

KISSIMMEE PRAIRIE PRESERVE STATE PARK

UNIT MANAGEMENT PLAN

APPROVED

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

April 22, 2005



Department of Environmental Protection

Jeb Bush
Governor

Marjorie Stoneman Douglas Building
3900 Commonwealth Boulevard, MS 140
Tallahassee, Florida 32399-3000

Colleen M. Castille
Secretary

August 8, 2005

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

Re: Kissimmee Prairie Preserve State Park

Lease #4166

Dear Ms. White:

On **April 22, 2005**, the Acquisition and Restoration Council recommended approval of the **Kissimmee Prairie Preserve State Park** 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 **Kissimmee Prairie Preserve State Park**. 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 **April 22, 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

"More Protection, Less Process"

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INTRODUCTION

Kissimmee Prairie Preserve State Park is located in Okeechobee County (see Vicinity Map). Access to the state preserve is by heading north from the town of Okeechobee on Highway 441, then west on County Road 724 until it ends. Turn north (Peavine Road) and follow the road 5 miles north to the preserve entrance (see Reference Map). The vicinity map also reflects significant land and water resources existing near the preserve.

Acquisition of the preserve began in 1996, under the Conservation and Recreational Lands (CARL) program and the Save Our Rivers program. The purchase of the river parcels under the SFWMD Save Our Rivers program was a portion of the land and easement acquisition project by the District to support the future restoration of the Kissimmee River. Under the CARL program, the acquisition of the interior parcel was for the purposes of protecting unique environmentally sensitive lands, to provide significant habitat for native species and threatened and endangered species, and to provide resource-based outdoor recreation. Currently the preserve contains approximately 53,760 acres.

At Kissimmee Prairie Preserve State Park, 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 (see [Addendum 1](#)).

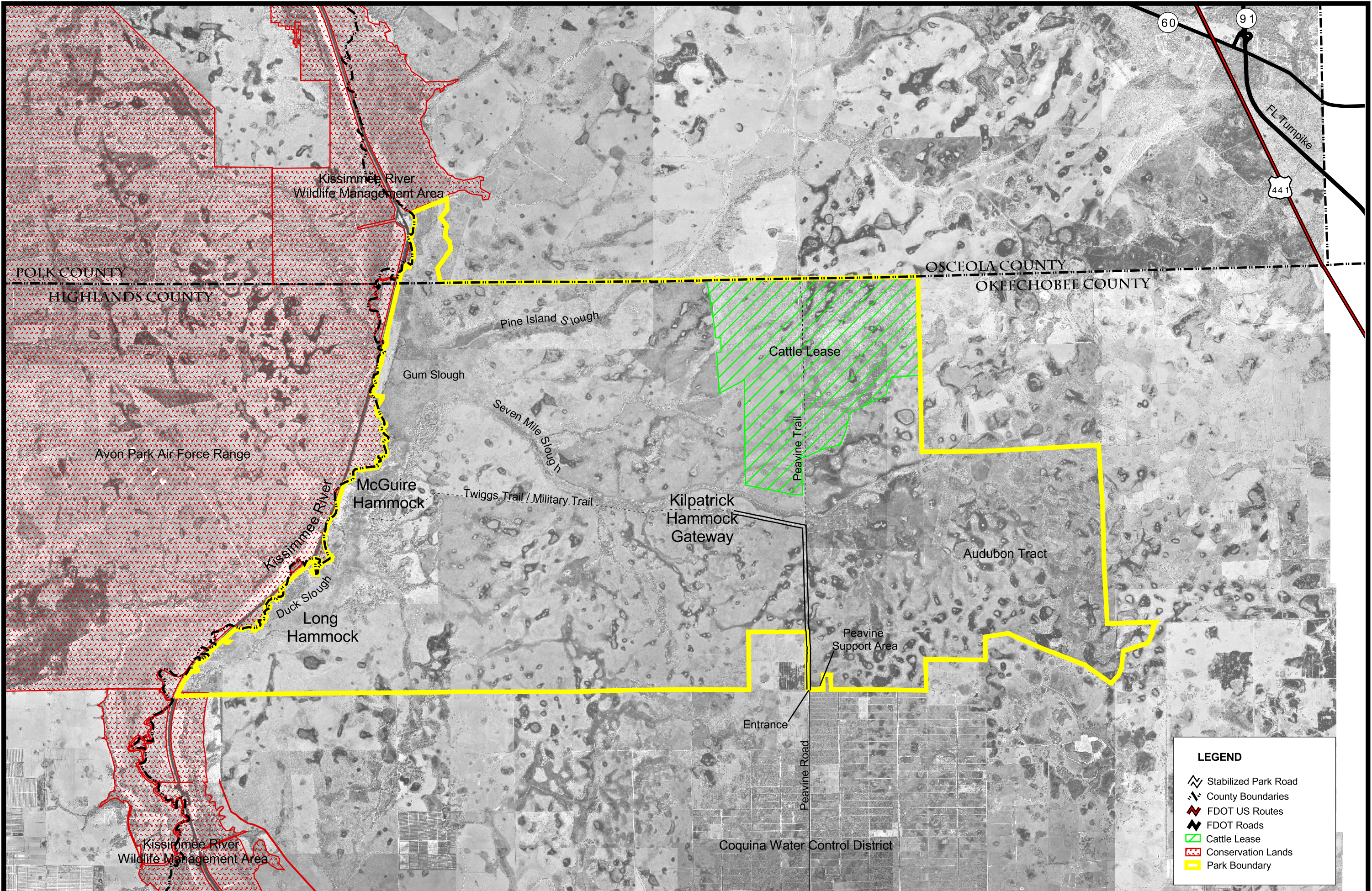
PURPOSE AND SCOPE OF THE PLAN

This plan serves as the basic statement of policy and direction for the management of Kissimmee Prairie Preserve State Park as a unit of Florida's state park system. It identifies the objectives, criteria and standards that guide each aspect of preserve 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 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 preserve. The resource management component provides a detailed inventory and assessment of the natural and cultural resources of the preserve. 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 preserve 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 preserve 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



KISSIMMEE PRAIRIE PRESERVE STATE PARK



LEGEND

- Stabilized Park Road
- County Boundaries
- FDOT US Routes
- FDOT Roads
- Cattle Lease
- Conservation Lands
- Park Boundary

REFERENCE MAP

resource needs and values of the preserve. This analysis considered the preserve natural and cultural resources, management needs, aesthetic values, visitation and visitor experiences. For this preserve, 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 preserve.

The potential for generating revenue to enhance management was also analyzed. Visitor fees and charges are the principal source of revenue generated by the preserve. 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 preserve 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 of Recreation and Parks (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.

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 Kissimmee Prairie Preserve State Park, 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 preserve, although other compatible uses are permitted in limited amounts. Program emphasis is placed on interpretation of the natural and cultural attributes of the preserve.

Preserve Goals and Objectives

The following preserve goals and objectives express the Division long-term intent in managing the preserve. 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 preserve 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. Improve public awareness and encourage stewardship and protection of the natural resources through education, interpretation and enforcement of rules and regulations.
2. Maintain prescribed fire program.
 - A. Develop and utilize a prescribed fire program to monitor the effect of fire on the natural communities within the preserve.
 - B. Prescribe burn on a one to three-year rotation to perpetuate and restore the natural communities.
 - C. Secure funding to complete a perimeter firebreak.
 - D. Secure funding for two slip-on units.
 - E. Secure funding to acquire and maintain personal protective equipment (PPE) and other necessary fire equipment.
 - F. Cooperate with adjacent land managers and agencies to implement respective prescribed fire programs.
3. Protect, restore and maintain native plant and animal diversity, and natural resource abundance.
 - A. Seek funding to complete inventory of vascular and nonvascular plants.
 - B. Seek funding to complete inventory of vertebrates.
 - C. Seek funding to complete inventory of arthropods.
 - D. Continue to expand listed species monitoring and research. Seek funding to locate, monitor, map, restore and maintain listed species.

- E. Continue annual Florida grasshopper sparrow surveys.
- F. Create opportunities for outside researchers to study Florida dry prairie and its components within the preserve and pursue funding for construction of a research center with dormitory facilities
- G. Seek funding and appropriate assistance for groundcover restoration of the pasture.
- 4. Establish and maintain invasive exotic plant and animal removal programs.
 - A. Seek funding to locate, map, remove and monitor exotic plants.
 - B. Maintain a successful feral pig removal contract.
- 5. Protect, restore, maintain and monitor natural hydrological regimes and natural water quality conditions.
 - A. Seek mitigation and/or grant monies to complete hydrological restoration of disturbed areas.
 - B. Seek funding and appropriate assistance to establish surface water quality monitoring program.
 - C. Seek funding for remediation of cattle dip vat sites.
- 6. Protect the preserve boundary
 - A. Review, refine and pursue the optimum boundary.
 - B. Seek law enforcement assistance as needed to manage a single entrance into the preserve.
- 7. Protect the visual resources and the preserve the unique wilderness character of the landscape.
- 8. Use GIS or other technologies for all restoration, monitoring, research and land management activities within the preserve.

Cultural Resources

- 9. Protect and preserve the cultural resources of Kissimmee Prairie Preserve State Park.
 - A. Conduct a Level I archaeological survey on recently acquired lands to determine the identity, location and extent of any unrecorded prehistoric or historic archaeological sites.
 - B. Seek funding to conduct a level II archaeological survey on the preserve.
 - C. Develop and implement a written plan to protect and preserve the recorded cultural sites from erosion, animal and root damage, and vandalism.
 - D. Pursue funding to interpret existing on-site cultural sites including Kilpatrick homestead.
 - E. Seek grant funding for research projects to document the prehistory and history of the preserve, Kissimmee River Valley, Lake Okeechobee Basin and surrounding area.
 - F. Improve public awareness and encourage protection and stewardship of the preserve's cultural resources through education, interpretation and enforcement of agency rules and regulations.
 - G. Interpret preserve cultural resources in context to educate preserve visitors about the preserve and area history through interpretive signs and programs.

Recreation

- 10. Continue to provide quality resource based outdoor recreational and interpretive programs and facilities at the preserve.
 - A. Maintain overnight accommodations, including RV and tent camping.
 - B. Maintain opportunities for picnicking, nature observation, hiking, horseback riding, and biking.
 - C. Interpret the natural and cultural resources through static displays, guided tours, ranger-led talks and guest speakers.
- 11. 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. Provide single-use and shared-use trails for hikers, off-road bikers and horse back riders that allows for short trips, full day trips and multi-day trips with primitive campsites along the trail.
- B. Pursue funding for construction of a Visitor Center as well as cabins that would house overnight guests in Kilpatrick Hammock.
- C. Pursue funding for development of a prairie buggy and guided tours.
- D. Improve horse camping loop by adding a bathhouse and power/water hookups at each site. Provide a shade structure and day-use equestrian trailhead in the horse paddock.
- E. Pursue funding for construction of a stargazing pad.
- F. Provide a Picnic Area in Kilpatrick Hammock.
- G. Provide a Picnic Area and develop a River Camp with camping platforms and a primitive group camp in McGuire Hammock.
- H. Continue providing opportunities for preserve visitors to accompany field staff conducting field research.
- I. Develop programs with the local public schools' environmental education programs.

Park Administration/Operations

- 12. Provide efficient and effective management of preserve resources and facilities while maintaining a high level of visitor service.
 - A. Pursue funding for two FTE positions to meet growing preserve needs associated with the resource management program and to meet new recreational demands in addition to maintenance, visitor services and preserve operations.
 - B. Provide universally accessible facilities in compliance with the Americans with Disabilities Act.
 - C. Assure that appropriate training is provided to all staff in visitor services, preserve information and emergency procedures.
 - D. Consider both threat of wildfire and complexity of prescribed fire program when developing and locating new facilities within the preserve.
 - E. Seek funding for preserve infrastructure needs including expanded shop and storage facilities.
 - F. Develop preserve facilities with maximum sensitivity to the natural and cultural resources of the state preserve through the application of principles of sustainable design and development.
 - G. Coordinate water resources protection and management activities such as restoration, water quality monitoring, facilities design, permitting, construction and maintenance with the SFWMD, the DEP and others.
 - H. Develop and implement strategies to provide opportunities and to recruit volunteers for the Preserve.
 - I. Maintain a coordinated network of law enforcement agencies, including the Florida Park Patrol, other state agencies and applicable local governments for the protection of the natural and cultural resources of the state preserve and its visitors.
 - J. Develop and maintain a citizens' support organization (CSO) for the preserve.

Management Coordination

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

The Department of Agriculture and Consumer Services, Division of Forestry (DOF), assists

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

Preserve staff coordinates management of the dry prairie ecosystem for the endangered Florida grasshopper sparrow with the U.S. Fish and Wildlife Service. In addition, numerous sparrow-related projects are coordinated with the University of Central Florida, Archbold Biological Research Station, Avon Park Air Force Range (Department of Defense), National Audubon Society and Three Lakes Wildlife Management Area (FFWCC).

Management of the floodplain marshes and restoration of areas along the Kissimmee River are coordinated with South Florida Water Management District. Treatment of various exotic plant species is coordinated with both South Florida Water Management District and DEP's Bureau of Invasive Plant Management.

Public Participation

The Division provided an opportunity for public input by conducting a public workshop and an advisory group meeting. A public workshop was held on November 30, 2004. The purpose of this meeting was to present this draft management plan to the public. An Advisory Group meeting was held on December 1, 2004. The purpose of this meeting was to provide the Advisory Group members the opportunity to discuss this draft management plan.

Other Designations

Kissimmee Prairie Preserve State Park 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 preserve is a component of the Florida Greenways and Trails System.

The waters within the unit have not been designated as Outstanding Florida Waters, pursuant to Chapter 62-302 Florida Administrative Code. Surface waters in this unit are classified as Class III waters by DEP. This unit is not within or adjacent to 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

Kissimmee Prairie Preserve State Park (KPPSP) is located on the east side of the former Kissimmee River, currently the C-38 Canal, south of Lake Kissimmee and north of Lake Okeechobee. It lies in a relatively flat area, the Osceola Plain, which slopes from east to west towards the river. Elevation ranges from about 70 feet along the eastern boundary to 40 feet in some areas adjacent to the river. The landscape is a matrix of extensive open prairie, small ponds or depressions, swales, partially wooded sloughs, hammocks, and marsh along the river.

The preserve occurs within the Eastern Flatwoods District physiographic division (Brooks 1981a). This area, which is also called the Coastal Lowlands, extends from Jacksonville south towards West Palm Beach and well inland in the southern portion bordering the Lake Wales Ridge area to the west. This district originated as a sequence of barrier islands and lagoons during the Plio-Pleistocene and Recent time. Specifically, the preserve lies within the Kissimmee Valley sub district, which is characterized as seasonally flooded lowlands of river swamp and grassland prairies mostly underlain by lagoonal silty sand deposits.

Geology

KPPSP is underlain by one geologic deposit (Brooks 1981b). This Plio-Pleistocene deposit consists of preglacial Pleistocene lagoonal and prograded unlithified coastal sand, shelly silty gray to greenish gray sand.

Soils

The Natural Resources Conservation Service identified 35 soil types (see Soils Map) in KPPSP in the soil surveys of Okeechobee County (Lewis et. al. 2001) and Osceola County (Readle 1979). Most of the soil types found at the preserve are classified as being poorly drained, nearly level and sandy. Many of these soil types have a water table near or at the surface or are ponded for a portion of the year. Addendum 3 contains detailed descriptions of the soil types within this unit.

Management activities will follow generally accepted best management practices to prevent soil erosion and conserve soil and water resources on the preserve.

Minerals

There are no currently known minerals of commercial value within the preserve.

Hydrology

The Kissimmee River is part of a large drainage system known as the Kissimmee-Okeechobee-Everglades drainage basin. The headwaters of the Kissimmee River originate south of Orlando. From this upper flat basin, the water flows from Lake Kissimmee to the Kissimmee River. The Kissimmee River once meandered for over 103 miles as a long natural river that had many meanders and switchbacks and an extensive floodplain marsh. In response to catastrophic flooding, the river was canalized in the 1960s by the U. S. Army Corps of Engineers into a 56-mile long canal (C-38). Unfortunately, because of this project, aesthetics, biological diversity and downstream water quality declined (Hand et al. 1996). Over 43,000 acres of wetlands disappeared, and migratory waterfowl populations declined by as much as 90 percent (SFWMD no date).

Although the floodplain of the Kissimmee River was substantially altered by the construction of the C-38 canal, the floodplain in the preserve still supports a broad area of semi-natural floodplain marsh with many native species. The drawdown associated with canal construction has allowed some areas to be planted in exotic pasture grasses and has led to woody encroachment. In addition, some of the spoil deposition sites, or “berms”, are covered with exotics species, with cogongrass (*Imperata cylindrica*), rose natalgrass (*Rhynchelytrum repens*), guava (*Psidium guajava*), and paragrass (*Urochloa mutica*) being the most apparent.

It is unknown to what extent the major Kissimmee River restoration project will effect the preserve. Any portion of the C-38 that is backfilled and restored along the boundary of the preserve will greatly benefit the floodplain marshes and the slough systems of the preserve. Hydroperiod will be increased, and woody encroachment will be reduced.

The internal portion of the preserve is characterized by several major sloughs that are aligned in roughly an east-west orientation. These sloughs run for many miles through the preserve. The largest and most extensive is Seven Mile Slough. Five Mile Slough is a tributary to Seven Mile Slough. Both Seven Mile Slough and Pine Island Slough drain into Gum Slough, which is located on the floodplain marsh of the Kissimmee River. This area has become invaded by woody plants due to the altered hydrology of the Kissimmee River. Duck Slough is another

LEGEND

- Okeechobee County
- 2-Basinger fine sand
- 3-Basinger and Placid soils, depressional
- 4-Bradenton fine sand
- 5-Valkaria fine sand
- 6-Manatee loamy fine sand, depressional
- 7-Floridana, Riviera and Placid soils, depressional
- 8-Pineda fine sand
- 9-Riviera fine sand
- 10-Ft. Drum fine sand
- 11-Immokalee fine sand
- 12-Udorthents, 2 to 35 percent slopes
- 13-Manatee, Floridana and Tequesta soils, frequently flooded
- 14-Myakka fine sand
- 15-Okeelanta muck
- 18-Parkwood fine sand
- 19-Floridana, Placid and Okeelanta soils, frequently flooded
- 20-Pomello fine sand, 0 to 5 percent slopes
- 23-St. Johns fine sand
- 24-Terra Ceia muck
- 25-Wabasso fine muck
- Water
- Osceola County
- 1-Adamsville sand
- 4-Arents, 0 to 5 percent slopes
- 5-Basinger fine sand
- 6-Basinger fine sand, depressional
- 10-Delray loamy fine sand
- 11-EauGallie fine sand
- 12-Floridana fine sand
- 14-Holopaw fine sand
- 16-Immokalee fine sand
- 17-Kaliga muck
- 19-Malabar fine sand
- 22-Myakka fine sand
- 25-Nittaw muck
- 26-Oldsmar fine sand
- 32-Placid fine sand
- 36-Pompano fine sand
- 38-Riviera fine sand
- 40-Satellite sand
- 42-Smyrna fine sand
- 47-Winder loamy fine sand
- Highlands County
- 23-Gator muck
- County Boundary



KISSIMMEE PRAIRIE
PRESERVE STATE PARK

4000 0 4000 8000 Feet

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

SOILS MAP

major drainage in the southwestern corner of the preserve. In addition, there is a large, unnamed swale in the center of the preserve, which flows in a northerly direction into Seven Mile Slough.

The preserve is characterized by many acres of depression marsh, basin marsh and wet prairie. Many of the depression marshes are deep enough to hold water throughout the year. A study of some of the wetlands in the Audubon parcel found them to be mesotrophic (Kozusko 1995). Fish populations in acidic, mesotrophic wetlands can be quite robust, as is the case in Shin Hammock marsh (Paul Gray, pers. comm.).

There has been a certain amount of hydrological disruption to the property related to past agricultural uses. There were at least 100 miles of canals throughout the preserve at the time of purchase. Several areas were converted into vegetable fields. These field areas were ditched and diked to form impoundments in order to control water levels. All of the major drainage systems had been canalized to varying degrees. This canalizing was done to expedite drainage from the property. In some areas, depression marshes were interconnected with canals. Although seasonal hydroperiods have certainly been reduced, the overall impacts are unknown.

During the period 1999-2001, a major restoration project back filled approximately 73 miles of canals within the preserve as part of the ongoing effort to restore a more natural hydrology. Rows of trees that had grown on canal spoil banks were removed as well. These tree rows might have been serving as potential barriers to Florida grasshopper sparrow (*Ammodramus savannarum floridanus*) dispersal. Over time, the remaining hydrologically disturbed areas are targeted for restoration. Old agricultural areas in the former Audubon Sanctuary are in the greatest need of restoration.

Additionally, it is estimated that at least 100 miles of plow lines were created within the preserve as a result of fire suppression efforts related to wildfires. As efforts to GPS the extent of these lines to date are incomplete, the full linear extent has yet to be quantified. Plow lines affect the surface water hydrology, alter the local vegetation composition, act as vectors for edge and exotic species, and are physical barriers to both small animal movement/dispersal patterns and prescribed fire. Restoration back to the original ground surface level and native ground cover is necessary.

Various funding sources are being sought for these projects through grant applications and through mitigation projects. See <http://feri.dep.state.fl.us> for proposed restoration projects within the preserve.

The 2003 Natural Resource Management Evaluation (RME) made specific recommendations regarding the hydrology of KPPSP (Florida Dept. of Environmental Protection 2003b). The report commends KPPSP for the hydrological (canal) restoration work already completed, but recognizes that no data exist on the quality or quantity of surface water on the preserve. It is recommended that the Division of Recreation and Parks coordinate with the South Florida Water Management District (SFWMD) or within the Department of Environmental Protection (DEP) to develop, implement, and maintain a water quality and quantity testing monitoring plan. Additionally, KPPSP should seek the technical expertise of the SFWMD toward the development of a hydrological model of surface water movements to guide future restoration efforts and to evaluate the effectiveness of past restoration efforts. The model should include information on the entry (influent) and exit (effluent) points of surface water within the

preserve. The pollution levels of ground water within the preserve should also be evaluated. While there is no reason to suspect a problem, there is also no reason to deny the possibility that there may be a problem with ground water quality given the past uses of the land now within the preserve, and the current land uses of surrounding properties.

The RME committee also noted the need to improve hydrological monitoring within the preserve. Preserve staff is directed to seek the cooperation of the SFWMD in the acquisition and installation of a water level recorder in Seven Mile Slough so that long-term surface water trends can be monitored as well as guidance on whether a need exists to place recorders in other locations.

Some water quality issues exist both inside the preserve boundaries and outside. The cattle lease requires the leasee to put fertilizer on the improved pasture. While fertilization is standard practice for maintaining introduced pasture grasses, there is concern over whether the water quality and subsequently the aquatic natural systems are being deleteriously affected. In addition, there is concern regarding the possibility that fertilizer and animal waste could be entering the preserve from adjoining properties. Currently, no water quality data is being collected. To that end, staff should seek the assistance of the appropriate agencies in establishing stations to sample surface water quality.

Natural Communities

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

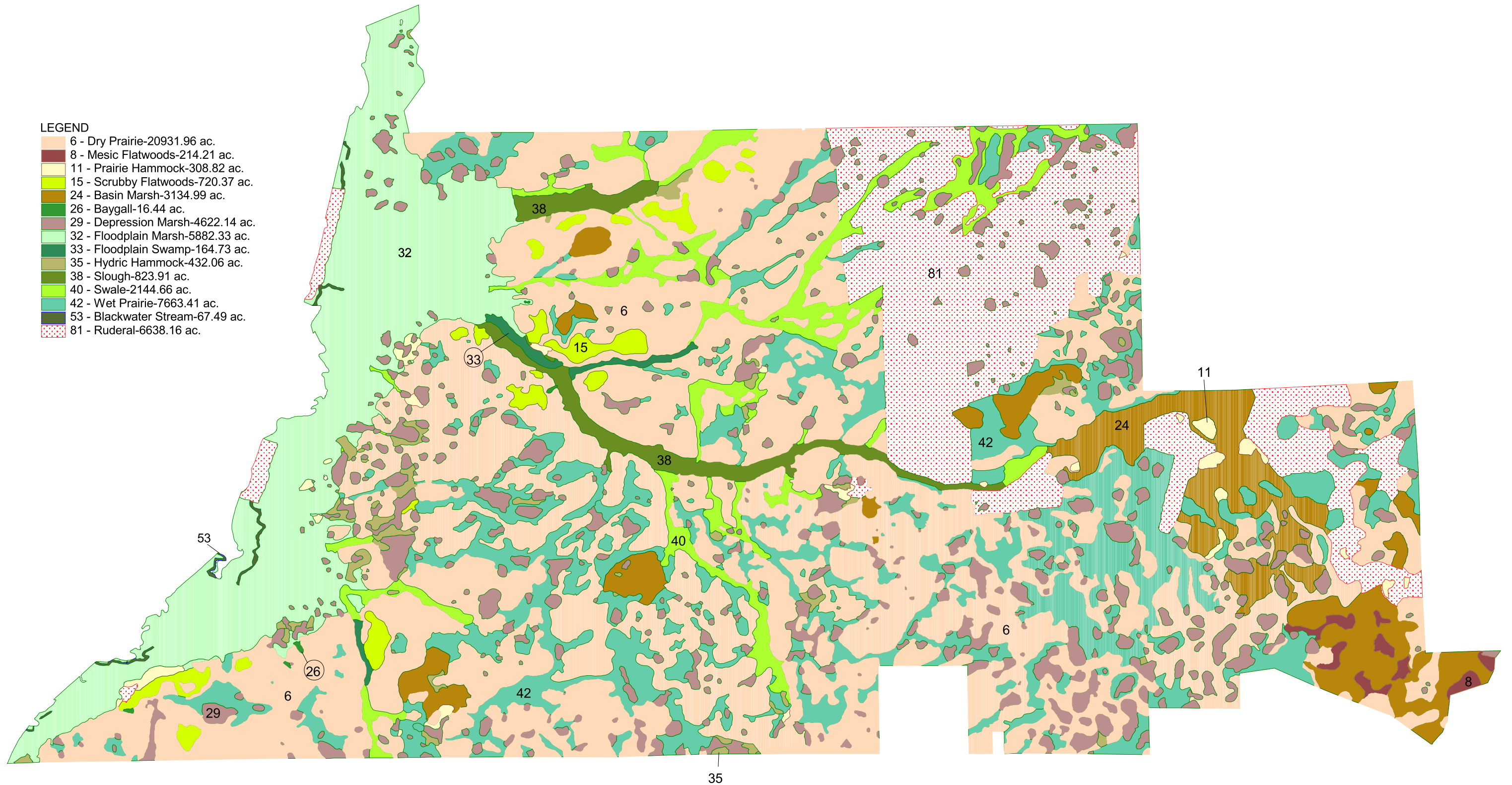
This plan also uses information contained within the South Florida Multi-Species Recovery Plan (MSRP) developed by the U. S. Fish and Wildlife Service (U.S. Fish and Wildlife Service 1999). Obvious differences in species composition can occur, despite similar physical conditions. In other instances, 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 preserve contains 14 distinct natural communities (see Natural Communities Map) in addition to ruderal and developed areas. Park specific assessments of the existing natural communities are provided in the narrative below. A list of plants and animals occurring in the unit is contained in [Addendum 4](#).

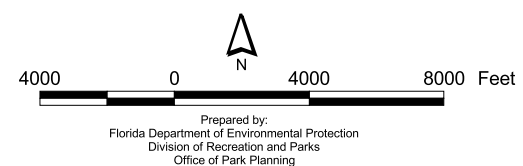
Dry prairie. Dry prairie, or Florida dry prairie, is the most common natural community within the preserve and is the matrix in which the other communities occur as hydrologic conditions and topography vary. Dry prairie is a natural community endemic to the state, with no similar communities found in adjacent states, and is ranked as G2, globally imperiled, and S2, state imperiled, by FNAI (FNAI 2002). It appears to be geographically restricted to central and south-central peninsular Florida. Dry prairie occurs on nearly level, poorly drained

LEGEND

- 6 - Dry Prairie-20931.96 ac.
- 8 - Mesic Flatwoods-214.21 ac.
- 11 - Prairie Hammock-308.82 ac.
- 15 - Scrubby Flatwoods-720.37 ac.
- 24 - Basin Marsh-3134.99 ac.
- 26 - Baygall-16.44 ac.
- 29 - Depression Marsh-4622.14 ac.
- 32 - Floodplain Marsh-5882.33 ac.
- 33 - Floodplain Swamp-164.73 ac.
- 35 - Hydric Hammock-432.06 ac.
- 38 - Slough-823.91 ac.
- 40 - Swale-2144.66 ac.
- 42 - Wet Prairie-7663.41 ac.
- 53 - Blackwater Stream-67.49 ac.
- 81 - Ruderal-6638.16 ac.



KISSIMMEE PRAIRIE
PRESERVE STATE PARK



NATURAL COMMUNITIES
MAP

to somewhat poorly drained inter-drainageway flats and is best developed on acidic, nutrient-poor, sandy to sandy clay soils in either the Spodosols or Alfisols soil orders.

Dry prairie is characterized as a nearly treeless plain with a diverse ground cover that includes regionally endemic plant taxa. Forested natural communities within the preserve account for only 2.11 percent of the land area, and these are prairie hammock, mesic flatwoods, hydric hammock, baygall and floodplain swamp. Dry prairie dominant ground cover species include wiregrass (*Aristida beyrichiana*), saw palmetto (*Serenoa repens*), dwarf live oak (*Quercus minima*), and other grasses, forbs and shrubs. Other common shrubs of dry prairie include staggerbush (*Lyonia fruticosa*), fetterbush (*Lyonia lucida*), gallberry (*Ilex glabra*), and shiny blueberry

(*Vaccinium myrsinites*). In frequently burned sites, shrub cover is reduced, allowing more space for the development of a diverse herbaceous ground cover. Other characteristic grasses of dry prairie include broomsedge bluestem (*Andropogon ternarius* var. *cabanisii*), bluestem (*Andropogon virginicus* var. *decipiens*), little bluestem (*Schizachyrium stoloniferum*), and lopsided Indiangrass (*Sorghastrum secundum*). These characteristic associated grasses can usually serve to distinguish Florida dry prairie from interspersed wet prairie patches.

Field surveys in central Florida (Bridges 1997) showed that in terms of total floristic composition most dry prairies are essentially identical to mesic and wet-mesic flatwoods. A number of authors have noted that dry prairie hardly differs from pine flatwoods except in the absence of pine trees (Abrahamson and Hartnett 1990). Often, the only notable difference is the treeless condition, presumably due to more frequent fire, past clear cutting, and/or livestock grazing (Abrahamson and Hartnett 1990). In fact, dry prairie is often (but not exclusively) found on the same soil series, topographic positions and moisture regimes as mesic flatwoods. However, there is some indication that it may differ in its relative landscape position to other natural communities, which may have resulted in a shorter fire return interval (Bridges 1997). Some examples of dry prairie might best be thought of as points on a continuum of variation in canopy cover of mesic pine flatwoods, but others, as in the examples within KPPSP, represent a distinct community type.

Specifically, five natural community types of dry prairie [dry (sub-xeric) type, dry-mesic sandy type, mesic type, wet-mesic alfic soil type, and wet-mesic spodic soil type] are tentatively described, based in part upon quantitative vegetation analysis of south-central Florida dry prairies. These community types are based upon Bridges (1997, 1998a), and may be subject to revision based on continuing data analysis (Bridges and Reese 1998).

The original pre-settlement extent of dry prairie has been drastically reduced by 81 percent (Shriver and Vickery 1999). Only a few areas still contain significant amounts of this community type. These are Avon Park Air Force Range, Three Lakes WMA, the Bright Hour Ranch, Fish-eating Creek, and Myakka River State Park. Bird species associated with this community may not have the necessary amount of habitat required to ensure their long-term survival (Cox et al. 1994). The preserve is the largest and most significant remaining example of Florida dry prairie in the public domain. The acquisition of KPPSP substantially increases the preserved Florida dry prairie area in the state (by approximately 21,000 acres), and the prospects for preservation of this natural community and associated rare species.

The natural fire frequency for Florida dry prairie is unknown but may be every one to four years, which is slightly more frequent than has typically occurred within mesic flatwoods in

recent decades. This statement is based mostly upon historical accounts, journals and surveys (Abrahamson and Hartnett 1990, Frost 1993), although scientific evidence to support or refute this assumption is lacking. A higher fire frequency over a long period would presumably be the critical factor that limits pine recruitment in this community, but it may not be the sole factor responsible for limiting natural pine establishment. Florida dry prairie may have once occurred naturally, as a community type embedded in higher fire return interval areas within the mesic flatwoods/depression marsh/prairie pre-settlement landscape mosaic. Therefore, when considered in a landscape context, Florida dry prairie could have occurred naturally along a densely forested to treeless continuum of mesic pine flatwoods in response to variation in the natural fire regime, as dictated by natural fire barriers and behavior of individual fires. Due to the few natural barriers to fire within the Kissimmee Prairie, it is quite possible that fire swept through the landscape often enough to prevent pines from becoming established except in rare fire-protected areas. The 1858 public land survey notes examined (those for T33S, R32E) indicate that the area was mostly prairie or low prairie, and no witness trees are given for section corners, indicating a treeless or mostly treeless landscape.

The dry prairie within the preserve was qualified as being in excellent condition by the RME team after the 2002 site visit (Florida Department of Environmental Protection 2003a). Most of the area has been subject to prescribed burning on a 2 to 3 year frequency for several decades or longer. The current plan strives for a fire return interval of 1 to 3 years, every 2 on average, with a majority to be burned within the growing season (defined generally as the period between March and July).

Mesic flatwoods. The mesic pine flatwood habitat is dominated by a slash pine (*Pinus elliotii*) overstory with an upland understory. Mesic pine flatwoods are distinct from hydric and xeric pine flatwoods in the tendency toward midstory dominance by saw palmetto and scrub species such as fetterbush, tarflower (*Bejaria racemosa*), rusty staggerbush (*Lyonia ferruginea*), cabbage palm (*Sabal palmetto*), and wax myrtle (*Myrica cerifera*). Understory includes a wide variety of grasses (*Agrostis*, *Andropogon*, *Aristida*, *Dichanthelium*, *Eragrostis*, and *Panicum* spp.), pawpaws (*Asimina* spp.), gopher apple (*Licania michauxii*), legumes (*Cassia*, *Crotalaria*, *Rhynchosia*, and *Tephrosia* spp.), milkworts (*Polygala* spp.), blueberries (*Vaccinium* spp.), and a wide variety of composites.

Mesic flatwoods occur on relatively flat, moderately to poorly drained terrain. The soils typically consist of 1-3 feet of acidic sands generally overlying and organic hardpan or clayey subsoil. The hardpan substantially reduces the percolation of water below and above its surface. During the rainy seasons, water frequently stands on the hardpan's surface and briefly inundates much of the flatwoods; while during the drier seasons, groundwater is unobtainable for many plants whose roots fail to penetrate the hardpan. Thus, many species are under the stress of water saturation during the wet seasons and under the stress of dehydration during the dry seasons.

Another important physical factor in mesic flatwoods is fire, which probably occurred every 1 to 8 years during pre-Columbian times. Nearly all plants and animals inhabiting this community are adapted to periodic fires; several species depend on fire for their continued existence. Without relatively frequent fires, mesic flatwoods succeed into hardwood-dominated forests whose closed canopy can essentially eliminate the ground cover herbs and shrubs. Additionally, the dense layer of litter that accumulates on unburned sites can eliminate the reproduction of pines which requires a mineral soil substrate for proper regeneration. Thus, the integrity of the mesic flatwood community is dependent on periodic fires. However,

fires that are too frequent or too hot would eliminate pine recruitment and eventually transform mesic flatwoods into dry prairie.

Mesic flatwoods are closely associated with and often grade into wet flatwoods, dry prairie, or scrubby flatwoods. The question of mesic flatwood occurrence within KPPSP requires further research. If these areas are, in fact, mesic flatwoods, they are only small patches occurring within a matrix of other, mostly hydric, community types. Most of the currently supposed mesic flatwoods within KPPSP occur in the southeastern corner of the Audubon tract. A 'pine island' at the headwaters of Seven Mile Slough and an area within the river hammock just south of Military Trail are also possible candidates for mesic flatwood classification. In strong support of this classification, the NRCS soil survey maps delineate a soil type unique within the preserve to only these areas.

Prairie hammock. Prairie hammock is often used to refer to any clump of Virginia live oak (*Quercus virginiana*) and/or cabbage palms surrounded by prairie or marsh communities. These hammocks vary greatly in size, soil type, degree of protection from fire, and hydrology. In the vegetation mapping for the preserve, prairie hammock is reserved for those hammocks with a substantial elevation rise from the surrounding marshes or prairies, sufficient to support some upland vegetation in the center of the hammock. Although the borders of even these hammocks are saturated or inundated such as to resemble hydric hammocks, these wetter zones are lumped with the prairie hammock center of the hammock for mapping. This distinction between prairie hammocks and hydric hammocks is rather arbitrary, but may be useful in relating biodiversity of these areas to the different hammock types.

Even with this distinction between prairie hammocks and hydric hammocks, three distinct subtypes of prairie hammocks were found on the preserve. All of these prairie hammocks have a canopy dominated by Virginia live oak and cabbage palm, but differ in associated tree species and understory components. The most unusual of these subtypes can be thought of as prairie hammock with a subtropical understory. Only two examples of this hammock type were surveyed, but a few others are potentially this type. The canopy of these areas is of mature Virginia live oak, cabbage palm, hackberry (*Celtis laevigata*), American elm (*Ulmus americana*), and laurel oak (*Quercus laurifolia*). What most distinguishes this hammock type is the tall subcanopy layer of twinberry (*Myrcianthes fragrans*), and the presence of other subtropical shrubs and vines such as marlberry (*Ardisia escallonioides*), wild coffee (*Psychotria nervosa*), smallflower mock buckthorn (*Sageretia minutiflora*), wild lime (*Zanthoxylum fagara*), and leafless swallowwort (*Cynanchum scoparium*). This suite of species, along with upland swampprivet (*Forestiera ligustrina*), also found in these hammocks, indicates a marly soil with likely a higher pH than the surrounding landscape. The understory density of these hammocks may have been reduced somewhat by past grazing and be in the process of recovery. Hammocks with subtropical understory components are very unusual in the interior of central Florida, although they are somewhat more common along the coasts. These areas are very important local biodiversity components, and extremely sensitive to alterations by overuse by animals (cattle, feral hogs) or intensive human use (camping, horseback riding).

A second prairie hammock subtype was only seen once, the high sandy prairie hammock. This type was found at a high ridge along the edge of the floodplain of the Kissimmee River (just northeast of the old Prescott Homestead in Long Hammock, Section 1, T34S, R31E), and is the site of a known Indian mound. Canopy trees here include live oak, cabbage palm, and pignut hickory (*Carya glabra*), and the understory includes such sandy soil indicators as

persimmon (*Diospyros virginiana*), wild olive (*Osmanthus americanus*), redbay (*Persea borbonia*), Carolina laurel cherry (*Prunus caroliniana*), coralbean (*Erythrina herbacea*), and Carolina holly (*Ilex ambigua*). This hammock is extremely protected from fire by its unusual position between a large area of scrubby flatwoods and the Kissimmee River floodplain. The zone where this hammock meets the adjacent scrubby flatwoods resembles a xeric hammock, but is only a narrow zone and is not mapped separately. This seems to be the only high sandy bluff along the river floodplain on the preserve that is as well drained and protected from fire as to support this type of hammock. Despite its proximity to an old homestead, natural quality is high, being compromised primarily by an infestation of the exotic air potato (*Dioscorea bulbifera*) in parts of the hammock.

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The prairie hammocks of the preserve are very unusual and sensitive habitats. The low biodiversity of the majority of prairie hammocks could be the result of past damage to the groundcover by cattle and feral hogs, both of which preferentially utilize these sites. (Alternatively, some hammocks may have lower diversity by being subject to occasional fire, where, during dry periods, fires from the surrounding prairies and marshes burn through the groundcover of the hammocks.) Since hammocks are all of small area and are limited in total extent, care should be taken when planning trails, primitive camping areas, horseback camping facilities and other facilities to avoid further damage to the groundcover of the more intact hammocks.

The hammocks are currently thought to be in good condition (Florida Dept. of Environmental Protection 2003a).

Scrubby flatwoods. This natural community needs to be reclassified as a form of dry prairie, ‘sub-xeric’ dry prairie (Bridges 1997). The dry (sub-xeric) community type of dry prairie (scrubby flatwoods) occurs in scattered roughly circular to elliptic patches, mostly associated with the escarpments above floodplains (Duck Slough, Five Mile Slough, Seven Mile Slough and the Kissimmee River). These areas are often incorrectly referred to as ‘scrub’ (in surveys of the property). They do not precisely fit the definition of either scrub or scrubby flatwoods, but have more characteristics in common with scrubby flatwoods than scrub. They differ from typical scrubby flatwoods only in the absence of a pine canopy, and can be thought of as a treeless variant of this community within a dry prairie landscape mosaic. The dominant species of the scrubby flatwoods on the property include sand live oak (*Quercus geminata*), myrtle oak (*Q. myrtifolia*), Chapman’s oak (*Q. chapmanii*), staggerbush, fetterbush, saw palmetto, tarflower, wiregrass, and shiny blueberry. Characteristic species of this community are often restricted to herbaceous openings, and include coastalplain honeycombhead

(*Balduina angustifolia*), wild pennyroyal (*Piloblephis rigida*), pinebarren beaksedge (*Rhynchospora intermedia*), and October flower (*Polygonella polygama*). These herbaceous openings also support large populations of such wetland species as dwarf sundew (*Drosera brevifolia*), yellow hatpins (*Syngonanthus flavidulus*), roadgrass (*Eleocharis baldwinii*), zigzag bladderwort (*Utricularia subulata*), and shortleaf yellow-eyed grass (*Xyris brevifolia*). The presence of these herbaceous species indicative of seasonally saturated soils serves to distinguish scrubby flatwoods from scrub, which has open patches of excessively drained white sandy soil and does not support any wetland herbs. In addition, scrubby flatwoods on the preserve lack any narrow scrub endemic plant or vertebrate species, including such widespread and characteristic species as garberia (*Garberia heterophylla*), silk bay (*Persea borbonia* var. *humilis*), and Florida scrub lizard (*Sceloporus woodi*). In addition, in contrast to scrub, there are few to no white sandy openings within the community except along cleared roadsides. Openings tend to be quickly vegetated by wiregrass and other grasses.

The scrubby flatwoods patches occur on very slight rises within the dry prairie matrix, often only a few feet above the surroundings. The patches tend to be more concentrated near the drainage escarpments of the major sloughs and at high points along the Kissimmee River escarpment. The best examples are found on Pomello fine sand (Typic Haplohumods), although some are also mapped as Immokalee fine sand (Arenic Haplaquods). Presumably, the proximity of a major drainage feature serves to lower the water table after rain events, and therefore reduces the duration of soil saturation, even though a spodic layer (hardpan) is present in these soils at depths from 35 to 42 inches.

Scrubby flatwoods patches on the preserve are almost all subject to occasional fire. The fire frequency is naturally less than in dry prairie, but parts of some scrubby flatwoods patches may burn as often as every five years, while other parts of the same patch may escape fire for 10 to 15 years. Prescribed fire in these patches should be accomplished as much as possible without the use of firebreaks between the scrubby flatwoods patches and the surrounding dry prairie. The goal should be that only parts of a particular patch burns in most fires, leaving some of the oaks unburned, while rejuvenating the growth of those in the burned portion. Over a 15 year period, the majority of all the scrubby flatwoods should have been subject to some burning, which should be sufficient to retard succession to a poor-quality xeric hammock, while allowing enough oak growth to maintain their distinctiveness from dry prairie and to support oak-dependent wildlife (i.e. - Florida scrub-jay).

Despite the uncertain nature of this community, it is thought to be in excellent condition (Florida Dept. of Environmental Protection 2003a).

Basin marsh. There is a rather arbitrary distinction which must be made between depression marshes and basin marshes. Basin marshes tend to occupy larger and more irregularly shaped depressions and lack the distinctive broad sandweed (*Hypericum fasciculatum*) zone of depression marshes. Dominant species of basin marshes are more likely to be deeper or more permanent water species such as maidencane (*Panicum hemitomon*), pickerelweed (*Pontederia cordata*), sawgrass (*Cladium jamaicense*), Carolina willow (*Salix caroliniana*), Southern cutgrass (*Leersia hexandra*), and spatterdock (*Nuphar advena*). The major sloughs and swales forming the drainages through the property seem to have their headwaters in basin marshes (i.e. the headwaters of Seven Mile Slough is Dead Pine Island Marsh, a basin marsh). Most of the large basin marshes on the preserve have been subject to some drainage by ditching. A large depression marsh at the corner of Sections 25, 26, 35 and 36, T33S, R32E has been subject to major drainage by a ditch connecting it to the swale in Section 25. This

has resulted in invasion of the shallower zones of this basin marsh by big carpetgrass (*Axonopus furcatus*) and major alteration of vegetation zones throughout this marsh.

Baygall. Baygall is very restricted in extent on the property, perhaps occurring in only four locations, each of only a few acres. The baygalls are found in somewhat U-shaped small drainages near the escarpments between the dry prairie landscape and major drainages (Seven Mile Slough and the Kissimmee River). These differ from other natural communities on the property in having a primary water source of diffuse lateral groundwater seepage. The baygalls on the preserve are poorly developed in comparison to baygalls associated with higher sandy ridges. The canopy dominant is sweetbay (*Magnolia virginiana*), with a few swamp tupelo (*Nyssa sylvatica* var. *biflora*), and occasional red maple (*Acer rubrum*), swampbay (*Persea palustris*), and loblolly bay (*Gordonia lasianthus*). The shrub layer is often composed of wax myrtle, highbush blueberry, fetterbush, and Virginia willow (*Itea virginica*), tied together by dense tangles of laurel greenbrier (*Smilax laurifolia*). Groundcover species which are restricted to or more common in baygalls than in other communities include cinnamon fern (*Osmunda cinnamomea*), netted chain fern (*Woodwardia areolata*), green arrow arum (*Peltandra virginica*), Virginia marsh St. John's-wort (*Triadenum virginicum*), and golden club (*Orontium aquaticum*).

Most of the baygalls on the preserve have been penetrated by fire at various times, which kills the dominant sweetbay trees, resulting in an open, scraggly canopy appearance. It is possible that some of these baygall edges, should fire penetrate them often enough, may potentially support some open herbaceous seepage slope species. Only tiny fragments indicating the potential of occurrence of this community type were found under the dense shrubs of some baygall edges. Fire should be allowed to penetrate these baygall edges often, in the hope that rare seepage-dependent herbaceous species may emerge from dormancy if they have persisted.

Depression marsh. Depression marshes occur in shallow, often roughly circular, small depressions within the dry prairie - wet prairie landscape. Some larger depression marshes are elliptic or irregular in shape and represent the coalescence of more than one depression into a single depression marsh mapping unit. These are often recognized by having multiple deeper water centers. In many cases, depression marshes are isolated from deeper wetland areas and have no external surface water connections. In other cases, they are connected by shallow slough-like wet prairies to each other and to the major drainages through the property. Depression marshes hold surface water for long periods, usually with most of the depression inundated throughout the growing season and the central zones of larger depressions inundated year round. In wet years, depression marshes hold water for long periods up to the outer rim of the depression, whereas in drier years the outer zones are dry for most of the year.

The presence of concentric bands of vegetation correlated with hydrology is characteristic of depression marshes. Where depression marshes border dry prairie, there is usually an abrupt band of saw palmetto just above the boundary of the depression marsh. Where depression marshes border wet prairie, the transition between the two communities is more gradual, with the outer zone of the depression marsh often gradually transitional into wet prairie. Typically, the outer vegetation zone of depression marshes is grassy, dominated by either blue maidencane (*Amphicarpum muhlenbergianum*) (the sandiest depression marshes), bluestem (*Andropogon virginicus* var. *virginicus*) (usually on mucky sand), or purple bluestem (*Andropogon glomeratus* var. *glaucopsis*, indicating a more mucky soil). The next zone

inward is usually dominated by sandweed, which is very characteristic of depression marshes. This sandweed zone often has less total vegetative cover, particularly when frequently burned, and is usually recognized as being dark gray to black on aerial photography, due to the high cover of open water. Characteristic species of depression marshes mostly occur in this zone, including flattened pipewort (*Eriocaulon compressum*), longleaf threeawn (*Aristida palustris*), erectleaf witchgrass (*Dichanthelium erectifolium*), bluejoint panicum (*Panicum tenerum*), and Tracy's beaksedge (*Rhynchospora tracyi*). Inward from this zone the sandweed gradually mixes with maidencane. The composition of these inner zones varies between depressions, but usually includes a combination of maidencane, pickerelweed, sawgrass, bulltongue arrowhead (*Sagittaria lancifolia*), and American white waterlily (*Nymphaea odorata*). The centers of depression marshes sometimes support a small stand of swamp tupelo, or sometimes sweetbay, Carolina willow, or common buttonbush (*Cephalanthus occidentalis*).

Most of the depression marshes on the preserve are in excellent natural condition (Florida Dept. of Environmental Protection 2003a). Of particular importance is the fact that the marginal zones of the majority of the depression marshes have been subject to frequent fire. Without frequent fire, the margins of depression marshes are quickly invaded and eventually dominated by wax myrtle, sometimes with gallberry. Most fires will naturally extinguish somewhere within the *Hypericum fasciculatum* zone in depression marshes. The *Hypericum* abundantly germinates after fire, and rapidly becomes dominant again. Most of the depression marshes in central Florida have been connected by ditches to major drainages to help drain these depressions. On the preserve, this seems to have occurred only within the improved pastures of Sections 9, 16, and 21, T33S, R33E, in some of the adjacent ruderal areas of the northeast corner of the preserve, and in Sections 26, 27, 34, and 35, T33S, R33E in the southeast part of the preserve, which have subsequently been restored.

The depression marshes of the northeast part of the preserve, in most of the area of Sections 2, 3, 4, 5, 8, 9, 10, 11, and 15, T33S, R33E, are essentially the only natural communities remaining in an area which has otherwise been completely cleared, and partially converted to improved pastures and fields (see discussion under Ruderal areas). When this area was cleared and scraped, the alteration often stopped at the boundary of the depression marshes, leaving these areas as isolated areas of relatively natural communities in an otherwise ruderal landscape. The relatively infrequent fire in subsequent years has resulted in invasion of the outer zones of these depression marshes by wax myrtle, and unnatural growth of the rim of saw palmetto and invasion of this rim by wetland trees (i.e., dahoon holly (*Ilex cassine*), swampbay). The more central zones of these depressions apparently are still rather natural in composition. Reintroduction of fire into this large ruderal area should improve the quality of these depression marshes.

Floodplain marsh. Floodplain marsh is the natural community present throughout the former Kissimmee River floodplain, and in the lower reaches of the tributary sloughs where they broaden to meet the Kissimmee floodplain. Floodplain marsh is mapped as two subtypes because they have dramatically different composition and current hydrology. The following discussion will refer to two types of floodplain marsh, 32a and 32b. The Natural Communities Map does not make this distinction, and only the mapping code of 32 appears on the map. For discussion purposes, 32a is used for the currently active floodplain of the River, that area that is subject to inundation between a 10 and 100-year period by the currently canalized Kissimmee River. The code 32b represents the area not within this current floodplain, but which is interpreted to be within the 100-year floodplain as determined by close examination

of 1943 aerial photography, taken before canalization of the River.

The active floodplain of the Kissimmee River, although all mapped as floodplain marsh, contains many distinct vegetation zones. The deeper areas of the floodplain marsh are dominated by sawgrass, which was probably historically much more common in the river floodplain, based on examination of 1943 photography and original land survey notes from 1858. Near the canalized river, much of the original floodplain marsh has been invaded by Carolina willow and perhaps other woody plants. Areas with intermediate hydrology have large patches of such marsh species as pickerelweed, bulltongue arrowhead, maidencane and narrowfruit horned beaksedge (*Rhynchospora inundata*). These deeper water marshes are probably rather similar to their natural composition, although it is likely that all the deeper water zones have been reduced in extent since canalization.

The broad outer zones of the active floodplain marsh are inundated with much less frequency and duration than the deeper zones, and are quite different in composition. Common grasses dominating these areas include *Andropogon virginicus* var. *virginicus*, sand cordgrass (*Spartina bakeri*), blue maidencane and big carpetgrass (*Axonopus furcatus*). Much of this zone has been heavily invaded by sabal palm (*Sabal palmetto*) and wax myrtle (*Myrica cerifera*) as a result of reduced hydroperiod and lack of fire. The composition appears somewhat weedy, which is likely due to a combination of factors - natural hydrologic fluctuation, alteration of hydrology, grazing by cattle and damage by feral hogs, and lack of fire burning into the marshes during dry periods from the dry prairie. The long dry period which naturally occurs between flood events in the outer zone of any floodplain marsh does allow microhabitats for weedy species to occur, and naturally keeps the composition from reaching and maintaining equilibrium. The alteration of hydrology further destabilizes the vegetation composition, resulting in some cases in outer zones of floodplain marshes that look like ruderal areas. Currently, neither prescribed fire or mechanical methods are being used to maintain or improve this community type from continued wax myrtle encroachment. The South Florida Water Management District (SFWMD) has requested that Division of Recreation and Parks not manage this community type with fire.

Even further altered are the zones mapped as being in the historical floodplain marsh, but which are now above even the highest flood events (for discussion referred to as 32b). These are easily recognized on 1943 aerial photography as lying waterward of contiguous areas of dry prairie, and landward of the current floodplain marsh boundary. These areas were naturally patchy, having clumps of saw palmetto on the highest micro-elevations, and even widely scattered young Virginia live oak and cabbage palm. However, the ground surface around and between these slight rises would have had a shallow marsh vegetation similar to that now found in the current outer zone. One field indicator of this historical floodplain is the presence of scattered small, sparse clumps of sand cordgrass, which has likely persisted in these areas for decades and may have once been much more dominant in this zone. Current composition of this zone includes larger and more abundant patches of large saw palmetto, rather thick growth of young Virginia live oak, cabbage palm, and wax myrtle, and a weedy appearing groundcover dominated by broomsedge bluestem, blue maidencane, and/or big carpetgrass. The ground cover is being colonized by patches of the less sensitive dry prairie species, those which can easily invade disturbed ground, such as slender flat-topped goldenrod (*Euthamia caroliniana*), bottlebrush threeawn (*Aristida spiciformis*), shortleaf yellow-eyed grass, and blackroot (*Pterocaulon pycnostachyum*). However, the perennial grasses that characterize dry prairie are rare or absent in this zone.

The area is currently thought to be in fair condition (Florida Dept. of Environmental Protection 2003a). At the writing of this update to the plan, canal restoration is not planned any further north than weir 3, which is approximately 2 miles north, along the canal, of the preserve's southern border. Restoration of the channel of the Kissimmee River would enhance the potential for increased hydroperiods in all of the floodplain marsh zones in the future. For this reason, it is important to understand the extent of the historical floodplain, since it could be subject to flooding again during major floods after restoration. However, some of this area may never flood often enough to return to a more natural composition, and it is possible in the long term (100 years or longer) that some of this historical floodplain, may become colonized by more dry prairie species and support a relatively natural dry prairie community rather than its current, ruderal floodplain swamp appearing, vegetation. The entire floodplain marsh needs further exploration and monitoring for invasive exotics.

Floodplain swamp. Floodplain swamp is very limited in natural extent within the preserve, occurring only in the lower reaches of Seven Mile Slough, in part of Duck Slough, in the lower part of Gum Slough, and a small stand along Pine Island Slough. Floodplain swamp has a canopy of laurel oak, red maple, dahoon, swamp tupelo and water ash (*Fraxinus caroliniana*). The canopy is often rather open, and composed of deciduous trees, resulting in a rather marshy ground cover. Common ground cover species in floodplain swamp include swamp fern (*Blechnum serrulatum*), Hottentot fern (*Thelypteris interrupta*), lizard's tail (*Saururus cernuus*), dotted smartweed (*Polygonum punctatum*), and false nettle (*Boehmeria cylindrica*). Several species seem to be restricted to floodplain swamp on the preserve, perhaps occurring in no other natural community on the site, these include groundnut (*Apios americana*), false hopsedge (*Carex lupuliformis*), woolly witchgrass (*Dichanthelium scabrisculum*), and coral greenbrier (*Smilax walteri*). The floodplain swamps have distinctly flowing water during high water periods, which distinguishes them from all other forested communities on the preserve.

Hydric hammock. Hydric hammock is used for those hammocks that periodically inundate or saturate to the soil surface to the extent that there is little or no upland area within the hammock. These tend to have a mostly cabbage palm canopy, with little or no Virginia live oak, and occasional trees of red maple and laurel oak. A characteristic shrub, which distinguishes these from prairie hammocks, is small-leaf viburnum (*Viburnum obovatum*). The ground cover is quite disturbed in most examples visited, comprised of mostly the same grasses as in the low diversity prairie hammocks. The outer or wetter zones of these hammocks may naturally have a sparse ground cover due to the combined effects of periodic flooding and dense shade, which limits the plant species able to grow in this situation. Most of the hydric hammocks on the property have similar damage as the prairie hammocks due to cattle and feral hogs. An exception is a small hammock in the northeast corner of the property, which was the only site seen for several hydric hammock species.

Slough. Sloughs are distinguished from swales by their more permanent water, and consequent deeper marsh vegetation. Seven Mile Slough is an excellent example of a slough on the property for most of its length, and the lower reaches of Duck Slough and Five Mile Slough would be classified as slough rather than swale. The deep marsh vegetation of the sloughs within the preserve is often dominated by pickerelweed, with substantial amounts of maidencane, sawgrass, arrowhead, alligator flag (*Thalia geniculata*), and spatterdock. There are scattered clumps of woody plants naturally occurring in sloughs, such as Carolina willow, Carolina ash and swamp tupelo. The sloughs within the preserve are currently thought to be in excellent condition (Florida Dept. of Environmental Protection 2003a).

Swale. The surface water drainage features through most of the preserve are mapped as slough and swale. The difference between slough and swale is a matter of size and hydroperiod. Swale is mapped as narrow, long, mostly linear drainages without a defined channel and with short hydroperiods. It is distinguished from depression marshes and basin marshes by being more of a conduit of surface water than a water storage depression. There is more of a gradual change from large linear wet prairies to shallow swales, but they can be distinguished by the lesser importance of *Hypericum fasciculatum* and *Aristida beyrichiana* in swales. The classic example of a swale in the statewide natural community classification is the Everglades. Obviously, the small swales on the preserve have little in common with this large system other than both being herbaceous-dominated marshes with shallow flowing water in wet seasons and lacking surface water during a typical dry season.

Unfortunately, most of the swales on the preserve have had major drainage ditches constructed through the center of the swale to move water rapidly, which has drastically altered the natural community composition. The best examples of unditched swales are in Section 8 (and adjacent parts of sections 16 and 17), T33S, R33E. Based on preliminary reconnaissance of this area, the greatest extent of swales may have been naturally dominated by sand cordgrass, with zones of Gulf hairawn muhly (*Muhlenbergia capillaris* var. *filipes*) mixed with wiregrass at their shallower edges. Isolated small clumps of cabbage palm occurred within the swales, and perhaps higher small areas protected from fire may have supported small hammocks. Swale is defined more as a hydrologic feature than by vegetative dominance or physiognomy, and as such, is really a mosaic of many plant communities.

Ditched swales on the property include the upper reaches of Duck Slough, Pine Island Slough, and Gum Slough, as well as unnamed swales such as the large north-flowing swale in Section 25, T33S, R32E. The ditching of the swales has altered the vegetative composition very dramatically. Due to the reduced hydroperiod, the drier parts of the swales have been heavily invaded by big carpetgrass, and woody species such as wax myrtle, Virginia live oak, and cabbage palm have greatly increased in abundance. The ditch spoil banks have been subject to even greater invasion by shrubs and trees, giving the impression of a linear hammock in places, although the presence of trees is unnatural here. The ditches themselves support deeper water species than the original swale would have, including southern cattail (*Typha domingensis*), common water hyacinth (*Eichhornia crassipes*), and hydrilla (*Hydrilla verticillata*). Restoration of the natural hydrology and vegetation of the swales will require extensive removal of invading woody plants, blocking of the outlets of the ditches, and probably filling of most of the length of the remaining ditches back to an approximation of natural grade. Without filling of most of the length of these deep ditches, they still will act to reduce the hydroperiod of the surrounding swales.

The swales are currently thought to be in good condition, with probable improvement related to the ongoing natural community restoration (Florida Dept. of Environmental Protection 2003a).

Wet prairie. Wet prairie is commonly interspersed throughout the Florida dry prairie matrix over most of the preserve. The boundary between dry prairie and wet prairie is superficially discrete, seemingly marked by the appearance of saw palmetto as the soil becomes drier, but there is an ecotone reflecting increasing hydroperiod over only a very slight decrease in elevation. There are actually several plant communities or microhabitat zones that are present across this gradient (Bridges 1997). In some sense, this is not unexpected, since in the flatwoods landscape of central Florida, a distinct natural community (wet flatwoods) is found

intermediate in hydrology between mesic flatwoods (hydrologically similar to dry prairie) and wet prairie. The ground cover in the transitional zone between dry prairie and wet prairie is very diverse and reflects the microtopographic diversity within this transition.

At the preserve, wet prairie is distinguished from dry prairie as being those areas which are saturated or shallowly inundated at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soils, which is essentially the wetland definition of Florida Statutes subsection 373.019(17). This boundary has been drawn considering that it should correspond to the wetland/upland boundary as determined by Chapter 62-340, F.A.C., Delineation of the Landward Extent of Wetlands and Surface Waters. Due to the large area of the preserve, the scale of the vegetation mapping, and the limitations of aerial photo interpretation, site-specific investigations should occur in areas where more than a rough estimate of the wetland boundary is needed.

Wet prairie can be distinguished from dry prairie by a dramatic and often abrupt decrease in cover of saw palmetto, and a usually correlated decrease in cover or near absence of the associated shrubs staggerbush, fetterbush, Atlantic St. John's-wort (*Hypericum redutum*), and shiny blueberry. It should be noted that dwarf live oak is found in both wet and dry prairies, although it usually is lower in cover in wet prairies, and gallberry may actually have greater cover in some (less frequently burned) wet prairies than in dry prairies. The dominant species of most wet prairies on the preserve is wiregrass, often in association with blue maidencane, shortspike bluestem (*Andropogon brachystachyus*), broomsedge bluestem, toothachegrass (*Ctenium aromaticum*), and little bluestem (*Schizachyrium scoparium*). The ground cover is very diverse in herbaceous species, including the carnivorous plants dwarf sundew, pink sundew (*D. capillaris*), yellowflower butterwort (*Pinguicula lutea*), blueflower butterwort (*P. caerulea*), small butterwort (*P. pumila*), and zigzag bladderwort.

Only limited surveys of wet prairies have been conducted thus far on the preserve. Wet prairies have high potential for supporting additional populations of endangered and threatened plant species and should be subject to much additional survey work in the summer and fall of the year of prescribed burning of each site.

The wet prairies of the preserve are mostly in excellent condition due to the frequency of past burning and lack of significant ditching of these shallow wetland systems (Florida Dept. of Environmental Protection 2003a). However, some of the wet prairies have been invaded by big carpet grass that has reduced the species diversity and compromised the quality of those sites. Carpet grass was widely aerially seeded in central Florida in the past and has impacted many similar communities throughout the region. It is possible that the carpet grass increase in some wet prairies will have been further influenced by rooting of the native groundcover by feral hogs, allowing the more aggressive, rhizomatously spreading carpet grass to dominate these disturbed areas.

Blackwater stream. Blackwater stream is mapped as the remnants of the open channel of the historical route of the Kissimmee River. These areas are now mostly cut off from natural flow to and from the river, but will be the subject of the river restoration.

Ruderal. Ruderal areas are relatively limited in extent on KPPSP except for the northeast section. For purposes of discussion, ruderal areas are divided into six types, although for mapping purposes, only one code (81) appears on the Natural Communities Map. The different subtypes of ruderal are as follows:

- a. Totally cleared and improved (planted in exotic grasses) pastures (81a)
- b. Scraped and cleared in the past, but not improved, pastures (81b)
- c. Cleared, ditched, abandoned agricultural fields (81c)
- d. Areas of human occupation and land clearing (old home sites, cow camps) (81d)
- e. Spoil areas resulting from Kissimmee River canalization (81e)
- f. Built-up roadways and developed areas (used for just those areas with shell or other fill for roadbed and structures, 81f)

The improved pastures (81a) are confined to Sections 9, 16, and 21, T33S, R33E, as a single contiguous block. The wetlands within this improved pasture had been extensively ditched and drained allowing only the deepest areas to remain in a natural state. The ditches were removed as part of the canal removal/restoration effort and the wetlands now experience a more natural hydroperiod.

The predominant grass of the improved pasture is bahiagrass (*Paspalum notatum*), with limpograss (*Hemarthria altissima*) planted to a lesser extent. Although there is still a native floral component to the pasture, it remains far from having the same native groundcover of the adjacent dry prairie. The long-term goal for this area of the preserve is restoration. Groundcover restoration of the improved pastures will be a difficult and long-term process, and cattle grazing will remain the interim management practice.

The cattle lease (6,088 acres) is let out for five-year terms. The entire lease is managed to the best benefit of the range, with all components of range management subject to review and approval by the preserve manager. The plan was developed in consultation with the Natural Resources Conservation Service and with the grazing subcommittee that developed out of the Agro-Ecology Conference (1997). The goal of the lease is to provide interim resource management while a natural community restoration plan is developed. Stocking rates are kept low so that a quality vegetative condition is maintained. The lease will also take into account that the endangered Florida grasshopper sparrow is nesting and foraging in the pastures, and lease revenue will be used to continue the research on sparrow use of the pastures. The leaseholder has acted to control wax myrtle encroachment by mechanical means as necessary and in consultation with the preserve manager.

Exotic species are a major concern that will be addressed by the cattle lease. The leasee will be responsible for controlling all exotics (other than pasture grasses) in the pasture areas under direction from staff. To assure that tropical soda apple (*Solanum viarum*) is not introduced to the preserve, the lease will require a minimum of 7 days in an off-site quarantine pen (devoid of invasive pest plant species), prior to release on the preserve. No non-native forage grasses will be planted or propagated on the preserve.

In contrast, the areas that have been scraped and cleared in the past, but not planted in exotic pasture grasses (81b), have a quite different composition. These areas are found both east and northwest of the improved pasture, in Sections 2, 3, 4, 5, 8, 10, and 11, T33S, R33E. They are easily recognized on aerial photography as not having the characteristic pattern of dry and wet prairie of the natural landscape, yet without the tan appearance of improved pasture. According to local accounts, the method of clearing these areas would have been to draw a blade just below the ground surface, cutting off the vegetation almost completely. However, some native species would have survived this process by having growing points below the level of the scraping, while others could have colonized the bare ground. The resulting vegetation is now dominated by weedy natives, such as broomsedge bluestem, bushy

bluestem (*Andropogon glomeratus* var. *pumilus*), and wax myrtle, but with interspersed clumps of native grasses and scattered native forbs. Other commonly occurring native species which persist or have colonized these areas include shortspike bluestem, whitehead bog-buttons (*Lachnocaulon anceps*), spadeleaf (*Centella asiatica*), roundpod St. John's-wort (*Hypericum cistifolium*), and tall yellow-eyed grass (*Xyris platylepis*). The overall impression is one of a weedy, overgrown prairie or flatwoods, where natives outnumber exotics but the overall impression is still of disturbance. Exotics do occur in patches within this area, particularly big carpet grass and bahiagrass. These scraped and cleared areas have a higher potential for restoration than the improved pastures, but it will still be a long process. As in the dry prairie, prescribed fire is the primary management tool, setting back woody invasion and stimulating the fire-dependent grasses. It is possible that these could preferentially produce seed and become established on the bare ground patches that will result from fire and hasten the process of restoration.

There are several former agricultural fields (81c) located in the northeast part of the preserve and in the Audubon tract. These were located primarily in natural swales and sloughs, which would have been herbaceous at the time of clearing, and have better soils for agriculture than the dry prairies and wet prairies. These now have an exceptionally weedy flora, and at least parts are dominated by the exotic torpedograss (*Panicum repens*). It is possible that quite a few other exotics are present in these old fields, but have not yet been documented for the preserve. The vegetation is now composed of a mixture of the weediest native plants and many exotic species and has the least natural component of any type mapped. Restoration of these areas was a priority under the previous management plan. Various funds were secured to allow restoration of most of the old agricultural fields in the preserve (including those fields in the Audubon tract when it was still under the management and ownership of the National Audubon Society through cooperative grants). However, more than 25 miles of small agricultural canals and ditches remain in need of restoration. The largest restoration effort would still need to be directed toward the Audubon tract where approximately 22 miles of ditches still need restoration. Some improvement in vegetative composition may occur naturally by the return of sheet flow through a more normal hydroperiod. Additional funding is being sought.

Only a very few areas on the property are mapped as ruderal based on intensive human use for habitation or man-made facilities (81d). These areas are the Prescott homestead (Long Hammock), the area north of Kilpatrick Hammock, and a small area north of Military Trail near the border of the Kissimmee River floodplain, which may represent a very old clearing for habitation or a fort outpost and should be investigated for possible historical significance. Of particular note at this type of ruderal area is the presence of exotic species that were obviously planted around these human use areas. Most of these likely pose little or no danger to the surrounding natural vegetation, as most are not known as aggressive invaders. However, air potato is a problem exotic in a hammock adjacent to the Prescott homestead (Long Hammock), and the eucalyptus grove at the Kilpatrick Hammock site should be watched for signs of reproduction. The other exotics at the Prescott homestead seem to be just botanical curiosities rather than invasive exotics.

The large areas of spoil (berms) along the canalized Kissimmee River (81e) are the fifth type of ruderal area. The berms currently support an extensive community of exotic species, many of them considered invasive. Until the berms are utilized for the Kissimmee River restoration, or otherwise removed, this area will continue to be very challenging in terms of invasive weed management. Category I and II invasive exotics occurring here include, but aren't limited to,

lantana (*Lantana camara*), cogongrass, guava, and paragrass. Forests of the native sabal palm (cabbage palm), as well as other woody plants, have also become established.

The only other ruderal areas surveyed are the narrow sections of elevated road where fill has been brought in to raise the roadbed above the surrounding landscape. This is primarily found only on the northern half of Peavine Road on the preserve. The roadbed and road shoulders of Peavine Road in this section do support a set of exotic and weedy native species that are not characteristic of the natural landscape, primarily species that grow well in shell or marl fill. None of these is particularly invasive of natural habitats except for cogongrass, which is also found in the adjacent areas of improved pasture (and is spreading to adjacent natural areas of the preserve).

Developed. The only developed areas are the maintenance shop/housing/entrance area on the southern end of the preserve and the campground/office/housing area in Kilpatrick Hammock.

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.

There are numerous designated species at the unit and more designated species will probably be found. The preserve contains a large representative sample of dry prairie, a globally and state imperiled community. Dry prairie is listed as an S2 community by FNAI standards, recorded from only 17 locations throughout the State. The property was purchased in part, because it contained the last largest remaining block of the globally imperiled and endemic dry prairie community. Dry prairie comprises approximately 21,000 acres on the preserve, and it contains a whole suite of designated species. Some of the distinctive prairie species that have already been confirmed from the site are Florida grasshopper sparrows (*Ammodramus savannarum floridanus*), crested caracara (*Caracara cheriway*), Florida sandhill crane (*Grus canadensis pratensis*) and burrowing owls (*Speotyto cunicularia*). A single whooping crane (*Grus americana*) has been recovered from the preserve by the FFWCC. Whooping cranes have also been observed in the Audubon tract before state ownership.

The preserve also contains sub-xeric dry prairie (formerly mapped as scrubby flatwoods), which covers approximately 720 acres. Rare species associated with it that have been confirmed within the preserve are the Florida scrub-jay (*Aphelocoma c. coerulescens*) and gopher tortoise (*Gopherus polyphemus*). A rare plant, Florida beargrass (*Nolina atopocarpa*), has also been reported from the community, but this identification needs further verification during the flowering season.

There are numerous designated species associated with the extensive herbaceous and forested wetlands throughout the property. Several wading bird rookeries exist within the preserve that were patrolled by Audubon Society wardens in the early 20th century and are still active. Floodplain marsh itself is listed as an S2 community by FNAI (FNAI 2002). Some of the species recorded to date include wood stork (*Mycteria americana*), great egret (*Ardea alba*), snowy egret (*Egretta thula*), tricolored heron (*Egretta tricolor*), swallow-tailed kite (*Elanoides forficatus*), short-tailed hawk (*Buteo brachyurus*), round-tailed muskrat (*Neofiber alleni*), American alligator (*Alligator mississippiensis*), and river otter (*Lutra canadensis*).

Although not positively confirmed yet, the FFWCC believe that the Florida panther (*Puma concolor coryi*) likely occurs on the preserve. Some promising evidence has been found, and a track census may begin in the future.

There are numerous designated plants on the preserve, and the current list could probably be expanded. Listed plants include bearded grass-pink (*Calopogon barbatus*), spreading pinweed (*Lechea divaricata*), hooded pitcher plant (*Sarracenia minor*), giant orchid (*Pteroglossapsis ecristata*), and twinberry (*Myrcianthes fragrans* var. *simpsonii*).

While the 2003 Land Management Review commended the preserve for active management directed toward the preservation of the Florida grasshopper sparrow, the review team recommended improved monitoring of the status of other listed plant and animal species found within the preserve.

Special Natural Features

The large expanse and isolation of the preserve makes it a special natural feature. The preserve is one of only a handful of rare jewels in the State where landscape-level processes may still occur. Daytime vistas of a landscape devoid of man-made objects stretch for several miles. The remoteness of the preserve from urban areas results not only in a true wilderness character, but what have been called some of the darkest skies in Florida. For these reasons, the preserve offers the opportunity for the public to experience a part of Florida that has largely disappeared. The preserve is truly one of the last outstanding natural areas in Florida.

Cultural Resources

Evaluating the condition of cultural resources is accomplished using a three part evaluative scale, expressed as good, fair, or 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 describes an unstable condition where there is palpable, accelerating decline, and physical integrity is being compromised quickly. A resource in poor condition suffers obvious declines in physical integrity from year to year. A poor condition suggests immediate action to reestablish physical stability.

South Central Florida and the Okeechobee Basin have a rich cultural prehistory and history. KPPSP falls within the Okeechobee Basin Cultural Region (Milanich and Fairbanks 1980). The area around Lake Okeechobee and Kissimmee Prairie was probably occupied and utilized by Native Americans during the full sequence of Pre-Columbian cultural periods, beginning with the Paleo Indian and continuing through the Archaic, Transitional, Belle Glade, Territorial, and Seminole. Technological changes observed in the archeological record and evidence of increasing populations, marked each progressive period. The list of Native American cultures also includes the Seminole, although they are primarily descended from Lower Creeks who fled from Georgia and Alabama to north Florida in the 18th century (Milanich and Fairbanks 1980, Stanton 2001).

It should be noted that the preserve is within an area rich in the history of the late 19th and early 20th century homesteaders and cattle industry. This is vividly portrayed in the Patrick Smith historical fiction work "A Land Remembered" (Smith, 1984). In addition, a book in which the preserve takes a degree of prominence is Snyder's "The Carolina Parakeet:

Glimpses of a Vanished Bird” (Snyder 2004). Some of the early Audubon Society wardens of the area play a key role, and evidence is provided that one of the last known nesting localities of this extinct species was within Gum Slough.

At the time of the property acquisition, there were no recorded archaeological sites within the preserve. In December 1997, Christine Newman began a CARL archaeological investigation that found and recorded five sites (Newman 1998). Since then, the CARL archaeologists have returned to the preserve several times, have identified and recorded 19 sites. Of the 19 sites, 11 are historic, seven are prehistoric and one has both prehistoric and historic components (Florida Department of Environmental Protection 1998; Newman et. al. 2002). All 19-recorded sites would benefit from further archaeological investigation and analysis to assess their significance, and the rest of the preserve would benefit from an archaeological reconnaissance survey.

8OB57, the Prescott Homestead, is the site of an early 20th century homestead and consists of the remains of several wooden buildings and a wooden boat hull (Florida Department of State: 8OB57, Newman et. al. 2002). Preserve staff should protect and preserve the site as is. No disturbance of the site, including debris removal or “clean up,” should occur until the Division of Historical Resources has been contacted and approved the disturbance. The condition assessment is poor.

8OB58, the Latt Maxcy Camp Prehistoric Site, is a Belle Glade midden (Florida Department of State: 8OB58, Newman et. al. 2002). Preserve staff should protect and preserve the site. No ground disturbance of the site should occur without the approval of the Division of Historical Resources. The condition is good.

8OB59, the Cow Camp, is a 20th century historic cow camp with cattle pens and a recently buried cattle dip vat. The camp was used in the 1940s and possibly earlier (Florida Department of State: 8OB59, Newman et. al. 2002). Preserve staff should protect and preserve the site. No ground disturbance of the site should occur without the approval of the Division of Historical Resources. The condition assessment is poor.

8OB60, Crescent Hammock, is a Belle Glade midden (Florida Department of State: 8OB60, Newman et. al. 2002). Preserve staff should protect and preserve the site. No ground disturbance of the site should occur without the approval of the Division of Historical Resources. The condition assessment is good.

8OB225, the Drake Kilpatrick House/Latt Maxcy Cow Camp and Cattle Pens Site, is the remains of a 1920s farmstead and base camp for the Latt Maxcy Corporation’s cattle operation. The site is a rare example of an early 20th century base camp for a cattle ranch (Florida Department of State: 8OB225, Newman et. al. 2002). Preserve staff should protect and preserve the site. No ground disturbance of the site should occur without the approval of the Division of Historical Resources. The condition assessment is fair.

8OB226, the Latt Maxcy Camp Dipping Vat, is poured concrete cattle dipping vat built in 1932. Much of the wooden structure surrounding the vat still survives. The area is restricted to visitors because of the fragile nature of the associated wooden structure and the hazardous material used in cattle dipping which still permeates the soil (Florida Department of State: 8OB226, Newman et. al. 2002). At the writing of this update to the plan, analysis and remediation of the dipping vat’s associated soil contaminant plume is being pursued. The

area remains fenced off to the public until the remediation is completed. No ground disturbance of the site should occur without the approval of the Division of Historical Resources. The condition assessment is fair.

8OB227, the Kilpatrick Homestead, is the site of an early 20th century historic homestead with surface artifact scatter and subsurface deposits (Florida Department of State: 8OB227, Newman et. al. 2002). Preserve staff should protect and preserve the site. No ground disturbance of the site should occur without the approval of the Division of Historical Resources. The condition assessment is poor.

8OB237, the Lost Archaeologists Site, is a possible Belle Glade prehistoric midden. (Florida Department of State: 8OB237, Newman et. al. 2002). Preserve staff should protect and preserve the site. No ground disturbance of the site should occur without the approval of the Division of Historical Resources. The condition assessment is good.

8OB238, Mulberry Midden, is a prehistoric midden, possibly Belle Glade (Florida Department of State: 8OB238, Newman et. al. 2002). Preserve staff should protect and preserve the site. No ground disturbance of the site should occur without the approval of the Division of Historical Resources. The condition assessment is good.

8OB239, the Eucalyptus Homestead, is a 20th century homestead site with some evidence of an associated old field. There are no remains of standing structures (Florida Department of State: 8OB239, Newman et. al. 2002). Preserve staff should protect and preserve the site. No ground disturbance of the site should occur without the approval of the Division of Historical Resources. The condition assessment is poor.

8OB240, the McGuire Hammock, is a compound site featuring a prehistoric midden, probably Belle Glade, a 20th century cow campsite, a possible late 19th or early 20th century homestead, or possibly a Second and Third Seminole War fort site. The location of Fort Kissimmee has never been found (Florida Department of State: 8OB240, Newman et. al. 2002). Preserve staff should protect and preserve the site. No ground disturbance of the site should occur without the approval of the Division of Historical Resources. The condition assessment is good although a river restoration project may cause flooding that could lead to the threat of erosion.

8OB241, Long Hammock North, is a Belle Glade midden (Florida Department of State: 8OB241, Newman et. al. 2002). Preserve staff should protect and preserve the site. No ground disturbance should occur without the approval of the Division of Historical Resources. The condition assessment is good.

8OB242, the Historic Trail or Twiggs Trail, is a surviving portion of a 19th century military trail that originally linked a chain of forts from the Indian River to the Manatee River (Florida Department of State: 8OB242, Newman et. al. 2002). Preserve staff should protect and preserve the site. No ground disturbance should occur without the approval of the Division of Historical Resources. The condition assessment is poor.

8OB243, the South Florida and Gulf Railroad Line, is a surviving remnant of the rail line that ran through Kissimmee Prairie until 1923 when the tracks were dismantled. Portions of the old railroad bed are now part of the Peavine Trail (Florida Department of State: 8OB243, Newman et. al. 2002). Preserve staff should protect and preserve the site. No ground disturbance should occur without the approval of the Division of Historical Resources. The

condition assessment is fair.

8OB245, Gum Slough Ridge is a Belle Glade sand midden (Florida Department of State: 8OB245, Newman et. al. 2002). Preserve staff should protect and preserve the site. No ground disturbance should occur without the approval of the Division of Historical Resources. The condition assessment is good.

8OR246, the Orange Tree, is a Belle Glade midden located close to 8OB59, the Cow Camp (Florida Department of State: 8OB246, Newman et. al. 2002). Preserve staff should protect and preserve the site. No ground disturbance should occur without the approval of the Division of Historical Resources. The condition assessment is good.

8OB247, Pine Island Slough is a Belle Glade midden in a large hammock on the south side of Pine Island Slough. The boundaries of the site have not been determined, and the midden's artifact load appears to be sparse (Florida Department of State: 8OB247, Newman et. al. 2002). Preserve staff should protect and preserve the site. No ground disturbance should occur without the approval of the Division of Historical Resources. The condition assessment is good.

8OB248, the Stirrup Cow Camp, is a 20th century historic cow camp artifact scatter site with no surviving structures (Florida Department of State: 8OB248, Newman et. al. 2002). Preserve staff should protect and preserve the site. No ground disturbance should occur without the approval of the Division of Historical Resources. The condition assessment is poor.

8OB249, the Arthur Raulerson Cattle Trough is a poured cement cattle-watering trough with an associated depression where a hole was dug to locate water. The presumed builder's name, Arthur Raulerson, and the date 1922 are written in the cement (Florida Department of State: 8OB249, Newman et. al. 2002). Preserve staff should protect and preserve the site. No ground disturbance or other impact upon the site should occur without the approval of the Division of Historical Resources. The condition assessment is good.

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

During the development of this plan, the Division analyzed the feasibility of timber management activities for the preserve. Based on this analysis, it was determined that the primary management objectives of the preserve could be met without conducting timber management activities for this management plan cycle.

Additional Considerations

The primary land management objective at the preserve is the restoration and maintenance of the largest protected parcel of Florida dry prairie habitat and associated natural communities (wet prairie, basin and depression marshes) in the world. The only taxon endemic to this ecosystem is the federally endangered Florida grasshopper sparrow (*Ammodramus* *savannarum floridanus*), and the preserve protects its largest remaining population. Also, many migratory bird species rely on the natural communities within the preserve as stop-over sites during spring and fall migration, as do over wintering species as well (KPPSP, unpublished data).

Florida dry prairie is closely related to the pine flatwoods ecological community complex that originally occurred over much of the southeastern United States. All dry prairie and pine flatwood communities are dependent upon fire for their continued species diversity and maintenance. Florida dry prairie is one of four plant community types in the western hemisphere to have a measured diversity of over 40 flowering plant species per meter² (Peet and Allard 1993, Bridges 1997, Bridges and Reese 1998,). The other three plant communities, found in North Carolina and Mississippi, were also in the pine flatwoods complex. However, it is only in central peninsular Florida, with the second highest frequency of lightning strikes on Earth, that dry prairie occurs. Dry prairie has a fire return interval so short (1 to 3 years) that pine trees cannot become established.

A result of the dry prairie's high flowering plant diversity is high pollinator diversity. While the arthropod community in general needs further research, the butterflies of the preserve are well known. As a result of highly qualified volunteer surveys, 79 species of butterflies have been documented within the preserve. While this may not seem like an exceptionally large number, many of these species are somewhat to extremely hard to find within Florida, yet occur within the preserve in impressive numbers. Butterfly watching, or "lepping", is recognized as a pastime that is fast approaching birding in participation and ecotourism spending in the U. S. and KPPSP is a premiere site in Florida to see butterflies.

As mentioned in the Special Natural Features section, KPPSP by virtue of its remoteness from urbanized areas has very dark skies at night. As a resource, dark skies are sought after by amateur and professional astronomers. At the time of this update to the plan, the preserve is being utilized by members of at least 3 Florida astronomical societies on a regular basis. Astronomy programs for preserve campers and visitors, as well as the public, should continue to expand. It will be important for the preserve to protect and preserve its dark sky resource. This can be accomplished through the use of directional lighting, which avoids the casting of erroneous, ambient light into the sky.

Based upon 2002 survey results, more than 70 percent of the known remaining FGSP population resides within the preserve. Although much more evidence needs to be collected, the sparrows appear to be responding positively to the aggressive use of prescribed fire in maintaining and restoring dry prairie within the preserve (with, as would be expected, occasional help from lightning).

The preserve has over 50,000 fire type acres, a substantial proportion of the total fire type acres under the management of the Florida Division of Recreation and Parks statewide. The relative importance of prescribed fire to the ecological up-keep of the preserve and the long-term survival of the Florida grasshopper sparrow cannot be exaggerated.

Management Needs and Problems

- Increased Law Enforcement presence to prevent unauthorized access, poaching, and inappropriate visitor use in the preserve.
- Funding to support increased listed species and dry prairie research.
- Funding to support continued plant and animal inventories throughout the preserve.
- Increased physical and material support for an aggressive prescribed fire program.
- Continued restoration of altered natural communities.
- Increased physical and material support for exotic removal program.
- Implement and maintain hydrological monitoring program.
- Use GIS technologies for all restoration, monitoring, research and land management activities within the preserve.

Management Objectives

The resources administered by the Division are divided into two principal categories: natural resources and cultural resources. The Division's 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.

Management Measures for Natural Resources

Hydrology

There were at least 100 miles of ditches and canals in the original 46,373 acres of the preserve. In 1999 through 2001, a \$600,000 Federal North American Wetland Conservation Act (NAWCA) Grant, administered through the U. S. Fish and Wildlife Service, provided the funds needed to restore some 73 miles of canals and ditches within the preserve as well approximately 40 miles of old agricultural ditches on the Audubon Sanctuary. Today, a further 22 miles of ditches remain to be restored in the 7,311 acre Audubon tract (now a part of KPPSP).

Additional funds are being sought through grants and mitigation efforts to finance the restoration of the remaining ditches in the preserve. The preferred restoration method is to fill ditches with onsite fill and return them to natural topographic grade to restore the natural hydrology. Ditch removal should be prioritized.

In all of these restoration efforts, the Division will comply with best management practices to maintain and improve the existing water quality onsite. All restoration efforts will be coordinated with the South Florida Water Management District. The Division will take measures to prevent soil erosion or other impacts to the unit's water resources.

In addition to the ongoing hydrological restoration effort, funding and appropriate assistance is being sought to establish and maintain a surface water quality and quantity monitoring program.

The continued existence of the C-38 canal (the canalized Kissimmee River), on the western boundary of the preserve, will prevent effective the restoration and management of the floodplain marsh and floodplain swamp habitats within the preserve. Artificially maintained water levels have allowed encroachment of wax myrtles and made these habitats vulnerable to colonization by exotic plants.

The ecological integrity of the preserve would be greatly enhanced if the proposed Kissimmee River restoration plan would include the section of the canal that comprises the entirety of the western boundary. Such an extension of the river restoration effort would create a scenic and natural ecosystem that would be protected on both sides by public lands (KPPSP on the east and the Avon Park Air Force Range on the west) making the preserve a premiere gateway to the ecological interpretation of the upper Kissimmee River/Lake Okeechobee/Everglades ecosystem, as well as providing for ecotourism development of the region. However, at the writing of this update (2005), only 2 of the 10 miles of the river that are the preserve's western boundary are currently scheduled for ecological restoration. Without restoration, the western boundary of the preserve will remain a highly impacted ruderal area overlooking a canal.

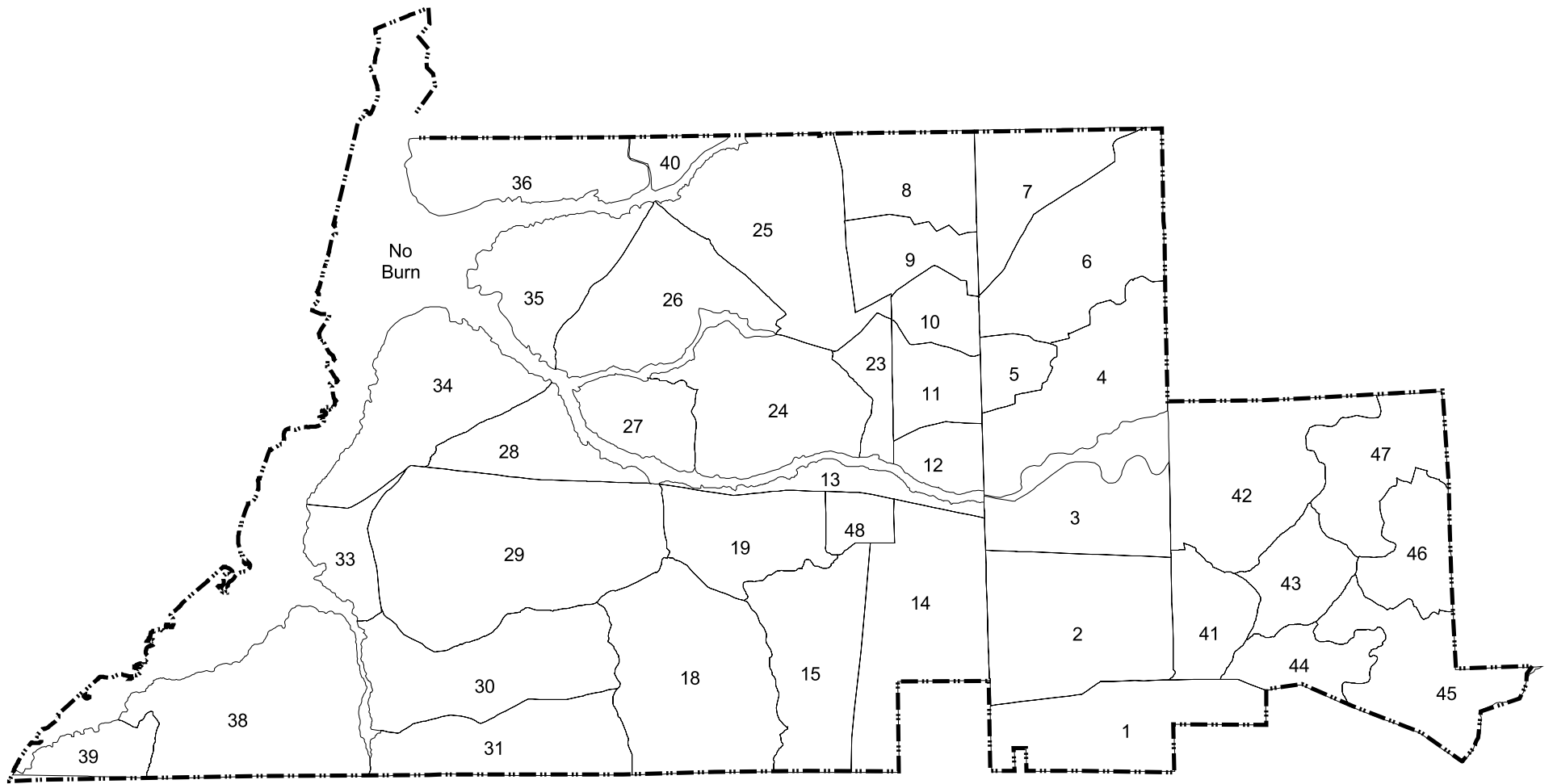
Prescribed Burning

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.

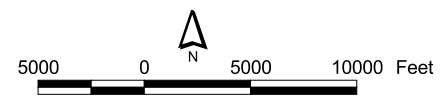
Before State acquisition, the property was managed as a private cattle ranch, and prescribed burning was a routine management activity on the land. The former burn program utilized the four main drainage systems found on the property: Pine Island Slough, Gum Slough, Seven Mile Slough and Duck Slough. These drainages provide excellent natural fire barriers and largely eliminate the need for more intensive firebreaks. Burning was done on a three-year cycle with approximately a third of the property being burned each year. The former owner found that both annual and biannual burning had a limited amount of success meeting cattle grazing objectives, with the best results coming from a three-year fire interval. The former National Audubon Society Sanctuary has a varied fire history. Portions of the property were well managed with frequent fire while the majority of the property had not been burned in quite some time before state acquisition. As a result, several thousand acres burned in a wildfire during June 2002 (see below).

A prescribed fire program will be developed and implemented to track the use of fire within the preserve and monitor fire effects on natural communities and species. This program will also assist in the overall timing of when fire is applied to any particular burn zone. Inherent within this program will be goal-specific success criterion. Also, as part of the KPPSP burn program, funding will be sought for such necessary components as staff PPE, fire line equipment, and fire-break maintenance. Inter-agency partnerships will also be fostered within the greater Kissimmee River Basin to cooperatively assist in meeting respective fire program objectives.

The preserve is divided into 41 burn zones (see Burn Zones Map) that vary in size from 235 to 3,138 acres. The zone boundaries are largely laid out to utilize natural firebreaks such as semi-improved roads, major drainages, two-track trails and wetland features. Firebreaks will consist of natural wet areas and mowed or disked areas. Each zone will burn every 1-3 years, with every two years as the overall goal. The frequency and seasonality of prescribed fire was addressed at the Florida Dry Prairie Conference in Sebring, Florida, October 5-7, 2004 (Noss In review).



LEGEND
Park Boundary
Burn Zones



KISSIMMEE PRAIRIE
PRESERVE STATE PARK

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

BURN ZONE
MAP

Although the former owner burned approximately one-third of the property each year, he avoided burning in just one large block. The burns, although large, were scattered throughout the property. The current fire plan follows the same pattern established by the previous owner. Approximately a third of the area will be burned each year, utilizing the natural drainages to the largest extent possible. Portions of the improved pastures are managed using mechanical means (mowing or roller chopping) in place of fire during certain rotations.

Much of the broad outer zones of the floodplain marsh have been invaded by shrubs, such as wax myrtle, due to reduced hydro period and lack of fire. Fire would have naturally burned into this community from the adjoining dry prairie during dry periods, and both fire and water are important ecological forces in this ecotone. Due to concerns related to the river restoration project, burning in floodplain areas owned by the South Florida Water Management District is not allowed. At the time of this update to the plan, active discussion of the use of prescribed fire within the marsh has been engaged, and, as a result, may be encouraged in the near future in some areas.

Burning will also be coordinated with the presence of the endangered Florida grasshopper sparrow. The Federal Recovery Plan for the Florida grasshopper sparrow (USFWS 1999) states that suitable habitat must be burned or chopped at regular intervals to maintain the low, open dry prairie that the species prefers. All of the burning will be done with this objective in mind. Surveys have documented sparrows in all the prairies of the preserve with larger concentrations in certain areas. Burning during the sparrow nesting season will take place but will not include a majority of the sparrow concentrations in any one year. The nesting season begins in late March and continues through, at least, late June. Sparrows have been documented to extend the nesting season into September in areas burned early in the nesting season. Fire during this time of the year, the growing or lightning season, results in much more natural results and is sought for restoring or maintaining high quality grasshopper sparrow habitat.

The preserve has experienced two severe wildfire events in 2001 and 2002. Two arson-ignited fires on Easter of 2001 burned just under 23,000 acres within the preserve and several hundred acres of private property. In the last week of May 2002 and the first week of June 2002, up to eleven separate lightning ignited fires burned over 5,000 acres mostly within the recently purchased National Audubon Society Sanctuary. Suppression tactics employed with wildfires consisted mainly of implementation of fire plows. Prior to these two wildfire events, only one old fire plow scar could be located within the preserve. Now the preserve has hundreds of miles of plow scars to disrupt surface water and future prescribed fire movements.

In an attempt to facilitate a more natural spread of fire on the property and to lessen the need for more aggressive suppression tactics within the preserve, a firebreak along the perimeter of the property will be maintained (45'-80' in width). This break will ensure that a fire will not be enabled to leave the preserve.

Burning with a 1-3 year (2 year average) fire interval requires that in any given year, on average, 16,000 acres burn annually. Current staffing of four necessitates that additional assistance support the majority of all fires. The preserve has begun utilizing aerial ignition techniques that allow larger prescribed burns to take place within a single day. Additional equipment was purchased with interim management funds to decrease the amount of time required to maintain all the preserve firebreaks. While the focus of the prescribed burning will

take place during the natural lightning season (April-August), prescribed burning may be utilized year-round, as conditions allow, keeping each zone in a maintenance phase. All attempts will be made to insure that when a zone is burned outside of the lightning season, the next time that same zone is burned during the lightning season.

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 general, the designated species found on the preserve will benefit from the large-scale natural systems management approach that will be utilized. The major components of this effort are continued hydrological restoration and prescribed burning. There are a number of species on the property for which Recovery Plans have been developed (USFWS 1999). These include the Florida grasshopper sparrow, the crested caracara, the wood stork, and the Florida scrub-jay. All management activities will be based on recommendations for the recovery of each of these species, and a monitoring program will be developed and maintained.

A monitoring program for Florida grasshopper sparrows (FGSP) was developed and implemented in 1999 in consultation with the U. S. Fish and Wildlife Service and the FFWCC (Walsh 1992). A series of permanent FGSP monitoring points were established in various dry prairie locations. These points are used to give a rough index of minimum FGSP population levels since they only cover 5.6 percent of the available dry prairie habitat. These surveys give a very general year-to-year (gross scale) comparison of trends in a small portion of the preserve's sparrow population.

Since monitoring began in 1999, FGSP numbers have fluctuated. These numbers are based on the established survey grid points, which sample approximately 5.6 percent of the available dry prairie habitat within the preserve. In spring 2002, an ambitious presence/absence survey of the remaining, unsampled 94 percent of dry prairie was accomplished. This one time survey (requiring 75 person-days) functionally doubled the estimated FGSP population on the preserve. The importance of the preserve to the continued survival of the FGSP has increased with the new estimate, placing approximately 70 percent of the species' remaining population within the preserve.

FGSP had previously been known to inhabit the Audubon Sanctuary before it was added to the preserve. That population was extirpated due to adjacent landowners backing up (by blocking the drainage of) water onto the Audubon Sanctuary. The Courts settled the water rights contest in favor of the National Audubon Society, but not before the resident FGSP had been lost due to long term flooding. In spring of 2002, during presence/absence surveys on the Audubon tract, three Florida grasshopper sparrows were again found on the property. With the water issue settled, and a good prescribed fire program on the Audubon tract, it is expected that this initial sparrow population will continue to grow.

At the writing of this update to the plan, funding through the USFWS for continued support for the FGSP program at KPPSP is pending (Miller 2004). The USFWS has funded the preserve efforts in the past, and this pending support will help with the continuity of the

monitoring of the species within the preserve. Funding is also being sought by the University of Central Florida (UCF) and a new research phase of FGSP biology and population dynamics is planned for the years 2005-2008, with possible continuation (Noss 2004).

Exotic Species Control

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

Plants. An exotic species program will be developed and maintained at the preserve. This will include acquiring funding and necessary assistance to locate, map, remove and monitor exotics within the preserve.

The exotic species found on the preserve are largely associated with human habitation and agricultural uses of the site. Around most of the former home sites are found such planted exotics as citrus (orange and grapefruit) and guava. Long Hammock is infested by air potato. Most, if not all, of the hammocks have a groundcover of varying densities of Lima, which is associated with ground disturbance. The improved pastures, as well as other locations throughout the property, contain bahiagrass, Bermuda grass (*Cynodon dactylon*), and limpograss. There is one hammock area near the culverts at Seven Mile Slough that has a stand of eucalyptus (*Eucalyptis* spp.). A second stand of eucalyptus occurs in the Kilpatrick Hammock. Cogongrass has been found in large patches on the spoil deposition areas by the river and in small patches throughout the improved pastures and row-crop fields. It is also spreading into the natural communities of the preserve. Tropical soda apple plants have been observed on the preserve. In almost all cases, the tropical soda apple plants have been in disturbed sites, typically associated with fill material having been brought into the preserve. The individual plants are destroyed as they are seen. Brazilian pepper (*Schinus terebinthifolius*) has been observed along the preserve's western boundary (Kissimmee River floodplain) within the preserve. Funds have been secured to treat the Brazilian pepper infestation. Brazilian pepper is widespread immediately outside of preserve boundaries. A constant alert will need to be maintained for this species. The sloughs contain several widespread aquatic exotic species including hydrilla and common water hyacinth. Air potato and cogongrass pose the greatest threat to the integrity of the unit. While the air potato has been found only in Long Hammock, it is spreading, and once a trail system is established, it will be very easy for trail users to move it from one hammock to another by picking up the potatoes. Funds have been secured to treat the entire area infested with air potato. Vigorous re-treatment will be necessary to root out the infestation. All efforts should be made to remove it from this hammock before a trail is routed through the hammock. Cogongrass has the ability to form dense monocultures, excluding all native species. Cogongrass removal needs to be aggressively pursued throughout the unit. This can probably be done the most easily and efficiently by mounting a small herbicide tank on an ATV. Small, localized patches of old world climbing fern (*Lygodium microphyllum*) have been found within the preserve. In each case, the patches were treated aggressively with apparent complete control achieved. However, close monitoring is needed to prevent the escape of this dangerous plant into the preserve.

Due to horse trail use and the cattle lease, extra precautions will be necessary to monitor for the introduction of exotic plants to the preserve. Control measures related to the cattle lease are discussed under the ruderal community description. As horse trails and staging areas are

developed, the staff will work with trail volunteers to monitor for and control exotics. Because the proposed trails are quite extensive, it will be necessary to train volunteers in plant recognition so that they can augment staff survey efforts.

Animals. Feral hogs (*Sus scrofa*) occur throughout the property and are damaging areas. A contract to remove hogs on an annual basis is being maintained. During the period 1998-2004, 1,720 feral hogs have been removed on this contract. Preserve staff have also remove feral hogs as opportunity presents. The Nine-banded Armadillo (*Dasypus novemcinctus*) is another exotic pest animal that is being controlled by preserve staff.

Occasional pets are either inadvertently or deliberately released into the preserve. The list so far is dogs, cats, and potbelly pig. In each case, the animals were removed by preserve staff.

Problem Species

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

There are no real problem species at the preserve. The occasional individual raccoon (*Procyon lotor*) and diamondback rattlesnake (*Crotalus adamanteus*) become a problem in the campground area. These animals are removed to different areas of the preserve as needed by staff.

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.

Research Needs

Natural Resources

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

Several Florida grasshopper sparrow research projects have been completed at KPPSP since the last unit plan revision. Research by Dustin Perkins (1999, 2001) has provided a better understanding of the Florida grasshopper sparrows breeding ecology and annual survival rates. Tylan Dean (1996, 2001) completed a study that has better illustrated the non-breeding season and winter ecology of the Florida grasshopper sparrow. Research on the biology and population dynamics of the FGSP will take place on the preserve during the period 2005-2008

by the University of Central Florida (Noss 2004).

Several plant transects have been established on the preserve as part of a study being done by Avon Park Air Force Range contract biologist to describe the dry prairie community in Florida. Scrub-jay researchers from the Air Force Range also periodically check the preserve for birds that may have moved from the Range to the preserve.

The FFWCC has set up track census counts for Florida panthers. These counts are designed to verify panther use of the preserve. The FFWCC is also considering evaluating the preserve as a new potential release site for the experimental population of whooping cranes being introduced to Florida.

Since the property was only acquired in 1997, there is obviously a great opportunity for research on the preserve. Such basic items as more complete and habitat specific surveying the property for plants and animals still needs to be done. Of the plant species reported so far for the preserve, approximately 155 are species that were previously un-documented for Okeechobee County. This indicates the richness of the flora of the preserve, and the potential for many more species, including designated species, to occur within the area. The preserve has the potential of having the richest flora of any natural area in Okeechobee County. Surveys for designated species need to be conducted, and locations of these species need to be mapped. Consideration needs to be given to more in-depth research for these species. The hammocks on the preserve are quite diverse, some of which are of high ecological quality. A comprehensive inventory of hammocks should be conducted. The hydrological restoration efforts that have been completed in the preserve have had a major effect on the natural community composition of some areas. Baseline monitoring of vegetation and hydrological conditions needs to be conducted prior to, and following, future restoration work so that changes can be documented. One of the continuing objectives is to develop a more comprehensive list of needed research and to make this preserve known to potential researchers in need of study sites.

The need for new and continuing research was recognized in the RME. The RME specifically addressed the need for a complete inventory of vascular plants to be developed. Additionally, inventories of bryophytes, algae, lichen, and fungi should be initiated, concentrating on those of primary ecological or conservation significance. Since the properties that now comprise the preserve were still recently in private ownership, there is little likelihood of records existing for these groups in the herbaria of the various State Universities of Florida. As a first step, it is recommended that the appropriate department of the various state universities should be made aware of the need for an inventory of the preserve's non-vascular flora. Arthropods also need to be inventoried within the preserve.

Cultural Resources

Research is needed on the succession of aboriginal cultures that occupied the general area in which the preserve lays, the Lake Okeechobee Basin. Cultural landscape inventories are needed for the Kilpatrick and Prescott hammock homestead sites to guide the development of the proposed visitor centers. Research is needed to document surviving structures associated with the Latt Maxcy cattle ranch operation and with the U. S. Army Air Corps bombing range and its contribution to the war effort as a training facility during WWII. This research effort should include mapping the physical layout of the structures, facilities and landforms, which may be accomplished through sponsorship of a Master's level student from an accredited anthropology, archaeology, architecture, landscape architecture or history department.

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.

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.

Kissimmee Prairie Preserve State Park was subject to a land management review on February 25, 2003 (see Addendum 7). The review team made the following determinations:

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

LAND USE COMPONENT

INTRODUCTION

Land use planning and preserve development decisions for the preserve 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 preserve facilities. Input to the plan is provided by experts in environmental sciences, cultural resources, preserve operation and management, through public workshops, and environmental groups. With this approach, the Division objective is to provide quality development for resource-based recreation throughout the state with a high level of sensitivity to the natural and cultural resources at each preserve.

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 preserve that will be given special protection, are identified. The land use component then summarizes the current conceptual land use plan for the preserve, identifying the existing or proposed activities suited to the resource base of the preserve. 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 the preserve's interaction with other facilities.

Kissimmee Prairie Preserve State Park is located within Okeechobee County, about 25 miles northwest of Okeechobee in the central part of the state. The populations of Okeechobee County and the adjacent Highlands, Polk, Osceola, Indian River, and St. Lucie Counties have grown 28 percent since 1990, and are projected to grow an additional 21 percent by 2010 (BEBR, University of Florida, 2002). As of 2000, 19 percent of residents in these counties were in the 0-14 age group, 37 percent in the 15-44 age group, 23 percent in the 45-64 age group, and 20 percent were aged 65 and over, which indicates the community is slightly older than the state average for these groupings (BEBR, University of Florida, 2002). Nearly 1.2 million people reside within 50 miles of the preserve, which includes the cities of Kissimmee, St. Cloud, Cocoa Beach, Satellite Beach, Melbourne, Palm Bay, Sebastian, Vero Beach, Ft. Pierce, Port St. Lucie, Stuart, Okeechobee, Arcadia, Sebring, Avon Park, Wauchula, Ft. Meade, Frostproof, Lake Wales, Bartow, Auburndale, Winter Haven and Haines City (Census, 2000).

Acquisition of the preserve began in 1996 and despite its rural location; the Preserve recorded 13,837 visitors in 2002/2003. This represents a significant net increase over the last five years. By Division of Recreation and Parks estimates, these 2002/2003 visitors contributed \$1,128,867 in direct economic impact and the equivalent of 22.6 jobs to the

local economy (Florida Department of Environmental Protection, 2003).

Existing Use of Adjacent Lands

The northern boundary of the preserve lies on the Okeechobee-Osceola County line and extends for approximately 1.25 miles into Osceola County along the Kissimmee River floodplain. The area surrounding the preserve to the north, east and south is agricultural land in private ownership. The land to the south includes the Coquina Water Control District (WCD); a 20 square mile area composed of 12,000 private and County-owned subdivided lots of 1.25 acres each. The area is classified for agricultural use, yet contains scattered residences with road and drainage improvements. Future development of these lots is expected to be very slow. Due to the rural nature of this area, Okeechobee County has developed Rural Activity Centers to reduce the dependence on the one existing urban area of the county for all employment opportunities and goods and services. Two of these communities are designated approximately 11 miles east of the preserve at Fort Drum and about 11.5 miles south at Basinger.

The preserve is bounded on the west by the Kissimmee River (the C-38 Canal). West of the river is the Avon Park Air Force Range. The Air Force recognizes zero ceiling over the entire preserve. They control the entire air space, from the ground to infinity over the western half of the preserve. The western boundary is subdivided into four different ranges. Depending on which range is being used for various types of training, the air space can be closed.

Audubon holds a conservation easement on a tract of land adjacent to the extreme southeast corner of the preserve. It allows grazing and hunting, but no conversion of cover, drainage, structures, or any other changes.

Peavine Road is a county road that extends from one mile west of the intersection of County Road 724 (Eagle Island Road) with County Road 700-A (Durrance Road), north through the Coquina WCD to the southern boundary of the preserve. Public access by way of Peavine Road to the preserve from the south is along Durrance Road from U.S. Highway 98 at Basinger, or from U.S. Highway 441, by way of Eagle Island Road.

Since most of the land near the preserve is undeveloped, there are numerous resource-based recreation opportunities in the area. Across the Kissimmee River, the Avon Park Air Force Range has approximately 82,000 acres open for public access on a regular basis for hiking, hunting, fishing, camping and other related activities. The St. Johns River Water Management District manages two Conservation Areas ten miles to the east of the preserve. Blue Cypress Conservation Area offers 54,458 acres for wildlife viewing, fishing, seasonal hunting, bicycling and hiking along many miles of levees, primitive camping at designated sites, canoeing, air boating and boating. Fort Drum Marsh Conservation Area offers an additional 20,862 acres for picnicking, hiking, horseback riding, fishing, bicycling, primitive camping at designated sites, wildlife viewing, canoeing, environmental education and seasonal hunting. Fifteen miles to the north of the preserve, the Florida Fish and Wildlife Conservation Commission (FFWCC) manage Three Lakes Wildlife Management Area. This 61,845-acre management area provides wildlife viewing opportunities, primitive camping, hiking and seasonal hunting.

Numerous lands along the Kissimmee River, totaling 38,415 acres, are also available for public recreation. These properties are managed by the South Florida Water Management District for open public use in conjunction with the FFWCC. Recreational opportunities

include hunting, fishing, hiking, biking, primitive camping, boating, canoeing and nature study.

Lake Wales Ridge State Forest is located fifteen miles to west of the preserve. It also provides 20,283 acres of wildlife viewing opportunities, picnicking, primitive group camping, fishing, canoeing, horseback riding, hiking and seasonal hunting. Polk County operates a public, full facility campground on Lake Arbuckle. Local citizens also enjoy hiking, horseback riding, and hunting on private lands while fishing and boating is popular along the Kissimmee River.

There are over 440,000 acres of public hunting land within 50 miles of KPPSP. In Highlands County, hunting is offered in Hickory Hammock Wildlife Management Area (9,487 acres), and Avon Park Air Force Range (82,000 acres). Straddling the Kissimmee River lays numerous public hunting areas managed by the SFWMD and FFWCC that are collectively known as the Kissimmee River Wildlife Management Area (21,502 acres). Within Polk County are Arbuckle WMA (13,531 acres), Lake Wales Ridge State Forest (5,959 acres), Kicco Wildlife Management Area (7,426 acres) and Lake Marion Creek Wildlife Management Area (8,083 acres). Osceola County is home to Bull Creek Wildlife Management Area (23,485 acres), Three Lakes Wildlife Management Area (52,976 acres), Three Lakes Prairie Lakes Unit (8,859 acres) and Triple N Ranch (15,391 acres). In Orange County, hunters can use Tosohatchee State Reserve (30,701 acres). Brevard County offers the Upper St. Johns River Marsh Type II Hunting Area (102,500 acres) and Thomas M. Goodwin WMA (3,000 acres). Indian River County has Fort Drum Conservation Area (20,862 acres). Martin County's public hunting lands include DuPuis Wildlife and Environmental Area (21,935 acres). Public hunting land can also be found in Glades County at Fisheating Creek WMA (18,272 acres).

Planned Use of Adjacent Lands

According to the Future Land Use Maps for Okeechobee, Highlands, and Osceola Counties, the lands surrounding the preserve are designated as "Agriculture," "Conservation", and "Rural/Agriculture", respectively. In Okeechobee County, the "Agriculture" designation limits residential development to a density of one dwelling unit per 10 acres (Okeechobee County, 1997). In Osceola County, "Rural/Agriculture" limits residential density to one dwelling unit per five acres (Osceola County, 1990).

It is projected that 150,000 acres of land in Florida will be converted to residential and urban uses each year through the year 2020 to support population growth. An estimated two-thirds of the converted acreage will come from agricultural lands. Alteration of the current land use pattern around the KPPSP should be anticipated due to the continuing population growth of the Central and South Florida regions, although significant changes are not imminent at this time. The conversion of adjoining land to residential or commercial land uses could produce serious impacts on the preserve. Changes in the quality and quantity of surface and groundwater, decline in the quality and the fragmentation of adjacent wildlife habitat, complication of the Division's prescribed fire management activities, traffic congestion and degradation of the aesthetic character of the land surrounding the preserve are some of the effects that could result from adjacent land use changes. It will be important for Division staff to participate in the review of all Comprehensive Plan amendments, proposed zoning changes, and development plans within the greenline boundary of the preserve in the future.

In an effort to conserve habitat and hydrological connections, two Florida Forever Projects surround the preserve. Bordering the eastern boundary of the preserve is the Kissimmee-St.

Johns River Connector Project. This 32,216-acre project is managed by the Florida Fish and Wildlife Conservation Commission (FFWCC). North of preserve lies the Pine Island Slough Ecosystem Project. This project area consists of 49,583 acres and is slated for management by the FFWCC. Acquisition of the lands would help protect the preserve from the potential impacts of future development in the region. If hunting were established on these lands in the future, a safety zone would be established between the areas utilized by the hunters and the preserve visitors.

The restoration of the Kissimmee River and its floodplain by the U.S. Army Corps of Engineers and the South Florida Water Management District began in 1999 and will take many years to complete. Under the restoration plan, more than 40 square miles of riverine ecosystem, including 43 miles of continuous river channel and 26,500 acres of floodplain will be restored to a more natural hydrological condition. The river restoration project will affect the preserve by raising the elevation of floods to historic levels along the edge between the river and interior uplands. Over time, changes in the vegetation along the river berm should be expected as parts of the flood zone are reclaimed by plant species endemic to the floodplain marsh community. Resource management activities and facilities development at the preserve will be coordinated with the river restoration project. Moreover, the Kissimmee River restoration is a significant interpretive resource for visitors to the preserve.

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

Kissimmee Prairie Preserve State Park contains nearly 54,000 acres of nearly pristine land. The dry prairie community is the most extensive natural community in the preserve, covering one-half of the site. The dry prairie is interspersed with wet prairies and depression marshes, forming treeless plains with viewsheds that extend up to 9 miles. Swales and sloughs are shallow linear depressions imbedded in the mosaic of prairie communities. These drainage features support hardwood trees and Sabal palms that make scenic backdrops to the open character of the prairie and shelter substantial bird and animal populations.

Hydric hammocks and prairie hammocks are found between the prairie communities and the swales and sloughs, and along the upper edge of the river floodplain. The hammocks provide pockets of dense overstory and shade in the open landscape. Larger hammocks are often the sites of disturbances from past human uses, such as homesteads, campsites, and improved pastures. The disturbed hammock communities have the highest potential for

development of public facilities, providing park-like environments with large overstory trees and relatively clear understories. These hammocks are also the highest concentration of cultural and historic sites within the preserve. These older hammocks support an understory of tropical plants, many of which represent the northern most location for each species. All hammocks need careful assessment prior to any development to determine if anticipated impacts would compromise the delicate natural and cultural resources occurring in some of them.

Information that is more detailed is found within the Resource Management Component and within the index on natural communities.

Water Area

Approximately 8,200 acres of the preserve lie below the 100-year flood line of the Kissimmee River. Although the hydroperiod of the floodplain was altered by the channelization, the river corridor retains much of its characteristic natural vegetation. The river and floodplain restoration efforts will greatly improve the ecological function of the riverine system, and the results will be evident along the uplands/floodplain interface at the preserve. The significance of the Kissimmee River project to the restoration of the South Florida ecosystem and water supply, combined with the fact that such restoration has never been attempted before, will attract international attention to this site in the future.

The hydrology of the preserve has been restored through the filling of 73 miles of drainage ditches and canals since the state has taken ownership. Much of the wetland restoration has been completed, restoring natural hydrology. This restoration means that preserve development is limited to the hammock areas and other higher and drier spots of the prairie.

Natural Scenery

The visual qualities of the preserve are exceptional. The most dramatic scenery can be found on the open prairies, where vistas exceeding five miles are common. The experience of these views is even more notable for the fact that only a few manmade disturbances are visible. The protection of visual resources and the preservation of the unique wilderness character of this landscape are important components of the Division's resource management and development plans for the preserve. The Division will continue to protect the unaltered landscape by burying power and telephone lines and avoiding the construction of any buildings or structures that would interfere with exceptional views of the open prairies.

Another exceptional resource, yet often overlooked, is the night sky. Due to the preserve's remote location and lack of light pollution, this area is home to some of the darkest night sky in all of Florida. This high quality resource attracts astronomers and amateur star gazers from the more populated areas of southern and central Florida.

Significant Wildlife Habitat

A primary feature of the conceptual plan for the preserve is the provision of public access for wildlife observation and interpretation. "Watchable Wildlife" initiatives are part of cooperative efforts to meet a growing national interest in the preservation of biological diversity and the conservative management of natural and cultural resource lands. Watchable Wildlife programs promote the enjoyment of wildlife observation and provide an understanding of wildlife habits and the relationships between the various animal species and the environment.

The Kissimmee Prairie region of Florida is one of the State's richest in terms of rare and

endangered wildlife. As discussed in the Resource Management Component, the mosaic of high-quality upland and wetland natural communities in the preserve provides exceptional habitat for listed bird species, including the Florida grasshopper sparrow, Audubon's crested caracara, swallow-tailed kites, white-tailed kites, wood storks, sandhill cranes, plus an extremely diverse migratory species list of shorebirds and a wintering grassland bird assemblage. The preserve is also home to 79 species of butterflies, many of which are rare. Thirty-four animal species and 13 plant species listed by State and Federal authorities for protection are known to inhabit the preserve at this time. Many more listed species will likely be identified on the property in the future. The importance of the listed species habitat on the preserve was a primary reason for its acquisition by the State of Florida. Common animals are also abundant, including wading birds, raptors, songbirds, alligators, snakes and game animals such as deer, turkey, quail and doves.

The preserve offers outstanding Watchable Wildlife opportunities. The exceptional opportunities for visitors to observe wildlife are expected to generate the largest numbers of visitors to the preserve in the future. The preserve should become a leading wildlife observation park in the State Park system as soon as the facilities and services needed for public access are made available.

Archaeological and Historical Features

Although the preserve is remote, it contains rich cultural landscapes created over the past 3,000 years or more. In 1997, the C.A.R.L. Archaeological Survey began their survey and assessment of the cultural resources on the preserve. Nineteen archaeological and historical sites have been identified including Belle Glade, Seminole and mid- to late-19th and early 20th century developments, such as the Military Trail, the Peavine Railroad and homesteads. Most were located in the numerous oak and cabbage palm hammocks found on the property, although sites were not limited to this environmental setting. Of the 19 sites documented, seven are prehistoric, 11 are historic and one site has both prehistoric and historic components. (Newman et al., 2002)

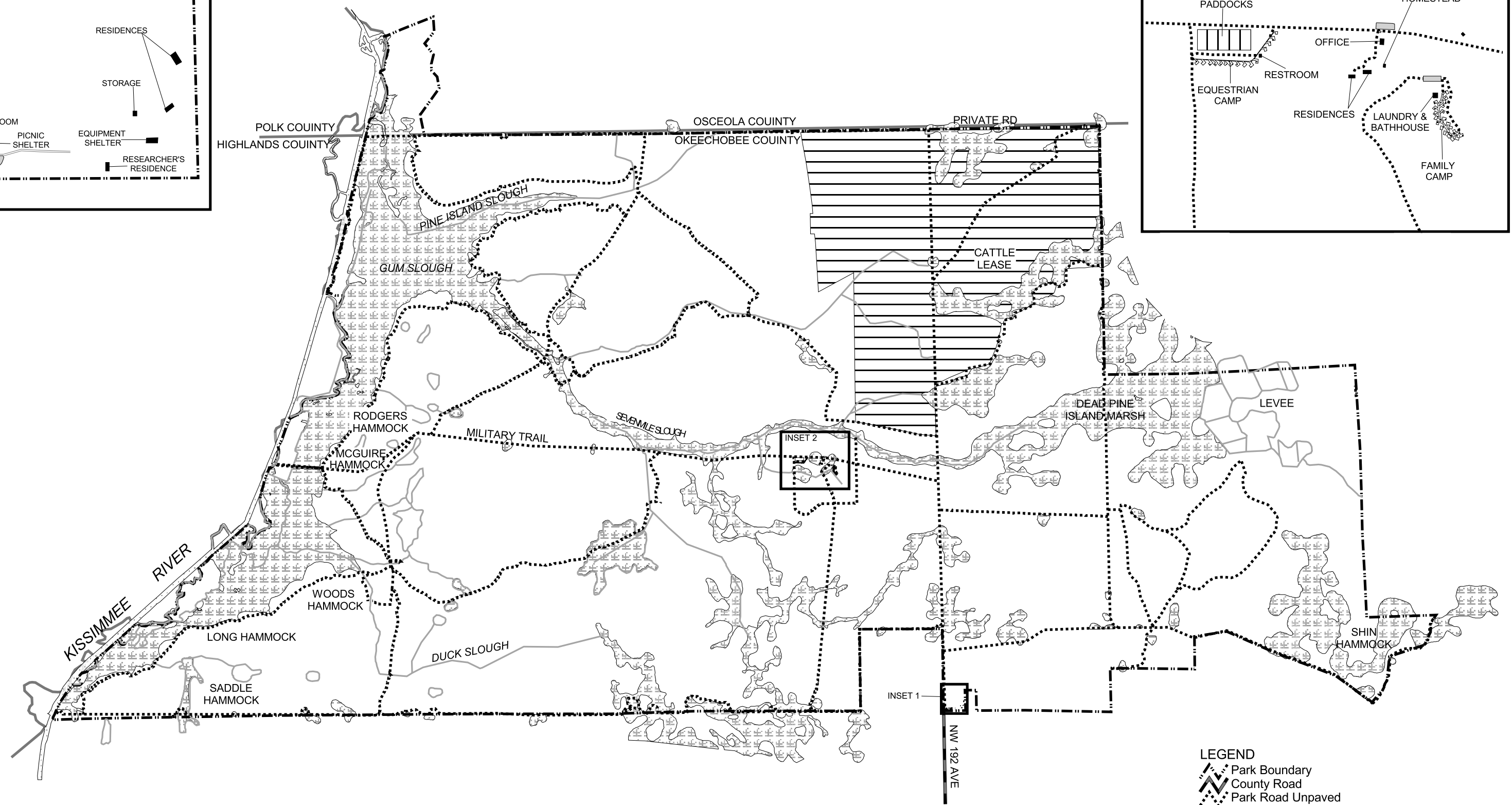
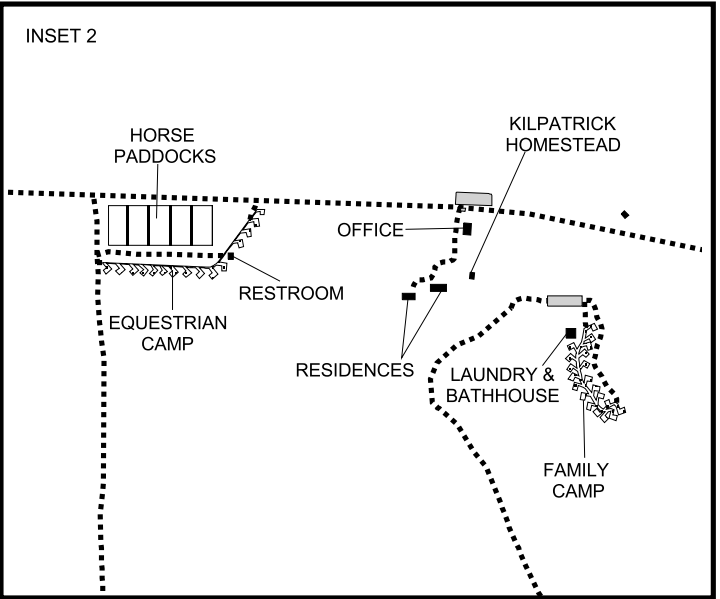
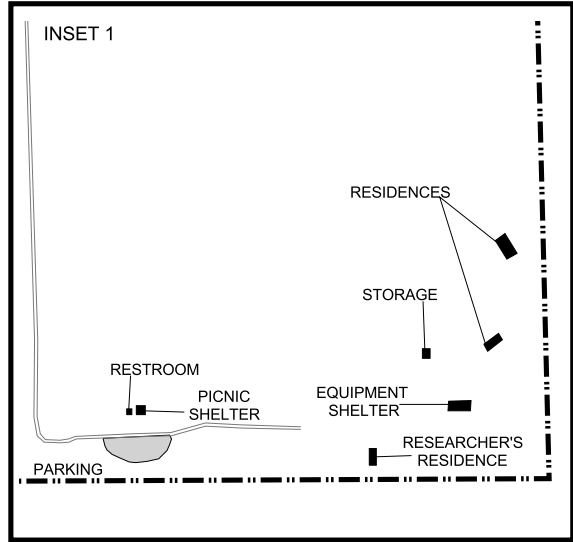
The preservation and interpretation of these cultural resources will continue to be one of the most significant benefits of public ownership. Additional historical and archaeological research, oral history collection and cultural landscape inventories are needed to develop a base of information on the history of this place to support the development of a comprehensive cultural heritage program. The book *A Land Remembered* by Patrick D. Smith was written about the area and is therefore one useful resource. A feature of the interpretive programs of the preserve should be the Kilpatrick family homestead, located in the center of Kilpatrick Hammock. Programs that highlight the history of cattle and cowmen in the Kissimmee Valley region should also be featured through interpretive programs at this preserve.

Assessment of Use

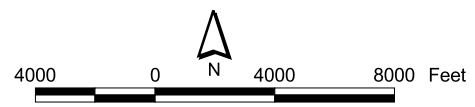
All legal boundaries, significant natural features, structures, facilities, roads, and easements trails in the unit are delineated on the base map (see Base Map). Specific uses made of the unit are briefly described in the following sections.

Past Uses

It appears that prehistoric occupation, as evidenced by nine middens found in the preserve, primarily dates to post 500 B.C., thus representing the Belle Glade culture. The one exception may be Long Hammock North where an earlier component may be present at the site. As to the historic occupation of the prairie, many of the sites are related to the cattle



- LEGEND**
- Park Boundary
 - County Road
 - Park Road Unpaved
 - Private Road
 - Structures
 - Camp Sites
 - Parking Lots
 - Water Bodies
 - Marsh



KISSIMMEE PRAIRIE
PRESERVE STATE PARK

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

BASE MAP

industry, although some, Kilpatrick, Prescott and perhaps Eucalyptus, are representative of early homesteading in the area. According to anecdotal sources, the prairies were Seminole cattle grazing lands, and were used by the pioneer cow hunters who established the Florida cattle industry after the Seminoles had been driven out. The South Florida and Gulf Railroad site also dates to the late 19th century. The Military Trail, also known as Twiggs Trail, and perhaps a component present at McGuire Hammock attest to the 19th century use of the property. Twiggs Trail was an 1830s wagon road that became the military trail between Fort Kissimmee and Fort Drum during the Seminole Wars. It is likely that additional undocumented sites are present on the property and it is recommended that preserve personnel continue to document any unrecorded sites or contact either the C.A.R.L. Archaeological Survey or the Bureau of Archaeological Research for help. (Newman et al., 2002)

Peavine Road originated as the Peavine Railroad, part of a land speculation scheme perpetrated in the early 1900s. Midwestern businessmen built the railroad from Whittier (present day Keenansville, near Lake Kissimmee) south to its terminus at a depot on Prairie Ridge at the southern boundary of the preserve. The land speculation scheme collapsed, and the elevated grade of the rail line was subsequently used for ranching operations. The Military Grade is the only other semi-improved road on the property, running east to west, and terminating at McGuire Hammock.

Cattle ranching began as a significant land use on the state property during the mid-19th century, when Cracker cow hunters roamed across this landscape in search of the wild cattle that descended from stock left in Florida by Spanish explorers and colonists. The prairies and hammocks of the preserve were part of the vast open range used by the pioneer families that originally settled the Kissimmee River Basin.

Lattimer Maxcy began to purchase land in Osceola and Okeechobee Counties in the 1940s. Today, the Latt Maxcy Corporation is one of Florida's largest private landholdings. Although the corporation altered the land by planting improved pastures, developing agricultural fields and ditching numerous drainageways, most of the property was maintained under a native-range management scheme. The corporation's native-range management and use of prescribed fire over much of the area now included in the preserve is the primary reason for the exceptional ecological quality that has persisted on this land to the present time. In many ways, ranch management by the Maxcy family exemplifies a stewardship ethos that has long been a part of ranch culture in this region of the state. The ranching history of this land will be an important component of interpretive and educational programs provided for visitors to the preserve.

Although the majority of the property was managed under a low intensity, native-rangemanagement scheme, alterations to the natural hydrology and clearing of natural communities occurred at several locations. Many of the natural drainageways were ditched to support improved pasture and other agricultural fields. These alterations resulted in the accelerated movement of water off the property, creating some degradation of the surrounding wetland and dry prairie communities. Many of these canals and ditches have been back-filled as part of environmental restoration efforts within the preserve.

In 1923, the Florida Legislature mandated that Florida cattlemen install and use cattle dip vats (CDV's) in order to combat the Texas tick fever. Three dip vats were subsequently placed on what is now within the preserve property. A fourth vat is located just north of the

preserve boundary on the Okeechobee-Osceola County line, and the contamination zone south of the vat is within the preserve boundary. A fifth vat is located just north of the boundary of the old Audubon Sanctuary. Two of the CDV's within the preserve were cleaned up by the South Florida Water Management District prior to the purchase of the property.

The most significant CDV remaining within the preserve is located in the Kilpatrick Homestead cultural site, an area already home to most of the preserve's development. The area surrounding this CDV is severely contaminated and has been fenced and signs have been placed to insure that staff and visitors do not encounter the contamination. Full remediation of the contamination is recommended.

A second category of serious impacts to the preserve from past land use results from its inclusion in the Avon Park Air Force Range from 1939 until the mid-1960. Four bomb targets were located within the current preserve boundary, and a fifth target was located just south of the boundary, east of Peavine Road. A study conducted during the land acquisition process concluded that there is a possibility that unexploded ordnance (UXO) may be found on the preserve. Efforts will continue to encourage the U.S. Government to fund the effort needed to clear the entire area of the preserve. For the interim, safety guidelines have been provided for preserve staff and the initial public access facility at the preserve incorporates warning signage to educate visitors to the possibilities of UXO's being present on the property.

The Division believes that the risk of UXO on the entire property cannot be determined with complete certainty without performing extensive field investigations. Given the length of time between the active military use of the range (over 50 years) and some apparent discrepancies in the ACOE Archives Search Report regarding exactly what type of ordinance may exist on the site, the cost for a surveillance of this magnitude could approach \$12 million. The estimated UXO surveillance costs associated with the next proposed development phases for the preserve are included in the development cost estimate provided in Addendum 6.

Recreational Uses

No public recreational access to the property was sanctioned by the previous landowner.

Other Uses

Despite law enforcement efforts by the Latt Maxcy Corporation, illegal hunting has occurred on the property in the past. Poaching has continued to be a problem on the preserve since its acquisition by the Water Management District and the State of Florida. Easy access to the western portion of the preserve by boat makes the control of poaching activities difficult. DEP sends a law enforcement officer to the preserve one day every two weeks while the Okeechobee County Sheriff's Office has an officer patrolling the neighboring Coquina Water Control District, and FFWCC has officers on the Kissimmee River. Increased surveillance and enforcement on the property continues to be an important need.

The Latt Maxcy Corporation holds an easement for drainage and access over a portion of Pine Island Slough and existing lesser channels located near the northern boundary of the preserve. The easement stipulates the Corporation's right to drain, discharge and overflow surface waters at the historical rate, up to the volume authorized under existing surface water management permits, and allows access to the drainage ditch and water control structures for maintenance. The Latt Maxcy Corporation retains ownership of the County Line Dip Vat

located at the northern preserve boundary (0.5 acre of the affected area is located south of the County line).

The restoration project on the C-38 Canal will include removal of the fill deposited within the river floodplain adjacent to the preserve. The floodplain portion of the Military Grade has already been removed in preparation of the river floodplain restoration. The canal will be backfilled to a point approximately 3 miles north from the preserve's southern boundary, and water will be channeled into what remains of the historic course of the Kissimmee River for a distance north of that point. Division staff will work with the Water Management District and the Army Corps of Engineers to coordinate these activities with their protection and management activities on the preserve.

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.

Because the property is such an extensive intertwined mosaic of wet and dry prairie, approximately 48,000 acres of KPPSP are designated as a protected zone. Approximately 6,000 acres of improved pastures at the northeast corner of the property is managed under a cattle lease and, therefore, excluded from the protected zone at this time. The existing trailhead and preserve support area, the Kilpatrick Hammock Gateway, and the other areas identified in this plan for future development are also excluded from the protected zone.

Existing Facilities

Recreation Facilities. In 1997, a parking lot was developed at the preserve entrance on Peavine Road to provide public access to the preserve. This area is also the location of many of the support facilities. The following is a list of existing facilities.

Peavine Support Area

- Stabilized Parking (30 spaces)
- Small Picnic Shelter
- Composting Toilet
- Interpretive Kiosk

Over the past 2 years, the Kilpatrick Hammock has been the site of new preserve development.

Kilpatrick Hammock Gateway

- Standard Camping Area (20 sites)
- Equestrian Camping Area (15 sites)
- Horse Paddock

Over 110 miles of two-trail roads crisscross the preserve and are available to hikers, bikers and horseback riders.

Trail System

- Shared-Use Trail (110 miles)
- Primitive Campsites (3 sites)

Support Facilities

- Preserve Office
- Equipment Shelter
- Flammable Storage Building
- Staff Residence (4)
- Researcher's Trailer

Peavine Road and the Military Grade are the only semi-improved roads on the property. Since acquisition, the Division of Recreation and Parks has improved the section of road from the preserve entrance to the Kilpatrick Hammock Gateway and it serves as the only road open to visitors.

CONCEPTUAL LAND USE PLAN

The following narrative represents the current conceptual land use proposal for this preserve. As new information is provided regarding the environment of the preserve, 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 preserve and a site plan for specific facilities will be developed based on this conceptual land use plan, as funding becomes available.

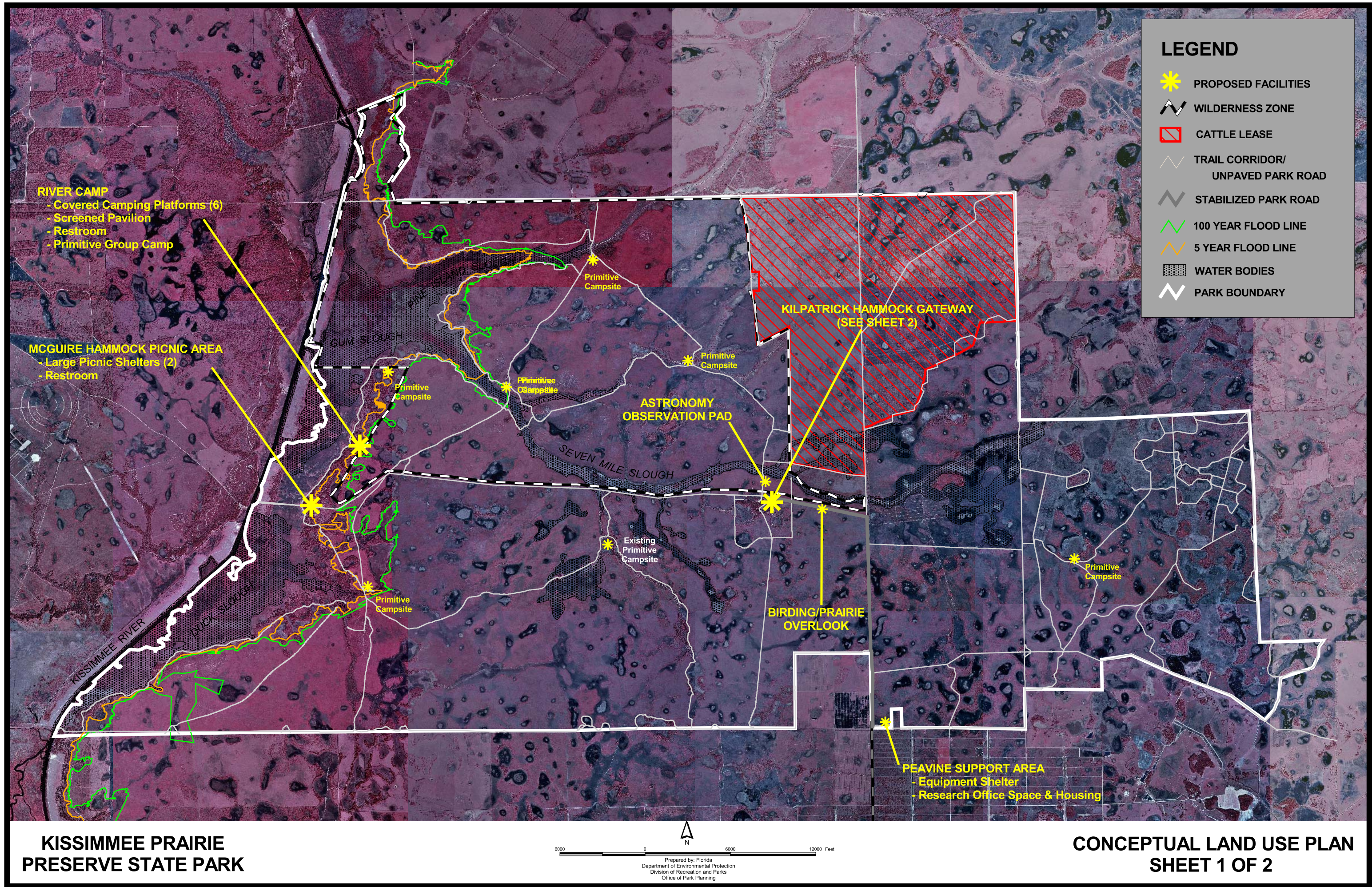
During the development of the unit management plan, the Division assesses potential impacts of proposed uses on the resources of the property. Uses that could result in unacceptable impacts are not included in the conceptual land use plan. Potential impacts are more thoroughly identified and assessed 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 preserve facilities consistent with the universal access requirements of the Americans with Disabilities Act (ADA). After new facilities are constructed, the preserve staff monitors conditions to ensure that impacts remain within acceptable levels.

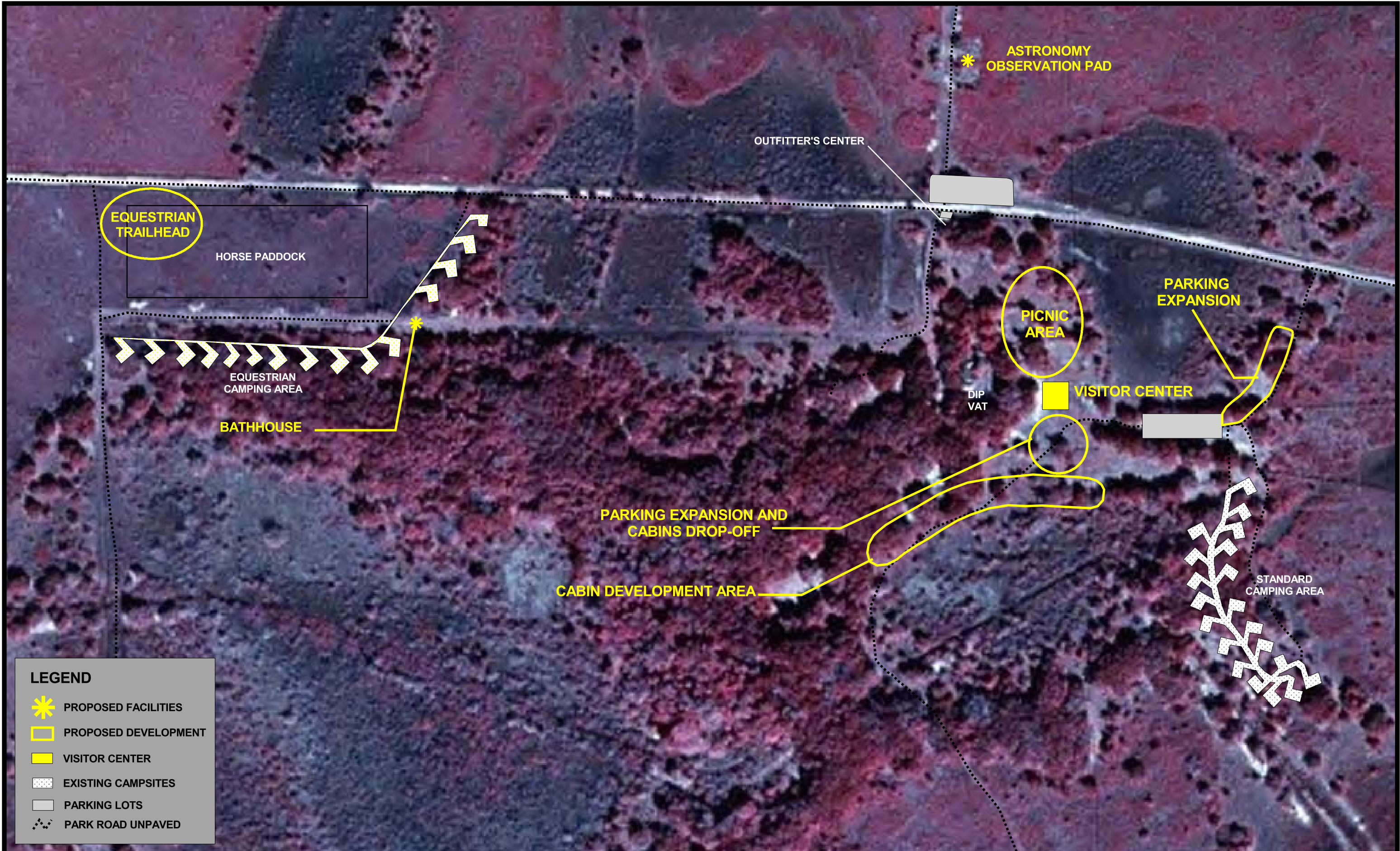
Potential Uses and Proposed Facilities

Recreation, Interpretation and Research Facilities

The preserve has a huge potential for trails, primitive camping and nature and heritage based recreation and interpretive programs. Watchable Wildlife opportunities, the Kissimmee River restoration projects, the preserve's wilderness character, its scenic qualities, excellent trails recreation resources and unique ecological and cultural resources will attract state, national, and international visitors to the preserve in the future.

The dry prairie ecosystem is a focus of intense scientific interest because of the diversity of plant and animal species, the high number of listed species and the natural community's globally endangered status. These attributes provide a tremendous opportunity for the Division of Recreation and Parks to establish a dry prairie ecosystem research facility, integrated with public interpretation that will support an international community of researchers focusing their attention on the preserve's natural resources and endangered habitats. Areas of research that will occur and will be interpreted in the Visitor Center include:





**KISSIMMEE PRAIRIE
PRESERVE STATE PARK**



**CONCEPTUAL LAND USE PLAN
SHEET 2 OF 2**

- Florida Grasshopper Sparrow: surveys, banding, effect of grazed pastures
- Caracara
- Gopher Tortoise
- Flora: dry prairie, hammocks
- Restoration of pasture back to prairie
- Effect of hydrology before and after Kissimmee River restoration
- Ground water hydrology
- Entomology
- Herpetology
- Lepidopterology
- Other endangered species

The conceptual land use plan for the preserve recommends development of new facilities at Kilpatrick Hammock and near McGuire Hammock. The intent of these projects will be to provide interpretive programs and guided tours, accommodate picnicking, support astronomical observation, and support an extensive hiking, bicycling, horseback riding and nature trail network with wildlife observation points and primitive campsite destinations. A Visitor Center and cabins for lodging of preserve guests is recommended as a central feature of the development program at Kilpatrick Hammock, while working researchers' housing and laboratories would be located within the Peavine support area.

Because of the scale of the property and the sensitivity of its resources, in-park transportation services provided by preserve staff or concessionaires are recommended to move visitors within the preserve. Unique "Outfitter Tours" on prairie buggy vehicles and recreational and interpretive tours by hiking, horseback riding and bicycling are recommended.

Kilpatrick Hammock Gateway. The majority of new visitor facilities proposed for the preserve will be located at the Kilpatrick Hammock Gateway. This area will continue to function as the terminus for public vehicular access to the property. The gateway will provide parking, a picnic area, trailheads, various overnight accommodations, the Visitor Center and other interpretive facilities such as a Grasshopper sparrow observation platform, other wildlife observation facilities, nature trails, and a "stargazing pad" for setup of equipment for astronomical observations.

A Visitor Center is recommended to orient and inform guests as they arrive at the preserve and provide a base for group interpretive lectures, tours, social activities and research programs, as discussed in detail below.

A picnic area with two large shelters is proposed. The picnic shelters will offer much needed shade and a wonderful view of the vast prairie to both day-use visitors and campers alike. This picnic area should be located just east of the existing preserve office, which would provide a convenient staging area for preserve tours and other interpretive programs.

Interpretive programs will originate from the Gateway. Self-guided interpreted nature trails, ranger- or concessionaire- led hikes or bike tours, and Outfitter Tours via horseback and prairie buggy will begin at Kilpatrick Hammock and take visitors into the surrounding prairie and beyond. The length of these interpretive tours will range from a short hike to multiple-day wilderness adventures.

A day-use equestrian trailhead area with parking for at least 10 trailers is recommended for a portion of the existing horse paddocks adjacent to the equestrian camping area.

The Kilpatrick family homestead should be thoroughly documented and interpreted using Visitor Center exhibits, outdoor displays, staff presentations and park brochures. Interpretive themes for the homestead area include the history of Florida's cattle industry, the Cracker Cowboy, Florida scrub cows, the tools of the trade, homesteading and the early pioneering families in this region of Florida. Extensive oral history material needs to be collected from the Kilpatricks and other long-time residents of the area.

The cattle dip vat located just south of the remains of the Kilpatrick barn and house needs to be decontaminated, since this feature poses a public health threat in the center of the public facilities of the preserve. (The area is currently fenced so no visitors can contact the contaminated soil.) Remediation may involve removal of trees, groundcover and soil from a small area, and backfill with clean soil. The decontamination of this site should be a high priority project, preceding the construction of new visitor facilities and the resulting increase in public uses in this area of Kilpatrick Hammock.

An astronomy observation pad is recommended for the area north of Kilpatrick Hammock and south of Seven-Mile slough, just east of the service road that runs from the current preserve office to the slough. A raised, stabilized surface will serve as a stargazing pad for both amateur and professional astronomers. Electricity should be provided to power the astronomers' telescopes and computers.

A short distance east of Kilpatrick Hammock, a birding/prairie overlook is recommended to be located just off the road shoulder. The overlook will serve as a viewing platform for bird watchers near a prime Florida grasshopper sparrow habitat and will include an interpretive display containing information about the grasshopper sparrow. The selection of building materials should take into account the wildfires that regularly burn the dry prairies. Parallel parking for three or four vehicles should be provided at this location.

Visitor Center. The Visitor Center would accommodate the following:

- Fee collection and overnight registration.
- Visitor orientation to the preserve resources and recreational opportunities.
- Interpretive displays that convey the importance of protecting Florida Dry Prairie flora and fauna (birds, reptiles, insects and butterflies).
- Interpretive displays conveying the history of the area from prehistoric man and early settlers and their land use practices to present day owners and uses.
- Display area for the current research programs and their importance.
- An area to give interpretive programs either by staff, outfitters or researchers.

The architectural style of this building should be similar to the preserve office. A parking lot already exists near the site selected for the Visitor Center; however, it will need to be expanded.

Cabins. Up to six cabins are also recommended for construction south of the proposed Visitor Center for groups and families on extended visits to the preserve. In an effort to minimize their footprint and to keep them dry during flooding events, the cabins should be raised on stilts and connected to one another with a boardwalk that begins at the parking area. It is recommended that two cabins be designed for occupancy by groups as large as 12 persons are to provide specialized support for the programs described above (either interpretive tour or researcher groups). In all, the six cabins will provide lodging for 48

guests. A screened picnic shelter with a barbecue pit is also recommended for the cabin area. This shelter would be used for social gatherings, group meals and interpretive programs.

McGuire Hammock Picnic Area and River Camp. Picnicking and interpretive facilities are proposed for McGuire Hammock, located about seven miles west of Kilpatrick Hammock. Two large shelters and a restroom are recommended to provide trail users with a comfortable facility to enjoy a meal, relax and offer shelter during a storm.

A River Camp is proposed to support multi-day hiking, bicycling and horseback riding tours, allowing visitors to camp near the Kissimmee River. The River Camp will be accessible by trail or by preserve-operated or concessionaire-provided transportation services, but not by private automobiles. It should be located approximately one-half mile north of the proposed McGuire Hammock Picnic Area. The River Camp should provide six covered camping platforms (each sleeps 6 people), a screened pavilion for dining and group activities and a bathhouse. This area should also include a primitive group camp with at least four tent sites, located an appropriate distance from the other campers as not to disturb them but close enough to share the bathhouse.

The construction of permanent structures within McGuire Hammock should wait until the restoration of the Kissimmee River is complete. Delaying development of this area will help to determine the restoration's effect of the hammock and should insure that the best sites are selected for the placement of permanent structures. Temporary structures such as picnic tables, composting toilets and primitive campsites are appropriate in the interim.

Trails. A network of hiking, bicycling, equestrian and nature trails is proposed to provide recreation on day trips and multiple-days trips in the preserve. Single-use trails should be provided near the Gateway, the McGuire Hammock Picnic Area and the River Camp, where the density of use will be highest. Nature trails in the Gateway area should be accessible to visitors of all physical abilities to provide universal access to the recreational and interpretive resources of the preserve.

Beyond the Gateway, shared-use trail configurations will be provided in order to minimize the environmental impacts and maintenance requirements of the trail network. Generally, hiking and bicycling routes will be combined, and equestrian routes will separate from the shared-use trail. Where crossings of wetlands or other sensitive areas must occur, the trails will be consolidated to one alignment to minimize disturbances. Trail bridges are recommended to cross Seven Mile Slough and Gum Slough. These crossings need to be developed to incorporate pedestrians, bicycles, equestrians and service vehicles.

The trail corridors shown on the Conceptual Land Use Plan are preliminary locations for planning purposes. Additional site analysis and planning will be conducted in order to establish the proposed trails with appropriate sensitivity to the preserve's natural and cultural resources. In most cases, the trails will be integrated with the firebreaks and resource management service roads needed by Division staff to conduct resource management activities on the preserve.

Wildlife Observation Facilities. Wildlife observation facilities, ranging from simple interpretive stations to visually screened enclosures or platforms, should be provided at key locations along the trail system. The Division will collaborate with staff of the Florida Fish and Wildlife Conservation Commission, the U.S. Fish and Wildlife Service and other experts

in wildlife management and behavior to determine sites and techniques for developing the wildlife observation systems of the preserve. An important component of the program will be the education of visitors on the human behavior that is necessary to conduct wildlife-viewing activities on a sustainable basis. The guiding principle for the Watchable Wildlife effort will be to provide the highest quality wildlife viewing experiences possible, while avoiding disturbance of the animals' natural patterns of behavior.

Primitive Campsites. Six additional primitive campsites are proposed along the trail network, providing 12 designated tent sites for up to 48 campers. As with the trail corridors, these are preliminary recommendations to guide additional planning and study. More or fewer tent sites may be designated, as additional information becomes available.

Primitive campsites should include small shelters that will serve as trailside rest stops and weather shelters for day use visitors on the trails system and as a camping amenity. The proposed sites should also include hitching posts to support equestrian campers.

Outfitter's Tours. Construction of a park road network to deliver visitors in private vehicles to all activity sites in the preserve is not feasible since that action would result in unacceptable environmental impacts and development costs. Transportation in the preserve can be provided very effectively by trails and by a concessionaire's transportation service using prairie buggies, horses and bicycles to accommodate visitors of all ages, physical abilities and preferences.

Opportunities exist for public/private partnerships between the Division and private businesses. This is a key recommendation of this plan. The partnerships will be assigned to deliver transportation, outfitting, one-day or multiple-day hiking, bicycling and equestrian trail tours, Outfitter's Tours, accommodations and other services to the visiting public. The proposed arrangement for qualified private sector businesses to provide in-preserve transportation is intended to generate an appropriate level of public access to the preserve while minimizing physical and aesthetic impacts to the protected landscape.

Preserve-operated or concessionaire services should be arranged to transport visitors from the Kilpatrick Hammock Gateway to the McGuire Hammock Picnic Area and the River Camp where picnic areas, interpretive features and campsites are proposed. The unique tours should provide interpretive prairie buggy tours along service roads in the southern portion of the preserve that will allow visitors an alternative mode of access to several of the primitive campsites along that route. The tour route will use only permanent service roads that are to be maintained for resource management activities. These service roads should be stabilized in areas that are wet and prone to rutting. Ruts can disturb the natural sheet flow of water by creating channels that block the flow of shallow water across the prairie.

The tours will maintain a regular schedule to allow wildlife to adapt to the disturbance and insure quality wildlife viewing opportunities. The Division should seek purchase and maintenance funds for a tour buggy that can carry 12 to 20 passengers and additional staff to operate a backcountry tour. The Division should seek to provide this transportation service until a private business is available.

In the future, when a concession operator is identified, the Division will work with operator to determine their facility needs and placement. The Division would then amend the Conceptual Land Use Plan.

Wilderness Zone. Under the Division of Recreation and Parks policy, a Wilderness Zone is an area that retains its primeval character and is protected and managed to preserve its natural appeal and values. A designated Wilderness Zone generally appears to have been shaped by the unaltered forces of nature, with the imprint of human influence substantially unnoticeable. A Wilderness Zone offers outstanding opportunities for the conditions of solitude and remoteness that are essential for a wilderness experience. The area may contain environmental, archaeological or other kinds of features of scientific, educational, scenic or historic value. Compatible uses and carrying capacities are specified for each Wilderness Zone. Facilities are limited to those considered essential for resource management and for the specified public uses.

All management activities in Wilderness Zones are aimed at keeping the site in natural and pristine condition. Ecological restoration programs are appropriate. Only those existing service roads that are needed management are retained, and unnecessary roads should be abandoned. Motorized equipment and motorized boats are normally permitted for patrol and management purposes only.

The proposed Wilderness Zone at Kissimmee Prairie Preserve State Park is approximately 15,700 acres in size, or nearly 28 percent of the total land area. It is located north of the Military Grade, west of the improved pasture area, and immediately east of the Kissimmee River, with the exception of the river berm located between McGuire Hammock and Marsh Point (see Conceptual Land Use Plan). Hiking, biking, horseback riding, primitive camping, nature study and nature photography are the primary recreation activities proposed. Recommended facilities in the Wilderness Zone are hiking, bicycling and equestrian trails, designated primitive campsites with weather shelters and hitching posts, and boardwalk structures, as needed, for trail crossings of wetland areas. The proposed total visitor capacity for the Wilderness Zone is 68 persons daily.

Support Facilities

An additional 4-bay equipment shelter is recommended for the Peavine support area (see Conceptual Land Use Plan). When additional ranger residences are warranted, they should also be located within the Peavine Support Area, adjacent to the existing residences.

The Peavine support area will also serve the research facility needs. The existing modular building should be converted into office/laboratory space for the visiting researchers. The researchers should be provided with modular buildings capable of housing 10 individuals. Any additional research facility needs should also be located in the Peavine support area.

Upgrades to the equestrian camping area are recommended. Electricity and water should be added to each campsite. A bathhouse is proposed to replace the composting toilet and a shade structure is recommended for the paddocks.

Potable water systems and electrical service facilities will be needed to support the proposed developed areas. Service road improvements and stabilized low-water crossings will be needed to provide efficient access for resource and visitor management. The improved wetland crossings will also support the proposed trails system.

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 preserve improvements, and may be revised as more information is collected through the planning and design processes.

The protection of the water resources of the preserve, the protection of listed plant and animal habitat areas and the integration of new facilities with resource management activities, such as prescribed fire, will be priority considerations in the design and construction of the facilities proposed by this plan. These goals will be guiding principles in all site-specific analyses and site design activities for the development projects outlined here. Guidelines for sustainable design and construction will be applied to development projects, and careful construction planning and management will be applied to minimize impacts to the preserve's natural and cultural resources during the development process.

Of equal importance and priority is the protection of visitor safety on the preserve. U.S. Department of Defense policy acknowledges that the Federal government should remedy hazardous conditions created by past national defense activities. Since the clearance of all unexploded ordnance that may be located on the property is needed, the Division will pursue Federal funding for the project in the future. The known UXO zones have been generally avoided as development sites in the recommendations of this plan. However, sites proposed for the location of public and service facilities will require UXO clearance before construction activities begin. Decisions regarding fencing or other methods of exclusion of preserve visitors from known UXO sites will be made on a case-by-case basis as recreational trails are planned and constructed, and as visitation, patterns become defined.

Reconnaissance-level archaeological surveys will precede any ground disturbing activities in the preserve. Disturbance to known cultural resource sites will be avoided. These sites will be protected and preserved. Qualified staff will monitor construction projects as they proceed to identify and protect unknown cultural resource sites.

The planning and design of facilities will accommodate the use of prescribed fire as the primary resource management activity at the preserve. Site selection, site design, building orientation and selections of building materials will respond to the fact that many of the natural communities in the preserve will be burned periodically. If possible, permanent structures will not be planned or developed in dry prairie, wet prairie or scrub communities. When construction must occur in such areas, efforts will be made to minimize the impact to the fire dependent communities and appropriate firebreaks will be incorporated in the design of those sites. The area excluded from burning will be the minimum necessary to provide a safe, enjoyable and high-quality outdoor recreation and interpretive experience for the preserve's visitors.

In an effort to help preserve the dark sky over the preserve, the Division is committed to minimizing the impact of light pollution. As new facilities are constructed within the preserve, their lighting systems will include full cut-off lights to be sensitive to the night sky resource and its recreational use for stargazing.

The design of road and parking improvements for the preserve begins with a thorough analysis of the existing surface hydrology conditions of the proposed development sites. All efforts will be made to integrate the development activities with the resource management goal to restore natural hydrologic conditions to the preserve. The design of any road improvement will include adequate water management facilities to protect and restore the water quality and natural hydrologic regimes of the dry prairie/wet prairie ecosystem, in

particular.

Best management practices for stormwater, including designs that reduce the quantity of impervious surfaces will be incorporated, to the extent feasible, in new roads and parking areas. Non-public vehicular transportation routes will incorporate stabilized low-water crossings where they must cross drainageways. The design of these stabilized wetland crossings will be consistent with current best management practices and will be developed with input from regulatory staff of the DEP and the South Florida Water Management District.

State of the art waste disposal systems for restrooms, such as the composting toilet systems used elsewhere in the State Park system, will avoid discharge of nutrients into the environment at the preserve. Electric services will be extended to the equestrian camping area and to the proposed development within the Kilpatrick Hammock Gateway. Underground electric service lines will be constructed to protect the visual resources of the preserve. Public water supplies, composting restrooms and shelters will be provided at the picnic areas and the River Camp. Photovoltaic supply systems may be used in those areas for electrical service.

Trailside primitive campsites should provide small shelters that can double as rest areas and severe-weather refuges for trail users. Campsites that are designated for equestrian use will provide hitching posts.

After restoration of the Kissimmee River, if the county is interested in extending Micco Bluff Road to the southwest corner of the preserve, the Division will reconsider the possibility of a second gateway at Long Hammock.

Recreation Facilities

Kilpatrick Hammock Gateway

- Large Picnic Shelters (2)
- Visitor Center
- Cabins (6)
- Large Screened Pavilion with Barbecue Pit
- Horse Trailer Parking (10 vehicles)
- Standardize Equestrian Campsites (15)
- Bathhouse for Equestrian Camping Area
- Observation Platform
- Birding Overlook
- Astronomy Observation Pad
- Interpretive Display/Kiosk (2)

McGuire Hammock Picnic Area

- Large Picnic Shelters (2)
- Restroom
- Interpretive Display/Kiosk (2)

River Camp

- Covered Camping Platforms (6)
- Screened Pavilion
- Bathhouse
- Primitive Group Camp

Primitive Campsites (6)

- Primitive Tent Sites (12)
- Small Shelters (6)
- Hitching Post (6)

Support Facilities

- Research Office Space & Housing
- Equipment Shelter, 4-bay
- Trail Bridges (2)
- Service Road Stabilization (approximately 3 miles)

Existing Use and Optimum Carrying Capacity

Carrying capacity is an estimate of the number of users a recreation resource or facility can accommodate and still provide a high quality recreational experience and preserve the natural values of the site. The carrying capacity of a unit is determined by identifying the land and water requirements for each recreation activity at the unit, and then applying these requirements to the unit's land and water base. Next, guidelines are applied which estimate the physical capacity of the unit's natural communities to withstand recreational uses without significant degradation. This analysis identifies a range within which the carrying capacity most appropriate to the specific activity, the activity site and the unit's classification is selected (see Table 1).

The optimum carrying capacity for this preserve 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.

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
VISITOR CENTER			30	60	30	60
CAMPING						
Standard (20 sites)	80	80			80	80
Equestrian (15 sites)	60	60			60	60
River Camp			52	52	52	52
Primitive Campsites	12	12	48	48	60	60
CABINS						
Standard (6)			48	48	48	48
TRAILS						
Shared Use Trail	175	175			175	175
TOTAL	327	327	178	208	505	535
Note: Due to the remoteness of this park, visitor turnover rates have been reduced.						

Optimum Boundary

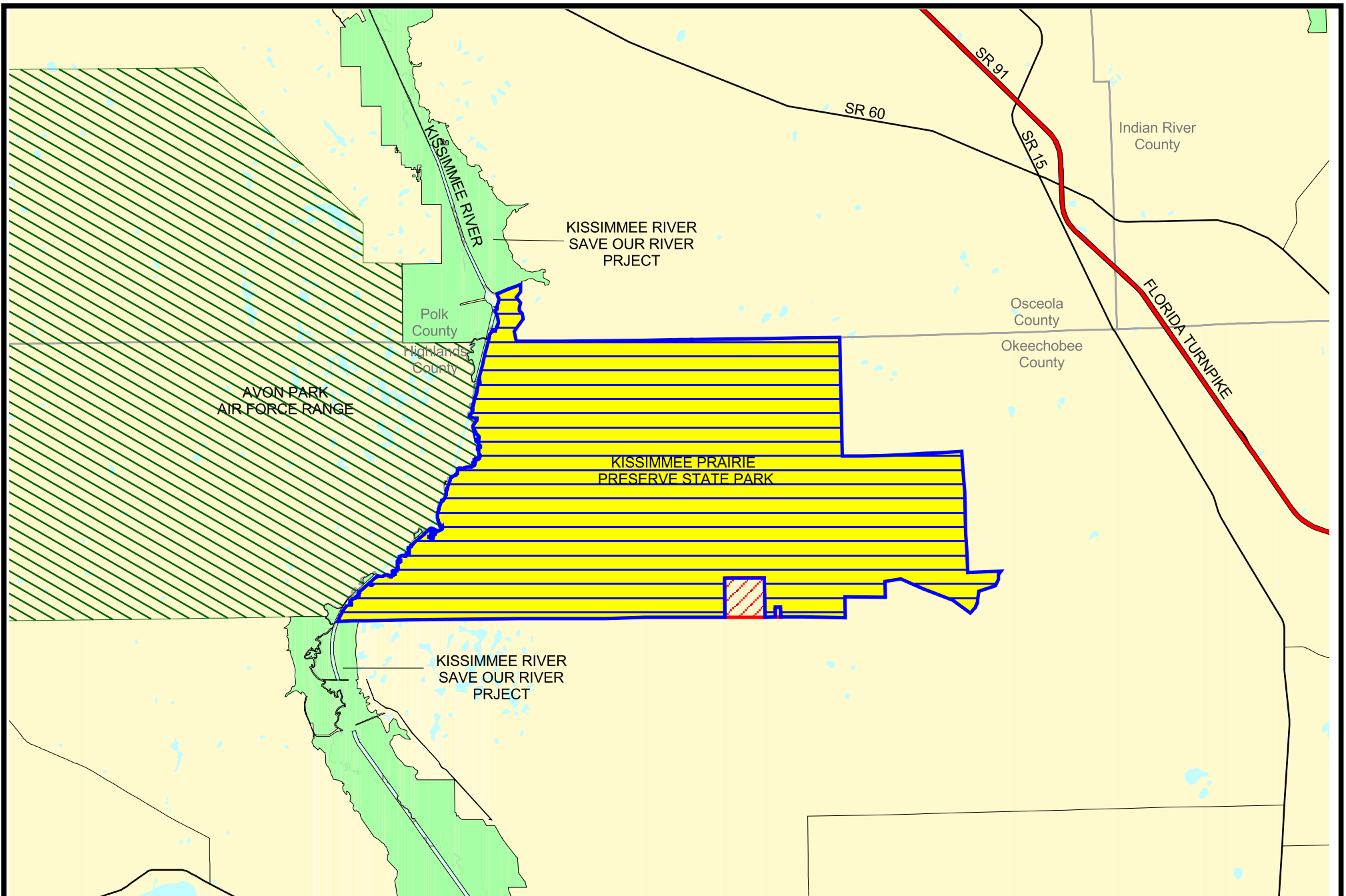
As additional needs are identified through preserve use, development, research, and as adjacent land uses change on private properties, modification of the unit's optimum

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 preserve.

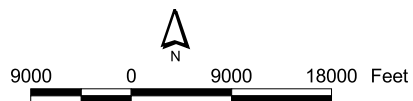
Identification of lands on the optimum boundary map is solely for planning purposes and not for regulatory purposes. A property's identification on the optimum boundary map is not for use by any party or other government body to reduce or restrict the lawful right of private landowners. Identification 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 optimum boundary map reflects lands identified for direct management by the Division as part of the preserve. These parcels may include public as well as privately owned lands that improve the continuity of existing preserve lands, provide additional natural and cultural resource protection, and/or allow for future expansion of recreational activities.

The section of land immediately west of Peavine Road, along the southern boundary at the preserve entrance, is recommended to "square off" the management boundary, and could provide a disturbed area for future restoration of natural resources and facilities development. Another small parcel on the preserve's southern boundary is also recommended for purchase. In addition, a 20-acre rectangular parcel north of Seven Mile Slough is currently managed by the preserve under a lease agreement; however, the preference is for fee acquisition of the property.



KISSIMMEE PRAIRIE
PRESERVE STATE PARK



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

LEGEND

- Park Boundary
- Optimum Boundary

OPTIMUM BOUNDARY MAP

Addendum 1—Acquisition History and Advisory Group Report

Kissimmee Prairie Preserve State Park Acquisition History

Purpose And Sequence Of Acquisition

The Board of Trustees of the Internal Improvement Trust Fund of the State of Florida (Trustees) has acquired Kissimmee Prairie Preserve State Park 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 March 14, 1997, the South Florida Water Management District (SFWMD) purchased approximately 47,416.27-acre property, constituting the initial area of Kissimmee Prairie Preserve State Park, from Latt Maxcy Corporation. About nine months later, on November 14, 1997, the SFWMD sold an undivided 76.2% interest in the property to the Trustees for \$16,892,643.90. The Trustees funded the purchase through the P2000/CARL program.

Since the 1997 initial purchase, the Trustees has acquired several parcels through leases, a purchase under the P2000/A and I program and a donation, and added them to Kissimmee Prairie Preserve State Park.

The Division of Recreation and Parks (Division) manages Kissimmee Prairie Preserve State Park under three different leases. The Division manages the Trustees' undivided 76.2 % interest in the SFWMD's initial purchase as well as the Trustees' own subsequent acquisitions under Lease No. 4166. This lease is for a period of fifty (50) years, which will expire on March 18, 2049. The Division manages the SFWMD's undivided 23.8% interest in the property under lease No. C-8318. Lease No. C-8318 is also for a period a period of fifty (50) years; the lease expires on March 11, 2048. On March 1, 2000, the Division leased a 22.26-acre parcel from Ms. Laura C. Olthafer-Burns to manage the property as part of Kissimmee Prairie Preserve State Park. This lease renews itself from year to year, unless terminated in writing.

Title Interest

The Trustees, the SFWMD and Ms. Laura C. Olthafer-Burns hold fee simple title to portions of Kissimmee Prairie Preserve State Park.

Special Conditions On Use

Kissimmee Prairie Preserve State Park is designated single-use to provide resource-based public outdoor recreation and other park related uses. Uses such as water resource development projects, water supply projects, storm-water management projects, and linear facilities and sustainable agriculture and forestry, unless specifically stated otherwise in the park's Unit Management Plan, are not consistent with the management purposes of the park and will be discouraged.

Outstanding Reservations

Following is a listing of outstanding rights, reservations and encumbrances that apply to Kissimmee Prairie Preserve State Park.

Kissimmee Prairie Preserve State Park
Acquisition History

Instrument:	Warranty Deed
Instrument Holder:	Latt Maxcy Corporation
Beginning Date:	March 14, 1997
Ending Date:	Forever
Outstanding Rights, Uses, Etc.:	The instrument holder reserves the right to (1) drain, discharge and overflow surface water over a certain portion of the subject property, and (2) enter the premises for the purpose of cleaning out the ditch to maintain water flow.

Instrument:	Lease Agreement
Instrument Holder:	South Florida Water Management District
Beginning Date:	March 12, 1998
Ending Date:	March 11, 2048
Outstanding Rights, Uses, Etc.:	The instrument holder reserves the right to plow and store water and conduct any and all activities required to complete the federally-authorized Kissimmee Restoration project.

Kissimmee Prairie Preserve State Park

List of Advisory Group Attendees

The Honorable Clifford Betts, Jr.
Commissioner - District 3
Okeechobee County Board of County
Commissioners
304 NW 2nd Street, Room 106
Okeechobee, Florida 34972

The Honorable John Abney, Chairman
Okeechobee County Board of County
Commissioners
P.O. Box 700
Okeechobee, Florida 34973

The Honorable James E. Kirk, Mayor
Office of the City Clerk
55 SE 3rd Avenue
Okeechobee, Florida 34974

Mr. Charles Brown, Park Manager
Kissimmee Prairie Preserve State Park
33104 NW 192nd Avenue
Okeechobee, Florida 34972

Mr. Malcolm Johnson, Engineer
Coquina Water Control District
364 Catfish Creek Road
Lake Placid, Florida 33852

Jeff McLemore, Land Manager
SFWMD
205 N. Parrot Ave, Suite 201
Okeechobee, FL 34972-2916

Mr. Dale Armstrong, Senior Forester
Florida Division of Forestry
5200 Highway 441 North
Okeechobee, Florida 34972-8697

Mr. Steve Coughlin,
Acting Regional Director
Florida Fish and Wildlife Conservation
Commission, South Region
8535 Northlake Boulevard
West Palm Beach, Florida 33412

Represented by:
Grant Steelman
Fisheating Creek Wildlife Management
Area
3010 Banana Grove Road
Moore Haven, Florida 33471

Deborah Pierce, Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
South Florida ES Office
1339 20th Street
Vero Beach, Florida 32960

Mr. Mariano Corona, Chairman
Okeechobee Soil and Water Conservation
District
6830 Southwest 13th Street
Okeechobee, Florida 34974

Kathy Scott, Tourism Coordinator
Okeechobee County Tourist Development
Council
499 N.W. 5th Avenue
Okeechobee, Florida 34972

Lucy W. Fribourg, Chairman
Tropical Trekkers Chapter
Florida Trail Association
12186 Florida Avenue
Stuart, Florida 34994

Represented by:
Bob Keefe
29265 NE 69th Terrace
Okeechobee, Florida 34972

Laura Hallam, Executive Director
Florida Bicycle Association
P.O. Box 1547
Orlando, FL 32802

Ken Macht, President
Indian River Astronomical Society
3240 16th Street
Vero Beach, FL 32960

Kissimmee Prairie Preserve State Park

List of Advisory Group Attendees

Stephen Hinkle, Director
Jupiter Horsemen's Association
12945 154th Road N
Jupiter Farms, Florida 33478-6656

Represented by:
Trudy Hatfield
4401 SE 134th Avenue
Okeechobee, Florida 34974

Ms. Pamela Bates
Sierra Club – Loxahatchee Group
8940 Oldham Way
West Palm Beach, Florida 33412

Mr. Paul Gray
Audubon of Florida
PO Box 707
Lorida, FL 33857

Buck Cooper
North American Butterfly Association
558 Sunshine Blvd
Haines City, FL 33844

Lyn Atherton
Florida Ornithological Society
1100 Pinellas Bayway, I-3
Tierra Verde, Florida 33715

Mr. David Delargy
Triple Diamond Ranch
17762 Northwest 240th Street
Okeechobee, Florida 34572

Mr. Paul Ebersbach, Chief
Environmental Flight, Avon Park Air
Force
18 ASOG, DET 1, OL A/CEV
29 South Boulevard
Avon Park AFR, Florida 33825-5700

Kissimmee Prairie Preserve State Park

Advisory Group Staff Report

The Advisory Group meeting to review the proposed land management plan for Kissimmee Prairie Preserve State Park was held at the Basinger Community Center on December 1, 2004. Grant Steelman represented Steve Coughlin (Florida Fish and Wildlife Conservation Commission), Bob Keefe represented Lucy Fribourg (Florida Trail Association), and Trudy Hatfield represented Stephen Hinkle (Jupiter Horsemen's Association). The Honorable James E. Kirk (Mayor of the city of Okeechobee), The Honorable Clifford Betts, Jr. (Okeechobee County Commission), Deborah Pierce (U.S. Fish and Wildlife Service), Mariano Corona (Okeechobee Soil and Water Conservation District), and Laura Hallam (Florida Bicycle Association) did not attend. Dale Armstrong (Florida Division of Forestry) provided written comments. All other appointed Advisory Group members were present. Attending staff were Charlie Brown, Paul Miller, Larry Fooks, Rosi Mulholland, Lew Scruggs, and Brian Burket.

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

Summary of Advisory Group Comments

Paul Ebersbach pointed out that the directions to the preserve on page 1 of the plan do not coincide with the roads labeled on the Vicinity Map. He noted that page 5 should mention the park's participation in regional partnerships. He said the list of natural resource management goals should include natural community restoration. He stated the plan needs an overall description of the monitoring program and that the protection of surface water quality should be a stated priority. He said the cultural resource component does not mention the need for Level 2 surveys or the eligibility of sites for the National Register. He recommended a discussion of the use of GIS in management decisions. He mentioned that a volunteer program should be listed in the goals and objectives. He requested that the Hydrology section on p.10 discuss the status of the Kissimmee River as an impaired waterway. He remarked that "Avon Park Air Force Range" is the official name of the neighboring Air Force property and should be used consistently throughout the plan. He recommended an assessment of the current condition of each of the natural communities. He believes the description of prescribed fires on p.35 should include a discussion of line vs. spot ignitions and El Nino and La Nina effects. He requested clarification of the grasshopper sparrow sampling techniques on p.37-38 as well as a discussion of incidental take permits. He recommended that the plan address monitoring the effects of the burn program on community goals and sparrow habitat. He stated that the monitoring program for exotic plants, if developed, should be included on p.39. He stated that the Avon Park air space description on p.44 is inaccurate and offered his assistance to correct. He questioned the use of the word "pristine" on p.46. He recommended that the plan explain its decision making process for burning. He mentioned that the river restoration is expected to reach the preserve's boundary within the next 3 years, and cautioned that access and trespassing will be a management challenge during this time period. He supported monitoring the hydroperiods and community conditions during restoration and recommended initiating a burn program in the floodplain. **Paul Gray** requested that a separate meeting be called between the state park, Avon Park Air Force Range, South Florida Water Management District and the Army Corps of Engineers to discuss the restoration plans of the Kissimmee River along the boundary of the preserve. Mr. Ebersbach concluded by stating his approval of the work being done by the park's wildlife biologist.

Kissimmee Prairie Preserve State Park

Advisory Group Staff Report

Buck Cooper stated that he is extremely pleased with the non-consumptive use of the state park. He believes that a 4-person staff is inadequate to manage the property and therefore unable to develop outreach programs. He said the park needs a volunteer program and a “Friends of Kissimmee Prairie Preserve State Park.” He thinks the attendance count is low and there is a need for a check-in/fee station. He mentioned that interest in butterflies is growing rapidly in America and Kissimmee Prairie is incredible habitat. A two year study he conducted revealed 79 species within the preserve, many of which are rare. Since burn cycles affect butterfly populations, he requests that the park burn areas that are more easily accessible to the public early in the growing cycle. **Paul Gray** recommended adding a discussion of butterfly habitat on p.33 and considering their role as indicator species. Mr. Cooper concluded by expressing his appreciation for Charlie Brown, Parks Small, and all the staff at the preserve.

Lyn Atherton began by sharing comments provided by Jim Cox. He believes a 3-year burning rotation may be too long for dry prairie and expressed concern over the use of aerial ignitions in regards to encircling wildlife. **Rosi Mulholland** agreed that a 2-year rotation should be the goal and responded that she has not witnessed any problems with aerial ignitions. Ms. Atherton recommended that the grasshopper sparrow monitoring program discussed on p.37-38 include a strategy of establishing photo points and conducting 2 non-random nesting bird surveys. She concluded by questioning the restoration plans for the improved pasture. **Paul Miller** replied that the staff is currently developing ideas for restoring this area.

Bob Keefe expressed his satisfaction with the plan and is particularly pleased with the proposal for more primitive campsites.

Trudy Hatfield was pleased with the horse facility at the preserve; however, she requested easier access to the paddocks from the campsites. **Charlie Brown** announced that an Eagle Scout project is underway to address this problem. Ms. Hatfield would also like to see temporary bathroom facilities installed at the equestrian camping area in the interim until a more permanent bathhouse is constructed. She then asked for an explanation on the proposed paddock shade structure. Mr. Brown said he is trying to relocate a few trees to the paddock area. Ms. Hatfield also recommends tie-outs at each of the campsites and requests that the roads not be shelled because her horses are barefoot.

Kathy Scott encouraged the staff to let the locals know what kind of help is needed at the preserve and recommended starting a Friends group to aide volunteerism and to assist the funding of development projects. She mentioned the TDC calendar website is available to publicize events and programs occurring at the preserve. She also stated that part of the TDC’s mission is to help organize or create local events and she is offering assistance to the preserve. She added that advertising money may be available.

Ken Macht remarked that the preserve contains the darkest skies in all of Florida. He is very pleased with the plan’s inclusion of an astronomy pad facility. He commented that astronomy groups might be able to help fund the astronomy pad and provide maintenance of the facility. He requests that as new facilities are constructed within the preserve, they include full cut-off lights that don’t impact the night sky. **Mr. Cooper** suggested adding a paragraph to the plan stating that the lighting systems of new facilities in the preserve will be night sky sensitive. Mr. Macht concluded by stating his amazement of the management progress of such an undersized staff.

Kissimmee Prairie Preserve State Park

Advisory Group Staff Report

Dave Delargy also recommended increasing the number of staff at the park. In addition, he suggested monitoring the effects of hydrological restoration. His ranch is receiving water that is damaging infrastructure which he believes is due to restoration efforts at the park. He also strongly believes that providing road access to McGuire Hammock would be a major benefit to the park which would enhance recreational opportunities and increase visitation.

Grant Steelman suggested that the park pursue volunteers that could help with resource management programs. He restated the importance of developing a GIS database for resource management, especially for mapping exotics. He recommended more baseline wildlife surveys. He commends the park burning program. He recommends monitoring the Kissimmee River restoration project and believes the floodplain should be burned.

Paul Gray complimented the plan. He stated that the effects of vehicles driving on the prairie are long-lasting and recommended adding text to the plan describing the constraints of providing public access roads within the property. He commented that river restoration coordination is important and cautioned the staff to monitor the climbing fern population in the floodplain. He reiterated the fact that the preserve is understaffed and stated that the expansion of visitor services should not occur until more staff are on-site. He believes an effective website is the key to recruiting volunteers and promoting public awareness. He mentioned that Patrick Smith's book, A Land Remembered, was written about the property and is therefore a useful resource for the preserve and should be referenced in the plan. He commented that there reportedly is an Indian mound(s) on the old Audubon Sanctuary in Chandler Hammock. He said the preserve is listed as a destination on the Great Florida Birding Trail and is designated as one of Audubon of Florida's "Important Bird Areas." He revealed that the preserve was the last official sighting of the Carolina parakeet. He offered to share information on the history of the Audubon Tract and regional hydrology. He recommended water quality sampling and burning the floodplain. He stated shell roads contain calcium that could impact the pH of the soil. He requested that the Florida mottled duck be added to the list of designated species and suggested that the Kirkman's warbler may be present. He believes the statement concerning wildlife watching on p.48 is too optimistic. He requested that the plan reference a conservation easement held by Audubon on the old Audubon tract. He believes that adding road access from the southwest corner of the preserve from Micco Bluff Road could greatly expand recreational and visitor opportunities and recommended that this option be explored for long-range planning. Mr. Gray concluded by expressing his support for the proposed research center.

Malcolm Johnson began with a brief history of the Coquina Water Control District and its relationship with the state park. He stated there are 12,000 1.25-acre lots comprising 22 square miles south of the preserve that could potentially house 30,000 people. Future pressure to develop these lots will result in a movement to upgrade the drainage system.

Pam Bates shared comments on behalf of multiple Sierra Club members. She asked how water quality data will be collected and why burning was restricted in the floodplain. **Ms. Mulholland** replied that these ideas will be revisited in the plan. Ms. Bates asked about the cattle lease and when restoration of the pasture would occur. **Mr. Brown** stated that the cattle lease had recently been renewed. **Mr. Miller** discussed the long-term goal of restoring the pasture. **Ms. Mulholland** commented that the money obtained through the cattle lease is available for resource management. Ms. Bates asked how the carrying capacity figures were calculated. **Mr. Scruggs** explained how the numbers represent the best professional estimate based on certain

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established guidelines for a peak-use day. Ms. Bates raised questions about the high development costs. **Mr. Scruggs** defended the cost estimates and commented that the proposed cabins will be rustic and are necessary to support the future programming of the preserve. Ms. Bates asked if there are problems with trespassing and off-road vehicular use. **Mr. Brown** responded that park patrol and hefty fines have become effective deterrents. Ms. Bates suggested that interpretive programs include the impacts of off-road vehicles on the prairie. She concluded by cautioning the staff to exercise care in promoting the park, as it is possible to become too successful.

Jeff McLemore agreed that the floodplain should be allowed to be burned, but in the meantime, suggests roller chopping or grazing. He asked about the management of the Osceola County parcel of the preserve. **Mr. Brown** replied that only exotic species are being addressed there. Mr. McLemore suggested that the staff coordinate the spraying for *Lygodium* along the river with the South Florida Water Management District. The SFWMD is also willing to collaborate in the burning program. He then asked if there were any plans or potential for developing boat ramps or paddling launches at McGuire Hammock. **Mr. Scruggs** stated that there is no road access to McGuire Hammock and none of the sloughs have deep enough water. Mr. McLemore recommended that after restoration, the staff reconsider the possibility for providing boating/paddling opportunities. **Ms. Mulholland** commented that if the Division wants to pursue the landings, it would need to be coordinated with the Army Corps of Engineers before they begin moving dirt. Mr. McLemore believes the wide firebreaks along the perimeter of the property are a good idea, but wanted to know what will be done to correct the plow scars. **Mr. Steelman** stated that the Division of Forestry will fix it for a cost. Mr. McLemore expressed jurisdiction concerns over the trespassing of submerged lands. **Mr. Brown** said a court case is still pending.

Charlie Brown announced that the staff would like to establish a citizen support organization for the preserve and posted a sign-up sheet for those interested in becoming involved.

Chairman John Abney (who provided his comments at the previous evening's public workshop) reminded those in attendance that the creation of the preserve resulted in a 9% reduction in the county's tax roll. He then asked how the economic impact figures were calculated. **Lew Scruggs** explained that the Division uses a model developed by the National Park Service. Chairman Abney stated that Okeechobee County needs financial assistance for improving/maintaining access roads to the state park and is asking the Division of Recreation and Parks to include consideration of a Micco Bluff connection to the preserve's southwest corner. He also requests that a park sign be placed at State Road 60 and the Turnpike. He concluded by expressing his appreciation to the park service for their cooperation in promoting tourism in Okeechobee County. **Mr. Scruggs** replied that the Division is limited in its ability to build roads outside their boundary, but he will forward the Chairman's request to administrators in Tallahassee.

Summary of Written Comments

Dale Armstrong (Florida Division of Forestry):

- Don't forget to check with the local Division of Forestry for assistance with prescribed burning. Page 33 of the plan indicated a need for "increased physical and material support for an aggressive Rx fire program." With budgets getting tighter every year, I believe sister

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agencies need to help each other out as much as possible. The DOF Supervisor for Okeechobee County is Ed Ward. His office telephone number is 772-221-4045.

- Page 37 talks about the desire to establish a 45-80' fire perimeter around the park. Perhaps in areas to the south, where the park abuts residential property, there may be some DOF Wildland Fire Mitigation dollars and/or physical assistance available to establish a portion of the perimeter. Once again, check with Ed Ward regarding this possibility.

Staff Recommendations

Many minor revisions will be made as a result of comments shared at the Advisory Group meeting but are not listed below. The staff recommends approval of the proposed management plan for Kissimmee Prairie Preserve State Park as presented with the following more substantial changes:

Resource Management Component

Monitoring Programs. All of the following issues concerning monitoring are important considerations; however, they may not be practical at the current time. When the means are found to do the monitoring at a level that meaningful information can be derived, it should be done.

Hydrological – there is a great need for hydrological monitoring at the unit, both quantity and quality. The park needs to pursue establishing a monitoring protocol, hopefully using partnerships with SFWMD and DEP Regulatory staff. Background baseline data should be collected since the site is relatively remote. Water quality (TMDL, phosphorus, dissolved oxygen, etc) of Seven Mile Slough and Pine Island Slough should be sampled periodically at specific distance intervals to monitor the surface water quality of run-off from pasture and adjacent ranches on its way to the Kissimmee River. Surface water flow should be monitored at least periodically to dispel the idea that the park is flooding neighbors due to restoration actions. This concern continues to surface despite reviews from the WMD to the contrary. Flow calculations can be researched, comparable to the information available for the Audubon Tract. A water sampling protocol for a representation of marshes and sloughs can be developed. Both pasture and natural areas would be represented.

Florida grasshopper sparrows – more detailed descriptions will be provided in the plan of what monitoring is presently occurring, both on an annual basis and a periodic basis. The park will most likely never monitor all available habitat on an annual basis due to the large number of acres. Staff does not believe a complete survey of the entire dry prairie is necessary for every year. Due to grant funding, a great deal of new research on grasshopper sparrows will be starting on the park.

Bird surveys – park staff believe that this is a worthwhile effort whether it would be by a breeding bird route or other method. As part of the Listed Species Management Plan, breeding bird surveys and wading bird surveys will be developed and conducted as staffing permits. Park staff recognizes the use of the prairie and associated hammocks and wetlands by migrant bird species is endeavoring to start a regular migratory bird banding project for the fall. Park staff is also routinely adding new species of birds and other animals to the park's species lists.

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Butterflies – a better write-up of the uniqueness of the site to butterflies will be added to the plan and it should mention the high diversity of flowering plants which may be a correlate to the diversity of butterflies. This is an area where the ecological processes that are happening on a landscape scale are evident to even the casual observer.

Natural Community Assessment. Staff agrees that there should be stated targets defining what constitutes a quality natural community. Development of desired ecological conditions will provide us with the means to gauge whether management, especially prescribed fire and restoration, is successful. Staff will work on developing an ecological target for the key communities at the park.

GIS Database Development. Park staff routinely collected data and use it in a GIS format. Exotics locations, especially cogongrass, are being tracked in this manner. All of the sparrow survey points are tracked in GIS format. Sparrow locations and territories are delineated with hand held GPS units. Burn information is collected in a GIS layer. GIS and GPS technology is increasingly being used to record all monitoring, research and land management activities within the preserve. A Listed Species Management Plan (LSMP), Exotic Species Management Plan (ESMP), and a Natural Community Restoration Plan (NCRP) are being developed with geo-spatial data through GIS technology for creating baseline data and tracking the management activities necessary to reach the goals of these management plans. The potential applications are endless, and are routinely being expanded.

Prescribed Fire. Staff agrees that 3 years is not the ideal rotation for dry prairie, and the goal is already set for a 2 year rotation. Text will be adjusted accordingly. Discussions will be expanded to emphasize the preferred timing of burning early in the lightning strike season, but with the limitations of staff and the ability to obtain permits, all burning can not be done during the April – May timeframe. Although this is when the majority of large prairie fires would have historically occurred, the constraints placed on the park do not allow all the burning to occur at that time. Even if all the burning could be done in the early part of the season, for the sake of diversity, it would not be ideal to compress burning in that short of a season. The burn program will strive to do the bulk of the burning in the early growing season, but some burning is likely to take place throughout the year, except during very wet times. Both butterflies and sparrows will benefit from the early burning, but both can adapt to fire at other times as long as significant amounts of habitat are not all in one burn stage. Listed species that benefit from prescribed fire will be monitored, and populations assessed through development and application of a Listed Species Management Plan. The fire program strives for a spatial and temporal mosaic that perpetuates the pre-settlement ecological processes occurring within the dry prairie region and benefits the diversity of plant and animal species. Park staff recognizes the advantage of using a variety of ignition methods to ensure that each burn zone is managed successfully. And, the staff is ready to proactively start burning the river floodplain as soon as they get approval from SFWMD.

Land Use Component

Micco Bluff Entrance. After restoration of the Kissimmee River, if the county is willing to extend Micco Bluff Road to the southwest corner of the preserve, the Division will reconsider the possibility of a second gateway at Long Hammock.

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Dark Sky Protection. In an effort to protect the darkest sky in the state of Florida, the Division is committed to minimizing the impact of light pollution over the preserve. As new facilities are constructed within the preserve, their lighting systems will include full cut-off lights to be sensitive to the night sky resource and its recreational use for stargazing.

Park Road Extension. All public park roads are generally two lanes wide. Therefore, the widening of the existing Military Trail from Kilpatrick Hammock to McGuire Hammock would result in the loss of many acres of endangered dry prairie. And, raising the road bed to make it is passable year-round would inhibit the shallow sheet flow of water across the preserve, thus resulting in unacceptable environmental impacts. The development cost of constructing a seven-mile public road from Kilpatrick Hammock to McGuire Hammock is also prohibitive. For these reasons, the Division has decided not to provide a public road to McGuire Hammock.

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Addendum 2—References Cited

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Addendum 3—Soil Descriptions

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Soils Descriptions

OSCEOLA COUNTY

(1X) Adamsville fine sand is a somewhat poorly drained, nearly level, deep, sandy soil found along the fringes of flatwoods areas that border sloughs and ponds.. It is rapidly permeable and available water capacity is low. Fertility and organic matter content are low. It has a seasonal high water table at a depth of 15 to 30 inches for two to six months during the year. Natural vegetation includes pine trees, saw palmetto, native grasses and shrubs, and a few cabbage palms.

(4X) Arents, 0 to 5 percent slopes are somewhat poorly drained, nearly level to gently sloping soils that have been reworked and shaped by earthworking equipment. These soils have no orderly sequence of layers and consist predominantly of sandy mineral material that contains fragments, lenses, or streaks of former subsoils. Depth of fill ranges from 20 to more than 80 inches. The water table is at a depth of 20 to 60 inches. And available water capacity and permeability are variable.

(5X) Basinger fine sand is a poorly drained, sandy, deep, nearly level soil found in grassy sloughs. The water table is at a depth of 0 to 15 inches of the surface for two to six months in most years and a few inches of water covers the surface during the wet season.. Although this soil type is wet for prolonged periods it is rapidly permeable. It has a low available water capacity, and has low fertility and organic content . The natural vegetation usually is comprised of native grasses and small shrubs, wax myrtle, scattered cypress and pines.

(11X) Eau Gallie fine sand is a poorly drained, nearly level soil in the flatwoods. This soil has a water table within 10 inches of the surface for periods of 1 to 4 months and within a depth of 40 inches for more than 6 months. Available water capacity is very low in the surface and subsurface layers; low in the upper, sandy subsoil; very low in the sandy layers beneath the upper subsoil; and medium in the lower subsoil. Permeability is rapid in the surface and subsurface; moderate to moderately rapid in the upper subsoil; rapid in the sandy layers beneath the upper subsoil; and moderate to moderately rapid in the lower subsoil. Natural fertility and organic matter content are low. Native vegetation consists of longleaf and slash pines with an understory of saw palmetto, inkberry, fetterbush, and running oak. Grasses on this soil are creeping bluestem, chalky bluestem, lopsided indiagrass, wiregrass, switchgrass, and several panicum species.

(12X) Floridana fine sand This very poorly drained, nearly level soil is found in depressional areas in the flatwoods and at the edges of large lakes that have fluctuating water levels. Water stands above the surface for more than 6 months in most years and is within 10 inches of the surface for 9 months or more in most years. Available water capacity is medium in the surface, low in the subsurface, medium in the subsoil, and low in the substratum. Permeability is rapid in the surface and subsurface, slow to very slow in the subsoil, and rapid in the substratum. Natural fertility and organic matter content are moderate. Native vegetation consists mainly of maidencane, sand cordgrass, pickeralweed, giant cutgrass, wax myrtle, sedges, and rushes. There are scattered cypress, bay, tupelo, and cabbage palm trees in many areas.

(14X) Holopaw fine sand is a poorly drained, nearly level soil in broad flat areas and poorly defined drainageways in the flatwoods. The water table is usually within 10 inches for 2 to 6

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Soils Descriptions

months in most years and between 10 to 40 inches during the rest of the year, except during dry times when it recedes to a depth of more than 40 inches. Available water capacity is very low in the surface and subsurface, medium in the subsoil, and low in the substratum. Permeability is rapid in the surface and subsurface, moderately rapid in the subsoil, and rapid in the substratum. Natural fertility and organic matter content are low. Native vegetation consists of cabbage palms and scattered longleaf and slash pine with a few water oaks, particularly in higher areas. Saw palmetto, wax myrtle, inkberry, and American beautyberry are the main shrubs. Creeping bluestem is the dominant grass in most areas, but in some sand cordgrass is dominant. Other grasses are indiagrass, chalky bluestem, several species of panicums, wiregrass, S. Florida bluestem, and switchgrass.

(16X) Immokalee fine sand is a deep, poorly drained, nearly level, sandy soil in broad areas of flatwoods. The water table is normally at 30 inches but may rise to near the surface during the wet season and drop to 48 inches or more during the dry season. This soil is rapidly permeable. Available water capacity, fertility, and organic matter content are all low. The natural vegetation usually includes scattered pines and saw palmetto

(17X) Kaliga muck This is a very poorly drained, nearly level, organic soil in low flats, fresh water marshes, swamps, and depressions. This soil has a water table above the surface except during extended dry periods. Available water capacity is very high in the organic layers and medium to high in the mineral layers. Permeability is moderate to very rapid in the organic layers, moderate in the upper 11 inches of mineral layers, and slow to very slow in the lower 44 inches. Natural fertility and organic matter content are high. Natural vegetation consists mostly of sawgrass, maidencane, cattails, giant cutgrass, arrowheads, and a variety of sedges. In some places are thick stands of willow, elderberry, and buttonbush, and in other places are mixed stands of cypress, red maple, loblolly, black tupelo, and sweetgum trees with a ground cover of greenbriers and ferns.

(19X) Malabar fine sand This is a nearly level, poorly drained soil in broad sloughs in the flatwoods. The water table is at a depth of 10 inches for 2 to 6 months during most years. Available water capacity is very low or low in the surface layer, subsurface and upper subsoil; medium in the lower subsoil; and low to very low in the substratum. Permeability is rapid in the surface, subsurface, upper subsoil, and layer between the upper and lower subsoils; slow to very slow in the lower subsoil; and rapid in the substratum. Organic matter content and natural fertility are low. Native vegetation usually consists of cabbage palms and scattered longleaf and slash pine with a few water oaks, particularly in higher areas. Saw palmetto, wax myrtle, inkberry, and American beautyberry are the main shrubs. Creeping bluestem is the dominant grass in most areas, but in some sand cordgrass is dominant. Other grasses are indiagrass, chalky bluestem, several species of panicums, wiregrass, S. Florida bluestem, and switchgrass.

(22X) Myakka fine sand This is a deep, nearly level, poorly drained, sandy soil that occurs in broad flatwood areas. The water table varies from a depth of 0 to 15 inches for one to two months during the wet season and to a depth of more than 48 inches during dry seasons. Available water capacity is very low and permeability is rapid. The natural fertility and organic matter content of this soil type are low. Native vegetation usually consists of pine trees with an undergrowth of saw palmetto, runner oak, gallberry, and many native grasses.

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Soils Descriptions

(26X) Oldsmar fine sand This is a poorly drained, nearly level soil in flatwoods. The water table is within a depth of 10 inches for 1 to 3 months and within a depth of 10 to 40 inches for 6 months or more in most years. Available water capacity is very low in the surface and subsurface, and medium in the subsoil. Permeability is rapid in the surface and subsurface layers, moderate to moderately rapid in the sandy part of the subsoil, in the subsoil, and slow to very slow in the loamy part of the subsoil. Natural fertility and organic matter content are low. Native vegetation consists of longleaf and slash pines with an understory of saw palmetto, inkberry, fetterbush, and running oak. Grasses on this soil are creeping bluestem, chalky bluestem, lopsided indiagrass, wiregrass, switchgrass, and several species of panicums.

(32X) Placid fine sand This is a nearly level, dark-colored, sandy, very poorly drained soil which occurs in low areas. The water table is at or above the surface most of the year with most areas being ponded for 6 months or more. Placid sand is rapidly permeable throughout. It has moderate available water capacity, high organic content, and low natural fertility. The native vegetation is pickerelweed and maidencane with most areas consisting of shallow ponds or grassy sloughs.

(40X) Samsula muck is a very poorly drained, nearly level organic soil in freshwater marshes and swamps. The water table is at or above the surface except during extended dry periods. Permeability is rapid throughout. Available water capacity is very high in the organic layers and very low below. Natural fertility is moderate to high and organic content is very high. Natural vegetation consists mostly of sawgrass, maidencane, cattails, giant cutgrass, arrowheads, and a variety of sedges. In some places there are thick stands of willow, elderberry, and buttonbush, and in other places there are mixed stands of cypress, red maple, loblolly bay, black tupelo, and sweetgum trees with a ground cover of greenbriers and ferns.

(42X) Smyrna fine sand This nearly level, poorly drained soil is in broad flat areas in the flatwoods. The water table is at a depth of less than 10 inches for 1 to 4 months and between depths of 10 and 40 inches for more than 6 months in most years. In rainy seasons the water table rises above the surface briefly. Permeability is rapid in the surface and subsurface, moderate to moderately rapid in the in the upper subsoil, rapid in the next layer, and medium in the lower subsoil. Natural fertility is low, and organic matter content is moderately low or moderate. Native vegetation usually is composed of longleaf and slash pines with an understory of saw palmetto, inkberry, fetterbush, and running oak. Grasses on this soil are creeping bluestem, chalky bluestem, lopsided indiagrass, wiregrass, switchgrass, and several species of panicums.

OKEECHOBEE COUNTY

(2) Basinger fine sand is a poorly drained, sandy, deep, nearly level soil found in grassy sloughs. The water table is at a depth of 0 to 15 inches of the surface for two to six months in most years and a few inches of water covers the surface during the wet season.. Although this soil type is wet for prolonged periods it is rapidly permeable. It has a low available water capacity, and has low fertility and organic content . The natural vegetation usually is comprised of native grasses and small shrubs, wax myrtle, scattered cypress and pines.

(3) Basinger and Placid siols, depressional The soils in this complex occur together in low places

Kissimmee Prairie Preserve State Park

Soils Descriptions

in wide sloughs and in isolated depressions in acid flatwoods areas. Most areas are covered with shallow water throughout the year. The Basinger soils are similar to Basinger fine sand except that water covers the surface most of the time. The Placid soils are similar to Placid fine sand but normally are ponded for longer periods. Most areas are small and lack natural drainage. The native vegetation is usually maidencane, St. Johnswort, and grasses that tolerate wetness.

(4) Bradenton fine sand is a poorly drained, nearly level soil found in low flatlands and hammock areas that border sloughs, ponds, and marshes. The water table is at a depth of 0 to 15 inches for 1 to 2 months during the wet season. This soil is moderately to rapidly permeable and the available water capacity is low in the upper sandy layer but more favorable in the loamy subsoil. Fertility is low to moderate, and organic matter content is low. The native vegetation is primarily open pinewoods and an understory of saw-palmettos, native grasses, and shrubs. Individual Cabbage palms are common and small palm hammocks also occur.

(5) Valkaria fine sand is a deep, poorly drained, nearly level, sandy soil found in low, grassy sloughs. The water table normally is at a depth of about 24 inches. This soil type is rapidly permeable. Available water capacity, fertility, and organic matter content are all low. Most areas of this soil have a cover of native grasses.

(6) Manatee loamy fine sand, depressional This is a very poorly drained, nearly level soil in shallow depressions. This soil has a water table is usually above the surface or within 15 inches of the surface. Permeability is rapid in the surface layer and moderate in the subsoil. Available water capacity is high. The organic matter content and the fertility are high. The native vegetation is generally maidencane, sedges, and other plants that tolerate wetness, but cypress and other wetland hardwoods grow in some places.

(7) Floridana, Riveria, and Placid soils, depressional This undifferentiated unit consists of deep, nearly level, sandy soils that are poorly drained. These soils are found in low places in sloughs and in isolated depressions in the flatwoods. Most areas are either Basinger or Pompano soils, but these two soils are rarely found together in the same mapped area. Most areas of this soil are small and lack drainage outlets. The native vegetation consists mainly of St. Johnswort, water lilies, grasses, pickerel weed, and other plants that tolerate wetness.

(8) Pineda fine sand This soil type is sandy, poorly drained, and nearly level. It is found in low flatwoods and grassy sloughs. The water table is normally at a depth of 20 inches, but ranges from near the surface for 1 to 2 months during the wet season to 30 inches during the dry season. This soil is moderately to rapidly permeable. Available water capacity is low in the sandy surface layer but is high in the loamy subsoil. Fertility is moderately low and organic matter content is low. The native vegetation is usually scattered pines and cabbage palms with an understory of saw palmettos and native grasses. Some areas however are treeless, grassy sloughs.

(9) Riveria fine sand This very poorly drained, nearly level, sandy soil is in depressions and drainageways. The water table is normally between 0 to 15 inches, but it rises above the surface for short periods and forms shallow ponds. This soil type is normally wet but it is rapidly permeable in the upper 46 inches and moderately permeable below. Available water capacity and fertility are moderate and organic matter content is high. Most of the areas are either grassy

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Soils Descriptions

sloughs or intermittent ponds with the native vegetation consisting of wax myrtle, pickerel weed, sedges, reeds, and grasses that tolerate wetness. Cypress, sweetbay, and sweetgum trees grow in some places.

(10) Ft. Drum fine sand This somewhat poorly drained, nearly level soil is in flatwoods and hammock areas that border sloughs and depressions. The water table is normally at 30 inches but may rise to near the surface during the wet season and drop to 48 inches or more during the dry season. This soil is rapidly permeable in the sandy surface but is moderate to rapid in the loamy marl layer. Available water capacity is very low. Fertility and organic matter content are all low. The native vegetation can consist of an open growth of pine trees and scattered cabbage palms with an understory of saw palmetto and native grasses.

(11) Immokalee fine sand is a deep, poorly drained, nearly level, sandy soil in broad areas of flatwoods. The water table is normally at 30 inches but may rise to near the surface during the wet season and drop to 48 inches or more during the dry season. This soil is rapidly permeable. Available water capacity, fertility, and organic matter content are all low. The natural vegetation usually includes scattered pines and saw palmetto

(12) Udorthents, 2 to 35 pct sloped This unit consist of excessively drained, unconsolidated soil material that has been excavated from canals and redeposited along the side of the canal.

(13) Manatee, Floridana, and Tequesta soils, occ. flooded This undifferentiated unit consists of nearly level soils that are very poorly drained that occur on marshy floodplains of the Kissimmee River and of Taylor Creek. The soils in this map unit have a relatively thick surface layer and lack a sandy clay loam subsoil. Most of the areas have native marsh vegetation that consists of a dense growth of pickerelweed, iris, smartweed, maidencane, black willow, and other aquatic shrubs and grasses.

(14) Myakka fine sand This is a deep, nearly level, poorly drained, sandy soil that occurs in broad flatwood areas. The water table varies from a depth of 0 to 15 inches for one to two months during the wet season and to a depth of more than 48 inches during dry seasons. Available water capacity is very low and permeability is rapid. The natural fertility and organic matter content of this soil type are low. Native vegetation usually consists of pine trees with an undergrowth of saw palmetto, runner oak, gallberry, and many native grasses.

(15) Okeelanta muck This is a very poorly drained, nearly level, organic soil found in depressions and broad marshes. The water table is near or above the surface at all times. Most areas of this soil remain in native vegetation of sawgrass, lilies, sedges, reeds, a few scattered cypress trees, and other aquatic plants.

(18) Parkwood fine sand is a poorly drained, nearly level soil in palm hammocks along sloughs and depressions. The water table is generally at a depth of 24 inches but can be near the surface for short periods during wet seasons and to a depth of more than 30 inches during dry seasons. Permeability is rapid in the surface layer and moderately rapid in the marl layers. Although the water table is near the surface during wet seasons the soil has a low available water capacity. Organic matter content is low to high and fertility is moderately low.

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(19) Floridana, Placid, Okeelanta soils, freq. flooded is a undifferentiated unit consisting of nearly level and poorly drained soils that occur in swamps and along heavily wooded drainage ways. Most areas are dominated by Placid fine sand with other areas being dominated by Pamlico muck or Delray fine sand. Most areas are heavily wooded and occupy the lowest areas in the landscape. The organic matter content is high but the content of most plant nutrients is low. Native plant cover consists mostly of sweetbay, sweetgum, cypress, bracken fern, sawgrass, and other plants that tolerate wetness.

(20) Pomello fine sand, 0 to 5 pct slopes This is a deep, nearly level, moderately well drained sandy soil occurring on low ridges and knolls in flatwoods areas. The water table normally is at a depth of 48 to 60 inches with it ranging from 30 to 75 inches in dry and wet seasons respectively. This soil has rapid permeability, low available water capacity, very low fertility, and very low organic matter content in the surface and subsurface horizons. The native vegetation usually consists of scrub oaks, saw palmettos, scattered pine trees, grasses and woody shrubs.

(23) St. Johns fine sand is a deep, poorly drained, nearly level soil found on low narrow areas in flatwoods. During most years this soil has a water table 20 inches from the surface with it varying from 0 to 15 inches from 2 to 6 months a year to being covered with water for short periods during wet seasons. This soil is rapidly permeable. Available water capacity, fertility are low, and organic matter content is medium. The natural vegetation is mainly saw palmetto with grasses, woody shrubs, and a few scattered pines in some areas.

(24) Terra Ceia muck This very poorly drained, nearly level, organic soil is in depressional and broad marsh areas. The soil is usually flooded or the water table is near the surface for most of the time. Available water capacity is high and nitrogen content is high but the content of most other plant contents is low. The native vegetation consists of sawgrass and other aquatic plants with a few scattered cypress in some areas.

(25) Wabasso fine sand Nearly level and poorly drained, this soil is found in flatwoods. inches and is a mottled sandy The water table is normally at about a depth of 30 inches. For 1 to 2 months in the wet season the water table is between 0 to 15 inches of the surface and during very dry periods the water table may go below 30 inches. This is a moderately permeable soil with a medium available water capacity and a low organic matter content. Natural fertility is moderate.

Addendum 4—Plant and Animal List

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Plants

Common Name	Scientific Name	Habitat Code Listed Species
Red maple	<i>Acer rubrum</i>	
Flaxleaf false foxglove	<i>Agalinis linifolia</i>	
Yellow colicroot	<i>Aletris lutea</i>	
Alligatorweed*	<i>Alternanthera philoxeroides</i>	
Blue maidencane	<i>Amphicarpum muhlenbergianum</i>	
Shortspike bluestem	<i>Andropogon brachystachyus</i>	
Purple bluestem	<i>Andropogon glomeratus</i> var. <i>glaucopsis</i>	
Bushy bluestem	<i>Andropogon glomeratus</i> var. <i>hirsutior</i>	
Bushy bluestem	<i>Andropogon glomeratus</i> var. <i>pumilus</i>	
Elliott's bluestem	<i>Andropogon gyrans</i> var. <i>gyrans</i>	
Elliott's bluestem	<i>Andropogon gyrans</i> var. <i>stenophyllus</i>	
Splitbeard bluestem	<i>Andropogon ternarius</i>	
Broomsedge bluestem	<i>Andropogon virginicus</i> var. <i>decipiens</i>	
Chalky bluestem	<i>Andropogon virginicus</i> var. <i>glaucus</i>	
Broomsedge bluestem	<i>Andropogon virginicus</i> var. <i>virginicus</i>	
Groundnut	<i>Apios americana</i>	
Marlberry	<i>Ardisia escallonioides</i>	
Jack-in-the-pulpit	<i>Arisaema triphyllum</i>	
Wiregrass	<i>Aristida beyrichiana</i>	
Longleaf threeawn	<i>Aristida palustris</i>	
Tall threeawn	<i>Aristida patula</i>	
Arrowfeather threeawn	<i>Aristida purpurascens</i>	
Hillsboro threeawn	<i>Aristida purpurascens</i> var. <i>tenuispica</i>	
Florida threeawn	<i>Aristida rhizomophora</i>	
Bottlebrush threeawn	<i>Aristida spiciformis</i>	
Savannah milkweed	<i>Asclepias pedicellata</i>	
Bigflower pawpaw	<i>Asimina obovata</i>	
Netted pawpaw	<i>Asimina reticulata</i>	
Climbing aster	<i>Aster carolinianus</i>	
Rice button aster	<i>Aster dumosus</i>	
Whitetop aster; Pinebarren aster	<i>Aster reticulatus</i>	
Annual saltmarsh aster	<i>Aster subulatus</i>	
Whitetop aster; Dixie aster	<i>Aster tortifolius</i>	
Common carpetgrass	<i>Axonopus fissifolius</i>	
Big carpetgrass	<i>Axonopus furcatus</i>	
Carolina mosquito fern	<i>Azolla caroliniana</i>	
Silverling	<i>Baccharis glomeruliflora</i>	
Groundsel tree; Sea myrtle	<i>Baccharis halimifolia</i>	
Lemon bacopa; Blue waterhyssop	<i>Bacopa caroliniana</i>	
Herb-of-grace	<i>Bacopa monnieri</i>	
Coastalplain honeycombhead	<i>Balduina angustifolia</i>	

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Plants

Common Name	Scientific Name	Habitat Code Listed Species
White screwstem	<i>Bartonia verna</i>	
Yellow screwstem	<i>Bartonia virginica</i>	
Tarflower	<i>Befaria racemosa</i>	
Beggarticks; Romerillo	<i>Bidens alba</i> var. <i>radiata</i>	
Smallfruit beggarticks	<i>Bidens mitis</i>	
Pineland rayless goldenrod	<i>Bigelowia nudata</i> ssp. <i>australis</i>	
Toothed midsorus fern; Swamp fern	<i>Blechnum serrulatum</i>	
False nettle, Bog hemp	<i>Boehmeria cylindrica</i>	
Smallhead doll's-daisy	<i>Boltonia diffusa</i>	
American bluehearts	<i>Buchnera americana</i>	
Densetuft hairsedge	<i>Bulbostylis ciliatifolia</i>	
American beautyberry	<i>Callicarpa americana</i>	
Florida scrub roseling	<i>Callisia ornata</i>	
Bearded grasspink	<i>Calopogon barbatus</i>	
Long's sedge	<i>Carex longii</i>	
Hop sedge	<i>Carex lupulina</i>	
Warty sedge	<i>Carex verrucosa</i>	
Florida hammock sedge	<i>Carex vexans</i>	
Papaya *	<i>Carica papaya</i>	
Pineland chaffhead	<i>Carphephorus carnosus</i>	
Florida paintbrush	<i>Carphephorus corymbosus</i>	
Vanillaleaf	<i>Carphephorus odoratissimus</i>	
Hairy chaffhead	<i>Carphephorus paniculatus</i>	
Pignut hickory	<i>Carya glabra</i>	
Love vine; Devil's gut	<i>Cassytha filiformis</i>	
Sugarberry; Hackberry	<i>Celtis laevigata</i>	
Southern sandbur	<i>Cenchrus echinatus</i>	
Spadeleaf	<i>Centella asiatica</i>	
Common buttonbush	<i>Cephalanthus occidentalis</i>	
Sensitive pea	<i>Chamaecrista nictitans</i> var. <i>aspera</i>	
Woolly sonbonnets; Pineland daisy	<i>Chaptalia tomentosa</i>	
Yellow thistle	<i>Cirsium horridulum</i>	
Nuttall's thistle	<i>Cirsium nuttallii</i>	
Sour orange *	<i>Citrus aurantium</i>	
Citrus *	<i>Citrus</i> sp.	
Grapefruit *	<i>Citrus X paradisi</i>	
Jamaica swamp sawgrass	<i>Cladium jamaicense</i>	
Bleeding-heart*	<i>Clerodendrum thomsoniae</i>	
Tread-softly; Finger-rot	<i>Cnidoscolus stimulosus</i>	
Dayflower	<i>Commelina diffusa</i>	
Whitemouth dayflower	<i>Commelina erecta</i>	

* Non-Native Species

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Plants

Common Name	Scientific Name	Habitat Code Listed Species
Florida tickseed	<i>Coreopsis floridana</i>	
Leavenworth's tickseed	<i>Coreopsis leavenworthii</i>	
Swamp dogwood; Stiff dogwood	<i>Cornus foemina</i>	
Rabbitbells	<i>Crotalaria rotundifolia</i>	
Toothachegrass	<i>Ctenium aromaticum</i>	
Colombian waxweed	<i>Cuphea carthagenensis</i>	
Leafless swallowwort	<i>Cynanchum scoparium</i>	
Bermudagrass *	<i>Cynodon dactylon</i>	
Baldwin's flatsedge	<i>Cyperus croceus</i>	
Haspan flatsedge	<i>Cyperus haspan</i>	
Manyspike flatsedge	<i>Cyperus polystachyos</i>	
Pinebarren flatsedge	<i>Cyperus retrorsus</i>	
Tropical flatsedge	<i>Cyperus surinamensis</i>	
Fourangle flatsedge	<i>Cyperus tetragonus</i>	
Ticktrefoil	<i>Desmodium incanum</i>	
Needleleaf witchgrass	<i>Dichanthelium aciculare</i>	
Tapered witchgrass	<i>Dichanthelium acuminatum</i>	
Variable witchgrass	<i>Dichanthelium commutatum</i>	
Cypress witchgrass	<i>Dichanthelium dichotomum</i>	
-----	<i>Dichanthelium ensifolium</i> var. <i>ensifolium</i>	
-----	<i>Dichanthelium ensifolium</i> var. <i>unciphyllum</i>	
Erectleaf witchgrass	<i>Dichanthelium erectifolium</i>	
Openflower witchgrass	<i>Dichanthelium laxiflorum</i>	
Hemlock witchgrass	<i>Dichanthelium portoricense</i>	
Woolly witchgrass	<i>Dichanthelium scabriusculum</i>	
Roughhair witchgrass	<i>Dichanthelium strigosum</i>	
Carolina ponysfoot	<i>Dichondra caroliniensis</i>	
Virginia buttonweed	<i>Diodia virginiana</i>	
Air-potato *	<i>Dioscorea bulbifera</i>	
Common persimmon	<i>Diospyros virginiana</i>	
Dwarf sundew	<i>Drosera brevifolia</i>	
Pink sundew	<i>Drosera capillaris</i>	
Drymary; West Indian chickweed	<i>Drymaria cordata</i>	
Common water-hyacinth*	<i>Eichhornia crassipes</i>	
Baldwin's spikerush; Roadgrass	<i>Eleocharis baldwinii</i>	
Canada spikerush	<i>Eleocharis geniculata</i>	
Viviparous spikerush	<i>Eleocharis vivipara</i>	
Tall elephantsfoot	<i>Elephantopus elatus</i>	
Florida butterfly orchid	<i>Encyclia tampensis</i>	11,35
Thalia lovegrass*	<i>Eragrostis atrovirens</i>	
Elliott's lovegrass	<i>Eragrostis elliottii</i>	

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Plants

Common Name	Scientific Name	Habitat Code Listed Species
Coastal lovegrass	<i>Eragrostis virginica</i>	
American burnweed; Fireweed	<i>Erechtites hieracifolia</i>	
Oakleaf fleabane	<i>Erigeron quercifolius</i>	
Early whitetop fleabane	<i>Erigeron vernus</i>	
Flattened pipewort	<i>Eriocaulon compressum</i>	
Tenangle pipewort	<i>Eriocaulon decangulare</i>	
Fragrant eryngo	<i>Eryngium aromaticum</i>	
Button rattlesnakemaster	<i>Eryngium yuccifolium</i>	
Coralbean; Cherokee bean	<i>Erythrina herbacea</i>	
Swampmahogany*	<i>Eucalyptus robusta</i>	
Dogfennel	<i>Eupatorium capillifolium</i>	
Mohr's thoroughwort	<i>Eupatorium mohrii</i>	
Roundleaf thoroughwort	<i>Eupatorium rotundifolium</i>	
Pinewoods fingergrass	<i>Eustachys petraea</i>	
Slender goldenrod	<i>Euthamia caroliniana</i>	
Carolina fimbry	<i>Fimbristylis caroliniana</i>	
Hairy fimbry	<i>Fimbristylis puberula</i>	
Marsh fimbry	<i>Fimbristylis spadicea</i>	
Marsh fimbry	<i>Fimbristylis spadicea</i>	
Upland swampprivet	<i>Forestiera ligustrina</i>	
Carolina ash; Water ash; Pop ash	<i>Fraxinus carolinianus</i>	
Saltmarsh umbrellasedge	<i>Fuirena breviseta</i>	
Southern umbrellasedge	<i>Fuirena scirpoidea</i>	
Elliott's milkpea	<i>Galactia elliotii</i>	
Eastern milkpea	<i>Galactia regularis</i>	
Coastal bedstraw	<i>Galium hispidulum</i>	
Stiff marsh bedstraw	<i>Galium tinctorium</i>	
Gardenia *	<i>Gardenia jasminoides</i>	
Dwarf huckleberry	<i>Gaylussacia dumosa</i>	
Blue huckleberry	<i>Gaylussacia frondosa</i>	
Yellow jessamine	<i>Gelsemium sempervirens</i>	
Loblolly bay	<i>Gordonia lasianthus</i>	
Rough hedgehyssop	<i>Gratiola hispida</i>	
Shaggy hedgehyssop	<i>Gratiola pilosa</i>	
Branched hedgehyssop	<i>Gratiola ramosa</i>	
Shortleaf skeletongrass	<i>Gymnopogon brevifolius</i>	
Chapman's skeletongrass	<i>Gymnopogon chapmanianus</i>	
Toothpetal false reinorchid	<i>Habenaria floribunda</i>	
Innocence; Roundleaf bluet	<i>Hedyotis procumbens</i>	
Clustered mille graine	<i>Hedyotis uniflora</i>	
Southeastern sneezeweed	<i>Helenium pinnatifidum</i>	

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Plants

Common Name	Scientific Name	Habitat Code Listed Species
Pinebarren frostweed	<i>Helianthemum corymbosum</i>	
Narrowleaf sunflower	<i>Helianthus angustifolius</i>	
Limpograss*	<i>Hemarthria altissima</i>	
Camphorweed	<i>Heterotheca subaxillaris</i>	
Swamp rosemallow	<i>Hibiscus grandiflorus</i>	
Coastalplain hawkweed	<i>Hieracium megacephalon</i>	
Waterthyme*	<i>Hydrilla verticillata</i>	
Floating marshpennywort	<i>Hydrocotyle ranunculoides</i>	
Manyflower marshpennywort	<i>Hydrocotyle umbellata</i>	
Whorled marshpennywort	<i>Hydrocotyle verticillata</i>	
Alligatorlily	<i>Hymenocallis palmeri</i>	
Roundpod St. John's-wort	<i>Hypericum cistifolium</i>	
Sandweed; Peelbark St. John's-wort	<i>Hypericum fasciculatum</i>	
St. Andrew's-cross	<i>Hypericum hypericoides</i>	
Myrtleleaf St. John's-wort	<i>Hypericum myrtifolium</i>	
Atlantic St. John's-wort	<i>Hypericum reductum</i>	
Fourpetal St. John's-wort	<i>Hypericum tetrapetalum</i>	
Fringed yellow stargrass	<i>Hypoxis juncea</i>	
Clustered bushmint; Musky mint	<i>Hyptis alata</i>	
Carolina holly; Sand holly	<i>Ilex ambigua</i> var. <i>ambigua</i>	
Dahoon	<i>Ilex cassine</i>	
Inkberry; Gallberry	<i>Ilex glabra</i>	
Brazilian satintail	<i>Imperata brasiliensis</i>	
Cogongrass *	<i>Imperata cylindrica</i>	
Dixie iris; Prairie iris	<i>Iris hexagona</i>	
Virginia willow; Virginia sweetspire	<i>Itea virginica</i>	
Piedmont marshelder	<i>Iva microcephala</i>	
Soft rush	<i>Juncus effusus</i> var. <i>solutus</i>	
Shore rush; Grassleaf rush	<i>Juncus marginatus</i>	
Bighead rush	<i>Juncus megacephalus</i>	
Lesser creeping rush	<i>Juncus repens</i>	
Needlepod rush	<i>Juncus scirpoides</i>	
Shortleaf spikesedge*	<i>Kyllinga brevifolia</i>	
Carolina redroot	<i>Lachnanthes caroliniana</i>	
Whitehead bogbutton	<i>Lachnocaulon anceps</i>	
Lantana; Shrubverbena*	<i>Lantana camara</i>	
Dickert's pinweed	<i>Lechea deckertii</i>	
Drysand pinweed	<i>Lechea divaricata</i>	15
Piedmont pinweed	<i>Lechea torreyi</i>	
Southern cutgrass	<i>Leersia hexandra</i>	

* Non-Native Species

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Plants

Common Name	Scientific Name	Habitat Code Listed Species
Slender gayfeather	<i>Liatris gracilis</i>	
Dense gayfeather	<i>Liatris spicata</i>	
Shortleaf gayfeather	<i>Liatris tenuifolia</i>	
Shortleaf gayfeather	<i>Liatris tenuifolia</i> var. <i>quadriflora</i>	
Gopher apple	<i>Licania michauxii</i>	
Catesby's lily; Pine lily	<i>Lilium catesbaei</i>	42
Malaysian false pimpernel*	<i>Lindernia crustacea</i>	
Savannah false pimpernel	<i>Lindernia grandiflora</i>	
Stiff yellow flax	<i>Linum medium</i> var. <i>texanum</i>	
Bay lobelia	<i>Lobelia feayana</i>	
Glade lobelia	<i>Lobelia glandulosa</i>	
White lobelia	<i>Lobelia paludosa</i>	
Southeastern primrosewillow	<i>Ludwigia linifolia</i>	
Seaside primrosewillow	<i>Ludwigia maritima</i>	
Smallfruit primrosewillow	<i>Ludwigia microcarpa</i>	
Marsh seedbox	<i>Ludwigia palustris</i>	
Peruvian primrosewillow*	<i>Ludwigia peruviana</i>	
Creeping primrosewillow	<i>Ludwigia repens</i>	
Shrubby primrosewillow	<i>Ludwigia suffruticosa</i>	
Southern watergrass	<i>Luziola fluitans</i>	
Foxtail club-moss	<i>Lycopodiella alopecuroides</i>	
Southern club-moss	<i>Lycopodiella appressa</i>	
Slender club-moss	<i>Lycopodiella caroliniana</i>	
Nodding club-moss	<i>Lycopodiella cernua</i>	
Rose-rush	<i>Lygodesmia aphylla</i>	
Coastalplain staggerbush	<i>Lyonia fruticosa</i>	
Maleberry	<i>Lyonia ligustrina</i>	
Fetterbush	<i>Lyonia lucida</i>	
Sweetbay	<i>Magnolia virginiana</i>	
Grassleaf Barbara's buttons	<i>Marshallia tenuifolia</i>	
Creeping cucumber	<i>Melothria pendula</i>	
Shade mudflower	<i>Micranthemum umbrosum</i>	
Climbing hempvine	<i>Mikania scandens</i>	
Red mulberry	<i>Morus rubra</i>	
Muhly grass	<i>Muhlenbergia capillaris</i>	
Nimblewill muhly	<i>Muhlenbergia schreberi</i>	
Twinberry	<i>Myrcianthes fragrans</i>	11,35
Southern bayberry; Wax myrtle	<i>Myrica cerifera</i>	
Sword fern; Wild Boston fern	<i>Nephrolepis exaltata</i>	
Florida beargrass	<i>Nolina atopocarpa</i>	15
Spatterdock; Yellow pondlily	<i>Nuphar luteum</i>	
American white waterlily	<i>Nymphaea odorata</i>	

Kissimmee Prairie Preserve State Park

Plants

Common Name	Scientific Name	Habitat Code Listed Species
Big floatingheart	<i>Nymphoides aquatica</i>	
Swamp tupelo	<i>Nyssa sylvatica</i> var. <i>biflora</i>	
Woodsgrass; Basketgrass	<i>Oplismenus hirtellus</i>	
Pricklypear	<i>Opuntia humifusa</i>	
Goldenclub; Neverwet	<i>Orontium aquaticum</i>	
Wild olive	<i>Osmanthus americanus</i>	
Cinnamon fern	<i>Osmunda cinnamomea</i>	33,35,42
Royal fern	<i>Osmunda regalis</i> var. <i>spectabilis</i>	33,35,42
Common yellow woodsorrel	<i>Oxalis corniculata</i>	
Water cowbane	<i>Oxypolis filiformis</i>	
Beaked panicum	<i>Panicum anceps</i>	
Maidencane	<i>Panicum hemitomon</i>	
Gaping panicum	<i>Panicum hians</i>	
-----	<i>Panicum longifolium</i>	
Torpedograss*	<i>Panicum repens</i>	
Redtop panicum	<i>Panicum rigidulum</i>	
Bluejoint panicum	<i>Panicum tenerum</i>	
Warty panicgrass	<i>Panicum verrucosum</i>	
Virginia creeper; Woodbine	<i>Parthenocissus quinquefolia</i>	
Egyptian paspalidium	<i>Paspalidium geminatum</i>	
Sour paspalum; Hilograss	<i>Paspalum conjugatum</i>	
Dallisgrass*	<i>Paspalum dilatatum</i>	
Bahiagrass*	<i>Paspalum notatum</i>	
Early paspalum	<i>Paspalum praecox</i>	
Thin paspalum	<i>Paspalum setaceum</i>	
Corkystem passionflower	<i>Passiflora suberosa</i>	
Green arrow arum	<i>Peltandra virginica</i>	
Redbay	<i>Persea borbonia</i> var. <i>borbonia</i>	
Swamp bay	<i>Persea palustris</i>	
Golden polypody	<i>Phlebodium aureum</i>	
Florida false sunflower	<i>Phoebanthus grandiflora</i>	
Oak mistletoe	<i>Phoradendron leucarpum</i>	
Turkey tangle fogfruit; Capeweed	<i>Phyla nodiflora</i>	
American pokeweed	<i>Phytolacca americana</i>	
Wild pennyroyal	<i>Piloblephis rigida</i>	
Blueflower butterwort	<i>Pinguicula caerulea</i>	6,42
Yellow butterwort	<i>Pinguicula lutea</i>	6,26,42
Small butterwort	<i>Pinguicula pumila</i>	
South Florida slash pine	<i>Pinus elliottii</i> var. <i>densa</i>	
Longleaf pine	<i>Pinus palustris</i>	
Narrowleaf silkgrass	<i>Pityopsis graminifolia</i>	

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Plants

Common Name	Scientific Name	Habitat Code Listed Species
Resurrection fern	<i>Pleopeltis polypodioides var. michauxiana</i>	
Stinking camphorweed	<i>Pluchea foetida</i>	
Rosy camphorweed	<i>Pluchea rosea</i>	
Tall pinebarren milkwort	<i>Polygala cymosa</i>	
Orange milkwort	<i>Polygala lutea</i>	
Candyroot	<i>Polygala nana</i>	
Yellow milkwort	<i>Polygala rugelii</i>	
Coastalplain milkwort	<i>Polygala setacea</i>	
October flower	<i>Polygonella polygama</i>	
Mild waterpepper	<i>Polygonum hydropiperoides</i>	
Dotted smartweed	<i>Polygonum punctatum</i>	
Rustweed; Juniperleaf	<i>Polypremum procumbens</i>	
Pickernelweed	<i>Pontederia cordata</i>	
Pink purslane; Kiss-me-quick	<i>Portulaca pilosa</i>	
Marsh mermaidweed	<i>Proserpinaca palustris</i>	
Combleaf mermaidweed	<i>Proserpinaca pectinata</i>	
Carolina laurelcherry	<i>Prunus caroliniana</i>	
Guava *	<i>Psidium guajava</i>	
Wild coffee	<i>Psychotria nervosa</i>	
Bracken fern	<i>Pteridium aquilinum</i>	
Blackroot	<i>Pterocaulon pycnostachyum</i>	
Giant orchid	<i>Pteroglossaspis ecristata</i>	15
Mock bishopsweed; Herbwilliam	<i>Ptilimnium capillaceum</i>	
Chapman's oak	<i>Quercus chapmanii</i>	
Sand live oak	<i>Quercus geminata</i>	
Laurel oak; Diamond oak	<i>Quercus laurifolia</i>	
Dwarf live oak	<i>Quercus minima</i>	
Myrtle oak	<i>Quercus myrtifolia</i>	
Water oak	<i>Quercus nigra</i>	
Running oak	<i>Quercus pumila</i>	
Virginia live oak	<i>Quercus virginiana</i>	
West Indian meadowbeauty	<i>Rhexia cubensis</i>	
Pale meadowbeauty	<i>Rhexia mariana</i>	
Maid marian	<i>Rhexia nashii</i>	
Nuttall's meadowbeauty	<i>Rhexia nuttallii</i>	
Winged sumac	<i>Rhus copallina</i>	
Baldwin's beaksedge	<i>Rhynchospora baldwinii</i>	
Shortbristle beaksedge	<i>Rhynchospora breviseta</i>	
Bunched beaksedge	<i>Rhynchospora cephalantha</i>	
Fringed beaksedge	<i>Rhynchospora ciliaris</i>	
Starrush whitetop	<i>Rhynchospora colorata</i>	

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Plants

Common Name	Scientific Name	Habitat Code Listed Species
Spreading beaksedge	<i>Rhynchospora divergens</i>	
Fascicled beaksedge	<i>Rhynchospora fascicularis</i>	
Fernald's beaksedge	<i>Rhynchospora fernaldii</i>	
Threadleaf beaksedge	<i>Rhynchospora filifolia</i>	
Globe beakrush	<i>Rhynchospora globularis</i>	
Gray's beaksedge	<i>Rhynchospora grayii</i>	
Pinebarren beaksedge	<i>Rhynchospora intermedia</i>	
Narrowfruit horned beaksedge	<i>Rhynchospora inundata</i>	
Giant whitetop	<i>Rhynchospora latifolia</i>	
Sandyfield beaksedge	<i>Rhynchospora megalocarpa</i>	
Southern beaksedge	<i>Rhynchospora microcarpa</i>	
Bunched beaksedge	<i>Rhynchospora microcephala</i>	
Millet beaksedge	<i>Rhynchospora miliacea</i>	
Shortbeak beaksedge; Baldrush	<i>Rhynchospora nitens</i>	
Plumed beaksedge	<i>Rhynchospora plumosa</i>	
Fairy beaksedge	<i>Rhynchospora pusilla</i>	
Fewflower beaksedge	<i>Rhynchospora rariflora</i>	
Tracy's beaksedge	<i>Rhynchospora tracyi</i>	
Rougeplant	<i>Rivina humilis</i>	
Sawtooth blackberry	<i>Rubus argutus</i>	
Southern dewberry	<i>Rubus trivialis</i>	
Cabbage palm	<i>Sabal palmetto</i>	
Bartram's rosegentian	<i>Sabatia bartramii</i>	
Shortleaf rosegentian	<i>Sabatia brevifolia</i>	
Largeflower rosegentian	<i>Sabatia grandiflora</i>	
Sugarcane plumegrass	<i>Saccharum giganteum</i>	
India cupscale*	<i>Sacciolepis indica</i>	
Smallflower mock buckthorn	<i>Sageretia minutiflora</i>	
Grassy arrowhead	<i>Sagittaria graminea</i>	
Chapman's arrowhead	<i>Sagittaria graminea</i> var. <i>chapmanii</i>	
Bulltongue arrowhead	<i>Sagittaria lancifolia</i>	
Carolina willow	<i>Salix caroliniana</i>	
Water spangles	<i>Salvinia minima</i>	
American elder; Elderberry	<i>Sambucus canadensis</i>	
Pineland pimpernel	<i>Samolus valerandi</i> var. <i>parviflorus</i>	
White twinevine	<i>Sarcostemma clausum</i>	
Hooded pitcherplant	<i>Sarracenia minor</i>	26
Lizard's tail	<i>Saururus cernuus</i>	
Brazilian Pepper*	<i>Schinus terebinthifolius</i>	
Little bluestem	<i>Schizachyrium scoparium</i>	
Bluestem	<i>Schizachyrium scoparium</i> var. <i>scoparium</i>	
Cuban bulrush*	<i>Scirpus cubensis</i>	

* Non-Native Species

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Plants

Common Name	Scientific Name	Habitat Code Listed Species
Threesquare bulrush	<i>Scirpus pungens</i>	
Softstem bulrush	<i>Scirpus tabernaemontani</i>	
Baldwin's nutrush	<i>Scleria baldwinii</i>	
Fewflower nutrush	<i>Scleria ciliata</i> var. <i>pauciflora</i>	
Slenderfruit nutrush	<i>Scleria georgiana</i>	
Netted nutrush	<i>Scleria reticularis</i>	
Tall nutgrass; Whip nutrush	<i>Scleria triglomerata</i>	
Sweetbroom; Licoriceweed	<i>Scoparia dulcis</i>	
Saw palmetto	<i>Serenoa repens</i>	
Bladderpod; Bagpod	<i>Sesbania vesicaria</i>	
Yellow bristlegrass; Yellow foxtail	<i>Setaria parviflora</i>	
Common wireweed	<i>Sida acuta</i>	
Lima*	<i>Sida cordifolia</i>	
Florida bully	<i>Sideroxylon reclinatum</i> ssp. <i>reclinatum</i>	
Narrowleaf blueeyed grass	<i>Sisyrinchium angustifolium</i>	
Blueeyed grass	<i>Sisyrinchium</i> sp.	
Earleaf greenbrier	<i>Smilax auriculata</i>	
Saw greenbrier	<i>Smilax bona-nox</i>	
Laurel greenbrier	<i>Smilax laurifolia</i>	
Bristly greenbrier	<i>Smilax tamnoides</i>	
Coral greenbrier	<i>Smilax walteri</i>	
Pinebarren goldenrod	<i>Solidago fistulosa</i>	
Chapman's goldenrod	<i>Solidago odora</i> var. <i>chapmanii</i>	
Wand goldenrod	<i>Solidago stricta</i>	
Lopsided Indiangrass	<i>Sorghastrum secundum</i>	
Sand cordgrass	<i>Spartina bakeri</i>	
Woodland false buttonweed	<i>Spermacoce assurgens</i>	
Sphagnum	<i>Sphagnum</i> sp.	
Spring ladiestresses	<i>Spiranthes vernalis</i>	
Smutgrass*	<i>Sporobolus indicus</i>	
Pineywoods dropseed	<i>Sporobolus junceus</i>	
Water toothleaf; Corkwood	<i>Stillingia aquatica</i>	
Queensdelight	<i>Stillingia sylvatica</i>	
Pineland scalypink	<i>Stipulicida setacea</i>	
Yellow hatpins	<i>Syngonanthus flavidulus</i>	
Sprawling hoarypea	<i>Tephrosia hispidula</i>	
Alligatorflag; Fireflag	<i>Thalia geniculata</i>	
Downy maiden fern*	<i>Thelypteris dentata</i>	
Hairy maiden fern	<i>Thelypteris hispidula</i> var. <i>versicolor</i>	
Hottentot fern; Willdenow's fern	<i>Thelypteris interrupta</i>	
Widespread maiden fern	<i>Thelypteris kunthii</i>	

* Non-Native Species

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Plants

Common Name	Scientific Name	Habitat Code Listed Species
Marsh fern	<i>Thelypteris palustris</i>	
Northern needleleaf	<i>Tillandsia balbisiana</i>	11,35
Cardinal airplant	<i>Tillandsia fasciculata</i> var. <i>densispica</i>	
Ballmoss	<i>Tillandsia recurvata</i>	
Southern needleleaf	<i>Tillandsia setacea</i>	
Spanish moss	<i>Tillandsia usneoides</i>	
Giant airplant	<i>Tillandsia utriculata</i>	11,35
Eastern poison ivy	<i>Toxicodendron radicans</i>	
Confederate jasmine *	<i>Trachelospermum jasminoides</i>	
Virginia marsh St. John's-wort	<i>Triadenum virginicum</i>	
Southern cattail	<i>Typha domingensis</i>	
American elm; Florida elm	<i>Ulmus americana</i>	
Caesarweed	<i>Urena lobata</i>	
Browntop millet; Dixie signalgrass*	<i>Urochloa ramosa</i>	
Heartleaf nettle	<i>Urtica chamaedryoides</i>	
Horned bladderwort	<i>Utricularia cornuta</i>	
Floating bladderwort	<i>Utricularia inflata</i>	
Eastern purple bladderwort	<i>Utricularia purpurea</i>	
Zigzag bladderwort	<i>Utricularia subulata</i>	
Highbush blueberry	<i>Vaccinium corymbosum</i>	
Darrow's blueberry	<i>Vaccinium darrowii</i>	
Shiny blueberry	<i>Vaccinium myrsinites</i>	
Deerberry	<i>Vaccinium stamineum</i>	
Brazilian vervain*	<i>Verbena brasiliensis</i>	
Walter's viburnum	<i>Viburnum obovatum</i>	
Bog white violet	<i>Viola lanceolata</i>	
Primroseleaf violet	<i>Viola primulifolia</i>	
Common blue violet	<i>Viola sororia</i>	
Summer grape	<i>Vitis aestivalis</i>	
Muscadine	<i>Vitis rotundifolia</i>	
Shoestring fern	<i>Vittaria lineata</i>	
Netted chain fern	<i>Woodwardia areolata</i>	
Virginia chain fern	<i>Woodwardia virginica</i>	
Tallow wood; Hog plum	<i>Ximenia americana</i>	
Coastalplain yelloweyed grass	<i>Xyris ambigua</i>	
Shortleaf yelloweyed grass	<i>Xyris brevifolia</i>	
Carolina yelloweyed grass	<i>Xyris caroliniana</i>	
Florida yelloweyed grass	<i>Xyris difformis</i> var. <i>floridana</i>	
Elliott's yelloweyed grass	<i>Xyris elliottii</i>	
Fringed yelloweyed grass	<i>Xyris fimbriata</i>	
Savannah yelloweyed grass	<i>Xyris flabelliformis</i>	

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Plants

Common Name	Scientific Name	Habitat Code Listed Species
Richard's yelloweyed grass*	<i>Xyris jupicai</i>	
Tall yelloweyed grass	<i>Xyris platylepis</i>	
Small's yelloweyed grass	<i>Xyris smalliana</i>	
Wild lime; Lime pricklyash	<i>Zanthoxylum fagara</i>	
Orchid*	<i>Zuexine strateumatic</i>	

Kissimmee Prairie Preserve State Park

Animals

Common Name	Scientific Name	Habitat Code All Species
INSECTS		
	<i>Phidippus regius</i>	Throughout
	<i>Cheiracanthium inclusum</i>	Throughout
	<i>Misumenops celer</i>	Throughout
	<i>Eustala sp.</i>	Throughout
Common green darner	<i>Anax junius</i>	Throughout
Common green darner	<i>Anax junius</i>	Throughout
Blue-faced darner	<i>Coryphaeschna adnexa</i>	Throughout
Regal darner	<i>Coryphaeschna ingens</i>	Throughout
Swamp darner	<i>Epiaeschna heros</i>	Throughout
Twilight darner	<i>Gynacantha nervosa</i> *	Throughout
Common baskettail	<i>Epithea cynosura</i>	Throughout
Golden-winged skimmer	<i>Libellula aripennis</i> *	Throughout
Bar-winged skimmer	<i>Libellula axilena</i> *	Throughout
Slaty skimmer	<i>Libellula incesta</i> *	Throughout
Great blue skimmer	<i>Libellula vibrans</i>	Throughout
Little blue dragonlet	<i>Erythrodiplax minuscula</i>	Throughout
Band-winged dragonlet	<i>Erythrodiplax umbrata</i> *	Throughout
Blue dasher	<i>Pachydiplax longipennis</i>	Throughout
Great pondhawk	<i>Erythemis vesiculosa</i>	Throughout
Wandering glider	<i>Pantala flavescens</i>	Throughout
Carolina saddlebags	<i>Tamea carolina</i> *	Throughout
Red saddlebags	<i>Tamea onusta</i>	Throughout
Hyacinth glider	<i>Miathyria marcella</i>	Throughout
Four-spotted pennant	<i>Brachymesia gravida</i>	Throughout
Citrine forktail	<i>Ischnura hastata</i>	Throughout
Rambur's forktail	<i>Ischnura ramburii</i>	Throughout
Atlantic Bluet	<i>Enallagma doubledayi</i>	Throughout
Polydamas swallowtail	<i>Battus polydamas lucayas</i>	Throughout
Zebra swallowtail	<i>Eurytides marcellus</i>	Throughout
Black swallowtail	<i>Papilio polyxenes asterius</i>	Throughout
Giant swallowtail	<i>Papilio cresphontes</i>	Throughout
Eastern tiger swallowtail	<i>Papilio glaucus australis</i>	Throughout
Spice-bush swallowtail	<i>Papilio troilus ilioneus</i>	Throughout
Palamedes swallowtail	<i>Papilio palamedes</i>	Throughout
Checkered white	<i>Pontia protodice</i>	Throughout
Great Southern White	<i>Ascia monuste phileta</i>	Throughout
Orange sulphur	<i>Colias eurytheme</i>	Throughout
Cloudless sulphur	<i>Phoebis sennae eubule</i>	Throughout
Barred yellow	<i>Eurema daira daira</i>	Throughout

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Animals

Common Name	Scientific Name	Habitat Code All Species
Little yellow	<i>Eurema lisa</i>	Throughout
Sleepy orange	<i>Eurema nicippe</i>	Throughout
Dainty sulphur	<i>Nathalis iole</i>	Throughout
Great purple hairstreak	<i>Atlides halesus</i>	Throughout
Oak hairstreak	<i>Satyrium liparops</i>	Throughout
Gray hairstreak	<i>Strymon melinus</i>	Throughout
Red banded hairstreak	<i>Calycopis cecrops</i>	Throughout
White-M hairstreak	<i>Parrhasius m-album</i>	Throughout
Cassius Blue	<i>Leptutes cassius</i>	Throughout
Ceraunus Blue	<i>Hemiargus ceraunus antbubastus</i>	Throughout
Little metalmark	<i>Calephelis virginensis</i>	Throughout
Gulf fritillary	<i>Agraulis vanillae nigrior</i>	Throughout
Zebra heliconian	<i>Heliconius charitonius</i>	Throughout
Variegated fritillary	<i>Euptoieta claudia</i>	Throughout
Phaon crescent	<i>Phyciodes phaon</i>	Throughout
Pearl crescent	<i>Phyciodes tharos tharos</i>	Throughout
Question mark	<i>Polygonia interrogationis</i>	Throughout
American lady	<i>Vanessa virginensis</i>	Throughout
Painted lady	<i>Vanessa cardui</i>	Throughout
Red admiral	<i>Vanessa atalanta rubria</i>	Throughout
Common Buckeye	<i>Junonia coenia</i>	Throughout
White peacock	<i>Anartia Jatrophae</i>	Throughout
Viceroy	<i>Limenitis archippus</i>	Throughout
Hackberry emperor	<i>Asterocampa celtis alicia</i>	Throughout
Tawny emperor	<i>Asterocampa clyton</i>	Throughout
Carolina satyr	<i>Hermeuptychia hermes sosybius</i>	Throughout
Georgia satyr	<i>Neonympha areolata</i>	Throughout
Monarch	<i>Danaus plexippus</i>	Throughout
Queen	<i>Danaus gillippus berenice</i>	Throughout
Soldier	<i>Danaus eresimus</i>	Throughout
Silver-spotted skipper	<i>Epargyreus clarus</i>	Throughout
Long-tailed skipper	<i>Urbanus proteus</i>	Throughout
Byssus skipper	<i>Problema byssus</i>	Throughout
Dorantes longtail	<i>Urbanus dorantes</i>	Throughout
Northern cloudywing	<i>Thorybes pylades</i>	Throughout
Southern cloudywing	<i>Thorybes bathyllus</i>	Throughout
Confused cloudywing	<i>Thorybes confusus</i>	Throughout
Horace's duskywing	<i>Erynnis horatius</i>	Throughout
Zarucco dusky wing	<i>Erynnis zarucco</i>	Throughout
Common checkered skipper	<i>Pyrgus communis</i>	Throughout
Tropical checkered skipper	<i>Pyrgus oileus</i>	Throughout
Swarthy skipper	<i>Nastra lherminier</i>	Throughout

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Animals

Common Name	Scientific Name	Habitat Code All Species
Neamathla skipper	<i>Nastra neamathla</i>	Throughout
Clouded skipper	<i>Lerema accius</i>	Throughout
Least skipper	<i>Ancyloxypha numitor</i>	Throughout
Southern skipperling	<i>Copaeodes minimus</i>	Throughout
Fiery skipper	<i>Hylephila phyleus</i>	Throughout
Meske's skipper	<i>Hesperia meskei</i>	Throughout
Tawny-edged skipper	<i>Polites themistocles</i>	Throughout
Whirlabout	<i>Polites vibex</i>	Throughout
Southern broken-dash	<i>Wallengrenia otho</i>	Throughout
Sachem	<i>Atalopedes campestris</i>	Throughout
Delaware skipper	<i>Anatrytone logan</i>	Throughout
Byssus skipper	<i>Problema byssus</i>	Throughout
Aaron's skipper	<i>Poanes aaroni</i>	Throughout
Palmetto skipper	<i>Euphyes arpa</i>	Throughout
Palatka skipper	<i>Euphyes pilatka</i>	Throughout
Berry's skipper	<i>Euphyes berryi</i>	Throughout
Dun skipper	<i>Euphyes vestris</i>	Throughout
Monk skipper	<i>Asbolis capucinus</i>	Throughout
Florida dusted skipper	<i>Atrytonopsis hianna loammi</i>	Throughout
Eufala skipper	<i>Lerodea eufala</i>	Throughout
Twin-spot skipper	<i>Oligoria maculata</i>	Throughout
Brazilian skipper	<i>Calpododes ethlius</i>	Throughout
Ocola skipper	<i>Panoquina ocola</i>	Throughout
FISH		
Longnose gar	<i>Lepisosteus osseus</i>	38
Florida gar	<i>Lepisosteus platyrhincus</i>	38
Bowfin	<i>Amia calva</i>	38
Tarpon	<i>Megalops atlanticus</i>	38
American eel	<i>Anguilla rostrata</i>	38
Gizzard shad	<i>Dorosoma cepedianum</i>	38
Threadfin shad	<i>Dorosoma petenense</i>	38
Grass carp	<i>Ctenopharyngodon idella</i>	38
Common carp *	<i>Cyprinus carpio</i>	38
Golden shiner	<i>Notemigonus crysoleucas</i>	38
Pugnose shiner	<i>Notropis anogenus</i>	38
Taillight shiner	<i>Notropis maculatus</i>	38
Lake chubsucker	<i>Erimyzon sucetta</i>	38
White catfish	<i>Ameiurus catus</i>	38
Yellow bullhead	<i>Ameiurus natalis</i>	38
Brown bullhead	<i>Ameiurus nebulosus</i>	38

Kissimmee Prairie Preserve State Park

Animals

Common Name	Scientific Name	Habitat Code All Species
Channel catfish	<i>Ictalurus punctatus</i>	38
Tadpole madtom	<i>Noturus gyrinus</i>	38
Walking catfish*	<i>Clarias batrachus</i>	38
Redfin pickerel	<i>Esox americanus americanus</i>	38
Chain pickerel	<i>Esox niger</i>	38
Pirate perch	<i>Aphredoderus sayanus</i>	38
Atlantic needlefish	<i>Strongylura marina</i>	38
Sheepshead minnow	<i>Cyprinodon variegatus variegatus</i>	38
Golden topminnow	<i>Fundulus chrysotus</i>	38
Lined topminnow	<i>Fundulus lineolatus</i>	38
Seminole killifish	<i>Fundulus seminolis</i>	38
Flagfish	<i>Jordanella floridae</i>	38
Bluefin killifish	<i>Lucania goodei</i>	38
Eastern mosquitofish	<i>Gambusia holbrooki</i>	38
Least killifish	<i>Heterandria formosa</i>	38
Sailfin molly	<i>Poecilia latipinna</i>	38
Brook silversides	<i>Labidesthes sicculus</i>	38
Inland silverside	<i>Menidia beryllina</i>	38
Opossum pipefish	<i>Microphis brachyurus</i>	38
Everglades pygmy sunfish	<i>Elassoma evergladei</i>	38
Okefenokee pygmy sunfish	<i>Elassoma okefenokee</i>	38
Bluespotted sunfish	<i>Enneacanthus gloriosus</i>	38
Redbreast sunfish	<i>Lepomis auritus</i>	38
Warmouth	<i>Lepomis gulosus</i>	38
Bluegill	<i>Lepomis macrochirus</i>	38
Dollar sunfish	<i>Lepomis marginatus</i>	38
Redear sunfish	<i>Lepomis microlophus</i>	38
Spotted sunfish	<i>Lepomis punctatus</i>	38
Largemouth bass	<i>Micropterus salmoides</i>	38
Black crappie	<i>Pomoxis nigromaculatus</i>	38
Swamp darter	<i>Etheostoma fusiforme</i>	38
Oscar	<i>Astronotus ocellatus</i>	38
Blue tilapia	<i>Tilapia aurea</i>	38
Striped mullet	<i>Mugil cephalus</i>	38
Naked goby	<i>Gobiosoma bosc</i>	38
Clown goby	<i>Microgobius gulosus</i>	38
AMPHIBIANS		
Indo-pacific gecko*	<i>Hemidactylus garnotti*</i>	81
Oak toad	<i>Bufo quercicus</i>	3
Southern toad	<i>Bufo terrestris</i>	4

* Non-Native Species

Kissimmee Prairie Preserve State Park

Animals

Common Name	Scientific Name	Habitat Code All Species
Florida cricket frog	<i>Acris gryllus dorsalis</i>	7
Green treefrog	<i>Hyla cinerea</i>	12
Pine woods treefrog	<i>Hyla femoralis</i>	13
Barking treefrog	<i>Hyla gratiosa</i>	14
Squirrel treefrog	<i>Hyla squirella</i>	15
Cuban treefrog*	<i>Osteopilus septentrionalis</i> *	16
Florida chorus frog	<i>Pseudacris nigrita verrucosa</i>	20
Pig frog	<i>Rana grylio</i>	28
Florida leopard frog	<i>Rana utricularia sphenoccephala</i>	31
Eastern narrow-mouthed toad	<i>Gastrophryne carolinensis</i>	33
Two-toed amphiuma	<i>Amphiuma means</i>	35
REPTILES		
Green anole	<i>Anolis carolinensis carolinensis</i>	all
Brown anole *	<i>Anolis sagrei sagrei</i>	81,11
Five-lined skink	<i>Eumeces fasciatus</i>	all
Six-lined racerunner	<i>Cnemidophorus sexlineatus sexlineatus</i>	all
Eastern glass lizard	<i>Ophisaurus ventralis</i>	all
American alligator	<i>Alligator mississippiensis</i>	38,40
Southern black racer	<i>Coluber constrictor priapus</i>	6,11,15,35
Eastern indigo snake	<i>Drymarchon corais couperi</i>	6,42
Corn snake	<i>Elaphe guttata guttata</i>	all
Yellow rat snake	<i>Elaphe obsoleta quadrivittata</i>	all
Eastern mud snake	<i>Farancia abacura abacura</i>	all
Southern mole kingsnake	<i>Lampropeltis calligaster occipitolineata</i>	all
Florida kingsnake	<i>Lampropeltis getula floridana</i>	all
Florida water snake	<i>Nerodia fasciata pictiventris</i>	all
Florida green water snake	<i>Nerodia floridana</i>	all
Rough green snake	<i>Opheodrys aestivus</i>	all
Bluestripe ribbon snake	<i>Thamnophis sauritus nitae</i>	all
Peninsula ribbon snake	<i>Thamnophis sauritus sackeni</i>	all
Eastern garter snake	<i>Thamnophis sirtalis sirtalis</i>	all
Eastern coral snake	<i>Micrurus fulvius fulvius</i>	all
Florida cottonmouth	<i>Agkistrodon piscivorus conanti</i>	all
Eastern diamondback rattlesnake	<i>Crotalus adamanteus</i>	6,11,15,35
Dusky pigmy rattlesnake	<i>Sistrurus miliarius barbouri</i>	all
Florida cooter	<i>Pseudemys floridana floridana</i>	24,29,33,38,40
Florida softshell	<i>Apalone ferox</i>	29,33
Eastern box turtle	<i>Terrapene carolina carolina</i>	6,11,15
Gopher tortoise	<i>Gopherus polyphemus</i>	6,11,15

* Non-Native Species

Kissimmee Prairie Preserve State Park

Animals

Common Name	Scientific Name	Habitat Code All Species
BIRDS		
Pied-billed Grebe	<i>Podilymbus podiceps</i>	24,38
American White Pelican	<i>Pelecanus erythrorhynchos</i>	24
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	38
Anhinga	<i>Anhinga anhinga</i>	24,38
American Bittern	<i>Botaurus lentiginosus</i>	24,29,32,40
Least Bittern	<i>Ixobrychus exilis</i>	32
Great Blue Heron	<i>Ardea herodias</i>	24,29,32,38,40
Great Egret	<i>Ardea alba</i>	24,29,32,38,40
Snowy Egret	<i>Egretta thula</i>	24,29,32,38,40
Little Blue Heron	<i>Egretta caerulea</i>	24,29,32,38,40
Tricolored Heron	<i>Egretta tricolor</i>	24,29,32,38,40
Cattle Egret	<i>Bubulcus ibis</i>	6
Green Heron	<i>Butorides virescens</i>	24,29,32,38,40
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>	24,29,32,38,40
Yellow-crowned Night-Heron	<i>Nyctanassa violacea</i>	24,29
White Ibis	<i>Eudocimus albus</i>	24,29,32,38,40
Glossy Ibis	<i>Plegadis falcinellus</i>	24,29,42
Roseate Spoonbill	<i>Ajaia ajaja</i>	24,38
Wood Stork	<i>Mycteria americana</i>	24,29,32,38,40
Black Vulture	<i>Coragyps atratus</i>	24,29,32,38,40
Turkey Vulture	<i>Cathartes aura</i>	24,29,32,38,40
Wood Duck	<i>Aix sponsa</i>	42,38,40
Mottled Duck	<i>Anas fulvigula</i>	38,40,42
Blue-winged Teal	<i>Anas discors</i>	24,38
Hooded Merganser	<i>Lophodytes cucullatus</i>	38,40,42
Osprey	<i>Pandion haliaetus</i>	38
Swallow-tailed Kite	<i>Elanoides forficatus</i>	33,35
White-tailed Kite	<i>Elanus leucurus</i>	6
Snail Kite	<i>Rostrhamus sociabilis</i>	24,32
Bald Eagle	<i>Haliaeetus leucocephalus</i>	6,53
Northern Harrier	<i>Circus cyaneus</i>	6,42
Sharp-shinned Hawk	<i>Accipiter striatus</i>	11,35
Cooper's Hawk	<i>Accipiter cooperii</i>	6,42
Red-shouldered Hawk	<i>Buteo lineatus</i>	6,42
Short-tailed Hawk	<i>Buteo brachyurus</i>	6,42
Red-tailed Hawk	<i>Buteo jamaicensis</i>	6,42
Crested Caracara	<i>Caracara cheriway audubonii</i>	6,42
American Kestrel	<i>Falco sparverius</i>	6,42
Merlin	<i>Falco columbarius</i>	6
Peregrine Falcon	<i>Falco peregrinus</i>	6,42

Kissimmee Prairie Preserve State Park

Animals

Common Name	Scientific Name	Habitat Code All Species
Wild Turkey	<i>Meleagris gallopavo</i>	6,42
Northern Bobwhite	<i>Colinus virginianus</i>	6,42
Yellow Rail	<i>Coturnicops noveboracensis</i>	24,29,32,40,42
King Rail	<i>Rallus elegans</i>	24,29,32,40,42
Purple Gallinule	<i>Porphyryla martinica</i>	38
Common Moorhen	<i>Gallinula chloropus</i>	38
Limpkin	<i>Aramus guarana</i>	33,38
Florida Sandhill Crane	<i>Grus canadensis pratensis</i>	6,29,32,40,42
Whooping Crane	<i>Grus americana</i>	6,42
Killdeer	<i>Charadrius vociferus</i>	81
Greater Yellowlegs	<i>Tringa melanoleuca</i>	24,29,42
Lesser Yellowlegs	<i>Tringa flavipes</i>	24,29,42
Solitary Sandpiper	<i>Tringa solitaria</i>	24,29
Spotted Sandpiper	<i>Actitis macularia</i>	24,29
Upland Sandpiper	<i>Bartramia longicauda</i>	6
Least Sandpiper	<i>Calidris minutilla</i>	24,29
Common Snipe	<i>Gallinago gallinago</i>	6,29,32,40,42
Rock Dove *	<i>Columba livia</i>	81
Eurasian Collared-Dove *	<i>Streptopelia decaocto</i>	81
White-winged Dove	<i>Zenaida asiatica</i>	81
Mourning Dove	<i>Zenaida macroura</i>	6
Common Ground-Dove	<i>Columbina passerina</i>	6
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	33,35
Eastern Screech-Owl	<i>Otus asio</i>	11,35
Burrowing Owl	<i>Athene cunicularia floridana</i>	81
Barred Owl	<i>Strix varia</i>	11,35
Short-eared Owl	<i>Asio flammeus</i>	6
Common Nighthawk	<i>Chordeiles minor</i>	6
Chuck-will's-widow	<i>Caprimulgus carolinensis</i>	11,35
Whip-poor-will	<i>Caprimulgus vociferus</i>	11,35
Chimney Swift	<i>Chaetura pelagica</i>	6,81
Belted Kingfisher	<i>Ceryle alcyon</i>	38,40
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	11
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	6,11,15,33,35
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	11,35
Downy Woodpecker	<i>Picoides pubescens</i>	6,11,15,33,35
Northern Flicker	<i>Colaptes auratus</i>	11,35
Pileated Woodpecker	<i>Dryocopus pileatus</i>	6,11,15,33,35
Eastern Wood-Pewee	<i>Contopus virens</i>	81
Yellow-bellied Flycatcher	<i>Empidonax flaviventris</i>	35
Acadian Flycatcher	<i>Empidonax virens</i>	35
Eastern Phoebe	<i>Sayornis phoebe</i>	6,42

Kissimmee Prairie Preserve State Park

Animals

Common Name	Scientific Name	Habitat Code All Species
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	6,42
Eastern Kingbird	<i>Tyrannus tyrannus</i>	6,42
Scissor-tailed Flycatcher	<i>Tyrannus forficatus</i>	81
Loggerhead Shrike	<i>Lanius ludovicianus</i>	11
White-eyed Vireo	<i>Vireo griseus</i>	11
Blue-headed Vireo	<i>Vireo solitarius</i>	11,35
Red-eyed Vireo	<i>Vireo olivaceus</i>	11,35
Blue Jay	<i>Cyanocitta cristata</i>	11,35
Florida Scrub-Jay	<i>Aphelocoma coerulescens</i>	15
American Crow	<i>Corvus brachyrhynchos</i>	6,11
Fish Crow	<i>Corvus ossifragus</i>	35,81
Purple Martin	<i>Progne subis</i>	6
Tree Swallow	<i>Tachycineta bicolor</i>	6,42
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	6
Bank Swallow	<i>Riparia riparia</i>	6
Barn Swallow	<i>Hirundo rustica</i>	6,42
Carolina Wren	<i>Thryothorus ludovicianus</i>	11,35
House Wren	<i>Troglodytes aedon</i>	11,35
Sedge Wren	<i>Cistothorus platensis</i>	6
Ruby-crowned Kinglet	<i>Regulus calendula</i>	11,35
Blue-gray Gnatcatcher	<i>Poliophtila caerulea</i>	11
Eastern Bluebird	<i>Sialia sialis</i>	11,81
Veery	<i>Catharus fuscescens</i>	11,35
Swainson's Thrush	<i>Catharus ustulatus</i>	11
Hermit Thrush	<i>Catharus guttatus</i>	11,35
American Robin	<i>Turdus migratorius</i>	11
Gray Catbird	<i>Dumetella carolinensis</i>	11
Northern Mockingbird	<i>Mimus polyglottos</i>	11
Brown Thrasher	<i>Toxostoma rufum</i>	11
European Starling *	<i>Sturnus vulgaris</i>	81
American Pipit	<i>Anthus rubescens</i>	81
Cedar Waxwing	<i>Bombycilla cedrorum</i>	11,35
Northern Parula	<i>Parula americana</i>	11
Cape May Warbler	<i>Dendroica tigrina</i>	11
Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	11
Yellow-rumped Warbler	<i>Dendroica coronata</i>	11
Yellow-throated Warbler	<i>Dendroica dominica</i>	11,35
Prairie Warbler	<i>Dendroica discolor</i>	11
Palm Warbler	<i>Dendroica palmarum</i>	11,40
Blackpoll Warbler	<i>Dendroica striata</i>	11
Black-and-white Warbler	<i>Mniotilta varia</i>	11,35
American Redstart	<i>Setophaga ruticilla</i>	11,35

Kissimmee Prairie Preserve State Park

Animals

Common Name	Scientific Name	Habitat Code All Species
Worm-eating Warbler	<i>Helmitheros vermivorus</i>	11,35
Ovenbird	<i>Seiurus aurocapillus</i>	11,35
Northern Waterthrush	<i>Seiurus noveboracensis</i>	35,38
Kentucky Warbler	<i>Oporornis formosus</i>	11,35
Common Yellowthroat	<i>Geothlypis trichas</i>	40,42
Hooded Warbler	<i>Wilsonia citrina</i>	11
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	15
Bachman's Sparrow	<i>Aimophila aestivalis</i>	6
Vesper Sparrow	<i>Pooecetes gramineus</i>	6
Savannah Sparrow	<i>Passerculus sandwichensis</i>	6
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	6
Florida Grasshopper Sparrow	<i>Ammodramus savannarum floridanus</i>	6
Henslow's Sparrow	<i>Ammodramus henslowii</i>	6
Swamp Sparrow	<i>Melospiza georgiana</i>	38,42
Northern Cardinal	<i>Cardinalis cardinalis</i>	11,35
Indigo Bunting	<i>Passerina cyanea</i>	6,81
Bobolink	<i>Dolichonyx oryzivorus</i>	6,81
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	24,32,40,42
Eastern Meadowlark	<i>Sturnella magna</i>	6,42
Common Grackle	<i>Quiscalus quiscula</i>	24,32,40,42
Boat-tailed Grackle	<i>Quiscalus major</i>	81
Shiny Cowbird	<i>Molothrus bonariensis</i>	81
Brown-headed Cowbird	<i>Molothrus ater</i>	81
American Goldfinch	<i>Carduelis tristis</i>	6,81
MAMMALS		
Virginia opossum	<i>Didelphis virginiana</i>	11,35,81
Raccoon	<i>Procyon lotor</i>	11,35,81
River otter	<i>Lutra canadensis</i>	38
Eastern spotted skunk	<i>Spilogale putorius</i>	6
Coyote	<i>Canis latrans</i>	6,11,42,81
Florida panther	<i>Puma concolor coryi</i>	6,11,42
Bobcat	<i>Felis rufus</i>	6,11,42
Gray squirrel	<i>Sciurus carolinensis</i>	11,35
Cotton mouse	<i>Peromyscus gossypinus gossypinus</i>	6,15
Hispid cotton rat	<i>Sigmodon hispidus</i>	6,15
Round-tailed muskrat	<i>Neofiber alleni</i>	42
Black rat *	<i>Rattus rattus</i>	81
Eastern cottontail	<i>Sylvilagus floridanus</i>	6,42
Wild pig *	<i>Sus scrofa</i>	6,11,24,32,42
White-tailed deer	<i>Odocoileus virginianus</i>	6,11,24,32,42

* Non-Native Species

Kissimmee Prairie Preserve State Park

Animals

Common Name	Scientific Name	Habitat Code All Species
Nine-banded armadillo *	<i>Dasypus novemcinctus</i>	11,35

Natural Community Codes

Terrestrial

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

Palustrine

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

Lacustrine

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

Lacustrine—Continued

47. Marsh Lake
48. River Floodplain Lake
49. Sandhill Upland Lake
50. Sinkhole Lake
51. Swamp Lake
52. **Riverine**
53. Alluvial Stream
54. Blackwater Stream
55. Seepage Stream
56. Spring-Run Stream
57. **Estuarine**
58. Estuarine Composite Substrate
59. Estuarine Consolidated Substrate
60. Estuarine Coral Reef
61. Estuarine Grass Bed
62. Estuarine Mollusk Reef
63. Estuarine Octocoral Bed
64. Estuarine Sponge Bed
65. Estuarine Tidal Marsh
66. Estuarine Tidal Swamp
67. Estuarine Unconsolidated Substrate
68. Estuarine Worm Reef
69. **Marine**
70. Marine Algal Bed
71. Marine Composite Substrate
72. Marine Consolidated Substrate
73. Marine Coral Reef
74. Marine Grass Bed
75. Marine Mollusk Reef
76. Marine Octocoral Bed
77. Marine Sponge Bed
78. Marine Tidal Marsh
79. Marine Tidal Swamp
80. Marine Unconsolidated Substrate
81. Marine Worm Reef
82. **Subterranean**
83. Aquatic Cave
84. Terrestrial Cave
85. **Miscellaneous**
86. Ruderal
87. Developed

MTC Many Types Of Communities

OF Overflying

Natural Community Codes

Addendum 5—Designated Species List

RANK EXPLANATIONS FOR FNAI GLOBAL RANK, FNAI STATE RANK, FEDERAL STATUS AND STATE STATUS

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

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

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

FNAI GLOBAL RANK DEFINITIONS

G1	=	Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
G2	=	Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
G3	=	Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction of other factors.
G4	=	apparently secure globally (may be rare in parts of range)
G5	=	demonstrably secure globally
GH	=	of historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker)
GX	=	believed to be extinct throughout range
GXC	=	extirpated from the wild but still known from captivity or cultivation
G#?	=	tentative rank (e.g., G2?)
G#G#	=	range of rank; insufficient data to assign specific global rank (e.g., G2G3)
G#T#	=	rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g., G3T1)
G#Q	=	rank of questionable species - ranked as species but questionable whether it is species or subspecies; numbers have same definition as above (e.g., G2Q)
G#T#Q	=	same as above, but validity as subspecies or variety is questioned.
GU	=	due to lack of information, no rank or range can be assigned (e.g., GUT2).
G?	=	not yet ranked (temporary)
S1	=	Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
S2	=	Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
S3	=	Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction of other factors.
S4	=	apparently secure in Florida (may be rare in parts of range)
S5	=	demonstrably secure in Florida
SH	=	of historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker)
SX	=	believed to be extinct throughout range
SA	=	accidental in Florida, i.e., not part of the established biota
SE	=	an exotic species established in Florida may be native elsewhere in North America
SN	=	regularly occurring, but widely and unreliably distributed; sites for conservation hard to determine
SU	=	due to lack of information, no rank or range can be assigned (e.g., SUT2).
S?	=	not yet ranked (temporary)
N	=	Not currently listed, nor currently being considered for listing, by state or federal agencies.

**RANK EXPLANATIONS FOR FNAI GLOBAL RANK, FNAI STATE RANK,
FEDERAL STATUS AND STATE STATUS**

LEGAL STATUS

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

- LE = Listed as Endangered Species in the List of Endangered and Threatened Wildlife and Plants under the provisions of the Endangered Species Act. Defined as any species which 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 which is likely to become an endangered species within the foreseeable 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.

Kissimmee Prairie Preserve State Park

Designated Species—Plants

DESIGNATED SPECIES STATUS

Common Name	Scientific Name	FDACS	USFWS	FNAI
Florida butterfly orchid	<i>Encyclia tampensis</i>	CE		
Drysand pinweed	<i>Lechea divaricata</i>	E		S2
Catesby's lily; Pine lily	<i>Lilium catesbaei</i>	T		
Twinberry	<i>Myrcianthes fragrans</i>	T		
Florida beargrass	<i>Nolina atopocarpa</i>	T		S3
Cinnamon fern	<i>Osmunda cinnamomea</i>	CE		
Royal fern	<i>Osmunda regalis</i> var. <i>spectabilis</i>	CE		
Blueflower butterwort	<i>Pinguicula caerulea</i>	T		
Yellow butterwort	<i>Pinguicula lutea</i>	T		
Giant orchid	<i>Pteroglossaspis ecristata</i>	T	MC	S2
Hooded pitcherplant	<i>Sarracenia minor</i>	T		
Northern needleleaf	<i>Tillandsia balbisiana</i>	T		
Giant airplant	<i>Tillandsia utriculata</i>	E		

Kissimmee Prairie Preserve State Park

Designated Species—Plants

DESIGNATED SPECIES STATUS

Kissimmee Prairie Preserve State Park

Designated Species—Animals

DESIGNATED SPECIES STATUS

Common Name	Scientific Name	FWCC	USFWS	FNAI
FISH				
Opossum pipefish	<i>Microphis brachyurus</i>			S2
REPTILES				
American alligator	<i>Alligator mississippiensis</i>	SSC	T(S/A)	S4
Eastern indigo snake	<i>Drymarchon corais couperi</i>	T	T	S3
Eastern diamondback rattlesnake	<i>Crotalus adamanteus</i>			S3
Gopher tortoise	<i>Gopherus polyphemus</i>	SSC		S3
BIRDS				
Snowy Egret	<i>Egretta thula</i>	SSC		S3
Little Blue Heron	<i>Egretta caerulea</i>	SSC		S4
Tricolored Heron	<i>Egretta tricolor</i>	SSC		S4
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>			S3
Yellow-crowned Night-Heron	<i>Nyctanassa violacea</i>			S3
White Ibis	<i>Eudocimus albus</i>	SSC		S4
Glossy Ibis	<i>Plegadis falcinellus</i>			S3
Roseate Spoonbill	<i>Ajaia ajaja</i>	SSC		S2
Wood Stork	<i>Mycteria americana</i>	E	E	S2
Osprey	<i>Pandion haliaetus</i>			S3S4
Swallow-tailed Kite	<i>Elanoides forficatus</i>			S2
White-tailed Kite	<i>Elanus leucurus</i>			S1
Snail Kite	<i>Rostrhamus sociabilis</i>	E	E	S2

Kissimmee Prairie Preserve State Park

Designated Species—Animals

DESIGNATED SPECIES STATUS

Common Name	Scientific Name	FWCC	USFWS	FNAI
Bald Eagle	<i>Haliaeetus leucocephalus</i>	T	T	S3
Cooper's Hawk	<i>Accipiter cooperii</i>			S3
Short-tailed Hawk	<i>Buteo brachyurus</i>			S1
Crested Caracara	<i>Caracara plancus audubonii</i>	T	T	S2
Merlin	<i>Falco columbarius</i>			S2
Limpkin	<i>Aramus guarauna</i>	SSC		S3
Wood Stork	<i>Mycteria americana</i>	E	E	S2
Osprey	<i>Pandion haliaetus</i>			S3S4
Florida Sandhill Crane	<i>Grus canadensis pratensis</i>	T		S2S3
Whooping Crane	<i>Grus americana</i>	SSC	E,XN	SX,C
Burrowing Owl	<i>Speotyto cunicularia floridana</i>	SSC		S3
Florida Scrub-Jay	<i>Aphelocoma coerulescens</i>	T	T	S2
American Redstart	<i>Setophaga ruticilla</i>			S2
Worm-eating Warbler	<i>Helmitheros vermivorus</i>			S1
Bachman's Sparrow	<i>Aimophila aestivalis</i>			S3
Florida Grasshopper Sparrow	<i>Ammodramus savannarum floridanus</i>	E	E	S1
Burrowing Owl	<i>Speotyto cunicularia floridana</i>	SSC		S3
Florida Scrub-Jay	<i>Aphelocoma coerulescens</i>	T	T	S2
American Redstart	<i>Setophaga ruticilla</i>			S2

Kissimmee Prairie Preserve State Park

Designated Species—Animals

DESIGNATED SPECIES STATUS

MAMMALS				
Florida panther	<i>Puma concolor coryi</i>	E	E	S1
Round tailed muskrat	<i>Neofiber alleni</i>			S3

Kissimmee Prairie Preserve State Park

Designated Species—Animals

DESIGNATED SPECIES STATUS

Addendum 6—Priority Schedule And Cost Estimates

Kissimmee Prairie Preserve State Park

Priority Schedule And Cost Estimates

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

Resource Management

Natural Resources

1. Improve public awareness and encourage stewardship and protection of the natural resources through education, interpretation, and enforcement of rules and regulations. 0-10 years.
Estimated Cost: \$15,000.
2. Protect, Restore, and Maintain Native Plant and Animal Diversity, and Natural Resource Abundance.
 - A. Seek funding to complete inventory of vascular and nonvascular plants. 0-5 years.
Estimated Cost: \$45,000.
 - B. Seek funding to complete inventory of vertebrates. 0-5 years. **Estimated Cost: \$30,000.**
 - C. Seek funding to complete inventory of macroinvertebrates. 0-5 years. **Estimated Cost: \$60,000.**
 - D. Seek funding to locate, monitor, map, restore and maintain listed species. 0-10 years. **Estimated Cost: \$75,000.**
 - E. Continue to expand Florida Grasshopper Sparrow research. 0-10 years. **Estimated Cost: \$2,500,000.** (Note there is an \$800,000 grant pending approval.)
3. Maintain Prescribed Fire Program
 - A. Prescribe burn on a three-year rotation to perpetuate and restore the natural communities. 0-10 years. **Estimated Cost: \$830,000** (\$5/acre for total of 166,000 acres)
 - B. Secure funding to complete a perimeter firebreak. 0-5 years. **Estimated Cost: \$45,000.**
 - C. Secure funding for two slip-on units. 0-5 years. **Estimated Cost: \$20,000.**
 - D. Consider both threat of wildfire and complexity of prescribed fire program when developing and locating new facilities within the park. 0-10 years. **Estimated Cost: \$5,000.**
4. Establish and Maintain Invasive Exotic Plant and Animal Removal Program.
 - A. Seek funding to map, remove and monitor exotic plants. 0-10 years. **Estimated Cost: \$100,000.**

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

Kissimmee Prairie Preserve State Park

Priority Schedule And Cost Estimates

- B. Maintain a successful feral pig removal contract. 0-10 years. **Estimated Cost: \$5,000.**
- 5. Protect, Restore, and Maintain Natural Hydrological Regimes and Natural Water Quality Conditions.
 - A. Seek mitigation and/or grant monies to complete hydrological restoration of disturbed areas. 0-10 years. **Estimated Cost: \$500,000.**
 - B. Seek funding and appropriate assistance to establish surface water quality monitoring program. 0-10 years. **Estimated Cost: \$40,000.**
 - C. Seek funding for remediation of cattle dip vat sites. 0-5 years. **Estimated Cost: not available.**

Natural Resources Total: \$4,270,000 plus 1 unknown cost figure.

Cultural Resources

- 1. Protect and preserve the cultural resources of Kissimmee Prairie Preserve State Park. 0-10 years. **Estimated Cost: \$2,000 plus \$1,000/year in reoccurring costs.**
- 2. Conduct a Level I archaeological survey on recently acquired lands to determine the identity, location, and extent of any unrecorded prehistoric or historic archaeological sites. 0-2 years. **Estimated Cost: \$20,000.**
- 3. Develop and implement a written plan to protect and preserve the recorded cultural sites from erosion, animal and root damage, and vandalism. 0-5 years. **Estimated Cost: \$3,000.**
- 4. Pursue funding to interpret existing on-site cultural sites including Kilpatrick homestead. 0-2 years. **Estimated Cost: \$25,000.**
- 5. Seek grant funding for research projects to document the prehistory and history of the park, Kissimmee River Valley, Lake Okeechobee Basin, and surrounding area. 0-10 years. **Estimated Cost: \$2,000.**
- 6. Improve public awareness and encourage protection and stewardship of the park's cultural resources through education, interpretation, and enforcement of agency rules and regulations. 0-10 years. **Estimated Cost: \$5,000.**
- 7. Interpret the park's cultural resources in context to educate park visitors about the park and area history through interpretive signs and programs. 0-10 years. **Estimated Cost: \$6,000.**

Cultural Resources Total: \$63,000 plus \$10,000 reoccurring.

Visitor Services/Recreation

- 1. 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. Pursue funding for development of a swamp buggy and guided tours. 0-10 years. **Estimated Cost: \$80,000.**

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

Kissimmee Prairie Preserve State Park

Priority Schedule And Cost Estimates

- B. Develop opportunities for park visitors to accompany field staff conducting research. 0-10 years. **Estimated Cost: \$8,000.**
- C. Develop programs with the local public schools' environmental education programs. 0-10 years. **Estimated Cost: \$5,000.**

Visitor Services/Recreation Total: \$93,000.

Administration

- 1. Provide efficient and effective management of park resources and facilities while maintaining a high level of visitor service.
 - A. Meet staffing needs associated with routine maintenance, visitor services and park operations of the expanded public use facilities recommended in this plan through outsourcing contracts, seasonal and OPS workers or new FTE positions. 0-10 years. **Estimated Cost: \$70,000/year reoccurring.**
 - B. Meet staffing needs of the expanded resource management activities recommended in this plan through outsourcing contracts, seasonal and OPS workers or new FTE positions. 0-10 years. **Estimated Cost: \$ 70,000/year reoccurring.**
 - C. Provide universally accessible facilities in compliance with the Americans with Disabilities Act. 0-10 years. **Estimated Cost: \$15,000**
 - D. Assure that appropriate training is provided to all staff in visitor services, park information, resource management and emergency procedures. 0-10 years. **Estimated Cost: \$10,000.**
 - E. Coordinate water resources protection and management activities such as restoration, water quality monitoring, facilities design, permitting, construction and maintenance with the SFWMD, the DEP and others. 0-10 years. **Estimated Cost: \$3,000.**
 - F. Develop and implement strategies to provide opportunities and to recruit volunteers for the Preserve. 0-10 years. **Estimated Cost: \$10,000.**
 - G. Maintain a coordinated network of law enforcement agencies, including the Florida Park Patrol, other state agencies and applicable local governments for the protection of the natural and cultural resources of the state preserve and its visitors. 0-10 years. **Estimated Cost: \$1,000.**

Park Administration/Operations Total: \$39,000 plus \$140,000 reoccurring.

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

Kissimmee Prairie Preserve State Park

Capital Improvements

Development Area or Facilities	Cost
▪ Kilpatrick Hammock Gateway	3,348,943.75
▪ Mcguire Hammock Picnic Area	905,050.00
▪ Primitive Trailside Campsites	239,775.00
▪ River Camp	1,495,000.00
▪ Bridge	230,000.00
▪ Research Housing	\$575,000.00
▪ Support Facilities	\$215,625.00
▪ Road Stabilization	<u>\$724,500.00</u>
Total w/contingency	9,280,672.50

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

And

Land Management Review Report

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;

Descriptions Of Natural Communities Developed By FNAI

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.

Descriptions Of Natural Communities Developed By FNAI

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.

Descriptions Of Natural Communities Developed By FNAI

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

Descriptions Of Natural Communities Developed By FNAI

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 troglonec, troglophilic, and troglotic organisms.

Aquatic Cave - cavernicolous area permanently or periodically submerged; often characterized by troglotic 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 Of Natural Communities Developed By FNAI

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

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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]

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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

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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,

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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

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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

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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.).

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- (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

**Management Procedures For
Archaeological And Historical Sites And Properties
On State -- Owned Or Controlled Lands
(Revised August, 1995)**

Land Management Review of Kissimmee Prairie Preserve State Park

Okeechobee County (Lease No. 3672): February 25, 2003

Prepared by Division of State Lands Staff

William Howell, OMC Manager
Ginny Morris, Administrative Assistant

For

Kissimmee Prairie Preserve State Park Review Team

Final: May 28, 2003

Land Manager:	DRP
Area:	53,764.78 Acres
County:	Okeechobee County
Mngt. Plan Revised:	12/08/1998
Mngt. Plan Update Due:	12/08/2003

**Kissimmee Prairie Preserve State Park
Land Management Review Report—February 25, 2003**

Management Review Team Members

Agency Represented	Team member Appointed	Team member In attendance
DEP/DRP	Rosi Mulholland	Sally Braem
DEP South Florida District	Mary Murphy	Mary Murphy
DACS/DOF	Bill Korn	Bill Korn
FWCC	Tim Regan	Tim Regan
Soil and Water Conservation	Mary Ann Goza	Mary Ann Goza
County Commission	Darrell Enfinger	Darrel Enfinger
Conservation Organization	Jim Murrian	Jim Murrian
Private Land Manager	Alec Fulford	Alec Fulford
Observer (SFWMD)	Jeff MacLemore	Jeff MacLemore
Observer (ARC Member)	Dr. Hilary Swain	Dr. Hilary Swain

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 Kissimmee Prairie Preserve State Park considered approximately 38,134 acres in Okeechobee County that are managed by the Division of Recreation and Parks. 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 revised the management plan on December 8, 1998, and the management plan update is due on December 8, 2003.

Review Team Determination

**Kissimmee Prairie Preserve State Park
Land Management Review Report—February 25, 2003**

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

All team members agreed that Kissimmee Prairie Preserve State Park 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 and staff for their outstanding management of the dry and wet prairie, for improving and monitoring the habitat of the grasshopper sparrow, and for the hydrological restoration of the sloughs and the areas that were used for tomato fields.

Exceptional Management Actions

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

Exceptional management actions

1. Management and protection the dry prairie, prairie hammock, scrubby flatwoods, slough/swale, and wet prairie communities.
2. Protection and preservation of listed animals.
3. Excellent job of prescribed burning of areas that require fire. Also, excellent fire return intervals, and excellent quality of prescribed burns.
4. Excellent job of restoring the slough and prairie communities.
5. Excellent control of non-native animals.
6. Exceptional job of installing culverts to restore hydrology.
7. Excellent boundary surveys, gates and fencing.
8. Excellent parking, roads and sanitary facilities.
9. Exceptional identification of, and success with, acquiring in-holdings.
10. Excellent use of grazing to manage areas that can not be immediately restored.

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. The team recommends that DRP coordinate with the SFWMD to implement water quality and quantity testing and develop a hydrological model for surface water in order to guide future restoration and to evaluate the effectiveness of the current restoration efforts.

Manager's Response: Agree. We will seek support from the SFWMD and other sources to monitor the

Kissimmee Prairie Preserve State Park
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quality and quantity of surface water.

2. The team recommends that DRP more closely coordinate with the Division of Forestry on wildfire response, to reduce impacts from plow lines.

Manager's Response: Agree. A special meeting was held earlier this year with the DOF District Manager and the two Forest Area Supervisors to address our concerns and methods to reduce impacts of fire plows.

3. The team recommends that the DRP continue encouraging the SFWMD to restore fire into the floodplain marsh area to evaluate the effectiveness of this form of restoration treatment.

Manager's Response: Agree. We will continue ongoing efforts to educate SFWMD staff to the important role of fire in maintaining the river marsh area.

4. The team recommends that no additional recreational improvements that require staff resources, be implemented, until additional staffing or outsourcing is provided.

Manager's Response: Agree. We agree that new recreational improvements need to be adequately staffed to avoid detrimental impacts upon the valuable natural resources of the preserve. In order to properly maintain the resources, additional staff must be provided to support any new recreational development and uses.

5. The team recommends that the three sections of land south of the preserve be acquired as soon as feasible, to facilitate hydrological restoration, and to add valuable wetland resources to the preserve.

Manager's Response: Agree in part. We realize this area contains good quality dry prairie habitat and is important to the hydrological restoration of the Duck Slough system, to the preservation of the imperiled dry prairie ecosystem (an endemic Florida ecosystem), and to the survivorship of the endangered Florida grasshopper sparrow. However, before adding it to the optimum boundary, we will need to evaluate the feasibility of acquiring Sections 8, 9, and 17 of R33E T34S. It appears that at least one of the sections has been subdivided into as many as 1,000 lots and may be owned by many different individuals. If this is true, under the States voluntary purchase program, it would be impossible to procure all of the small parcels of land and to be able to properly manage, hydrologically restore, and protect the dry prairie and wetland resources in the area. However, if acquisition is determined to be feasible, the purchase of these sections should be supported and funded from the Florida Forever Program.

6. The team recommends that more aggressive action be taken, particularly in the floodplain area, to remove invasive plants.

Manager's Response: Agree. The mapping of exotic invasive plants is ongoing and the park staff has submitted a grant application to fund removal work. Returning fire to the floodplain will greatly aid in this endeavor.

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). These items need to be further addressed in the management plan update.

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1. Discussion in the management plan of the potential negative impacts from the expanding development south of the preserve.(p)

Manager's Response: Agree. A section will be added to the next updated UMP to address the impacts of offsite development on the preserve.

2. Discussion in the management plan of the need to coordinate management planning with the Avon Park managers.(f,p)

Manager's Response: Agree. DRP will continue to coordinate with Avon Park on resource management issues concerning scrub-jay and grasshopper sparrow and on other matters including UXO needs and boundary issues and will briefly discuss that coordination is occurring in the next updated UMP.

3. Discussion in the management plan of the need to burn and restore the floodplain marsh communities.(f)

Manager's Response: Agree. The draft of the next updated UMP has already addressed this need.

4. Discussion in the management plan of the need to monitor ground water quantity and surface water quality and quantity.(f)

Manager's Response: Agree. See the response to 1 of the Recommendations and the response to 3 above.

5. Discussion in the management plan of need for additional law enforcement presence.(f)

Manager's Response: Agree. The next updated UMP plan will include comments on the need for additional law enforcement.

6. Discussion in the management plan of need for additional staff, funding and equipment.(f)

Manager's Response: Agree. See the response to 3 above.