red-throated Loon	Gavia stellata	
Pied-billed Grebe.....	Podilymbus podiceps	
Brown Pelican	Pelecanus occidentalis.....	MUS,BD,OF,MS
Brown Booby.....	Sula leucogaster	
Northern Gannet	Morus bassanus	
Double-crested Cormorant	Phalacrocorax auritus	
Anhinga.....	Anhinga anhinga	
Magnificent Frigatebird ...	Fregata magnificens	
Great Blue Heron.....	Ardea herodias	
Green Heron.....	Butorides virescens	
Little Blue Heron	Egretta caerulea	MUS,BD,OF,MS
Tricolored Heron	Egretta tricolor	MUS,BD,OF,MS
Yellow-crowned Night Heron.....	Nyctanassa violacea	
Black-crowned Night Heron.....	Nycticorax nycticorax	
Cattle Egret	Bubulcus ibis	
Reddish Egret.....	Egretta rufescens	MUS,BD,OF,MS
Great Egret.....	Ardea alba	
Snowy Egret.....	Egretta thula	MUS,BD,OF,MS
Wood Stork	Mycteria americana	MUS,BD,OF,MS
White Ibis	Eudocimus albus.....	MTC
Roseate Spoonbill.....	Ajaia ajaja	MUS,BD,OF,MS
Mottled Duck	Anas fulvigula	
Pintail.....	Anas acuta	
Blue-winged Teal	Anas discors	
Mallard	Anas platyrhynchos	
Black Duck	Anas rubripes	
American Wigeon	Anas americana	
Gadwall	Anas strepera	
Wood Duck.....	Aix sponsa	
Ring-necked Duck	Aythya collaris	
Lesser Scaup	Aythya affinis	
Red-breasted Merganser ..	Mergus serrator	
Turkey Vulture	Coragyps atratus	
Red-shouldered Hawk	Buteo lineatus	
Red-tailed Hawk.....	Buteo jamaicensis	

Fort Pierce Inlet State Park

Animals

Codes		Primary Habitat
Common Name	Scientific Name	
(designated species)		
Northern Harrier	Circus cyaneus	
Osprey.....	Pandion haliaetus	MUS,CS,BD,OF
Merlin.....	Falco columbarius	
American Kestrel.....	Falco sparverius	
Screech Owl	Bubo virginianus	
Barred Owl	Strix varia	
American Oystercatcher ...	Haematopus palliatus	BD,OF,MUS
Semipalmated Plover	Charadrius semipalmatus	
Wilson's Plover.....	Charadrius wilsonia	BD,OF
Black-bellied Plover	Pluvialis squatarola	
Ruddy Turnstone	Arenaria interpres	
Killdeer.....	Charadrius vociferus	
Spotted Sandpiper.....	Actitis macularia	
Willet	Catoptrophorus semipalmatus	
Greater Yellowlegs	Tringa melanoleuca	
Lesser Yellowlegs.....	Tringa flavipes	
Least Sandpiper	Calidris minutilla	
Red Knot	Calidris canutus	OF,BD,MUS
Dunlin	Calidris alpina	
Short-billed Dowitcher	Limnodromus griseus	
Western Sandpiper.....	Calidris mauri	
Sanderling.....	Calidris alba	
Black-necked Stilt	Himantopus mexicanus	
Clapper Rail.....	Rallus longirostris	
Sora	Porzana carolina	
American Coot.....	Fulica americana	
Greater Black-backed Gull	Larus marinus	
Herring Gull.....	Larus argentatus	
Ring-billed Gull	Larus delawarensis	
Laughing Gull	Larus atricilla	
Forster's Tern.....	Sterna forsteri	
Least Tern	Sterna antillarum	OF,BD,MUS
Royal Tern.....	Sterna maxima	
Sandwich Tern	Sterna sandvicensis	
Black Skimmer	Rynchops niger	OF,BD,MUS
Mourning Dove	Zenaida macroura	
Ground Dove	Columbina passerina	
Tree Swallow.....	Iridoprocne bicolor	

Fort Pierce Inlet State Park

Animals

Codes		Primary Habitat
Common Name	Scientific Name	
(designated species)		
Barn Swallow	Hirundo rustica	
Purple Martin	Progne subis	
Chimney Swift	Chaetura pelagica	
Belted Kingfisher.....	Megasceryle alcyon	
Common Flicker	Colaptes auratus	
Pileated Woodpecker	Dryocopus pileatus	
Red-bellied Woodpecker ..	Centurus carolinus	
Hairy Woodpecker	Picoides villosus	
Downy Woodpecker	Dendrocopus pubescens	
Yellow-bellied Sapsucker .	Sphyrapicus varius	
Eastern Kingbird	Tyrannus tyrannus	
Great Crested Flycatcher ..	Myiarchus crinitus	
Eastern Phoebe	Sayornis phoebe	
Blue Jay	Cyanocitta cristata	
Fish Crow	Corvus ossifragus	
Yellow-billed Cuckoo	Coccyzus americanus	
House Wren.....	Troglodytes aedon	
Carolina Wren	Thryothorus ludovicianus	
Mockingbird	Mimus polyglottos	
Gray Catbird	Dumetella carolinensis	
Brown Thrasher	Toxostoma rufum	
American Robin	Turdus migratorius	
Chuck-Will's Widow.....	Caprimulgus carolinensis	
Whip-poor-will	Caprimulgus vociferus	
Common Nighthawk	Chordeiles minor	
Blue-gray Gnatcatcher	Polioptila caerulea	
White-eyed Vireo	Vireo griseus	
Black-and-white Warbler .	Mniotilta varia	
Northern Parula	Parula americana	
Yellow-rumped Warbler ...	Dendroica coronata	
Prairie Warbler.....	Dendroica discolor	
Yellow-throated Warbler..	Dendroica dominica	
Pine Warbler	Dendroica pinus	
Palm Warbler	Dendroica palmarum	
Common Yellowthroat.....	Geothlypis trichas	
American Redstart	Setophaya ruticilla	
Red-winged Blackbird	Agelaius phoeniceus	
Common Grackle	Quiscalus quiscula	

Fort Pierce Inlet State Park

Animals

Codes	Primary Habitat
Common Name	Scientific Name
(designated species)	

Summer Tanager.....	Piranga rubra
Cardinal.....	Cardinalis cardinalis
Savannah Sparrow	Passerculus sandwichensis
Song Sparrow.....	Melospiza melodia
Loggerhead Shrike	Lanius ludovicianus
Bobwhite Quail.....	Colinus virginianus

MAMMALS

Coyote.....	Canis latrans
Nine-Banded Armadillo.....	Dasypus novemcinctus*
Opossum.....	Didelphis marsupialis
Domestic Cat.....	Felix catus*
River Otter.....	Lontra canadensis
Bobcat.....	Lynx rufus
CottonMouse.....	Peromyscus gossypinus
Raccoon.....	Procyon lotor
Eastern Mole	Scalopus aquaticus
Eastern Gray Squirrel.....	Sciurus carolinensis
Hispid Cotton Rat.....	Sigmodon hispidus
Eastern spotted skunk.....	Spilogale putorius
Eastern Cottontail.....	Sylvilagus floridanus
Marsh Rabbit	Sylvilagus palustris
West Indian Manatee.....	Trichechus manatus.....MUS,MSG
Atlantic Bottlenose Dolphin.....	Tursiops truncatus
Gray Fox	Urocyon cinereoargenteus

Fort Pierce Inlet State Park Animals

Primary

Habitat Codes

Common Name Scientific Name (for imperiled species)

TERRESTRIAL

Beach Dune BD
Coastal Berm CB
Coastal Grassland CG
Coastal Strand CS
Dry Prairie DP
Keys Cactus Barren..... KCB
Limestone Outcrop LO
Maritime Hammock..... MAH
Mesic Flatwoods MF
Mesic Hammock..... MEH
Pine Rockland PR
Rockland Hammock RH
Sandhill SH
Scrub SC
Scrubby Flatwoods SCF
Shell Mound..... SHM
Sinkhole SK
Slope Forest SPF
Upland Glade UG
Upland Hardwood Forest .. UHF
Upland Mixed Woodland ... UMW
Upland Pine UP
Wet Flatwoods..... WF
Xeric Hammock..... XH

PALUSTRINE

Alluvial Forest AF
Basin Marsh BM
Basin Swamp BS
Baygall BG
Bottomland Forest..... BF
Coastal Interdunal Swale . CIS
Depression Marsh DM
Dome Swamp DS
Floodplain Marsh FM
Floodplain Swamp FS
Glades Marsh GM
Hydric Hammock HH
Keys Tidal Rock Barren..... KTRB

Mangrove Swamp..... MS
Marl Prairie MP
Salt Marsh SAM
Seepage Slope..... SSL
Shrub Bog SHB
Slough..... SLO
Slough Marsh SLM
Strand Swamp..... STS
Wet Prairie WP

LACUSTRINE

Clastic Upland Lake CULK
Coastal Dune Lake..... CDLK
Coastal Rockland Lake CRLK
Flatwoods/Prairie FPLK
Marsh Lake..... MLK
River Floodplain Lake RFLK
Sandhill Upland Lake..... SULK
Sinkhole Lake..... SKLK
Swamp Lake
SWLK

RIVERINE

Alluvial Stream..... AST
Blackwater Stream..... BST
Seepage Stream SST
Spring-run Stream SRST

SUBTERRANEAN

Aquatic Cave ACV
Terrestrial Cave..... TCV

ESTUARINE

Algal Bed..... EAB
Composite Substrate ECPS
Consolidated Substrate ECNS
Coral Reef ECR
Mollusk Reef..... EMR
Octocoral Bed..... EOB
Seagrass Bed..... ESGB

Fort Pierce Inlet State Park Animals

Primary

Habitat Codes

Common Name Scientific Name (for imperiled species)

Sponge Bed ESPB

Unconsolidated Substrate. EUS

Worm Reef EWR

MARINE

Algal Bed MAB

Composite Substrate

MCPS

Consolidated Substrate

MCNS

Coral Reef MCR

Mollusk Reef MMR

Octocoral Bed MOB

Seagrass Bed

MSGB

Sponge Bed

MSPB

Unconsolidated Substrate. MUS

Worm Reef MWR

ALTERED LANDCOVER TYPES

Abandoned field ABF

Abandoned pasture ABP

Agriculture AG

Canal/ditch CD

Clearcut pine plantation ... CPP

Clearing CL

Developed DV

Impoundment/artificial pond.....

Invasive exotic monoculture

Pasture - improved..... PI

Pasture - semi-improved.. PSI

Pine plantation PP

Road..... RD

Spoil area SA

Successional hardwood forest.....

Utility corridor..... UC

MISCELLANEOUS

Many Types of Communities.....

Overflying OF

Addendum 6—Imperiled Species Ranking Definitions

Imperiled Species Ranking Definitions

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

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

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

FNAI GLOBAL RANK DEFINITIONS

- G1Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or fabricated factor.
- G2Imperiled 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.
- G3Either very rare or local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction of other factors.
- G4apparently secure globally (may be rare in parts of range)
- G5demonstrably secure globally
- GH.....of historical occurrence throughout its range may be rediscovered (e.g., ivory-billed woodpecker)
- GX.....believed to be extinct throughout range
- GXCextirpated 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

Imperiled Species Ranking Definitions

- to the specific subgroup; numbers have same definition as above (e.g., G3T1)
- G#Qrank 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.
- GUdue to lack of information, no rank or range can be assigned (e.g., GUT2).
- G?Not yet ranked (temporary)
- S1Critically 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.
- S2Imperiled 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.
- S3Either very rare or local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction of other factors.
- S4apparently secure in Florida (may be rare in parts of range)
- S5demonstrably secure in Florida
- SHof historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker)
- SXbelieved to be extinct throughout range
- SAaccidental in Florida, i.e., not part of the established biota
- SEan exotic species established in Florida may be native elsewhere in North America
- SNregularly occurring but widely and unreliably distributed; sites for conservation hard to determine
- SUdue to lack of information, no rank or range can be assigned (e.g., SUT2).
- S?.....Not yet ranked (temporary)
- NNot currently listed, nor currently being considered for listing, by state or federal agencies.

Imperiled Species Ranking Definitions

LEGAL STATUS

FEDERAL

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

- LE..... Listed as Endangered Species in the List of Endangered and Threatened Wildlife and Plants under the provisions of the Endangered Species Act. Defined as any species that is in danger of extinction throughout all or a significant portion of its range.
- PE..... Proposed for addition to the List of Endangered and Threatened Wildlife and Plants as Endangered Species.
- LT..... Listed as Threatened Species. Defined as any species that is likely to become an endangered species within the near future throughout all or a significant portion of its range.
- PT..... Proposed for listing as Threatened Species.
- C Candidate Species for addition to the list of Endangered and Threatened Wildlife and Plants. Defined as those species for which the USFWS currently has on file sufficient information on biological vulnerability and threats to support proposing to list the species as endangered or threatened.
- E(S/A)..... Endangered due to similarity of appearance.
- T(S/A)..... Threatened due to similarity of appearance.
- EXPE, XE..... Experimental essential population. A species listed as experimental and essential.
- EXPN, XN.... Experimental non-essential population. A species listed as experimental and non-essential. Experimental, nonessential populations of endangered species are treated as threatened species on public land, for consultation purposes.

STATE

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

- FE..... Federally-designated Endangered
- FT..... Federally-designated Threatened
- FXN Federally-designated Threatened Nonessential Experimental Population
- FT(S/A) Federally-designated Threatened species due to similarity of appearance

Imperiled Species Ranking Definitions

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

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

- LE..... Listed as Endangered Plants in the Preservation of Native Flora of Florida Act. Defined as species of plants native to the state that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue, and includes all species determined to be endangered or threatened pursuant to the Federal Endangered Species Act of 1973, as amended.
- LT..... Listed as Threatened Plants in the Preservation of Native Flora of Florida Act. Defined as species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in such number as to cause them to be endangered.

Addendum 7—Cultural Information

Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties (revised March 2013)

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

A. General Discussion

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

B. Agency Responsibilities

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

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

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

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

C. Statutory Authority

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

D. Management Implementation

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

Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties (revised March 2013)

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

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

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

E. Minimum Review Documentation Requirements

In order to have a proposed project reviewed by the Division, certain information must be submitted for comments and recommendations. The minimum review documentation requirements can be found at:

http://www.flheritage.com/preservation/compliance/docs/minimum_review_documentation_requirements.pdf .

* * *

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

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

StateLandsCompliance@dos.my.florida.com

Phone: (850) 245-6333
Toll Free: (800) 847-7278
Fax: (850) 245-6435

Eligibility Criteria for National Register of Historic Places

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

- 1)** Districts, sites, buildings, structures, and objects may be considered to have significance in American history, architecture, archaeology, engineering, and/or culture if they possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
 - a)** are associated with events that have made a significant contribution to the broad patterns of our history; and/or
 - b)** are associated with the lives of persons significant in our past; and/or
 - c)** embody the distinctive characteristics of type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; and/or
 - d)** have yielded, or may be likely to yield, information important in prehistory or history.

- 2)** Ordinarily cemeteries, birthplaces, or graves of historical figures; properties owned by religious institutions or used for religious purposes; structures that have been moved from their original locations; reconstructed historic buildings; properties primarily commemorative in nature; and properties that have achieved significance within the past 50 years shall not be considered eligible for the *National Register*. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:
 - a)** a religious property deriving its primary significance from architectural or artistic distinction or historical importance; or
 - b)** a building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or
 - c)** a birthplace or grave of an historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life; or
 - d)** a cemetery which derives its primary significance from graves of persons of transcendent importance, from age, distinctive design features, or association with historic events; or a reconstructed building, when it is accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and no other building or structure with the same association has survived; or a property primarily commemorative in intent, if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or
 - e)** a property achieving significance within the past 50 years, if it is of exceptional importance.

Preservation Treatments as Defined by Secretary of Interior's Standards and Guidelines

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

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

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

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

Addendum 8—Local Government Comprehensive Plan Compliance

From: [Benjamin Balcer](#)
To: [Armaghani, Yasmine](#)
Subject: RE: Fort Pierce Inlet State Park - Request to Review Park Unit Management Plan RE Co. Comprehensive Plan Compliance
Date: Friday, August 6, 2021 1:56:13 PM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)

Yasmine,

Thank you for speaking with me yesterday. I apologize for the delay my response. The Fort Pierce Inlet State Park management plan accurately citing the FLU and zoning designations. The Plan does cite 2016 as the date of the Comp Plan, but the most recent version was adopted in 2018. The proposed conceptual land use section, as well as the existing facilities section comply with the CPUB Future Land Use and Institutional zoning designation.

Please let me know if you need anything else.

Enjoy the weekend.

Benjamin Balcer, AICP | Assistant Director | Planning & Development Services

Ph: 772-462-1589 | Cell: 772-979-1908 | 2300 Virginia Ave. Fort Pierce 34982

facebook.com/stluciegov | twitter.com/stluciegov | instagram.com/stluciegov | youtube.com/stluciegov



From: Degagne, Demi <Demi.Degagne@dep.state.fl.us>

Sent: Friday, July 9, 2021 2:30 PM

To: Leslie Olson <OlsonL@stlucieco.org>; Benjamin Balcer <BalcerB@stlucieco.org>

Cc: Armaghani, Yasmine <Yasmine.Armaghani@dep.state.fl.us>

Subject: Fort Pierce Inlet State Park - Request to Review Park Unit Management Plan RE Co. Comprehensive Plan Compliance

Importance: High

SECURITY WARNING: This email originated from outside the County systems. Please show caution when clicking links or opening attachments unless you recognize the sender and know the content is safe.

Good Afternoon,

The Florida Department of Environmental Protection, Division of Recreation and Parks, Office of Park Planning is responsible for the unit management planning of all Florida State Parks. As part of this planning process, prior to the unit management plan being presented to its Acquisition and Restoration Council for consideration, the Office of Park Planning is now required to connect and

communicate with the area's agency that is responsible for the local comprehensive plan to determine if the park unit management plan is in compliance with the comprehensive plan. Specifically, we want to make sure we are accurately citing the future land use and zoning designations for the park and would like to confirm that our proposed developments in the conceptual land use section comply with those designations. The existing facilities section will also need to be reviewed.

We would like to have the **Fort Pierce Inlet State Park's** unit management plan reviewed. The document can be found at the following link: <https://floridadep.gov/parks/parks-office-park-planning/documents/fort-pierce-inlet-state-park-arc-draft-ump>.

If you need any clarification regarding the unit management plan or its contents, please contact Yasmine Armaghani at yasmine.armaghani@floridadep.gov or 850.245.3066. Ms. Armaghani, who has been copied with this communication, is the Planner assigned to handle this park's management planning and will be able to answer any questions regarding the plan.

Thank you, in advance, for your help and time.

Have a good rest of the day!



Demi P. Degagne

Florida Department of Environmental Protection
Division of Recreation and Parks/Office of Park Planning
Government Operations Consultant and
Park Planning Administrative Assistant

Demi.Degagne@floridadep.gov

Office: 850.245.3051

Direct: 850.245.3052

Please Note: Florida has very broad public records laws. Most written communications to or from County officials regarding County business are public records available to the public and media upon request. It is the policy of St. Lucie County that all County records shall be open for personal inspection, examination and / or copying. Your e-mail communications will be subject to public disclosure unless an exemption applies to the communication. If you received this email in error, please notify the sender by reply e-mail and delete all materials from all computers.

Local Government Comprehensive Plan Compliance
