SEBASTIAN INLET STATE PARK

Unit Management Plan

APPROVED

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Division of Recreation and Parks
DECEMBER 12, 2008

TABLE OF CONTENTS

LAND USE COMPONENT

TABLE

LIST OF ADDENDA

ADDENDUM 3

ADDENDUM 4

ADDENDUM 5

ADDENDUM 6

ADDENDUM 7

MAPS

INTRODUCTION

Sebastian Inlet State Park is located in Brevard and Indian River counties (see Vicinity Map) on a barrier island between the Atlantic Ocean and the Indian River Lagoon. Access to the park is from State Road A1A, 12 miles north of Vero Beach or 18 miles south of Melbourne (see Reference Map).

Acquisition of the park began in 1966, with a donation from Robert P. McLarty and Dodo W. McLarty. The State of Florida acquired Sebastian Inlet State Park to protect, develop, operate and maintain the property for public outdoor recreational, park, conservation, historic and related purposes.

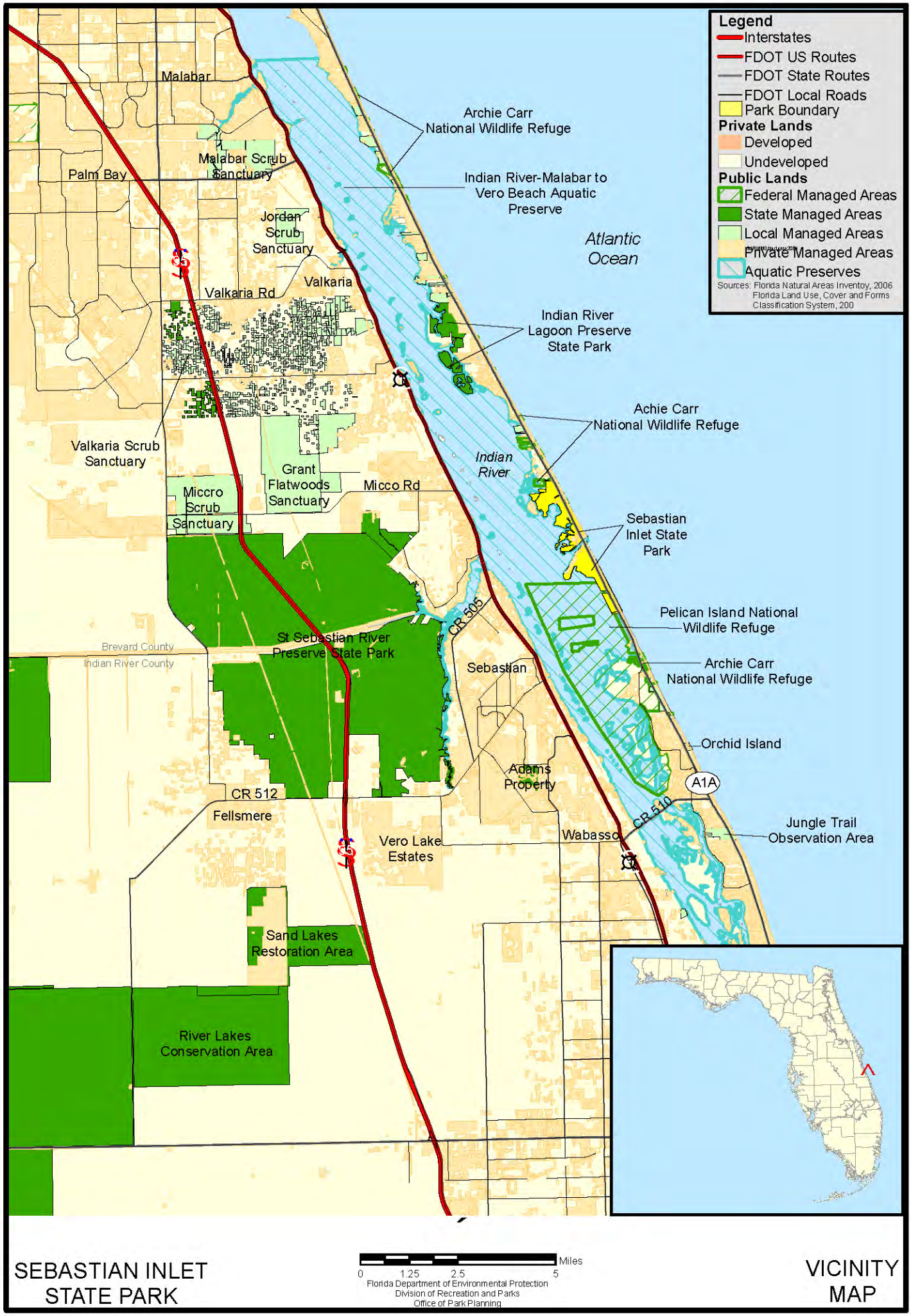
At Sebastian Inlet State Park, public outdoor recreation is the designated single use of the property (see Addendum 1). There are no legislative or executive directives that constrain the use of this property. The park contains 971.01 acres, as reflected on the current Properties under Jurisdiction of the Division of Recreation and Parks (Division) report.

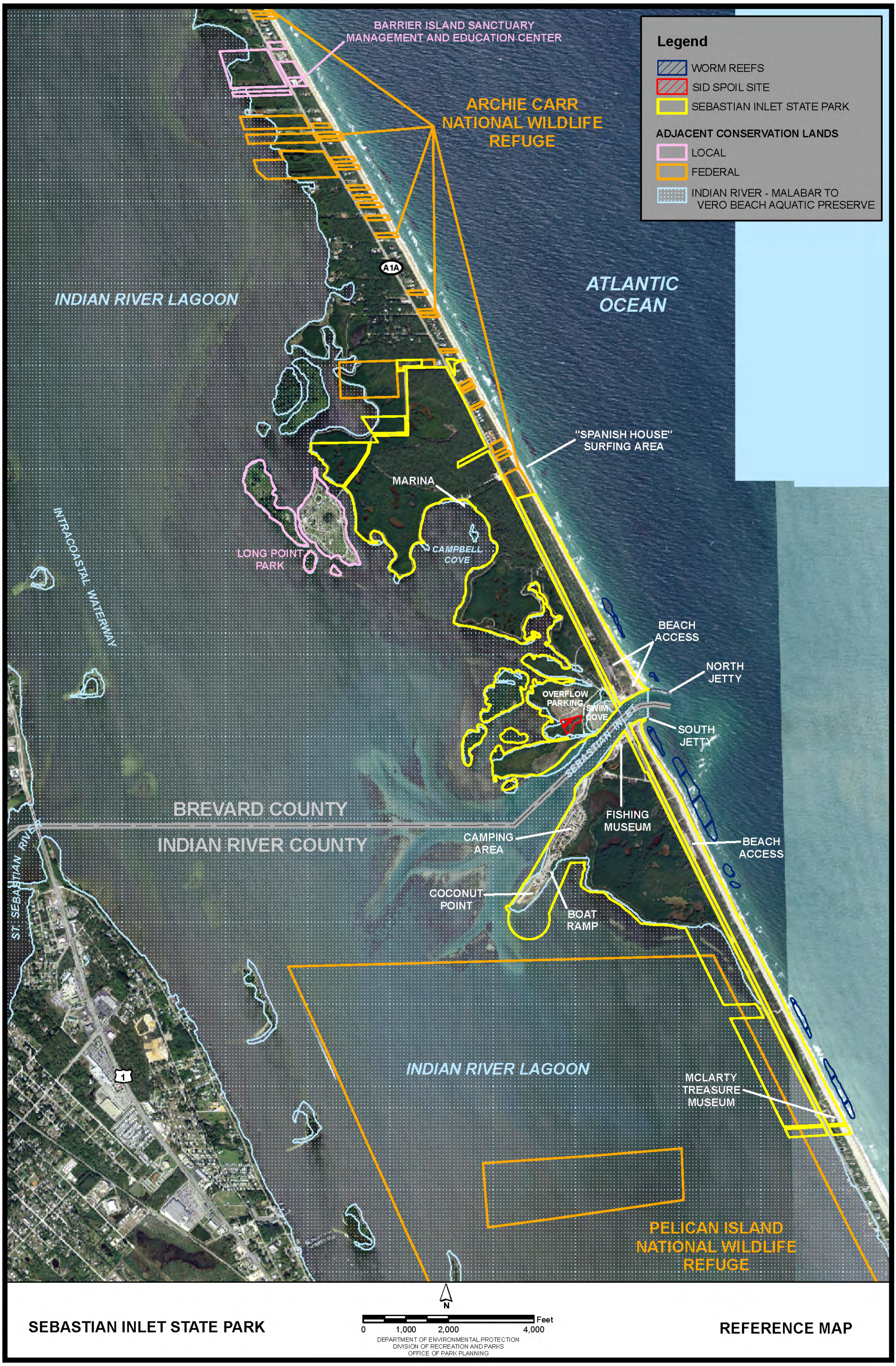
PURPOSE AND SCOPE OF THE PLAN

This plan serves as the basic statement of policy and direction for the management of Sebastian Inlet State Park as a unit of Florida's state park system. It identifies the objectives, criteria and standards that guide each aspect of park administration, and sets forth the specific measures that will be implemented to meet management objectives. The plan is intended to meet the requirements of Sections 253.034 and 259.032, Florida Statutes, Chapter 18-2, Florida Administrative Code, and intended to be consistent with the State Lands Management Plan. With approval, this management plan will replace the January 25, 2001 approved plan. All development and resource alteration encompassed in this plan is subject to the granting of appropriate permits; easements, licenses, and other required legal instruments. Approval of the management plan does not constitute an exemption from complying with the appropriate local, state or federal agencies. This plan is also intended to meet the requirements for beach and shore preservation, as defined in Chapter 161, Florida Statutes and Chapters 62B-33, 62B-36 and 62R-49, Florida Administrative Code.

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

The land use component is the recreational resource allocation plan for the unit. Based


Legend
Interstates
FDOT US Routes
FDOT State Routes
FDOT Local Roads
Park Boundary
Private Lands
Developed
Undeveloped
Public Lands
Federal Managed Areas
State Managed Areas
Local Managed Areas
Private Managed Areas
Aquatic Preserves
Sources: Florida Natural Areas Inventoy, 2006
Florida Land Use, Cover and Forms Classification System, 200
Malabar
Palm Bay
Malabar Scrub Sanctuary
Archie Carr National Wildlife Refuge
Indian River-Malabar to Vero Beach Aquatic Preserve
Atlantic Ocean
Jordan Scrub Sanctuary
Valkaria Rd
Valkaria
Indian River Lagoon Preserve State Park
Achie Carr National Wildlife Refuge
Valkaria Scrub Sanctuary
Indian River
Grant Flatwoods Sanctuary
Micco Rd
Miccro Scrub Sanctuary
Sebastian Inlet State Park
CR 505
Pelican Island National Wildlife Refuge
St Sebastian River Preserve State Park
Brevard County
Indian River County
Sebastian
Archie Carr National Wildlife Refuge
Orchid Island
Adams Property
A1A
CR 512
Fellsmere
CR 510
Wabasso
Jungle Trail Observation Area
Vero Lake Estates
Sand Lakes Restoration Area
River Lakes Conservation Area
SEBASTIAN INLET STATE PARK
Miles
0 1.25 2.5 5
Florida Department of Environmental Protection
Division of Recreation and Parks
Office of Park Planning
VICINITY MAP



SEBASTIAN INLET STATE PARK

REFERENCE MAP

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

In the development of this plan, the potential of the park to accommodate secondary management purposes ("multiple uses") was analyzed. These secondary purposes were considered within the context of the Division's statutory responsibilities and an analysis of the resource needs and values of the park. This analysis considered the park natural and cultural resources, management needs, aesthetic values, visitation and visitor experiences.

For this park, it was determined that no secondary purposes could be accommodated in a manner that would not interfere with the primary purpose of resource-based outdoor recreation and conservation. Uses such as water resource development projects, water supply projects, stormwater management projects, linear facilities and sustainable agriculture and forestry (other than those forest management activities specifically identified in this plan) are not consistent with this plan.

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

MANAGEMENT PROGRAM OVERVIEW

Management Authority and Responsibility

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

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

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

Many operating procedures are standard system wide and are set by policy. These procedures are outlined in the Division's Operations Manual (OM) and cover such areas as personnel management, uniforms and personal appearance, training, signs, communications, fiscal procedures, interpretation, concessions, camping regulations, resource management, law enforcement, protection, safety and maintenance.

In the management of Sebastian Inlet State Park, a balance is sought between the goals of maintaining and enhancing natural conditions and providing various recreational opportunities. Natural resource management activities are aimed at management of natural systems. Development in the park is directed toward providing public access to and within the park, and to providing recreational facilities, in a balance, that are both convenient and safe. Depletion of a resource by any recreational activity is not permitted. Program emphasis is on interpretation on the park's natural, aesthetic and educational attributes.

Park Goals and Objectives

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

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

by the availability of funding resources for these purposes.

Natural Resources

1. Conserve, protect and manage natural communities, significant habitat and ecological systems.
   - **A.** Survey for exotic plant and animal species and continue the exotic species removal program.
   - **B.** Continue and expand the prescribed fire program to maintain fire as an ecosystem process with emphasis on maintaining the current condition of the coastal strand and beach dune habitats south of the inlet while restoring these communities to the north of the inlet.
   - **C.** Seek funding for additional staff to aid in the preparation, implementation and evaluation of resource management.
   - **D.** Monitor natural community restoration projects to adaptively manage habitats
   - **E.** Close unauthorized footpaths that occur throughout the beach dune and coastal strand habitat to the north and south of the inlet and replant with native herbaceous vegetation.
   - **F.** Control unauthorized access and prevent additional erosion.
   - **G.** Educate visitors on all projects and changes to the park to promote the park and park programs.

2. Restore, monitor and protect the hydrology of the park to the greatest extent practicable.
   - **A.** Work with St. Johns River Water Management District to obtain ground and surface water quality and quantity data.
   - **B.** Determine the feasibility of restoring the original hydroperiod to the tidal swamps by working with local mosquito control districts.
   - **C.** Control and limit stormwater runoff into adjacent wetlands along State Road A1A, park drives, easements and other areas.

3. Maintain or increase populations of listed plant and animal species occurring on the park.
   - **A.** Explore opportunities for reintroducing the southeastern beach mouse to the north side of the inlet.
   - **B.** Expand and restore beach mouse habitat.
   - **C.** Survey and monitor for wintering and nesting shorebirds and establish protected resting, loafing and nesting areas where needed throughout the year. Work with FWC and local agencies on shorebird protection issues.
   - **D.** Prohibit pets from all park beach areas.
   - **E.** Control access to Coconut Point during shorebird breeding season and after enhancement.
   - **F.** Work with SID to encourage more appropriate timing and frequency for future renourishment projects that allow for successful sea turtle nesting and to protect sensitive beach mouse and shorebird habitat
   - **G.** Survey and monitor populations of gopher tortoises.

H. Protect gopher tortoises in the field west of the cove by controlling access and developing a plan for this area.

I. Continue flora and fauna surveys.

4. Restore highly altered or severely impacted natural communities.

A. Mechanically treat severely overgrown, fire suppressed coastal strand communities to the north of the inlet. A narrow buffer may be needed to control unauthorized access.

B. Seek funding to initiate the enhancement of the Coconut Point protected zone for beach-nesting birds according to the developed plan.

C. Develop a written plan for the field west of the cove that takes into consideration all demands for this parcel.

D. Restore the area around the cove by removing exotics and replanting with natives to give a more natural appearance for visitors to enjoy.

5. Provide environmental education and enhance public appreciation for elements of natural and cultural diversity.

A. Continue to operate both the McLarty Treasure Museum and the Sebastian Fishing Museum

B. Expand interpretive programs and field trips for the public and school groups to raise awareness of the local flora and fauna, including what is needed for management.

C. Train additional volunteers as tour guides.

D. Universal Trail Assessment Process (UTAP) designated park trails and update interpretive signage as appropriate.

Cultural Resources

1. Develop and implement an archaeological site condition-monitoring program.

A. Establish a reasonable site visit schedule.

B. Train staff or volunteers to conduct condition assessments.

C. Adopt a standardized condition assessment form to ensure data collection consistency.

D. Maintain permanent files for each site for condition data, and other documentation related to the physical change or treatment of sites.

2. Protect recorded and unrecorded archaeological sites.

A. Prioritize avoiding or minimizing site disturbance during improvement and resource management projects.

B. Reduce or eliminate other threats to the extent possible.

C. Apply approved treatment to preserve or stabilize sites.

3. Conduct archaeological surveys in order to locate sites, determine boundaries, document condition, assess significance, evaluate the archaeological sensitivity of the coast and distinguish between historic and non-historic surface remains.

A. Prioritize archaeological survey needs.

B. Identify what can be accomplished in-house.

C. Pursue grant funding for additional professional work.

D. Solicit volunteer support where appropriate.

4. Coordinate preservation, research and interpretation efforts for archaeological sites with local entities.

A. Encourage permitted research by accredited regional universities and colleges.

B. Encourage volunteer work by local chapters of the Florida Anthropological Society.

C. Foster a relationship with the new regional office of the Florida Public Archaeology Network.

D. Solicit support from Brevard and Indian River Counties for archaeological surveys and pursuit of grant money.

5. Develop a Museum Manual for the Sebastian Inlet Fishing Museum.

A. Clarify roles and responsibilities of the park and the Citizens Support Organization.

B. Clarify operational procedures.

C. Clarify collection management arrangements.

6. Develop an Interpretive Plan and Scope of Collection Statement for the Sebastian Inlet Fishing Museum.

A. Revisit the purpose of the museum and identify additional interpretive goals.

B. Consult with individuals with ties to the local commercial fishing industry.

C. Evaluate current exhibits based on the new interpretive plan.

D. Evaluate current museum collection, and identify collecting priorities based on the new interpretive plan.

7. Address preservation, conservation and interpretation issues at the McLarty Museum

A. Purchase equipment to produce a continuous record of temperature and humidity, and evaluate and remedy significant fluctuations.

B. Replace UV-protective sleeves on lights; reconfigure or replace current lighting as needed to protect photographic material.

C. Consult with Department Of State, Division of Historical Resources for permission to and instructions on touching up conserved metal artifacts.

D. Secure funds for a general conservation assessment, via the Conservation Assessment Program or a private conservator, to assess the collection and museum environment, and for specific evaluation of the paintings.

E. Develop a written security plan for the museum.

8. Recognize and interpret the significance of the park's cultural resource and stewardship activities.

A. Solicit the involvement of associated living communities in the development of related preservation and interpretive projects.

B. Post protective signage near heavily trafficked archaeological sites if useful.

C. Nominate significant sites to the National Register of Historic Places.

D. Keep permanent park history files on the park's development and history of surfing, fishing and other traditional uses; Park Interpretive plans should be updated to promote public education of these activities, the park's history and

prehistory, archaeological research of the peninsula, and preservation issues.

Recreational Goals

1. Continue to provide quality resource based outdoor recreational and interpretive programs and facilities at the state park.
- **A.** Provide facilities and use areas to support beach recreation, fishing, surfing, camping, picnicking, hiking, biking, boating, kayaking and birding.
- **B.** Regularly monitor impacts to park resources and the visitor experience and address through appropriate management action.
- **C.** Provide controlled public access to the beach.
- **D.** Deliver ranger led interpretive programs and provide static interpretive displays and educational materials to educate visitors and encourage responsible use of park resources.

2. Seek funding to expand recreational and interpretive opportunities through the improvement of programs and the development of new use areas and facilities, as outlined in this management plan.
- **A.** Expand and enhance the "Spanish House" parking area.
- **B.** Evaluate and renovate the entire marina area.
- **C.** Evaluate and redesign the concession area at the north jetty beach use area.
- **D.** Enhance the swimming cove area and provide stabilized parking.
- **E.** Add a primitive group camp.
- **F.** Explore the feasibility of developing a cabin area along the north inlet shoreline.
- **G.** Replace the fishing dock along the inlet's south shoreline.
- **H.** Improve and expand the camping area.
- **I.** Improve and control beach access areas south of the inlet.
- **J.** Evaluate the McLarty Treasure Museum for possible renovations.
- **K.** Explore ability to extend paved bike paths along park roads.

Park Administration/Operations

1. Provide efficient and effective management of park resources and facilities while maintaining a high level of visitor service.
- **A.** Pursue funding to acquire additional FTE positions as the parks operation grows in complexity.
- **B.** Seek funding to accomplish goals and objectives set forth in this management plan.
- **C.** Assure compliance with Division, state and federal safety guidelines and training requirements by providing training to all staff in visitor services, park information and emergency services.
- **D.** Maintain high maintenance standards and conduct routine safety inspections to provide clean safe facilities and use areas.
- **E.** Seek funding to meet staff residence needs and construct/upgrade support facilities.

F. Recruit and maintain volunteer support to assist park staff with the maintenance of park facilities, protection of park resources and implementation of park programs.

G. Establish and maintain effective park boundaries through fencing and posting of signs.

H. Work with Florida Park Police and other state and local Law Enforcement Agencies to protect natural and cultural resources while protecting park visitors.

I. Maintain and expand an active public relations program that increases public awareness and support for the park including resource management activities such as prescribed burning, exotic removal, listed species protection.

Management Coordination

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

The Department of Agriculture and Consumer Services, Division of Forestry (DOF), assists Division staff in the development of wildfire emergency plans and provides the authorization required for prescribed burning. The Florida Fish and Wildlife Conservation Commission (FFWCC), assists staff in the enforcement of state laws pertaining to wildlife, freshwater fish and other aquatic life existing within park boundaries. In addition, the FFWCC aids the Division with wildlife management programs, including the development and management of Watchable Wildlife programs. The Department of State, Division of Historical Resources (DHR) assists staff to assure protection of archaeological and historical sites. The Department of Environmental Protection (DEP), Office of Coastal and Aquatic Managed Areas (CAMA) aids staff in aquatic preserves management programs and advises staff of Environmental Resource Permitting (ERP) requirements and mitigation options. The DEP, Bureau of Beaches and Wetland Resources aids staff in planning and construction activities seaward of the Coastal Construction Line. In addition, the Bureau of Beaches and Wetland Resources aid the staff in the development of erosion control projects. Emphasis is placed on protection of existing resources as well as the promotion of compatible outdoor recreational uses.

Sebastian Inlet State Park is closely related to management issues and activities by the Sebastian Inlet District (SID), Indian River and Brevard County governments, CAMA, local water management districts, and the U.S. Fish and Wildlife Service's Archie Carr National Wildlife Refuge. The park is also involved in local initiatives to designate State Road A1A as a Florida Scenic Highway and to designate portions of the barrier island as a National Historic District. Division staff will continue its involvement with each of these groups to insure that management activities within the state park are consistent with the goals, objectives and activities of the other programs, as necessary

and appropriate.

Division staff will encourage staff of the Florida Forever acquisition program to evaluate those areas the Indian River Blueways project to identify important shorebird nesting habitats within the project boundary, and recommend that important habitat areas be given priority for acquisition.

Division of Recreation and Parks staff has reviewed the SID's management plan for the Sebastian Inlet. Staff considers the goals and objectives of that plan to be generally consistent with the Division's interests in management of the state park. Erosion of the Atlantic beach shoreline south of the Sebastian Inlet has been a resource management problem for decades, and will continue to be in the future. The development of a sand transfer system at Sebastian Inlet is suggested as a primary measure to address this ongoing problem. Division staff agrees that a sand transfer system should continue to be considered as a part of the solution to the problem, with the understanding that decisions on beach renourishment and sand transfer must be based on a comprehensive understanding of the options and their relative impacts to the physical, biological and recreational resources and operation of the state park. The Division will continue to work with the SID, Indian River and Brevard Counties and the DEP Bureau of Beaches and Coastal Systems to evaluate all options available to address beach erosion and renourishment south of the inlet.

Public Participation

The Division provided an opportunity for public input by conducting a public meeting and an advisory group meeting to present the draft management plan to the public. A public meeting was held on May 13, 2008. An Advisory Group meeting was held May 14, 2008. The purpose of this meeting was to provide the Advisory Group members an opportunity to discuss the draft management plan.

Other Designations

Sebastian Inlet State Park has not been designated as an Area of Critical State Concern as defined in section 380.05, Florida Statutes. Currently it is not under study for such designation. The park is a component of the Florida Greenways and Trails System.

This unit is adjacent to the Indian River Aquatic Preserve, which was designated under provision of the Florida Aquatic Preserve Act of 1975 (section 258.35, Florida Statutes). All waters within the unit have been designated as Outstanding Florida Waters, pursuant to Chapter 62-302 Florida Administrative Code. Administered by the Department of Environmental Protection, this program was created by Section 403.061, Florida Statutes, and protects lakes, rivers and streams against degradation of existing ambient water quality. Surface waters in this unit are also classified as Class III waters by DEP.

RESOURCE MANAGEMENT COMPONENT

INTRODUCTION

The Division of Recreation and Parks has implemented resource management programs for preserving for all time the representative examples of natural and cultural resources of statewide significance under its administration. This component of the unit plan describes the natural and cultural resources of the park and identifies the methods that will be used to manage them. The stated management measures in this plan are consistent with the Department's overall mission in ecosystem management. Cited references are contained in Addendum 2.

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

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

Because park units are often components of larger ecosystems, their proper management is often affected by conditions and occurrences beyond park boundaries. Ecosystem management is implemented through a resource management evaluation program (to assess resource conditions, evaluate management activities and refine management actions), review of local comprehensive plans and review of permit applications for park/ecosystem impacts.

RESOURCE DESCRIPTION AND ASSESSMENT

Natural Resources

Topography

Sebastian Inlet State Park is located on the Atlantic coast of Florida on a barrier island, which is bounded on the east by the Atlantic Ocean, and on the west by the Indian River Lagoon. Elevations at the unit range from sea level along the coast to approximately 5 feet above mean sea level.

This unit is found within the Eastern Flatwoods District (Brooks 1981a). Within this district, the park lies along the Central Atlantic Coastal Strip physiographic division, which was created or modified by shoreline processes during the Late Pleistocene when

sea levels were at about 18 feet (12 to 15 feet above its present level). In this division, the park lies along the Cocoa-Sebastian Ridge (Brooks 1981b); in addition, this unit is situated along the Silver Bluff Terrace, which formed during the Pleistocene. During the formation of this terrace, sea level was approximately 8 to 10 feet higher than the current level (Healy 1975).

Geology

This unit is underlain by at least two different geological deposits (Wettstein et al. 1987). The majority of the park consists of Hawthorn Group deposits of interbedded limestone, dolomite, sand and clay, laid down in the Miocene (25 to 13 million years before the present). The Anastasia Formation, which overlies the Hawthorn Group, is composed of quartz sand and shell material; it was laid during the Pleistocene, 1.6 to 0.1 million years before the present.

Soils

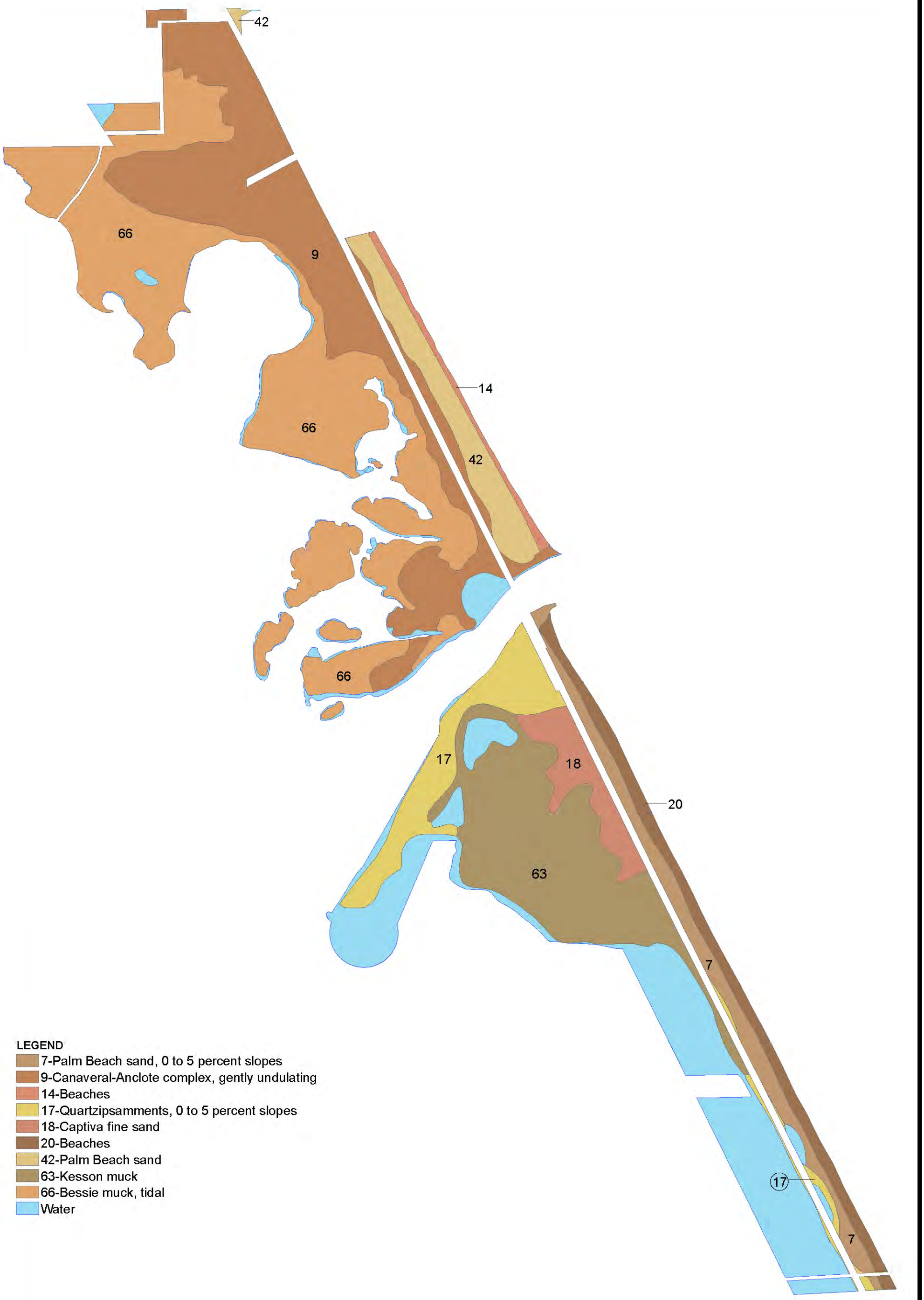
There are nine different soil types in addition to spoil banks occurring in Sebastian Inlet State Park (see Soils Map). This soil survey was compiled by the U. S. Department of Agriculture, Soil Conservation Service (SCS) in the soil surveys of Brevard County (Huckle et al. 1974) and Indian River County (Wettstein et al. 1987). Management activities will follow generally accepted best management practices to prevent soil erosion and conserve soil and water resources on site. Addendum 3 contains complete descriptions of park soil types.

Soil erosion occurs primarily in two areas of the park: 1) along the shoreline of the Atlantic Ocean 2) and in the beach dune community, south of inlet. Along the shoreline of the Atlantic, the erosion is caused by seasonal storms; the inlet exacerbates erosion in the southern part of the park. Beach renourishment projects have occurred south of the inlet on a periodic basis; in recent years, the frequency of the projects has increased. Following these projects, moderate to severe escarpments (3-6 feet or higher) has formed; on some occasions, the contractor has removed the escarpment. Numerous footpaths exist south of inlet which transverse the coastal strand and beach dune communities. These areas are devoid of vegetation because they are heavily used by visitors to access the beach. Over time, sand has been dispersed, leaving a trench like gully through the dune. Closing these foots paths and redirecting visitors to the designated parking areas will correct these issues before the paths can be restored.

In 1975, riprap was placed seaward of the McLarty Museum to protect the building and the historic site from beach erosion. This has stabilized the shoreline and does not appear to be negatively affecting sea turtle nesting and erosion in the immediate vicinity of the Museum.

Minerals

No deposits of commercially valuable minerals are evident.



LEGEND

- 7-Palm Beach sand, 0 to 5 percent slopes
- 9-Canaveral-Anclote complex, gently undulating
- 14-Beaches
- 17-Quartzipsamments, 0 to 5 percent slopes
- 18-Captiva fine sand
- 20-Beaches
- 42-Palm Beach sand
- 63-Kesson muck
- 66-Bessie muck, tidal
- Water

N

0 500 1,000 2,000 Feet

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

SEBASTIAN INLET STATE PARK

SOILS MAP

Hydrology

The principal drainage from this unit is to the Atlantic Ocean and the Indian River, a shallow estuarine lagoon separating the barrier island from the mainland. Groundwater is available from the shallow surficial aquifer and the upper Floridan aquifer (Hyde 1975). Average annual rainfall at the park is approximately 52 inches. Though much of the rain filters into the shallow aquifer, some remains on the surface, adding to the Indian River Lagoon system.

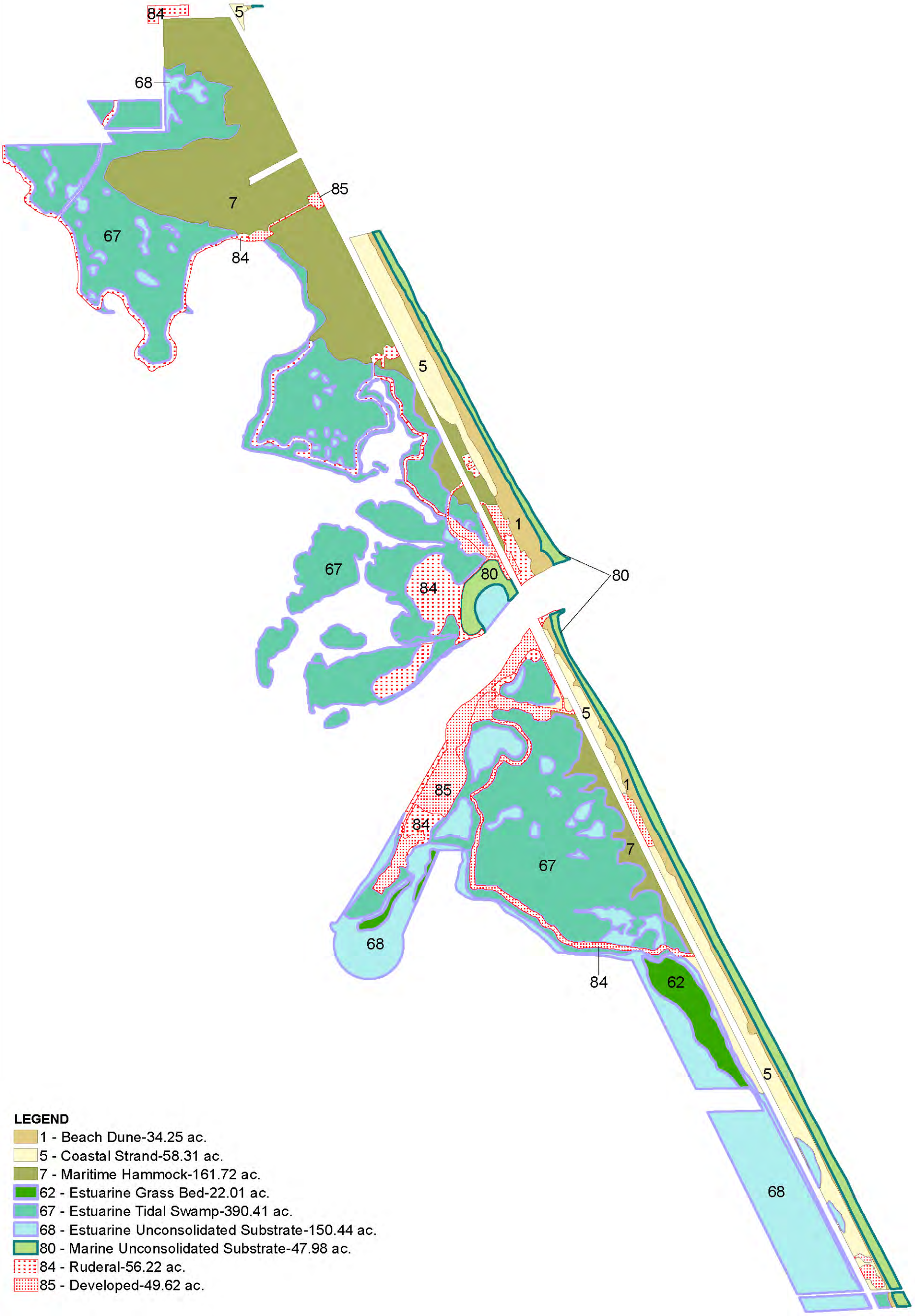
Past mosquito ditching practices along the western side of the park have altered the historical hydrologic flow. Studies should be conducted to determine the feasibility of backfilling mosquito ditches and removing the levees to restore the altered hydrology and near shore communities along the Indian River Lagoon. Most of the Indian River, including that portion adjacent to this unit, has been designated as an aquatic preserve and has received a Class II water quality designation by the Department. The waters of the aquatic preserve and the park are designated as Outstanding Florida Waters.

Natural Communities

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 which are similar with respect to these factors will tend to have natural communities with similar species compositions. Obvious differences in species composition can occur, despite similar physical conditions. In other instances, physical factors are substantially different, yet the species compositions are quite similar. For example, coastal strand and scrub--two communities with similar species compositions--generally have quite different climatic environments, and these necessitate different management programs.

The park contains eight distinct natural communities (see Natural Communities Map—marine worm reef is not mapped) in addition to ruderal and developed areas. The Natural Communities Map is a graphic representation of the existing vegetative conditions in the park at the time this management plan was developed. Park specific assessments of the existing natural communities are provided in the narrative below. A list of plants and animals occurring in the unit is contained in Addendum 4.

Beach dune. This community exists as a strip of land along the eastern border of the unit between the beach and the coastal strand communities. The condition of this community varies along its length. North and immediately south of the inlet, the community is generally in fair to good condition; erosion is minimal, and vegetative cover is largely intact. The dominant vegetation on the foredunes is sea oats (*Uniola paniculata*); other plants include railroad vine (*Ipomoea pes-caprae*), beach morning glory (*Ipomoea imperati*), east coast dune sunflower (*Helianthus debilis* var. *debilis*), baybean



LEGEND

- 1 - Beach Dune-34.25 ac.
- 5 - Coastal Strand-58.31 ac.
- 7 - Maritime Hammock-161.72 ac.
- 62 - Estuarine Grass Bed-22.01 ac.
- 67 - Estuarine Tidal Swamp-390.41 ac.
- 68 - Estuarine Unconsolidated Substrate-150.44 ac.
- 80 - Marine Unconsolidated Substrate-47.98 ac.
- 84 - Ruderal-56.22 ac.
- 85 - Developed-49.62 ac.

SEBASTIAN INLET
STATE PARK

N

0 500 1,000 2,000 Feet

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

NATURAL COMMUNITIES
MAP

(Canavalia rosea), bitter panicgrass (*Panicum amarum*) with scattered sea grape (*Coccoloba uvifera*) encroaching from the coastal strand community in areas of infrequent fire.

South of the day-use area, to the southern end of the park, the beach dune community is in poor to fair condition. The community has been negatively impacted by recent beach renourishment projects: several vehicular access ramps were constructed to allow dump trucks to deposit fill material on the beach, and many areas of the community were covered by the fill. To date, the ramps have not been completely revegetated; they are regularly used by visitors for access to the beach. These areas are more susceptible to blowouts and erosion due to the lack of vegetative cover. The park has obtained ownership of one of the access ramps and has begun to mitigate for the impacts caused by foot traffic. There is a high amount of erosion along this area; in some cases, very little of the original foredune still exists. Where vegetation occurs, sea oats are dominant. Numerous footpaths and access ramps are used by visitors to access the beach. Vegetation is being trampled, leaving large areas of foredune devoid of vegetation leading to erosion and possible blowouts. Access to the beach should be controlled by directing visitors to the parking areas, allowing restoration of the footpaths to begin. With the exception of revegetation of the ramp areas and footpaths, no special management actions are needed at this time.

Coastal strand. Coastal strand exists inland of the beach dune community. North of the inlet, this community grades into maritime hammock. Several boardwalks have been constructed through this community north of the inlet for access to the beach. In this area of the park, the community is in fair condition. The dominant vegetation consists primarily of shrubs and trees consisting of saw palmetto (*Serenoa repens*), sea grape, cabbage palm (*Sabal palmetto*), coralbean, and beachberry (*Scaevola plumieri*). Areas devoid of shrubs are dominated by sea oats, marshhay cordgrass (*Spartina patens*), bitter panicgrass, seacoast marshelder (*Iva imbricata*), erect pricklypear (*Opuntia stricta*), gulf croton (*Croton punctatus*), and east coast dune sunflower.

South of the inlet, the community is in good condition and is highly fragmented; beach facilities, a boardwalk, footpaths, a staff residence, a museum, and State Road A1A were sited in the coastal strand. While grasses predominate, sea grape, wax myrtle (*Myrica cerifera*), saw palmetto and cabbage palm are present. Several vehicular access roads for beach renourishment projects (also referenced above) were constructed through this community; to date, the roads have not been revegetated. They are regularly used by visitors for access to the beach. These areas are more susceptible to blowouts and erosion due to the lack of vegetative cover. In 1997, a prescribed burning program was initiated in this area of the park to reduce the amount of hardwood encroachment and increase the coverage of grasses to benefit a population of southeastern beach mice (*Peromyscus polionotus niveiventris*). Additional prescribed burning, mowing and periodic exotic removal efforts will be necessary to maintain this community.

Maritime hammock. At this unit, the maritime hammock community is considered to be in good to excellent condition. It is composed of a mixture of temperate and subtropical plant species, such as sand live oak (*Quercus geminata*), red bay (*Persea borbonia* var. *borbonia*), marlberry (*Ardisia escallonioides*), Florida swamp-privet (*Forestiera segregata*), wild lime (*Zanthoxylum fagara*), twinberry (*Myrcianthes fragrans*), white stopper (*Eugenia axillaris*), Spanish stopper (*Eugenia foetida*), strangler fig (*Ficus aurea*), wild coffee (*Psychotria nervosa*), shortleaf wild coffee (*Psychotria sulzneri*), and gumbo-limbo (*Bursera simaruba*).

In some areas of the park, this community has been invaded by exotic plant species, including Brazilian pepper (*Schinus terebinthifolius*) and Australian pines (*Casuarina equisetifolia*). An aggressive exotic control effort, which has been underway for the past several years, has resulted in a significant reduction in the coverage of these and other exotic plants within the maritime hammock.

This community type is considered by the Florida Natural Areas Inventory (FNAI) to be imperiled due to its rarity of because of vulnerability to extinction due to natural or human-caused factors. It should be protected from future development to the greatest extent practicable. This community is essentially self-maintaining; with the exception of exotic removal efforts, no special management actions are needed at this time.

Estuarine tidal swamp. The condition of this community varies within the park from excellent to good to fair. Historically, some of this community was likely estuarine tidal marsh before extensive ditching and impoundment for mosquito control. Over time, the marshes dried out and the community succeeded to estuarine and marine tidal swamp. In submerged areas, red mangrove (*Rhizophora mangle*) became dominant, while Brazilian pepper and Australian pine are dominant along the dikes. In other areas of the park, exotic encroachment is minimal. Many of these areas are dominated by red mangrove, black mangrove (*Avicennia germinans*), white mangrove (*Laguncularia racemosa*), and buttonwood (*Conocarpus erectus*). This community is essentially self-maintaining; with the exception of exotic removal efforts, no special management actions are needed at this time.

Estuarine unconsolidated substrate. The often-unvegetated portion of sand lying along the lagoon side of the park that is categorized as estuarine unconsolidated substrate. This community is tidally inundated on a daily basis, and is largely devoid of plant species; however, in areas where the substrate has been disturbed, grass and weedy species dominate. Estuarine unconsolidated substrate is utilized by shorebirds for resting, loafing and feeding, along with other invertebrate species like crabs and mollusks.

Marine unconsolidated substrate. The portion of the beach, which lies seaward of the beach dune community, is categorized as marine unconsolidated substrate. This

community is tidally inundated on a daily basis, and is largely devoid of plant species. Marine unconsolidated substrate is utilized by shorebirds for resting, loafing and feeding, and sea turtles traverse this community during nesting and emergence events. With the exception of periodic beach renourishment projects (once or twice every decade) that use sand dredged from the inlet sand trap, no other renourishment projects may be warranted. Additional actions to improve the quality of the material placed in this community should be implemented.

Estuarine grass beds. This offshore natural community is one of the smallest within the boundaries of the park but does exist outside of park within CAMA lands. Dominant species are turtle grass *(Thalassia testudinum*), shoal grass *(Halodule wrightii*), and manatee grass *(Syringodium filiforme*). Johnson's seagrass (*Halophila johnsonii*) can also be found within the park, but due to its rarity, it often not detectable. Ecologically, grass beds are important components of the estuary: they stabilize sediments and provide nurseries, food and shelter to many estuarine organisms. Grass beds are sensitive to changes in salinity and to disturbance caused by boats such as propeller scars. Due to their location within the park near the boat ramp facility, impacts caused by boats will increase as ramp becomes more heavily used. The park should continue to educate boaters on the proper protection measures to protect this valuable resource.

Marine worm reef (not mapped). This community is located just offshore of the park and is faunal-based where it is dependent on a *sabellariid polychaete*, *Phragmatopoma lapidosa*. This marine invertebrate cements sand grains together to form large colonial structures of worm tubes. The community grows as larvae attach to the substrate created by the adults. In order for the community to become established, a hard substrate must be present, such as the granitic rocks of the jetties as well as on the coquina-limestone outcrop of the Anastasia Formation south of the inlet. South of the inlet, the worm reef is covered by sand following storms and beach renourishment projects; this can result in the death of portions of the reef. At this time, the condition of the reef is unknown; no management actions are proposed at this time. Future considerations should include an initial assessment of reef conditions followed by periodic monitoring to determine if beach renourishment projects are having a negative impact on the reef systems.

Ruderal areas. These areas are characterized by having the natural substrate or the natural community overwhelmingly altered because of human activity. Native vegetation is sparse and is often replaced by weedy or exotic species. These areas require restoration efforts.

Developed areas. These areas consist of natural biological communities that have been replaced or nearly replaced by structures or permanently cleared areas such as roads, visitor facilities, campgrounds, recreation areas, parking lots or concessions.

Designated Species

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

Marine turtles. As noted previously, Sebastian Inlet State Park is located within the Archie Carr National Wildlife Refuge, which is a critical area for the nesting of loggerhead sea turtles (*Caretta caretta*). The beaches of the ACNWR support the largest nesting colony of loggerhead turtles in the western hemisphere, the second largest in the world. The park also provides important nesting habitat for green and leatherback sea turtles (*Chelonia mydas and Dermochelys coriacea*, respectively). In addition, hawksbills (*Eretmochelys imbricata*) have occasionally been seen at the park. In 2006, the totals were as follows: 619 loggerhead nests, 74 green turtle nests, and 1 leatherback nest. The park participates in nest surveys and monitoring as part of the index nesting beach program administered by the Florida Fish and Wildlife Conservation Commission. The park participates in nest monitoring as an index beach. The Federal recovery plan for the respective sea turtle species (loggerhead and green turtle: National Marine Fisheries Service and U.S. Fish and Wildlife Service 1991; leatherback: National Marine Fisheries Service and U.S. Fish and Wildlife Service 1992) will be closely adhered to by staff.

The greatest threat to sea turtles at this unit involves the beach renourishment projects that use sand brought in from inland sources. According to Ehrhart and Herren (1998), nesting success was reduced by 60 percent on the portion of the beach that received inland material in 1997. Reproductive success was also significantly reduced; many eggs died early in development. The smaller grain sizes, higher moisture content, lower temperatures, and higher shears resistance of the material contributed to these results. Too much material has also been placed on the beach in some areas during the past renourishment projects. Often, this leads to the formation of numerous scarps along the beach. Once escarpment occurs, a tall wall of material is created (3-6 or more feet); which can create a situation where sea turtles are unable to pull themselves up the beach to nest. The excessive amount of material placed on the beach has also covered the primary dune community in some areas, destroying habitat for beach mice and obscuring nesting cues for sea turtles. On several occasions, after the escarpment was removed by the renourishment contractor, sea turtles continued west, fell over the back of the original primary dune and were trapped. In one instance, a turtle continued heading west and was killed by an automobile on State Road A1A. The timing of the projects will likely prove detrimental to sea turtles. According to Ehrhart (pers. comm.), renourished beaches require a minimal resting period of three years before they become

optimal for sea turtle nesting. The current renourishment schedule proposed by the Sebastian Inlet District (SID) has projects occurring every year. FPS should pursue a less frequent schedule for future renourishment projects to help encourage sea turtle nesting as well as to protect sensitive beach mouse and shorebird habitat. This would also be favorable for the protection of the worm rock reef communities located just offshore.

Beach mice. The beach dune community south of the inlet supports one of the last populations of the southeastern beach mouse in the southern half of its range. Monitoring has revealed that the population is very small, but persistent. Continued habitat fragmentation and destruction by beach renourishment projects may jeopardize the continued existence of this federally threatened species at the park. Prescribed burning was initiated in beach mouse habitat south of the inlet in 1997; due to the favorable response by beach mice, burning has continued since then on a periodic basis to reduce hardwood encroachment and to increase the coverage and vigor of grasses.

Beach mice historically occurred north of the inlet, but due to predation, habitat fragmentation and habitat succession, the population no longer is present. In the late 1990s, the Florida Park Service began ongoing discussions with the United States Fish and Wildlife Service (USFWS) and university researchers of the possibility of reintroducing the species back into the northern side of the park. It was determined that habitat modification was needed to restore the beach dune and coastal strand communities before a reintroduction could be attempted. The condition of both communities at the time was determined to be fair to poor, with overgrown vegetation, exotic plant infestations and inflated native and non-native predator populations. Habitat restoration of the coastal strand community began in 2006. The goal was to mechanically treat the vegetation with mowing and follow with a prescribed fire. Mowing was completed in 2006 and a burn was conducted in February 2007. Herbaceous ground cover has already responded and exotic species have been treated and removed. Continued mowing and burning of both the coastal strand and beach dune communities will continue until all areas are managed and have reached a maintenance condition where prescribed fire and exotic removal alone will be able to maintain the natural communities in a favorable condition. The feasibility of a reintroduction of the southeastern beach mouse will be evaluated upon the response of the habitat to restoration.

Feral cats are removed as soon as they are detected. Other nuisance wildlife that are determined to be a threat to beach mouse populations will be removed on an as needed basis upon the recommendation from the park / district biologist. A Federal recovery plan for the southeastern beach mouse (U.S. Fish and Wildlife Service 1993) will be referenced and followed by staff.

Shorebirds and wading birds. The park provides important resting, feeding, and

nesting habitat for many state and federally listed shorebirds and wading birds, including but not limited to Roseate Spoonbill (*Ajaia ajaja*), Little Blue Heron (*Egretta caerulea*), Reddish Egret (*E. rufescens*), Snowy Egret (*E. thula*), Tricolored Heron (*E. tricolor*), Wood Stork, White Ibis (*Eudocimus albus*), Least Tern (*Sterna antillarum*), Black Skimmer (*Rynchops niger*), Wilson's Plover (*Charadrius wilsonia*), and the Piping Plover (*Charadrius melodus*). Standard Resource Management Procedure Number 13 and Resource Management Guideline Number 3, concerning the protection of colonial breeding birds, will continue to be followed by park staff. These procedures are currently being revised to include protection of loafing and resting birds year round along with nesting birds. The current and new procedures and guidelines will be strictly followed.

With over 3 miles of beach habitat within a sea of development, Sebastian Inlet State Park should be a magnet for beach-nesting birds, but unfortunately, no nesting activity has been observed on the beach itself within the last few years. The only nesting activity that has been documented on the park has occurred on a spoil deposition area west of the campground. This lack of bird nesting activity on relatively untouched, natural beach can be attributed to: 1) heavy use by visitors 2) presence of predators 3) presence of dogs 4) beach renourishment activities. To date, no areas have been closed to public access for the purpose of protecting and encouraging nesting of shorebirds. The beach is restricted to pets year round; however, dogs are frequently seen. Dogs can run through congregations of resting birds and destroy nests of nesting birds. Research studies have shown that shorebirds can detect an animal on the beach from a distance of 500 ft and greater, depending on the species. Beach renourishment projects occur yearly and cause considerable disturbance to the birds during crucial periods prior to nesting. Sand is pumped onto shorebird habitat at the toe of the primary dune where most nesting shorebirds nest.

A population of least terns historically nested on Coconut Point, west of the campground. In 1978, a use agreement for a portion of this area was granted to the SITD for the placement of non-beach quality fill dredged from the inlet. Following the placement of material in this area and the resultant erosion, least tern nesting ceased. In spring 2000, park staff scraped ruderal vegetation off the westernmost portion of Coconut Point; following this, tern nesting was observed, and the area was temporarily closed to public access. Additional habitat enhancement and seasonal restrictions of visitor access (March 15 to September 1) to this area will be necessary to protect future nesting of least terns and other beach-nesting birds. Future facility or campground development on Coconut Point will need to be planned with consideration of sensitive area. The tip of the point (1.5 ac) has been set aside for protection and enhancement will begin when funds are secured. Other areas throughout the park should be investigated for the possibility of being potential nesting sites for beach-nesting birds. Areas that are determined to be suitable nesting/resting areas may be temporarily closed.

In response to high numbers of road-killed birds, especially royal terns (*Sterna maxima*) on the State Road A1A bridge over Sebastian Inlet, bird mortality reduction structures were installed on the bridge in 1994 (Egensteiner, pers. comm.). These structures consisted of 10-foot poles erected vertically and placed 12 feet apart on both sides of the bridge. The intent of this action was to direct the birds up and away from the bridge, thus reducing road-kill. To date, the structures appear to be successful in reducing bird mortality on the bridge.

Gopher tortoise. A population of gopher tortoises (*Gopherus polyphemus*) can be found in several of the upland communities of the park. Currently, a marking program exists to allow for long-term monitoring of the population. Continued prescribed fire activities will benefit the tortoise population at the park as well. A population occurs in a field on the north side of the inlet, west of the cove. The field is often used as an overflow parking area during peak visitation that creates a problem with protection of tortoises. A plan for this area should be developed to take into account all visitor and wildlife uses for this area. This topic will be discussed in the management measures section.

Diamondback terrapin. The Indian River Lagoon historically supported a large population of diamondback terrapins (*Malaclemys terrapin*). Due to habitat loss, overharvesting, mortality in crab traps, predation, and stochastic factors, populations of diamondback terrapins have declined throughout the species' range (Roosenburg et al. 1997; Forstner, pers. comm. 1998). Although terrapin sightings in the area surrounding the park were numerous until the mid-1980s, few have been seen in recent years.

Special Natural Features

The park is located within the Archie Carr National Wildlife Refuge, which is recognized as the most important region of nesting beaches for the loggerhead sea turtle within the Western Hemisphere.

Cultural Resources

Evaluating the condition of cultural resources is accomplished using a three part evaluative scale, expressed as good, fair, and poor. These terms describe the present state of affairs, rather than comparing what exists against the ideal, a newly constructed component. 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 judgment is cause for concern. Poor describe 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 to reestablish physical stability.

The Florida Master Site File (FMSF) lists 13-recorded sites within the unit.

Sebastian Inlet State Park contains many cultural resources, and many types, remnants of the daily life of the area's former inhabitants, or representative of typical activities specific to this locale, from the prehistoric period to the mid-20th century. For several millennia, people have inhabited this narrow peninsula seasonally and permanently, drawn by the area's unique natural resources that make it an ideal place to harvest marine and riverine resources and to recreate. The park also contains the exceptional material associated with survivors and salvagers of the Spanish Plate Fleet destroyed just offshore by a hurricane in 1715. Archaeological sites and artifacts; historic objects, archives and photographs; oral histories, and works of art document and illuminate the peninsula's rich and varied history. Additionally, the park has ties to living communities, including fishers and surfers, for whom park lands figure strongly into their sense of identity or (past) way of life; thus its cultural resources also include associated peoples and related ethnographic material.

Archaeological resources. Sebastian Inlet State Park's archaeological resources include thirteen recorded sites, four in the northern half of the peninsula in Brevard County and nine in the southern half in Indian River; an unknown number of unrecorded sites; and recovered artifacts on display at the park's McLarty Museum. Additionally, there are eight recorded sites, similar and related, just off shore and to the north and south of the park, and artifacts excavated from sites now in the park in storage at other institutions in Florida and elsewhere. The park's archaeological resources represent many facets of the larger area's history, including the Indian River Lagoon's pre-contact and proto-historic native population, the 1715 Spanish Plate Fleet wreck and salvage operations, French colonial activity on Florida's northern Atlantic seaboard, and the inlet's 19th and 20th century fish camps.

All thirteen of the recorded sites represent Sebastian Inlet's lengthiest yet least well-understood history –that of the peoples who lived here before European arrival. Eleven of the thirteen sites are prehistoric, shell middens and one sand mound, while the two historic sites also contain shell middens. Archaeological evidence suggests cultural continuity in the area, from the Orange Period (circa 2000 – 500 B.C.) through the Malabar 1 and 2 Periods (circa 500 B.C. to 800 A.D. and 800 A.D. to 1763 A.D.), including the colonial-period Ais Indians. The Malabar tradition ceramics include both the chalky, plain and decorated St. Johns pottery found to the north, and the plain sand-tempered Glades pottery to the south, reflecting an area of transition or interaction between the neighboring Glades and St. Johns cultures (Milanich 1994). Shell middens that run the length of the peninsula indicate that inhabitants of the Indian River Lagoon were foragers, unlike the St. Johns agriculturalists to the north, living in larger villages near wetlands while harvesting marine and riverine resources from single-use or seasonal campsites in the surrounding area. Sand mounds and human burials reflect some degree of ceremonialism and ritualism, although not as elaborate as found in

South Florida. Excavated sites in and nearby the park have contained shellfish and other faunal remains, hearths, ceramics, human remains, and utilitarian and decorative worked shell and bone. Four of the five terrestrial sites just outside park boundaries are prehistoric sites.

According to the Florida Master Site File, ten of the thirteen prehistoric sites lay along the coastline in the beach dune, coastal strand and maritime hammock natural communities. Highway realignment since original recordation of the sites makes their exact location uncertain. The other three-recorded sites lie along coves on the Indian River Lagoon coastline. The park also contains known but unrecorded sites, and additional sites in unsurveyed areas are suspected. It is unknown how representative this site distribution pattern is given the lack of a systematic archaeological survey of the area. Known sites may simply correlate with areas that have already been examined, or represent chance discoveries encountered during other activities. A predictive model of archaeological site location developed for Brevard County determined that the entire peninsula possessed a high probability for containing archaeological sites and furthermore, that every type of physiographic environment in the peninsula, except the surf zone, possessed this probability (Bense and Phillips 1990). The swampy nature of the Indian River Lagoon shoreline may have dissuaded investigators to date; however, one of the oldest known sites in the Indian River area is located along the lagoon just outside the park, dating to the Orange Period with its fiber-tempered ceramics, now partially inundated by higher sea levels. According to State Archaeologists, the high numbers of sites on the peninsula indicate a concentrated pre-Columbian occupation (CARL 2003).

Two of the park's thirteen recorded sites are historic sites with prehistoric components. One is a tentatively identified homestead or mosquito control ditch located near the Indian River Lagoon, and the other is the renowned 1715 Spanish survivors' camp that stretches across a narrow portion of the peninsula near the park's southern boundary. The park's McLarty Museum is located on-site, interpreting the catastrophe and recovery efforts, and the larger historical and political context, including Native American and European interactions evidenced by the mix of historic and aboriginal archaeological material. There are three underwater shipwreck sites just offshore, not under Division management; two are remnants of wrecked Spanish Plate Fleet ships, and one an early 20th century vessel. The park also contains structural remains and debris associated with late 19th through mid 20th century fishing camps and squatter habitations. It is uncertain at this time which qualify as historic, or what significance any possess. See Addendum 6 for basic site information.

Many of the prehistoric sites along the peninsula, including ones now within park boundaries, were documented by Irving Rouse during his 1944 "survey of Indian River archaeology," sponsored by the Yale Peabody Museum (Rouse 1951). Rouse compiled all available data on known sites, based largely on local informants, and from his own

limited reconnaissance survey, site visits and study of private and museum collections. Of the nine sites in the park that Rouse recorded, two were brought to his attention by Albert T. Anderson, a local landowner, and five by Charles D. Higgs, a winter resident of the area. Both men had conducted amateur excavations of a number of these sites, as had other amateurs from the late 19th century on, the type, extent and documentation of which are unknown. Several artifact collections associated with these early investigations are housed at the Florida Museum of Natural History in Gainesville, Florida, (formerly the Florida State Museum); a collection may also exist at the Museum of Natural History as well, associated with Charles S. Allen's excavations of 8BR124 in 1893. Archaeologists Rouse, John Goggin, and Hale Smith, a student field crew, and local amateurs visited several of the park sites during the mid to late 1940s in connection with the Indian River survey, documenting sites' observable extent and conducting very limited subsurface testing, with the exception of the more substantial trenching of a shell midden north of the inlet (8BR125). The information from this survey comprises the bulk of what we know to this day about most of the sites in the park.

Three sites received greater attention in the late 1960s. In 1966, midden and human remains eroding from a beach deposit exposed by low tides prompted excavations by individuals associated with the company that held salvage rights to the area. In 1967, the Central Florida Archaeological Society, a local branch of the Florida Anthropological Society, systematically excavated a large shell midden (8BR125) north of the inlet to sterile ground with permission from then owner Jack Foote (CFAS 1969). The site revealed evidence of habitation, including a possible hearth, postholes and *in situ* deposits of ceramic sherds dating to the Malabar 2 period. Also in 1966 – 1967, State Archaeologist Carl Clausen excavated the 1715 Spanish Fleet Survivors and Salvagers Camp, donated to the state by local landowner Robert McLarty, recovering artifacts and data from this and nearby sites and shipwrecks to develop interpretive exhibits for the park's new treasure museum.

There has not been an intensive, systematic archaeological survey of the Indian River Lagoon. In the half century since Rouse's seminal work, amateur and professional archaeologists, as well as treasure hunters, have identified more sites and excavated a few, counties have developed predictive site location models, CRM firms have surveyed sites slated for development, and state archaeologists have helped public land managers protect sites. The Division has conducted or sponsored no further research, survey or excavation in the park since Clausen in the late 1960s, with the exception of limited shovel testing during archaeological monitoring of park improvements. Eleven of the park's thirteen recorded archaeological sties were recorded before the state park was established; the two since were recorded in the 1990s by agency staff who encountered them while in the field on other business.

With the exception of the National Historic Landmark 1715 Survivors' and Salvagers'

Camp, the significance of sites in the park is mostly unknown. The 2003 CARL (Conservation and Recreational Land) Survey of the Archie Carr Sea Turtle Refuge just to the north of the park found that the prehistoric sites in the refuge, and other similar sites nearby, appeared to "form a settlement complex strategic to exploiting resources from the Atlantic and the Indian River." State Archaeologists stated that this complex of sites is likely eligible for listing on the National Register of Historic Places (Glowacki, Newman and Gensler 2003).

The size and current condition are also unknown for most sites, and for a few, their location too. During a 1997 assessment of recorded sites, park staff relocated as many sites as possible, updated location and condition information, identified observable threats, and noted recent activity in the area. At that point, some sites were vegetated while others had recently been cleared of exotics; sites to the south of the inlet were eroding along their coastal edge, while areas to the north were accreting; some had long ago been impacted by road and parking lot construction; and one had recently been looted after being covered in a local newspaper article. It is unknown, however, how seriously the park's archaeological sites have been impacted by these various phenomena and how much decline, if any, sites have suffered over the years.

In addition to archaeological sites, the park also possesses artifacts excavated from sites in the park, related nearby sites, and sites further afield along Florida's Atlantic coast. Almost all of the park's archaeological artifacts are located in interpretive exhibits in the McLarty Treasure Museum. The artifact collection is primarily related to the 1715 Spanish Plate Fleet, recovered from nearby underwater shipwreck sites, the park's Survivors and Salvagers Camp (8IR26), and the Higgs site (8IR24) just south of the park. Many of these artifacts are on loan to the park from the Division of Historic Resources (DHR), Florida Department of State. Loan renewal is based on conducting periodic inventory and condition assessment, and ensuring the safety of artifacts via sufficient security and housekeeping measures. Other artifacts are on loan from private collectors, or have been donated to the museum by such. The artifacts are in a climate-controlled environment, and are in relatively stable condition. An exception is a large anchor conserved years ago by DHR, whose protective coating is starting to fail. See the Museum Collection sections for related information.

Metal detecting is a popular sport in the area. The public is presently permitted to metal detect in the park between the high water mark and the toe of the dune along the coast. Two issues associated with metal detecting in the park are the unknown archaeological sensitivity of the coastline and conflicts between metal detectors and offshore treasure salvagers. As permitted by Division policy, park management has banned metal detecting in coastal areas with known archaeological sites, including the Cato Site and the 1715 Spanish Shipwreck and Salvagers Camp. The park's coast has never been surveyed to assess its archaeological sensitivity, however; future survey, which should be prioritized, may support restricting the activity in even more areas of

the park. This stretch of Florida is known as the Treasure Coast because of the Spanish shipwrecks just offshore; however, the park does not promote metal detecting in the park for historic artifacts. Per state law, any artifacts found on state lands belong to the State of Florida and cannot be removed from the park, including those located by metal detectors in areas where the activity is permitted. Three state-issued, offshore treasure salvage contracts are presently held by private entities that each extend to the park's mean high water mark. In the past, metal detectors have inadvertently trespassed over this line into areas that these companies hold exclusive salvage rights. Some mechanism is needed to inform metal detectors of restrictions in regards to archaeological sites, and salvage companies' control of certain areas.

Ethnographic resources. Sebastian Inlet is renowned as a top fishing location. In addition to attracting sport and local fisherman, park lands have an historic association with a once thriving commercial fishing industry. This history and these lands have cultural significance for still living local communities. With construction of the Sebastian Inlet Fishing Museum in 2000, the park formally assumed a role in the preservation and interpretation of this history. In the process of developing interpretive displays for the museum, the park established or strengthened relationships with local families with ties to the industry, conducted oral history interviews, and collected objects and photographs that illuminate various aspects of the industry. The park manages the tangible material related to this history and culture as part of its museum collections, including oral history tapes and transcripts, fishing poles and other equipment, photographs and miscellaneous memorabilia. Museum staff actively collects additional material to round out its collection and augment its interpretation, and routinely interacts with individuals who have connections to this past.

Sebastian Inlet is also renowned as a top surfing location. The north jetty creates breaks that draw surfers from around the world; the park hosts an annual surf competition. While a much newer phenomenon in the area than fishing, surfing predates creation of the park, as does the sometimes contentious relationship between surfers and fishers. The park does not formally recognize surfing as a cultural or historical resource; in another decade or so, however, use of the area for this activity by this subculture will segue way into the historic, worthy of consideration as a candidate for preservation efforts.

Historic structures. The park does not presently contain any historic structures. While not historic yet, the McLarty Treasure Museum is unique for its 'starfish' design, with finger-like projections from a central hub. Preservation of this character-defining design should be considered during the planning of any new additions or alterations. Sebastian Inlet's jetties date to the first half of the 20th century, qualifying as historic structures whose significance, particularly as an example of engineering, is unknown. Because the Division's jurisdiction does not include them, however, responsibility for compliance lies elsewhere.

Museum collections. The park contains two museums –the McLarty Treasure Museum and the Sebastian Inlet Fishing Museum. The McLarty Museum was built in 1969 on land donated by Robert McLarty, on a portion of the site whose history it interprets, the 1715 Spanish Plate Fleet Survivors and Salvagers' Camp. It was the donor's intent that this facility be used to exhibit a certain percentage of the State's share of treasure recovered from local Florida waters by permitted salvage companies. Security concerns have tempered the scale of the original endeavor. The museum still exhibits representative artifacts from the string of such camps and shipwrecks along the peninsula, however, as well as artifacts related to Florida's French colonial activity that are displayed in separate cases, donated and loaned to the park by private collectors. Members of the museum's Citizen Support Organization have donated some of this material, and embellished some displays with interpretive props. Artifact displays, narrative text and illustrations, paintings, an acclaimed documentary, and special event presentations are used to tell the story of the Treasure Coast. The park directly manages and oversees development of the museum building, collection and interpretative programming. Dedicated staff handles collection care, including loan and donation transfers and paperwork, the collection catalog and the cyclical cleaning of artifact cases and exhibit areas.

The Sebastian Inlet Fishing Museum was built in 2000 with sponsorship by Representative Sembler to commemorate, preserve and interpret the history of commercial fishing in the area. Because this history is of the recent past, this museum has the extra dynamic of being staffed and visited by people connected specifically to this local history and seafaring generally. Interpretation is largely accomplished through signage and reproduced historic images and industrial settings and equipment. Several exhibits incorporate authentic objects whose historical and cultural value differentiates them from interpretive props. These museum collection objects are mostly owned and managed by the museum's Citizen Support Organization, who handle new acquisitions and donor stipulations. This museum, unlike the McLarty Museum, is directly overseen, operated and staffed by volunteers. Volunteer staff has augmented interpretive programming by new tours, exhibit cases, displays and hands-on activities.

RESOURCE MANAGEMENT PROGRAM

Special Management Considerations

Timber Management Analysis

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

long-term management goal for forest communities in the state park system is to maintain or re-establish old-growth characteristics to the degree practicable, with the exception of early successional communities such as sand pine scrub and coastal strand.

A timber management analysis was not conducted for this park. The total acreage for the park is below the 1,000-acre threshold established by Florida Statutes.

Additional Considerations

Since Sebastian Inlet State Park represents one of the last remaining populations of southeastern beach mice (SEBM), monitoring will continue, and all suitable habitats for this endemic subspecies should be burned periodically. This would include both the beach dune and coastal strand communities. The opportunities to reintroduce beach mice north of the inlet should be investigated for feasibility and desirability. In 2006, discussions occurred with USFWS about a possible reintroduction of mice, north of the park on USFWS property and on park property. In order for the reintroduction to be successful, habitat at the park is needed. A number of recommendations were made: 1) continue to control possible predators and feral cats, 2) increase herbaceous ground cover through mechanical treatment and prescribed fire and 3) improve suitable habitats, which would include both the beach dune and coastal strand communities where possible. The park follows all USFWS procedures for beach mice outlined in the Federal recovery plan for SEBM.

Increased protection and management for threatened and endangered shorebird species should continue and should expand into other areas of the park where habitat is available. Cooperation with local, state and federal agencies along with law enforcement is needed to ensure that resting, loafing and nesting birds are protected on the beaches with in the park, especially in the cove west of the bridge, on the north side of the inlet, and on Coconut Point. The beach is heavily used by visitors for fishing, swimming, sunbathing, surfing and fitness. Often visitors will bring their pets to the beach with them even though pets are prohibited on the beach. Enforcement of the no pets on the beach policy is necessary in order have successful shorebird nesting.

Enhancement of the protected zone at the tip of Coconut Point should begin as soon as possible since this area has proven to be a suitable area for beach-nesting birds. A plan has been written for this area and can be put into action when funds are secured. In order for the project to be a success, visitor access to the site will need to be restricted and enforced.

Biotically diverse Sabellariid worm reefs occur east of the park boundary, within the 400-foot sovereign submerged areas. Juvenile green turtles are known to use these reefs for protection and foraging. Research to determine faunal composition has been conducted and additional research should be encouraged. The condition of the reefs is not well known; however, they do appear to be affected by beach renourishment

projects. Following beach renourishment projects and storms, sand has covered them; this may result in death to some portions of the reef. With respect to beach renourishment projects, measures should be taken to insure that beach quality sand with a minimum of fine material is used; in addition, the amount of material placed on the beach and its slope should be minimized. The park needs to stress the importance of monitoring the reefs during renourishment projects. The best reefs within the vicinity of the park should be protected and are shown on the Reference Map.

Protection of archeological resources. The spit of land that Sebastian Inlet bisects is heavily impacted by natural forces, including tidal action and inclement weather. The resulting flooding, accretion, and erosion pose some of the most serious threats to archaeological sites given the coastal location of most. Three areas of active erosion have been identified in the park, including the Coconut Point area west of the campground, the entire Atlantic shoreline and the beach dune community south of the inlet. Archaeological sites in these areas require closer monitoring than more sheltered sites. The park's dynamic natural conditions routinely precipitate substantial beach re-nourishment projects that entail the addition of sand, heavy vehicle traffic, and occasional earth moving. As with any anticipated potential impact to archaeological sites, coordination with the Division of Historical Resources regarding compliance requirements is needed. Other potential impacts to monitor and mitigate as needed include erosive foot and ATV traffic across areas with known sites, vegetation removal and prescribed burns.

Management Needs and Problems

1. The interaction between gopher tortoises and vehicles in the overflow parking area west of the cove will continue to be a problem with the demand for additional parking to meet the high recreational demands. Vehicles should be prohibited in portions of the field where tortoises are present according to FWC protection guidelines. A plan will need to written for this area outlining all demands for this area such as species protection, groundcover enhancement and visitor use in the area.

2. Unauthorized access to the beaches along A1A south of the inlet continues to be a problem and may be a problem on the north side of the inlet following habitat restoration efforts. Access must be controlled by closing the numerous footpaths and directing visitors to authorized parking areas and park entrances. Fencing may be needed to control access and to allow restoration of the eroded footpaths to take place. Signage along State Road A1A and the primary dune may be necessary. The use of ATVs on park beaches is proving to be a problem. Those needing access to the beach using ATVs should receive permission from the park manager beforehand.

3. Funding needs to be secured in order to begin enhancement of the protected area at tip of Coconut Point for beach-nesting birds. Ruderal and exotic vegetation needs to be removed and access controlled. This may require fences, native

plantings and public education.

4. The cove west of the bridge and north of inlet is a swimming beach; therefore, pets should be restricted from this area for public health and safety, water quality, and listed species protection. Law enforcement will be necessary in order to restrict pets from the area.
5. Areas on the beach, around the cove, and on Coconut Point may be occasionally closed if the areas prove to be possible nesting and resting areas for listed shorebird species. The recreational demands at the park are so great that birds may not have the opportunity to begin to nest. Birds and visitors can both be in or on these areas if done according to FWC, USFWS, and the Florida Park Service's rules and guidelines.
6. A professional archaeological survey is needed to re-locate previously recorded sites, identify not yet recorded sites and determine site boundaries, so that the park can know what to protect. Priority areas for this kind of archaeological survey work are the areas most impacted by erosion, exotic vegetation removal and beach renourishment projects.
7. Regularly scheduled site visits to archeological sites are needed to monitor site condition, track condition changes over time and generate data useful for planning any needed preservation treatment. Baseline condition information should be compiled for the park's archaeological sites so that site decline can be measured and detected.
8. Impacts to sea grass beds within the park boundaries should be limited to the extent possible due to their sensitive nature and rarity and the habitat for which they provide to wildlife. The park should work with CAMA to determine the appropriate protection measures that would take into consideration current and future visitor use.
9. An interpretive plan is needed for the fishing museum to evaluate current exhibits and to guide future improvements.

Management Objectives

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

Natural Resources

1. Conserve, protect and manage natural communities, significant habitat and ecological systems.
   - **A.** Survey for exotic plant and animal species and continue the exotic species removal program

B. Continue and expand the prescribed fire program to maintain fire as an ecosystem process with emphasis on maintaining the current condition of the coastal strand and beach dune habitats south of the inlet while restoring these communities to the north of the inlet

C. Seek funding for additional staff to aid in the preparation, implementation, and evaluation of resource management

D. Monitor natural community restoration projects to adaptively manage habitats

E. Close unauthorized foot paths which occur throughout the beach dune and coastal strand habitat to the north and south of the inlet and replant with native herbaceous vegetation

F. Control unauthorized access and prevent additional erosion

G. Educate visitors on all projects and changes to the park to promote the park and it's programs

2. Restore, monitor and protect the hydrology of the park to the greatest extent practicable.

A. Work with SJRWMD to obtain ground and surface water quality and quantity data

B. Determine the feasibility of restoring the original hydroperiod to the tidal swamps by working with local mosquito control districts

C. Control and limit stormwater runoff into adjacent wetlands along A1A, park drives, easements, and other areas

3. Maintain or increase populations of listed plant and animal species occurring on the park.

A. Explore opportunities for reintroducing the southeastern beach mouse to the north side of the inlet

B. Expand and restore beach mouse habitat

C. Survey and monitor for wintering and nesting shorebirds and establish protected resting, loafing and nesting areas where needed throughout the year. Work with FWC and local agencies on shorebird protection issues.

D. Prohibit pets from all park beach areas

E. Control access to Coconut Point during shorebird breeding season and after enhancement

F. Work with SID to encourage more appropriate timing and frequency for future renourishment projects that allow for successful sea turtle nesting and to protect sensitive beach mouse and shorebird habitat

G. Survey and monitor populations of gopher tortoises

H. Protect gopher tortoises in the field west of the cove by controlling access and developing a plan for this area

I. Continue flora and fauna surveys

4. Restore highly altered or severely impacted natural communities.

A. Mechanically treat severely overgrown, fire suppressed coastal strand communities to the north of the inlet. A narrow buffer may be needed to control unauthorized access

B. Seek funding to initiate the enhancement of the Coconut Point protected zone for beach-nesting birds according to the developed plan

C. Develop a written plan for the field west of the cove that takes into consideration all demands for this parcel

D. Restore the area around the cove by removing exotics and replanting with natives to give a more natural appearance for visitors to enjoy

5. Provide environmental education and enhance public appreciation for elements of natural and cultural diversity.

A. Continue to operate both the McLarty Treasure Museum and the Sebastian Fishing Museum

B. Expand interpretive programs and field trips for the general public and school groups to raise awareness of the local flora and fauna, including what is needed for management

C. Train additional volunteers as tour guides

D. UTAP designated park trails and update interpretive signage as appropriate

Cultural Resources

1. Develop and implement an archaeological site condition-monitoring program.

A. Establish a reasonable site visit schedule

B. Train staff or volunteers to conduct condition assessments

C. Adopt a standardized condition assessment form to ensure data collection consistency

D. Maintain permanent files for each site for condition data, and other documentation related to the physical change or treatment of sites.

2. Protect recorded and unrecorded archaeological sites.

A. Prioritize avoiding or minimizing site disturbance during improvement and resource management projects

B. Reduce or eliminate other threats to the extent possible

C. Apply approved treatment to preserve or stabilize sites

3. Conduct archaeological surveys in order to locate sites, determine boundaries, document condition, assess significance, evaluate the archaeological sensitivity of the coast and distinguish between historic and non-historic surface remains.

A. Prioritize archaeological survey needs

B. Identify what can be accomplished in-house

C. Pursue grant funding for additional professional work

D. Solicit volunteer support where appropriate

4. Coordinate preservation, research and interpretation efforts for archaeological sites with local entities.

A. Encourage permitted research by accredited regional universities and colleges

B. Encourage volunteer work by local chapters of the Florida Anthropological Society, as appropriate

C. Foster a relationship with the new regional office of the Florida Public Archaeology Network

D. Solicit support from Brevard and Indian River Counties for archaeological surveys and pursuit of grant money

5. Develop a Museum Manual for the Sebastian Inlet Fishing Museum.
- **A.** Clarify roles and responsibilities of the park and the CSO
- **B.** Clarify operational procedures
- **C.** Clarify collection management arrangements

6. Develop an Interpretive Plan and Scope of Collection Statement for the Sebastian Inlet Fishing Museum.
- **A.** Revisit the purpose of the museum and identify additional interpretive goals
- **B.** Consult with individuals with ties to the local commercial fishing industry
- **C.** Evaluate current exhibits based on the new interpretive plan
- **D.** Evaluate current museum collection, and identify collecting priorities based on the new interpretive plan

7. Address preservation, conservation and interpretation issues at the McLarty Museum.
- **A.** Purchase equipment to produce a continuous record of temperature and humidity, and evaluate and remedy significant fluctuations
- **B.** Replace UV-protective sleeves on lights; reconfigure or replace current lighting as needed to protect photographic material
- **C.** Consult with DHR for permission to and instructions on touching up conserved metal artifacts
- **D.** Secure funds for a general conservation assessment, via the Conservation Assessment Program or a private conservator, to assess the collection and museum environment, and for specific evaluation of the paintings.
- **E.** Develop a written security plan for the museum

8. Recognize and interpret the significance of the park's cultural resource and stewardship activities.
- **A.** Solicit the involvement of associated living communities in the development of related preservation and interpretive projects
- **B.** Post protective signage near heavily trafficked archaeological sites if useful.
- **C.** Nominate significant sites to the National Register of Historic Places
- **D.** Keep permanent park history files on the park's development and history of surfing, fishing and other traditional uses; Park Interpretive plans should be updated to promote public education of these activities, the park's history and prehistory, archaeological research of the peninsula, and preservation issues

Management Measures for Natural Resources

Hydrology

The St. Johns River Water Management District (SJRWMD) is responsible for water control in the unit as well as in the surrounding drainage basin. SJRWMD monitors quality and quantity of ground water in the park. Management will comply with best management practices to maintain and improve the existing water quality on site and

will take measures to prevent soil erosion and other impacts to water resources.

Discussions with the local mosquito control districts should be initiated to address the altered hydroperiod for the tidal swamp caused by the levees. The tidal swamps are not influenced by the natural tidal influx, possibly affecting water quality, flora and fauna, and other unknown aspects of the park. A feasibility study should be done to determine if any of the mosquito ditches and levees could be removed to restore hydrologic conditions to near shore communities.

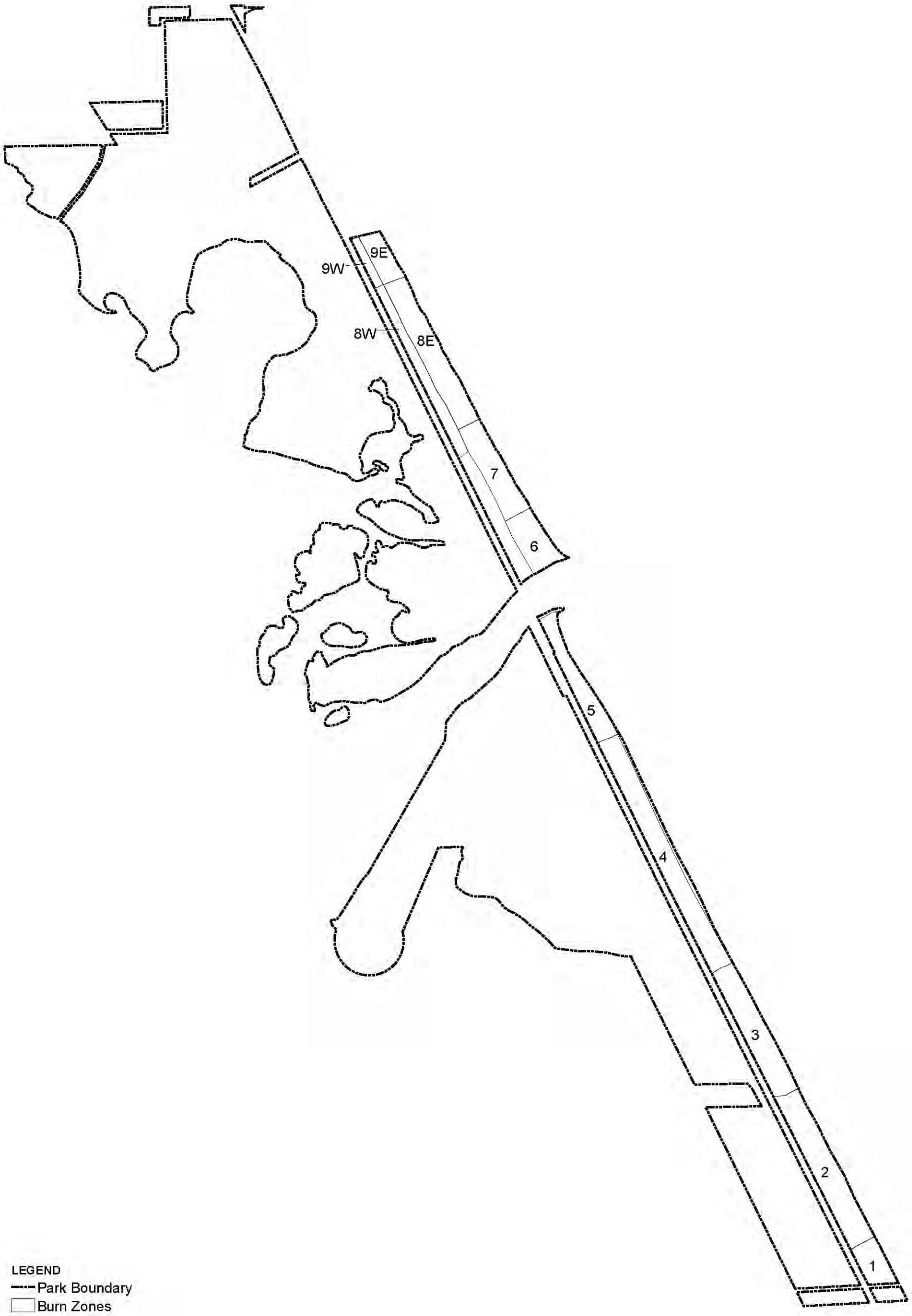
Prescribed Burning

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

There are 92 total burn acres at this unit divided into 11 burn zones (see Burn Zone Map). Both fuel reduction and restoration burns are necessary. Since a majority of the burn acres is dominated by coastal strand and beach dune, all zones will have a target fire return interval of five to seven years. Shorter intervals may be necessary to help restore overgrown zones to a more natural state based on desired herbaceous cover and densities. Fire will be the main restoration tool, but mechanical removal of hardwoods and palmettos and the use of herbicides will be used when needed. These issues will be addressed in the annual burn proposal developed by the park manager and biologist.

Restoration of the coastal strand community north of the concession building on the north side of the inlet began in January 2007. Only a portion of the habitat was mowed in preparation of a prescribed fire and for a possible reintroduction of the southeastern beach mouse. A burn was performed a month later and the results were impressive. This had been the first time that this zone had ever been burned and fuel loading was a concern as well as vertical structures of the habitat. The vertical structure before mowing was on average 6 to 15 ft but after mowing, the average height was 18 in with a few unmowed patches. When other zones north of the inlet are treated, unauthorized access will be a concern. It may be necessary to leave a visual barrier and / or fence along A1A to prevent access.

The USFWS manages a small portion of habitat directly north of the park, west of A1A, located within the Archie Carr National Wildlife Refuge. Due to budget cutbacks and staff reductions, it has been difficult for the Service to find resources to restore this portion of coastal strand and dune to its historic condition. As the park continues to



LEGEND

Park Boundary

Burn Zones

N

0 500 1,000 2,000 Feet

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

SEBASTIAN INLET STATE PARK

BURN ZONE MAP

restore portions of habitat immediately adjacent to the USFWS, it will become more and more difficult to conduct prescribed burns. The Park Service and the USFWS have begun to discuss the possibilities of how the park can aid in the management of this parcel.

Restoration has been ongoing on the south side of the inlet in the coastal strand community. Numerous burns have been conducted with the vegetation responding favorably. Sea grape is dense around the base of the bridge and in some areas south of the day use parking area. Mowing may be needed to reduce the height of the sea grape and encourage the reproduction of grasses and forbs as long as the removal of the vegetation does not cause disorientation of nesting sea turtles.

Future development and placement of facilities should consider the prescribed fire program. The existing concession building and restrooms are located within burn zones and that may be difficult to burn around. Resource management would be much improved if future facilities were placed within existing footprints or in disturbed areas.

Designated Species Protection

The welfare of designated species is an important concern of the Division. In many cases, these species will benefit most from proper management of their natural communities. At times, however, additional management measures are needed because of the poor condition of some communities, or because of unusual circumstances that aggravate the particular problems of a species. To avoid duplication of efforts and conserve staff resources, the Division will consult and coordinate with appropriate federal, state and local agencies for management of designated species. Specifically, data collected by the FWC and USFWS as part of their ongoing research and monitoring programs will be reviewed periodically to inform management of decisions that may have an impact on designated species at the park.

Surveys to monitor the distribution and abundance of the southeastern beach mouse at Sebastian Inlet will continue. At this time, the population appears to be concentrated in the most recently burned areas of coastal strand habitat on the southern part of the park.

Surveys to monitor the population of gopher tortoises should also continue, as should road kill surveys to document the impact of roads on wildlife, particularly State Road A1A that bisects the park going from north to south and is known to be a significant source of wildlife mortality in the park.

Sea turtle nest monitoring and index nesting beach surveys will also be continued following the statewide protocols established by the FWC. Additionally, predator removal projects will be implemented if it is determined that excessive predator populations are having negative impacts on sea turtles and their nests as well as other

listed species such as beach mice and shorebirds.

Shorebird surveys will also be conducted. Staff will continue to follow Standard Resource Management Procedure Number 13 and Resource Management Guideline Number 3, concerning the protection of colonial breeding birds. Under this procedure and guideline, recommended setback distances from colonies will be implemented, boundary signs will be posted and the area will be monitored. The recommended setback distance for least tern colonies is 180 meters (590 feet) from the perimeter of the outermost nests or individual birds. Important bird resting areas may also be protected under this resource management procedure and guideline. Fencing to exclude visitors may be necessary during the nesting season. On Coconut Point, mechanical removal of vegetation may be required before shorebird nesting season. Where nesting occurs on spoil areas, both the resource management procedure and guideline allow for the deposition of new spoil if necessary, well in advance of the expected onset of breeding.

Exotic Species Control

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

Plants. All exotic species pose real or potential threats to the integrity of the unit's natural communities and are in conflict with the Division goal of preserving and maintaining examples of the natural Florida. Brazilian pepper is the invasive exotic plant species that currently poses the greatest threat to the resources of this unit. Other invasive exotics, such as Australian pine, simpleleaf chastetree (*Vitex trifolia*), golden pothos (*Epipremnum pinnatum*), chandelier plant (*Kalanchoe tubiflora*), castorbean (*Ricinus communis*), creeping oxeye (*Wedelia trilobata*), papaya (*Carica papaya*), mother-in-law's tongue (*Sansevieria hyacinthoides*), and balsampear (*Momordica charanita*) also occur at this unit and should be removed to prevent further infestations. Brazilian pepper and Australian pine are the main priorities for removal activities; an exotic removal plan is updated annually and is actively carried out by park staff. Grants and other sources of funding must be sought to hire contractors in order to aid in the control of exotic plant infestations. Staff time is limited so the park often relies on seasonal employees to scout for and to treat infestation in difficult locations.

Animals. Several exotic animal species are found at this unit, including black rat (*Rattus rattus*), nine-banded armadillo (*Dasypus novemcinctus*), brown anole (*Anolis sagrei*), Indo-pacific gecko (*Hemidactylus garnotii*), and northern curlytail lizard (*Leiocephalus carinatus armouri*). Of these, the black rat is the most widespread. It occurs in and around buildings, the jetties and the coastal strand habitat, primarily where

Brazilian pepper has been established. Black rats could compete with southeastern beach mice and eastern wood rats for similar food sources; therefore, rats should be removed whenever possible. Feral cats are occasionally a problem and are removed immediately upon detection. It may prove beneficial to the park to hire private contractors to deal with hard to capture species when funds are available to do so.

Problem Species

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

Raccoons (*Procyon lotor*) are problem species during sea turtle and shorebird nesting season when they predate nests and destroy eggs, nestlings and hatchlings. They are also problematic in the campground where they scavenge for food from campers. Education of the park visitor about the consequences of feeding wildlife should continue. Periodically, the least cautious and most destructive raccoons may need to be removed from the beach dune areas and the campground.

Management Measures for Cultural Resources

The management of cultural resources is often complicated because these resources are irreplaceable and extremely vulnerable to disturbances. The advice of historical and archaeological experts is required in this effort. 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, 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 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 prepare for locating and evaluating historic resources, both archaeological sites and historic structures.

The significance of most archaeological sites in the park is unknown. Evaluation of

significance enables a park to know the cultural and historical value, and research potential, of the archaeological resources in its charge. As relates to the practical matter of site protection, the park is unable to prioritize and concentrate its protection efforts to sites of known significance versus those with no remaining integrity. As relates to the role of preserving and interpreting Florida's heritage, the park possesses a largely unevaluated and untapped resource.

Many of the archaeological artifacts on display are metal objects, much of which has undergone conservation treatment in the past. Protective coatings have a life span, and may require periodic touch-up. Other collection-related concerns related to archaeological artifacts are included in the Museum Collection section.

Ethnographic resources. The park is, to some extent, a steward of a living group's heritage. The Sebastian Inlet Fishing Museum is the primary mechanism through which the park researches, preserves and interprets the area's commercial fishing history, and maintains connection to the local fishing community. Development of new interpretive displays tends to drive the collection of historic and ethnographic objects, photographs and other material. At present, the museum does not possess a plan to guide interpretive program development beyond the original exhibits installed for its grand opening. These exhibits were based, in part, on the contributions of families that had once been prominent in the local industry. An interpretive plan is needed to evaluate current exhibits, and to guide future improvements. The planning process should identify what other aspects of this history are significant to the local community and warrant interpretation, and what additional museum collections are needed for effective interpretation. This process can honor the park's associated communities by calling on them not just to contribute content, but participate in design.

The park should consider broadening its scope of collection to include material related to the history of surfing in the area. The park does not presently interpret this history to the public, nor does it have available interpretive facilities to do so. While collecting objects may be beyond the interpretive plans and resource management capacity of the park, collecting archival material can preserve record of this long-time recreational use of the area and distinct subculture.

Museum collections. The McLarty Museum's artifact collection is at the museum's core, and in addition to the direct care regime, is affected by interpretive and structural issues. Interpretation, which makes artifacts meaningful to visitors, needs further development for subsets of the collection. This includes additional research, consideration of rotating displays and living history events, refurbishment and correction of existing signage and displays, and installation of new interpretive media. The building itself, its envelope, systems and displays, also directly affect the physical wellbeing of artifacts. While the interior is climate controlled, summers are extremely hot and humid. The door from the main gallery to the boardwalk overlooking the site

is opened frequently during business hours, having an unknown affect on the desired temperature and humidity inside the museum. Some mechanism is needed to produce a continuous record of temperature and humidity fluctuations in order to assess the impact of the door on the gallery, and the functioning of the HVAC generally. If indicated by monitoring results, corrective action should be taken to stabilize the environment inside to protect artifacts. Other environmental threats to the collection are mold and UV light. Visible patches of mold on the ceiling, and reports of carpenter ants, indicate possible moisture problems with the roof that need identification and remedy. Displayed artwork requires examination by a conservator, particularly the large rendition of a hurricane-tossed ship, as it has been treated for mold in the past and may be molding again. Fading of displayed historic photographs signifies the need to assess and remedy the harmful affects of light, and/or replace the original photos with copies.

The Sebastian Inlet Fishing Museum is newer and less well established, and its collection is smaller. From its start, the museum has been dependent on FPS collaboration with locals and volunteers, both for interpretive program development and for staffing. Volunteers from the museum's Citizen Support Organization (CSO) handle the day-to-day operation of the gallery, and have expanded the scope of its interpretation and collection via the addition of new displays and narrative. The CSO accepts, owns and manages most of the museum's historic object collection. The museum is where the CSO and the park's purview overlap; no formal agreement exists, however, between the park and CSO regarding the museum. A Museum Manual is needed that clarifies the roles and responsibilities of each, and delineates procedures, in regards to different aspects of the museum's operation and development. Additionally, an interpretive plan is needed to identify and prioritize the museum's goals; its development can honor and bring together the input and contributions of volunteers and associated local communities with the park's preservation and interpretive goals. Both of these documents will have a direct bearing on museum collections management and care, and are necessary to proceed in development of a Scope of Collection Statement.

Research Needs

Natural Resources

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

Research on sea turtles and sea turtle nesting has been ongoing at the park for many years; due to the importance of this area to nesting sea turtles, current and future

research should be encouraged. Monitoring of the physical attributes of nourished and natural beaches has been conducted since the mid-1990s; this information continues to yield valuable information for management purposes. Some limited geological research has also been conducted; more should be encouraged. Research on marine invertebrates, seagrass and worm reefs has been ongoing, in some cases since the late 1980s. Further research should be done to document the effects of beach renourishment on the worm rock reefs. A feasibility study should be done to determine if any of the mosquito ditches and levees could be removed to restore hydrologic conditions and nearshore communities. Some recent research on mangrove planting techniques within the park may prove to be valuable for mangrove community restoration. Research has also been conducted on royal tern migration based on band recoveries.

Surveys to monitor gopher tortoise population size and status should continue, as should monitoring of the southeastern beach mouse, shorebirds, and marine turtles. Additional surveys to determine the presence and population size of diamondback terrapin and eastern wood rat should be conducted when possible.

Cultural Resources

In the past, there have been several very limited or narrowly focused cultural resource research projects at the park. There are no current or ongoing cultural resource research projects. Further research and survey opportunities should be pursued when possible, especially if the recommended combined Level I and Level II archaeological survey locates any prehistoric or historic sites.

Staff should draft a proposal for a combined Level I and Level II archaeological survey to identify, protect and preserve currently unknown prehistoric and historic cultural resources at the park and to resurvey the known recorded archaeological sites, utilizing GPS to fix locations.

Research is needed on the cultural periods that occupied the park or the surrounding area throughout prehistory and history: Archaic, perhaps Mount Taylor, Orange, Transitional, St. Johns and Glades, First Spanish, British, Second Spanish, Territorial, and Seminole.

Research is also needed on the history of the Spanish treasure fleets, the 1715 shipwreck, the survivors and salvors camp, the settlement of the Indian River Lagoon and the Sebastian area, the development and decline of the commercial fishing industry, and the various inlet projects.

Research is also needed to document the history of land acquisition, development and operation of the park and its two unique museums.

Resource Management Schedule

A priority schedule for conducting all management activities that is based on the purposes for which these lands were acquired, and to enhance the resource values, is contained in Addendum 7. Cost estimates for conducting priority management activities are based on the most cost effective methods and recommendations currently available.

Land Management Review

Section 259.036, Florida Statutes, established land management review teams to determine whether conservation, preservation, and recreation lands titled in the name of the Board of Trustees of the Internal Improvement Trust Fund (board) are being managed for the purposes for which they were acquired and in accordance with a land management plan adopted pursuant to s. 259.032, the board of trustees, acting through the Department of Environmental Protection (department). The managing agency shall consider the findings and recommendations of the land management review team in finalizing the required update of its management plan.

This park was subject to a land management review on April 27, 2006. The review team made the following determinations:

1. The land is being managed for the purpose for which it was acquired.
2. The actual management practices, including public access, complied with the management plan for the park.

LAND USE COMPONENT

INTRODUCTION

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

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

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

EXTERNAL CONDITIONS

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

Existing Use of Adjacent Lands

The lands north and south of Sebastian Inlet State Park include a mix of single family residential and condominium developments, a few commercial areas, and numerous conservation lands. The Atlantic coastal area of east-central Florida has been a focus of conservation land acquisition programs for many years. The Archie Carr National Wildlife Refuge, which is composed of multiple units along a twenty-mile stretch of coast north and south of the park, was established to protect sea turtles that nest here. South of the park is the country's first national wildlife refuge, Pelican Island National Wildlife Refuge. This refuge was created in 1903 by Theodore Roosevelt to protect its bird rookeries. To the west of the park is the Indian River – Malabar to Vero Beach

Aquatic Preserve that was established to protect the living waters of the Indian River Lagoon, a shallow lagoon estuary. Also near the park are various protected lands acquired and managed by Brevard and Indian River Counties, some of which provide public beach access. Of note, Brevard County opened the Barrier Island Sanctuary Management and Education Center in 2008 that is located less than two miles north of the park. This new educational facility will focus on the habitats of the barrier island, sustainable living and the sea turtles found in the Archie Carr Refuge. Brevard County also operates a large camping area at Long Point Park on an island in the Indian River Lagoon adjacent to the northwest corner of the park.

Collectively, these managed areas protect a significant range of natural communities and habitats and support an important sample of Florida's natural biodiversity. In addition to their importance to the protection of natural habitat, the Division of Recreation and Parks recognizes the importance of these diverse natural and cultural resource areas as assets to the growing success of nature and heritage based tourism in this area of the state.

Planned Use of Adjacent Lands

Continued development of residential and commercial properties north and south of the park is expected, to a limited extent. Future development will likely result in additional traffic along State Road A1A, increased threat of exotic species invading the park, additional constraints on the prescribed burning program within the park, and higher demand for the park's recreational resources. Generally, the growth management regulations now in place in both Brevard and Indian River Counties will serve to protect the natural resources and surface and ground water systems of the park.

In recent years, a paved bicycle path along State Road A1A was completed that connects to the park entrances from both the north and south. An increase in bicycle and pedestrian activities has resulted. Division staff will advocate for a safe bike/pedestrian crossing when the Florida Department of Transportation designs a replacement bridge scheduled for 2015. In addition, as part of the recent Scenic Highway designation, signage along the state road within the park may need to be altered to comply with guidelines adopted with the Scenic Highway management plan. Staff will coordinate these activities with the appropriate parties, as needed.

PROPERTY ANALYSIS

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

Recreation Resource Elements

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

Land Area

Sebastian Inlet State Park provides the typical recreational resources of Florida's coastal barrier islands with beach frontage on the Atlantic Ocean. The primary recreational activities of fishing, surfing, swimming and boating occur along the shoreline and within the surrounding waters. The upland communities of the park consist of beach dune, coastal strand, maritime hammock and estuarine tidal swamp. These areas provide numerous opportunities for land-based recreation including camping, hiking, biking, picnicking, bird watching and interpretive programs.

Water and Shoreline Area

The waters bordering the park include three miles of shoreline on the Atlantic Ocean, the Indian River Lagoon along its western boundary, and the Sebastian Inlet that bisects the park. The beach shoreline is extremely popular for surfing. The north jetty creates breaks that draw surfers from around the world. The beach is also popular for swimming, sunbathing, shoreline fishing, snorkeling and strolling. Bordering the lagoon side of the park is mangrove tidal swamp. The marina and boat ramp area provide access to this water body that is used by fishermen, pleasure boaters and canoe/kayakers. Along the 500-foot wide inlet, the park's shoreline is heavily used by fishermen. In particular, the jetties at the mouth of inlet that extend into the ocean have produced many impressive catches.

Natural Scenery

The outstanding natural scenery of the park includes views from the beach, the jetties north and south of the inlet, and the bridge that crosses the inlet.

Significant Wildlife Habitat

The beach dunes, coastal hammock community and the mangrove shoreline along the Indian River Lagoon provide excellent wildlife habitat. In winter, thousands of birds gather to feed on the wide tidal flats. In summer, sea turtles nest along the park beach, and on adjacent beachfronts. Manatees can be seen feeding in the Indian River. In addition, rare worm reefs can be found in certain areas just off the beach. Interpretive programs in the park attempt to capitalize on these recreational resources, while protecting the animal species through visitor management and education.

Archaeological and Historical Features

Sebastian Inlet State Park is also a significant cultural resource site, with prehistoric

components and the site of the salvage camp from the hurricane wreck of the 1715 Spanish treasure fleet. The McLarty Treasure Museum provides an exceptional collection of artifacts from the Spanish wreck site, and interprets both the wreck and the subsequent salvage operation. In addition, the Sebastian Fishing Museum is devoted to the rich cultural history of the local fishing industry.

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

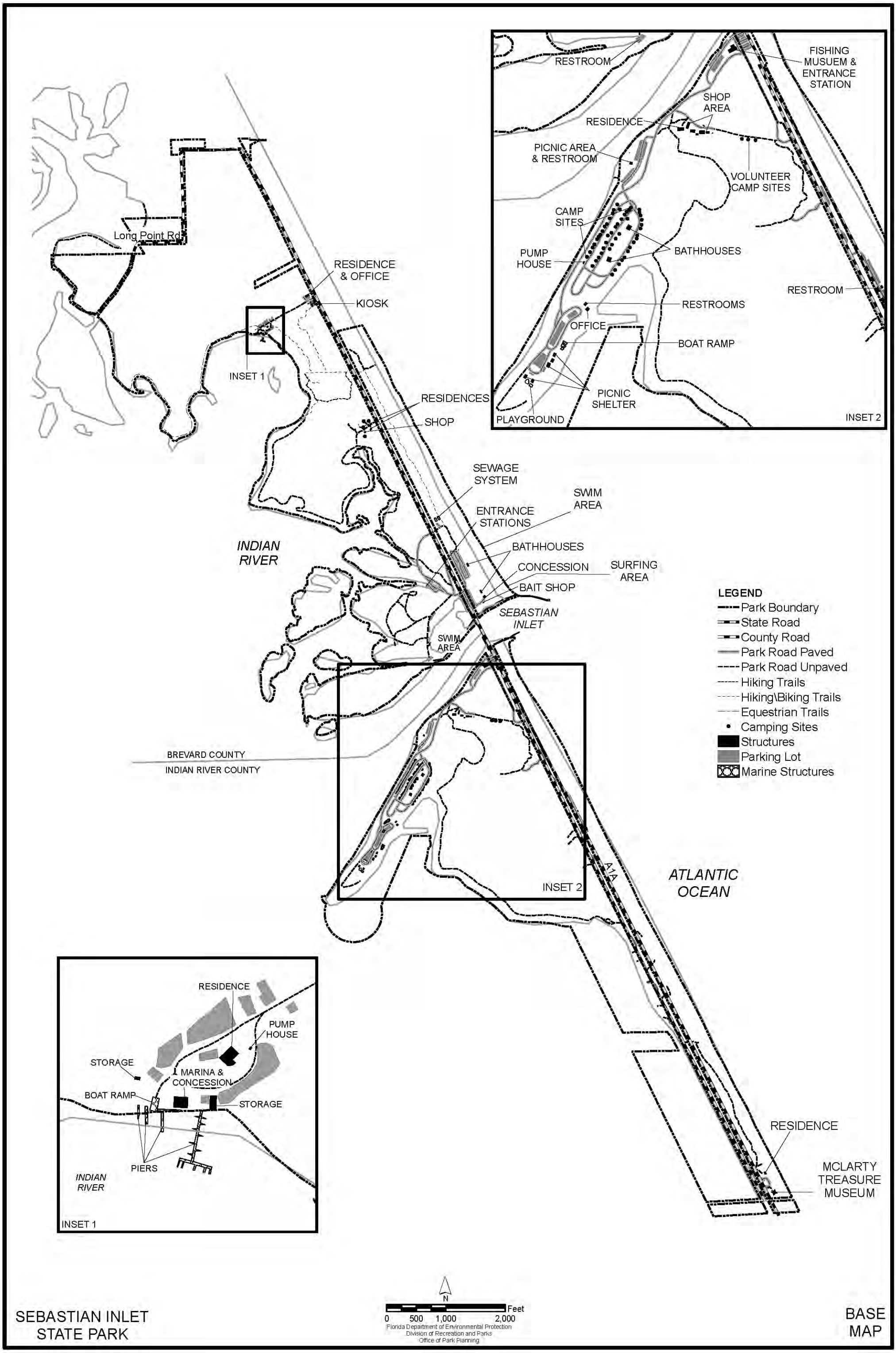
Before state acquisition, portions of the park were private lots used for mobile home sites. Indian River County managed a camping area at the same location currently developed for that purpose before the inception of the park.

Future Land Use and Zoning

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

The Future Land Use designations for the park property within Brevard County include Recreation, Public Conservation and Residential 1 (Brevard County, 2005). The zoning classifications for the park property within Brevard County include Government Managed Lands (GML), General Use (GU) and Environmental Areas (EA). The permitted uses within the GML – Parks and Conservation designation allows active and passive recreation as well as temporary or permanent conservation uses. The areas of the park designated as GML include the administration office area, marina area, and beach concession area. The estuarine tidal swamp areas of the park are classified EA. The purpose of this classification is to conserve natural resource functions and features by retaining lands and waters in their pristine character and condition, but permit uses which are compatible with or which shall enhance or restore the functions and features of such natural resources. The remainder of the park within Brevard County is classified as GU. This zoning classification encompasses rural single-family residential development, or unimproved lands for which there is no definite current proposal for development, or land in areas lacking specific development trends. Parks and public recreational facilities are permitted uses in both GML and GU.

The park property within Indian River County is designated Recreation on the Future Land Use Map (Indian River County, 2007). The local zoning for almost all of the park property within Indian River County, RS-1, allows public parks as an administrative permit use and retreats and camps as a special exception. At the extreme southern end of the park, there are a few parcels including the McLarty Treasure Museum zoned as



SEBASTIAN INLET STATE PARK

BASE MAP

RS-3 and A-1 which also allow public parks as an administrative permit use.

Current Recreational Use and Visitor Programs

Sebastian Inlet State Park is an extremely popular location for saltwater fishing and surfing. Since the area directly north of the north jetty is favored by both fishermen and surfers, conflicts do arise on occasion. Other available recreational uses at the park include swimming, sunbathing, camping, hiking, biking, picnicking, shelling, snorkeling, scuba diving, boating, canoe/kayaking, bird watching, and interpretive programs. The park also contains two museums, the McLarty Treasure Museum and the Sebastian Fishing Museum. In addition, several major surfing competitions are held here every year.

The park recorded 712,256 visitors in fiscal year 2006/2007 ranking it sixth among all the parks in Florida**.** Visitation remains heavy throughout the year but peaks March through July. This park is unique in that it remains open 24 hours a day to allow fishing access to the jetties. By Division estimates, the FY 2006/2007 visitors contributed $32.3 million in direct economic impact and the equivalent of 645 jobs to the local economy (Florida Department of Environmental Protection, 2007).

Other Uses

The original Sebastian Inlet was dug by hand between 1886 and 1895, but closed by a storm soon after. A permanent inlet was opened in 1924, allowed to close during World War II and reopened after the war. Today, the inlet is maintained by the Sebastian Inlet District (SID). The two jetties, which are very popular with fishermen and other park visitors, are managed under agreements between the Division and the SID. Spoil and pipeline easements are in place to support the periodic dredging operations necessary to maintain the inlet. Division staff meets with the SID frequently to coordinate inlet work with the resource management and visitor service responsibilities of the park.

State Road A1A traverses the full length of the park, and a paved bicycle path has been constructed within the state road right-of-way through the park.

During the summer, an overnight surf camp for children utilizes the volunteer campsites adjacent to the maintenance area on the south side of the inlet. The remainder of the year the campsites are reserved for park volunteers.

Protected Zones

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

At Sebastian Inlet State Park, the beach dunes, marine unconsolidated substrate, coastal strand, maritime hammock, tidal swamp and offshore worm reef communities have been designated as protected zones. The western portion of Coconut Point is an additional protected zone established for nesting shorebirds (see the Conceptual Land Use Plan).

Existing Facilities

Most of the facilities at this park are 20 to 35 years old and require considerable maintenance due to heavy use and the harsh coastal environment. Ongoing maintenance and repair budgets sufficient to deal with these factors are needed to provide a quality park experience for visitors. The following is a list of existing facilities.

Recreation Facilities

Administrative Office/"Spanish House" Area

- Administrative office
- Interpretive kiosk
- Portable toilet
- Stabilized parking (48 spaces)

Sebastian Inlet Marina

- Marina office/store
- Boat slips (22)
- Boat ramp
- Storage building
- Stabilized parking (14 spaces)

North Jetty/Beach Use Area

- Ranger station
- Beach restrooms (2)
- Dune boardwalks (3)
- Snack bar/gift shop building
- Bait and tackle store
- Medium shelter
- Scattered picnic tables
- Parking (226 spaces)

Swimming Cove/Overflow Area

- Swimming area
- Portable toilets (2)
- Unimproved parking (approximately 40 spaces)
- Overflow parking field (approximately 200 spaces)

South Inlet Shoreline

- Sebastian Fishing Museum
- Camper registration office
- Fishing dock
- Fish cleaning table
- Scattered picnic tables
- Restroom
- Parking (190 spaces)

Camping Area

- Standard campsites (51)
- Bathhouses (2)

Coconut Point Area

Boat ramp (3 lanes)
Non-motorized watercraft launching beach
Large picnic shelters (4)
Playground
Restrooms (2)
Office
Parking (66 spaces)

South Beach Use Area

Bathhouse
Dune boardwalk
Parking (80 spaces)

McLarty Treasure Museum

Museum building
Dune boardwalk w/overlook
Parking (28)

Trails

Hammock Nature Trail (1 mi.)
Bike trail (4 miles)

Support Facilities

North Maintenance Area

Equipment storage building

South Maintenance Area

Shop building
Equipment storage buildings (3)
Sheds (2)
Greenhouse

Residences (6)

Miscellaneous

Sewage treatment plant

Park Roads

Paved (1.25 mile)
Unpaved (0.5 mile)

CONCEPTUAL LAND USE PLAN

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

Site Planning and Design Process

During the development of the unit management plan, the Division assesses potential impacts of proposed uses on the resources of the property. Uses that could result in

SEBASTIAN INLET STATE PARK

CONCEPTUAL LAND USE PLAN

unacceptable impacts are not included in the conceptual land use plan. Potential impacts are more thoroughly identified and assessed through the site planning process once funding is available for the development project. At that stage, design elements, such as sewage disposal and stormwater management, and design constraints, such as designated species or cultural site locations, are more thoroughly investigated. Advanced wastewater treatment or best available technology systems are applied for on-site sewage disposal. Stormwater management systems are designed to minimize impervious surfaces to the greatest extent feasible, and all facilities are designed and constructed using best management practices to avoid impacts and to mitigate those that cannot be avoided. Federal, state and local permit and regulatory requirements are met by the final design of the projects. This includes the design of all new park facilities consistent with the universal access requirements of the Americans with Disabilities Act (ADA). After new facilities are constructed, the park staff monitors conditions to ensure that impacts remain within acceptable levels.

Potential Uses and Proposed Facilities

The existing recreational activities provided to the public at Sebastian Inlet State Park are appropriate and should be continued. As with all of the older units of the park system, improvements to park facilities and infrastructure are needed for the Division to fulfill its responsibilities to provide outdoor recreation, protect, and enhance the natural and cultural resources of the park. Renovations, replacements and other improvements of the facilities and use areas are recommended by this plan to enhance visitor experience. In addition, this plan also recommends the expansion of certain use areas, as described below.

Recreation Facilities

Administrative Office/"Spanish House" area. Across State Road A1A from the park's administrative office is a very popular and well-known surfing destination called "Spanish House." Surfers park their vehicles in the stabilized parking area adjacent to the administrative office and walk across the highway to the beach. As discussed in the Optimum Boundary section, this particular stretch of beach is not within the park boundary, but instead, is part of the Archie Carr National Wildlife Refuge. The Division will work towards establishing a Memorandum of Understanding with the U.S. Fish and Wildlife Service to manage this property. If such a management arrangement is established, this plan recommends creating a new beach access a short distance to the south of the existing foot trail, expanding and redesigning the parking area to accommodate up to 100 vehicles, constructing a restroom with outdoor shower, and providing scattered picnic tables adjacent to the parking area. Coordination with the Florida Department of Transportation is also needed to provide flashing signals, a marked pedestrian crosswalk and reduced speed limit on State Road A1A at this location for visitor safety.

Sebastian Inlet Marina. The facilities at Sebastian Inlet Marina are in disrepair and in

need of a complete overhaul. In addition, this area has not reached its potential for visitor use. Future planning and design should determine how best to improve this area to support its intended recreational use. A site plan is recommended. Consideration should be given to revamping the marina buildings, docking facilities, seawall, boat ramp, residence, road, septic system and increasing the capacity of the boating facilities and parking area. The possibility of providing a marine pump-out station, establishing some tent camping in this area and providing dockage for a rescue/law enforcement vessel will also be explored. Ideally, the marina structures should be constructed in a vernacular architectural style in keeping with the rustic character associated with the many small "fish camps" that once flourished along the Indian River. The services to be offered in the marina area should include expanded boat and kayak rentals, snacks and sales area, a designated area for fishing and manatee observation, and possible boat tours and fishing trips. Commercial uses of the marina should be limited to those related to the recreational programs of the park. Long-term slip rentals and boat storage are not uses appropriate to this facility.

Several factors will influence the new design of the docking facilities, including the lack of a dredged channel and draft limitations within Campbell Cove, the hard coquina surface bottom and the desire to analyze the needs of park visitors.

North Jetty/Beach use area. The beach use area at the north jetty is the most popular location in the park. This area is attractive to surfers, fishermen, and beach goers. The park's main concession operation is located here, consisting of a small snack bar/gift shop and bait and tackle store. These concession buildings are showing serious signs of aging and are no longer adequate to accommodate customer growth and serve their expanding needs. This plan recommends developing a site plan for this area and replacing these structures with new, expanded facilities. Services to be provided in this area should continue to offer food service with a dining area, retail sales, beach equipment rentals and fishing supplies.

A complete redesign of the boardwalk system including outdoor shower stations should be incorporated into the site plan for the area. The two beach restrooms in this area of the park also require some attention; appropriate renovations are recommended.

Swimming Cove/overflow parking area. The small swimming cove on the north shoreline of the inlet is very popular and should be improved for public access to enhance its use as a sheltered swimming area suitable for families with small children. Recommended facilities include up to eight small and medium-sized picnic shelters, two restrooms with outdoor showers, universal access to the picnic facilities and the shoreline, and native landscaping. The road leading to the cove swimming area should be either stabilized or paved and parking should be established along the road shoulder for up to 100 vehicles.

The overflow-parking field, north of the swimming cove, is used regularly during weekends and holidays. During large special events, nearly the entire field can be full of vehicles. The organization and efficiency of this parking area could be greatly improved if sections were stabilized, circulation route established, and wheel stops added. Barriers for vehicles should also be placed around gopher tortoise burrows that occupy this area. Improvement of this area should follow the recommendations of the proposed plan discussed in the Resource Management Component that will evaluate all the demands for this specific area such as species protection, groundcover enhancement, SID easements and visitor use.

South Inlet shoreline. In recent years, many amenities have been added along the south inlet shoreline to enhance the visitors' fishing experience. This plan recommends replacing the small, L-shaped fishing dock with a longer dock that parallels this portion of the inlet shoreline. The existing, adjacent parking lot is currently underutilized and could accommodate the increased use of the dock. Potential also exists for providing a park store near this fishing facility and the adjacent camping area. This location could service fishermen, campers and other day-use visitors. A decision on the park store requires further market analysis.

Camping area. Complete renovation of the existing 51-site camping area is recommended to bring the infrastructure up to modern standards, enhance the size and slope of each site, and improve the buffer between the sites. In addition, this plan recommends expanding the campground to the southwest into a previously disturbed area to provide an additional 20 to 25 campsites and a bathhouse. Approximately five of these new sites should be designed for tent camping only. This area had contained campsites in the past but those sites were relocated in preparation to construct rental cabins, a concept approved in the previous management plan. The Division has since decided not to proceed with cabin development at this location and believes camping expansion would result in greater public benefit for this area. As part of the camping area renovations and expansion, landscaping is recommended, where possible, to provide better separation, privacy and shade for each campsite.

North Inlet Shoreline/new use area. In the previous approved management plan, cabins were proposed for the western end of the existing camping area. During the planning process for this management plan, a location that is better suited for cabin development was identified within an old spoil deposition site along the north inlet shoreline. This new location is preferable because it is located within a previously disturbed area that would not affect an established use area while still providing scenic views of the inlet. An engineering study is recommended to determine the feasibility of building on this site and providing vehicular access. If feasible, six rental cabins are proposed along with the necessary utilities and access. Since development of the cabins is not likely in the near future, this plan recommends making the site available to serve as a primitive group camp in the interim. This group camp should be able to

accommodate organized groups of up to 30 campers. Recommended facilities include a campfire circle, designated tent area, large shelter, restroom facilities and boardwalk access.

Coconut Point area. The shoreline north of the picnic area on Coconut Point provides a stabilized beach for launching non-motorized watercraft. This shoreline area is currently being repaired following hurricane damage. As part of future concession operations, this location would be ideal for renting catamarans and other non-motorized vessels.

South Beach use areas. Proposed improvements to the existing beach use area south of the inlet include replacing the beach restroom and dune crossover as well as formalizing the two existing footpaths at the corner of the parking lot. The remaining informal footpaths in the vicinity will be eliminated.

Despite the availability of this 80-vehicle beach parking lot, many visitors choose to park along State Road A1A south of the inlet and access the beach through numerous, unauthorized foot paths that cross over the dunes. Consequently, these areas are more susceptible to blowouts and erosion due to the lack of vegetative cover. In an effort to discourage the use of these unauthorized paths, fencing and signage is proposed to control beach access and direct visitors to established parking areas. In addition, one new beach parking area is recommended south of the inlet with parking for up to 40 vehicles. This new beach access area should utilize one of the more popular footpaths located between the existing beach parking lot and the McLarty Museum.

McLarty Treasure Museum. The museum should be evaluated for possible upgrades and renovations. Consideration should be given to exhibit content, ADA compliance, improving the gift shop area and dedicating space for revolving exhibits and guest lectures.

Miscellaneous. As noted above, a paved bicycle path along State Road A1A now connects to the park entrances from both the north and south thus resulting in an increase in bicycle and pedestrian activity around the park. Unfortunately, the bike path ends at the park gates. This plan recommends exploring the ability to provide a separate bike path along the park roads at both park entrances to deliver bikes/pedestrians to each use area within the park.

Support Facilities

Administrative office area. A 3-bay equipment storage building is recommended within the fenced compound adjacent to the administrative office.

North maintenance area. The 2-bay equipment storage building located in the maintenance area north of the inlet needs to be replaced.

South maintenance area. Most of the structures within the large maintenance area located south of the inlet need replacement. The list of proposed structures includes a 6-bay equipment storage building, 4-bay shop building, and another 4-bay equipment storage building.

Residences. Either two additional permanent residences or one duplex residence is needed at the north residence area to replace existing mobile homes.

Miscellaneous. Water and sewage collection systems are available both north and south of the park. Engineering studies are needed to determine the feasibility of connecting the park to these systems, and to determine the costs involved. A long-term goal of the park is to shift these infrastructure needs to off-site systems to reduce maintenance responsibilities and discontinue operation of the existing water wells, a sewage treatment plant and septic tank/drainfield disposal systems.

Facilities Development

Preliminary cost estimates for the following list of proposed facilities are provided in Addendum 7. These cost estimates are based on the most cost-effective construction standards available at this time. The preliminary estimates are provided to assist the Division in budgeting future park improvements, and may be revised as more information is collected through the planning and design processes.

The following is a summary of facilities needed to implement the conceptual land use plan for Sebastian Inlet State Park:

Administrative Office/"Spanish House" Area

Medium restroom w/outdoor showers
Scattered picnic tables (8)
Crosswalk and signs
Stabilized parking expansion (up to 50 additional spaces)

Sebastian Inlet Marina

Site plan
Renovate/replace marina buildings
Repair seawall
Replace docking facility
Evaluate boat ramp
Evaluate residence
Evaluate septic system
Parking expansion
Road paving (0.25 mile)

North Jetty/Beach Use Area

Site plan
Renovate/replace concessions buildings
Redesign dune boardwalk system
Renovate beach restrooms (2)

Swimming Cove/Overflow Parking Area

Small picnic shelters (4)
Medium picnic shelters (4)

Swimming Cove/Overflow Parking Area

Small restrooms (2)
Boardwalks (3)
Stabilized parking (up to 100 spaces)
Road stabilize/paving (0.25 mile)
Native landscaping
Overflow parking field enhancements

North Inlet Shoreline/New Use Area

Primitive group camp w/pedestrian access
Cabin development (6) w/vehicular access

South Inlet Shoreline

Replace fishing dock

Camping Area

Renovate camping area (51 sites)
Upgrade electric/water/sewer connections
New full-facility campsites (approximately 20 sites)
New tent sites (approximately 5)
New bathhouse
Native landscaping

Coconut Point Area

Potential non-motorized watercraft rental station

South Beach Use Areas

Replace restroom
Replace dune crossover
New stabilized beach parking area (40 cars)
Fencing (as needed)

McLarty Treasure Museum

Evaluate exhibit area

Miscellaneous

Bike paths (0.5 mile)

<u>Support Facilities</u>

3-bay equipment shelter
2-bay equipment shelter
4-bay shop building
6-bay equipment shelter
4-bay equipment shelter
Ranger residences (2)
Engineering study (water & sewer systems)

Existing Use and Recreational Carrying Capacity

Carrying capacity is an estimate of the number of users a recreation resource or facility can accommodate and still provide a high quality recreational experience and preserve the natural values of the site. The carrying capacity of a unit is determined by identifying the land and water requirements for each recreation activity at the unit, and then applying these requirements to the unit's land and water base. Next, guidelines are applied which estimate the physical capacity of the unit's natural communities to

withstand recreational uses without significant degradation. This analysis identifies a range within which the carrying capacity most appropriate to the specific activity, the activity site and the unit's classification is selected (see Table 1).

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

Table 1--Existing Use And Recreational Carrying Capacity

	Existing Capacity		Proposed Additional Capacity		Estimated Recreational Capacity	
Activity/Facility	**One Time**	**Daily**	**One Time**	**Daily**	**One Time**	**Daily**
Beach Use						
Swim, Sunbath, etc.	800	1600	80	160	880	1760
Surfing	300	600	100	200	400	800
Fishing	352	704			352	704
Camping						
Standard	408	408	200	200	608	608
Group Camp			30	30	30	30
Picnicking	220	440			220	440
Trails						
Hiking	10	40			10	40
Biking	32	64			32	64
Boating						
Motorized Vessels	242	242			242	242
Non-Motorized	80	160			80	160
McLarty Museum	60	240			60	240
Fishing Museum	60	240			60	240
Cabins			36	36	36	36
TOTAL	**2564**	**4738**	**446**	**626**	**3010**	**5364**

Note: Under the Beach Use category, the "Swim, Sunbath, etc." capacity includes swimming, sunbathing, beachcombing, snorkeling, and other beach related activities. For the two boating categories, the capacity figures refer to the number of people, not boats. In addition, occasional special events can draw large crowds in excess of 6,000 people.

Optimum Boundary

As additional needs are identified through park use, development, research, and as adjacent land uses change on private properties, modification of the unit's optimum boundary may occur for the enhancement of natural and cultural resources, recreational values and management efficiency.

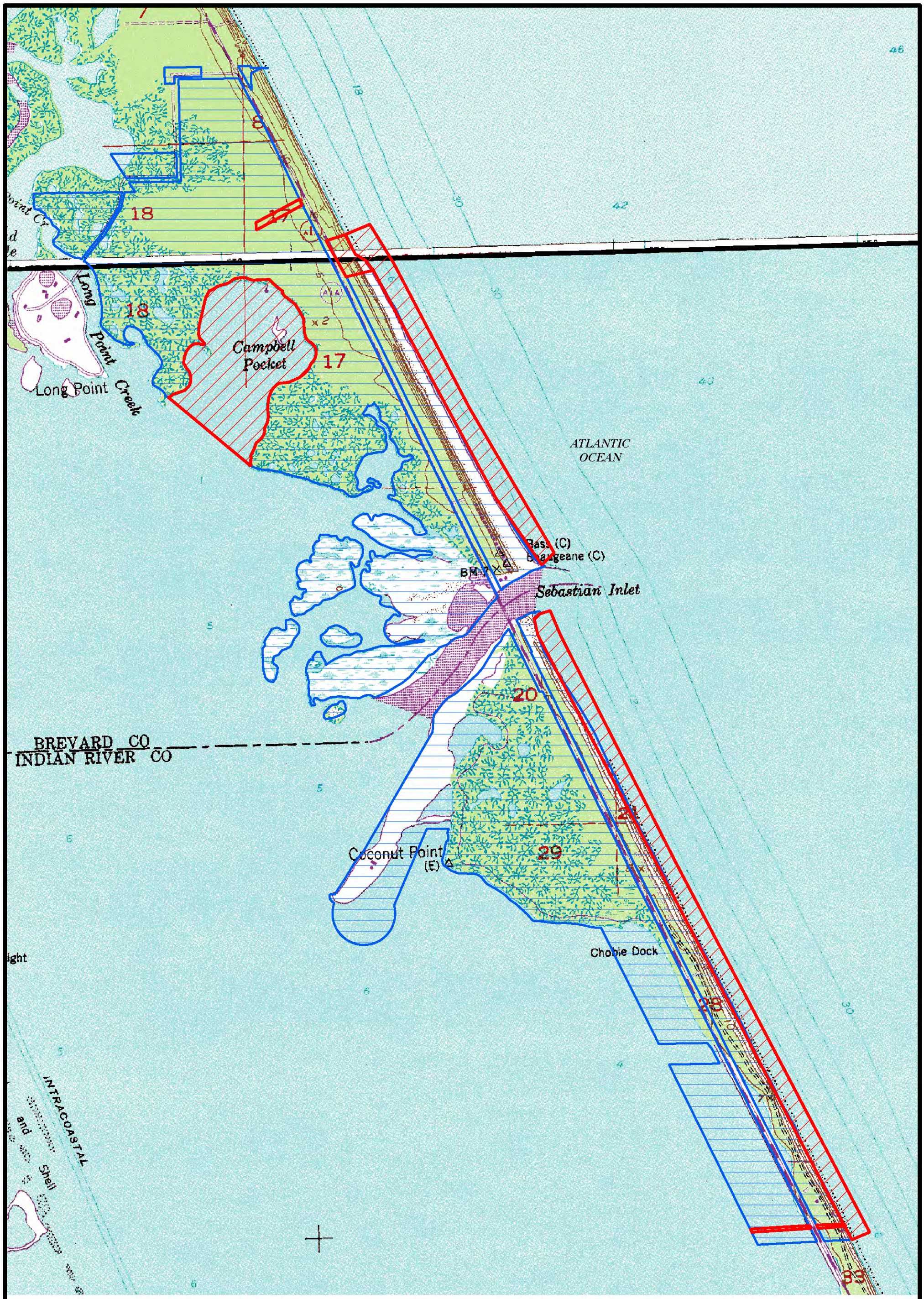
Identification of lands on the optimum boundary map is solely for planning purposes and not for regulatory purposes. A property's identification on the optimum boundary recreational activities.

The submerged land within Campbell Pocket is recommended for addition to the park boundary. This cove is home to the park's marina and supports ongoing recreational use such as boating, canoe/kayaking, fishing and manatee observation. The Optimum Boundary Map also identifies two, small out parcels for addition to the park.

The beachfront property north of the current boundary, which is a non-contiguous parcel of the Archie Carr National Wildlife Refuge, should be considered for cooperative management through the implementation of a Memorandum of Understanding between the two agencies. As discussed under *Potential Uses and Proposed Facilities*, this section of beach is a popular destination for surfers and having management authority for this area would allow the Division to enhance its recreational use as well as coordinate resource management efforts.

The submerged lands along the Atlantic Ocean shoreline are recommended for including in the park boundary. The placement of these submerged lands within the boundaries of the park would allow park staff to enforce Florida Administrative Code 62D-2 within this new boundary that is proposed to stretch approximately 400 feet waterward of the mean high water line.

And, consideration may be given to releasing the two, small disjunct parcels at the north end of the park near the intersection of Long Point Road and State Road A1A. Due to their remoteness, these parcels might be better served under the management of another agency or entity, such as Brevard County or the USFWS.



SEBASTIAN INLET
STATE PARK

OPTIMUM BOUNDARY MAP

Addendum 1 – Acquisition History and Advisory Group Staff Report

Purpose of Acquisition. The State of Florida acquired Sebastian Inlet State Park to restore, conserve, protect and develop the property for the greatest good and benefit of the citizens of the state.

Sequence of Acquisition. On February 14, 1969, the Board of Trustees of the Internal Improvement Trust Fund (Trustees) obtained title to a 7-acre property constituting the initial area of Sebastian Inlet State Park. This property was donated to the State by Robert P. McLarty and his wife Dodo W. McLarty. Since this initial acquisition, the Trustees have acquired several individual parcels through a lease as well as through different land acquisition programs such as EEL, LATF, SOC and P2000 and added them to Sebastian Inlet State Park. Currently, the park is comprises 971.01 acres.

On September 4, 1970, the Trustees leased Sebastian Inlet State Park to the Florida Department of Environmental Protection, Division of Recreation and Parks (Division), under Lease Number 2457. Lease Number 2457 is a ninety-nine (99)-year lease and will expire on September 3, 2069.

According to Lease Number 2457, the Division manages Sebastian Inlet State Park for the purpose of preserving, developing, operating, and maintaining said lands and property for outdoor recreational, park, conservation and related purposes.

Title Interest. The Trustees holds fee simple title to Sebastian Inlet State Park.

Special Conditions on Use. Sebastian Inlet State Park is designated single-use to provide public recreation and other related uses. Uses such as water resource development projects, water supply projects, stormwater management projects, linear facilities and sustainable agriculture and forestry (other than those forest management activities specifically identified in this plan) are not consistent with this plan.

Outstanding Reservations. The Division's lease from the Trustees stipulates that all the property shall be used for public outdoor recreation and related purposes. Following is a listing of outstanding rights, reservations and encumbrances that apply to Sebastian Inlet State Park.

Instrument: .....Amended and Restated Memorandum of Agreement
Instrument Holder: .....Sebastian Inlet Tax District
Beginning Date:.....December 21, 2000
Ending Date:.....There is no specific ending date given.
Outstanding Rights, Uses, Etc.: .....The memorandum of agreement summarizes and restates all easements including, but not limited to, maintenance, construction, ingress and egress, and spoil disposal granted to Sebastian Inlet Tax District to use certain portions of Sebastian Inlet State Park.

Instrument: .....Lease Agreement (Right-of-way lands along State Road A-1-A and beneath the Sebastian Inlet Bridge)
Instrument Holder: .....State of Florida Department of Transportation
Beginning Date:.....April 23, 1976
Ending Date:.....April 22, 2071
Outstanding Rights, Uses, Etc: .....The lease is subject to the rights of the owners and operators of utility lines existed within the leased premises at the time of the lease agreement.

Instrument: .....Special Warranty Deed
Instrument Holder: .....Indian River County
Beginning Date:.....November 4, 1970
Ending Date:.....No specific ending date given.
Outstanding Rights, Uses, Etc.: .....The special warranty deed is subject to that :
(1) The property in question be used forever and continuously used and maintained for a public park for recreational purposes and no part of this property is confined or used as a restricted campground or other restricted area.
(2) The South shoreline of the Sebastian Inlet, the fishing pier, under the Sebastian Inlet Bridge and the South Jetty of the Sebastian Inlet shall be accessed by all people day or night at no specific charge.

The Honorable Truman Scarborough
Chairperson
Brevard County Board of Commissioners
400 South Street, Suite 1-A
Titusville, Florida 32780

The Honorable Sandra Bowden
Chairperson
Indian River County Board of Commissioners
1801 27th Street, Building A
Vero Beach, Florida 32960

Terence Coulliette, Park Manager
Sebastian Inlet State Park
9700 South Highway A1A
Melbourne Beach, Florida 32951

Paul Tritaik, Manager
Archie Carr National Wildlife Refuge
1339 20th Street
Vero Beach, Florida 32960

Sharon Tyson, Manager
Indian River – Malabar to Vero Beach Aquatic Preserve
3783 North Indian River Drive
Cocoa, Florida 32926

Alex Pries, Conservation Biologist
Florida Fish and Wildlife Conservation Commission
1239 Southwest 10th Street
Ocala, Florida 34471

Dale Armstrong, Senior Forester
Florida Division of Forestry
5200 Highway 441 North
Okeechobee, Florida 34972

Bud Crisafulli, Chair
Brevard Soil and Water Conservation District
5525 North Courtney Parkway
Merritt Island, Florida 32953

David Gunter, Chair
Indian River Soil and Water Conservation District
7305 4th Street
Vero Beach, Florida 32968

Jenny Lawton-Seal, Chair
Sebastian Inlet District
114 Sixth Avenue, Suite A
Indialantic, Florida 32903

Dave Pasley, President
Friends of Sebastian Inlet State Park, Inc.
4740 South Highway A1A
Melbourne Beach, Florida 32951

Rob Varley, Executive Director
Brevard County Tourism Development Council
430 Brevard Avenue, Suite 150
Cocoa Village, Florida 32922

Mr. Jon W. Bates
Indian River County Tourist Development Council
380 Marbrisa Drive
Vero Beach, Florida 32963

"Sachi" Sachidanandan, Chair
3001 Thrush Drive, Unit 125
Melbourne, Florida 32935

Richard Baker, President
Pelican Island Audubon Society
522 North Blue Island Lane
Sebastian, Florida 32958

Jim Egan, Executive Director
Marine Resources Council
3275 Dixie Highway Northeast
Palm Bay, Florida 32905

David Barney, Chairman
Indian River Chapter
Surfrider Foundation
1550 Penlynn Street
Sebastian, Florida 32958

Justin Stoval, Owner
Whitey's Bait & Tackle
9030 South Highway A1A
Melbourne Beach, Florida 32951

Steven Webster, President
Citizens for Florida's Waterways
2569 Newfound Harbor Drive
Merritt Island, Florida 32952

Dr. Blair Witherington
Floridana Beach Homeowner's
Association
129 Delvalle Street
Melbourne Beach, Florida 32951

Mr. Bob Bruce
12396 North Highway A1A
Vero Beach, Florida 32963

The Advisory Group meeting to review the proposed land management plan for Sebastian Inlet State Park was held in the park's conference room on May 14, 2008 at 9am. Commissioner Chuck Nelson (Brevard County), Bud Crisafulli (Brevard Soil and Water Conservation District), David Gunter (Indian River Soil and Water Conservation District) and Rob Varley (Brevard County Tourism Development Council) did not attend. Alex Pries (Florida Fish and Wildlife Conservation Commission) and Dale Armstrong (Florida Division of Forestry) sent written comments in lieu of attending. All other appointed Advisory Group members were present. Attending staff from the Division of Recreation and Parks included Larry Fooks, Clif Maxwell, Ron Johns, Terry Coulliette, Jason DePue, Phil Rand and Brian Burket.

Mr. Burket began the meeting by explaining the purpose of the Advisory Group and reviewing the meeting agenda. He provided a brief overview of the Division's planning process and summarized public comments received during the previous evening's public workshop. He then asked each member of the advisory group to express his or her comments on the plan.

Summary of Advisory Group Comments

Richard Baker (Pelican Island Audubon Society) recommended that more effort be made to get local citizens active in the park. He encouraged the park to provide more birding and kayak trips and suggested that they be free. He initiated a discussion about recent efforts to protect sea grass beds around the park. He commented that the Audubon Society contributed to the Eagle Scout project at the tip of Coconut Point to enhance and interpret this shorebird nesting area. He recommended a more proactive exotic plant removal effort.

Chairman Sandra Bowden (Indian River County Board of County Commissioners) suggested that the park may become more popular with local citizens as a consequence of the slumping economy. She commented that the park is a glorious place and she would like to invite Park Manager Terry Coulliette to an upcoming BOCC meeting to recognize and help raise support for the park. She also offered her support to publicize the park to local citizens.

Jenny Lawton-Seal (Sebastian Inlet District) recommended including language in the management plan about the current SID proposal. The SID has requested exchanging their existing spoil deposit site for a larger, previously disturbed area. In compensation, the SID has offered to dredge the boat ramp, replace the L-dock, provide a new canoe/kayak launch area and maintain the channel markers to the boat ramp. She offered the assistance of the SID to help advertise and market the park. She mentioned that SID has recently developed a touch-screen kiosk that needs a secure home and suggested that an appropriate area might be found in the park.

Jon Bates (Indian River County Tourist Development Council) remarked that the plan was an interesting read. He commented that more effective methods are needed to inform residents and tourists about the park. He requested that park staff provide brochures to local hotels to help encourage visitation. He inquired about where revenue generated at the park goes and how the park is funded. He suggested that park staff work with the TDC to develop a marketing plan.

"Sachi" Sachidanandan (Turtle Coast Sierra Club) expressed appreciation for the staff and their work put into the development of the management plan. He commented that the plan is ambitious and will require additional staffing and volunteers. He suggested that the management plan clarify that the bike trail is for bicycles and not motorized bikes. He recommended that all beach access areas include a restroom and shower. He commented that the existing beach concession buildings are not attractive and requested that the future concession building be aesthetically pleasing.

He later sent written comments where he suggested that water conservation be considered in the renovation or construction of new restrooms and shower facilities. He recommended installing waterless urinals and water conserving showerheads in an effort to minimize water usage at the park.

Justin Stovall (Whitey's Bait & Tackle) commented that he talked with many local boaters and fishermen to hear their comments about the park. He shared that many are concerned about the conflict between boaters navigating the inlet and fishermen who cast in their path. He commented that boats moving through the inlet have the right-of-way. He suggested that the creation of an offshore, artificial reef could lure some boaters away from fishing at the congested, north jetty. He requested more law enforcement at the jetties due to indecent behavior by some park visitors and the taking of illegal fish. He suggested that all park visitors who pay taxes to the SID should be allowed into the park at no cost. He congratulated the SID for the new seagrass signage around the inlet. He requested that the channel markers for the marina be extended to the inlet channel and to Long Point Park. He commented that closing the unauthorized footpaths to the beach will be difficult to enforce since each path leads to a popular fishing hole. After the meeting, he suggested that 10-20 tent campsites with a restroom and showers be considered for the marina area to support this use of this area by boaters and surfers.

Blair Witherington (Floridana Beach Homeowner's Association) commented that the plan was well written. He recommended that the plan recognize the draft limitations within the marina channel. He commented that the plan provides a good discussion of the natural resource impacts of sand bypass and beach renourishment. A discussion followed about the impacts of the most recent beach renourishment project. He questioned whether the SID's management plan for the inlet was consistent with the Division's interests in management of the state park. A compromise was reached that

the plan is "generally consistent." He encouraged the park staff to strengthen their relationship with the SID and improve coordination of SID projects that could result in impacts to the park resources and visitor experience. He requested that the management plan reinforce the need for park staff to be involved in decision making process regarding SID projects. He commented that the dog policy for the park is confusing and suggested identifying specific areas where dogs are allowed rather than providing signage everywhere dogs are not allowed. He commented that the Coconut Point shorebird protection area is rather small and recommended exploring the potential to establish/enhance other areas of the park for shorebird habitat. He recommended increasing the volume of parking at the existing beach parking lot south of the inlet rather than establishing a new beach access area. He voiced support for closing all unauthorized footpaths to the beach. He remarked that a stable and well-managed sand footpath to the beach is better than a boardwalk. He commented that future boat tours from the marina should be encouraged. He commented that the area suggested for a kayak launch by the SID is a destination for paddlers and therefore should not be an access point. He suggested the development of a marked kayak trail from the marina to this area. He provided a few recommendations for the species list.

Steven Webster (Citizens for Florida's Waterways) asked about the proposed budget for the marina redevelopment and requested that this be a priority project. He commented that the county is lacking a sufficient number of boat ramps and boat trailer parking spaces so therefore requested that consideration be given to expanding the boating capacity at the marina as part of the redevelopment project. He suggested that the Division look into establishing boat trips between the park and the City of Sebastian across the lagoon. He asked for clarification of the carrying capacity table regarding the number of motorized boaters the park is able to support now and in the future following the marina redevelopment.

Jim Egan (Marine Resources Council) commented that funding sources are available for establishing boat tours to and from the park. He encouraged the Division staff to include a list of all potential projects, studies, research, etc. in the management plan to increase the likelihood of them being supported and funded. He suggested lobbying for a bicycle path to be included on the bridge once FDOT begins planning its replacement. He commented that Scenic Highway grants may be available to improve destination areas within the park.

David Barney (Surfrider Foundation, Indian River Chapter) recommended that the management plan mention the legal obligation of the SID to transfer a certain volume of sand on Indian River beaches each year. He recommended that smaller beach renourishment projects be pursued that build-up the dunes instead of larger projects that impact hard bottom. He commented that recent studies indicate that Sebastian Inlet is becoming a mature inlet and that some sand is beginning to naturally bypass the inlet. He suggested that the park manager and/or biologist attend the monthly

meetings of the Indian River Beach and Shore Preservation Advisory Committee. He commented that the park has amazing resources and acknowledged the hard work and dedication of outgoing Park Manager Ron Johns and Archie Carr NWR Manager Paul Tritaik. He asked about the relationship between park visitation and funding for the park. He commented that many tourists know more about the park than local citizens and recommended that the Division aggressively promote the park locally. He remarked that the desire for free beach access is a big issue at the park. He suggested creating a new beach access area at "Monster Hole." He commented that surfers/beachgoers recently lost a beach access near Long Point Road due to the elimination of roadside parking there. He requested that the Division consider providing a beach access parking lot at the north end of the park adjacent to Long Point Road in exchange for scaling down the proposed improvements at the "Spanish House" parking area. He commented that the Surfrider Foundation can be a huge resource for volunteer recruitment especially for surf competitions and other special events. He suggested that the park staff attend the FDOT workgroup meetings. He identified the need to enforce the separation of surfers and jet skis at "Monster Hole" for safety reasons.

Sharon Tyson (Indian River-Malabar to Vero Beach Aquatic Preserve) suggested that a committee of experts be established to review SID projects before the permitting phase. She commented that recent studies indicate that beach renourishment projects around the state are linked to the increasing frequency of red-tide blooms around Florida. She mentioned that FWC is researching least terns in Brevard County and are working to establish Critical Wildlife Areas. She recommended that the Division inquire about the park's CWA status. She commented that her office has a tremendous relationship with the park staff and complimented the management plan. She requested that the plan clarify that CAMA shares management authority for all submerged lands within the park boundary and within the 400 foot zone waterward of MHW. She mentioned that CAMA might be able to assist with native plantings around the swim cove area, including mangroves. She recommended that the tidal connection near the south maintenance area should be improved. She requested that the Division coordinate any projects with CAMA that take place within submerged lands around the park, such as the proposed fishing dock replacement. She requested that seagrass beds around the park be identified on a map in the plan. She commented that healthy seagrass beds are located in the area of the proposed dock replacement within the inlet. She recommended including a small rescue/law enforcement boat at the proposed fishing dock. She commented that CAMA has been actively surveying for diamondback terrapins around the park.

She also provided the following additional comments in written form. She recommended a management objective to prepare a plan for the occurrence of aquatic invasive species. She recommended an objective to encourage permitted research by universities and institutions. She recommended an objective to limit disturbance (trails)

through tidal wetlands on the north side of the park adjacent to the inlet. In addition to controlling access to the shorebird protection area at Coconut Point, she requested that waterward access to seagrass beds and shoreline habitat also be limited. She suggested the use of Island designations and Universal Island signage be adopted. She recommended the surveying of submerged archaeological sites. She proposed that park staff comment on State and Federal treasure requests and re-authorizations. She commented that the camping area is surrounded by tidal wetlands so the proposed improvements will probably require ERP permitting. She recommended implementing educational signage allowances for the protection of dolphin, manatee, woodstorks, etc. She provided some language about CAMA to include under the Management Coordination section. She commented that the Natural Communities Map does not reflect all tidal habitats near developed areas or natural mangrove fringe habitat. She provided a description of seagrass habitat for possible inclusion in the plan. She suggested coordinating with utility companies about any future placement of electrical poles and wires which could result in bird fatalities. She recommended that the Management Needs and Problems section mention seagrass impacts by boats, sand removal and construction. She requested that shorebird data be reported on the FWC website.

Bob Bruce (adjacent landowner) commented that the inlet is manmade and has deleterious impacts; however, the inlet is also what makes this area so special and popular. He remarked that a lot of work was put into getting the Scenic Highway designation so the park and others could benefit from this funding source which could be used for beach access improvements.

Paul Tritaik (Archie Carr National Wildlife Refuge) highlighted the benefits of establishing a disposal site for material dredged from the inlet, i.e. identifying an area for material not suitable for the beach but useable for the creation of shorebird habitat. He commented that a boardwalk to the beach can be problematic for prescribed burns and is not necessary if the sand footpath is stable and not prone to dune blowout. He thanked Ron Johns and his staff for their support and hard work over the years and complimented the management plan. He expressed appreciation for the commitment to sea turtle surveys and attention to shorebirds, gopher tortoises, beach mice and diamondback terrapins. He recommended the plan include a discussion of land crabs occurring in the park. He commented that the USFWS is interested in establishing a management agreement with the Division for their property at "Spanish House." He identified one small beach parcel at the north end of the park that he believes is owned by the State and not USFWS. He provided a couple of suggestions for the exotic species list. He expressed appreciation for the coordination of efforts pertaining to the beach mice. He suggested that a management agreement between the park and USFWS be established to share management resources.

Dave Pasley (Friends of Sebastian Inlet State Park, Inc.) suggested a mulch and sand

footpath for the new beach access at "Spanish House" instead of a boardwalk structure. He strongly recommended that the management plan include a comprehensive "wish list" of potential projects likely to be funded and approved.

He also provided the following additional comments in written form. In regards to channel dredging and beach renourishment projects, he recommended that the management plan focus on the Division's advisory role and allow the process to work in resolving permitting issues, etc. He stated that the management of these issues is both political and beyond the scope of this management plan. He recommended that the plan address the Division's role in working with SID, ACOE, FIND, DEP, etc. in managing the wetlands, shorelines, beaches, etc. He pointed out that it would be inaccurate to identify "restoration" plans for Coconut Point and the overflow parking field since these areas didn't exist prior to the creation of the inlet. He recommended that pictures and documents of local historical significance that have been collected by SID Commissioner Jim Culbertson be directed to state archives. He suggested that park volunteers also help with park operations and security. He recommended that the paragraphs regarding the impact of beach renourishment projects on park resources be removed from the plan. He recommended that a comprehensive plan, funding, etc. be provided for Coconut Point to help establish a shorebird nesting area. He questioned whether there exists a Document of Understanding that outlines who owns which collection items at the Sebastian Fishing Museum and what items can be displayed, etc. He commented that the issue of the worm reef and beach renourishment is highly controversial and suggested removing some of the text in the plan regarding this topic. He requested that the SID proposal to develop the fill area west of the swim cove and overflow parking field be reviewed and incorporated into the management plan. He also supported the SID's proposal to develop a kayak launch in the old inlet channel area. He recommended that a brief description of the SID/Park agreements be included in the management plan. He recommended that the plan also acknowledge the various agencies and research groups that are managing land and collecting important data in and around the park. He commented that expanding the use at "Spanish House" will result in a variety of issues including liability, security and inability to collect fees. He recommended that the existing marina buildings should be demolished and seawall replaced. He recommended adding more boat slips, parking and boat ramps at the marina. He recommended that the beach concession building should also be demolished and suggested that it be replaced with a structure that the community can use for weddings and other functions in addition to hosting surfing events, etc. He requested that serious consideration be given to the SID proposal to replace the inlet fishing dock with a larger structure that can be used for emergency/law enforcement vessels and mooring of a 60 foot barge for inlet construction and dredging activities. He stated his strong support for upgrading and expanding the camping area. He requested consideration for expanding the gift shop at the McLarty Treasure Museum in any remodeling plans. He commented that much of the ongoing boardwalk renovation at the north jetty beach use area is being funded by the CSO. He commented that the

swim cove is highly susceptible to storm damage; therefore, investing in anything but the barest essentials here will be futile. He requested permission to open a small gift counter in the Sebastian Fishing Museum. He mentioned that the majority of the park's 225 picnic tables were built by volunteers and funded by the CSO.

Summary of Written Comments

Dale Armstrong (Florida Division of Forestry) stated that due to the location of the park, timber management is not a consideration. He commented that beach renourishment projects have greatly impacted the worm reefs from Sebastian Inlet down to MacArthur Beach. He offered the assistance of DOF staff for prescribed burns at the park. He stated that park staff does a commendable job in balancing natural resource management with intensive recreation. He commented that over the last eleven years he has seen the park improve both naturally and recreationally.

Alex Pries (Florida Fish & Wildlife Conservation Commission) stated that overall the management plan provides adequate consideration for wildlife and wildlife needs on-site. He commented that the discussion of using prescribed fire in dune habitats was confusing since fire is not typically needed in dune communities. However, he stated prescribed fire is useful in the coastal strand community and should continue to enhance habitat for beach mice and bird species. He stated support for the closing of unauthorized footpaths to the beach and recommended planting a mixture of native coastal vegetation when attempting to rebuild the dunes. He recommended keeping FWC informed of any improvements in beach mouse habitat or potential for translocation. He suggested coordinating survey and monitoring actions for nesting shorebirds with FWC personnel. He strongly recommended coordination with SID to develop beach nourishment projects that minimize impacts to nesting sea turtles/beach mouse habitat. He encouraged the removal of feral cats and educating surrounding landowners on being responsible pet owners. He suggested that FWC staff could help with closing shorebird nesting areas. He expressed support for actions to protect the population of gopher tortoise within the overflow parking field. He commented that the monitoring efforts for listed species discussed in the plan are appropriate. He suggested alternative methods to determining the relative abundance of beach mice.

Staff Recommendations

The staff recommends approval of the proposed management plan for Sebastian Inlet State Park as presented with a few minor edits and clarifications as well as the changes below. Some of the other suggestions voiced at the meeting are not appropriate for inclusion in the management plan but are appreciated and will be taken into consideration as it affects park operations.

- In regards to the recent SID request to exchange their spoil easement site, the Division is carefully considering their proposal. The specifics of their proposal do not need to be included in the management plan since it is part of the regular coordination between the Division and the SID.
- In addition to Coconut Point, the Division will explore the potential to establish/enhance shorebird habitat elsewhere in the park.
- Consideration for potential seagrass impacts will be evaluated when determining appropriate recreational activities in these areas.
- The request for an offshore, artificial reef is not within the jurisdiction of the Division and, therefore, will not be included in the management plan.
- The Natural Communities Map will be evaluated for possible improvements, including the identification of seagrass beds within the park boundary.
- Staff agrees that a boardwalk to provide beach access may not always be necessary and will pursue the best available management option for providing beach access in the future.
- As part of the site planning for the marina redevelopment project, consideration will be given to expanding the boating capacity, providing a marine pump-out station, exploring the possibility of establishing some tent camping, and providing dockage for a rescue/law enforcement vessel.
- The Division does not support the recommendation to establish a new beach access area at the north end of the park adjacent to Long Point Road. This area is composed of maritime hammock which is included in the park's protected zone due to its rarity in the state. In addition, Sebastian Inlet State Park already provides multiple beach access points along its shoreline.
- The carrying capacity table will be edited to clarify the number of motorized boaters (people) the park is currently able to support.
- Park staff has identified the need for an additional 3-bay equipment storage building within the fenced area adjacent to the Administrative Office.

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Addendum 3—Soils Descriptions

(Ca) Canaveral complex, gently undulating - This complex consists of nearly level and gently sloping soils that are mixtures of sand and shell fragments. It is along the Atlantic Coast on narrow ridges interspersed with parallel narrow sloughs. The water table is between depths of 10 and 40 inches for 2 to 4 months of the year; in dry seasons it is below a depth of 60 inches.

(Ck) Coastal beaches - This soil type consists of narrow strips of nearly level or gently sloping sand, along the Atlantic Ocean, that is covered with salt water at daily high tides and of low dunes adjacent to the tide-washed sands. This material is a mixture of quartz sand and fragments of sea shells. It is subject to movement by the wind and the tide and is bare of vegetation.

(7) Palm Beach sand, 0 to 5 percent slopes - This soil type is nearly level to gently sloping and well-drained to excessively drained. It occurs on dunelike ridges that are parallel to the coastline. This map unit is adjacent to the beach. Slopes are mainly 0 to 5 percent but can range from 0 to 8 percent.

Typically, the surface layer is very dark gray sand about 4 inches thick. The underlying material to a depth of 65 inches is sand that has stratified layers of shell fragments throughout. The upper 16 inches of the underlying material is grayish brown sand, and the lower 45 inches is pale brown sand. Below that to a depth of 80 inches or more is very pale brown sand.

This soil is low in organic matter content; it is moderately alkaline throughout. Permeability is very rapid, and the available water capacity is very low. It has no water table within a depth of 80 inches.

(Pb) Palm Beach sand - This is a nearly level and gently sloping, excessively drained soil on dunelike ridges that roughly parallel the Atlantic Ocean. It consists of mixed sand and shell fragments. Slopes are mostly 2 to 5 percent. The water table is at a depth of more than 10 feet.

(17) Quartzipsamments, 0 to 5 percent slopes - This soil type is nearly level to gently sloping and moderately well-drained to somewhat poorly drained. It consists of thick deposits of sand and of mixed sand and shell fragments.

One of the most common profiles has a surface layer of light yellowish brown fine sand that has brownish yellow mottles about 17 inches thick. The next layer, to a depth of about 30 inches, is yellowish-brown fine sand that has very dark grayish-brown mottles. Below that, to a depth of about 60 inches, is dark grayish-brown fine sand that has very dark gray streaks and yellowish-brown splotches and is mixed with 10 percent shell fragments. The underlying material to a depth of 80 inches or more is gray sand.

Permeability is very rapid, and the available water capacity is very low. Reaction is slightly acid to alkaline. The content of shell fragments ranges from about 5 to 50 percent.

(18) Captiva fine sand - This soil is nearly level and poorly drained. It is in narrow, elongated sloughs that are between low, dunelike ridges and mangrove swamps. Slopes are smooth and range from 0 to 1 percent.

Typically, the surface layer is very dark gray fine sand mixed with about 2 percent shell fragments. It is about 8 inches thick. The underlying material to a depth of 80 inches or more is grayish-brown, olive gray, and greenish-gray fine sand mixed with about 2 to 15 percent shell fragments. In most years, under natural conditions, the water table is at a depth of 10 to 40 inches for 6 to 9 months or more and within a depth of 10 inches of the surface for 1 to 3 months during the wet season. In some years, the soil is covered by standing water for about 1 month.

Permeability is rapid in the surface layer and very rapid in the underlying layers. The available water capacity is medium in the surface layer and low to very low in the subsurface layer.

(20) Beaches - This map unit consists of nearly level to sloping, narrow strips of tide and surf-washed sands and shell fragments. Beaches occur along the Atlantic Ocean shoreline. They commonly are a mixture of moderately alkaline sand and fine shell fragments. Beaches are generally devoid of vegetation, although some sparse growth of sea oats, railroad vine, or other salt-tolerant plants occurs near the inland edges.

Depth to the water table is highly variable depending on distance from the shore, elevation of the beach, and the tidal condition. Commonly, the water table ranges from a depth of 0 to 6 feet.

(63) Kesson muck - This soil is nearly level and very poorly drained and is frequently flooded. It occurs in tidal swamps and marshes. This soil formed in thick marine deposits of sand and shell fragments. These swamps and marshes are at or near sea level and are adjacent to the Indian River. Tidal water inundates most of these areas at high tide.

Typically, the surface layer is about 6 inches thick; it is a dark reddish-brown muck that is about 30 percent unrubbed fiber and less than 5 percent rubbed. The underlying material is grayish-brown and dark greenish-gray fine sand mixed with about 15 to 25 percent sand-sized shell fragments to a depth of 80 inches or more.

Under natural conditions, this soil is flooded during normal high tides. Permeability is moderately rapid. The available water capacity is high in the surface layer and low in

the underlying materials. The native vegetation consists of red, black, and white mangroves; searocket, saltwort, perennial glasswort, seashore saltgrass, and seashore paspalum occur in some areas.

(Tm)Tidal marsh - Tidal marsh consists of nearly level areas of soils that are regularly covered with salt water or brackish water at high tide. It occurs along the edge of salt water in several places. Many areas are isolated by deep, wide canals. The soils are highly variable; some are shallow mucky sands over marl or limestone, some are irregularly stratified mixed sand and shell fragments, some are silty or clayey layers over sand sand shells, and some are deep organic material. Any one area of tidal marsh can be one kind of soil material or a mixture.

(Ts) Tidal swamp - This soil type consists of nearly level areas at about mean sea level that are covered with a dense, tangled growth of mangrove trees and roots. It occurs along the edge of the Banana and Indian rivers and in smaller areas adjacent to salt water. The soil material ranges from mixed sand and shells to organic materials.

Addendum 4–Plants And Animals List

Sebastian Inlet State Park Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Spiny redweed	*Acanthophora* sp.	
Mermaid's wine glass	*Acetabularia crenulata*	
Giant leather fern	*Acrostichum danaefolium*	
False sisal	*Agave decipiens*	
Wild century plant*	*Agave sisalana*	
Silktree*	*Albizia julibrissin*	
Aloe*	*Aloe vera*	
Yellow joyweed	*Alternanthera flavescens*	
Common ragweed	*Ambrosia artemisiifolia*	
Bastard indigobush	*Amorpha fruticosa*	
Sea torchwood	*Amyris elemifera*	
Marlberry	*Ardisia escallonioides*	
Bluestem	*Andropogon* sp.	
Red algae	*Anotrichium tenue*	
Sprenger's asparagus-fern*	*Asparagus densiflorus*	
White oldfield aster	*Aster pilosus*	
Crested saltbush	*Atriplex cristata*	
Algae	*Audounella* sp.	
Algae	*Audouinella* sp.	
Black mangrove	*Avicennia germinans*	
Groundsel tree	*Baccharis halimifolia*	
Herb-of-grace	*Bacopa monnieri*	
Saltwort	*Batis maritima*	
Beggarticks	*Bidens alba* var. *radiata*	
Bushy seaside oxeye	*Borrichia frutescens*	
Algae	*Botyrocladia occidentalis*	
Bouganvillea*	*Bouganvillea spectabilis*	
Red algae	*Bryocladia cuspidata*	
Red algae	*Bryothamnium seaforthii*	
Fungus	*Buellia lauricassiae*	
Fungus	*Buellia rappii*	
Fungus	*Buellia* sp.	
Gumbo-limbo	*Bursera simaruba*	
Gray nicker	*Caesalpinia bonduc*	
American beautyberry	*Callicarpa americana*	
Algae	*Caloglossa leprieurii*	
Santa Maria*	*Calophyllum antillanum*	
Fungus	*Caloplaca* sp.	
Baybean	*Canavalia rosea*	
Garden canna*	*Canna* x *generalis*	
Lichen	*Canoparmelia amazonica*	

* Non-native Species

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Lichen	*Canoparmelia cryptochlorophaea*	
Jamaican capertree	*Capparis cynophallophora*	
Papaya*	*Carica papaya*	
Natal plum*	*Carissa macrocarpa*	
Chaffhead	*Carphephorus* sp.	
Australian-pine*	*Casuarina equisetifolia*	
Madagascar periwinkle*	*Catharanthus roseus*	
Green algae	*Caulerpa cupressoides*	
Green algae	*Caulerpa mexicana*	
Green algae	*Caulerpa prolifera*	
Green algae	*Caulerpa racemosa* var. *macrophysa*	
Green algae	*Caulerpa vickersiae*	
Southern sandbur	*Cenchrus echinatus*	
Coast sandbur	*Cenchrus incertus*	
Sanddune sandbur	*Cenchrus tribuloides*	
Sandbur	*Cenchrus* sp.	
Algae	*Centroceras clavulatum*	
Spurred butterfly pea	*Centrosema virginianum*	
Algae	*Ceramium fastigiatum*	
Green algae	*Chaetomorpha aerea*	
Partridge pea	*Chamaecrista fasciculata*	
Pillpod sandmat	*Chamaesyce hirta*	
Hyssopleaf sandmat	*Chamaesyce hyssopifolia*	
Spotted sandmat	*Chamaesyce maculata*	
Coastal beach sandmat	*Chamaesyce mesembryanthemifolia*	
Snowberry	*Chiococca alba*	
Algae	*Chondra collinsiana*	
Red algae	*Chondra* sp.	
Coco plum	*Chrysobalanus icaco*	
Lichen	*Chrysothrix candelaris*	
Sorrelvine	*Cissus trifoliata*	
Florida fiddlewood	*Citharexylum spinosum*	
Sour orange*	*Citrus aurantium*	
Lemon*	*Citrus limon*	
Lime*	*Citrus* sp.	
Green algae	*Cladophora* sp.	
Tread-softly	*Cnidoscolus stimulosus*	
Lichen	*Coccocarpia palmicola*	
Seagrape	*Coccoloba uvifera*	
Domestic croton*	*Codiaeum variegatum*	
Green algae	*Codium decorticatum*	

* **Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Algae	*Colopomenia sinuosa*	
Whitemouth dayflower	*Commelina erecta*	
Buttonwood	*Conocarpus erectus*	
Canadian horseweed	*Conyza canadensis* var. *pusilla*	
Showy rattlebox*	*Crotalaria spectabilis*	
Gulf croton	*Croton punctatus*	
Red algae	*Cryptonemia* sp.	
Lichen	*Cryptothecia striata*	
Christmas lichen	*Cryptothecia rubrocincta*	
Dodder	*Cuscuta* sp.	
Sago palm*	*Cycas circinalis*	
Leafless swallowwort	*Cynanchum scoparium*	
Flatsedge	*Cyperus* sp.	
Beach star	*Cyperus pedunculatus*	
Flatleaf flatsedge	*Cyperus planifolius*	
Pinebarren flatsedge	*Cyperus retrorsus*	
Durban crowfootgrass*	*Dactyloctenium aegyptium*	
Coinvine	*Dalbergia ecastophyllum*	
Algae	*Dasya collinsiana*	
Ticktrefoil	*Desmodium incanum*	
Witchgrass	*Dichanthelium* sp.	
Sixangle foldwing	*Dicliptera sexangularis*	
Algae	*Dictyopteris delicatula*	
Algae	*Dictyota dichotoma*	
Brown algae	*Dictyota* spp.	
Algae	*Dilophus guineensis*	
Air potato*	*Dioscorea bulbifera*	
Lichen	*Dirinaria applanata*	
Lichen	*Dirinaria picta*	
Lichen	*Dirinaria purpurascens*	
Twinflower	*Dyschoriste* sp.	
Devil's potato	*Echites umbellata*	
Florida butterfly orchid	*Encyclia tampensis*	7
Hair algae	*Enteromorpha* spp.	
Golden pothos*	*Epipremnum pinnatum*	
Coralbean	*Erythrina herbacea*	
White stopper	*Eugenia axillaris*	
Spanish stopper	*Eugenia foetida*	
Dogfennel	*Eupatorium capillifolium*	
Throughwort	*Eupatorum* sp.	
Crown-of-thorns*	*Euphorbia milii*	

* **Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Pinewoods fingergrass	*Eustachys petraea*	
Marshgentian	*Eustoma exaltatum*	
Strangler fig	*Ficus aurea*	
Hurricanegrass	*Fimbristylis cymosa*	
Narrowleaf yellowtops	*Flaveria linearis*	
Florida swampprivet	*Forestiera segregata*	
Firewheel	*Gaillardia pulchella*	
Downy milkpea	*Galactia volubilis*	
Southern beeblossom	*Gaura angustifolia*	
Algae	*Gelidopsis gracilis*	
Red algae	*Gigartina acicularis*	
Rose mock vervain	*Glandularia canadensis*	
Mock vervain	*Glandularia* sp.	
Globe amaranth*	*Gomphrena serrata*	
Red algae	*Gracilaria cervicornis*	
Red algae	*Gracilaria mammilaris*	
Red algae	*Gracilaria* sp.	
Lichen	*Graphis sp*	
Lichen	*Graphis striatula*	
Algae	*Gratelupia filicina*	
Red algae	*Griffithsia* sp.	
Beeftree	*Guapira discolor*	
Lichen	*Haematomma accolens*	
Lichen	*Haematomma persoonii*	
Bloodstain lichen	*Hafellia bahiana*	
Red algae	*Haliptilon cubense*	
Shoalweed	*Halodule wrightii*	
Johnson's seagrass	*Halophila johnsonii*	
Algae	*Halymenia* sp.	
Simpson's applecactus	*Harrisia simpsonii*	
Clustered mille graine	*Hedyotis uniflora*	
East coast dune sunflower	*Helianthus debilis* ssp. *debilis*	
Seaside heliotrope	*Heliotropium curassavicum*	
Heliotrope	*Heliotropium* sp.	
Algae	*Helminthocladia calvadosii*	
Algae	*Herposiphonia secunda*	
Camphorweed	*Heterotheca subaxillaris*	
Rosemallow*	*Hibiscus rosa-sinensis* var. *rosa-sinensis*	
Mangrove spiderlily	*Hymenocallis latifolia*	
St. John's wort	*Hypericum* sp.	
Algae	*Hypnea musciformis*	

* Non-native Species

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Algae	*Hypnea* sp.	
Moonflowers	*Ipomoea alba*	
Tievine	*Ipomoea cordatotriloba*	
Beach morningglory	*Ipomoea imperati*	
Railroad vine	*Ipomoea pes-caprae*	
Saltmarsh morningglory	*Ipomoea sagitatta*	
Ornamental iris*	*Iris* sp.	
Seacoast marshelder	*Iva imbricata*	
Algae	*Jania rubens*	
Star jasmine*	*Jasminum multiflorum*	
Chandelier plant*	*Kalanchoe tubiflora*	
Virginia saltmarsh mallow	*Kosteletskya virginica*	
Black ironwood	*Krugiodendron ferreum*	
Crapemyrtle*	*Lagerstroemia indica*	
White mangrove	*Laguncularia racemosa*	
Lantana*	*Lantana camara*	
Buttonsage	*Lantana involucrata*	
Lichen	*Lecanora hybocarpa*	
Lichen	*Lecanora* sp.	
Lichen	*Lecanora strobilina*	
Duckweed	*Lemna* sp.	
Lichen	*Leptogium austroamericanum*	
Algae	*Liagora ceranoides*	
Algae	*Liagora* sp.	
Gopher apple	*Licania michauxii*	
Carolina sealavender	*Limonium carolinianum*	
Creeping cucumber	*Melothria pendula*	
Poorman's patch	*Mentzelia floridana*	
Climbing hempvine	*Mikania scandens*	
Indian chickweed*	*Mollugo verticillata*	
Balsampear*	*Momordica charantia*	
Spotted beebalm	*Monarda punctata*	
Red mulberry	*Morus rubra*	
Common banana*	*Musa* x *paradisiaca*	
Twinberry	*Myrcianthes fragrans*	
Southern bayberry	*Myrica cerifera*	
Tuberous sword fern*	*Nephrolepis cordifolia*	
Oleander*	*Nerium oleander*	
Lancewood	*Ocotea coriacea*	
Seabeach eveningprimrose	*Oenothera humifusa*	
Clustered mille graine	*Oldenlandia uniflora*	

* **Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Erect pricklypear	*Opuntia stricta*	
Algae	*Padina gymnosperma*	
Algae	*Padina jamaicensis*	
Algae	*Padina sanctae-crucis*	
Algae	*Padina* spp.	
Bitter panicgrass	*Panicum amarum*	
Panic grass	*Panicum* spp.	
Lichen	*Parmotrema dilatatum*	
Lichen	*Parmotrema gardneri*	
Lichen	*Parmotrema michauxianum*	
Lichen	*Parmotrema perforatum*	
Lichen	*Parmotrema praesorediosum*	
Lichen	*Parmotrema rigidum*	
Virginia creeper	*Parthenocissus quinquefolia*	
Purple passionflower	*Passiflora incarnata*	
Corkystem passionflower	*Passiflora suberosa*	
Redbay	*Persea borbonia* var. *borbonia*	
Volcano wart lichen	*Pertusaria xanthodes*	
Red algae	*Peyssonnelia inamoena*	
Lichen	*Phaeographis* sp.	
Lichen	*Phaeographis subfulgurata*	
Tree philodendron*	*Philodendron selloum*	
Golden polypody	*Phlebodium aureum*	
Turkey tangle fogfruit	*Phyla nodiflora*	
Chamber-bitter*	*Phyllanthus urinaria*	
Groundcherry	*Physalis* sp.	
Walter's groundcherry	*Physalis walteri*	
American rosette lichen	*Physcia americana*	
Rosette lichen	*Physcia atrostriata*	
Rosette lichen	*Physcia neogaea*	
American pokeweed	*Phytolacca americana*	
Resurrection fern	*Pleopeltis polypodioides* var. *michauxiana*	
Camphorweed	*Pluchea* sp.	
Paintedleaf	*Poinsettia cyathophora*	
Rustweed	*Polypremum procumbens*	
Little hogweed	*Portulaca oleracea*	
Pink purslane	*Portulaca pilosa*	
Purselane	*Portulaca* sp.	
Black cherry	*Prunus serotina* var. *serotina*	
Wild coffee	*Psychotria nervosa*	
Shortleaf wild coffee	*Psychotria sulzneriI*	

* **Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Red algae	*Pterocladia bartletti*	
Red algae	*Pterocladia* sp.	
Wart lichen	*Pyrenula cruenta*	
Wart lichen	*Pyrenula microcarpa*	
Wart lichen	*Pyrenula ochaceoflava*	
Wart lichen	*Pyrenula ochaceoflavens*	
Wart lichen	*Pyrenula* sp.	
Wart lichen	*Pyrenula thelomorpha*	
Sand live oak	*Quercus geminata*	
Lichen	*Ramalina complanata*	
Lichen	*Ramalina montagnei*	
Lichen	*Ramalina paludosa*	
Lichen	*Ramalina peruviana*	
Lichen	*Ramalina stenospora*	
Lichen	*Ramalina willeyi*	
White indigoberry	*Randia aculeata*	
Myrsine	*Rapanea punctata*	
Rubbervine	*Rhabdadenia biflora*	
Red mangrove	*Rhizophora mangle*	
Winged sumac	*Rhus copallinum*	
Rose natalgrass*	*Rhynchelytrum repens*	
Castorbean*	*Ricinus communis*	
Rougeplant	*Rivina humilis*	
Britton's wild petunia*	*Ruellia tweediana*	
Curly dock*	*Rumex crispus*	
Wedgeleaf dock*	*Rumex frutescens*	
Cabbage palm	*Sabal palmetto*	
Annual glasswort	*Salicornia bigelovii*	
Carolina willow	*Salix caroliniana*	
Tropical sage	*Salvia coccinea*	
American elder	*Sambucus canadensis*	
Bowstring hemp*	*Sansevieria hyacinthoides*	
Sargassum weed	*Sargassum* sp.	
Beachberry	*Scaevola plumieri*	
Australian umbrella tree*	*Schefflera actinophylla*	
Brazilian pepper*	*Schinus terebinthifolius*	
Algae	*Scinaia* sp.	
Saw palmetto	*Serenoa repens*	
Shoreline seapurslane	*Sesuvium portulacastrum*	
Common wireweed	*Sida acuta*	
Fanpetals	*Sida* sp.	

* **Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Saffron plum	*Sideroxylon celastrinum*	
Tough bully	*Sideroxylon tenax*	
False mastic	*Sideroxylon foetidissimum*	
Earleaf greenbrier	*Smilax auriculata*	
Seaside goldenrod	*Solidago sempervirens*	
Algae	*Solieriacae* sp.	
Common sowthistle*	*Sonchus oleraceus*	
Yellow necklacepod	*Sophora tomentosa*	
Marshhay cordgrass	*Spartina patens*	
Algae	*Spatoglossum schroederi*	
Creeping oxeye*	*Sphagneticola trilobata*	
Coral dropseed	*Sporobolus domingensis*	
Smutgrass*	*Sporobolus indicus*	
Seashore dropseed	*Sporobolus virginicus*	
Red algae	*Sporolithon* spp.	
White oldfield aster	*Symphyotrichum pilosum*	
Manateegrass	*Syringodium filiforme*	
Turtlegrass	*Thalassia testudinum*	
Spanish moss	*Tillandsia usneoides*	
Red algae	*Titanoderma* sp.	
Eastern poison ivy	*Toxicodendron radicans*	
Purple queen*	*Tradescantia pallida*	
Oyster-plant*	*Tradescantia spathacea*	
Wandering-jew*	*Tradescantia zebrina*	
Burrnut*	*Tribulus cistoides*	
Forked bluecurls	*Trichostema dichotomum*	
Southern cattail	*Typha domingensis*	
Algae	*Ulva lactuca*	
Algae	*Ulva rigida*	
Seaoats	*Uniola paniculata*	
Sandpaper vervain	*Verbena scabra*	
White crownbeard	*Verbesina virginica*	
Giant ironweed	*Vernonia gigantea*	
Ironweed	*Vernonia* sp.	
Hairypod cowpea	*Vigna luteola*	
Simpleleaf chastetree*	*Vitex trifolia*	
Summer grape	*Vitis aestivalis*	
Muscadine	*Vitis rotundifolia*	
Shoestring fern	*Vittaria lineata*	
Tallow wood	*Ximenia americana*	
Spanish bayonet*	*Yucca aloifolia*	

* **Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Florida arrowroot	*Zamia pumila*	7,82
Hercules'-club	*Zanthoxylum clava-herculis*	
Wild lime	*Zanthoxylum fagara*	

*** Non-native Species**

Sebastian Inlet State Park Plants

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

* Non-native Species

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

INVERTEBRATES

Lepidoptera

Gulf fritillary	*Dione vanillae nigrior*	1,5,81
Common sulphur	*Colias philodice*	1,5,81
Great southern white	*Ascia monuste phileta*	1,5,81
Zebra long wing	*Heliconius charitonius tuckeri*	1,5,81
Composia moth	*Composia fidelissima*	5,81,82
Cecropia moth	*Hyalophora cecropia*	5,81,82
Luna moth	*Actias luna*	5,81,82
Io moth	*Automeris io io*	5,7,81,82
Imperial moth	*Eacles imperialis imperialis*	5,7,81,82
Bella moth	*Utetheisa bella*	5,81
Palamedes swallowtail	*Papilio palamedes*	
Cloudless sulfur butterfly	*Phoebis sennae eubule*	
Oak hairstreak	*Satyrium liparops*	

Porifera

Sponge	*Callyspongia vaginalis*	66/78
Sponge	*Cinachyra alloclada*	66/78
Sponge	*Cliona caribbea*	66/78
Sponge	*Cliona celata*	66/78
Sponge	*Cliona lampa*	66/78
Sponge	*Halichondria* sp.	66/78,81
Sponge	*Hymeniacidon* sp.	66/78
Sponge	*Leucetta floridana*	66/78
Sponge	*Lissodendoryx* sp.	66/78,81
Sponge	*Microciona prolifera*	66/78,81
Sponge	*Microciona spinosa*	66/78
Sponge	*Mycale* sp.	66/78
Sponge	*Tethya* sp.	66/78

Cnidaria

Hydroid	*Obelia hyalina*	66/78
Hydroid	*Sertularia amplectens*	66/78
Hydroid	*Sertularia exigua*	66/78
Hydroid	*Sertularia flowersi*	66/78
Hydroid	*Sertularia inflata*	66/78

* Non-native Species

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Hydroid	*Sertularia mayersi*	66/78
Hydroid	*Sertularia stookeyi*	66/78
Hydroid	*Telmactis* sp.	66/78,81
Ctenophora		
Comb jellies	*Mnemiopsis leadyi*	59/71
Chordata		
	Botryllus sp.	66/78,81
Bryozoa		
Bryozoan	*Amathia alternata*	66/78
Bryozoan	*Amathia vidivici*	66/78
Bryozoan	*Beania hirtissima*	66/78
Bryozoan	*Bugula* sp.	66/78,81
Bryozoan	*Bugula stolonifera*	66/78
Bryozoan	*Bugula turrita*	66/78
Bryozoan	*Cryptosula pallasiana*	66/78
Bryozoan	*Exechonella antillea*	66/78
Bryozoan	*Membranipora arborescens*	66/78
Bryozoan	*Membranipora savartii*	66/78
Bryozoan	*Membranipora* sp.	66/78,81
Bryozoan	*Pasythea tulipifera*	66/78
Bryozoan	*Schizoporella unicornis*	66/78
Bryozoan	*Thalamoporella floridana*	66/78
Bryozoan	*Watersipora subovoidea*	66/78
Polychaeta		
Polychaete	*Cirriformia* sp.	66/78
Polychaete	*Dialychone* sp.	66/78
Polychaete	*Dodecaceria* sp.	66/78
Polychaete	*Eulalia* sp.	66/78
Polychaete	*Eunice websteri*	66/78
Polychaete	*Filograna* sp.	66/78
Polychaete	*Hermenia* sp.	66/78,81
Polychaete	*Hermodice carunculata*	66/78,81
Polychaete	*Hesione* sp.	66/78

* Non-native Species

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Polychaete	*Hydroides dianthus*	66/78
Polychaete	*Hydroides protulicola*	66/78
Polychaete	*Lepidonotus* sp.	66/78
Polychaete	*Loimia medusa*	66/78,81
Polychaete	*Lumbrinereis inflata*	66/78
Polychaete	*Marphysa* sp.	66/78
Polychaete	*Megalomma bioculatum*	66/78
Polychaete	*Mystides* sp.	66/78
Polychaete	*Naineris* sp.	66/78
Polychaete	*Nereiphylla* sp.	66/78
Polychaete	*Nereis* sp.	66/78
Polychaete	*Nothria* sp.	66/78
Polychaete	*Onuphis* sp.	66/78,81
Polychaete	*Ophiodromus* sp.	66/78
Polychaete	*Phragmatopoma lapidosa*	66/78
Polychaete	*Phyllodocidae* sp.	66/78
Polychaete	*Platynereis* sp.	66/78
Polychaete	*Polydorella* sp.	66/78
Polychaete	*Pseudovermillia occidentalis*	66/78
Polychaete	*Pseudovermiliopsis* sp.	66/78
Polychaete	*Pterocirrus* sp.	66/78
Polychaete	*Pycnogonum littorale*	66/78
Polychaete	*Rhynchospio* sp.	66/78
Polychaete	*Sabella* sp.	66/78,81
Polychaete	*Sabellaria* sp.	66/78
Polychaete	*Sabellastarte* sp.	66/78,81
Polychaete	*Syllides* sp.	66/78
Polychaete	*Syllis* sp.	66/78
Polychaete	*Trypanosyllis* sp.	66/78
Pycnogonida		
Sea spider	*Achelia spinosa*	66/78
Sea spider	*Anoplodactylus parvus*	66/78
Sea spider	*Pycnogonum* sp.	66/78,81
Sea spider	*Tanystylum orbiculare*	66/78
Cirripedia		
Barnacle	*Balanus amphitrite amphitrite*	66/78
Barnacle	*Balanus* sp.	66/78,81
Barnacle	*Balanus trigonus*	66/78
Barnacle	*Balanus venustus*	66/78

* Non-native Species

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Barnacle	*Chthamalus* sp.	66/78,81
Cumacea		
	Cyclaspis pustulata	66/78
	Oxyurostylis smithi	66/78
Isopoda		
Isopod	*Bagatus bermudensis*	66/78
Isopod	*Cirolana gracilis*	
Isopod	*Cirolana parva*	66/78
Isopod	*Cleantis planicauda*	66/78
Isopod	*Dynamella quadripunctata*	66/78
Isopod	*Dynamella* sp.	66/78
Isopod	*Erichsonella filiformis*	66/78
Isopod	*Excorallana sexticornis*	66/78
Isopod	*Excorallana tricornis*	66/78
Isopod	*Exosphaeroma* sp.	66/78
Isopod	*Janira minuta*	66/78
Isopod	*Jaeropsis rathbunae*	66/78
Isopod	*Jaeropsis* sp.	66/78
Isopod	*Laeropsis* sp.	
Isopod	*Mesanthura decorata*	66/78
Isopod	*Paracerceis caudata*	66/78
Isopod	*Sphaeroma destructor*	66/78
Isopod	*Sphaeroma quadridentatum*	66/78
Isopod	*Sphaeroma* sp.	66/78,81
Isopod	*Sphaeroma walkeri*	66/78
Amphipoda		
Amphipod	*Acanthohaustorius shoemakei*	66/78
Amphipod	*Ampelisca agassizi*	66/78
Amphipod	*Ampithoe marcuzzii*	66/78
Amphipod	*Ampithoe pollex*	66/78
Amphipod	*Ampithoe* sp.	66/78
Amphipod	*Caprella equilibra*	66/78
Amphipod	*Caprella penantis*	66/78
Amphipod	*Cerapus tubularis*	66/78
Amphipod	*Corophium acherusicum*	66/78
Amphipod	*Corophium acutum*	66/78
Amphipod	*Corophium tuberculatum*	66/78
Amphipod	*Elasmopus levis*	66/78

* **Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Amphipod	*Elasmopus pectinicrus*	66/78
Amphipod	*Elasmopus rapax*	66/78
Amphipod	*Elasmopus* sp.	66/78
Amphipod	*Erichthonius brasiliensis*	66/78
Amphipod	*Gammaropsis* sp.	66/78
Amphipod	*Gammarus* sp.	66/78,81
Amphipod	*Gitanopsis tortugae*	66/78
Amphipod	*Hyale* sp.	66/78
Amphipod	*Jassa falcata*	66/78
Amphipod	*Lembos* sp.	66/78
Amphipod	*Listriella* sp.	66/78
Amphipod	*Lysianassa* sp.	66/78
Amphipod	*Lysianopsis* sp	66/78,81
Amphipod	*Microdeutopus myersi*	66/78
Amphipod	*Microprotopus raneyi*	66/78
Amphipod	*Milita nitida*	66/78
Amphipod	*Orchestia* sp.	66/78,81
Amphipod	*Podocerus brasiliensis*	66/78
Amphipod	*Stenothoe* spp.	66/78
Crustacea		
Speckled crab	*Arenaeus cribrarius*	1,65/77
Crab	*Clibanarius* sp.	66/78,81
Brown shrimp	*Farfantepenaeus aztecus*	66/78
Crab	*Homola* sp.	66/78
Crab	*Libinia* sp.	66/78,81
Crab	*Macrocoeloma subparallelum*	66/78,81
Crab	*Menippe mercenaria*	66/78,81
Crab	*Microphrys bicornutus*	66/78,81
Crab	*Neopanope sayi*	66/78
Ghost crab	*Ocypode quadrata*	1,65/77
Mottled shore crab	*Pachygrapsus transversus*	66/78
Crab	*Panopeus herbstii*	66/78,81
Crab	*Panopeus occidentalis*	66/78
Spiny lobster	*Panulirus argus*	66/78
Spanish lobster	*Panulirus guttata*	66/78
Crab	*Percnon gibbesi*	66/78,81
Crab	*Pelia mutica*	66/78
Crab	*Petrolisthes galathinus*	66/78,81
Crab	*Pilumnus dasypodus*	66/78

* **Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Crab	*Pilumnus floridanus*	66/78
Crab	*Speleophorus pontifer*	66/78
Florida shovelnose	*Scyllarus americanus*	66/78

Mollusca

Mollusk	*Abra aequalis*	66/78
Mollusk	*Anomia antillensis*	66/78,81
Mollusk	*Anomia simplex*	66/78,81
Mollusk	*Barbatia domingensis*	66/78,81
Mollusk	*Barbatia candida*	66/78,81
Mollusk	*Barleeia* sp.	66/78
Mollusk	*Bittium varium*	66/78,81
Mollusk	*Brachidontes exustus*	66/78,81
Mollusk	*Bulla striata*	66/78,81
Mollusk	*Caecum pulchellum*	66/78,81
Mollusk	*Caecum nitidum*	66/78,81
Mollusk	*Cerithiopsis greeni*	66/78
Mollusk	*Cerithiopsis subulata*	66/78,81
Mollusk	*Cerithium atratum*	66/78,81
Mollusk	*Cerithium eburneum*	66/78,81
Mollusk	*Chama congregata*	66/78,81
Mollusk	*Chama macerophylla*	66/78,81
Mollusk	*Chione grus*	66/78,81
Mollusk	*Costoanachis avara*	66/78,81
Mollusk	*Costoanachis floridana*	66/78,81
Mollusk	*Crassispira leucocyma*	66/78,81
Mollusk	*Crepidula aculeata*	66/78,81
Mollusk	*Crepidula fornicata*	66/78,81
Mollusk	*Cylindrobulla beauii*	66/78
Mollusk	*Dendrodoris krebsi*	66/78,81
Mollusk	*Diodora cayenensis*	66/78,81
Mollusk	*Diodora listeri*	66/78,81
Mollusk	*Diplothyra smithi*	66/78
Mollusk	*Epitonium multistriatum*	66/78
Mollusk	*Epitonium* sp.	66/78,81
Mollusk	*Fargoa bartschi*	66/78,81
Mollusk	*Fargoa bushiana*	66/78,81
Mollusk	*Fargoa dianthophila*	66/78,81
Mollusk	*Haminoea antillarium*	66/78,81
Mollusk	*Haminoe succinea*	66/78

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Mollusk	*Isognomon alatus*	66/78,81
Mollusk	*Isognomon bicolor*	66/78
Mollusk	*Lithophaga bisulcata*	66/78
Mollusk	*Littorina melagris*	66/78
Mollusk	*Littorina ziczac*	66/78,81
Mollusk	*Marginella lavalleana*	66/78,81
Mollusk	*Meioceras nitidum*	66/78,81
Mollusk	*Microphrys bicornutus*	66/78,81
Mollusk	*Mitrella lunata*	66/78
Mollusk	*Modulus modulus*	66/78,81
Mollusk	*Modiulus* sp.	66/78
Mollusk	*Musculus lateralis*	66/78
Mollusk	*Nassarius albus*	66/78,81
Mollusk	*Nerita fulgurans*	66/78,81
Mollusk	*Noetia ponderosa*	66/78
Mollusk	*Odostoma* sp.	66/78
Mollusk	*Odostomia babylonia*	66/78,81
Mollusk	*Odostomia* sp.	
Mollusk	*Ostrea equestris*	66/78,81
Mollusk	*Ostreola equestris*	66/78
Mollusk	*Parviturboides interruptus*	66/78,81
Mollusk	*Peristicha agria*	66/78,81
Mollusk	*Pteria colymbus*	66/78
Mollusk	*Rissoina bryerea*	66/78,81
Mollusk	*Rissoina catesbyana*	66/78,81
Mollusk	*Seila adamsi*	66/78,81
Mollusk	*Selia pectinata*	
Mollusk	*Siphonaria pectinata*	66/78,81
Mollusk	*Sphenia antillensis*	66/78,81
Mollusk	*Thais haemastoma*	66/78,81
Mollusk	*Tricolia affinis*	66/78,81
Mollusk	*Triphora decorata*	66/78,81
Mollusk	*Triphora nigrocincta*	66/78,81
Mollusk	*Triphora* sp.	66/78
Mollusk	*Turbonilla* sp.	66/78,81
Mollusk	*Turitella* sp.	66/78
Mollusk	*Vermicularia* sp.	66/78
Mollusk	*Vermicularia spirata*	66/78,81
Mollusk	*Vitrinella floridana*	66/78,81

Echinodermata

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Sea urchin	*Echinometra lacunter*	66/78
Sea urchin	*Holothuria* sp.	66/78,81
Sea urchin	*Ophiothrix* sp.	66/78,81

Tunicata

Tunicate	*Aplidium* sp.	66/78
Sea squirt	*Didemnum candidum*	66/78
Tunicate	*Diplosoma macdonaldi*	66/78
Tunicate	*Distaplia bermudensis*	66/78
Tunicate	*Distaplia bermudia*	66/78
Tunicate	*Ecteinascidea turbinata*	66/78
Tunicate	*Eudistoma capsilatum*	66/78
Tunicate	*Eudistoma carolinense*	66/78
Tunicate	*Perophora bermudensis*	66/78
Tunicate	*Perophora viridis*	66/78
Sea squirt	*Tridemnum orbiculatum*	66/78
Sea squirt	*Tridemnum savignii*	66/78

FISH

Nurse shark	*Ginglymostoma cirratum*	59/71
Bonnethead	*Sphyrna tiburo*	59/71
Spinner shark	*Carcharhinus falciformis*	59/71
Bull shark	*Carcharhinus leucas*	59/71
Blacktip shark	*Carcharhinus limbatus*	59/71
Tiger shark	*Galeocerdo cuvier*	59/71
Lemon shark	*Negaprion brevirostris*	59/71
Atlantic sharpnose shark	*Rhizoprionodon terranovae*	59/71
Scalloped hammerhead	*Sphyrna lewini*	59/71
Great hammerhead	*Sphyrna mokarran*	59/71
Smalltooth sawfish	*Pristis pectinata*	59/71,64/76
Lesser electric ray	*Narcine brasiliensis*	59/71,64/76
Atlantic torpedo	*Torpedo nobiliana*	59/71,64/76
Atlantic guitarfish	*Rhinobatos lentiginosus*	59/71,64/76
Clearnose skate	*Raja eglanteria*	59/71
Southern stingray	*Dasyatis americana*	59/71
Roughtail stingray	*Dasyatis centroura*	59/71
Atlantic stingray	*Dasyatis sabina*	59/71
Bluntnose stingray	*Dasyatis say*	59/71

* **Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Smooth butterfly ray	*Gymnura micrura*	59/71
Spotted eagle ray	*Aetobatis narinari*	59/71
Cownose ray	*Rhinoptera bonasus*	59/71
Manta	*Manta birostris*	59/71
Ladyfish	*Elops saurus*	59/71,64/76
Tarpon	*Megalops atlanticus*	59/71,64/76
Bonefish	*Albula vulpes*	59/71,64/76
American eel	*Anguilla rostrata*	59/71,66/78
Green moray	*Gymnothorax funebris*	66/78
Spotted moray	*Gymnothorax moringa*	66/78
Atlantic menhaden	*Brevoortia tyrannus*	59/71,64/76
False pilchard	*Harengula clupeola*	59/71
Scaled sardine	*Harengula jaguarana*	59/71,64/76
Spanish sardine	*Sardinella aurita*	
Atlantic thread herring	*Opisthonema oglinum*	59/71,64/76
Striped anchovy	*Anchoa hepsetus*	59/71,64/76
Bigeye anchovy	*Anchoa lamprotaenia*	59/71,64/76
Bay anchovy	*Anchoa mitchilli*	59/71,64/76
Hardhead catfish	*Arius felis*	64/76
Gafftopsail catfish	*Bagre marinus*	64/76
Inshore lizardfish	*Synodus foetens*	59/71
Oyster toadfish	*Opsanus tau*	59/71
Ballyhoo	*Hemiramphus brasiliensis*	59/71
Silverstripe halfbeak	*Hyporhamphus unifasciatus*	59/71
Atlantic needlefish	*Strongylura marina*	59/71
Redfin needlefish	*Strongylura notata*	59/71,64/76
Timucu	*Strongylura timucu*	59/71,64/76
Houndfish	*Tylosurus crocodilus*	59/71,64/76
Sheepshead minnow	*Cyprinodon variegatus variegatus*	59/71,64/76
Goldspotted killifish	*Floridichthys carpio*	64/76
Gulf killifish	*Fundulus grandis*	64/76
Striped/longnose killifish	*Fundulus majalis*	64/76
Rainwater killifish	*Lucania parva*	59/71,64/76
Eastern mosquitofish	*Gambusia holbrooki*	64/76
Sailfin molly	*Poecilia latipinna*	59/71,64/76
Tidewater silverside	*Menidia peninsulae*	
Silverside	*Menidia* spp.	59/71,64/76
Lined seahorse	*Hippocampus erectus*	66/78
Chain pipefish	*Syngnathus louisianae*	59/71
Gulf pipefish	*Syngnathus scovelli*	59/71
Spotted scorpionfish	*Scorpaena plumier*	59/71

*** Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Leopard searobin	*Prionotus scitulus*	59/71,66/78
Bighead searobin	*Prionotus tribulus*	59/71,66/78
Swordspine snook	*Centropomus ensiferus*	59/71
Fat snook	*Centropomus paralelus*	59/71
Tarpon snook	*Centropomus pectinatus*	59/71
Common snook	*Centropomus undecimalis*	59/71
Black sea bass	*Centropristis striata*	59/71,64/76
Jewfish	*Epinephelus itajara*	59/71,64/76
Red grouper	*Epinephelus morio*	59/71
Black grouper	*Mycteroperca bonaci*	59/71,64/76
Gag	*Mycteroperca microlepis*	59/71,64/76
Bluefish	*Pomatomus saltatrix*	59/71,64/76
Cobia	*Rachycentron canadum*	59/71,64/76
Blue runner	*Caranx crysos*	59/71,64/76
Crevalle jack	*Caranx hippos*	59/71,66/78
Horse-eye jack	*Caranx latus*	59/71,66/78
Leatherjack	*Oligoplites saurus*	59/71,66/78
Atlantic moonfish	*Selene setapinnis*	59/71,66/78
Lookdown	*Selene vomer*	59/71,66/78
Florida pompano	*Trachinotus carolinus*	59/71,66/78
Permit	*Trachinotus falcatus*	59/71,66/78
Mutton snapper	*Lutjanus analis*	59/71
Schoolmaster	*Lutjanus apodus*	59/71
Gray snapper	*Lutjanus griseus*	59/71,64/76
Lane snapper	*Lutjanus synagris*	59/71,64/76
Tripletail	*Lobotes surinamensis*	59/71,64/76
Irish pompano	*Diapterus auratus*	59/71,66/78
Striped mojarra	*Diapterus plumieri*	59/71,66/78
Silver jenny	*Eucinostomus gula*	59/71,64/76
Tidewater mojarra	*Eucinostomus harengulus*	59/71,64/76
Slender mojarra	*Eucinostomus jonesi*	
Mojarra	*Eucinostomus* spp.	59/71,64/76
Black margate	*Anisotremus surinamensis*	59/71,64/76
Porkfish	*Anisotremus virginicus*	59/71,64/76
Tomtate	*Haemulon aurolineatum*	59/71,64/76
Sailor's choice	*Haemulon parra*	
Pigfish	*Orthopristis chrysoptera*	59/71
Sheepshead	*Archosargus probatocephalus*	59/71
Sea bream	*Archosargus rhomboidalis*	59/71
Grass porgy	*Calamus arctifrons*	59/71
Spottail pinfish	*Diplodus holbrooki*	59/71,64/76

*** Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Pinfish	*Lagodon rhomboides*	59/71,64/76
Silver perch	*Bairdiella chrysoura*	59/71,64/76
Spotted seatrout	*Cynoscion nebulosus*	59/71,64/76
Spotted drum	*Equetus punctatus*	59/71,64/76
Spot	*Leiostomus xanthurus*	59/71,64/76
Southern kingfish	*Menticirrhus americanus*	59/71,65/77
Gulf kingfish	*Menticirrhus littoralis*	59/71,65/77
Atlantic croaker	*Micropogonias undulatus*	59/71,65/77
Red drum	*Sciaenops ocellatus*	59/71,64/76
Star drum	*Stellifer lanceolatus*	59/71,64/76
Atlantic spadefish	*Chaetodipterus faber*	59/71,65/77
Blackchin tilapia	*Tilapia melanotheron*	64/76,65/77
Sargeant major	*Abudefduf saxatilis*	59/71,64/76
Night sargeant	*Abudefduf taurus*	59/71,64/76
Dusky damselfish	*Pomacentrus fuscus*	59/71,64/76
Beaugregory	*Pomacentrus leucostictus*	59/71,64/76
Striped mullet	*Mugil cephalus*	59/71,64/76
White mullet	*Mugil curema*	59/71,64/76
Mullet	*Mugil* sp.	59/71,64/76
Great barracuda	*Sphyraena barracuda*	65/77,66/78
Southern sennet	*Sphyraena picudilla*	65/77,66/78
Dwarf wrasse	*Doratonotus megalepis*	59/71,64/76
Emerald parrotfish	*Nicholsina usta*	65/77,66/78
Southern stargazer	*Astroscopus y-graecum*	65/77,66/78
Hairy blenny	*Labrisomus nuchipinnis*	59/71,64/76
Striped blenny	*Chasmodes bosquianus*	59/71,64/76
Florida blenny	*Chasmodes saburrae*	59/71,64/76
Frillfin goby	*Bathygobius soporator*	59/71,64/76
Violet goby	*Gobioides broussoneti*	59/71,64/76
Darter goby	*Gobionellus boleosoma*	59/71,64/76
Naked goby	*Gobiosoma bosc*	59/71,64/76
Code goby	*Gobiosoma robustum*	59/71,64/76
Clown goby	*Microgobius gulosus*	59/71,64/76
Atlantic cutlassfish	*Trichiurus lepturus*	59/71,64/76
King mackerel	*Scomberomorus cavalla*	59/71,64/76
Spanish mackerel	*Scomberomorus maculatus*	59/71,64/76
Cero	*Scomberomorus regalis*	59/71,64/76
Spotted whiff	*Citharichthys macrops*	
Bay whiff	*Citharichthys spilopterus*	59/71,64/76
Fringed flounder	*Etropus crossotus*	59/71,66/77
Gulf flounder	*Paralichthys albigutta*	59/71,65/77

* **Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Summer flounder	*Paralichthys dentatus*	59/71,65/77
Southern flounder	*Paralichthys lethostigma*	59/71,65/77
Lined sole	*Achirus lineatus*	59/71,65/77
Blackcheek tonguefish	*Symphurus plagiusa*	59/71,64/76
Hogchoker	*Trinectus maculatus*	59/71,64/76
Fringed filefish	*Monacanthus ciliatus*	59/71,64/76
Planehead filefish	*Monacanthus hispidus*	59/71,64/76
Spotted trunkfish	*Lactophrys bicaudalis*	59/71,64/76
Striped burrfish	*Chilomycterus schoepfi*	59/71,65/77
Southern puffer	*Sphoeroides nephelus*	59/71,65/77
Bandtail puffer	*Sphoeroides spengleri*	59/71,65/77
Checkered puffer	*Sphoeroides testudineus*	59/71,65/77
Ocean sunfish	*Mola mola*	66/78
Dolphin	*Coryphaena hippurus*	
Lyre gobi	*Evorthodus lyricus*	
Sargassumfish	*Histrio histrio*	

REPTILES

Leatherback	*Dermochelys coriacea coriacea*	1,66/78
Common snapping turtle	*Chelydra serpentina serpentina*	64/76,65/77
Striped mud turtle	*Kinosternon bauri*	7
Florida mud turtle	*Kinosternon subrubrum steindachneri*	64/76,65/77
Common musk turtle	*Sternotherus odoratus*	
Loggerhead musk turtle	*Sternotherus minor minor*	
Eastern chicken turtle	*Deirochelys reticularia reticularia*	
Carolina diamondback terrapin	*Malaclemys terrapin centrata*	59/71,64/76
Florida box turtle	*Terrapene carolina bauri*	5,7
Florida cooter	*Pseudemys floridana floridana*	
Florida redbelly turtle	*Pseudemys nelsoni*	
Gopher tortoise	*Gopherus polyphemus*	5,81
Loggerhead	*Caretta caretta*	1,66/78
Green turtle	*Chelonia mydas*	1,66/78
Hawksbill	*Eretmochelys imbricata*	1,66/78
Atlantic ridley	*Lepidochelys kempii*	1,66/78
Florida softshell	*Apalone ferox*	65/77
American alligator	*Alligator mississippiensis*	64/78
American crocodile	*Crocodylus acutus*	
Indo-Pacific gecko*	*Hemidactylus garnotii*	82
Green anole	*Anolis carolinensis carolinensis*	5,7
Brown anole*	*Anolis sagrei*	7,81,82

*** Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Brown Basilisk*	*Basiliscus vittatus*	82
Northern curlytail lizard*	*Leiocephalus carinatus armouri*	82
Eastern slender glass lizard	*Ophisaurus attenuatus longicaudus*	
Island glass lizard	*Ophisaurus compressus*	5,7
Eastern glass lizard	*Ophisaurus ventralis*	5
Six-lined racerunner	*Cnemidophorus sexlineatus sexlineatus*	5,7,81
Southeastern five-lined skink	*Eumeces inexpectatus*	5,7
Broad-headed skink	*Eumeces laticeps*	7
Ground skink	*Scincella lateralis*	7
Red-tailed Boa*	*Boa constrictor*	82
Florida scarlet snake	*Cemophora coccinea* coccinea	5,7
Southern black racer	*Coluber constrictor priapus*	5,7,81
Southern ringneck snake	*Diadophis punctatus punctatus*	7
Eastern indigo snake	*Drymarchon corais couperi*	5,7
Corn snake	*Elaphe guttata guttata*	5,7
Yellow rat snake	*Elaphe obsoleta quadrivittata*	7
Florida kingsnake	*Lampropeltis getula floridana*	7
Eastern kingsnake	*Lampropeltis getula getula*	
Scarlet kingsnake	*Lampropeltis triangulum elapsoides*	7
Eastern mud snake	*Farancia abacura abacura*	
Eastern coachwhip	*Masticophis flagellum flagellum*	5
Atlantic salt marsh snake	*Nerodia clarkii taeniata*	64/76
Florida brown snake	*Storeria dekayi victa*	
Banded water snake	*Nerodia fasciata fasciata*	64/76
Brown water snake	*Nerodia taxispilota*	64/76
Striped crayfish snake	*Regina alleni*	
Rough green snake	*Opheodrys aestivus*	7,64/76
Florida pine snake	*Pituophis melanoleucus mugitus*	5
Pine woods snake	*Rhadinaea flavilata*	
Southeastern crowned snake	*Tantilla coronata*	7
Eastern ribbon snake	*Thamnophis sauritus sauritus*	
Eastern garter snake	*Thamnophis sirtalis sirtalis*	
Eastern hognose snake	*Heterodon platyrhinos*	
Southeastern hognose snake	*Heterodon simus*	
Eastern coral snake	*Micrurus fulvius fulvius*	7
Eastern diamondback rattlesnake	*Crotalus adamanteus*	1,5,7,81
Dusky pigmy rattlesnake	*Sistrurus miliarius barbouri*	5,81
Eastern cottonmouth	*Agkistrodon piscivorus*	

BIRDS

* **Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Red-throated Loon	*Gavia stellata*	59/71
Common Loon	*Gavia immer*	59/71
Pied-billed Grebe	*Podilymbus podiceps*	59/71
Horned Grebe	*Podiceps auritus*	59/71
Sooty Shearwater	*Puffinus griseus*	Open ocean
Wilson's Storm-Petrel	*Oceanites oceanicus*	Open ocean
Leach's Storm-Petrel	*Oceanodroma leucorhoa*	Open ocean
Band-rumped Storm-Petrel	*Oceanodroma castro*	Open ocean
White-tailed Tropicbird	*Phaethon lepturus*	Open ocean
Masked Booby	*Sula dactylatra*	Open ocean
Brown Booby	*Sula leucogaster*	Open ocean
Northern Gannet	*Morus bassanus*	Open water
American White Pelican	*Pelecanus erythrorhynchos*	Flyover/open water
Brown Pelican	*Pelecanus occidentalis*	Flyover/open water
Double-crested Cormorant	*Phalacrocorax auritus*	59/71,64/76
Anhinga	*Anhinga anhinga*	59/71,64/76
Magnificent Frigatebird	*Fregata magnificens*	Flyover
Least Bittern	*Ixobrychus exilis*	59/71,64/76
Great Blue Heron	*Ardea herodias*	59/71,64/76
Great White Heron (pop)	*Ardea herodias occidentalis (pop)*	59/71,64/76
Great Egret	*Ardea alba*	59/71,64/76
Snowy Egret	*Egretta thula*	59/71,64/76
Little Blue Heron	*Egretta caerulea*	59/71,64/76
Tricolored Heron	*Egretta tricolor*	59/71,64/76
Reddish Egret	*Egretta rufescens*	59/71,64/76
Cattle Egret*	*Bubulcus ibis*	59/71,64/76
Green Heron	*Butorides virescens*	59/71,64/76
Black-crowned Night-Heron	*Nycticorax nycticorax*	59/71,64/76
Yellow-crowned Night-Heron	*Nyctanassa violacea*	59/71,64/76
White Ibis	*Eudocimus albus*	59/71,64/76
Glossy Ibis	*Plegadis falcinellus*	59/71,64/76
Roseate Spoonbill	*Platalea ajaja*	59/71,64/76
Wood Stork	*Mycteria americana*	59/71,64/76
Black Vulture	*Coragyps atratus*	Flyover
Turkey Vulture	*Cathartes aura*	Flyover
Fulvous Whistling-Duck	*Dendrocygna bicolor*	59/71,64/76
Canada Goose	*Branta canadensis*	59/71,64/76
Wood Duck	*Aix sponsa*	59/71,64/76
Green-winged Teal	*Anas crecca*	59/71,64/76
American Black Duck	*Anas rubripes*	59/71,64/76

* **Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Mottled Duck	*Anas fulvigula*	59/71,64/76
Mallard	*Anas platyrhynchos*	59/71,64/76
Northern Pintail	*Anas acuta*	59/71,64/76
Blue-winged Teal	*Anas discors*	59/71,64/76
Northern Shoveler	*Anas clypeata*	59/71,64/76
Gadwall	*Anas strepera*	59/71,64/76
American Wigeon	*Anas americana*	59/71,64/76
Canvasback	*Aythya valisineria*	59/71,64/76
Redhead	*Aythya americana*	59/71,64/76
Ring-Necked Duck	*Aythya collaris*	59/71,64/76
Greater Scaup	*Aythya marila*	59/71,64/76
Lesser Scaup	*Aythya affinis*	59/71,64/76
Harlequin Duck	*Histrionicus histrionicus*	59/71,64/76
Oldsquaw	*Clangula hyemalis*	59/71,64/76
Black Scoter	*Melanitta nigra*	59/71,64/76
Surf Scoter	*Melanitta perspicillata*	59/71,64/76
White-winged Scoter	*Melanitta fusca*	59/71,64/76
Hooded Merganser	*Lophodytes cucullatus*	59/71,64/76
Red-breasted Merganser	*Mergus serrator*	59/71,64/76
Ruddy Duck	*Oxyura jamaicensis*	59/71,64/76
Osprey	*Pandion haliaetus*	64,76
Bald Eagle	*Haliaeetus leucocephalus*	Flyover
Northern Harrier	*Circus cyaneus*	1,5
Sharp-shinned Hawk	*Accipiter striatus*	5,7
Cooper's Hawk	*Accipiter cooperii*	5,7
Red-shouldered Hawk	*Buteo lineatus*	5,7
Broad-winged Hawk	*Buteo platypterus*	5
Red-tailed Hawk	*Buteo jamaicensis*	5,7
American Kestrel	*Falco sparverius*	5
Merlin	*Falco columbarius*	5
Peregrine Falcon	*Falco peregrinus*	77
Northern Bobwhite	*Colinus virginianus*	5,81,82
Black Rail	*Laterallus jamaicensis*	64,76
Clapper Rail	*Rallus longirostris*	64,76
King Rail	*Rallus elegans*	64,76
Virginia Rail	*Rallus limicola*	64,76
Sora	*Porzana carolina*	64,76
Common Moorhen	*Gallinula chloropus*	64,76
American Coot	*Fulica americana*	64,76
Black-bellied Plover	*Pluvialis squatarola*	77
Wilson's Plover	*Charadrius wilsonia*	77

*** Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Semipalmated Plover	*Charadrius semipalmatus*	77
Piping Plover	*Charadrius melodus*	77
Killdeer	*Charadrius vociferus*	77
American Oystercatcher	*Haematopus palliatus*	77
Black-necked Stilt	*Himantopus mexicanus*	77
American Avocet	*Recurvirostra americana*	77
Greater Yellowlegs	*Tringa melanoleuca*	77
Lesser Yellowlegs	*Tringa flavipes*	77
Solitary Sandpiper	*Tringa solitaria*	77
Willet	*Catoptrophorus semipalmatus*	77
Spotted Sandpiper	*Actitis macularia*	77
Whimbrel	*Numenius phaeopus*	77
Long-billed Curlew	*Numenius americanus*	77
Marbled Godwit	*Limosa fedoa*	77
Ruddy Turnstone	*Arenaria interpres*	77
Red Knot	*Calidris canutus*	77
Sanderling	*Calidris alba*	77
Semipalmated Sandpiper	*Calidris pusilla*	77
Western Sandpiper	*Calidris mauri*	77
Least Sandpiper	*Calidris minutilla*	77
White-rumped Sandpiper	*Calidris fuscicollis*	77
Pectoral Sandpiper	*Calidris melanotos*	77
Purple Sandpiper	*Calidris maritima*	77
Dunlin	*Calidris alpina*	77
Stilt Sandpiper	*Calidris himantopus*	77
Short-billed Dowitcher	*Limnodromus griseus*	77
Common Snipe	*Gallinago gallinago*	77
Wilson's Phalarope	*Phalaropus tricolor*	77
Red-necked Phalarope	*Phalaropus lobatus*	77
Red Phalarope	*Phalaropus fulicaria*	77
Pomarine Jaeger	*Stercorarius pomarinus*	77
Parasitic Jaeger	*Stercorarius parasiticus*	77
Laughing Gull	*Larus atricilla*	77
Bonaparte's Gull	*Larus philadelphia*	77
Ring-billed Gull	*Larus delawarensis*	77
Herring Gull	*Larus argentatus*	77
Iceland Gull	*Larus glaucoides*	77
Lesser Black-backed Gull	*Larus fuscus*	77
Glaucous Gull	*Larus hyperboreus*	77
Great Black-backed Gull	*Larus marinus*	77
Black-legged Kittiwake	*Rissa tridactyla*	77

*** Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Gull-billed Tern	*Sterna nilotica*	77
Caspian Tern	*Sterna caspia*	77
Royal Tern	*Sterna maxima*	77
Sandwich Tern	*Sterna sandvicensis*	77
Roseate Tern	*Sterna dougallii*	77
Common Tern	*Sterna hirundo*	77
Arctic Tern	*Sterna paradisaea*	77
Forster's Tern	*Sterna forsteri*	77
Least Tern	*Sterna antillarum*	77
Bridled Tern	*Sterna anaethetus*	77
Sooty Tern	*Sterna fuscata*	77
Black Tern	*Chlidonias niger*	77
Brown Noddy	*Anous stolidus*	77
Black Skimmer	*Rynchops nigra*	77
Rock Dove *	*Columba livia*	81,82
Mourning Dove	*Zenaida macroura*	81,82
Common Ground-Dove	*Columbina passerina*	5,81,82
Black-billed Cuckoo	*Coccyzus erythropthalmus*	5,76
Yellow-billed Cuckoo	*Coccyzus americanus*	7,76
Mangrove Cuckoo	*Coccyzus minor*	76
Smooth-billed Ani	*Crotophaga ani*	5
Barn Owl	*Tyto alba*	7
Eastern Screech-Owl	*Otus asio*	7
Great Horned Owl	*Bubo virginianus*	7
Barred Owl	*Strix varia*	7
Common Nighthawk	*Chordeiles minor*	5,Flyover
Chuck-will's-widow	*Caprimulgus carolinensis*	5,7
Whip-poor-will	*Caprimulgus vociferus*	5,7
Chimney Swift	*Chaetura pelagica*	Flyover
Ruby-throated Hummingbird	*Archilochus colubris*	5,7,81,82
Belted Kingfisher	*Ceryle alcyon*	64,76
Red-bellied Woodpecker	*Melanerpes carolinus*	5,7,81,82
Yellow-bellied Sapsucker	*Sphyrapicus varius*	7
Downy Woodpecker	*Picoides pubescens*	5,7
Hairy Woodpecker	*Picoides villosus*	5,7
Northern Flicker	*Colaptes auratus*	5,81,82
Pileated Woodpecker	*Dryocopus pileatus*	7
Eastern Wood-Pewee	*Contopus virens*	5,7
Eastern Phoebe	*Sayornis phoebe*	5
Great Crested Flycatcher	*Myiarchus crinitus*	5,7
Western Kingbird	*Tyrannus verticalis*	5

*** Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Eastern Kingbird	*Tyrannus tyrannus*	5
Gray Kingbird	*Tyrannus dominicensis*	5
Scissor-tailed Flycatcher	*Tyrannus forficatus*	5
Horned Lark	*Eremophila alpestris*	5
Purple Martin	*Progne subis*	5,Flyover
Tree Swallow	*Tachycineta bicolor*	5,Flyover
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	5,Flyover
Bank Swallow	*Riparia riparia*	5,Flyover
Cliff Swallow	*Petrochelidon pyrrhonota*	5,Flyover
Barn Swallow	*Hirundo rustica*	5,Flyover
Blue Jay	*Cyanocitta cristata*	5,7,81,82
American Crow	*Corvus brachyrhynchos*	5,7,81,82
Fish Crow	*Corvus ossifragus*	5,7,81,82
Carolina Wren	*Thryothorus ludovicianus*	5,7,81,82
House Wren	*Troglodytes aedon*	5,7
Sedge Wren	*Cistothorus platensis*	5
Marsh Wren	*Cistothorus palustris*	5
Ruby-crowned Kinglet	*Regulus calendula*	5,7
Blue-gray Gnatcatcher	*Polioptila caerulea*	5,7
Veery	*Catharus fuscescens*	5,7
Gray-cheeked Thrush	*Catharus minimus*	5,7
Swainson's Thrush	*Catharus ustulatus*	5,7
Hermit Thrush	*Catharus guttatus*	5,7
Wood Thrush	*Hylocichla mustelina*	5,7
American Robin	*Turdus migratorius*	5,7
Gray Catbird	*Dumetella carolinensis*	5,7
Northern Mockingbird	*Mimus polyglottos*	5,7,81,82
Brown Thrasher	*Toxostoma rufum*	5,7
Cedar Waxwing	*Bombycilla cedrorum*	5,7
Loggerhead Shrike	*Lanius ludovicianus*	5
European Starling *	*Sturnus vulgaris*	5,81,82
White-eyed Vireo	*Vireo griseus*	5,7
Blue-headed Vireo	*Vireo solitarius*	7
Philadelphia Vireo	*Vireo philadelphicus*	7
Red-eyed Vireo	*Vireo olivaceus*	7
Black-whiskered Vireo	*Vireo altiloquus*	7
Blue-winged Warbler	*Vermivora pinus*	7
Tennessee Warbler	*Vermivora peregrina*	7
Orange-crowned Warbler	*Vermivora celata*	7
Northern Parula	*Parula americana*	7

*** Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Yellow Warbler	*Dendroica petechia*	7
Magnolia Warbler	*Dendroica magnolia*	7
Cape May Warbler	*Dendroica tigrina*	7
Black-throated Blue Warbler	*Dendroica caerulescens*	7
Yellow-rumped Warbler	*Dendroica coronata*	7
Black-throated Green Warbler	*Dendroica virens*	7
Blackburnian Warbler	*Dendroica fusca*	7
Yellow-throated Warbler	*Dendroica dominica*	7
Pine Warbler	*Dendroica pinus*	7
Prairie Warbler	*Dendroica discolor*	7
Palm Warbler	*Dendroica palmarum*	7
Blackpoll Warbler	*Dendroica striata*	7
Cerulean Warbler	*Dendroica cerulea*	7
Black-and-white Warbler	*Mniotilta varia*	7
American Redstart	*Setophaga ruticilla*	7
Prothonotary Warbler	*Protonotaria citrea*	7
Worm-eating Warbler	*Helmitheros vermivorus*	7
Ovenbird	*Seiurus aurocapillus*	7
Northern Waterthrush	*Seiurus noveboracensis*	7
Louisiana Waterthrush	*Seiurus motacilla*	7
Common Yellowthroat	*Geothlypis trichas*	7
Hooded Warbler	*Wilsonia citrina*	7
Wilson's Warbler	*Wilsonia pusilla*	7
Yellow-breasted Chat	*Icteria virens*	7
Bananaquit	*Coereba flaveola*	7
Summer Tanager	*Piranga rubra*	7
Scarlet Tanager	*Piranga olivacea*	7
Western Tanager	*Piranga ludoviciana*	7
Northern Cardinal	*Cardinalis cardinalis*	5,7,81,82
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	7
Indigo Bunting	*Passerina cyanea*	5,7
Painted Bunting	*Passerina ciris*	7
Eastern Towhee	*Pipilo erythrophthalmus*	5,7
Chipping Sparrow	*Spizella passerina*	5
Field Sparrow	*Spizella pusilla*	5
Savannah Sparrow	*Passerculus sandwichensis*	5
Grasshopper Sparrow	*Ammodramus savannarum*	5
LeConte's Sparrow	*Ammodramus leconteii*	5
Seaside Sparrow	*Ammodramus maritima*	5
White-throated Sparrow	*Zonotrichia albicollis*	5
Bobolink	*Dolichonyx oryzivorus*	5

* **Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Red-winged Blackbird	*Agelaius phoeniceus*	5,81,82
Boat-tailed Grackle	*Quiscalus major*	5,81,82
Common Grackle	*Quiscalus quiscula*	5,81,82
Brown-headed Cowbird	*Molothrus ater*	5,81,82
Baltimore Oriole	*Icterus galbula*	7
Pine Siskin	*Carduelis pinus*	5,7
American Goldfinch	*Carduelis tristis*	5,7
House Sparrow *	*Passer domesticus*	81,82

MAMMALS

Virginia opossum	*Didelphis virginiana*	5,7,81
Eastern mole	*Scalopus aquaticus*	5,7,81
Nine-banded armadillo*	*Dasypus novemcinctus*	5,7,64/76,81,82
Marsh rabbit	*Sylvilagus palustris*	7,64/76
Eastern cottontail	*Sylvialgus floridanus*	5,7,81
Gray squirrel	*Sciurus carolinensis*	7,64/76,81
Southern flying squirrel	*Glaucomys volans*	5,7
Red bat	*Lasiurus borealis*	
Hoary bat	*Lasiurus cinereus*	
Northern yellow bat	*Lasiurus intermedius*	
Seminole bat	*Lasiurus seminolus*	
Evening bat	*Nycticeius humeralis*	
Cotton mouse	*Peromyscus gossypinus*	5,7
Oldfield mouse	*Peromyscus polionotus*	
Southeastern beach mouse	*Peromyscus polionotus niveiventris*	1,5
Hispid cotton rat	*Sigmodon hispidus*	1,5,7
Norway rat	*Rattus norvegicus*	
Black rat*	*Rattus rattus*	5,81,82
Eastern woodrat	*Neotoma floridana*	
Marsh rice rat	*Oryzomys palustris*	
House mouse*	*Mus musculus*	81,82
Northern short-tailed shrew	*Blarina brevicauda*	
Least shrew	*Cryptotis parva*	
Gray fox	*Urocyon cinereoargenteus*	1,5,7,64/76
Raccoon	*Procyon lotor*	1,5,7,64/76,81,82
River otter	*Lutra canadensis*	64/76.59/71
Eastern spotted skunk	*Spilogale putorius*	5,7,64/76
Striped skunk	*Mephites mephites*	5,7,64/76
Bobcat	*Felis rufus*	5,7,64/76,81
Feral cat*	*Felis catus*	81,82

* **Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Jaguarundi	*Felis yagouaroundi*	
West Indian manatee	*Trichechus manatus latirostris*	59/71
Atlantic bottle-nosed dolphin	*Tursiops truncatus*	Water Areas
Pygmy sperm whale	*Kogia breviceps*	Water Areas
North Atlantic right whale	*Balaena glacialis glacialis*	Water Areas
Eastern pipistrelle	*Pipistrelluse subflavus*	

* Non-native Species

Sebastian Inlet State Park Animals

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

* Non-native Species

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

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

Lacustrine
45. Clastic Upland Lake
46. Coastal Dune Lake
47. Coastal Rockland Lake

Lacustrine
48. Flatwood/Prairie Lake
49. Marsh Lake
50. River Floodplain Lake
51. Sandhill Upland Lake
52. Sinkhole Lake
53. Swamp Lake

Riverine
54. Alluvial Stream
55. Blackwater Stream
56. Seepage Stream
57. Spring-Run Stream

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

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

Subterranean
82. Aquatic Cave
83. Terrestral Cave

Miscellaneous
84. Ruderal
85. Developed

MTC Many Types of Communities
OF Over Flying

Addendum 5—Designated Species List

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

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

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

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

FNAI GLOBAL RANK DEFINITIONS

G1	=	Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
G2	=	Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
G3	=	Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction of other factors.
G4	=	apparently secure globally (may be rare in parts of range)
G5	=	demonstrably secure globally
GH	=	of historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker)
GX	=	believed to be extinct throughout range
GXC	=	extirpated from the wild but still known from captivity or cultivation
G#?	=	tentative rank (e.g.,G2?)
G#G#	=	range of rank; insufficient data to assign specific global rank (e.g., G2G3)
G#T#	=	rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g., G3T1)
G#Q	=	rank of questionable species - ranked as species but questionable whether it is species or subspecies; numbers have same definition as above (e.g., G2Q)
G#T#Q	=	same as above, but validity as subspecies or variety is questioned.
GU	=	due to lack of information, no rank or range can be assigned (e.g., GUT2).
G?	=	not yet ranked (temporary)
S1	=	Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
S2	=	Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
S3	=	Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction of other factors.
S4	=	apparently secure in Florida (may be rare in parts of range)
S5	=	demonstrably secure in Florida
SH	=	of historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker)
SX	=	believed to be extinct throughout range
SA	=	accidental in Florida, i.e., not part of the established biota
SE	=	an exotic species established in Florida may be native elsewhere in North America
SN	=	regularly occurring, but widely and unreliably distributed; sites for conservation hard to determine
SU	=	due to lack of information, no rank or range can be assigned (e.g., SUT2).
S?	=	not yet ranked (temporary)

LEGAL STATUS

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

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

LE = Listed as Endangered Species in the List of Endangered and Threatened Wildlife and Plants under the provisions of the Endangered Species Act. Defined as any species that is in danger of extinction throughout all or a significant portion of its range.

PE = Proposed for addition to the List of Endangered and Threatened Wildlife and Plants as Endangered Species.

LT = Listed as Threatened Species. Defined as any species that is likely to become an endangered species within the near future throughout all or a significant portion of its range.

PT = Proposed for listing as Threatened Species.

C = Candidate Species for addition to the list of Endangered and Threatened Wildlife and Plants. Defined as those species for which the USFWS currently has on file sufficient information on biological vulnerability and threats to support proposing to list the species as endangered or threatened.

E(S/A) = Endangered due to similarity of appearance.

T(S/A) = Threatened due to similarity of appearance.

STATE

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

LE = Listed as Endangered Species by the FFWCC. Defined as a species, subspecies, or isolated population which is so rare or depleted in number or so restricted in range of habitat due to any man-made or natural factors that it is in immediate danger of extinction or extirpation from the state, or which may attain such a status within the immediate future.

LT = Listed as Threatened Species by the FFWCC. Defined as a species, subspecies, or isolated population which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat is decreasing in area at a rapid rate and as a consequence is destined or very likely to become an endangered species within the foreseeable future.

LS = Listed as Species of Special Concern by the FFWCC. Defined as a population which warrants special protection, recognition, or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance, or substantial human exploitation which, in the foreseeable future, may result in its becoming a threatened species.

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

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

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

Sebastian Inlet State Park Designated Species—Plants

Common Name/ *Scientific Name*	Designated Species Status FDACS	USFWS	FNAI
Florida butterfly orchid			
Encyclia tampensis	CE		
Simpson's applecactus			
Harrisia simpsonii	LE		
Johnson's Seagrass			
Halophila johnsonii	LT		
Twinberry			
Myrcianthes fragans	LT		
Erect pricklypear			
Opuntia stricta	LT		
Beachberry			
Scaevola plumieri	LT		
Coontie			
Zamia pumila	CE		

Sebastian Inlet State Park Designated Species—Plants

Common Name/ *Scientific Name*	Designated Species Status FDACS	USFWS	FNAI

Common Name/ *Scientific Name*	Designated Species Status FFWCC	USFWS	FNAI
REPTILES			
American alligator *Alligator mississippiensis*	LS	T(S/A)	S4
Loggerhead turtle *Caretta caretta*	LT	LT	S3
Green turtle *Chelonia mydas mydas*	LE	LE	S2
American crocodile *Crocodylus acutus*	LE	LE	S1
Leatherback *Dermochelys coriacea coriacea*	LE	LE	S2
Eastern indigo snake *Drymarchon corais couperi*	LT	LT	S3
Hawksbill turtle *Eretmochelys imbricata imbricata*	LE	LE	S1
Gopher tortoise *Gopherus polyphemus*	LS	PT	S3
Southern hognose snake *Heterodon simus*			S2
Atlantic ridley *Lepidochelys kempii*	LE	LE	S1
Atlantic salt marsh snake *Nerodia clarkii taeniata*	LT	LT	S1
Florida pine snake *Pituophis melanoleucus mugitus*	LS		S3
Florida brown snake *Storeria dekayi victa*	LT		
BIRDS			
Cooper's Hawk *Accipiter cooperii*			S3
Brown Noddy *Anous stolidus*			S1
Great Egret *Ardea alba*			S4
Piping Plover *Charadrius melodus*	LT	LT	S2

Common Name/ *Scientific Name*	Designated Species Status FFWCC	USFWS	FNAI
Wilson's Plover			
Charadrius wilsonia			S2
Mangrove Cuckoo			
Coccyzus minor			S3
Little Blue Heron			
Egretta caerulea	LS		S4
Reddish Egret			
Egretta rufescens	LS		S2
Snowy Egret			
Egretta thula	LS		S4
Tricolored Heron			
Egretta tricolor	LS		S4
White Ibis			
Eudocimus albus	LS		S4
Swallow-tailed Kite			
Elanoides forficatus			S2S3
Merlin			
Falco columbarius			S2
Peregrine Falcon			
Falco peregrinus	LE		
Magnificent Frigatebird			
Fregata magnificens			S1
American Oystercatcher			
Haematopus palliatus	LS		S3
Bald Eagle			
Haliaeetus leucocephalus	LT	LT	S3
Worm-eating Warbler			
Helmitheros vermivorus			S1
Black Scoter			
Melanitta nigra			
Wood Stork			
Mycteria americana	LE	LE	S2
Yellow-crowned Night-Heron			
Nytanassa violaceus			S3
Black-crowned Night-Heron			
Nycticorax nycticorax			S3
Osprey			
Pandion haliaetus			S3S4
Painted Bunting			
Passerina ciris			S3

Common Name/ *Scientific Name*	Designated Species Status FFWCC	USFWS	FNAI
Brown Pelican			
Pelecanus occidentalis	LS		S3
Hairy Woodpecker			
Picoides villosus			S3
Roseate Spoonbill			
Platalea ajaja	LS		S2
Glossy Ibis			
Plegadis falcinellus			S3
American Avocet			
Recurvirostra americana			S2
Black Skimmer			
Rynchops niger	LS		S3
Louisiana Waterthrush			
Seiurus motacilla			S2
American Redstart			
Setophaga ruticilla			S2
Least Tern			
Sterna antillarum	LT		S3
Caspian Tern			
Sterna caspia			S2
Roseate Tern			
Sterna dougallii	LT	LT	S1
Sooty Tern			
Stern fuscata			S1
Royal Tern			
Sterna maxima			S3
Gull-billed Tern			
Sterna nilotica			S2
Sandwich Tern			
Sterna sandvicensis			S2
Black-whiskered Vireo			
Vireo altiloquus			
FISH			
Snook			
Centropomus undecimalis	LS		
MAMMALS			
North Atlantic right whale			
Balaena glacialis glacialis	LE	LE	

Common Name/ *Scientific Name*	**Designated Species Status** FFWCC	USFWS	FNAI
Southeastern beach mouse			
Peromyscus polionotus niveiventris	LT	LT	S1
West Indian manatee			
Trichechus manatus latirostris	LE	LE	S2

Addendum 6—Archaeological Site Data

Sebastian Inlet State Park Archaeological Site Data

County	Location	Site #	Site Type 1	Site Type 2	Culture	Culture	Date Recorded
Brevard	in park	8BR124	shell midden	sand mound	unspecified prehsitoric		1950
Brevard	in park	8BR125	shell midden		Malabar 1 and 2		1951
Brevard	in park	8BR770	homestead or mosquito control structure	shell midden	19th - early 20th century	unspecified prehistoric	1990
Brevard	in park	8BR1694	shell midden		unspecified prehsitoric		1997
Indian River	in park	8IR34	shell midden		Malabar 1		1953
Indian River	in park	8IR37	shell midden	sand mounds	Malabar 2		1951
Indian River	in park	8IR38	shell midden				1950
Indian River	in park	8IR39	shell midden				1950
Indian River	in park	8IR35	sand mound				1950
Indian River	in park	8IR36	shell midden				1950
Indian River	in park	8IR40	shell midden		Malabar 2		1953

Sebastian Inlet State Park Archaeological Site Data

County	Location	Site #	Site Type 1	Site Type 2	Culture	Culture	Date Recorded
Indian River	**in park**	**8IR25**	**shell midden**				**1967**
Indian River	in park	8IR26	shipwreck survivors camp	shell midden	1715	unspecified prehistoric	1971
Brevard	to north of park	8BR559	shell midden				1989
Indian River	to south of park	8IR42	shell midden		Malabar 2		1951
Indian River	to south of park	8IR11	shell midden				1953
Indian River	to south of park	8IR24	shipwreck survivors camp	shell midden			1951
Indian River	to south of park	8IR41	shell midden		Orange	Malabar 1	
Indian River	offshore	8IR23	shipwreck		1715 Spanish Fleet		1965
Indian River	offshore	8IR30	shipwreck		1715 Spanish Fleet		1969
Brevard	offshore	8BR168	shipwreck	early 19th century			1965

Addendum 7—Priority Schedule and Cost Estimates

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

Resource Management

1. Revise the exotic plant removal plan to include recently acquired parcels. Zero-10 years. Estimated Cost: $1,000/year reoccurring **$10,000.00**

2. Survey for exotic species and implement an exotic species removal program. Zero-10 years. Estimated Cost: $20,000/year recurring **$200,000.00**

3. Continue and expand the prescribed fire program by obtaining the needed equipment and by training staff. Add overgrown coastal strand on the north side of inlet to the plan. Zero-10 years. Estimated Cost: $8,000/year reoccurring **$80,000.00**

4. Mechanically treat overgrown pyrogenic natural communities. Zero-10 years. Estimated Cost: $50,000 ..... **$50,000.00**

5. Monitor the site-bearing duneline, Atlantic beach on the east, and coastline on the Indian River Lagoon to the west for erosion damage. Zero-10 years. Estimated Cost: $2000/year reoccurring **$20,000.00**

6. Monitor the changes in the quality and quantity of suitable habitat for southeastern beach mice and the mouse population. Zero-10 years. Estimated Cost: $5,000, plus $5,000/year reoccurring..... **$55,000.00**

7. Survey for and monitor wintering and nesting shorebirds. Zero-10 years. Estimated Cost: $5000/year reoccurring **$50,000.00**

8. Restoration of Coconut point protection zone for beach-nesting birds and public education according to the restoration plan. Zero-10 years. Estimated Cost: $40,000 ..... **$40,000.00**

9. Monitoring all known archaeological sites for possible threats. Zero-10 years. Estimated Cost: $1000/yearreoccurring **$10,000.00**

10. Conduct both a Level I and Level II archaeological survey of the park, both on land and underwater, utilizing GPS technology. Zero-10 years. Estimated Cost: $75,000 ..... **$75,000.00**

11. Implement cultural resource monitoring protocols, utilizing photopoints. Zero-10 years. Estimated Cost: $1,000, plus $1,000/year reoccurring **$11,000.00**

12. Consider opportunities to reintroduce beach mice to appropriate habitat north of the inlet. Zero-10 years. Estimated Cost: $5,000..... **$5,000.00**

13. Catalog all collections objects in the fisheries museum. Zero-10 years. Estimated Cost: $2,000 ..... **$2,000.00**

14. Reach a planning decision on future of McLarty Museum. Zero-10 years. Estimated Cost: $1,000 ..... **$1,000.00**

15. Seek grant funding for a research project to document history of park and surrounding area. Zero-10 years. Estimated Cost: $1,000 ..... **$1,000.00**

Administration

1. Add staff positions. Zero-10 years. Estimated Cost (includes benefits): 1 Park Attendant, 2 Toll Collectors, 2 Park Rangers, 1 Environmental Specialist I. Zero-10 years. Estimated Cost: $136,000/year reoccurring **$1,360,000.00**

Total Estimated Cost..... $ 1,970,000.00

Development Area or Facilities

Administrative Office/"Spanish House" Area 468,700.00
Sebastian Inlet Marina.....1,500,000.00
North Jetty/Beach Use Area.....1,500,000.00
Swimming Cove/Overflow Area 1,026,000.00
South Inlet Shoreline 750,000.00
Camping Area 710,500.00
Cabin Area 1,976,000.00
South Beach Use Areas.....267,000.00
Miscellaneous 67,600.00
Support Facilities.....1,370,000.00

Total w/contingency $11,562,960.00