CEDAR KEY SCRUB STATE RESERVE

UNIT MANAGEMENT PLAN

APPROVED

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

FEBRUARY 11, 2005

Department of Environmental Protection

Jeb Bush
Governor

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard, MS 140
Tallahassee, Florida 32399-3000
Phone: (850) 245-2784 Fax: (850) 245-2786

Colleen Castille
Secretary

February 11, 2005

Ms. BryAnne White
Office of Park Planning
Division of Recreation and Parks
3900 Commonwealth Blvd.; M.S. 525
Tallahassee, Florida 32399

Re: Cedar Key Scrub State Reserve Lease #3568

Dear Ms. White:

On February 11, 2005, the Acquisition and Restoration Council recommended approval of the Cedar Key Scrub State Reserve management plan. Therefore, the Office of Environmental Services, acting as agent for the Board of Trustees of the Internal Improvement Trust Fund, approved the management plan for the Cedar Key Scrub State Reserve. Pursuant to Sections 253.034 and 259.032, Florida Statutes, and Chapter 18-2, Florida Administrative Code this plan's ten-year update will be due on February 11, 2015.

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

Sincerely,

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

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INTRODUCTION

Cedar Key Scrub State Reserve is located in Levy County about 2.5 miles east of the town of Cedar Key. Access to the park is from State Road 24 and County Road 347, both of which pass through the park. The Vicinity Map provides a geographic reference for the park and reflects significant land and water resources in the area.

At Cedar Key Scrub State Reserve, public outdoor recreation and conservation is the designated single use of the property. There are no legislative or executive directives that constrain the use of this property. Acquisition of the park began on December 27, 1978 using Environmentally Endangered Lands bond proceeds (see Addendum 1). Cedar Key Scrub State Reserve contains approximately 5,023 acres.

The Reserve operates under a multiple agency management lease that includes the Department of Environmental Protection's Division of Recreation and Parks (Division), Department of Agriculture and Consumer Services' Division of Forestry (DOF), and the Florida Fish and Wildlife Conservation Commission (FFWCC). The Division is the primary lead agency at Cedar Key Scrub State Reserve.

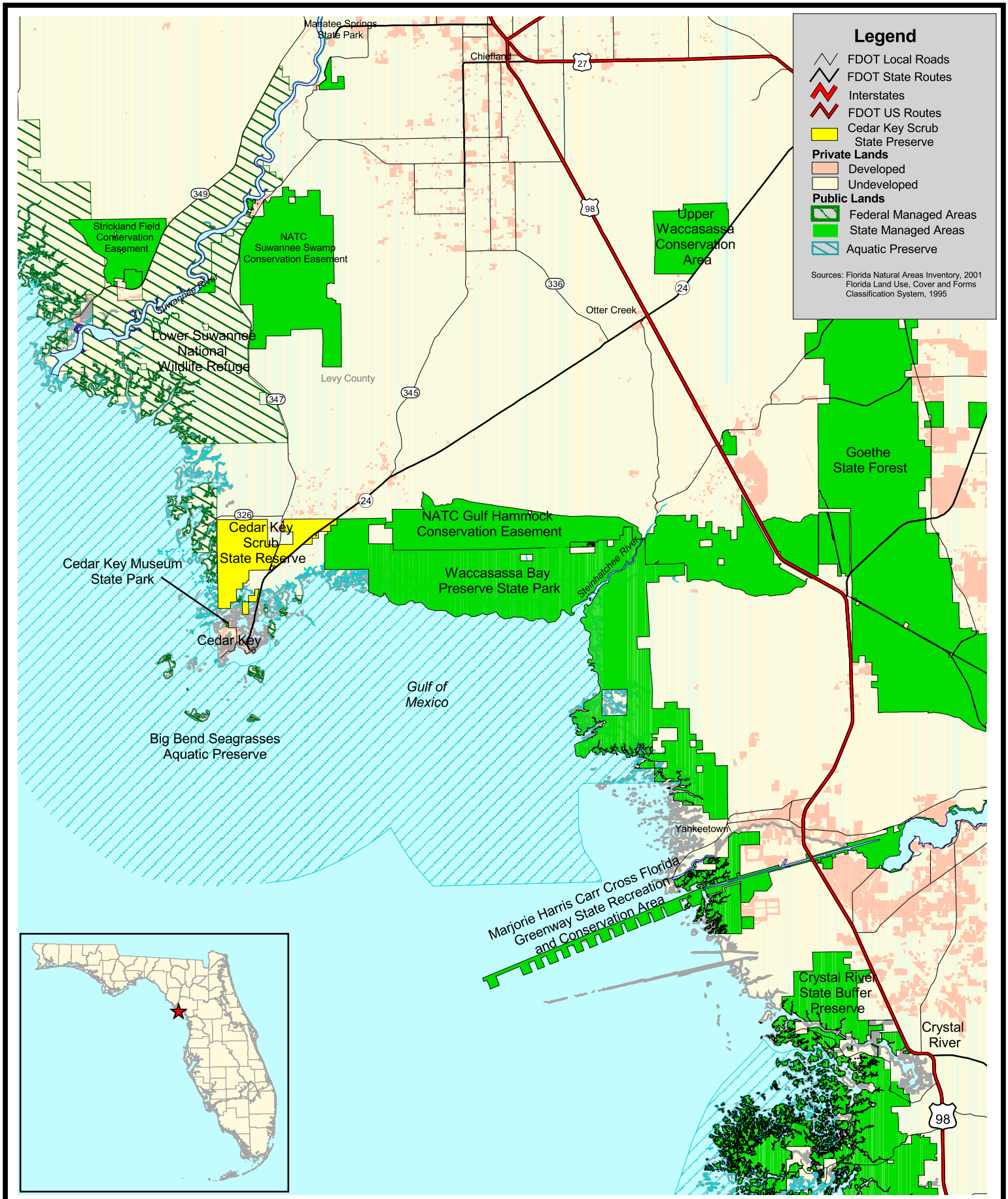
PURPOSE AND SCOPE OF THE PLAN

This plan serves as the basic statement of policy and direction for the management of Cedar Key Scrub State Reserve 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 April 13, 1998 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 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



CEDAR KEY SCRUB STATE RESERVE

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

VICINITY MAP

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 or the management purposes of the park and should be discouraged.

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

The use of private land managers to facilitate restoration and management of this unit was also analyzed. Decisions regarding this type of management (such as outsourcing, contracting with the private sector, use of volunteers, etc.) will be made on a case-by-case basis as necessity dictates.

MANAGEMENT PROGRAM OVERVIEW

Management Authority and Responsibility

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

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

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

Many operating procedures are standard system wide and are set by policy. These procedures are outlined in the Division's Operations Manual (OM) that covers 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 Cedar Key Scrub State Reserve, preservation and enhancement of natural conditions is all important. Resource considerations are given priority over user considerations and development is restricted to the minimum necessary for ensuring its protection and maintenance, limited access, user safety and convenience, and appropriate interpretation. Permitted uses are primarily of a passive nature, related to the aesthetic, educational and recreational enjoyment of the reserve, although other compatible uses are permitted in limited amounts. Program emphasis is placed on interpretation of the natural and cultural attributes of the preserve.

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 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. Continue to reestablish natural fire regimes in upland fire-maintained communities.
   - **A.** Reintroduce fire to additional areas of the reserve, while maintaining previously burned zones at fire-return intervals appropriate for their community type. Use Annual Burn Plans and a long-term Habitat Improvement Plan to guide the burn program. When burning scrub and scrubby flatwoods areas, attempt to create a mosaic of different successional stages that maximize habitat diversity. Increased diversity on a landscape level should provide appropriate habitat over the long term for species such as the scrub-jay and Florida mouse. Additional information about the Cedar Key Scrub burn program is included in the Prescribed Burning section.
   - **B.** Continue to use mechanical treatments such as roller-chopping, mowing and tree-cutting to help prepare zones for prescribed burns. These treatments will be used to reduce the height of the shrub layer in certain scrub and scrubby flatwoods areas, thereby improving fire control and safety. The treatments can also be used to facilitate creation of burn zones of manageable size.

2. Pursue acquisition of the Optimum Boundary parcels.
   - **A.** Continue to pursue acquisition of the parcels already on the Additions and Inholdings list for Cedar Key Scrub State Reserve. The highest priority properties are those immediately adjacent to the reserve that contain designated species habitat or that are necessary for safe management of prescribed burns in the reserve.

B. Pursue acquisition of properties that would link public lands to the north and south of the reserve along the Big Bend coast.

3. Continue to monitor designated species within the reserve, with emphasis on the Florida Scrub-Jay and other scrub endemics.

A. Continue to survey, monitor, and color band scrub-jays within the reserve and adjoining areas, in cooperation with the FFWCC. Place particular emphasis on detecting effects of the West Nile Virus.

B. Conduct periodic surveys of gopher tortoises, Florida mice, and other scrub endemics in cooperation with other researchers and the FFWCC, as time and budget constraints permit.

4. Restore lands damaged by artificial soil disturbances.

A. Restore fire plow scars within the reserve to the natural contour, where feasible, especially where natural drainage patterns have been altered.

B. Where possible along essential roadways that traverse wetland strands, modify or stabilize the roads to minimize their impacts to natural drainage patterns and to avoid degradation of water quality. Essential roads are those that allow access for prescribed burning and other resource management activities.

5. Remove exotic plant and animal species from the reserve.

A. Continue to survey for Chinese tallow tree, Brazilian pepper, and other exotic plants and remove them immediately.

B. Continue to cooperate with the FFWCC to control feral hogs through permitted hunting. Remove armadillos from the reserve whenever possible.

6. Pursue staffing for Cedar Key Scrub State Reserve.

A. At the District and Division levels, aggressively pursue staff positions for the reserve. Only with adequate on-site staff can the natural and cultural resources of the reserve be properly protected, preserved, and interpreted. There is currently no staff assigned to this unit.

Cultural Resources

1. Continue to monitor the property's cultural resources regularly.

- Regularly inspect cultural sites for signs of vandalism. If needed, install interpretative signs to discourage creation of casual trails. Signs should contain warnings against collecting artifacts in both terrestrial and aquatic environments. Ensure that personnel from the Division and from cooperating agencies are aware of the locations of cultural resources in order to prevent inadvertent impacts from land management activities.

2. Continue to document previously unknown cultural resources.

- Continue to involve C.A.R.L. Archaeologists whenever park staff, volunteers, or visitors discover new cultural sites.
- Pursue funding to conduct a comprehensive Phase I Archaeological Survey.

Recreational Goals

3. Continue to provide quality resource based outdoor recreational and interpretive programs and facilities at the state park.

- Maintain and promote the multi-use trail system utilizing existing service roads.
- Continue special events that emphasize natural and cultural resource interpretation.

4. 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. Enhance public access by developing a second trailhead and additional trails on the western side of the reserve.

B. Prepare a trail system brochure showing roads and facilities and interpreting natural

communities and listed species.

F. Provide local Chambers of Commerce and Tourism Development organizations with information on public facilities and use of the reserve.

F. Increase hunting opportunities for the taking of feral hogs that will also assist in meeting resource management goals.

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

Public Participation

The Division provided an opportunity for public input by conducting a public workshop and an advisory group meeting. The public workshop was held on January 21, 2004. The purpose of this meeting was to present this draft management plan to the public. A DEP Advisory Group meeting was held on January 22, 2004. The purpose of this meeting was to provide the Advisory Group members the opportunity to discuss this draft management plan.

Other Designations

Cedar Key Scrub State Reserve is not within 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. Cedar Key Scrub State Reserve is established as a Type I Wildlife Management Area by 39-14.002, Florida Administrative Code. This wildlife management area is governed by 39-15.004 and 39-15.065, Florida Administrative Code. It is also designated as a site on the Great Florida Birding Trail by the FFWCC.

All waters within the unit have been designated as Outstanding Florida Waters, pursuant to Chapter 62-302 Florida Administrative Code. Surface waters in this unit are also classified as Class II or III waters by DEP. This unit is adjacent to the Big Bend Seagrasses Aquatic Preserve, an aquatic preserve as designated under the Florida Aquatic Preserve Act of 1975 (section 258.35, Florida Statutes).

RESOURCE MANAGEMENT COMPONENT

INTRODUCTION

The 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

Cedar Key Scrub State Reserve is located within the Gulf Coastal Lowlands region of the Central, or Mid-peninsular, Physiographic Zone of the state. Nearly parallel ridges separated by wide valleys characterize this large zone. Northwestern portions of the reserve fall within a sub-region called the Coastal Swamps, which characteristically contain wetlands situated adjacent to coastal areas that are deficient in sand deposits. Much of the Big Bend coastline, including Waccasassa Bay to the south of the reserve and Suwannee Sound to the north, is also encompassed within the Coastal Swamps area. The majority of Cedar Key Scrub State Reserve, however, is dominated by deep deposits of wind-blown sand that accumulated during periods of lower sea levels. Many of these features now exist as offshore islands due to sea level rise and/or subsidence of the substrate.

Except for several ancient stabilized dunes, there is little topographic relief within the reserve. Elevations range from below mean sea level (msl) to 30 feet above. Numerous tidal creeks and inlets extend into the reserve from the Gulf of Mexico, and many islands occur in the tidal marsh along the coastline. In the interior of the reserve are numerous shallow depressions that vary widely in size and vegetative structure.

Several high sand ridges, remnants of ancient dunes, are bisected where State Road 24 cuts through the reserve. Other topographic alterations include service roads, abandoned logging-tram beds, firebreaks, and ditches. Fire plow lines were cut during wildfire suppression activities on several occasions over the past fifty years. The most recent major fire suppression occurred in April of 1996. While the long-term effects of fire plow scars on the topography and hydrology of the reserve are not yet understood, there is definitely cause for concern.

Geology

Regionally, in descending order, underlying deposits consist of the surficial Silver Bluff Formation of Pleistocene age; the Ocala Group, Avon Park Limestone, Lake City Limestone and Oldsmar Limestone of Eocene age; and the Cedar Keys Limestone of Paleocene age.

Surficial layers in the Cedar Key Scrub State Reserve consist of ancient dunes that are likely of aeolian origin (White 1970). Layers vary in thickness due to erosion of the dune formations and solution of the underlying karst. Sand deposits in the reserve are considered by some geologists to be part of the Silver Bluff Terrace.

The Ocala Group, next in sequence, comprises three limestone deposits. In descending order, these deposits include the Crystal River Formation, the Williston Formation and the Inglis Formation. Outcrops of these formations are common in salt marshes where overlying sands are less abundant. These deposits are differentiated based on lithology and fossil content. The Crystal River Formation and upper portions of the Williston Formation are typically white to cream, abundantly fossiliferous, chalky limestones. The lower Williston and the Inglis Formations commonly are alternating hard and soft, white, tan and gray, dolomitic and fossiliferous limestones. The Ocala Group may attain a thickness of 125 feet, but the average is 100 feet (Slabaugh et al. 1996).

Below the Ocala Group lies the Avon Park Limestone, which is variable in lithology. It is a tan, buff and brown dolomite that is often interbedded with white, cream and yellow-gray limestone. This limestone commonly contains varying amounts of peat, lignite, and plant remains. Some fossils are also present. The Avon Park limestone is typically 150 feet thick; however, a thickness of 800 to 1,100 feet can be reached (Slabaugh et al. 1996).

In Levy County, Lake City Limestone is variable in composition. This fossiliferous limestone is tan to cream colored and is peat flecked; it sometimes contains coquina, gypsum and dolomite. The thickness of the formation varies from 575 to 900 feet.

Earliest of the Eocene deposits is the Oldsmar Limestone, pervasively dolomitized and having seams of chert and anhydrite. The thickness of this formation ranges from just under 400 feet to slightly over 550 feet.

The Cedar Keys Formation is composed of interbedded tan to gray, often fossiliferous limestone, and of tan to brown, crystalline to chalky dolomite. Gypsum has impregnated large sections and may occur as thin lenses. The Cedar Keys Formation is approximately 600 feet thick (Chen 1965).

There are no known alterations of the reserve's geological formations.

Soils

There are nine soil types present within Cedar Key Scrub State Reserve (Slabaugh et al. 1996). These soil types range from well-drained sandy soils in the uplands to poorly drained, frequently

flooded, mucky soils in areas of tidal marsh (see Soils Map). Addendum 3 contains a complete list and descriptions of these soils.

Several areas within the reserve have experienced some degree of soil erosion. Where service roads run along the edges of stabilized dunes and where State Road 24 slices deeply through the dunes, sands tend to destabilize and the dunes become more prone to erosion.

Illegal foot and vehicular access to the dune ridges traversed by State Road 24 have caused some slumping of the cut edges of the dunes. Some soil disturbance has also occurred where service roads intersect wetland sites.

Lastly, and most significantly, fire plow scars remaining from several wildfire suppression events have impacted soils within the reserve. While the older plow lines are relatively stable and have become somewhat restored with the passage of time, some of the more recent ones may require additional re-contouring. On the other hand, most of the regular firebreaks installed in the reserve under non-emergency conditions do not appear to be causing impacts to soil or water resources. Management activities will follow generally accepted best management practices to minimize or prevent soil erosion and to conserve soil and water resources on site.

Minerals

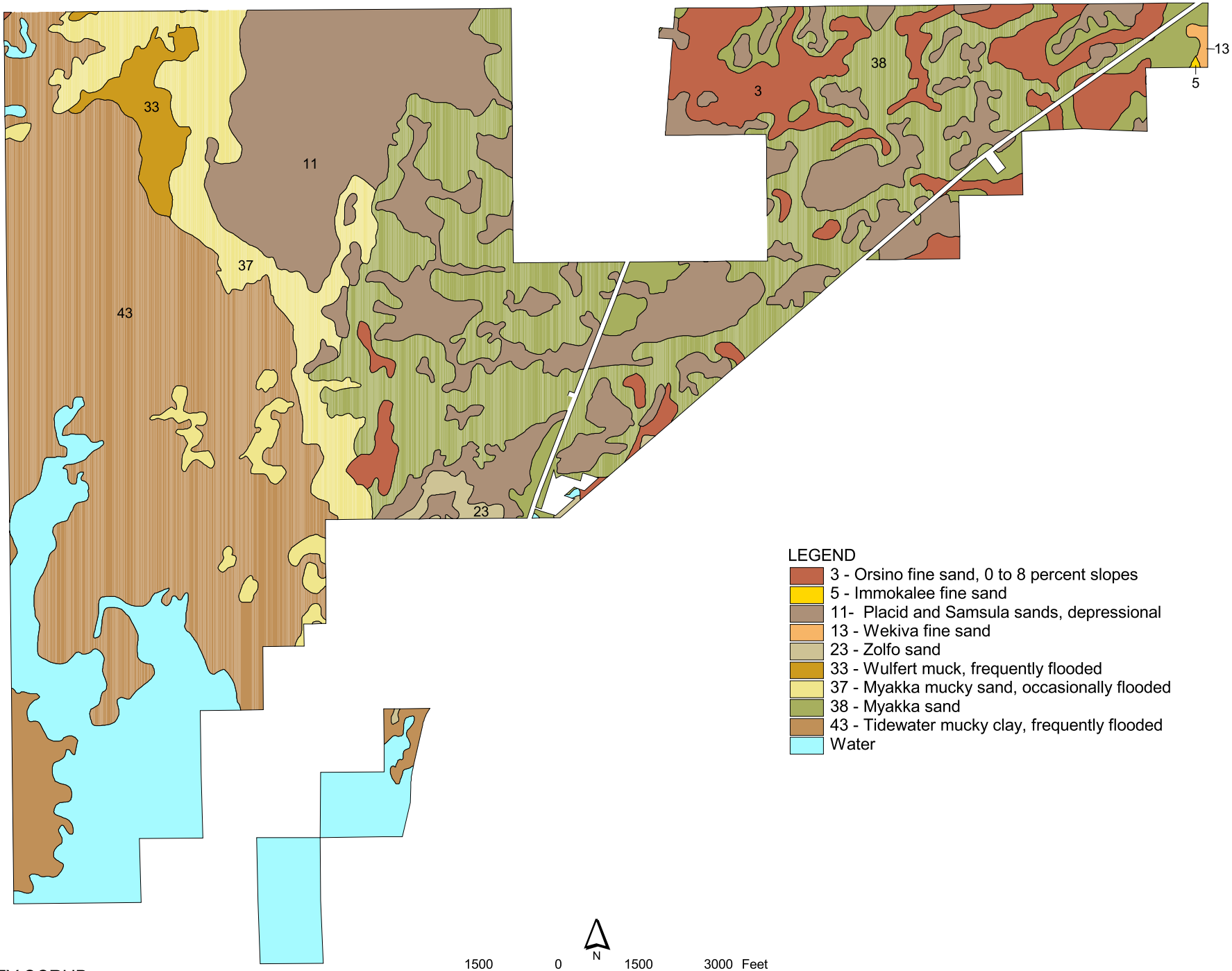
Although no mining is known to have occurred within the reserve, several borrow pits are located within the park or near the park boundary. In most cases these borrows were excavated for fill dirt or sand. No other mineral deposits are known to occur within the reserve.

Hydrology

Technically, the Cedar Key Scrub State Reserve lies within the Waccasassa River drainage basin. Due to the close proximity of the Gulf of Mexico, however, no surface water from the reserve actually enters the Waccasassa River or its tributaries. The reserve's coastal scrub happens to occupy a topographically higher area between the Lower Suwannee River and the Waccasassa River drainage basins.

Surface water within the reserve tends to move towards the coastline, eventually draining into coastal hydric hammock and then into tidal marshes and estuarine systems. Protection of surface waters and wetlands within the reserve is critical for the preservation of water quality within down-gradient salt marsh and estuarine systems. During periods of heavy rainfall, the hydric hammock in the reserve tends to flood, attenuating freshwater pulses into adjacent estuarine systems through the temporary storage of excess water (Vince et al. 1989).

Groundwater resources in the reserve include the Floridan aquifer and localized surficial aquifers; generally, all are in good condition. In some areas, particularly in flatwoods and certain isolated wetlands, localized development of hardpans or impermeable organic layers may occur, creating perched water tables. These function as surficial aquifers that are connected to the Floridan aquifer (the Floridan is generally unconfined in this area). Surface waters may freely enter either of these aquifers. Due to these circumstances, the potential for localized groundwater pollution may be high at times. Within Levy County, the potentiometric gradient of the Floridan aquifer tends to be west-southwest. Primary recharge of the aquifer is by rainfall percolation in the permeable sands of the northwestern and eastern portions of Levy County. The coastal hydric hammock, tidal marshes, and limestone flats of the reserve serve as discharge sites for the Floridan aquifer since the potentiometric surface lies at or near the ground surface where limestone layers are exposed (Slabaugh et al. 1996).



CEDAR KEY SCRUB
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SOILS MAP

Water quality of the Floridan aquifer is generally good; however, water along the coastal region may become saline because of a natural saltwater wedge extending inland from the Gulf. The depth of the saltwater intrusion into the aquifer is directly related to the distance from the coastline, with saltwater occurring at the ground surface along the coastline itself.

The drinking water wells that supply the town of Cedar Key are located at two sites within or adjacent to the reserve. One well is located on County Road 347 about 0.5 mile north of the intersection of County Road 347 and State Road 24, while the other is located about 1.2 miles northeast of the same intersection along State Road 24. Now, neither well appears to be impacting the local water table that represents the top of the Floridan aquifer.

The reserve contains numerous wetlands of a variety of types, including basin swamps dominated by cypress (*Taxodium ascendens*), large basin marshes containing sawgrass (*Cladium jamaicense*) and other emergent grasses, small isolated depressional wetlands within flatwoods, and tidal marshes and associated tidal creeks. The quality of surface waters within the reserve is generally considered good; relatively few impacts to wetland systems have been observed.

Freshwater systems in the western half of the reserve have been somewhat compromised by service roads that cross narrow wetland linkages between basin marshes. In the spring of 1996, one concrete bridge and two concrete fording mats were installed to minimize road impacts and to provide consistent, all-weather access for service vehicles and fire equipment. Funding for the project was provided through the state's Pollution Recovery Trust Fund. Additional wetland crossings are still required for all-weather access, particularly in the flatwoods west of County Road 347. Funding was secured in FY01/02 to proceed with additional wetland crossings using Geoweb fording mats filled with inert gravel.

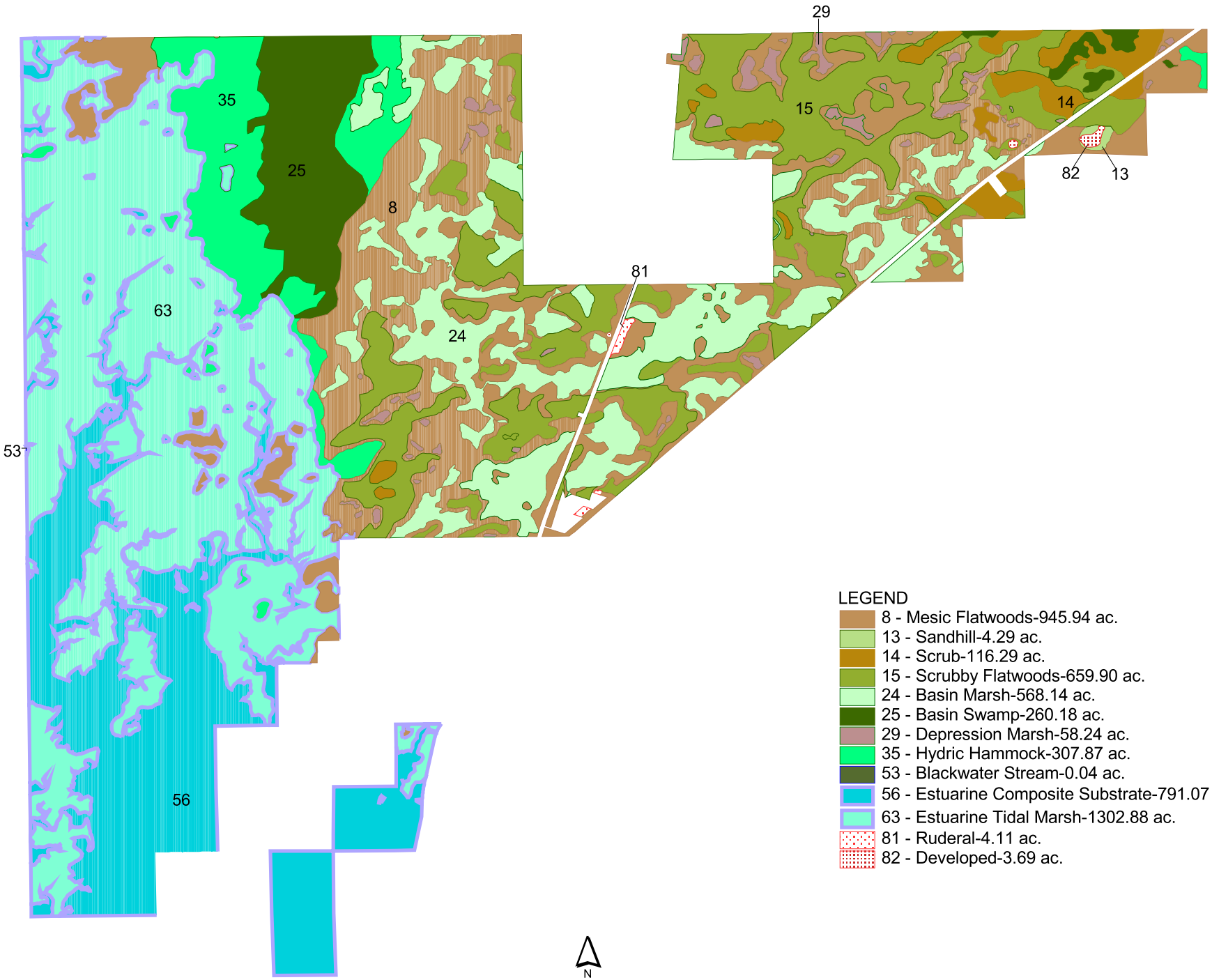
Some of the freshwater wetlands have also been impacted, sometimes even partially impounded, by the construction of State Road 24, County Road 347, and County Road 326. Other impacts include fire plow lines installed during emergency wildfire suppression activities. Many of the more recent plow lines have been re-contoured, but certain areas may still require additional work.

All of the freshwater wetlands in the reserve are considered Class III waters, while the estuarine areas are classified as Class II waters, although there are restrictions on shellfish harvesting. The tidal creeks and adjacent estuarine areas within the reserve are classified as either Conditionally Restricted or Conditionally Approved shellfish harvesting areas.

Natural Communities

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

The park contains 12 distinct natural communities (see Natural Communities Map) in addition to ruderal and developed areas. Three of the estuarine natural communities (seagrass bed, mollusk



CEDAR KEY SCRUB
STATE RESERVE

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NATURAL COMMUNITIES
MAP

reef, and unconsolidated substrate) are mapped together as estuarine composite substrate due to the difficulties of mapping these subtidal and intertidal natural communities individually. 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.

Mesic flatwoods. The mesic flatwoods natural community occurs at slightly lower elevations than the scrub and scrubby flatwoods communities, and often borders basin marsh or other wetland communities. The distinctions among mesic flatwoods, scrubby flatwoods, and scrub are based not only on differences in topographic elevation, but also on soil characteristics and to some extent on the fire history of a site.

Both longleaf pine (*Pinus palustris*) and slash pine (*Pinus elliottii*) occur within the mesic flatwoods at Cedar Key Scrub, but slash pines predominate in most areas. Selective removal of longleaf pines during past logging operations may have encouraged proliferation of the slash pine, which normally is found on wetter sites within the mesic flatwoods. The logging and turpentining activities that took place before establishment of the reserve undoubtedly altered not only the species composition of the mesic flatwoods, but other basic characteristics as well.

The most serious threat to the mesic flatwoods community is fire exclusion. The mesic flatwoods likely burned whenever the surrounding scrubby flatwoods and scrub burned. The scrubby flatwoods and scrub communities have much longer fire return intervals, however, and only burn during more extreme fire weather conditions. Presumably, the mesic flatwoods in the reserve would have burned more frequently and under more moderate conditions than the scrub and scrubby flatwoods, often when the latter would not have even ignited. Past fire suppression activities and the intrinsic difficulty of conducting prescribed burns in adjacent scrub and scrubby flatwoods combined to foster the accumulation of heavy fuel loads in many areas of mesic flatwoods within the reserve. Recent prescribed fires have significantly reduced fuel loads in several of these areas.

Past fire suppression activities have probably impacted the mesic flatwoods more than any other community in the reserve. Numerous fire plow lines are discernible in historical aerial photographs; those lines remain today. Although most plow scars have re-vegetated, their effects on local topography remain. Old scars may continue to cause problems, particularly in wetter areas of the mesic flatwoods. Some channeling of runoff and localized de-watering may occur where old plow lines function as ditches.

Sandhill. The small amount of sandhill in the reserve is located south of State Road 24. This happens to be the area selected in the past for the construction of park facilities such as staff residences, the park office and a shop complex. The sandhill in this area has certainly been impacted by the development, but representative plant species remain and the site is still managed as a natural area.

Scrub. Typically, the scrub at Cedar Key Scrub State Reserve is found on the crests and slopes of ancient dune ridges and on deep sand deposits that lie in the eastern portion of the reserve. Most of the sand pine scrub areas occur on Orsino fine sand. The Cedar Key scrub is dominated by characteristic scrub species such as sand live oak (*Quercus geminata*), myrtle oak (*Quercus myrtifolia*), and Chapman's oak (*Quercus chapmanii*), along with rusty lyonia (*Lyonia ferruginea*) and saw palmetto *(Serenoa repens*). Sand pines (*Pinus clausa*) usually occur in the overstory.

Unlike scrub communities found in the Lake Wales Ridge, the Cedar Key scrubs, though isolated, are relatively young. They have not yet had a chance to develop the diversity of rare plant species that evolved in the Lake Wales Ridge because of long periods of isolation. Cedar Key Scrub, however, does support populations of rare animal species that require sand pine scrub or scrubby flatwoods habitat, animals such as the Florida Scrub-Jay, Florida mouse, eastern indigo snake, and gopher tortoise.

Unlike most fire-maintained natural communities in Florida, peninsular sand pine scrub is adapted to long fire return intervals and catastrophic fires. Such fires usually kill all sand pines and kill the aboveground portions of the scrubby shrubs, which rapidly resprout. The sand pines recolonize burned sites from seed. Cedar Key Scrub is considered the northernmost example of coastal peninsular scrub on the Gulf Coast (Myers 1990). The majority of the sand pine scrub within the Cedar Key Scrub and on adjacent private lands is over-mature and approaching the high end of the range for fire return intervals.

The last large catastrophic scrub fire in the area occurred on June 8, 1955 (Peeples 1976). A first hand account states: “the fire consumed about 20,000 acres in one 8-mile run to the east…. The run ended in the only true fire storm which I have ever observed” (Peeples 1976:2). The fire that day likely consumed all of the sand pine scrub east of what is now County Road 347. A solid wall of fire was reported to have crossed County Road 345 near the Rosewood fire tower. During the previous three days, the fire had burned much of the flatwoods and coastal areas west of County Road 347 (Peeples 1976).

Several smaller scrub patches have burned during the past forty years due to arson or to lightning strikes, but suppression activities limited the size of most of these fires. Historical aerial photos reveal that multiple fire lines were plowed in response to wildfires during the 1970s and 1980s, primarily in mesic flatwoods and scrubby flatwoods. It is likely that some sand pine scrub also burned during the larger wildfires. Tree ring cores were collected in 1990 from four stands of sand pines in the eastern half of the reserve to estimate the ages of the sand pines. The adult trees ranged in age from 17 to over 36 years, with most trees in the 23 to 27 year range at that time.

While the scrub community is still in good condition, much of it is approaching senescence. It would be preferable to maintain a number of different “age classes” or successional stages of scrub within the reserve in order to maximize habitat diversity for plant and animal species, particularly designated species. Given that the range of fire-return intervals for scrub is 20-80 years (FNAI 1990), it would be prudent to maintain some limited areas of scrub with a fire-return interval of 50 years or more.

Major scrub restoration or "rejuvenation" efforts were initiated in 2000 with the harvesting of mature sand pines from most of the scrub areas east of County Road 347. A total of about 85 acres of sand pine were harvested. The sand pines were removed to allow the scrub areas to be burned under less hazardous fuel conditions. During the logging of the sand pines, much of the shrub layer was crushed, creating a more available fuel source closer to the ground surface.

In 2001, staff conducted prescribed burns in two of the resource management zones where sand pines had been harvested. In June 2002, 34 acres of mixed scrub and scrubby flatwoods were mowed under contract using a Kershaw 1010 heavy brush cutter that was capable of cutting and crushing large sand live oaks in overgrown scrub. An additional 49 acres of scrub and scrubby flatwoods were roller-chopped by park staff in preparation for burning. In January 2003, a 475-acre prescribed aerial ignition burned all of the mowed and roller-chopped areas as well as much

of the standing scrubby flatwoods. Two of the remaining stands of mature sand pines in the reserve did not ignite during the burn. In October 2003 another 85 acres of overgrown scrub and scrubby flatwoods were mowed under contract using a Kershaw 1010. Much of this area was then burned in March 2004. In the spring of 2004 the USFWS awarded a $30,000 habitat restoration grant to Cedar Key Scrub State Reserve to be used for additional mowing and restoration of overgrown scrub and scrubby flatwoods.

Scrubby flatwoods. The scrubby flatwoods community is often described as a transition zone between the mesic flatwoods occurring at slightly lower elevations and the true scrub that tends to occupy the higher elevations. Species composition seems to be intermediate between the two, although the same shrub species that dominate the scrub also dominate the scrubby flatwoods in the reserve. The sand pine overstory is lacking, however. Scrubby flatwoods have a fire return interval intermediate between mesic flatwoods and scrub, typically 8 to 25 years (FNAI 1990). Scrubby flatwoods typically have a sparse canopy of either longleaf pine or slash pine, but these pines are relatively uncommon in the scrubby flatwoods at Cedar Key Scrub. This may be due to the site's history of logging and wildfire.

As with the scrub, scrubby flatwoods in the reserve provide critical habitat for several designated species including the Florida Scrub-Jay, Florida mouse, eastern indigo snake, and gopher tortoise. Some of the scrubby flatwoods are over-mature, however. Areas are beginning to succeed to xeric hammock, with a resultant loss of bare sand patches and an increase in canopy closure. Scrubby flatwoods that have received prescribed fire since the state acquired the property are in significantly better condition than those that have remained unburned for a long period.

The early regeneration stages of scrub and scrubby flatwoods are the preferred habitat for Florida Scrub-Jays. A fire return interval of eight to twenty years is considered optimal for Florida Scrub-Jays (Fitzpatrick et al. 1991), with sand pine scrub burning somewhat less frequently on average than scrubby flatwoods. Presumably, Florida mice, eastern indigo snakes, and gopher tortoises also prefer these younger stages due to the openness of the vegetation structure.

A series of efforts have been made since 1985 to introduce prescribed fire to the scrubby flatwoods in order to rejuvenate the community. Several tracts have been burned with varying degrees of success. In 1995-96, the USFWS provided funding for a Habitat Improvement Grant to assist Division staff in preparing firebreaks and producing a Habitat Improvement Plan for the reserve. The grant specifically targeted habitat for Florida Scrub-Jays, Florida mice and gopher tortoises, and provided funding for monitoring of designated species. This grant was followed by a second USFWS grant in 1997 that emphasized more intensive monitoring of designated species. As a result, progress has been made in developing and carrying out a prescribed burn plan for the reserve, and advances have been made in monitoring designated species within the scrub and scrubby flatwoods, particularly the Florida Scrub-Jay. The removal of mature sand pines in adjacent scrub community in 2000 produced conditions that allowed the safe burning of several tracts of scrubby flatwoods in 2001. The mowing and roller chopping of overgrown scrubby flatwoods in 2002 and 2003 and the subsequent aerial ignition and ground ignition burns in 2003 and 2004 (see Scrub description above) have greatly improved the condition of the scrubby flatwoods community within the reserve.

Basin marsh. Sawgrass, a very flammable grass, dominates these marshes. Many of the basin marshes are hydrologically connected and many extend across the reserve boundary onto private lands. The marshes normally burn when the surrounding mesic flatwoods burn. During

prescribed burns, problems may arise since the marshes can easily carry fire across the boundaries of the reserve. The basin marshes are generally in good condition, although some have been impacted by service roads or by fire plow lines.

Basin swamp. The basin swamps in the eastern side of the reserve tend to be relatively small and are dominated by cypress. The large basin swamp in the western half of the reserve, Black Point Swamp, is dominated by sabal palms (*Sabal palmetto*) and by hardwood species such as black gum (*Nyssa biflora*), swamp bay (*Persea palustris*), sweetbay (*Magnolia virginiana*), dahoon holly (*Ilex cassine*) and red maple (*Acer rubrum*). Although the eastern basin swamps have at times been identified as cypress domes (Amoroso 1993), their irregular shape, geological origins, and topographic situation would seem to indicate that basin swamp would be a more appropriate classification (FNAI 1990).

The basin swamps within the reserve are generally in good condition, although past impacts no doubt included selective harvesting of cypress and hardwoods. Impacts that are more recent include fire plow lines near the perimeter of the Black Point Swamp and service roads along perimeters of some of the eastern cypress swamps.

Depression marsh. While some of these marshes have considerable overlap floristically with basin marshes, depression marshes tend to be smaller and are often more regular in shape. Typically, these small wetlands will carry fire during periods of low water or when emergent grassy fuels are continuous over standing water. Depression marshes that dry out during extended droughts act as ephemeral wetlands that are critical breeding sites for many amphibian species whose larvae cannot coexist with fish in more permanent wetlands. The gopher frog, a species of special concern that spends its non-breeding life in nearby scrub and scrubby flatwoods, is one such species.

Hydric hammock. The relatively limited area of hydric hammock in the reserve lies along the upland edge of the tidal marsh. The hydric hammock occupies transitional areas between Black Point Swamp and the tidal marsh and between mesic flatwoods and the tidal marsh. Although hydric hammock is much more common to the south along the coast of Waccasassa Bay, its extent within Cedar Key Scrub State Reserve is limited due to the structure of the overlying sediments in this part of the Big Bend coastline.

Estuarine composite substrate. Estuarine composite substrate consists of a composite of mineral, faunal, and floral-based estuarine natural communities. Due to the difficulties of mapping these subtidal and intertidal natural communities individually, they are lumped as estuarine composite substrate for mapping purposes. The estuarine communities are listed separately below to identify the specific community types found within the reserve, including estuarine seagrass bed, estuarine mollusk reef, and estuarine unconsolidated substrate.

Estuarine seagrass bed. Seagrass beds occur at scattered locations within estuarine areas of the reserve, but the beds have not yet been mapped so acreage figures are unavailable. As described above, seagrass bed acreage is included within the total acreage for the reserve's estuarine composite substrate.

Estuarine mollusk reef. Estuarine mollusk reefs are located at the western end of the reserve. The American oyster dominates the estuarine mollusk reefs in this part of the Gulf Coast, although other species of mollusks also occur on the reefs. Mollusk reefs are susceptible to impacts from degradation of water quality. The mollusk reefs within the reserve boundary occur

within Class II waters, but shellfish harvesting restrictions were imposed at times in the past due to water quality concerns.

Estuarine tidal marsh. Dominant plant species in this community include black needlerush (*Juncus roemerianus*) and saltmarsh cordgrass (*Spartina alterniflora*). As with the other estuarine natural communities, tidal marshes are very sensitive to runoff and pollution from adjacent uplands. According to Vince et al. (1989), the estuarine tidal marsh system is linked to adjacent upland areas by a band of hydric hammock that functions in such a way as to modify the quantity, timing, and quality of freshwater input to the marsh. Changes in any of these parameters can greatly modify the structure and productivity of the community receiving the freshwater flow. Especially significant are reductions in salinity that may negatively impact the function of the tidal marsh as a nursery for marine fish and invertebrate species.

The tidal marsh within the reserve is in excellent condition. The proximity of the expanding town of Cedar Key, however, makes it likely that the tidal marshes adjacent to the reserve will be subjected to ever-increasing pressures, including development of marsh-side residences on the mainland and intrusions by off-road vehicles. The tidal marsh lying northeast of the town of Cedar Key had occasionally been polluted in the past by sewage effluent. However, the town of Cedar Key has made significant progress by no longer allowing septic tanks, the installation of a modern treatment plant, initiating a stormwater treatment project, and other measures to protect water quality. In fact, the waters adjacent to Cedar Key Scrub and Waccasassa Bay Preserve contain many high-density clam leases that are part of the large clam industry in the area.

Estuarine unconsolidated substrate. As described above, acreage figures for estuarine unconsolidated substrate are included within the total for the reserve's estuarine composite substrate. Most of the tidal creeks within the reserve have mud bottoms and many have extensive supratidal mud flats that are important feeding areas for wading birds and shorebirds. Although some areas of estuarine unconsolidated substrate may have limited amounts of sand deposition derived from adjacent uplands, along this low energy coastline mud deposits usually dominate.

Ruderal. Relatively few ruderal areas occur within the reserve. These are primarily borrow sites that were probably excavated during construction of County Road 347 or during improvements to State Road 24. The resulting deep ponds and spoil piles provide wildlife habitat, but are considered ruderal. At this time, there are no plans to restore these areas.

Developed. Developed areas include the staff residences, the shop complex, and the trailheads and picnic area along State Road 24.

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.

Cedar Key Scrub State Reserve was purchased under the Environmentally Endangered Lands program in part to protect the endangered, threatened, rare or unique animal species that occur on the site. A focus of the reserve is the protection and management of designated species and the natural communities in which they occur.

Several listed or designated animal species occur within the reserve's fire-maintained upland communities. These include the Florida Scrub-Jay, gopher tortoise, Florida mouse, and eastern indigo snake. To varying degrees, the natural communities and the listed animal species on site have suffered from fire exclusion both within the reserve and on surrounding private lands over the past few decades. The earlier regeneration stages of both scrub and scrubby flatwoods are the preferred breeding habitat for Florida Scrub-Jays (Woolfenden and Fitzpatrick 1984) and presumably also for Florida mice and gopher tortoises due to the openness of the vegetation structure.

In 1995-96, the USFWS provided funding for a Habitat Improvement Grant to assist Division staff in preparing firebreaks and producing a Habitat Improvement Plan for the reserve. The grant specifically targeted habitat management and monitoring for Florida Scrub-Jays, Florida mice and gopher tortoises. A second grant was awarded in 1997 to continue the monitoring of designated species; the project was expanded at that time to include the eastern indigo snake. The additional funding allowed a substantial increase in efforts to monitor Florida Scrub-Jay and Florida mouse populations. In 2000, the FFWCC provided funding to hire Dr. Karl Miller to monitor and band the Cedar Key scrub-jays during the breeding season. During the 2001 breeding season, park and FFWCC staff monitored the scrub-jays, but no banding occurred. Dr. Karl Miller returned to Cedar Key during the spring of 2002 to continue monitoring and banding of the Cedar Key scrub-jays. The Division of Recreation and Parks is indebted to the FFWCC Bureau of Wildlife Diversity and Conservation and the Bureau of Wildlife Management for their generous support of the scrub-jay management program in the Cedar Key region.

Some historical data exist for the scrub-jay population in the Cedar Key area. Cox (1981) counted 20-21 scrub-jays within the Cedar Key Scrub State Reserve and an additional 35 scrub-jays on private lands in the area during 1980 and 1981. He also provided data from the 1979 and 1980 Christmas Bird Counts that counted 17 and 6 scrub-jays respectively in the Cedar Key area. Cox (1987) estimated the total population size at 100 individuals. In 1992-93, there were an estimated eight groups of scrub-jays in this same area (Fitzpatrick et al. 1994). The 1996 Christmas Bird Count, conducted January 4, 1997, yielded 10 scrub-jays in the area. Based on the groupings and locations of the sightings during 1995-1996, a minimum of 10 to 12 scrub-jays lived within or adjacent to the reserve. Survey work conducted by Dr. Tom Webber during 1997-98 under the second USFWS grant documented one color-banded pair that successfully nested in the western half of the reserve (Group 1). This pair produced at least three fledglings in 1997 (all color-banded), although the adult female and two of the three fledglings subsequently disappeared and may have dispersed elsewhere. Within a few days of the disappearance of the breeding female, an unbanded female arrived on the territory and joined the resident male (FDEP 1998). These two birds produced fledglings in 1998 (1), 2000(3), and 2001(3) (FDEP 1998; Miller et al 2001; Vic Doig pers.comm.). It is not known if they successfully fledged young in 1999. They remained on this territory as of January 2003. A second family group of three birds (Group 9) on the eastern side of the reserve appeared to have relocated somewhere outside the reserve in 1997 (FDEP 1997, 1998).

Webber also documented three groups of scrub-jays adjacent to the reserve on private lands (Groups 2, 3, and 4). Several of these birds were captured and color-banded in 1997. Group 3, originally documented north of the reserve along CR347, apparently relocated elsewhere in 1998. Group 4, originally documented west of CR347, appears to have abandoned its territory prior to the 2000 surveys (Miller et al 2001; Doonan et al. 2001). Unlike scrub-jays from other populations that have higher densities, the birds at Cedar Key Scrub exhibit relatively lower levels of territorial defense and do not maintain well-defined territories (FDEP 1998). In January

2003, Group 2 was still on its territory on private land west of CR347. Group 2 fledged at least two young in 1998 and 1999. This group does not appear to have reproduced successfully in 2000 or 2001; however, it was successful in 2002. One of the 1999 fledglings dispersed sometime after August 2000, established a territory with an unbanded bird on the former Group 3 territory north of the reserve, and successfully fledged one offspring in 2001 and one or two in 2002. As of 2003, that group consists of 4 or 5 individuals (Karl Miller pers. comm.).

The Cedar Key metapopulation includes several groups of jays near Rosewood about five miles to the northeast of the reserve. Webber documented the presence of four family groups in this area (FDEP 1998). Subsequent surveys by Miller (Miller et al 2001) found only two groups (Groups 7 and 8) remaining in that area. One bird that had been banded as a helper in Rosewood in 1998 subsequently dispersed into the reserve west of CR347 with an unbanded bird. Both were observed exhibiting territorial behavior in May 1999 and were designated Group 10. Group 10 was not found during the 2000 surveys. In 2002, both Groups 7 and 8 successfully produced fledglings. A new group, Group 11 appeared to the east of Groups 7 and 8 near Rosewood. This group also produced fledglings in 2002 (Karl Miller pers. comm.).

In early 2003, the Cedar Key metapopulation was estimated to include 26-28 known birds in 6 family groups. As of May 2004, 2 additional groups have formed. Unsurveyed habitat located north of Cedar Key Scrub State Reserve and Rosewood may harbor additional unbanded scrub-jays (Karl Miller pers. comm.).

The USFWS recently contracted a metapopulation viability analysis (MVA) for the Florida Scrub-Jay within the state. The resulting report stressed the importance and vulnerability of the Cedar Key metapopulation (Stith 1999). The Cedar Key metapopulation is considered extremely vulnerable to extinction. Even if all existing habitats in the reserve were restored to optimal condition, the scrub-jay metapopulation would still be vulnerable to extinction. However, the metapopulation has a high potential for improvement given the extent of scrub-jay habitat that remains near the reserve. According to the MVA, acquisition and restoration of over 30% of the remaining scrub-jay habitat will be required to remove the threat of extinction of this metapopulation. The Cedar Key metapopulation is ranked as the #2 priority in the state out of 21 metapopulations, although Stith suggests that it should perhaps be ranked #1. The report emphasizes the need to acquire additional scrub-jay habitat and to accelerate restoration of existing holdings. The rapid increase in residential development in the area threatens to destroy much of the remaining scrub-jay habitat before it can be protected (Stith 1999).

Historical data on the Florida mouse population at Cedar Key Scrub State Reserve are available from research conducted by Dr. Jim Layne. Dr. Layne began monitoring small mammals at Cedar Key Scrub in 1957 subsequent to the catastrophic fire of 1955. He has trapped a site in the northeast corner of the reserve, known as Levy 10, irregularly for over forty years. Layne (1990) notes that the Levy 10 Florida mouse population underwent a major decline about 10 years post-burn, although the mice have persisted on the site. The FFWCC and the Division also trapped Florida mice in the reserve during 1995-1997. The FFWCC began a multi-year project in 1995, just prior to the Division receipt of the USFWS Habitat Improvement Grant. Multiple locations within the reserve were surveyed for Florida mice, with almost all areas of appropriate habitat, namely scrubby flatwoods and scrub, discovered to be supporting populations of Florida mice. An outgrowth of these survey efforts was a Master's thesis research project conducted within the reserve by a University of Florida graduate student (Morgan 1998).

Gopher tortoises and their burrows are scattered throughout the scrub, scrubby flatwoods, and

mesic flatwoods communities. Gopher tortoises are normally less common in scrubby flatwoods and sand pine scrub than in open sandhills, however tortoises thrive in the early regeneration stages of scrubby flatwoods and scrub where the required open areas and herbaceous growth are present. Scrub in later stages of regeneration may become too shady or overgrown, even under a natural fire regime. It is likely that much of the gopher tortoise population at Cedar Key Scrub State Reserve persists in habitat that is less than ideal due to the relative infrequency of fire in the landscape. A typical response of tortoises to lack of fire in an area is to locate burrows along roadsides or utility easements where the shrub or tree canopy is more open (McCoy and Mushinsky 1991).

Eastern indigo snakes, which are often found in association with gopher tortoises, are relatively common in the reserve in comparison to other areas of their range. Although the potential for illegal collecting does exist, it would be difficult to determine if poaching is now or ever has been a significant problem in the reserve.

Several other designated animal species occur within the reserve, including a variety of wading birds and raptors. At least one active bald eagle nest and several abandoned nests have been recorded in the reserve over the years.

One animal species that occupies estuarine tidal marsh habitat similar to that found in the reserve, but which has not yet been recorded in the reserve, is the Florida salt marsh vole. This species is designated as endangered on both the federal and state lists, and FNAI considers it to be critically imperiled within Florida. Both the USFWS and the FFWCC have attempted to locate the species within the reserve without success. At this time, the Florida salt marsh vole is known from only one location along the Levy County coast south of the reserve.

Cedar Key Scrub State Reserve also contains a variety of rare plant species, many of which were documented during a floristic study (Amoroso 1993). Many of the designated plant species are orchids or carnivorous plant species.

Special Natural Features

Cedar Key Scrub State Reserve contains biological and geological resources of considerable significance. The sand pine scrub natural community, with its rare endemic species, is considered imperiled both globally and within Florida. The relative isolation of the particular example of scrub found at Cedar Key only serves to increase its ecological value. The development of a scrub community along this particular stretch of the Gulf Coast is due to the presence of ancient sand dunes that were created during periods of higher sea levels. These dune deposits are rare along the Big Bend coast and represent an important geological feature that has had a major role in the development of the natural and cultural resources of the area.

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 eight sites within Cedar Key Scrub State Reserve. To date, the reserve has had only one archaeological assessment, that performed by the C.A.R.L. Archaeological Survey (Vojnovski et al. 2000), although other surveys have been conducted in the Waccasassa Bay/Cedar Keys region (Jones and Borremans 1990, Jones 1993). The six sites identified in the course of the C.A.R.L. Archaeological Survey were discovered because local informants were interviewed and because areas with a high potential for site presence were inspected. A comprehensive survey of the reserve has not yet been attempted.

Three of the sites within the reserve are historic (8LV522, 8LV534, and 8LV535). These sites, all dating from the twentieth century, include two historic refuse sites and a site associated with the turpentine industry. Of these sites, the two contained wholly within the reserve are in good condition. The third site lies near the boundary, however, and has been impacted by construction activities outside the reserve. Consequently, it is considered to be in poor condition. It is thought that at least one of the historic sites may be related to the historic town of Lukens, a small settlement that sprang up around the Tilghman Cypress Company's mill in the mid-nineteenth century. The town disappeared after the mill closed in 1918.

The other sites within the reserve are prehistoric archaeological sites. Two of the sites, 8LV274 and 8LV536, are classified as artifact scatters. The former, Eureka Island, is listed as having an unspecified cultural affiliation. This site, located on an island in the salt marsh, is eroding and therefore in poor condition. The other of the two artifact scatters, the Cedar Key Scrub site, is from the Weeden Island period (A.D. 200 – A.D. 800) and is in good condition. The only known shell midden within the reserve, Pierson's cut (8LV528), was discovered during construction of a fire plow line during a wildfire. This Deptford period site (500 B.C. – A.D. 200) is in poor condition due to damage incurred during the construction. Hunters Ridge, a prehistoric habitation site (8LV125), was discovered because of the construction of State Road 24. Its cultural affiliation is unknown. A visit to the site in 1991 by a C.A.R.L. archaeologist failed to locate significant remains and the archaeologist concluded that the site had been destroyed or otherwise dispersed (Weisman 1991). The spinach patch (8LV533) is a lithic scatter, possibly from the Archaic period (7,500 B.C. – 500 B.C.). It is in a remote location and is in good condition.

The Florida Railroad, under the control of David Levy Yulee, once ran from Cedar Key to Fernandina on the Atlantic Coast. The railroad began operations in March of 1861; rail service to Cedar Key continued until around 1932. The abandoned rail bed lies southeast of State Road 24.

Undoubtedly, other, yet undocumented, cultural resources exist within the reserve. Florida Park Service personnel have found the remains of some type of industrial operation within the reserve, and a possible historic corduroy road has been discovered.

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 sale was conducted in 2000 to remove mature sand pines from scrub areas in order to facilitate restoration of the scrub community through subsequent prescribed burning. A limited area of slash pines was thinned at the same time. No additional timber sales are proposed for the cycle of this management plan.

Additional Considerations

Regional development concerns. The rate of population growth in western Levy County is relatively low in comparison to that of other, more southerly counties along the Gulf Coast. However, the Cedar Key residential area is expanding northward at a steady rate along State Road 24 into uplands near Cedar Key Scrub. The narrow strip of uplands between Cedar Key Scrub State Reserve and Waccasassa Bay Preserve State Park along State Road 24 encompasses only about 400 acres, so developable real estate in proximity to the town of Cedar Key is at a premium. Most of these lands are included within the Optimal Boundaries for the reserve and for Waccasassa Bay Preserve. In the past several years, a development company has acquired much of this land for the construction of home sites. At one point, a golf course was even considered. An already platted subdivision adjacent to Cedar Key Scrub State Reserve was purchased by the same company, and single-family residential lots were recently sold despite attempts by the State to purchase this property. Even now, lots as far away as those in Section 4 along County Road 347 are selling at a moderate rate. The unique characteristics of the reserve's natural areas are such that even scattered development outside the reserve can severely hamper the proper management and preservation of the natural resources within the reserve.

Encompassed within the relatively narrow confines of the Additions & Inholdings projects for Cedar Key Scrub State Reserve and Waccasassa Bay Preserve State Park are such disparate natural communities as scrub, scrubby flatwoods, hydric hammock, and tidal marsh. These communities form the Cedar Key Scrub/Gulf Hammock complex that has long been recognized as one of the state's truly unique natural systems. The area attracts much research interest because of the geographic isolation of its wildlife populations and its abundance of rare and threatened plant and animal species.

Acquisition of the Additions and Inholdings parcels would preserve the linkages among the natural areas of this remarkable region. It would greatly enhance the prospect that one day a continuous band of public land would extend north from Yankeetown through the Big Bend region of the Gulf Coast. Completion of these acquisition projects would ensure preservation of the remaining unprotected Cedar Key Scrub habitat so vital to the local scrub-jay population and it would save unspoiled salt marshes that provide the last refuge for the endangered Florida salt marsh vole. Cultural resources, including three archaeological sites registered in the Florida Master Site File, would also be protected. Finally, by adding to the reserve adjacent lands that likewise contain highly volatile natural fuels, the management goals for fire-maintained habitats already under state ownership would be made more attainable. Only by acquiring these lands will prescribed burning of the existing reserve become a relatively safe procedure.

The long-term preservation of the existing reserve and all of its components depends on the future protection and preservation of the entire ecosystem within which it lies. Development and destruction of the lands surrounding the scrub could irreparably harm one of Florida's major remaining natural assets.

400-foot management zone. The Trustees have also granted management authority of certain

sovereign submerged lands to the Division. The management area includes a 400-foot zone from the edge of mean high water where the reserve 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. Areas exempted from this management agreement include those areas open for shellfish harvesting. Most of the estuarine waters adjacent to the reserve are designated as either Conditionally Approved or Conditionally Restricted for shellfish harvesting. The only areas listed as Prohibited are adjacent to State Road 24 and cover portions of two disjunct parcels included in the reserve boundary.

Management Needs and Problems

Natural Resources

1. Fire-maintained natural communities suffer from lack of fire.
- **A.** Although prescribed burning in the reserve has increased significantly in the past 10 years, the impacts of long-term fire suppression on fire-maintained communities are still evident. Impacted communities include mesic flatwoods, scrubby flatwoods, scrub, sandhill, depression marshes and basin marshes. Fires in the reserve are by nature very intense; consequently, they are difficult to contain within burn zone boundaries. The lack of a natural fire regime has impacted animal and plant species that are adapted to scrub and scrubby flatwoods communities. The Florida Scrub-Jay, in particular, has specific habitat requirements that are not provided by mature sand pine scrub or advanced stages of scrubby flatwoods. Scrub-jays require early successional stages of scrub and scrubby flatwoods, as do Florida mice and gopher tortoises.

2. Adjacent natural areas are threatened by development.
- **A.** Several properties adjacent to the reserve are threatened by development. Most of these properties contain significant natural areas. Several properties along County Road 347 include critical habitat for the Florida Scrub-Jay and other scrub endemic species.
- **B.** Other parcels to the south and north have been identified for acquisition through the Additions and Inholdings Program to establish a broad linkage between the Cedar Key Scrub State Reserve, Waccasassa Bay Preserve State Park, and public lands to the north.

3. Designated species within the reserve require periodic monitoring.
- **A.** The management of the Florida Scrub-Jay within the reserve and in the region as a whole would be greatly enhanced by systematic monitoring of the population. Color banding of the birds is needed to monitor the fate of individuals, measure reproductive success, and evaluate the success of habitat restoration measures. The West Nile Virus may have an impact on the Cedar Key scrub-jay population.
- **B.** Periodic surveys of gopher tortoise burrows, Florida mice, and other scrub endemics would provide additional measures of success of the habitat restoration efforts within the reserve.

4. Artificial soil disturbances have altered natural topography and hydrology.
- **A.** Several areas within the reserve have been scarred by fire plows used during past fire suppression activities. Changes in natural drainage patterns have resulted.
- **B.** Certain service roads within the reserve also impact wetlands. Where these roads cannot be re-routed, stabilized low-water crossings are needed to provide access for prescribed burning and other resource management activities.

5. Exotic plant and animal species occur within the reserve.

A. Exotic plants such as Chinese tallow tree and Brazilian pepper pose a threat to the natural communities within the reserve.

B. Feral hogs and armadillos impact native plant and animal species within the reserve, mainly through soil disturbance and predation on invertebrates and smaller vertebrates.

6. A staff shortage has hindered resource management efforts within the reserve.

A. Currently the Cedar Key Scrub State Reserve has no staff positions assigned to it. The two-member staff of Waccasassa Bay Preserve State Park also manages the reserve. These two people, a resident park manager and a ranger, are responsible for the management of some 39,088 acres of state lands. In addition, the park manager is responsible for the management of the Cedar Key Museum State Park. A staff of such limited size cannot provide the level of resource management or protection needed for such valuable natural areas.

Cultural Resources

7. Known cultural resources within the reserve require protection.

A. Cultural sites within the reserve may be vulnerable to disturbance from illegal collection or inadvertent damage from land management activities.

8. Unknown or undocumented cultural sites occur within the reserve.

A. Previously unknown sites may be in time be discovered by staff, volunteers, or park visitors, and these sites will require documentation.

B. The reserve lacks a comprehensive Phase I Archaeological Survey.

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. Continue to reestablish natural fire regimes in upland fire-maintained communities.

A. Reintroduce fire to additional areas of the reserve, while maintaining previously burned zones at fire-return intervals appropriate for their community type. Use Annual Burn Plans and a long-term Habitat Improvement Plan to guide the burn program. When burning scrub and scrubby flatwoods areas, attempt to create a mosaic of different successional stages that maximize habitat diversity. Increased diversity on a landscape level should provide appropriate habitat over the long term for species such as the scrub-jay and the Florida mouse. Additional information about the Cedar Key Scrub burn program is included in the Prescribed Burning section.

B. Continue to use mechanical treatments such as roller-chopping, mowing and tree-cutting to help prepare zones for prescribed burns. These treatments will be used to reduce the height of the shrub layer in certain scrub and scrubby flatwoods areas, thereby improving fire control and safety. The treatments can also be used to facilitate creation of burn zones of manageable size.

2. Pursue acquisition of the optimum boundary parcels.

A. Continue to pursue acquisition of the parcels already on the Additions and Inholdings list for Cedar Key Scrub State Reserve. The highest priority properties are those immediately adjacent to the reserve that contain designated species habitat or that are necessary for safe management of prescribed burns in the reserve. Revise the optimum

boundary map to include additional habitat for the Florida Scrub-Jay that lies north of the reserve. Additional information on this issue is included in the Additional Considerations section.

B. Pursue acquisition of properties that would link public lands to the north and south of the reserve along the Big Bend coast.

3. Continue to monitor designated species within the reserve, with emphasis on the Florida Scrub-Jay and other scrub endemics.

A. Continue to survey, monitor, and color band scrub-jays within the reserve and adjoining areas, in cooperation with the FFWCC. Place particular emphasis on detecting effects of the West Nile Virus.

B. Conduct periodic surveys of gopher tortoises, Florida mice, and other scrub endemics in cooperation with other researchers and the FFWCC, as time and budget constraints permit.

4. Restore lands damaged by artificial soil disturbances.

A. Restore fire plow scars within the reserve to the natural contour, where feasible, especially in areas where natural drainage patterns have been altered.

B. Where possible along essential roadways that traverse wetland strands, modify or stabilize the roads to minimize their impacts to natural drainage patterns and to avoid degradation of water quality. Essential roads are those that allow access for prescribed burning and other resource management activities.

5. Remove exotic plant and animal species from the reserve.

A. Continue to survey for Chinese tallow tree, Brazilian pepper, and other exotic plants and remove them immediately.

B. Continue to cooperate with the FFWCC to control feral hogs through permitted hunting. Remove armadillos from the reserve whenever possible.

6. Pursue staffing for Cedar Key Scrub State Reserve.

Cultural Resources

7. Continue to monitor the property's cultural resources regularly.

A. Regularly inspect cultural sites for signs of vandalism. If needed, install interpretative signs to discourage creation of casual trails. Signs should contain warnings against collecting artifacts in both terrestrial and aquatic environments. Ensure that personnel from the Division and from cooperating agencies are aware of the locations of cultural resources in order to prevent inadvertent impacts from land management activities.

8. Continue to document previously unknown cultural resources.

A. Continue to involve C.A.R.L. Archaeologists whenever park staff, volunteers, or visitors discover new cultural sites.

B. Pursue funding to conduct a comprehensive Phase I Archaeological Survey.

Management Measures for Natural Resources

Hydrology

Most of the hydrological concerns at Cedar Key Scrub State Reserve involve relatively isolated surface waters rather than groundwater or riverine systems. The reserve is a complex mosaic of uplands and interconnected wetlands. By necessity, several service roads/fire lanes cross narrow wetland strands that connect larger basin marshes or swamps, particularly in the western half of the reserve. Such roads adversely impact the wetlands and ordinarily would be abandoned. Many of these roads, however, are required for access and are essential as firebreaks during prescribed burns. A grant from the Pollution Recovery Trust Fund provided funding in 1996 for a concrete bridge and two fording mats to remedy part of the problem and to provide all-weather access for fire equipment at three crossing sites. An additional dozen or more sites in the western part of the

reserve have been identified as potentially benefiting from some type of fording mat or other stabilization to provide all-weather access while protecting local water quality. Funding in FY 2001-02 was used to purchase materials and initiate design of low-water crossings that will use inert gravel and Geoweb to stabilize the soft, unconsolidated bottoms of the crossings.

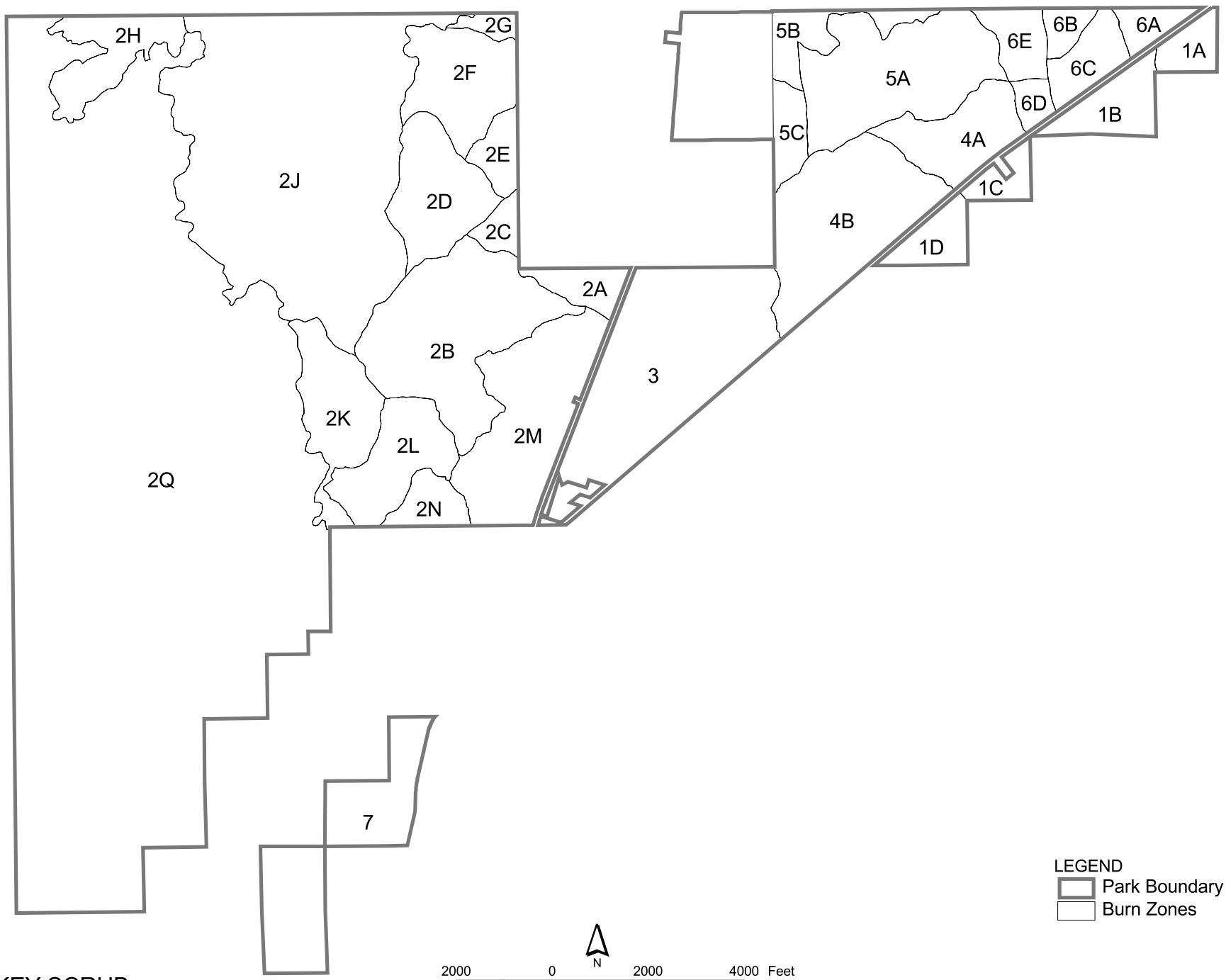
Wetlands have also been impacted by emergency fire suppression activities. Fire plow lines have created ditches adjacent to or even through wetlands. Many of these lines have been re-contoured, but some in wetland areas remain. Reserve and district staff will continue their attempts to restore these areas and will continue their coordination with the Florida Division of Forestry, a cooperative manager of the reserve. Management will comply with best management practices to maintain or improve the existing water quality on site and will take measures to prevent soil erosion or other impacts to water resources.

Although the Floridan aquifer is unconfined within the reserve, the aquifer primarily discharges in this area, so contamination of groundwater supplies from runoff is not as great a concern as in recharge areas. Saltwater intrusion, however, may become a concern if groundwater withdrawals increase in the area. The town of Cedar Key obtains its municipal drinking water from a well field within the reserve. Although current withdrawals may not be affecting groundwater levels or the depth of potable water in the area, future demands may change that situation. Staff will coordinate with the Suwannee River Water Management District to monitor any changes in withdrawal rates and to document any changes in groundwater quantity or quality.

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. County Road 347 divides the reserve into two halves. The FFWCC, a managing partner at the site, has traditionally designated the eastern half of the reserve as Zone A and the western half as Zone B. In most Division District 2 parks, however, burn zones are defined using alphanumeric designations. To standardize zone designations at this unit, each zone is assigned a zone number and letter (see Burn Zone Map).

The majority of the non-estuarine natural communities within Cedar Key Scrub State Reserve are maintained by fire. Prescribed burning remains the most potent and critical natural resource management tool at the reserve. Most of the burn zones in the reserve consist of a complex mosaic of sand pine scrub, scrubby flatwoods, mesic flatwoods, and freshwater marshes and swamps. This diversity greatly complicates prescription writing since each community type has a different set of optimal conditions for burning. The high fuel loading due to past fire suppression also contributes to the problem. These complexities have made it very difficult to isolate burn zones effectively and to prevent prescribed fires from escaping onto private lands or into adjacent burn zones. Problem areas include the basin marshes that straddle the reserve boundary. These marshes have light, flashy fuels that are relatively inaccessible to fire equipment due to standing water or hydric soils. Of particular concern are areas where private residences have been built adjacent to the reserve boundary in sand pine scrub or scrubby flatwoods communities. A severe shortage of staff and equipment has further hampered the prescribed burn program. Despite these impediments, the burn program has recently made significant progress (see details below).



CEDAR KEY SCRUB
STATE RESERVE

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

BURN ZONES
MAP

The primary goal of the prescribed burn program is to restore a natural fire regime, including a natural fire return interval, to the natural communities within the reserve. The sand pine scrub communities have a natural fire return interval ranging from 20 to 80 years or longer, while the scrubby flatwoods may burn as frequently as every 8 to 25 years, with mesic flatwoods burning every 1 to 8 years on average (FNAI 1990). The effects of fire exclusion or suppression are more quickly evident in the communities having shorter fire return intervals.

Ideally, fire return intervals should fluctuate within what is considered the natural range for a community type in order to maximize habitat diversity at any one time. Although short fire return intervals in sand pine scrub obviously benefit the Florida Scrub-Jay, there are other species in the community that require longer intervals between fires. The sand pine scrub community should be burned at varying intervals within the natural range. The fringes of sand pine scrub areas that are adjacent to scrubby and mesic flatwoods will likely burn more frequently than the interiors of the larger scrub patches. Scrubby flatwoods, which provide most of the habitat for Florida Scrub-Jays at Cedar Key Scrub, will be burned on a shorter interval, with most areas receiving fire every 8 to 15 years.

Until recently, limited areas of sand pine scrub had been burned since the State of Florida acquired the Cedar Key Scrub State Reserve, although several tracts of scrubby and mesic flatwoods had been burned during that period. In 1996, a prescribed fire on the western side of the reserve escaped across a basin marsh and burned a total of 269 acres of basin marsh, mesic flatwoods, and scrubby flatwoods. Despite the uncontrolled nature of the fire, ecologically the fire had a very beneficial effect on the communities involved. Drought conditions severely limited prescribed burning of the reserve in subsequent years. However, three zones east of County Road 347 (4A, 6D and 6E) were burned during a short window of opportunity in the spring of 2001. These zones included significant areas of sand pine scrub, scrubby flatwoods, mesic flatwoods, and basin and depression marshes. A return of more normal rainfall levels, as well as mowing and roller chopping of overgrown scrub and scrubby flatwoods, allowed the successful completion of a 475-acre aerial ignition burn in January 2003 in zones 3 and 4B. Additional areas of scrub and scrubby flatwoods were burned in 2003 and the spring of 2004 using ground ignition (zones 6A, 6B, 6C, 2A, 2L, and 2N).

Designated Species Protection

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

In most cases, the policy of natural systems management will suffice to protect designated species within lands managed by the Division of Recreation and Parks. The maintenance of natural hydrological regimes and fire cycles is essential for the preservation and restoration of natural communities, and consequently, for the preservation of the species dependent on those communities.

Proper management of scrub and scrubby flatwoods patches at Cedar Key Scrub State Reserve will be critical for the long-term survival of the designated species populations that depend upon them. These patches must be maintained in a spatial and temporal mosaic that allows individuals to relocate successfully as local habitat conditions change. When the landscape is as isolated as it is at the reserve, management actions must consider potential effects upon individuals as well as

upon populations and communities as a whole.

Although prescribed burns have been used effectively in the past to restore scrubby flatwoods areas west of County Road 347, burning the sand pine scrub and scrubby flatwoods east of County Road 347 has been more problematic. A timber harvest of the mature sand pines in 2000 along with mowing and roller chopping in 2002 east of County Road 347 initiated rejuvenation of the sand pine scrub and scrubby flatwoods. Removal of the mature sand pines has made burning the scrub much safer and has increased the window of opportunity for burning this habitat type. Three zones east of County Road 347 were burned successfully in 2001, partly because of the sand pine harvest. An aerial ignition in January 2003 east of County Road 347 burned several large expanses of scrub and scrubby flatwoods. Additional burns in 2003 and 2004 restored additional scrub and scrubby flatwoods. Removal of the sand pine overstory and mowing of overgrown areas have accelerated rejuvenation of the scrub and scrubby flatwoods.

Dedicated funding for natural resource restoration was used in FY 2001-02 and FY2002-03 at Cedar Key Scrub State Reserve to fund mechanical restoration of scrub and scrubby flatwoods. A total of 119 acres of severely overgrown scrub and scrubby flatwoods were mowed to a height of about 18 inches using a Kershaw 1010 mower. By spring of 2004 most of the mowed areas had been prescribed burned. These restoration funds, along with revenues from recent sand pine harvests, will also be used to install wetland crossings to allow reliable access during prescribed burns. In the spring of 2004 the park was awarded a $30,000 grant for scrub-jay habitat restoration from the USFWS. This will provide funding for the mowing of an additional 80 acres or more of overgrown scrub and scrubby flatwoods. These efforts will increase the ability of the reserve to burn scrub and scrubby flatwoods areas for scrub-jay management.

Acquisition of additional scrub and scrubby flatwoods adjacent to the reserve would greatly enhance the prospects for long-term survival of the scrub-jay and other scrub endemics in the Cedar Key Scrub area. A large area of privately owned scrub and scrubby flatwoods that is located along County Road 347 in Section 4 is bordered on three sides by the reserve. The parcels in this area contain critical habitat for scrub-jays according to a 1981 report by Jeffrey Cox. Cox states that the potential scrub-jay population in the area would be halved if Section 4 and adjacent private lands were to be developed. "This section (4) should be protected from development if at all possible; it should be high on the list of environmentally sensitive lands to be preserved by governmental or private conservation organizations" (Cox 1981:22). Stith (1999) also emphasizes the need to acquire additional scrub habitat to prevent local extirpation of the scrub-jay.

A revision and expansion of the reserve’s optimum boundary will be required to identify all scrub and scrubby flatwoods areas that are potential acquisitions near the reserve. Placement of the more promising parcels on the Division’s Additions and Inholdings Acquisition List will also be required. Acquisition of disjunct parcels containing scrub-jay habitat must be considered due to the extreme vulnerability of the Cedar Key scrub-jay metapopulation. The Division is also pursuing title to 126 acres of federal land confiscated by the U.S. Marshall Service that lies in Section 4 adjacent to the reserve. This property contains significant areas of scrub and scrubby flatwoods in dire need of restoration. The U.S. Marshall Service has extended management authority for the property to the Division until the title can be transferred to the State of Florida.

Survey and color banding of Florida Scrub-Jays began at Cedar Key Scrub State Reserve during 1997-1998 as part of the USFWS grant. Fledgling scrub-jays were also banded in the 2000 breeding season, with funding provided by the FFWCC. Park and FFWCC staffs and volunteers

regularly record sightings of scrub-jays within the reserve in an effort to monitor movements of banded and unbanded jays. Additional sighting records alone, however, do not provide the data necessary to measure the success of management actions. Since it is nearly impossible to recognize individual jays, it is very difficult to obtain an accurate census or to determine the membership or size of groups of unmarked jays.

Color banding, however, allows identification of individual birds and greatly increases the value of scrub-jay sighting records. Fortunately, the FFWCC is committed to the continued monitoring and banding of the Cedar Key metapopulation. FFWCC works closely with park staff and volunteers to monitor scrub-jays and to habituate birds to allow trapping of unbanded adults and fledglings. The banding program focuses on locating nests and banding nestlings as well as banding unmarked adults. The program not only provides important demographic data, but also ensures that future breeders are identifiable. The Division will continue to work with the FFWCC to coordinate scrub-jay monitoring and banding efforts. FFWCC and park staff are currently cooperating with researchers from the Archbold Biological Station to collect blood samples for a state-wide genetic analysis of scrub-jays.

The sighting records and field observations have provided the information used in the development of Geographical Information System (GIS) data layers showing territorial or home range boundaries of the known and historical family groups or pairs of jays in the Cedar Key metapopulation. These data are accessed using the ArcView 3.2a GIS. Accurate maps of jay territories assist staff in the fine-tuning of prescribed burn plans to avoid burning an entire scrub-jay territory at one time. If nest sites are identified in burn zones during the nesting season, those zones should not be burned until any offspring present have fledged. The GIS also provides accurate acreage estimates of scrub and scrubby flatwoods natural communities within the reserve and within scrub-jay home ranges. The GIS also allows analysis of natural community types outside the reserve to assist in optimum boundary planning.

Division staff will continue to cooperate with the USFWS in the management of the scrub-jays at Cedar Key Scrub and will refer to the USFWS Recovery Plan for the Florida Scrub-Jay (USFWS 1990), and any future revisions, for guidance. Staff will also coordinate with the USFWS and the FFWCC to determine if resource management activities on site, such as prescribed burning, might require an incidental take permit for scrub-jays. The Division will also continue to assist the FFWCC in monitoring the Cedar Key scrub-jays to detect any mortality or other possible effects from the West Nile Virus.

The FFWCC Florida mouse project included several trapping grids within the reserve. A master's thesis project investigating the relationship of the Florida mouse to gopher tortoise burrow distribution in scrubby flatwoods was completed in 1998 (Morgan 1998). The project included the trapping of Florida mice along transects and at tortoise burrows in the reserve. The project also analyzed vegetation structure at the study sites. These studies have provided some quantification of the habitat preferences and general needs of Florida mice in scrubby flatwoods and scrub.

Some of the more recent gopher tortoise monitoring at Cedar Key Scrub includes the survey and mapping of burrows using a Global Positioning System (GPS) and the incorporation of data into the Division's GIS system. Censuses of three resource management zones (4A, 6D and 6E) were conducted after the completion of prescribed burns in 2001. The District has also purchased a CCD video camera system known as a “gopher cam”. This "gopher cam" is modified for use within a gopher tortoise burrow and provides a high quality, black and white image of the

interior of a tortoise burrow using infrared illumination and a small video screen. This system is used to check for resident tortoises and burrow commensals such as the eastern indigo snake, eastern diamondback rattlesnake, Florida mouse, and gopher frog.

In 2004 a study was initiated by a University of Florida graduate student to study the effects of fire on small mammals, reptiles, and amphibians in scrub and scrubby flatwoods in the reserve. Park staff and volunteers are currently assisting with this research project.

Any bird rookeries discovered within the reserve will be shielded from human disturbance during the nesting season. Visitation to such sites will be discouraged from April through July. Visitation near any active bald eagle nest should be curtailed year-round. All guidelines and regulations promulgated by the FFWCC and the USFWS regarding visitation to bird nesting sites will be followed.

Most of the designated plant species within the reserve occur in wetland communities. The maintenance of normal hydroperiods and protection of surface water resources should suffice to protect these species. Control of feral hogs within the reserve will be required to protect vulnerable wetlands. Care must also be taken during the installation and maintenance of firebreaks. Firebreaks should not be placed along wetland edges or ecotones if possible.

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.

Fortunately, Cedar Key Scrub State Reserve lacks a significant exotic plant problem at this time. Still, small numbers of Chinese tallow trees are infrequently discovered within the reserve; these are removed immediately. This species certainly represents a threat to the reserve's wetland communities and staff should maintain a constant vigilance for its appearance. Several Brazilian pepper plants have also been removed recently along the edges of the estuarine tidal marsh. This species reaches its northern limit near Cedar Key. Although Brazilian pepper is periodically suppressed by freezes, its control in the Cedar Key area has only been achieved because of a very aggressive program of removal implemented by the community. Coastal sections of the reserve should be periodically surveyed for the presence of Brazilian pepper and control measures implemented immediately upon its discovery.

Native vegetation control measures that involve the use of machinery have the potential to import exotic plant propagules, particularly since the same types of machinery are often used in the control of both exotic and native plants. Machinery used within the reserve should continue to be inspected and only be allowed to work within the reserve if it is verified to be clean and free of debris.

The reserve harbors at least two exotic animals that are considered threats to natural and cultural resources. Both of these, the armadillo and the feral hog, are responsible for extensive ground disturbance and for possible predation on terrestrial amphibians and reptiles, as well as on the eggs of ground-nesting birds. Staff will remove armadillos whenever opportunity arises. The FFWCC currently assists in the control of feral hogs by coordinating hunting within the Cedar Key Scrub State Reserve. Now, feral hogs are hunted within the reserve only during the fall hunting season. Hog hunting within the reserve should continue, and consideration should be

given to expanding the season. Steady hunting pressure should help to limit the numbers of feral hogs within the reserve.

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.

Now, management is not aware of any native species causing problems within the reserve.

Management Measures for Cultural Resources

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

Actions that require permits or approval from DHR include development, site excavations or surveys, disturbances of sites or structures, disturbances of the substrate, and any other actions that may affect the integrity of the cultural resources. These actions could damage evidence that would someday be useful to researchers attempting to interpret the past. Staff of the reserve will continue to monitor the property's cultural resources regularly. The condition of recorded and unrecorded cultural resources will be routinely assessed.

Cultural sites will be patrolled to check for vandalism. When needed, interpretive signs will be used at sites to discourage the development of casual trails. Such signs may also include warnings against collecting artifacts in either terrestrial or aquatic environments.

Staff will continue efforts to document previously unknown cultural resources. C.A.R.L. Archaeologists will be contacted whenever staff or volunteers discover new sites. Funding for a comprehensive Phase I Archaeological Survey will be sought.

Staff of the reserve will continue to follow DHR guidelines when conducting activities that may cause ground disturbance.

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.

Cedar Key Scrub State Reserve is fortunate to have been the focus of several valuable studies in the past, including a floristic study and a long-term study of the Florida mouse. Current activities include the monitoring of designated animal species such as the Florida Scrub-Jay, Florida mouse, and gopher tortoise. Additional research needs are identified below.

1. Continue the Florida Scrub-Jay banding and demographic study. The color banding of Florida Scrub-Jays and the monitoring of family groups and their reproductive success will provide information critical to guiding the management of the scrub and scrubby flatwoods within the reserve. One of the goals is to maintain current maps showing territorial boundaries of the family groups or pairs of jays, as well as all sighting records.
2. Investigate the genetic relationship of the Cedar Key scrub-jay metapopulation to other scrub-jay metapopulations within the state. McDonald et al (1999) conducted a genetic analysis of the Florida scrub-jay. Although blood samples were collected from the Cedar Key metapopulation, they were too late to be included in the analysis. If possible, funds should be appropriated to analyze the existing samples and collect additional samples to establish the relationship of the Cedar Key metapopulation to others in the state.
3. Conduct additional censuses of Florida mouse and gopher tortoise populations. Research funded by the USFWS Habitat Improvement Grant established baseline information on the Florida mouse and gopher tortoise populations within areas of the reserve that were scheduled for prescribed burning. After prescribed burns of these areas are actually completed, there should be follow-up censuses to determine the effects of management on the designated species. Ideally, these surveys would be conducted at several different times post-burn.
4. Coordinate monitoring of estuarine fish species with the Cedar Key Field Laboratory of the FFWCC Fish and Wildlife Research Institute. Reserve and district staffs will coordinate with FWRI staff to conduct fish surveys within the estuarine areas of the reserve and to obtain information about existing species occurrences.

Cultural Resources

Although archaeological surveys have been conducted within Waccasassa Bay Preserve State Park and adjacent areas, relatively little survey work has been done within Cedar Key Scrub State Reserve. A comprehensive Phase I survey of the reserve is recommended to compile existing cultural information and to survey for unrecorded cultural sites.

Resource Management Schedule

A priority schedule for conducting all management activities that is based on the purposes for which these lands were acquired, and to enhance the resource values, is contained in Addendum 6. Cost estimates for conducting priority management activities are based on the most cost effective methods and recommendations currently available (see Addendum 6).

Land Management Review

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

Cedar Key Scrub State Reserve was subject to a land management review on February 6, 2004. The review team made the following determinations:

1. The land is being managed for the purpose for which it was acquired.
2. The actual management practices, including public access, were in compliance with the management plan for this site.

LAND USE COMPONENT

INTRODUCTION

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

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

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

EXTERNAL CONDITIONS

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

Cedar Key Scrub State Reserve is located in western Levy County, near the town of Cedar Key. The populations of Levy and the adjacent Marion and Citrus Counties have grown 31 percent since 1990, and are projected to grow an additional 21 percent by 2010 (BEBR, University of Florida, 2000). As of 2000, 17 percent of residents in these counties were in the 0-14 age group, 32 percent in the 15-44 age group, 26 percent in the 45-64 age group, and 25 percent were aged 65 and over, which (reflects, is less than, more than, etc.) the state average for these groupings (BEBR, University of Florida, 2000). Nearly 420,000 people reside within 50 miles of the park, which includes the cities of Cedar Key, Dunnellon, Crystal River, Homosassa Springs and Chiefland (U.S. Department of Commerce, Bureau of Census, 2000).

Cedar Key Scrub State Reserve recorded 13,312 visitors in FY 2002/2003. This represents a net increase over the last five years. By Division estimates, these visitors contributed $388,178 in direct economic impact and the equivalent of 7.8 jobs to the local economy (Florida Department of Environmental Protection, 2003).

Existing Use of Adjacent Lands

The western side of the reserve fronts the Gulf of Mexico. State Road 24 runs through the northeastern corner of the reserve, and along the southeastern boundary. State Road 347 nearly bisects the property. Much of the adjacent property is used for silvacultural purposes, but a significant amount of land is being subdivided for residential development.

There is a great deal of resource-based recreation opportunities near the reserve. Waccasassa Bay State Preserve lies adjacent to the reserve boundary, and portions of the Lower Suwannee National Wildlife Refuge lie immediately west of the reserve. The Cedar Keys National Wildlife Refuge lies west and south of the reserve. Gulf Hammock Wildlife Management Area, Goethe State Forest and Cedar Key Museum State Park all lie within a short drive of the reserve as well.

Planned Use of Adjacent Lands

It is anticipated that private uplands around the reserve will be developed for residential uses as the region's population continues to grow. A residential development, Cedar Key Plantation, is under development just south of the western reserve boundary. The additional development may affect water resources, prescribed burning capabilities, and increase vehicular traffic on adjacent roads.

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

Cedar Key Scrub State Reserve consists of 5,023 acres, north of the town of Cedar Key that are jointly managed by the Division, the FFWCC, and the DOF. The reserve is minimally developed for public use, in keeping with the management objective of perpetuating the environmental values of the unit.

Water Area

The reserve includes some submerged lands in the Gulf of Mexico. The submerged lands included in the reserve are part of the Big Bend Seagrasses Aquatic Preserve.

Shoreline

The low energy Gulf coast shoreline of the reserve is dominated by a tidal marsh community. Numerous tidal creeks form a dendritic network dissecting the marsh. These creeks are an integral part of the highly productive estuarine marsh community.

Natural Scenery

The reserve contains diverse habitats such as salt marsh, pine flatwoods and sand pine scrub. Although much of the property is relatively low and flat, elevations range from sea level on the western edge to 30 feet above mean sea level on the relict dune ridge in the northwestern portion. These ridges are the highest and driest elevations on the property, and support sandpine scrub and scrubby flatwoods.

Significant Wildlife Habitat

The sand pine scrub and scrubby flatwoods of the reserve support populations of rare animal species as the Florida Scrub-Jay, Florida mouse, eastern indigo snake and gopher tortoise. The reserve also supports at least one active bald eagle nest and several designated plant species.

Natural Features

The sand pine scrub community is an important natural community within the reserve and is considered imperiled both globally and within Florida. This community supports several rare endemic species.

Archaeological and Historical Features

Eight archaeological and historical sites have been recorded on the reserve property. Three of the sites found are historic, dating from the twentieth century, and include two refuse sites and a site associated with the turpentine industry. The other sites are prehistoric archaeological sites and contain two artifact scatter sites, one shell midden, one prehistoric habitation site, and one lithic scatter site. An abandoned railroad bed, formerly the Florida Railroad that ran from Cedar Key to Fernandina between 1861 and 1932, lies southeast of State Road 24. Additional information regarding the site's cultural resources is contained in the resource management component.

Assessment of Use

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

Past Uses

Portions of the uplands were used for turpentine production, as evidenced by the presence of numerous lighter stumps, many of which have cat faces.

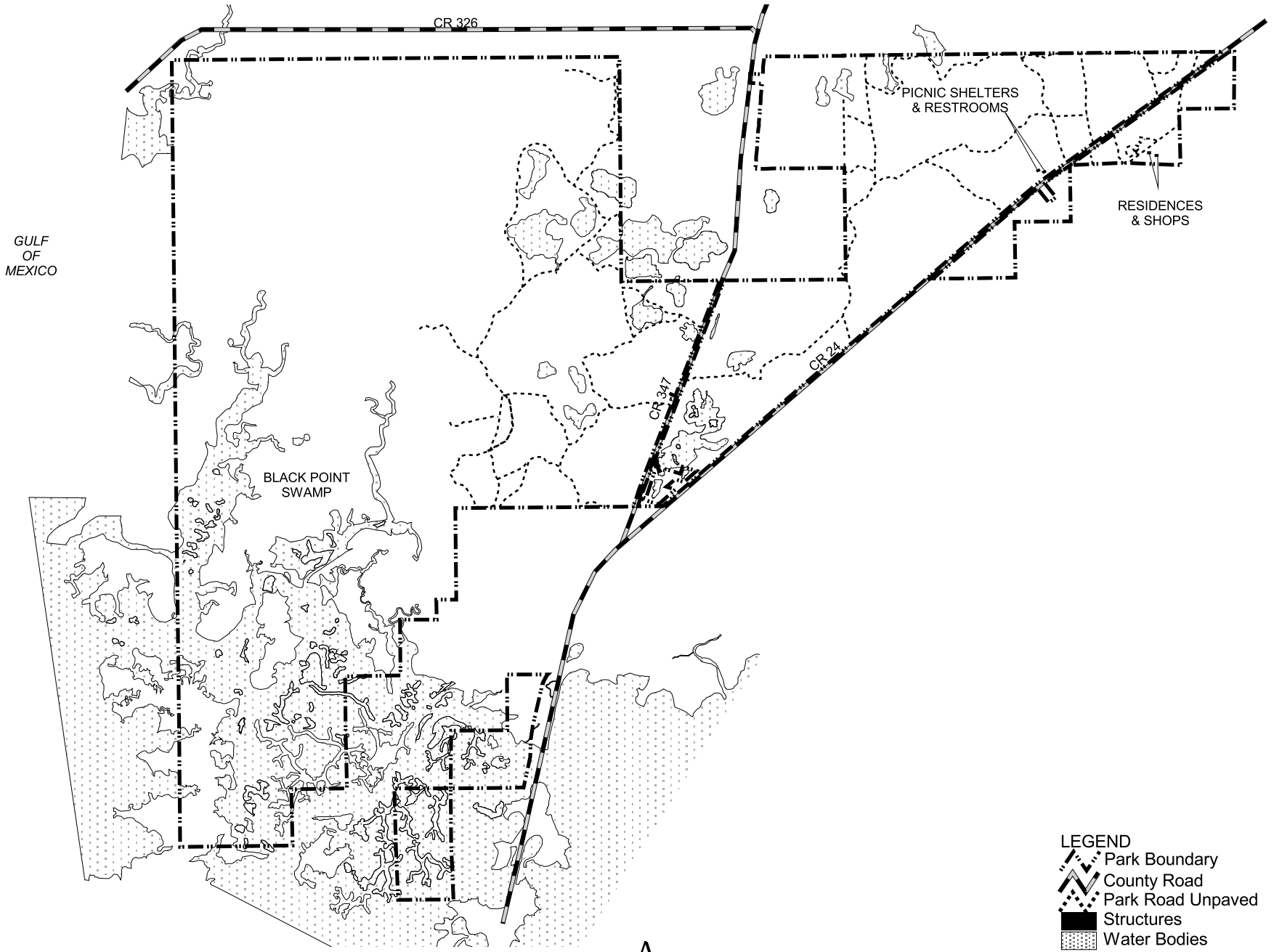
Recreational Uses

The existing jeep roads are utilized as multi-use trails, totaling about four miles in length on the eastern side and about six miles on the western side of the reserve. These trails are primarily used for hiking, but are also available for bicycling and horseback riding. The diverse habitats of the reserve provide opportunities for nature study and wildlife observation. Hunting activities, which usually occur from September through mid-November, are regulated by the Florida Fish and Wildlife Conservation Commission. Saltwater fishing is popular in the adjacent waters. The shallow waters near the salt marsh provide excellent opportunities for canoeing and kayaking. Rental canoes and kayaks are available in nearby Cedar Key. Boat launching facilities are available near the northwest border of the reserve and in Cedar Key.

Other Uses

Overhead power lines parallel the state roads that pass through the reserve. Because these power lines are adjacent to the roads, the aesthetic and physical impact is minimized.
The town of Cedar Key utilized two wells located on outparcels within the reserve for their drinking water supply. Future increases in use should be monitored jointly by DEP and the Suwannee River Water Management District to avoid adverse impacts to the reserve's water resources.

Along with the nearby Gulf Hammock, the Cedar Key Scrub has been scientifically investigated periodically over the past 30 years because of the interesting flora and fauna in this region. Some of these studies are long-term and still in progress.



CEDAR KEY SCRUB STATE RESERVE

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

BASE MAP

Protected Zones

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

At Cedar Key Scrub State Reserve, the sand pine scrub, scrubby flatwoods, basin marsh, basin swamp, depression marsh, hydric hammock, estuarine composite substrate, estuarine seagrass bed, estuarine mollusk reef, estuarine tidal marsh, and estuarine unconsolidated substrate natural communities have been designated as protected zones as delineated on the Conceptual Land Use Plan.

Existing Facilities

Recreation Facilities
Trailhead (1)
Picnic shelter (1)
Interpretive kiosk
Corral (1)

Support Facilities
Ranger residences (2)
Shop building
Composting restroom (1)
Honor check station (hunting season only)

CONCEPTUAL LAND USE PLAN

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

During the development of the unit management plan, the Division assesses potential impacts of proposed uses on the resources of the property. Uses that could result in unacceptable impacts are not included in the conceptual land use plan. Potential impacts are more thoroughly identified and assessed through the site planning process once funding is available for the development project. At that stage, design elements, such as sewage disposal and stormwater management, and design constraints, such as designated species or cultural site locations, are more thoroughly investigated. Advanced wastewater treatment or best available technology systems are applied for on-site sewage disposal.

Stormwater management systems are designed to minimize impervious surfaces to the greatest extent feasible, and all facilities are designed and constructed using best management practices to avoid impacts and to mitigate those that cannot be avoided. Federal, state and local permit and regulatory requirements are met by the final design of the projects. This includes the design of all new park facilities consistent with the universal access requirements of the Americans with Disabilities Act (ADA). After new facilities are constructed, the park staff monitors conditions to ensure that impacts remain within acceptable levels.

Potential Uses and Proposed Facilities

As a state reserve, the management emphasis is on natural systems management through

SR 347

SR 24

EXISTING
RESIDENCES

PROPOSED
PARK OFFICE

PROPOSED
TRAILHEAD
* PARKING
* CORRAL
* PICNIC SHELTER
* RESTROOM

LEGEND

- PROPOSED FACILITIES
- STATE RESERVE BOUNDARY
- PROTECTED ZONES

N

3000 0 3000 Feet

CEDAR KEY SCRUB STATE RESERVE

CONCEPTUAL LAND USE PLAN

Prepared by:
Florida Department of Environmental Protection
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approved methods of environmental land management, which may also enhance the recreational potential of the resources. The uses of a reserve are essentially primitive and not dependent upon the availability of facilities. Multiple uses may occur, so long as those uses are compatible with the overall objective of perpetuating the environmental values of the reserve. The current low-level public use of the site is appropriate and should continue. Recreational hunting will continue to be administered by the FFWCC, in coordination with the Division.

Recreation Facilities

Trailhead. A second trailhead is proposed for the western side of the reserve off SR 347. This trailhead should feature parking for up to 15 vehicles, a composting restroom, interpretive kiosk, a picnic shelter and a horse corral.

Trails. Additional hiking, biking and equestrian trails should be developed on the western side of the reserve.

Interpretive exhibits. Interpretation is a major focus of the Florida State Park system. Interpretive displays and exhibits will be needed throughout the reserve including at each trailhead and at designated points along the trails. Potential interpretive themes for Cedar Key Scrub State Reserve include rare and endangered species, the ecology of the scrub, the natural and cultural history of the Cedar Key region, Native American history, wetlands ecology and Leave-No-Trace ethics.

Support Facilities

Office. The current park office is old and too small for the park's current needs. A new park office building is needed to act as a center for administration of Cedar Key Scrub, Waccasassa Bay State Preserve and the Cedar Key Museum. The building should be large enough to house two offices and conduct meetings. It is proposed that it be located in the footprint of the old park office building.

Facilities Development

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

Recreation Facilities	**Support Facilities**
Trailhead (1)	Stabilized parking area (15 spaces)
Horse corral (1)	Composting restroom (1)
Picnic shelter (1)	Park office
Interpretive kiosk and displays	

Existing Use and Optimum Carrying Capacity

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

specific activity, the activity site and the unit's classification is selected (see Table 1).

Table 1--Existing Use And Optimum Carrying Capacity

	Existing Capacity		Proposed Additional Capacity		Estimated Optimum Capacity	
Activity/Facility	**One Time**	**Daily**	**One Time**	**Daily**	**One Time**	**Daily**
Trails						
Shared Use	80	160	60	120	140	280
Picnicking	8	16	8	16	16	32
Hunting*						
Canoeing/kayaking	20	40			20	40
TOTAL	**108**	**216**	**68**	**136**	**176**	**352**

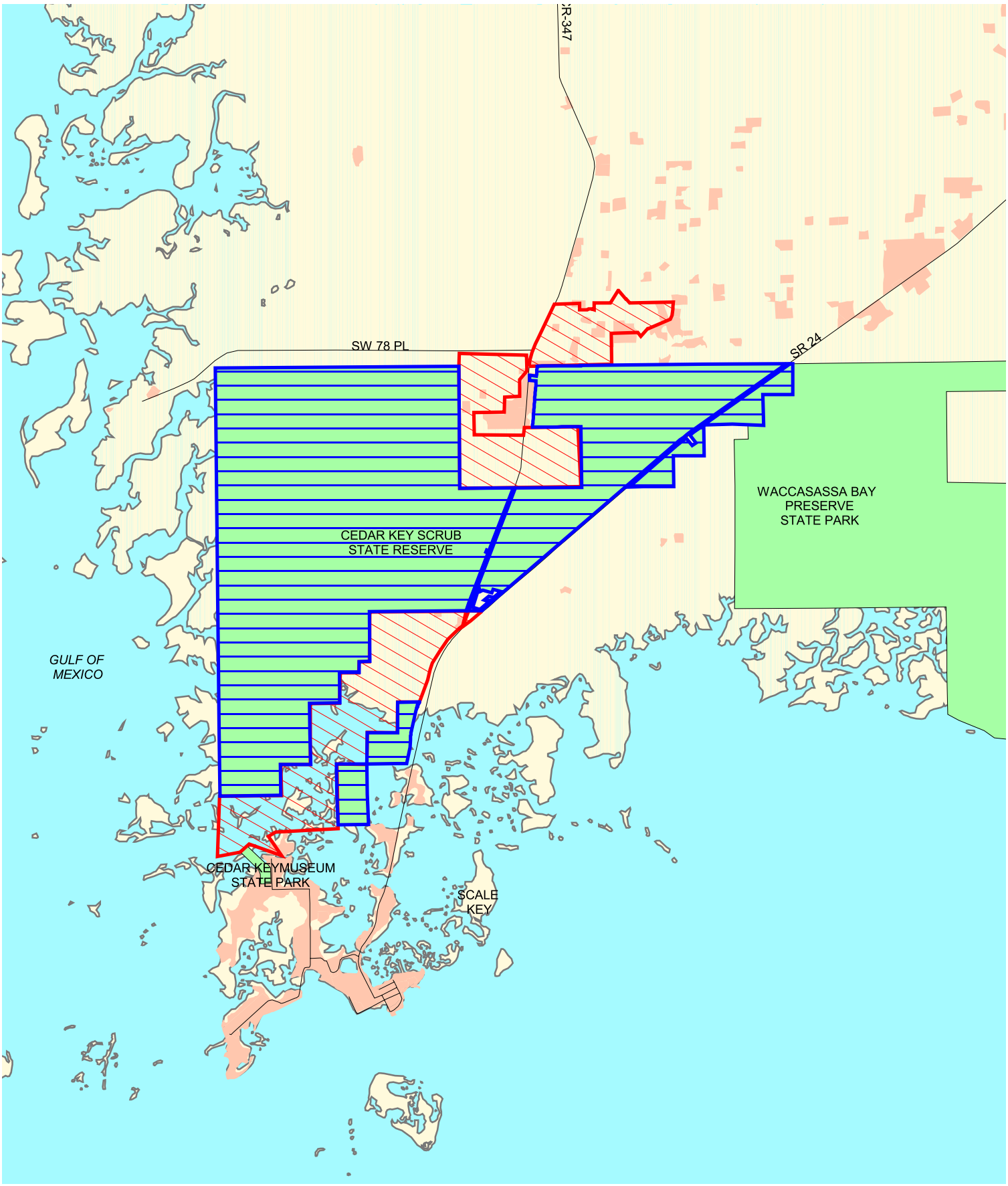
Note: Limited by special permits issued by the FFWCC.

The optimum carrying capacity for this park is a preliminary estimate of the number of users the unit could accommodate after the current conceptual development program has been implemented. When developed, the proposed new facilities would approximately increase the unit's carrying capacity as shown in Table 1.

Optimum Boundary

The optimum boundary map reflects lands identified for direct management by the Division as part of the park. These parcels may include public as well as privately owned lands that improve the continuity of existing park lands, provide additional natural and cultural resource protection, and/or allow for future expansion of recreational activities. 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. At this time, no lands are considered surplus to the needs of the park. Identification of lands on the optimum boundary map is solely for planning purposes and not for regulatory purposes. A property's identification on the optimum boundary map is not for use by any party or other government body to reduce or restrict the lawful right of private landowners. Identification on the map does not empower or require any government entity to impose additional or more restrictive environmental land use or zoning regulations. Identification is not to be used as the basis for permit denial or the imposition of permit conditions.

The parcels identified for the optimum boundary of Cedar Key Scrub State Reserve include approximately 1,000 acres to the south and 270 acres adjacent to the northeastern boundary. These areas are recommended for addition to the park to enhance management and conserve desirable natural resources and for connectivity to lands already under management by the reserve. The latter area, which is largely made up of scrub and scrubby flatwoods, would greatly enhance the prospects for the long-term survival of the scrub-jay and other scrub endemics within the reserve basin.



CEDER KEY SCRUB STATE RESERVE

OPTIMUM BOUNDARY MAP

Addendum 1—Acquisition History

Sequence of Acquisition

The Board of Trustees of the Internal Improvement Trust Fund of the State of Florida (Trustees) acquired Cedar Key Scrub State Reserve to manage the property in such a way as to protect and restore the natural and cultural values of the property and provide the greatest benefit to the citizens of the state.

On December 27, 1978, the Trustees purchased the property constituting the initial area of Cedar Key Scrub State Reserve. The purchase was funded with EEL bond proceeds. On March 12, 2003, the Division of Recreation and Parks (DRP) leased additional property from the United States Marshals Service for management as part of Cedar Key Scrub State Reserve.

On June 21, 1984, the Trustees leased Cedar Key Scrub State Reserve to a multiple agency management consisting of the DRP; the Department of Agriculture and Consumer Services, Division of Forestry (DOF); and the Florida Fish and Wildlife Conservation Commission (FFWCC), under Management Agreement No. 745-9004. This management agreement is for a period of twenty (20) years, and it will expire on June 20, 2004. In 1988, the Trustees changed Management Agreement No. 745-004 to a new lease, Lease No. 3568, without changing any of the terms and conditions of the management agreement.

According to Lease No. 3568, the DRP is the primary managing agency for Cedar Key Scrub State Reserve. As such, the DRP coordinates and oversees activities in the reserve. The reserve is managed in accordance with a management plan for the property. The plan states that DRP provides public recreation, FFWCC provides specific management recommendation and protection for all wildlife and FOA provides advice and on-site assistance to the DRP in implementing prescribe burning and oversee timber planting and harvesting.

Title Interest

The Trustees hold fee simple title of Cedar Key Scrub State Reserve.

Special Conditions on Use

Uses such as water resource development projects, water supply projects, stormwater management projects, linear facilities and sustainable agriculture and forestry (other than those management and recreational activities specifically identified in this plan) are not consistent with this plan or the management purposes of the reserve.

Outstanding Reservations

Following is a listing of outstanding rights, reservations, and encumbrances that apply to the reserve.

Instrument:.....Warranty Deed
Instrument Holder:.....Joseph M. Messana
Beginning Date:.....December 27, 1978
Ending Date:.....Forever
Outstanding Rights, Uses, Etc.: .....The deed is subject to easements for road right of way,

drainage, borrow pits and haul roads, utility, rights of public to use the beach.

Instrument: .....Right of Way Easement
Instrument Holder: .....Joseph M. Messana
Beginning Date: .....February 27, 1975
Ending Date: .....No specific date is given
Outstanding Rights, Uses, Etc.: .....The easement allows the Central Florida Electric Cooperative, Inc. to construct, operate, and maintain an electric distribution system on a portion of the property.

Instrument: .....Easement
Instrument Holder: .....Cedar Keys Company
Beginning Date: .....August 14, 1968
Ending Date: .....No specific date is given
Outstanding Rights, Uses, Etc.: .....The easement allows the Central Florida Electric Cooperative, Inc. to construct, operate, and maintain an electric distribution system on a portion of the property.

Instrument: .....Drainage Easement
Instrument Holder: .....Cedar Key Company
Beginning Date: .....August 31, 1955
Ending Date: .....Perpetual
Outstanding Rights, Uses, Etc.: .....The easement allows the State Road Department of Florida to construct and maintain outfall and drainage ditches on the property.

Instrument: .....Permit
Instrument Holder: .....Wm. H. Hale, and Ida L. Hale
Beginning Date: .....May 1, 1942
Ending Date: .....No specific date is given
Outstanding Rights, Uses, Etc.: .....The permit allows the Southern Bell Telephone and Telegraph Company to construct, operate, and maintain telephone lines on a portion of said property.

Instrument: .....Easement
Instrument Holder: .....E. G. Baxter
Beginning Date: .....November 17, 1926
Ending Date: .....Perpetual
Outstanding Rights, Uses, Etc.: .....The easement allows the State Road Department of Florida right of way to locate and construct part of State Road 13 on a portion of said property.

Danny Stevens, Chairman
Levy County Board of County Commissioners
Post Office Box 310
Bronson, Florida 32621

Ms. Kathy Winburn
Levy County Planning Department
PO Box 1373
Bronson, FL 32621

The Honorable Ken Daniels
Mayor, City of Cedar Key
Post Office Box 339
Cedar Key, Florida 32625
(352) 543-5132

Ms. Sue Colson
Cedar Key City Commission
Cedar Key Aquaculture Association Board
PO Box 376
Cedar Key, FL 32625

Jeff DiMaggio, Park Manager
Cedar Key Scrub State Reserve
Post Office Box 187
Cedar Key, Florida 32625

Desiree Mills, Chair
Levy Soil and Water Conservation District
Post Office Box 37
Bronson, Florida 32621

Don West, Center Manager
The Waccasassa Forestry Center
1600 Northeast 23rd Avenue
Gainesville, Florida 32609

Mr. DeWitt Watson
Division of Forestry
5450 N Hwy 19
Chiefland, FL 32626

Vic Doig, Biologist
Florida Fish & Wildlife Conservation Commission
9550 Northwest 160th St.
Trenton, Florida 32693

Mr. Charlie Houder
Suwannee River Water Management District
9225 County Road 49
Live Oak, Florida 32060

Mr. Terry Demott
Suwannee River Water Management District
9225 CR 49
Live Oak, FL 32066

Ken Litzenberger, Refuge Manager
Lower Suwannee National Wildlife Refuge
16450 Northwest 31st Place
Chiefland, Florida 32626

Mr. Mike Mitchell
Lower Suwannee National Wildlife Refuge
16450 Northwest 31st Place
Chiefland, Florida 32626

Lannie Cardona, Executive Director
Nature Coast Economic Development Council
Post Office Box 1112
Bronson, Florida 32621

Mr. George Griffin
Suwannee Audubon
Post Office Box 222
Old Town, Florida 32680

Rob Crane, President
Florida Nature Coast Conservancy
Post Office Box 401
Cedar Key, Florida 32625

Linda Pollini, Chair
Sierra Club, Suwannee-St. John's Group
Post Office Box 13951
Gainesville, Florida 32604

Elizabeth Van Mierop, Interim Chair
Florida Trails Association, Florida Crackers Chapter
2130 Southwest 43rd Place
Gainesville, Florida 32608

Dave Wilson, President
Levy county Horse Club
PO Box 2631
Chiefland, Florida 32644-2631

Brack Barker, Owner
Wild Florida Adventures
Post Office Box 626
Williston, Florida 32696

Mr. Greg Galpin
Plum Creek Timber Company
Post Office Box 157
Gulf Hammock, Florida 32639

Ms. Helen Pankratz-Koehler
1950 SE 111th Court
Morriston, FL 32668

Mr. Mike Crews
PO Box 1061
Alachua, FL 32616

Ms. Margy VanLandingham
PO Box 958
Cedar Key, FL 32625

The Advisory Group appointed to review the proposed land management plans for Cedar Key Scrub State Reserve and Waccasassa Bay Preserve State Park was held at the Cedar Key Museum State Park, on January 22, 2004. Mr. Danny Stevens, Ms. Desiree Mills, Mr. Charlie Houder, Mr. Ken Daniels, Ms. Elizabeth Van Mierop, Mr. Rob Crane, Ms. Linda Pollini, and Mr. Greg Galpin did not attend. Mr. Dave Wilson represented Ms. Ann Sharkey, Ms. Sue Colson represented Mr. Ken Daniels, Ms. Kathy Winborn represented Mr. Danny Stevens, Mr. Mike Mitchell represented Mr. Ken Litzenberger, and Mr. DeWitt Watson represented Mr. Don West. All other appointed Advisory Group members were present. Attending staff were Mr. Jeff DiMaggio, Mr. Dan Pearson, Ms. KC Bloom, and Mr. Charles Neese. Ms. Helen Pankratz-Koehler, Mr. Mike Crews, and Ms. Margy VanLandingham attended as interested citizens.

Ms. Bloom began the meeting by explaining the purpose of the advisory group and reviewing the meeting agenda. She also provided a brief overview of the Division's planning process and summarized public comments received during the previous evening's public workshop and written comments submitted by non-attending members of the Advisory Group. She then asked each member of the advisory group to express his or her comments on the plan.

Summary Of Advisory Group Comments

Ms. Sue Colson, in representing her views based upon her representation of the city of Cedar Key and as a member of the Cedar Key Aquaculture Association Board, stated that she would split her comments into two parts. First, as a representative of the city of Cedar Key, **Ms. Colson** stated that she had concerns regarding our information particularly on page 16 of the plan. She continued that in terms of storm water management, the city of Cedar Key has applied over $900,000 toward some of the problems. The city has eradicated the use of septic tanks and has started a storm water retention program using storm scepters. There is also a pump out station on the county dock and the county is working on maintaining the water quality of the region. As a representative of the Aquaculture Association, **Ms. Colson** stressed that the Scrub and Waccasassa are vital in maintaining the region's water quality. She expressed concern with the projected numbers of canoists/kayakers in the plans because of the potential for their using the land within Waccasassa Bay for bathroom activities and the potential water quality problems associated with them. She stressed the importance of interpretation and education for our park visitors so that they develop an awareness of the importance of good water quality to the clam industry and region. **Ms. Colson** suggested that any canoe/kayak trails and trips be managed based on a reservation system to help track the number of users within the area. She provided that the parks are doing a great job in terms of burning and restoring scrub jay habitat. **Ms. Colson** expressed disappointment in the state's land acquisition programs. She stated that as a former Water Management District board member, she was involved in numerous state acquisitions but that the current appraisal system does not work in that it doesn't allow for any flexibility. She expressed disappointment that the state has not yet found a way to purchase the Thompson tract.

Mr. Vic Doig stated that **Ms. Colson** made some excellent points about flaws in the state system. He continued that the highest priority for Cedar Key Scrub and Waccasassa should be the addition of more staff. He stated that while Jeff is doing a great job as manager, having 2 staff members actively managing the two properties is not enough**. Mr. Doig** would like to see the properties continue to focus on habitat management and protection. The scrub jay population is in need of help and if the reserve can keep restoring its habitat that would be a positive thing.

The state also needs to work at protecting more of the scrub jay habitat in this area through acquisition, easements and any other available means. He also stated that he thinks that the plans are strong but could incorporate more information about projects related to non-game species such as minks.

Mr. DeWitt Watson provided that in terms of forestry, the plans entail several things DOF would be willing to be a part of including burning and maintaining fire breaks. He commended the parks on their burning over the last few years. **Mr. Watson** stated that forestry would be glad to help the parks in anyway. **Mr. DiMaggio** thanked **Mr. Watson** for the Division of Forestry's help.

Mr. Dave Wilson stated his support for the park plans. As president of the Levy County Horse Club, Mr. Wilson expressed his support for increasing the number of equestrian trails in the Scrub. He provided that equestrians spend significant amounts of money in local areas when they go on trail rides. Mr. Wilson stated that the Horse Club would be happy to assist the Division in the development of more equestrian trails. He also suggested that the parking areas at the trailheads be increased to provide better access for horse trailers. Mr. DiMaggio stated that the Division was looking at developing pull-through parking areas at the trailheads and would be happy to accept any help in the development of additional trails.

Mr. George Griffin stated that he thought the plans were thorough and well-focused. He felt that **Ms. Colson** also made some excellent points. He also stated that he didn't notice the salt marsh vole on the species list for Waccasassa. **Mr. Pearson** explained that the vole has not been found in the park's boundary, even though it has been spotted in the vicinity. **Mr. Mitchell** added that they have identified some possible vole habitat at the Lower Suwannee National Wildlife Refuge and are currently studying it.

Mr. Terry Dumont stated that the Water Management District could help us with water quality data in the region, especially on the NATC Gulf Hammock Conservation Easement on the north end of Waccasassa. He described some of his work with the Plum Creek Timber Company on easements up the Waccasassa River and on Otter Creek. **Ms. Bloom** thanked **Mr. Dumont** for sharing his information.

Mr. Mike Mitchell, as the representative for **Mr. Ken Litzenberger**, stated **that Mr. Litzenberger** was in favor of the two plans. He stated that the parks are doing some very positive things in terms of restoration especially given the limited staffing.

Mr. Brack Barker stated that his company, Wild Florida Adventures, is Leave-No-Trace (LNT) certified and practices LNT techniques throughout their travels. He provided that he would like to see the proposed campsites in the Waccasassa plan be included in a paddling trail like the Big Bend paddling trail that is being developed by the Fish & Wildlife Conservation Commission. He also suggested that the Division adopt LNT ethics for use at the campsites.

Mr. Lannie Cardona provided that he would like to see the Division work with the county to get the US Department of the Interior to transfer the lease on a 460 acre property that is within Waccasassa's boundary from the county to the state. He stated that the county does not have the capabilities to manage it as well as the state could. **Mr. Cardona** asked how the Division gets its visitation and economic impact data. **Mr. DiMaggio** explained how he measures the visitation

levels at the parks and **Ms. Bloom** discussed the process for developing the economic impact data. **Mr. Cardona** then stated that the Division should proceed with increasing the amount of interpretation available at the parks because of its value to the park visitor/tourists. He believes that the Division should work with FWCC to develop a new paddling trail in the region and include the proposed Waccasassa campsites within the trail. **Mr. Cardona** expressed his support for the parks and discussed their importance to the water quality of the region.

Ms. Kathy Winburn stated that she supports the park plans. She expressed concerns that the plans don't discuss the current status of properties listed as optimum boundary**. Ms. Bloom** explained the optimum boundary/land acquisition process and discussed the various funds involved in the purchase of state lands.

Summary Of Public Comments

Ms. Helen Pankratz-Koehler stated that, as a member of the Levy County Tourism Development Council Board, she recognized the importance of nature-based tourism and how tourism is a mixed-blessing to a county that has been designated rural by the legislature. She continued that the parks, national wildlife refuge and state forest are important features which will help make Levy County a destination. **Ms. Pankrantz-Koehler** remarked that she was glad to see the Division looking at increasing the number of equestrian trails in the Scrub and stated that she, along with the Levy County Horse Club, would be happy to help the park develop the trails. She gave a CD focusing on equestrian issues (from the equestrian conference in Gainseville) to **Ms. Bloom** for her information and use in planning. **Ms. Pankrantz-Koehler** stated that she would like to see additional stabilized parking at the trailheads as well as for better tracking of the economic impacts of equestrians on the parks and in the local economies. **Ms. Bloom** thanked **Ms. Pankrantz-Koehler** for her information.

Ms. Margy Van Landingham stated that as a member of the Friends of Cedar Key Environmental Group, she would like to see the area potentially designated as an Area of Critical Concern for the state. She believes that because the area has such a fragile environment and is not already highly developed, the designation could help the county retain its rural nature while opening additional state resources to the area. **Ms. Van Landingham** supports the state's efforts in habitat management and restoration. She stated her support for the acquisition of optimum boundary lands around the park and reserve.

Mr. Mike Crews had no comment.

The meeting was then adjourned.

Staff Recommendation

A number of excellent discussions took place during the Advisory Group meeting. With minor revisions, staff recommends approval of the management plan as submitted.

Addendum 2—References Cited

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Addendum 3—Soils Descriptions

(3) Orsino fine sand, 0 to 8 percent slopes - This unit consists of moderately well-drained, very deep Orsino soils. These nearly level to gently rolling soils are on dunes and ridges. Typically, the surface layer is gray fine sand and extends to a depth of 8 inches. The subsurface layer is fine sand and extends to a depth of about 13 inches. It is very pale brown in the upper 4 inches, and white below. The subsoil is fine sand and extends to a depth of about 70 inches. It is brownish yellow to a depth of about 48 inches, light yellowish brown to a depth of about 58 inches, and brownish yellow below that. The underlying material is white fine sand.

(5) Immokalee fine sand - This unit consists of poorly drained, very deep Immokalee soils. These nearly level soils are in flatwoods areas. Typically, the surface layer is very dark gray fine sand, and extends to a depth of about 9 inches. The subsurface layer is fine sand and extends to a depth of about 38 inches. It is gray in the upper 16 inches, and light gray below that. The subsoil extends to beyond a depth of 80 inches. It is very dark grayish brown, organically coated fine sand to a depth of about 43 inches, and dark brown fine sand below that.

(11) Placid and Samsula soils, depressional - This unit consists of very poorly drained, very deep Placid and Samsula soils. These nearly level, ponded soils are on depressions. Typically, the surface layer of the Placid soil extends to a depth of about 14 inches. It is black muck in the upper 3 inches, and very dark gray fine sand below. The underlying material extends beyond a depth of 80 inches. It is light gray fine sand to a depth of about 24 inches, brown fine sand to a depth of about 45 inches, and very pale brown fine sand below that. Typically, the surface layer of the Samsula soil extends to a depth of about 80 inches. It is dark brown muck in the upper 6 inches, and black muck below that to a depth of 47 inches. The underlying material extends beyond a depth of 80 inches. It is grayish brown fine sand in the upper 15 inches, and light brownish gray fine sand below that.

(13) Wekiva fine sand - This unit consists of poorly drained, shallow to moderately deep Wekiva soils. These nearly level soils are on low ridges. Typically, the surface layer is 4 inches thick and very dark gray fine sand. The subsurface layer is grayish brown fine sand to a depth of 9 inches. Below this, the subsoil is yellowish brown sandy clay loam to 18 inches and underlain by limestone bedrock.

(23) Zolfo sand - This unit consists of somewhat poorly drained, very deep Zolfo soils. These nearly level soils are on low ridges and knolls in flatwoods. Typically, the surface layer is very dark gray sand, and is about 4 inches thick. The subsurface layer extends to a depth of about 71 inches. It is pale brown sand to a depth of about 8 inches, gray sand to a depth of about 32 inches, pale brown sand to a depth of about 65 inches, and light brownish gray sand below that. The subsoil layer extends from a depth of 71 inches to beyond a depth of 80 inches. It is very dark grayish brown, organically coated sand.

(33) Wulfert muck, frequently flooded - This unit consists of very poorly drained, very deep Wulfert soils. These nearly level, frequently flooded soils are on areas of tidal marsh. Typically, the surface layer is very dark brown muck, and is about 30 inches thick. The underlying material extends to beyond a depth of 80 inches. It is very dark gray mucky, loamy fine sand to a depth of about 56 inches, and very dark gray fine sand below that.

(37) Myakka mucky sand, occasionally flooded - This unit consists of poorly drained, very deep Myakka soils. These nearly level, occasionally flooded soils are on areas of flatwoods that are adjacent to the tidal marsh or the Suwannee River flood plain. Typically, the surface layer is about 10 inches thick. It is black muck in the upper 2 inches, and very dark gray mucky sand below that. The subsurface layer is gray sand and extends to a depth of about 21 inches. The subsoil extends from a depth of 21 inches to beyond a depth of 80 inches. It is very dark gray sand in the upper 19 inches, and very dark grayish brown sand below that.

(38) Myakka sand - This unit consists of poorly drained, very deep Myakka soils. These nearly level soils are on areas of flatwoods. Typically, the surface layer is very dark gray sand, and is about 5 inches thick. The subsurface layer extends to a depth of about 26 inches. It is grayish brown sand in the upper 13 inches, and light gray sand below that. The subsoil layer is organically coated sand, and extends to a depth of about 58 inches. It is black in the upper 14 inches, and very dark gray below that. The underlying material extends from a depth of 58 inches to beyond a depth of 80 inches. It is pale brown sand.

(43) Tidewater mucky clay, frequently flooded - This unit consists of very poorly drained, deep to very deep Tidewater soils. These nearly level, frequently flooded soils are on areas of tidal marsh. Typically, the surface layer extends to a depth of about 40 inches. It is very dark brown mucky clay to a depth of about 10 inches, black silty clay to a depth of about 24 inches, and black sandy clay loam below that. The underlying material extends from a depth of 40 inches to a depth of 76 inches. It is a mixture of black and very dark grayish brown loamy fine sand. Limestone bedrock is at a depth of 76 inches.

Addendum 4—Plant And Animal List

Cedar Key Scrub State Reserve

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
	PTERIDOPHYTES	
Giant leather fern	*Acrostichum danaeifolium*	
Florida shield fern	*Dryopteris ludoviciana*	
Clubmoss	*Lycopodium prostratum*	
Cinnamon fern	*Osmunda cinnamomea*	35
Royal fern	*Osmunda regalis*	35
Golden polypody	*Phlebodium aureum*	
Resurrection fern	*Polypodium polypodiodes*	
Bracken fern	*Pteridium aquilinum*	
Marsh fern	*Thelypteris palustris*	
Netted chain fern	*Woodwardia areolata*	
Virginia chain fern	*Woodwardia virginica*	
	GYMNOSPERMS	
Southern red cedar	*Juniperus virginiana*	
Sand pine	*Pinus clausa*	
Slash pine	*Pinus elliottii*	
Longleaf pine	*Pinus palustris*	
Pond cypress	*Taxodium ascendens*	
Bald cypress	*Taxodium distichum*	
Coontie	*Zamia pumila*	15
	ANGIOSPERMS	
MONOCOTS		
White colic-root	*Aletris obovata*	
Florida bluestem	*Andropogon floridanus*	
Bushy bluestem	*Andropogon glomeratus*	
Splitbeard bluestem	*Andropogon tenarius*	
Broomsedge	*Andropogon virginicus*	
Nodding nixie	*Apteria aphylla*	
Jack-in-the-pulpit	*Arisaema triphyllum*	
Wiregrass	*Aristida beyrichiana*	
Slimspike threeawn	*Aristida longesp*ica	
Arrowfeather	*Aristida purpurescens*	
Bottlebrush threeawn	*Aristida spiciformis*	
Capillary hair sedge	*Bulbostylis ciliatifolia*	
Blue thread	*Burmannia biflora*	
Bearded grass pink	*Calopogon barbatus*	8
Many flowered pink grass	*Calopogon multiflorous*	8
Grass pink	*Calopogon tuberosus*	
Sedge (unnamed)	*Carex alata*	
Sedge (unnamed)	*Carex leptalea*	
Coast sandspur	*Cenchrus incertus*	

* Non-native Species

Cedar Key Scrub State Reserve

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Longleaf chasmanthium	*Chasmanthium sessiliflorum*	
Sawgrass	*Cladium jamaicense*	
Erect dayflower	*Commelina erecta*	
Marshland flat sedge	*Cyperus distinctus*	
Sedge (unnamed)	*Cyperus erythrorhizos*	
Haspan flatsedge	*Cyperus haspan*	
Texas sedge	*Cyperus polystachyos*	
Cylindric sedge	*Cyperus retrorsus*	
Straw-color flat sedge	*Cyperus strigosus*	
Needleleaf witchgrass	*Dichanthelium aciculare*	
Variable witchgrass	*Dichanthelium commutatum*	
Cypress witchgrass	*Dichanthelium dichotomum*	
Erectleaf witchgrass	*Dichanthelium erectifolium*	
Hemlock witchgrass	*Dichanthelium portoricense*	
Roughhair witchgrass	*Dichanthelium strigosum*	
Saltgrass	*Distichlis spicata*	
Coast cockspur	*Echinochloa walteri*	
White spikerush	*Eleocharis albida*	
Roadgrass	*Eleocharis baldwinii*	
Creeping spikerush	*Eleocharis elongata*	
Pale spikerush	*Eleocharis flavescens*	
Viviparous spikerush	*Eleocharis vivipara*	
Mediterranean lovegrass	*Eragrostis barrelieri* *	
Fortyflower lovegrass	*Eragrostis cumingii*	
Elliott lovegrass	*Eragrostis elliotii*	
Big top love grass	*Eragrostis hirsuta*	
Centipede grass	*Eremochloa ophiuroides* *	
Sugarcane plume grass	*Erianthus giganteus*	
Pipewort	*Eriocaulon compressum*	
Hardheaded pipewort	*Eriocaulon decangulare*	
Pipewort	*Eriocaulon ravenelii*	
unnamed	*Erythrodes querceticola*	
Saltmarsh fingergrass	*Eustachys glauca*	
Rock fingergrass	*Eustachys petreae*	
Fringerush	*Fimbristylis puberula*	
Fringerush	*Fimbristylis spadicea = castanea*	
Short-bristled umbrella grass	*Fuirena breviseta*	
Rush fuirena	*Fuirena scirpoides*	
Umbrella grass	*Fuirena squarrosa*	
Green-cross orchid	*Habenaria odontopetala*	
Spider lily	*Hymenocallis crassifolia*	
Common star grass	*Hypoxis juncea*	
Prairie iris	*Iris hexagona*	
Two-parted rush	*Juncus dichotomus*	

* Non-native Species

Cedar Key Scrub State Reserve

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Bog rush	*Juncus elliottii*	
Shore rush	*Juncus marginatus*	
Large-headed rush	*Juncus megacephalus*	
Many headed rush	*Juncus polycephallis*	
Needle rush or Black rush	*Juncus roemerianus*	
Needlepod rush	*Juncus scirpoides*	
Redroot	*Lachnanthes caroliniana*	
Little white bog-button	*Lachnocaulon anceps*	
Tall liparis	*Liparis nervosa*	25
Goldcrest	*Lophiola americana*	
Florida malaxis orchid	*Malaxis spicata*	
Wrinkled jointtail	*Manisuris rugosa*	
Twoflower melic	*Melica mutica*	
Wood grass	*Oplismenus hirtellus*	
Beaked panicum	*Panicum anceps*	
Fringed panicum	*Panicum ciliatum*	
Maidencane	*Panicum hemitomon*	
Redtop panicum	*Panicum rigidulum*	
Bluejoint panicum	*Panicum tenerum*	
Switchgrass	*Panicum virgatum*	
Field paspalum	*Paspalum laeve*	
Pensacola Bahia grass	*Paspalum notatum* *	
Early paspalum	*Paspalum praecox*	
Thin paspalum	*Paspalum setaceum*	
Vasey grass	*Paspalum urvillei*	
Seashore paspalum	*Paspalum vaginatum*	
Green arum	*Peltandra virginica*	
Carolina canarygrass	*Phalaris caroliniana*	
Southern tubercled orchid	*Platanthera flava*	25
Rose pogonia	*Pogonia ophioglossoides*	
Pickerelweed	*Pontederia cordata*	
White-top sedge	*Rhynchospora colorata*	
Clustered beakrush	*Rhynchospora fascicularis*	
Beakrush (unnamed)	*Rhynchospora intermedia*	
Inundated beakrush	*Rhynchospora inundata*	
Largefruited beakrush	*Rhynchospora megalocarpa*	
Beakrush (unnamed)	*Rhynchospora microcephala*	
Millet beakrush	*Rhynchospora miliacea*	
Wire-grass beakrush	*Rhynchospora plumosa*	
Beakrush (unnamed)	*Rhynchospora rariflora*	
Beakrush (unnamed)	*Rhynchospora tracyi*	
Sabal palm	*Sabal palmetto*	
American cupscale	*Sacciolepis striata*	
India cupscale	*Sacciolepis indica* *	

*** Non-native Species**

Cedar Key Scrub State Reserve

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Slender arrowhead	*Sagittaria graminea*	
Arrowroot	*Sagittaria lancifolia*	
Lizard's tail	*Saururus cernuus*	
Little bluestem	*Schizachyrium scoparium*	
Nutgrass (unnamed)	*Scleria ciliata*	
Nutgrass (unnamed)	*Scleria reticularis*	
Tall nutgrass	*Scleria triglomerata*	
Nutgrass (unnamed)	*Scleria verticillata*	
Saw-palmetto	*Serenoa repens*	
Coastal foxtail	*Setaria corrugata*	
Knotroot foxtail	*Setaria geniculata*	
Coral foxtail	*Setaria macrosperma*	
Blue-eyed grass	*Sisyrinchium atlanticum*	
Greenbriar	*Smilax auriculata*	
Saw green-briar	*Smilax bona-nox*	
Wild sarsaparilla	*Smilax glauca*	
Bamboo briar	*Smilax laurifolia*	
Bristly greenbrier	*Smilax tamnoides*	
Lopsided Indian grass	*Sorghastrum secundum*	
Saltmarsh cordgrass	*Spartina alterniflora*	
Sand cordgrass	*Spartina bakeri*	
Marshhay cordgrass	*Spartina patens*	
Gulf cordgrass	*Spartina spartinae*	
Prairie wedgescale	*Sphenolepis obtusata*	
Grassleaved ladies tresses	*Spiranthes praecox*	
Virginia dropseed	*Sporobolus virginicus*	
St. Augustine grass	*Stenotaphrum secundatum*	
Bantam buttons	*Syngonanthus flavidulus*	
Bartram's airplant	*Tillandsia bartramii*	
Small ball-moss	*Tillandsia recurvata*	
Spanish moss	*Tillandsia usneoides*	
Arrowgrass	*Triglochin striata*	
Perennial sand grass	*Triplasis americana*	
Eastern gamagrass	*Tripsacum dactyloides*	
Southern cattail	*Typha domingensis*	
Common six-week grass	*Vulpia octoflora*	
Morning yellow-eyed grass	*Xyris ambigua*	
Leaved yellow-eyed grass	*Xyris brevifolia*	
Carolinia yellow-eyed grass	*Xyris caroliniana*	
Pink-leaved yellow-eyed grass	*Xyris difformis*	
Thin-leaved yellow-eyed grass	*Xyris elliottii*	
One-stemmed yellow-eyed grass	*Xyris flabelliformis*	
Common yellow-eyed grass	*Xyris jupicai*	
Spanish bayonet	*Yucca aloifolia* *	

* **Non-native Species**

Cedar Key Scrub State Reserve

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
DICOTS		
Three-seeded mercury	*Acalypha gracilens*	
Southern red maple	*Acer rubrum*	
Creeping spotflower	*Acmella oppositifolia*	
Joint-vetch	*Aeschynomene viscidula* *	
Pineland false-foxglove	*Agalinis divaricata*	
Fine-leaf agalinus	*Agalinis filifolia*	
Flax-leaved agalinis	*Agalinis linifolia*	
Seaside agalinis	*Agalinis maritima*	
Tenlobe false foxglove	*Agalinis obtusifolia*	
Smooth agalinis	*Agalinis purpurea*	
False moneywort	*Alysicarpus vaginalis*	
Sauer giant amaranth	*Amaranthus australis*	
Common ragweed	*Ambrosia artemisiifolia*	
Toothcups	*Ammannia latifolia*	
False indigo-bush	*Amorpha fruticosa*	
Pepper vine	*Ampelopsis arborea*	
Texas anemone	*Anemone berlandieri*	81
Groundnut	*Apios americana*	
Marsh parsley	*Apium leptophyllum*	
Red milkweed	*Asclepias lanceolata*	
Pedicillate milkweed	*Asclepias pedicellata*	
Aquatic milkweed	*Asclepias perennis*	
Velvet-leaf milkweed	*Asclepias tomentosa*	
Dwarf pawpaw	*Asimina pygmaea*	
Climbing aster	*Aster carolinianus*	
Bushy aster	*Aster dumosus*	
Annual marsh aster	*Aster subulatus*	
Perennial salt marsh aster	*Aster tenuifolius*	
Whitetopped aster	*Aster tortifolius*	
Comb oakleach	*Aureolaria pedicularia*	
Black mangrove	*Avicennia germinans*	
Falsewillow	*Baccharis angustifolia*	
Stalkless groundsel bush	*Baccharis glomeruliflora*	
Salt bush	*Baccharis halimifolia*	
Blue hyssop	*Bacopa caroliniana*	
Smooth water-hyssop	*Bacopa monnieri*	
Yellow buttons	*Balduina angustifolia*	
Saltwort	*Batis maritima*	
Tarflower	*Befaria racemosa*	
Rattan vine	*Berchemia scandens*	
Common beggar-ticks	*Bidens alba*	
Beggartick	*Bidens mitis*	
Mears samphire	*Blutaparon vermiculare*	

* Non-native Species

Cedar Key Scrub State Reserve

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
False nettle	*Boehmeria cylindrica*	
Doll's daisy	*Boltonia diffusa*	
Sea oxeye	*Borrichia frutescens*	
Blueheart	*Buchnera americana*	
Saffron plum	*Bumelia celastrina*	
Florida bully	*Bumelia reclinata*	
Buckthorn	*Bumelia rufotomentosa*	
American beautyberry	*Callicarpa americana*	
Florida bellflower	*Campanula floridana*	
Trumpet-creeper	*Campsis radicans*	
Deer tongue	*Carphephorus corymbosus*	
Vanilla plant	*Carphephorus ordoratissimus*	
Pignut hickory	*Carya glabra*	
Sugar hackberry	*Celtis laevigata*	
Coinwort	*Centella asiatica*	
Climbing butterfly pea	*Centrosema virginianum*	
Buttonbush	*Cephalanthus occidentalis*	
Rosemary	*Ceratiola ericoides*	
Partridge pea	*Chamaecrista fasciculata*	
Wild sensitive plant	*Chamaecrista nictitans*	
Eyebane	*Chamaesyce hyssopifolia*	
Milk purslane	*Chamaesyce maculata*	
Rough leaf goldenaster	*Chrysopsis scabrella*	
Horrid thistle	*Cirsium horridulum*	
Nuttall's thistle	*Cirsium nuttallii*	
Butterfly-pea	*Clitoria mariana*	
Tread sotly	*Cnidosculus stimulosus*	
Blue mistflower	*Conoclinium coelestinium*	
Horseweed	*Conyza canadensis*	
Dye flower	*Coreopsis basilis* *	
Common tickseed	*Coreopsis leavenworthii*	
Swamp dogwood	*Cornus foemina*	
Rabbitbells	*Crotalaria rotundifolia*	
Tropical croton	*Croton glandulosus*	
Rushfoil	*Crotonopsis linearis*	
Compact dodder	*Cuscuta compacta*	
Coastal cynanchum	*Cynanchum angustifolium*	
Western tansy-mustard	*Descurainia pinnata*	
Tickclover	*Desmodium incanum*	
Panicled tick-trefoil	*Desmodium paniculatum*	
Rough buttonweed	*Diodia teres*	
Persimmon	*Diospyros virginiana*	
Pink sundew	*Drosera capillaris*	
Water sundew	*Drosera intermedia*	8

* Non-native Species

Cedar Key Scrub State Reserve

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Florida elephant's foot	*Elephantopus elatus*	
Fireweed	*Erechtites hieracifolia*	
Southern fleabane	*Erigeron quercifolius*	
Daisy fleabane	*Erigeron strigosus*	
Marsh fleabane	*Erigeron vernus*	
Corn snakeroot	*Eryngium aquaticu*m	
Fragrant eryngium	*Eryngium aromaticum*	
Matted button snakeroot	*Eryngium baldwinii*	
Rattlesnake master	*Eryngium yuccifolium*	
Yankeeweed	*Eupatorium compositifolium*	
Falsefennel	*Eupatorium leptophyllum*	
Semaphore eupatorium	*Eupatorium mikanioides*	
Mohr's eupatorium	*Eupatorium mohrii*	
Boneset	*Eupatorium perfoliatum*	
False hoarhound	*Eupatorium rotundifolium*	
Late thoroughwort	*Eupatorium serotinum*	
Catchfly gentian	*Eustoma exaltatum*	
Flattopped goldenrod	*Euthamia tenuifolia*	
Yellow-top	*Flaveria linearis*	
Florida privet	*Forestiera segregata*	
Cottonweed	*Froelichia floridana*	
Smooth-headed blanket flower	*Gaillardia aestivalis*	
Blanket flower	*Gaillardia pulchella*	
Elliot's milk pea	*Galactia elliottii*	
Florida milk pea	*Galactia regularis*	
Coastal bedstraw	*Galium hispidulum*	
Southern gaura	*Gaura angustifolia*	
Dwarf huckleberry	*Gaylussacia dumosa*	
Dangleberry	*Gaylussacia nana*	
Cranesbill	*Geranium carolinianum*	
Moss Verbena	*Glandularia pulchella* *	
Cudweed	*Gnaphalium falcatum*	
Sweet everlasting	*Gnaphalium obtusifolium*	
Purple cudweed	*Gnaphalium purpureum*	
Scrub hedge hyssop	*Gratiola hispida*	
Hairy hedge hyssop	*Gratiola pilosa*	
Creeping hedge hyssop	*Gratiola ramosa*	
Innocence	*Hedyotis procumbens*	
Clustered bluet	*Hedyotis uniflora*	
Swamp sneezeweed	*Helenium pinnatifidum*	
Pine barren rock-rose	*Helianthemum corymbosum*	
Scrub rock rose	*Helianthemum nashii*	
Narrowleaved sunflower	*Helianthus angustifolius*	
Camphor weed	*Heterotheca subaxillaris*	

* Non-native Species

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Swamp hibiscus	*Hibiscus coccineus*	
Large-head hawkweed	*Hieracium megacephalon*	
Marsh pennywort	*Hydrocotyle umbellata*	
Swamp pennywort	*Hydrocotyle verticillata*	
Skyflower	*Hydrolea corymbosa*	
Short-leaved sandweed	*Hypercicum brachyphyllum*	
St.John's wort	*Hypericum cistifolium*	
Pineweed	*Hypericum gentianoides*	
St. Andrew's cross	*Hypericum hypericoides*	
Dwarf St. John's-wort	*Hypericum mutilum*	
Four-petaled St. John's-wort	*Hypericum tetrapetalum*	
Bittermint	*Hyptis alata*	
Carolina holly	*Ilex ambigua*	
Dahoon holly	*Ilex cassine*	
Gallberry	*Ilex glabra*	
Yaupon holly	*Ilex vomitoria*	
Carolina indigo	*Indigofera caroliniana*	
Florida coastal indigo	*Indigofera miniata*	
Creeping indigo	*Indigofera spicata* *	
Glades morning glory	*Ipomoea sagittata*	
Sharp-pod morning glory	*Ipomoea trichocarpa*	
Standing cypress	*Ipomopsis rubra*	
Virginia sweetspire	*Itea virginica*	
Marsh elder	*Iva frutescens*	
Narrowleaved elder	*Iva microcephala*	
Saltmarsh mallow	*Kosteletzkya virginica*	
Virginia dwarf dandelion	*Krigia virginica*	
Common wild lettuce	*Lactuca graminifolia*	
Thyme-leaved pinweed	*Lechea minor*	
Compact pinweed	*Lechea torreyi*	
Poorman's pepper	*Lepidium virginicum*	
Long-leaf blazing star	*Liatris laevigata*	
Gopher apple	*Licania michauxii*	
Sea lavender	*Limonium carolinianum*	
Blue toadflax	*Linaria canadensis*	
Florida toadflax	*Linaria floridana*	
Florida flax	*Linum floridanum*	
Yellow flax	*Linum medium*	
Sweetgum	*Liquidambar styraciflua*	
Cardinal flower	*Lobelia cardinalis*	35
Coastal plain lobelia	*Lobelia glandulosa*	
White swamp lobelia	*Lobelia paludosa*	
Winged water-primrose	*Ludwigia alata*	
Coastal plain seedbox	*Ludwigia maritima*	

* Non-native Species

Cedar Key Scrub State Reserve

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Tiny seedbox	*Ludwigia microcarpa*	
Christmasberry	*Lycium carolinianum*	
Rusty lyonia	*Lyonia ferruginea*	
Staggerbush	*Lyonia fruticosa*	
Fetterbush	*Lyonia lucida*	
Lance-leaved loosestrife	*Lythrum alatum*	
Saltmarsh loosestrife	*Lythrum lineare*	
Sweetbay	*Magnolia virginiana*	
Angle-pod	*Matelea gonocarpos*	25
Purple-axil flower	*Mecardonia acuminata*	
Hop clover	*Medicago lupulina* *	
Annual yellow sweetclover	*Melilotus indica* *	
Alamo vine	*Merremia dissecta*	
Climbing hempweed	*Mikania cordifolia*	
Climbing hempweed	*Mikania scandens*	
Baby's bath brush	*Mimosa strigillosa*	
Miterwort	*Mitreola petiolata*	
Miterwort	*Mitreola sessilifolia*	
Horsemint	*Monarda punctata*	
Red mulberry	*Morus rubra*	
Wax-myrtle	*Myrica cerifera*	
Watercress	*Nasturtium microphyllum* *	
Waterlily	*Nymphaea odorata*	
Big floating hearts	*Nymphoides aquatica*	
Black gum	*Nyssa biflora*	
Seaside evening primrose	*Oenothera humifusa*	
Prickly-pear cactus	*Opuntia humifusa*	
Prickly-pear cactus	*Opuntia stricta*	35
Wild olive	*Osmanthus americanus*	
Yellow wood-sorrel	*Oxalis florida*	
Water dropwort	*Oxypolis filiformis*	
Many wing polypteris	*Palafoxia integrifolia*	
Sand squares	*Paronychia rugelii*	
Virginia Creeper	*Parthenocissus quinquefolia*	
Many-flower beard tongue	*Penstemon multiflorus*	
Swampbay	*Persea palustris*	
Annual garden phlox	*Phlox drummondii* *	
Red chokeberry	*Photinia pyrifolia*	
Carpetweed	*Phyla nodiflora*	
Abnormal phyllanthus	*Phyllanthus abnormis*	
False dragonhead	*Physostegia virginiana*	
Pokeberry	*Phytolacca rigida*	
Blue butterwort	*Pinguicula caerulea*	8
Yellow butterwort	*Pinguicula lutea*	8

* Non-native Species

Cedar Key Scrub State Reserve

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Small butterwort	*Pinguicula pumila*	
Carolina stripeseed	*Piriqueta caroliniana*	
Silkgrass	*Pityopsis graminifolia*	
Southern plaintain	*Plantago virginica*	
Marsh camphorweed	*Pluchea camphorata*	
Fleabane (unnamed)	*Pluchea foetida*	
Long White Fleabane	*Pluchea longifolia*	
Shrubby camphorweed	*Pluchea odorata*	
Fleabane (unnamed)	*Pluchea rosea*	
(unnamed)	*Polanisia tenuifolia*	
White bachelor's button	*Polygala balduinii*	
Large-flowerer polygala	*Polygala grandiflora*	
Procession flower	*Polygala incarnata*	
Bog bachelor's button	*Polygala lutea*	
Wild bachelor's button	*Polygala nana*	
Racemed milkwort	*Polygala polygama*	
Yellow bachelor's button	*Polygala rugelii*	
Slender milkwort	*Polygala setacea*	
Wireweed	*Polygonella gracilis*	
Mild water-pepper	*Polygonum hydropiperoides*	
Dotted smartweed	*Polygonum punctatum*	
Rustweed	*Polypremum procumbens*	
Pink purslane	*Portulaca pilosa*	
Marsh mermaid weed	*Proserpinaca palustris*	
Mermaid weed	*Proserpinaca pectinata*	
Blackroot	*Pterocaulon pycnostaschyum*	
Mock bishop's-weed	*Ptilimnium capillaceum*	
Carolina false dandelion	*Pyrrhopappus carolinianus*	
Chapman’s oak	*Quercus chapmanii*	
Sand live oak	*Quercus geminata*	
Laurel oak	*Quercus hemisphaerica*	
Turkey oak	*Quercus laevis*	
Diamondleaf oak	*Quercus laurifolia*	
Myrtle oak	*Quercus myrtifolia*	
Running oak	*Quercus pumila*	
Live oak	*Quercus virginiana*	
Pale meadow beauty	*Rhexia mariana*	
Clustered meadow beauty	*Rhexia nashii*	
Nuttall's meadow beauty	*Rhexia nuttallii*	
Coastal plain meadow beauty	*Rhexia petiolata*	
Winged sumac	*Rhus copallina*	
One-leaf rhynchosia	*Rhynchosia michauxii*	
Tropical Mexican clover	*Richardia brasiliensis* *	
Swamp rose	*Rosa palustris*	

* **Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Highbush blackberry	*Rubus argutus*	
Sand blackberry	*Rubus cuneifolius*	
Southern dewberry	*Rubus trivialis*	
Hastate-leaved dock	*Rumex hastatulus*	
Swamp dock	*Rumex verticillatus*	
Ten-petal sabatia	*Sabatia bartramii*	
Coastal rose-gentian	*Sabatia calycina*	
Large-flowered sabatia	*Sabatia grandiflora*	
Sabatia (unnamed)	*Sabatia quadrangula*	
Star sabatia	*Sabatia stellaris*	
Perennial glasswort	*Salicornia virginica*	
Coastal plain willow	*Salix caroliniana*	
Elderberry	*Sambucus canadensis*	
Water pimpernel	*Samolus ebracteatus*	
Pineland pimpernel	*Samolus parviflorus*	
Brazilian pepper	*Schinus terebinthifolius* *	
Sweet broom	*Scoparia dulcis*	
Bladderpod	*Sesbania vesicaria*	
Sea purslane	*Sesuvium portulacastrum*	
Seymeria	*Seymeria pectinata*	
Broomweed	*Sida acuta*	
Sleepy catchfly	*Silene antirrhina*	
Chapman's goldenrod	*Solidago chapmanii*	
Goldenrod	*Solidago fistulosa*	
Seaside goldenrod	*Solidago sempervirens*	
Slender goldenrod	*Solidago stricta*	
Large leaf buttonwood	*Spermacoce assurgens*	
Spreading scaleseed	*Spermolepis divaricata*	
Hedge nettle	*Stachys floridana*	
Sea blite	*Suaeda linearis*	
Golden hoary pea	*Tephrosia chrysophylla*	
Hoary pea	*Tephrosia rugelii*	
Wood sage	*Teucrium canadense*	
Poison ivy	*Toxicodendron radicans*	
Forked bluecurls	*Trichostema dichotomum*	
Low hopclover	*Trifolium campestre*	
White lawn clover	*Trifolium repens* *	
Venus' looking-glass	*Triodanis perfoliata*	
American elm	*Ulmus americana*	
Cedar elm	*Ulmus crassifolia*	35
Horned bladderwort	*Utricularia cornuta*	
Bladderwort	*Utricularia foliosa*	
Floating bladderwort	*Utricularia inflata*	
Purple bladderwort	*Utricularia purpurea*	

* Non-native Species

Cedar Key Scrub State Reserve

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Wet sand bladderwort	*Utricularia subulata*	
Tree sparkleberry	*Vaccinium arboreum*	
Darrow's blueberry	*Vaccinium darrowi*	
Shiny blueberry	*Vaccinium myrsinites*	
Purple-stamen mullen	*Verbascum virginatum**	
European vervain	*Verbena officinalis **	
Harsh verbena	*Verbena scabra*	
Frostweed	*Verbesina virginica*	
Four-leaf vetch	*Vicia acutifolia*	
Bog white violet	*Viola lanceolata*	
Three-lobed violet	*Viola triloba*	
Simpson's grape	*Vitis cinerea*	
Muscadine grape	*Vitis rotundifolia*	

* **Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
	FISHES	
Lined sole	*Achirus lineatus*	56
Sheepshead	*Archosargus probatocephalus*	53, 56
Hardhead catfish	*Arius felis*	53, 56
Southern stargazer	*Astroscopus y-graecum*	56
Gulf menhaden	*Brevoortia patronus*	56
Grass porgy	*Calamus arctifrons*	56
Florida blenny	*Chasmodes saburrae*	56
Striped burrfish	*Chilomycterus schoepfi*	56
Sand seatrout	*Cynoscion arenarius*	56
Spotted seatrout	*Cynoscion nebulosus*	56
Sheepshead minnow	*Cyprinodon variegatus*	56
Atlantic stingray	*Dasyatis sabina*	56
Bluntnose stingray	*Dasyatis say*	56
Sand perch	*Diplectrum formosum*	56
Spottail pinfish	*Diplodus holbrooki*	56
Fringed flounder	*Etropus crossotus*	56
Smallmouth flounder	*Etropus microstomus*	56
Gray flounder	*Etropus rimosus*	56
Silver jenny	*Eucinostomus gula*	56
Tidewater mojarra	*Eucinostomus harengulus*	56
Gulf killifish	*Fundulus grandis*	56
Striped killifish	*Fundulus majalis*	56
Skilletfish	*Gobiesox strumosus*	56
Naked goby	*Gobiosoma bosc*	56
Two-scale goby	*Gobiosoma longipala*	56
Code goby	*Gobiosoma robustum*	56
Smooth butterfly ray	*Gymnura micrura*	56
Scaled sardine	*Harengula jaguana*	56
Lined seahorse	*Hippocampus erectus*	56
Dwarf seahorse	*Hippocampus zosterae*	56
Crested blenny	*Hypleurochilus geminatus*	56
Halfbeak	*Hyporhamphus unifasciatus*	56
Feather blenny	*Hypsoblennius hentz*	56
Scrawled cowfish	*Lactophrys quadricornis*	56
Pinfish	*Lagodon rhomboides*	53, 56
Spot	*Leiostomus xanthurus*	53, 56
Rainwater killifish	*Lucania parva*	53
Rough silverside	*Membras martinica*	56
Inland silverside	*Menidia beryllina*	53, 56
Tidewater silverside	*Menidia peninsulae*	53
Southern kingfish	*Menticirrhus americanus*	53
Northern kingfish	*Menticirrhus saxatalis*	53

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Green goby	*Microgobius thalassinus*	53
Fringed filefish	*Monacanthus ciliatus*	53
Planehead filefish	*Monacanthus hispidus*	53
Striped mullet	*Mugil cephalus*	56
White mullet	*Mugil curema*	56
Gag	*Mycteroperca microlepis*	56
Speckled worm eel	*Myrophis punctatus*	56
Atlantic thread herring	*Opisthonema oglinum*	56
Gulf toadfish	*Opsanus beta*	56
Pigfish	*Orthopristis chrysoptera*	53, 56
Seaweed blenny	*Parablennius marmoreus*	56
Gulf flounder	*Paralichthys albigutta*	56
Harvestfish	*Peprilus alepidotus*	56
Bluefish	*Pomatomus saltatrix*	56
Bighead searobin	*Prionotus tribulus*	56
Clearnose skate	*Raja eglanteria*	56
Red drum	*Sciaenops ocellatus*	56
Barbfish	*Scorpaena brasiliensis*	56
Northern sennet	*Sphyraena borealis*	56
Atlantic needlefish	*Strongylura marina*	56
Redfin needlefish	*Strongylura notata*	56
Blackcheek tonguefish	*Symphurus plagiusa*	56
Dusky pipefish	*Syngnathus floridae*	56
Chain pipefish	*Syngnathus louisianae*	56
Gulf pipefish	*Syngnathus scovelli*	56
Inshore lizardfish	*Synodus foetens*	56
Hogchoker	*Trinectes maculatus*	53, 56
Southern hake	*Urophycis floridana*	56
Spotted hake	*Urophycis regia*	56
	AMPHIBIANS	
FROGS		
Southern cricket frog	*Acris gryllus*	8
Oak Toad	*Bufo quercicus*	8
Southern toad	*Bufo terrestris*	8
Green treefrog	*Hyla cinerea*	8
Pinewoods treefrog	*Hyla femoralis*	8
Squirrel treefrog	*Hyla squirella*	8
Little grass frog	*Pseudacris ocularis*	8
Southern chorus frog	*Pseudacris nigrita*	8
Eastern spadefoot	*Scaphiopus holbrookii*	8
Gopher frog	*Rana capito*	15
Bull frog	*Rana catesbeiana*	25
Pig frog	*Rana grylio*	24

* Non-native Species

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Southern leopard frog	*Rana sphenocephala*	24
	REPTILES	
CROCODILIANS		
Alligator	*Alligator mississippiensis*	24, 53
TURTLES		
Chicken turtle	*Deirochelys reticularia*	24, 29
Gopher tortoise	*Gopherus polyphemus*	14, 15
Diamondback terrapin	*Malaclemys terrapin*	56
Box turtle	*Terrapene carolina*	8
LIZARDS		
Carolina anole	*Anolis carolinensis*	MTC
Six-lined racerunner	*Cnemidophorus sexlineatus*	14, 15
Southeastern five-lined skink	*Eumeces inexpectatus*	8
Island glass lizard	*Ophisaurus compressus*	14, 15
Southern fence lizard	*Sceloporus undulatus*	8
Ground skink	*Scincella lateralis*	8, 35
SNAKES		
Cottonmouth	*Agkistrodon piscivorus*	25, 35
Southern black racer	*Coluber constrictor priapus*	8
Eastern diamondback rattlesnake	*Crotalus adamanteus*	8, 15
Eastern indigo snake	*Drymarchon corais couperi*	14, 15
Eastern kingsnake	*Lampropeltis getulus*	8
Eastern coral snake	*Micrurus fulvius fulvius*	8, 15
Florida water snake	*Nerodia fasciata*	24, 29
Gulf Salt Marsh Snake	*Nerodia clarkii clarkii*	63
Blue-striped ribbon snake	*Thamnophis sauritus nitae*	8
Blue-striped garter snake	*Thamnophis sirtalis similis*	8
	BIRDS	
PELICANS		
Eastern brown pelican	*Pelecanus occidentalis carolinensis*	56
American white pelican	*Pelecanus erythrorhynchos*	OF
CORMORANTS		
Double-crested cormorant	*Phalacrocorax auritus*	56
HERONS AND BITTERNS		
Great blue heron	*Ardea herodias*	24, 63
Great egret	*Casmerodius albus*	24, 63
Little blue heron	*Egretta caerulea*	24, 63
Snowy egret	*Egretta thula*	24, 63
Tricolored heron	*Egretta tricolor*	24, 63
STORKS		
Wood stork	*Mycteria americana*	24, 63
IBIS AND SPOONBILLS		

Cedar Key Scrub State Reserve

Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
White ibis	*Eudocimus albus*	24, 63
DUCKS AND GEESE		
Red-breasted merganser	*Mergus serrator*	OF
PLOVERS		
Black-bellied plover	*Pluvialis squatorola*	65
SANDPIPERS		
Ruddy turnstone	*Arenaria interpres*	65
Dunlin	*Calidris alpina*	65
Least sandpiper	*Calidris minutilla*	65
Willet	*Catoptrophorus semipalmatus*	65
Short-billed dowitcher	*Limnodromus griseus*	65
Marbled godwit	*Limosa fedoa*	65
Solitary sandpiper	*Tringa solitaria*	OF
TERNS		
Caspian tern	*Sterna caspia*	OF
Forster's tern	*Sterna forsteri*	OF
VULTURES		
Turkey vulture	*Cathartes aura*	MTC
Black vulture	*Coragyps atratus*	MTC
KITES, EAGLES, AND HAWKS		
Sharp-shinned hawk	*Accipiter striatus*	8, 14
Short-tailed hawk	*Buteo brachyurus*	25
Red-tailed hawk	*Buteo jamaicensis*	8
Red-shouldered hawk	*Buteo lineatus*	8
American kestrel	*Falco sparverius*	8, 15
Bald eagle	*Haliaeetus leucocephalus*	8
Swallow-tailed kite	*Elanoides forficatus*	63
Osprey	*Pandion haliaetus*	63
PHEASANTS, TURKEY, AND QUAIL		
Northern bobwhite	*Colinus virginianus*	8
OYSTERCATCHERS		
American oystercatcher	*Haematopus palliatus*	63
RAILS AND GALLINULES		
Clapper rail	*Rallus longirostris*	63
PIGEONS AND DOVES		
Ground dove	*Columbina passerina*	15
Mourning dove	*Zenaida macroura*	MTC
OWLS		
Great Horned owl	*Bubo virginianus*	8
Barred owl	*Styrix varia*	25
KINGFISHERS		
Belted kingfisher	*Ceryle alcyon*	24, 63
WOODPECKERS		
Northern flicker	*Colaptes auratus*	8

*** Non-native Species**

Cedar Key Scrub State Reserve

Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Pileated woodpecker	*Dryocopus pileatus*	35
Red-bellied woodpecker	*Melanerpes erythrocephalus*	MTC
Yellow-bellied sapsucker	*Sphyrapicus varius*	8, 35
Downy woodpecker	*Picoides pubescens*	MTC
FLYCATCHERS		
Great crested flycatcher	*Myiarchus crinitus*	8
Eastern phoebe	*Sayornis phoebe*	8
Gray kingbird	*Tyrannus dominicensis*	8
SWALLOWS		
Barn swallow	*Hirundo rustica*	63
Purple martin	*Progne subis*	OF
Tree swallow	*Tachycineta bicolor*	63
JAYS, CROWS, AND MAGPIES		
Florida scrub jay	*Aphelocoma coerulescens*	14, 15
American crow	*Corvus brachyrhynchos*	MTC
Fish crow	*Corvus ossifragus*	MTC
Blue jay	*Cyanocitta cristata*	MTC
TITMICE		
Tufted titmouse	*Parus bicolor*	MTC
Carolina chickadee	*Parus carolinensis*	MTC
WRENS		
Marsh wren	*Cistothorus palustris*	63
Sedge wren	*Cistothorus platensis*	63
Carolina wren	*Thryothorus ludovicianus*	MTC
House wren	*Troglodytes aedon*	MTC
THRASHERS		
Gray catbird	*Dumetella carolinensis*	8
Northern mockingbird	*Mimus polyglottos*	MTC
Brown thrasher	*Toxostoma rufus*	8, 15
THRUSHES, KINGLETS, AND VEERY		
Hermit thrush	*Catharus guttatus*	35
Eastern bluebird	*Sialia sialis*	8
Blue-gray gnatcatcher	*Polioptila caerulea*	MTC
Ruby-crowned kinglet	*Regulus calendula*	MTC
American robin	*Turdus migratorius*	MTC
SHRIKES		
Loggerhead shrike	*Lanius ludovicianus*	8
VIREOS		
Yellow-throated vireo	*Vireo flavifrons*	8, 14
White-eyed vireo	*Vireo griseus*	MTC
Red-eyed vireo	*Vireo olivaceus*	35
Solitary vireo	*Vireo solitarius*	35
WAXWINGS		
Cedar Waxwing	*Bombycilla cedrorum*	OF

*** Non-native Species**

Cedar Key Scrub State Reserve

Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
WARBLERS, BLACKBIRDS, ETC.		
Red-winged blackbird	*Agelaius phoeniceus*	24, 63
Yellow-rumped warbler	*Dendroica coronata*	MTC
Prairie warbler	*Dendroica discolor*	8
Yellow-throated warbler	*Dendroica dominica*	8
Palm warbler	*Dendroica palmarum*	8
Pine warbler	*Dendroica pinus*	8
Common yellowthroat	*Geothlypis trichas*	24, 63
Brown-headed cowbird	*Molothrus ater*	8
Black-and-white warbler	*Mniotilta varia*	MTC
Northern parula	*Parula americana*	MTC
Summer tanager	*Piranga rubra*	8, 14
Boat-tailed grackle	*Quiscalus major*	MTC
Common grackle	*Quiscalus quiscula*	MTC
Eastern meadowlark	*Sturnella magna*	8, 81
Starling	*Sturnus vulgaris* *	81
GROSBEAKS, SPARROWS, AND BUNTINGS		
Scott's seaside sparrow	*Ammodramus maritimus peninsulae*	63
Northern cardinal	*Cardinalis cardinalis*	MTC
Swamp sparrow	*Melospiza georgiana*	24
Indigo bunting	*Passerina cyanea*	8
Rufous-sided towhee	*Pipilo erythrophthalmus*	8, 14
Nelson's sharp-tailed sparrow	*Ammodramus nelsoni*	63
	MAMMALS	
MARSUPIALS		
Opossum	*Didelphis marsupialis*	MTC
EDENTATES		
Armadillo	*Dasypus novemcinctus* *	MTC
LAGOMORPHS		
Eastern cottontail	*Sylvilagus floridanus*	MTC
RODENTS		
Southern flying squirrel	*Glaucomys volans*	8, 35
Southeastern pocket gopher	*Geomys pinetis*	14, 15
House mouse	*Mus musculus* *	8, 82
Rice rat	*Oryzomys palustris*	24
Cotton mouse	*Peromyscus gossypinus*	8
Golden mouse	*Peromyscus nuttalli*	14, 35
Florida mouse	*Podomys floridanus*	14, 15
Gray squirrel	*Sciurus carolinensis*	MTC
Cotton rat	*Sigmodon hispidus*	8
INSECTIVORES		
Least shrew	*Cryptotis parva*	8
Eastern mole	*Scalopus aquaticus*	14, 15

*** Non-native Species**

Cedar Key Scrub State Reserve

Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
CARNIVORES		
River otter	*Lutra canadensis*	63
Bobcat	*Lynx rufus*	MTC
Florida Long-tailed Weasel	*Mustela frenata peninsulae*	8
Florida Mink	*Mustela vison lutensis*	63
Gray fox	*Procyon cinereoargenteus*	8
Raccoon	*Procyon lotor*	MTC
Florida Black Bear	*Ursus americanus floridanus*	8
SIRENS		
West Indian manatee	*Trichechus manatus latirostris*	56
CETACEANS		
Atlantic bottle-nosed dolphin	*Tursiops truncatus*	56
ARTIODACTYLS		
White-tailed deer	*Odocoileus virginianus*	MTC
Feral pig	*Sus scrofa* *	8, 25, 35

* **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. Coastal Grasslands
10. Pine Rockland
11. Prairie Hammock
12. Rockland Hammock
13. Sandhill
14. Scrub
15. Scrubby Flatwoods
16. Shell Mound
17. Sinkhole
18. Slope Forest
19. Upland Glade
20. Upland Hardwood Forest
21. Upland Mixed Forest
22. Upland Pine Forest
23. Xeric Hammock

PALUSTRINE

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

LACUSTRINE

43. Clastic Upland Lake
44. Coastal Dune Lake
45. Coastal Rockland Lake
46. Flatwood/Prairie Lake
47. Marsh Lake

LACUSTRINE—Continued

48. River Floodplain Lake
49. Sandhill Upland Lake
50. Sinkhole Lake
51. Swamp Lake

RIVERINE

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

ESTUARINE

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

MARINE

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

SUBTERRANEAN

79. Aquatic Cave
80. Terrestral Cave

MISCELLANEOUS

81. Ruderal
82. Developed

MTC Many Types Of Communities

OF Overflying

Addendum 5—Designated Species List

Cedar Key Scrub State Reserve

Designated Species

Plants

Common Name/ *Scientific Name*	**Designated Species Status** FDA	USFWS	FNAI
Giant Leather Fern *Acrostichum danaeifolium*	CE		
Texas Anemone *Anemone berlandieri*			G4?,S2
Bearded grass pink *Calopogon barbatus*	T		
Many flowered grass pink *Calopogon multiflorous*	E		
Water Sundew *Drosera intermedia*	T		G5,S3
Greenfly Orchid *Epidendrum canopseum*	CE		
Tall Liparis *Liparis nervosa*	E		
Cardinal Flower *Lobelia cardinalis*	T		
Angle-pod *Matelea gonocarpos*	T		
Prickly-pear cactus *Opuntia stricta*	T		
Cinnamon Fern *Osmunda cinnamomea*	CE		
Royal Fern *Osmunda regalis*	CE		
Blue Butterwort *Pinguicula caerulea*	T		
Yellow Butterwort *Pinguicula lutea*	T		
Southern tubercled orchid *Platanthera flava*	T		
Rose Pogonia *Pogonia ophioglossoides*	T		
Cedar Elm *Ulmus crassifolia*			G5,S3
Coontie *Zamia pumila*	CE		

Cedar Key Scrub State Reserve

Designated Species

Animals

Common Name/ *Scientific Name*	Designated Species Status FFWCC	USFWS	FNAI
AMPHIBIANS			
Gopher Frog *Rana capito*	SSC		G4, S3
REPTILES			
American Alligator *Alligator mississippiensis*	SSC	T(S/A)	G5, S4
Eastern Diamondback Rattlesnake *Crotalus adamanteus*			G5, S3
Eastern Indigo Snake *Drymarchon corais couperi*	TT		G4T3, S3
Gopher Tortoise *Gopherus polyphemus*	SSC		G3S3
Gulf Salt Marsh Snake *Nerodia clarkii clarkii*			G4T3, S3?
BIRDS			
Scott's Seaside Sparrow *Ammodramus maritimus peninsulae*	SSC		G4T3, S3
Florida Scrub Jay *Aphelocoma coerulescens*	TT		G3, S3
Short-tailed Hawk *Buteo brachyurus*			G4?, S3
Great Egret *Casmerodius albus*			G5, S4
Little Blue Heron *Egretta caerulea*	SSC		G5, S4
Snowy Egret *Egretta thula*	SSC		G5, S4
Tricolored Heron *Egretta Tricolor*	SSC		G5, S4
Swallow-tailed Kite *Elanoides forficatus*			G4, S2S3
White Ibis *Eudocimus albus*	SSC		G5, S4
American Kestrel *Falco sparverius*	T		G5T3T4, S3?
American Oystercatcher *Haematopus palliatus*	SSC		G5, S3
Bald Eagle *Haliaeetus leycocephalus*	TT		G4, S3
Wood Stork *Mycteria americana*	EE		G4, S2

Cedar Key Scrub State Reserve

Designated Species

Animals

Common Name/ *Scientific Name*	**Designated Species Status** FFWCC	USFWS	FNAI
Osprey			
Pandion haliaetus			G5, S3S4
Brown Pelican			
Pelecanus occidentalis	SSC		G4, S3
MAMMALS			
Florida Long-tailed Weasel			
Mustela frenata peninsulae			G5T3, S3
Gulf Salt Marsh Mink			
Mustela vison halilimnetes			G5T3, S3
Florida Mouse			
Podomys floridanus	SSC		G3, S3
West Indian Manatee			
Trichechus manatus latirostris	EE		G2?, S2?
Florida Black Bear			
Ursus americanus floridanus	TC		G5T2, S2
INVERTEBRATES			
Peninsula tiger beetle			
Cincindela hirtilabris			G4S4
Scrub tiger beetle			
Cincindela scabrosa			G3S3

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)

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

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.

Addendum 6—Priority Schedule And Cost Estimates

Cedar Key Scrub State Reserve

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 of Recreation and Park's (DRP) legislative budget process. The DRP prepares an annual legislative budget request based on the priorities established for the entire state park system. The DRP 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 DRP 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. Increase prescribed burning program to 500 acres per year. 0-10 years. Average of $10,500/year for personnel and burn preparation and $5,500/year for equipment. **Estimated Cost: $160,000.**
2. Continue scrub and scrubby flatwoods rejuvenation using mowing and roller-chopping. Approximately 300 acres at $365 per acre for mowing. 0-5 years. **Estimated Cost: $109,500.**
3. Pursue acquisition of priority parcels. 0-10 years. **Estimated Cost: $2,000.**
4. Continue to monitor designated species within the reserve with emphasis on the Florida Scrub-Jay and other scrub endemics. 0-10 years. **Estimated Cost: $50,000.**
5. Establish low water crossings on essential service roads where roads cannot be relocated or abandoned. 0-5 years. **Estimated Cost: $40,000.**
6. Restore existing fire plow scars where feasible. 0-5 years. **Estimated Cost: $2,000.**
7. Continue surveying reserve for exotic plant species and remove when detected. 0-10 years. **Estimated Cost: $4,000.**
8. Continue to cooperate with FFWCC in the removal of feral hogs and other exotic animals. 0-10 years. **Estimated Cost: $2,000.**

Total Natural Resource Management Cost: $369,500.

Cultural Resources

1. Continue to regularly monitor and document cultural resources within the reserve. 0-10 years. Estimated Cost: $6,000.
2. Pursue funding for and conduct a comprehensive Phase I Archaeological Survey of the reserve. 0-5 years. Estimated Cost: $30,000.

Total Cultural Resource Management Cost: $ 36,000.

*** Categories of the uniform cost accounting system not reflected in this addendum, have no schedule or cost associated with them.**

Administration

1. Add Park Biologist or Park Service Specialist with resource management specialization to be shared with Waccasassa Bay Preserve State Park; 2-10 years. Estimated Cost: $320,000.
2. Add Park Ranger to assist with daily maintenance and management tasks, including management of public facilities and trail system at Cedar Key Scrub State Reserve. 2-10 years. Estimated Cost: $240,000.

Total Operations Cost: $560,000.

*** Categories of the uniform cost accounting system not reflected in this addendum, have no schedule or cost associated with them.**

Cedar Key Scrub State Reserve

Priority Schedule And Cost Estimates

Item	Quantity	Unit	Unit Price	Multiplier	Amount

Capital Improvements

Development Area or Facilities	Cost
Recreation Facilities	$73,500.00
Support Facilities	$215,000.00
Total w/contingency	**$346,200.00**

NOTE: These preliminary cost estimates, based on Divisions standards, do not include costs for site-specific elements not evident at the conceptual level of planning. Additional costs should be investigated before finalizing budget estimates. All items fall in the new facility construction category © of the uniform cost accounting system required by ch. 259.037 F.S.

Cedar Key Scrub State Reserve

Priority Schedule And Cost Estimates

Item	Quantity	Unit	Unit Price	Multiplier	Amount

NOTE: These preliminary cost estimates, based on Divisions standards, do not include costs for site-specific elements not evident at the conceptual level of planning. Additional costs should be investigated before finalizing budget estimates. All items fall in the new facility construction category © of the uniform cost accounting system required by ch. 259.037 F.S.

Addendum 7—Additional Information

FNAI Descriptions

DHR Cultural Management Statement

2004 Land Management Review

Descriptions Of Natural Communities Developed By FNAI

This summary presents the hierarchical classification and brief descriptions of 82 Natural Communities developed by Florida Natural Areas Inventory and identified as collectively constituting the original, natural biological associations of Florida.

A Natural Community is defined as a distinct and recurring assemblage of populations of plants, animals, fungi and microorganisms naturally associated with each other and their physical environment. For more complete descriptions, see Guide to the Natural Communities of Florida, available from Florida Department of Natural Resources.

The levels of the hierarchy are:

Natural Community Category - defined by hydrology and vegetation.

Natural Community Groups - defined by landform, substrate, and vegetation.

Natural Community Type - defined by landform and substrate; soil moisture condition; climate; fire; and characteristic vegetation.

TERRESTRIAL COMMUNITIES

XERIC UPLANDS
COASTAL UPLANDS
MESIC UPLANDS
ROCKLANDS
MESIC FLATLANDS

PALUSTRINE COMMUNITIES

WET FLATLANDS
SEEPAGE WETLANDS
FLOODPLAIN WETLANDS
BASIN WETLANDS

LACUSTRINE COMMUNITIES

RIVERINE COMMUNITIES

SUBTERRANEAN COMMUNITIES

MARINE/ESTUARINE COMMUNITIES

Definitions of Terms Used in Natural Community Descriptions

TERRESTRIAL - Upland habitats dominated by plants which are not adapted to anaerobic soil conditions imposed by saturation or inundation for more than 10% of the growing season.

XERIC UPLANDS - very dry, deep, well-drained hills of sand with xeric-adapted vegetation.

Sandhill - upland with deep sand substrate; xeric; temperate; frequent fire (2-5 years); longleaf pine and/or turkey oak with wiregrass understory.

Scrub - old dune with deep fine sand substrate; xeric; temperate or subtropical; occasional or rare fire (20 - 80 years); sand pine and/or scrub oaks and/or rosemary and lichens.

Xeric Hammock - upland with deep sand substrate; xeric-mesic; temperate or subtropical; rare or no fire; live oak and/or sand live oak and/or laurel oak and/or other oaks, sparkleberry, saw palmetto.

COASTAL UPLANDS - substrate and vegetation influenced primarily by such coastal (maritime) processes as erosion, deposition, salt spray, and storms.

Beach Dune - active coastal dune with sand substrate; xeric; temperate or subtropical; occasional or rare fire; sea oats and/or mixed salt-spray tolerant grasses and herbs.

Coastal Berm - old bar or storm debris with sand/shell substrate; xeric-mesic; subtropical or temperate; rare or no fire; buttonwood, mangroves, and/or mixed halophytic herbs and/or shrubs and trees.

Coastal Grassland - coastal flatland with sand substrate; xeric-mesic; subtropical or temperate; occasional fire; grasses, herbs, and shrubs with or without slash pine and/or cabbage palm.

Coastal Rock Barren - flatland with exposed limestone substrate; xeric; subtropical; no fire; algae, mixed halophytic herbs and grasses, and/or cacti and stunted shrubs and trees.

Coastal Strand - stabilized coastal dune with sand substrate; xeric; subtropical or temperate; occasional or rare fire; dense saw palmetto and/or seagrape and/or mixed stunted shrubs, yucca, and cacti.

Maritime Hammock - stabilized coastal dune with sand substrate; xeric-mesic; subtropical or temperate; rare or no fire; mixed hardwoods and/or live oak.

Shell Mound - Indian midden with shell substrate; xeric-mesic; subtropical or temperate; rare or no fire; mixed hardwoods.

MESIC UPLANDS - dry to moist hills of sand with varying amounts of clay, silt or organic material; diverse mixture of broadleaved and needleleaved temperate woody species.

Bluff - steep slope with rock, sand, and/or clay substrate; hydric-xeric; temperate; sparse grasses, herbs and shrubs.

Slope Forest - steep slope on bluff or in sheltered ravine; sand/clay substrate; mesic-hydric; temperate; rare or no fire; magnolia, beech, spruce pine, Shumard oak, Florida maple, mixed hardwoods.

Upland Glade - upland with calcareous rock and/or clay substrate; hydric-xeric; temperate; sparse mixed grasses and herbs with occasional stunted trees and shrubs, e.g., eastern red cedar.

Upland Hardwood Forest - upland with sand/clay and/or calcareous substrate; mesic; temperate; rare or no fire; spruce pine, magnolia, beech, pignut hickory, white oak, and mixed hardwoods.

Upland Mixed Forest - upland with sand/clay substrate; mesic; temperate; rare or no fire; loblolly pine and/or shortleaf pine and/or laurel oak and/or magnolia and spruce pine and/or mixed hardwoods.

Upland Pine Forest - upland with sand/clay substrate; mesic-xeric; temperate; frequent or occasional fire; longleaf pine and/or loblolly pine and/or shortleaf pine, southern red oak, wiregrass.

ROCKLANDS - low, generally flat limestone outcrops with tropical vegetation; or limestone exposed through karst activities with tropical or temperate vegetation.

Pine Rockland - flatland with exposed limestone substrate; mesic-xeric; subtropical; frequent fire; south Florida slash pine, palms and/or hardwoods, and mixed grasses and herbs.

Rockland Hammock - flatland with limestone substrate; mesic; subtropical; rare or no fire; mixed tropical hardwoods, often with live oak.

Sinkhole - karst feature with steep limestone walls; mesic-hydric; subtropical or temperate; no fire; ferns, herbs, shrubs, and hardwoods.

MESIC FLATLANDS - flat, moderately well-drained sandy substrates with admixture of organic material, often with a hard pan.

Dry Prairie - flatland with sand substrate; mesic-xeric; subtropical or temperate; annual or frequent fire; wiregrass, saw palmetto, and mixed grasses and herbs.

Mesic Flatwoods - flatland with sand substrate; mesic; subtropical or temperate; frequent fire; slash

pine and/or longleaf pine with saw palmetto, gallberry and/or wiregrass or cutthroat grass understory.

Prairie Hammock - flatland with sand/organic soil over marl or limestone substrate; mesic; subtropical; occasional or rare fire; live oak and/or cabbage palm.

Scrubby Flatwoods - flatland with sand substrate; xeric-mesic; subtropical or temperate; occasional fire; longleaf pine or slash pine with scrub oaks and wiregrass understory.

PALUSTRINE - Wetlands dominated by plants adapted to anaerobic substrate conditions imposed by substrate saturation or inundation during 10% or more of the growing season. Includes non-tidal wetlands; tidal wetlands with ocean derived salinities less than 0.5 ppt and dominance by salt-intolerant species; small (less than 8 ha), shallow (less than 2 m deep at low water) water bodies without wave-formed or bedrock shoreline; and inland brackish or saline wetlands.

WET FLATLANDS - flat, poorly drained sand, marl or limestone substrates.

Hydric Hammock - lowland with sand/clay/organic soil, often over limestone; mesic-hydric; subtropical or temperate; rare or no fire; water oak, cabbage palm, red cedar, red maple, bays, hackberry, hornbeam, blackgum, needle palm, and mixed hardwoods.

Marl Prairie - flatland with marl over limestone substrate; seasonally inundated; tropical; frequent to no fire; sawgrass, spikerush, and/or mixed grasses, sometimes with dwarf cypress.

Wet Flatwoods - flatland with sand substrate; seasonally inundated; subtropical or temperate; frequent fire; vegetation characterized by slash pine or pond pine and/or cabbage palm with mixed grasses and herbs.

Wet Prairie - flatland with sand substrate; seasonally inundated; subtropical or temperate; annual or frequent fire; maidencane, beakrush, spikerush, wiregrass, pitcher plants, St. John's wort, mixed herbs.

SEEPAGE WETLANDS - sloped or flat sands or peat with high moisture levels maintained by downslope seepage; wetland and mesic woody and/or herbaceous vegetation.

Baygall - wetland with peat substrate at base of slope; maintained by downslope seepage, usually saturated and occasionally inundated; subtropical or temperate; rare or no fire; bays and/or dahoon holly and/or red maple and/or mixed hardwoods.

Seepage Slope - wetland on or at base of slope with organic/sand substrate; maintained by downslope seepage, usually saturated but rarely inundated; subtropical or temperate; frequent or occasional fire; sphagnum moss, mixed grasses and herbs or mixed hydrophytic shrubs.

FLOODPLAIN WETLANDS - flat, alluvial sand or peat substrates associated with flowing water courses and subjected to flooding but not permanent inundation; wetland or mesic woody and herbaceous vegetation.

Bottomland Forest - flatland with sand/clay/organic substrate; occasionally inundated; temperate; rare or no fire; water oak, red maple, beech, magnolia, tuliptree, sweetgum, bays, cabbage palm, and mixed hardwoods.

Floodplain Forest - floodplain with alluvial substrate of sand, silt, clay or organic soil; seasonally inundated; temperate; rare or no fire; diamondleaf oak, overcup oak, water oak, swamp chestnut oak, blue palmetto, cane, and mixed hardwoods.

Floodplain Marsh - floodplain with organic/sand/alluvial substrate; seasonally inundated; subtropical; frequent or occasional fire; maidencane, pickerelweed, sagittaria spp., buttonbush, and mixed emergents.

Floodplain Swamp - floodplain with organic/alluvial substrate; usually inundated; subtropical or temperate; rare or no fire; vegetation characterized by cypress, tupelo, black gum, and/or pop ash.

Freshwater Tidal Swamp - river mouth wetland, organic soil with extensive root mat; inundated with freshwater in response to tidal cycles; rare or no fire; cypress, bays, cabbage palm, gums and/or cedars.

Slough - broad, shallow channel with peat over mineral substrate; seasonally inundated, flowing water; subtropical; occasional or rare fire; pop ash and/or pond apple or water lily.

Strand Swamp - broad, shallow channel with peat over mineral substrate; seasonally inundated, flowing water; subtropical; occasional or rare fire; cypress and/or willow.

Swale - broad, shallow channel with sand/peat substrate; seasonally inundated, flowing water; subtropical or temperate; frequent or occasional fire; sawgrass, maidencane, pickerelweed, and/or mixed emergents.

BASIN WETLANDS - shallow, closed basin with outlet usually only in time of high water; peat or sand substrate, usually inundated; wetland woody and/or herbaceous vegetation.

Basin Marsh - large basin with peat substrate; seasonally inundated; temperate or subtropical; frequent fire; sawgrass and/or cattail and/or buttonbush and/or mixed emergents.

Basin Swamp - large basin with peat substrate; seasonally inundated, still water; subtropical or temperate; occasional or rare fire; vegetation characterized by cypress, blackgum, bays and/or mixed hardwoods.

Bog - wetland on deep peat substrate; moisture held by sphagnum mosses, soil usually saturated, occasionally inundated; subtropical or temperate; rare fire; sphagnum moss and titi and/or bays and/or dahoon holly, and/or mixed hydrophytic shrubs.

Coastal Interdunal Swale - long narrow depression wetlands in sand/peat-sand substrate; seasonally inundated, fresh to brackish, still water; temperate; rare fire; graminoids and mixed wetland forbs.

Depression Marsh - small rounded depression in sand substrate with peat accumulating toward center; seasonally inundated, still water; subtropical or temperate; frequent or occasional fire; maidencane, fire flag, pickerelweed, and mixed emergents, may be in concentric bands.

Dome Swamp - rounded depression in sand/limestone substrate with peat accumulating toward center; seasonally inundated, still water; subtropical or temperate; occasional or rare fire; cypress, blackgum, or bays, often tallest in center.

LACUSTRINE - Non-flowing wetlands of natural depressions lacking persistent emergent vegetation except around the perimeter.

Clastic Upland Lake - generally irregular basin in clay uplands; predominantly with inflows, frequently without surface outflow; clay or organic substrate; colored, acidic, soft water with low mineral content (sodium, chloride, sulfate); oligo-mesotrophic to eutrophic.

Coastal Dune Lake - basin or lagoon influenced by recent coastal processes; predominantly sand substrate with some organic matter; salinity variable among and within lakes, and subject to saltwater intrusion and storm surges; slightly acidic, hard water with high mineral content (sodium, chloride).

Coastal Rockland Lake - shallow basin influence by recent coastal processes; predominantly barren oolitic or Miami limestone substrate; salinity variable among and within lakes, and subject to saltwater intrusion, storm surges and evaporation (because of shallowness); slightly alkaline, hard water with

high mineral content (sodium, chloride).

Flatwoods/Prairie Lake - generally shallow basin in flatlands with high water table; frequently with a broad littoral zone; still water or flow-through; sand or peat substrate; variable water chemistry, but characteristically colored to clear, acidic to slightly alkaline, soft to moderately hard water with moderate mineral content (sodium, chloride, sulfate); oligo-mesotrophic to eutrophic.

Marsh lake - generally shallow, open water area within wide expanses of freshwater marsh; still water or flow-through; peat, sand or clay substrate; occurs in most physiographic regions; variable water chemistry, but characteristically highly colored, acidic, soft water with moderate mineral content (sodium, chloride, sulfate); oligo-mesotrophic to eutrophic.

River Floodplain Lake - meander scar, backwater, or larger flow-through body within major river floodplains; sand, alluvial or organic substrate; colored, alkaline or slightly acidic, hard or moderately hard water with high mineral content (sulfate, sodium, chloride, calcium, magnesium); mesotrophic to eutrophic.

Sandhill Upland Lake - generally rounded solution depression in deep sandy uplands or sandy uplands shallowly underlain by limestone; predominantly without surface inflows/outflows; typically sand substrate with organic accumulations toward middle; clear, acidic moderately soft water with varying mineral content; ultra-oligotrophic to mesotrophic.

Sinkhole Lake - typically deep, funnel-shaped depression in limestone base; occurs in most physiographic regions; predominantly without surface inflows/outflows, but frequently with connection to the aquifer; clear, alkaline, hard water with high mineral content (calcium, bicarbonate, magnesium).

Swamp Lake - generally shallow, open water area within basin swamps; still water or flow-through; peat, sand or clay substrate; occurs in most physiographic regions; variable water chemistry, but characteristically highly colored, acidic, soft water with moderate mineral content (sodium, chloride, sulfate); oligo-mesotrophic to eutrophic.

RIVERINE - Natural, flowing waters from their source to the downstream limits of tidal influence and bounded by channel banks.

Alluvial Stream - lower perennial or intermittent/seasonal watercourse characterized by turbid water with suspended silt, clay, sand and small gravel; generally with a distinct, sediment-derived (alluvial) floodplain and a sandy, elevated natural levee just inland from the bank.

Blackwater Stream - perennial or intermittent/seasonal watercourse characterized by tea-colored water with a high content of particulate and dissolved organic matter derived from drainage through swamps and marshes; generally lacking an alluvial floodplain.

Seepage Stream - upper perennial or intermittent/seasonal watercourse characterized by clear to lightly colored water derived from shallow groundwater seepage.

Spring-run Stream - perennial watercourse with deep aquifer headwaters and characterized by clear water, circumneutral pH and, frequently, a solid limestone bottom.

SUBTERRANEAN - Twilight, middle and deep zones of natural chambers overlain by the earth's crust and characterized by climatic stability and assemblages of trogloxenic, troglophilic, and troglobitic organisms.

Aquatic Cave - cavernicolous area permanently or periodically submerged; often characterized by troglobitic crustaceans and salamanders; includes high energy systems which receive large quantities

of organic detritus and low energy systems.

Terrestrial Cave - cavernicolous area lacking standing water; often characterized by bats, such as Myotis spp., and other terrestrial vertebrates and invertebrates; includes interstitial areas above standing water such as fissures in the ceiling of caves.

MARINE/ESTUARINE (The distinction between the Marine and Estuarine Natural Communities is often subtle, and the natural communities types found under these two community categories have the same descriptions. For these reasons they have been grouped together.) - Subtidal, intertidal and supratidal zones of the sea, landward to the point at which seawater becomes significantly diluted with freshwater inflow from the land.

Consolidated Substrate - expansive subtidal, intertidal and supratidal area composed primarily of nonliving compacted or coherent and relatively hard, naturally formed mass of mineral matter (e.g., coquina limerock and relic reefs); octocorals, sponges, stony corals, nondrift macrophytic algae, blue-green mat-forming algae and seagrasses sparse, if present.

Unconsolidated Substrate - expansive subtidal, intertidal and supratidal area composed primarily of loose mineral matter (e.g., coralgal, gravel, marl, mud, sand and shell); octocorals, sponges, stony corals, nondrift macrophytic algae, blue-green mat-forming algae and seagrasses sparse, if present.

Octocoral Bed - expansive subtidal area occupied primarily by living sessile organisms of the Class Anthozoa, Subclass Octocorallia (e.g., soft corals, horny corals, sea fans, sea whips, and sea pens); sponges, stony corals, nondrift macrophytic algae and seagrasses spares, if present.

Sponge Bed - expansive subtidal area occupied primarily by living sessile organisms of the Phylum Porifera (e.g., sheepswool sponge, Florida loggerhead sponge and branching candle sponge); octocorals, stony corals, nondrift macrophytic algae and seagrasses sparse, if present.

Coral Reef - expansive subtidal area with elevational gradient or relief and occupied primarily by living sessile organisms of the Class Hydrozoa (e.g., fire corals and hydrocorals) and Class Anthozoa, Subclass Zoantharia (e.g., stony corals and black corals); includes deepwater bank reefs, fringing barrier reefs, outer bank reefs and patch reefs, some of which may contain distinct zones of assorted macrophytes, octocorals, & sponges.

Mollusk Reef - substantial subtidal or intertidal area with relief from concentrations of sessile organisms of the Phylum Mollusca, Class Bivalvia (e.g., molluscs, oysters, & worm shells); octocorals, sponges, stony corals, macrophytic algae and seagrasses sparse, if present.

Worm Reef - substantial subtidal or intertidal area with relief from concentrations of sessile, tubicolous organisms of the Phylum Annelida, Class Polychaeta (e.g., chaetopterids and sabellarids); octocorals, sponges, stony corals, macrophytic algae and seagrasses sparse, if present.

Algal Bed - expansive subtidal, intertidal or supratidal area, occupied primarily by attached thallophytic or mat-forming prokaryotic algae (e.g, halimeda, blue-green algae); octocorals, sponges, stony corals and seagrasses sparse, if present.

Grass Bed - expansive subtidal or intertidal area, occupied primarily by rooted vascular macrophytes, (e.g., shoal grass, halophila, widgeon grass, manatee grass and turtle grass); may include various epiphytes and epifauna; octocorals, sponges, stony corals, and attached macrophytic algae sparse, if present.

Composite Substrate - expansive subtidal, intertidal, or supratidal area, occupied primarily by Natural Community elements from more than one Natural Community category (e.g., Grass Bed and Algal Bed species; Octocoral and Algal Bed species); includes both patchy and evenly distributed occurrences.

Tidal Marsh - expansive intertidal or supratidal area occupied primarily by rooted, emergent vascular macrophytes (e.g., cord grass, needlerush, saw grass, saltwort, saltgrass and glasswort); may include various epiphytes and epifauna.

Tidal Swamp - expansive intertidal and supratidal area occupied primarily by woody vascular macrophytes (e.g., black mangrove, buttonwood, red mangrove, and white mangrove); may include various epiphytes and epifauna.

DEFINITIONS OF TERMS Terrestrial and Palustrine Natural Communities

Physiography

Upland - high area in region with significant topographic relief; generally undulating
Lowland - low area in region with or without significant topographic relief; generally flat to gently sloping
Flatland - generally level area in region without significant topographic relief; flat to gently sloping
Basin - large, relatively level lowland with slopes confined to the perimeter or isolated interior locations
Depression - small depression with sloping sides, deepest in center and progressively shallower towards the perimeter
Floodplain - lowland adjacent to a stream; topography influenced by recent fluvial processes
Bottomland - lowland not on active floodplain; sand/clay/organic substrate

Hydrology

occasionally inundated - surface water present only after heavy rains and/or during flood stages
seasonally inundated - surface water present during wet season and flood periods
usually inundated - surface water present except during droughts

Climatic Affinity of the Flora

tropical - community generally occurs in practically frost-free areas
subtropical - community generally occurs in areas that experience occasional frost, but where freezing temperatures are not frequent enough to cause true winter dormancy
temperate - community generally occurs in areas that freeze often enough that vegetation goes into winter dormancy

Fire

annual fire - burns about every 1-2 years
frequent fire - burns about every 3-7 years
occasional fire - burns about every 8-25 years
rare fire - burns about every 26-100 years
no fire - community develops only when site goes more than 100 years without burning

LATIN NAMES OF PLANTS MENTIONED IN NATURAL COMMUNITY DESCRIPTIONS

anise - *Illicium floridanum*
bays:
  swamp bay -*Persea palustris*
  gordonia -*Gordonia lasianthus*
  sweetbay -*Magnolia virgiana*
beakrush - *Rhynchospora* spp.
beech - *Fagus grandifolia*
blackgum - *Nyssa biflora*
blue palmetto - *Sabal minor*
bluestem - *Andropogon* spp.
buttonbush - *Cephalanthus occidentalis*
cabbage palm - *Sabal palmetto*
cacti - *Opuntia* and *Harrisia* spp.,
  predominantly *stricta* and *pentagonus*
cane - *Arundinaria gigantea* or *A. tecta*
cattail - *Typha* spp.
cedars:
  red cedar - *Juniperus silicicola*
  white cedar - *Chamaecyparis thyoides* or *C. henryi*
cladonia - *Cladonia* spp.
cypress - *Taxodium distichum*
dahoon holly - *Ilex cassine*
diamondleaf oak - *Quercus laurifolia*
fire flag - *Thalia geniculata*
Florida maple - *Acer barbatum*
gallberry - *Ilex glabra*
gums:
  tupelo - *Nyssa aquatica*
  blackgum - *Nyssa biflora*
  Ogeechee gum - *Nyssa ogeche*
hackberry - *Celtis laevigata*
hornbeam - *Carpinus caroliniana*
laurel oak - *Quercus hemisphaerica*
live oak - *Quercus virginiana*
loblolly pine - *Pinus taeda*
longleaf pine - *Pinus palustris*
magnolia - *Magnolia grandiflora*
maidencane - *Panicum hemitomon*
needle palm - *Rhapidophyllum hystrix*
overcup oak - *Quercus lyrata*
pickerel weed - *Pontederia cordata* or *P. lanceolata*
pignut hickory - *Carya glabra*
pop ash - *Fraxinus caroliniana*
pond apple - *Annona glabra*
pond pine - *Pinus serotina*
pyramid magnolia - *Magnolia pyramidata*
railroad vine - *Ipomoea pes-caprae*
red cedar - *Juniperus silicicola*
red maple - *Acer rubrum*
red oak - *Quercus falcata*
rosemary - *Ceratiola ericoides*
sagittaria - *Sagittaria lancifolia*
sand pine - *Pinus clausa*
saw palmetto - *Serenoa repens*
sawgrass - *Cladium jamaicensis*
scrub oaks - *Quercus geminata, Q. chapmanii, Q. myrtifolia,Q. inopina*
sea oats - *Uniola paniculata*
seagrape - *Coccoloba uvifera*
shortleaf pine - *Pinus echinata*
Shumard oak - *Quercus shumardii*
slash pine - *Pinus elliottii*
sphagnum moss - *Sphagnum* spp.
spikerush - *Eleocharis* spp.
spruce pine - *Pinus glabra*
St. John's wort - *Hypericum* spp.
swamp chestnut oak - *Quercus prinus*
sweetgum - *Liquidambar styraciflua*
titi - *Cyrilla racemiflora*, and *Cliftonia monophylla*
tuliptree - *Liriodendron tulipfera*
tupelo - *Nyssa aquatica*
turkey oak - *Quercus laevis*
water oak - *Quercus nigra*
waterlily - *Nymphaea odorata*
white cedar - *Chamaecyparis thyoides*
white oak - *Quercus alba*
willow - *Salix caroliniana*
yucca - *Yucca aloifolia*

A. GENERAL DISCUSSION

Archaeological and historic sites are defined collectively in 267.021(3), F.S., as "historic properties" or "historic resources." They have several essential characteristics that must be recognized in a management program.

First of all, they are a finite and non-renewable resource. Once destroyed, presently existing resources, including buildings, other structures, shipwreck remains, archaeological sites and other objects of antiquity, cannot be renewed or revived. Today, sites in the State of Florida are being destroyed by all kinds of land development, inappropriate land management practices, erosion, looting, and to a minor extent even by well-intentioned professional scientific research (e.g., archaeological excavation). Measures must be taken to ensure that some of these resources will be preserved for future study and appreciation.

Secondly, sites are unique because individually they represent the tangible remains of events that occurred at a specific time and place.

Thirdly, while sites uniquely reflect localized events, these events and the origin of particular sites are related to conditions and events in other times and places. Sites can be understood properly only in relation to their natural surroundings and the activities of inhabitants of other sites. Managers must be aware of this "systemic" character of historic and archaeological sites. Also, it should be recognized that archaeological sites are time capsules for more than cultural history; they preserve traces of past biotic communities, climate, and other elements of the environment that may be of interest to other scientific disciplines.

Finally, the significance of sites, particularly archaeological ones, derives not only from the individual artifacts within them, but equally from the spatial arrangement of those artifacts in both horizontal and vertical planes. When archaeologists excavate, they recover, not merely objects, but also a record of the positions of these objects in relation to one another and their containing matrix (e.g., soil strata). Much information is sacrificed if the so-called "context" of archaeological objects is destroyed or not recovered, and this is what archaeologists are most concerned about when a site is threatened with destruction or damage. The artifacts themselves can be recovered even after a site is heavily disturbed, but the context -- the vertical and horizontal relationships -- cannot. Historic structures also contain a wealth of cultural (socio-economic) data that can be lost if historically sensitive maintenance, restoration or rehabilitation procedures are not implemented, or if they are demolished or extensively altered without appropriate documentation. Lastly, it should not be forgotten that historic structures often have associated potentially significant historic archaeological features that must be considered in land management decisions.

B. STATUTORY AUTHORITY

Chapter 253, Florida Statutes ("State Lands") directs the preparation of "single-use" or "multiple-use" land management plans for all state-owned lands and state-owned sovereignty submerged lands. In this document, 253.034(4), F.S., specifically requires that "all management plans, whether for single-use or multiple-use properties, shall specifically describe how the managing agency plans to identify, locate, protect and preserve, or otherwise use fragile non-renewable resources, such as archaeological and historic sites, as well as other fragile resources..."

Chapter 267, Florida Statutes is the primary historic preservation authority of the state. The importance of protecting and interpreting archaeological and historic sites is recognized in 267.061(1)(a), F.S.:The rich and unique heritage of historic properties in this state, representing more than 10,000 years of human presence, is an important legacy to be valued and conserved for present and future generations. The destruction of these nonrenewable historic resources will engender a significant loss to the state's quality of life, economy, and cultural environment. It is therefore declared to be state policy to:

1. Provide leadership in the preservation of the state's historic resources; [and]
2. Administer state-owned or state-controlled historic resources in a spirit of stewardship and trusteeship;...

Responsibilities of the Division of Historical Resources in the Department of State pursuant to 267.061(3), F.S., include the following:

1. Cooperate with federal and state agencies, local Governments, and private organizations and individuals to direct and conduct a comprehensive statewide survey of historic resources and to maintain an inventory of such responses.
2. Develop a comprehensive statewide historic preservation plan.
3. Identify and nominate eligible properties to the National Register of Historic Places and otherwise administer applications for listing properties in the National Register of Historic Places.
4. Cooperate with federal and state agencies, local governments, and organizations and individuals to ensure that historic resources are taken into consideration at all levels of planning and development.
5. Advise and assist, as appropriate, federal and state agencies and local governments in carrying out their historic preservation responsibilities and programs.
6. Carry out on behalf of the state the programs of the National Historic Preservation Act of 1966, as amended, and to establish, maintain, and administer a state historic preservation program meeting the requirements of an approved program and fulfilling the responsibilities of state historic preservation programs as provided in subsection 101(b) of that act.
7. Take such other actions necessary or appropriate to locate, acquire, protect, preserve, operate, interpret, and promote the location, acquisition, protection, preservation, operation, and interpretation of historic resources to foster an appreciation of Florida history and culture. Prior to the acquisition, preservation, interpretation, or operation of a historic property by a state agency, the Division shall be provided a reasonable opportunity to review and comment on the proposed undertaking and shall determine that there exists historic authenticity and a feasible means of providing for the preservation, interpretation and operation of such property.
8. Establish professional standards for the preservation, exclusive of acquisition, of historic resources in state ownership or control.
9. Establish guidelines for state agency responsibilities under subsection (2).

Responsibilities of other state agencies of the executive branch, pursuant to 267.061(2), F.S., include:

1. Each state agency of the executive branch having direct or indirect jurisdiction over a proposed state or state-assisted undertaking shall, in accordance with state policy and prior to the approval of expenditure of any state funds on the undertaking, consider the effect of the undertaking on any historic property that is included in, or eligible for inclusion in, the National Register of Historic Places. Each such agency shall afford the division a reasonable opportunity to comment with regard to such an undertaking.
2. Each state agency of the executive branch shall initiate measures in consultation with the division to assure that where, as a result of state action or assistance carried out by such agency, a historic property is to be demolished or substantially altered in a way that adversely affects the character, form, integrity, or other qualities that contribute to [the] historical, architectural, or archaeological value of the property, timely steps are taken to determine that no feasible and prudent alternative to the proposed demolition or alteration exists, and, where no such alternative is determined to exist, to assure that timely steps are taken either to avoid or mitigate the adverse effects, or to undertake an appropriate archaeological salvage excavation or other recovery action to document the property as it existed prior to demolition or alteration.
3. In consultation with the division [of Historical Resources], each state agency of the executive branch shall establish a program to locate, inventory, and evaluate all historic properties under the agency's ownership or control that appear to qualify for the National Register. Each such agency shall exercise caution to assure that any such historic property is not inadvertently

transferred, sold, demolished, substantially altered, or allowed to deteriorate significantly.

4. Each state agency of the executive branch shall assume responsibility for the preservation of historic resources that are owned or controlled by such agency. Prior to acquiring, constructing, or leasing buildings for the purpose of carrying out agency responsibilities, the agency shall use, to the maximum extent feasible, historic properties available to the agency. Each agency shall undertake, consistent with preservation of such properties, the mission of the agency, and the professional standards established pursuant to paragraph (3)(k), any preservation actions necessary to carry out the intent of this paragraph.

5. Each state agency of the executive branch, in seeking to acquire additional space through new construction or lease, shall give preference to the acquisition or use of historic properties when such acquisition or use is determined to be feasible and prudent compared with available alternatives. The acquisition or use of historic properties is considered feasible and prudent if the cost of purchase or lease, the cost of rehabilitation, remodeling, or altering the building to meet compliance standards and the agency's needs, and the projected costs of maintaining the building and providing utilities and other services is less than or equal to the same costs for available alternatives. The agency shall request the division to assist in determining if the acquisition or use of a historic property is feasible and prudent. Within 60 days after making a determination that additional space is needed, the agency shall request the division to assist in identifying buildings within the appropriate geographic area that are historic properties suitable for acquisition or lease by the agency, whether or not such properties are in need of repair, alteration, or addition.

6. Consistent with the agency's mission and authority, all state agencies of the executive branch shall carry out agency programs and projects, including those under which any state assistance is provided, in a manner which is generally sensitive to the preservation of historic properties and shall give consideration to programs and projects which will further the purposes of this section.

Section 267.12 authorizes the Division to establish procedures for the granting of research permits for archaeological and historic site survey or excavation on state-owned or controlled lands, while Section 267.13 establishes penalties for the conduct of such work without first obtaining written permission from the Division of Historical Resources. The Rules of the Department of State, Division of Historical Resources, for research permits for archaeological sites of significance are contained in Chapter 1A-32, F.A.C.

Another Florida Statute affecting land management decisions is Chapter 872, F.S. Section 872.02, F.S., pertains to marked grave sites, regardless of age. Many state-owned properties contain old family and other cemeteries with tombstones, crypts, etc. Section 872.05, F.S., pertains to unmarked human burial sites, including prehistoric and historic Indian burial sites. Unauthorized disturbance of both marked and unmarked human burial site is a felony.

C. MANAGEMENT POLICY

The choice of a management policy for archaeological and historic sites within state-owned or controlled land obviously depends upon a detailed evaluation of the characteristics and conditions of the individual sites and groups of sites within those tracts. This includes an interpretation of the significance (or potential significance) of these sites, in terms of social and political factors, as well as environmental factors. Furthermore, for historic structures architectural significance must be considered, as well as any associated historic landscapes.

Sites on privately owned lands are especially vulnerable to destruction, since often times the economic incentives for preservation are low compared to other uses of the land areas involved. Hence, sites in public ownership have a magnified importance, since they are the ones with the best chance of survival over the long run. This is particularly true of sites that are state-owned or controlled, where the basis of management is to provide for land uses that are minimally destructive of resource values.

It should be noted that while many archaeological and historical sites are already recorded within state--owned or controlled--lands, the majority of the uplands areas and nearly all of the inundated areas have not been surveyed to locate and assess the significance of such resources. The known sites are, thus, only an incomplete sample of the actual resources - i.e., the number, density, distribution, age, character and condition of archaeological and historic sites - on these tracts. Unfortunately, the lack of specific knowledge of the actual resources prevents formulation of any sort of detailed management or use plan involving decisions about the relative historic value of individual sites. For this reason, a generalized policy of conservation is recommended until the resources have been better addressed.

The generalized management policy recommended by the Division of Historical Resources includes the following:

1. State land managers shall coordinate all planned activities involving known archaeological or historic sites or potential site areas closely with the Division of Historical Resources in order to prevent any kind of disturbance to significant archaeological or historic sites that may exist on the tract. Under 267.061(1)(b), F.S., the Division of Historical Resources is vested with title to archaeological and historic resources abandoned on state lands and is responsible for administration and protection of such resources. The Division will cooperate with the land manager in the management of these resources. Furthermore, provisions of 267.061(2) and 267.13, F.S., combined with those in 267.061(3) and 253.034(4), F.S., require that other managing (or permitting) agencies coordinate their plans with the Division of Historical Resources at a sufficiently early stage to preclude inadvertent damage or destruction to known or potentially occurring, presently unknown archaeological and historic sites. The provisions pertaining to human burial sites must also be followed by state land managers when such remains are known or suspected to be present (see 872.02 and 872.05, F.S., and 1A-44, F.A.C.)

2. Since the actual resources are so poorly known, the potential impact of the managing agency's activities on historic archaeological sites may not be immediately apparent. Special field survey for such sites may be required to identify the potential endangerment as a result of particular management or permitting activities. The Division may perform surveys, as its resources permit, to aid the planning of other state agencies in their management activities, but outside archaeological consultants may have to be retained by the managing agency. This would be especially necessary in the cases of activities contemplating ground disturbance over large areas and unexpected occurrences. It should be noted, however, that in most instances Division staff's knowledge of known and expected site distribution is such that actual field surveys may not be necessary, and the project may be reviewed by submitting a project location map (preferably a 7.5 minute U.S.G.S. Quadrangle map or portion thereof) and project descriptive data, including detailed construction plans. To avoid delays, Division staff should be contacted to discuss specific project documentation review needs.

3. In the case of known significant sites, which may be affected by proposed project activities, the managing agency will generally be expected to alter proposed management or development plans, as necessary, or else make special provisions to minimize or mitigate damage to such sites.

4. If in the course of management activities, or as a result of development or the permitting of dredge activities (see 403.918(2)(6)a, F.S.), it is determined that valuable historic or archaeological sites will be damaged or destroyed, the Division reserves the right, pursuant to 267.061(1)(b), F.S., to require salvage measures to mitigate the destructive impact of such activities to such sites. Such salvage measures would be accomplished before the Division would grant permission for destruction of the affected site areas. The funding needed to implement salvage measures would be the responsibility of the managing agency planning the site destructive activity. Mitigation of historic structures at a minimum involves the preparation of measured drawings and documentary photographs. Mitigation of archaeological resources involves the excavation, analysis and reporting of the project findings and must be planned to

occur sufficiently in advance to avoid project construction delays. If these services are to be contracted by the state agency, the selected consultant will need to obtain an Archaeological Research Permit from the Division of Historical Resources, Bureau of Archaeological Research (see 267.12, F.S. and Rules 1A-32 and 1A-46 F.A.C.).

5. For the near future, excavation of non-endangered (i.e., sites not being lost to erosion or development) archaeological site is discouraged. There are many endangered sites in Florida (on both private and public lands) in need of excavation because of the threat of development or other factors. Those within state-owned or controlled lands should be left undisturbed for the present - with particular attention devoted to preventing site looting by "treasure hunters". On the other hand, the archaeological and historic survey of these tracts is encouraged in order to build an inventory of the resources present, and to assess their scientific research potential and historic or architectural significance.

6. The cooperation of land managers in reporting sites to the Division that their field personnel may discover is encouraged. The Division will help inform field personnel from other resource managing agencies about the characteristics and appearance of sites. The Division has initiated a cultural resource management training program to help accomplish this. Upon request the Division will also provide to other agencies archaeological and historical summaries of the known and potentially occurring resources so that information may be incorporated into management plans and public awareness programs (See Management Implementation).

7. Any discovery of instances of looting or unauthorized destruction of sites must be reported to the agent for the Board of Trustees of the Internal Improvement Trust Fund and the Division so that appropriate action may be initiated. When human burial sites are involved, the provisions of 872.02 and 872.05, F. S. and Rule 1A-44, F.A.C., as applicable, must also be followed. Any state agent with law enforcement authority observing individuals or groups clearly and incontrovertibly vandalizing, looting or destroying archaeological or historic sites within state-owned or controlled lands without demonstrable permission from the Division will make arrests and detain those individuals or groups under the provisions of 267.13, 901.15, and 901.21, F.S., and related statutory authority pertaining to such illegal activities on state-owned or controlled lands. County Sheriffs' officers are urged to assist in efforts to stop and/or prevent site looting and destruction.

In addition to the above management policy for archaeological and historic sites on state-owned land, special attention shall be given to those properties listed in the National Register of Historic Places and other significant buildings. The Division recommends that the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (Revised 1990) be followed for such sites.

The following general standards apply to all treatments undertaken on historically significant properties.

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.

2. The historic character of a property shall be retained and preserved. The removal of historic materials or alterations of features and spaces that characterize a property shall be avoided.

3. Each property shall be recognized as a physical record of its time, place and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.

4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.

5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.

6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of

missing features shall be substantiated by documentary, physical, or pictorial evidence.

7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.

8. Significant archaeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.

9. New additions, exterior alterations, or related new construction shall not destroy materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired. (see Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings [Revised 1990]).

Divisions of Historical Resources staff are available for technical assistance for any of the above listed topics. It is encouraged that such assistance be sought as early as possible in the project planning.

D. MANAGEMENT IMPLEMENTATION

As noted earlier, 253.034(4), F.S., states that "all management plans, whether for single-use or multiple-use properties, shall specifically describe how the managing agency plans to identify, locate, protect and preserve, or otherwise use fragile non-renewable resources, such as archaeological and historic sites..." The following guidelines should help to fulfill that requirement.

1. All land managing agencies should contact the Division and send U.S.G.S. 7.5 minute quadrangle maps outlining the boundaries of their various properties.

2. The Division will in turn identify site locations on those maps and provide descriptions for known archaeological and historical sites to the managing agency.

3. Further, the Division may also identify on the maps areas of high archaeological and historic site location probability within the subject tract. These are only probability zones, and sites may be found outside of these areas. Therefore, actual ground inspections of project areas may still be necessary.

4. The Division will send archaeological field recording forms and historic structure field recording forms to representatives of the agency to facilitate the recording of information on such resources.

5. Land managers will update information on recorded sites and properties.

6. Land managers will supply the Division with new information as it becomes available on previously unrecorded sites that their staff locate. The following details the kind of information the Division wishes to obtain for any new sites or structures that the land managers may report:

A. Historic Sites

(1) Type of structure (dwelling, church, factory, etc.).

(2) Known or estimated age or construction date for each structure and addition.

(3) Location of building (identify location on a map of the property, and building placement, i.e., detached, row, etc.).

(4) General Characteristics: (include photographs if possible) overall shape of plan (rectangle, "L" "T" "H" "U", etc.); number of stories; number of vertical divisions of bays; construction materials (brick, frame, stone, etc.); wall finish (kind of bond, coursing, shingle, etc.); roof shape.

(5) Specific features including location, number and appearance of:
(a) Important decorative elements;
(b) Interior features contributing to the character of the building;

(c) Number, type, and location of outbuildings, as well as date(s) of construction;
(d) Notation if property has been moved;
(e) Notation of known alterations to building.

B. Archaeological Sites

(1) Site location (written narrative and mapped location).
(2) Cultural affiliation and period.
(3) Site type (midden, burial mound, artifact scatter, building rubble, etc.).
(4) Threats to site (deterioration, vandalism, etc.).
(5) Site size (acreage, square meters, etc.).
(6) Artifacts observed on ground surface (pottery, bone, glass, etc.).
(7) Description of surrounding environment.

7. No land disturbing activities should be undertaken in areas of known archaeological or historic sites or areas of high site probability without prior review by the Division early in the project planning.

8. Ground disturbing activities may proceed elsewhere but land managers should stop disturbance in the immediate vicinity of artifact finds and notifies the Division if previously unknown archaeological or historic remains are uncovered. The provisions of Chapter 872, F.S., must be followed when human remains are encountered.

9. Excavation and collection of archaeological and historic sites on state lands without a permit from the Division are a violation of state law and shall be reported to a law enforcement officer. The use of metal detectors to search for historic artifacts shall be prohibited on state lands except when authorized in a 1A-32, F.A.C., research permit from the Division.

10. Interpretation and visitation which will increase public understanding and enjoyment of archaeological and historic sites without site destruction or vandalism is strongly encouraged.

11. Development of interpretive programs including trails, signage, kiosks, and exhibits is encouraged and should be coordinated with the Division.

12. Artifacts found or collected on state lands are by law the property of the Division. Land managers shall contact the Division whenever such material is found so that arrangements may be made for recording and conservation. This material, if taken to Tallahassee, can be returned for public display on a long term loan.

E. ADMINISTERING AGENCY

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

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

Contact Person: **Susan M. Harp**
Historic Preservation Planner
Telephone (850) 245-6333
Suncom 205-6333
FAX (850) 245-6437

Land Management Review of
Cedar Key Scrub Reserve State Park
Lease No. 3568
February 6, 2004

Prepared by Division of State Lands Staff

William Howell, OMC Manager
Joseph Duncan, Administrative Assistant

For
Cedar Key Reserve State Park Review Team

FINAL REPORT

August 13, 2004

Land Manager:	DRP
Area:	4,875.98 acres
County:	Levy
Mngt. Plan Revised:	04/13/1998
Mngt. Plan Update Due:	04/13/2008

Management Review Team Members

Agency Represented	Team member Appointed	Team member In attendance
DOF	Bill Korn	Bill Korn
DEP	Don Jensen	Don Jensen
DRP	Dan Pearson	Dan Pearson
County	Kathy Winburn	
TNC	Laura Butterfield	Laura Butterfield
FWCC	Vic Doig	Vic Doig
SWCD	Dennis Andrews	
PLM	Greg Gaplin	
Observer	Marvin Miller	Marvin Miller

Process for Implementing Regional Management Review Teams

Legislative Intent and Guidance:

Chapter 259.036, F. S. was enacted in 1997 to determine whether conservation, preservation, and recreation lands owned by the state Board of Trustees of the Internal Improvement Trust Fund (Board) are being managed properly. It directs the Department of Environmental Protection (DEP) to establish land management review teams to evaluate the extent to which the existing management plan provides sufficient protection to threatened or endangered species, unique or important natural or physical features, geological or hydrological functions, and archaeological features. The teams also evaluate the extent to which the land is being managed for the purposes for which it was acquired and the degree to which actual management practices, including public access, are in compliance with the adopted management plan. If a land management plan has not been adopted, the review shall consider the extent to which the land is being managed for the purposes for which it was acquired and the degree to which actual management practices are in compliance with the management policy statement and management prospectus for that property. If the land management review team determines that reviewed lands are not being managed for the purposes for which they were acquired or in compliance with the adopted land management plan, management policy statement, or management prospectus, DEP shall provide the review findings to the Board, and the managing agency must report to the Board its reasons for managing the lands as it has. A report of the review findings are given to the managing agency under review, the Acquisition and Restoration Council, and to the Division of State Lands. Also, DEP shall report the annual review findings of its land management review teams to the Board no later than the second board meeting in October of each year.

Review Site

The management review of Cedar Key Scrub State reserve considered approximately 4,876 acres in Levy County that are managed by the Division of Recreation and Parks (DRP). The team evaluated the extent to which current management actions are sufficient, whether the land is being managed for the purpose for which it was acquired, and whether actual management practices, including public access, are in compliance with the management plan. The DRP management plan was approved on April 13, 1998, and the management plan update is due on April 13, 2008.

Review Team Determination

1. Is the land being managed for the purpose for which it was acquired?

All team members agreed that Cedar Key Scrub State Reserve is being managed for the purpose for which it was acquired.

2. Are actual management practices, including public access, in compliance with the management plan?

All team members agreed that actual management practices, including public access, were in compliance with the management plan for this site.

Commendations to the Managing Agency

1. The Team commends the manager for the exceptional amount of work accomplished with limited staff on resource management, including prescribed burning, on the reserve.

2. The Team commends the manager and staff for the cooperative effort and coordination with other agencies to accomplish resource management goals.

Exceptional Management Actions

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

Exceptional management actions:

- Management and protection of the Scrub, Scrubby Flatwoods, Basin Marsh, Basin Swamp, Blackwater Stream, Estuarine Composite Substrate, and Estuarine Tidal Marsh communities.
- Protection and preservation of listed plants and animals.
- Protection, survey and preservation of cultural sites.

- Excellent quality of the prescribed burns.
- Excellent Wildlife Habitats.
- Excellent Hunting/Fishing quality.
- Excellent plants, roads/culverts and ditches.
- Excellent ground water quality, surface water quality and surface water quantity monitoring.
- Excellent signage.
- Excellent recreational opportunities.
- Excellent waste disposal.
- Excellent equipment.

Recommendations and Checklist Findings

The management plan must include responses to the recommendations and checklist items that are identified below.

Recommendations

The following recommendations resulted from a discussion and vote of review team members.

1. Due to the critical need to restore the habitat for the scrub jays and the scrub communities, the team recommends that DRP provide additional contract funds and staff to the Cedar Key Scrub Reserve, to facilitate resource management objectives.

Manager's Response: Agree in principle. The Division is committed to restoration of scrub jay habitat and will continue to provide funding through Resource Restoration funds or other sources, as funds become available and in balance with other pressing statewide resource management needs. The Division has been awarded a $30,000 grant from the USFWS for scrub jay habitat restoration in FY2004-05.

2. Due to the unique, disjunct, and declining population of scrub jays at the reserve, the team recommends that the DRP make it a high priority to acquire additional scrub areas near the reserve, to increase the viability of the scrub jay population.

Manager's Response: Agree. The Division will continue to make this a high priority.

Checklist findings

The following items received low scores on the review team checklist (see Attachment 1), which indicates that management actions, in the field, were insufficient (f) or that the issue was not sufficiently addressed in the management plan (p).

1. Discussion in the management plan of management of the Sandhill community.

Manager's Response: Agree. The management plan update will address management of the Sandhill community. The Sandhill in the reserve is very limited and is adjacent to a developed portion of the reserve. For these reasons it is not as high a restoration priority as Scrub and Scrubby Flatwoods.

2. Discussion in the management plan of the need for more law enforcement.

Manager's Response: Agree. The management plan update will address law enforcement needs. The Division must request additional assistance through the Division of Law Enforcement or from a local law enforcement agency.

3. Discussion in the management plan of the need for acquisition of Inholdings/additions.

Manager's Response: Agree. The updated management plan will continue to do this.

4. Discussion in the management plan of the need for additional buildings, staff, and funding.

Manager's Response:

a) Disagree on buildings. State Park land use plans are developed by professional planning staff through a public process and are approved by the Acquisition and Restoration Council. It is beyond the scope of the review team's responsibilities to plan facilities or development on state lands.

b) Agree on staff (assuming land management staffing is the concern). If it is determined that additional staff are needed at the time of the next unit management plan revision, it will be included in the plan. However, no new staff can be assigned to this or any other park unit unless they are appropriated by the Legislature or reassigned from other units. Additional staff is needed by a majority of parks statewide, which is why we regularly seek positions, volunteers, and partners. Funding is determined annually by the Florida Legislature.

c) Agree on funding (assuming land management issues are the concern). The updated unit management plan will address land management funding needs. However, Division funding is determined annually by the Florida Legislature and funds are allocated to the 150+ state parks according to priority needs. All state parks would benefit from additional funding.