ECONFINA RIVER STATE PARK

UNIT MANAGEMENT PLAN

APPROVED

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

April 21, 2006

Department of Environmental Protection

Jeb Bush
Governor

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard, MS 140
Tallahassee, Florida 32399-3000
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Colleen Castille
Secretary

May 31, 2006

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

Re: Econfina River State Park Lease # 3540

Dear Ms. White:

On April 21, 2006, the Acquisition and Restoration Council recommended approval of the Econfina River 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 Econfina River 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 21, 2016.

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

Sincerely,

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

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INTRODUCTION

Econfina River State Park is located along the southern extent of the Econfina River in southwest Taylor County (see Vicinity Map). Currently the park contains 4,528.26 acres. Access to the park is from County Road 14 off U.S. Highway 98 (see Reference Map). The vicinity map also reflects significant land and water resources near the park.

The great majority of this park is a wetland wilderness. Significant natural features include a high quality salt marsh. This area is contiguous with the vast salt marsh community stretching from Wakulla County to Pasco County and representing one of the most extensive, intact salt marsh communities in the U.S. The park also contains large expanses of hydric hammock. These low lying, closed canopy hardwood forests harbor a great many plant and animal species, including the rare corkwood tree.

At Econfina River 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. The park was acquired in 1988 using Save Our Coast funds (see Addendum 1).

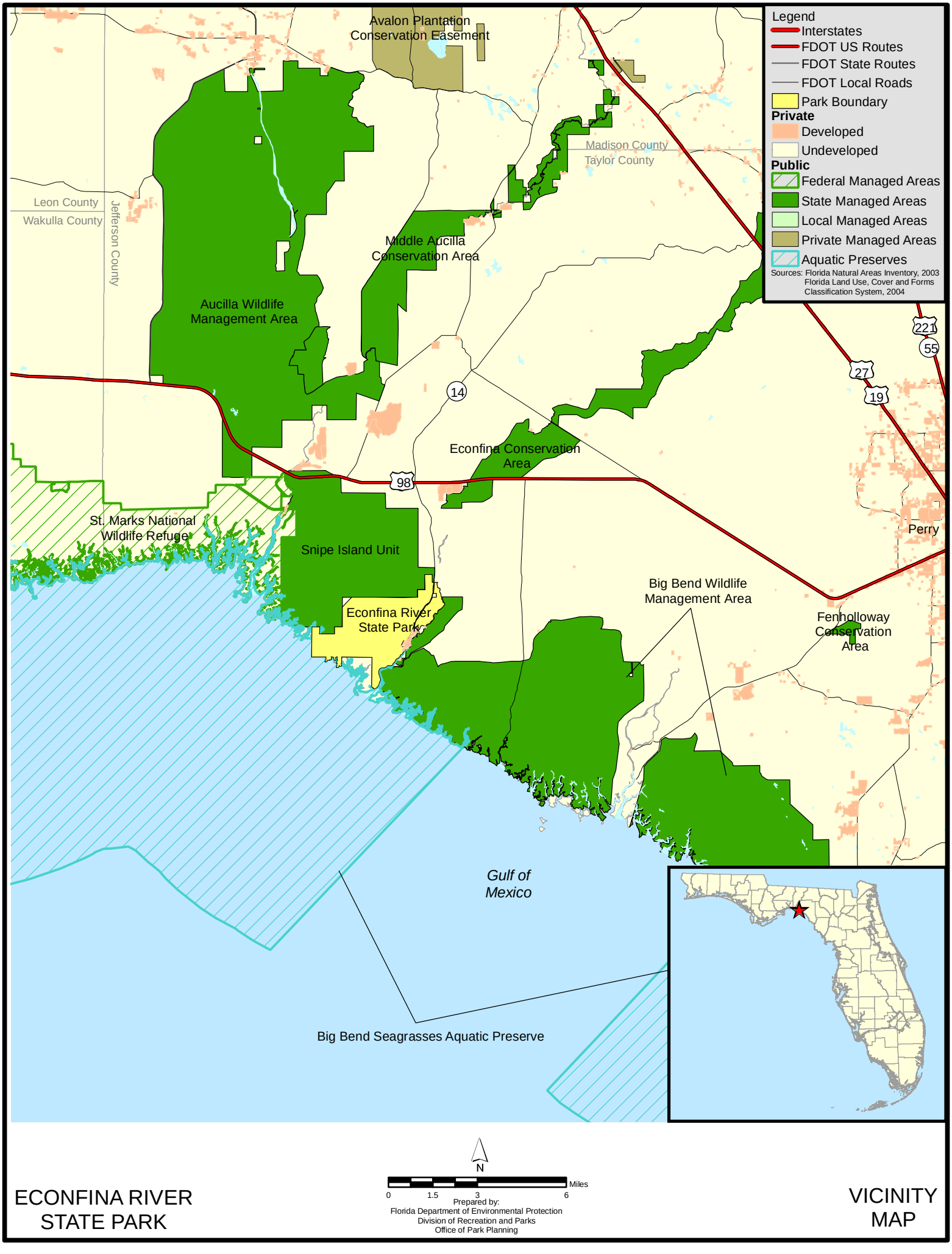
PURPOSE AND SCOPE OF THE PLAN

This plan serves as the basic statement of policy and direction for the management of Econfina River State Park as a unit of Florida's state park system. It identifies the objectives, criteria and standards that guide each aspect of park administration, and sets forth the specific measures that will be implemented to meet management objectives. The plan is intended to meet the requirements of Sections 253.034 and 259.032, Florida Statutes, Chapter 18-2, Florida Administrative Code, and intended to be consistent with the State Lands Management Plan. With approval, this management plan will replace the September 2, 1999 approved plan. All development and resource alteration encompassed in this plan is subject to the granting of appropriate permits; easements, licenses, and other required legal instruments. Approval of the management plan does not constitute an exemption from complying with the appropriate local, state or federal agencies. This plan is also intended to meet the requirements for beach and shore preservation, as defined in Chapter 161, Florida Statutes and Chapters 62B-33, 62B-36 and 62R-49, Florida Administrative Code.

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

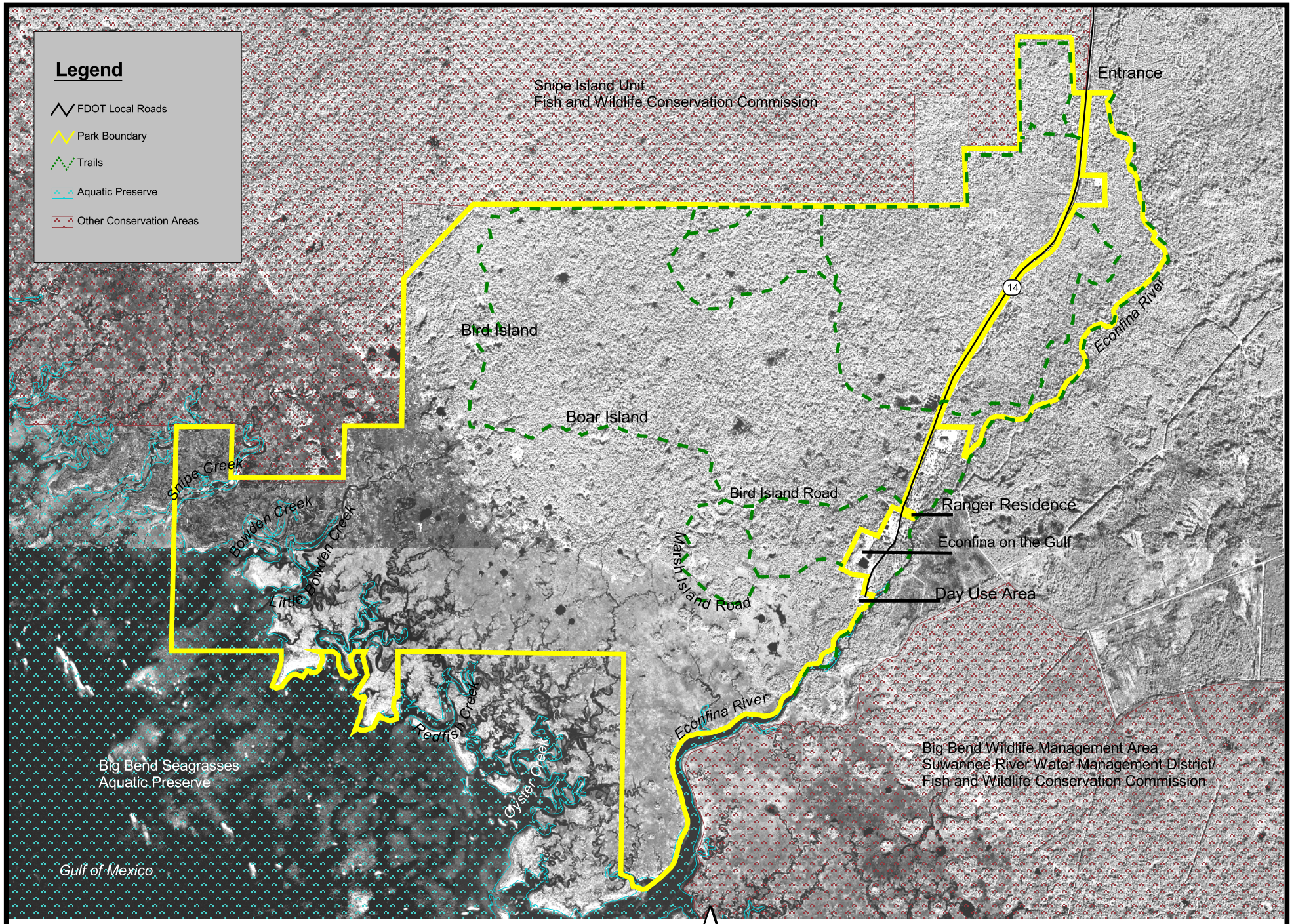
The land use component is the recreational resource allocation plan for the unit. Based on considerations such as access, population and adjacent land uses, an optimum allocation of the physical space of the park is made, locating use areas and proposing types of facilities and volume of use to be provided.

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



ECONFINA RIVER STATE PARK

VICINITY MAP



ECONFINA RIVER STATE PARK

REFERENCE MAP

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

it was determined that some level of selective timber removal, for the exclusive intent of natural community restoration could be accommodated in a manner that would be compatible and not interfere with the primary purpose of resource-based outdoor recreation and conservation. This compatible secondary management purpose is addressed in the Resource Management Component of the plan. Uses such as, water resource development projects, water supply projects, stormwater management projects, linear facilities and sustainable agriculture and forestry (other than those forest management activities specifically identified in this plan) are not consistent with this plan or the management purposes of the park.

The potential for generating revenue to enhance management was also analyzed. Visitor fees and charges are the principal source of revenue generated by the park. It was determined that selective timber removal efforts, related to natural community restoration, would be appropriate at this park as an additional source of revenue for land management since it compatible with the park's primary purpose of resource-based outdoor recreation and conservation.

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. The agreement is intended to provide additional protection to resources of the park and nearshore areas and to provide authority to manage activities that could adversely impact public recreational uses.

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

In the management of Econfina River State Park, a balance is sought between the goals of maintaining and enhancing natural conditions and providing various recreational opportunities. Natural resource management activities are aimed at management of natural systems. Development in the park is directed toward providing public access to and within the park, and to providing recreational facilities, in a reasonable balance, that are both convenient and safe. Program emphasis is on interpretation of the park's natural, aesthetic and educational attributes.

Park Goals and Objectives

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

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

Natural and Cultural Resources

1. Protect, restore and maintain natural hydrological regimes and water quality conditions.
- **A.** Assess hydrological patterns. Identify blockages to natural sheet flow and improve hydrology using culverts and, if practical, bridges.
- **B.** Coordinate with DEP and SRWMD to consider the value of installing one or two monitoring wells on the property.
- **C.** Coordinate with the DEP and SRWMD to consider the need to collect baseline data of surface waters within the park.

2. Protect and maintain native plant species diversity, and natural relative abundance.
- **A.** Continue surveys in order to compile an accurate and complete list of biota, with emphasis placed on identification of listed species.
- **B.** Contact the biological departments of the various Florida State Universities to communicate the need for additional botanical surveys of the park.

3. Protect, restore and maintain natural communities.
- **A.** Control unauthorized access and activities through maintenance of gating, fencing and signage.
- **B.** Reintroduce fire into appropriate mesic flatwoods areas in conjunction with timber management / restoration efforts.
- **C.** Continue feral hog removal. Evaluate the feasibility of installing hog-proof fencing.
- **D.** Continue to evaluate the road system and consider closing roads that are not used for

resource management or recreation.

4. Maintain management measures for cultural resources.
   - **A.** Periodically monitor recorded archaeological sites using GPS/GIS and photo points.
   - **B.** Review all planned ground disturbing activities according to DHR Guidelines in addition to the Guidelines for ground-Disturbing Activities On Park Lands, DRP/DHR Compliance Review Matrix
   - **C.** Request funding for a phase 1 archaeological resource survey of the park.

Recreational Goals

1. Continue to provide quality resource based outdoor recreational and interpretive programs and facilities at the state park.
   - **A.** Maintain trails for hiking and equestrian use.
   - **B.** Maintain boat launch and picnic area for day use.
     - **1)** Monitor overflow-parking area for degradation due to overuse.
2. Seek funding to expand recreational and interpretive opportunities through the improvement of programs and the development of new use areas and facilities, as outlined in this management plan.
   - **A.** Provide opportunities for overnight visits to the park**.**
     - **1)** Develop a group camp with facilities for equestrian use.
     - **2)** Develop primitive campsites accessible to hikers, equestrians and paddlers.
   - **B.** Establish trailheads and viewing opportunities along trails**.**
     - **1)** Develop a hiking trailhead with stabilized parking, informational kiosks, sign-in station and composting restroom.
     - **2)** Construct an overlook of marsh.
     - **3)** Coordinate with other agencies to link trails systems.
   - **C.** Increase interpretation opportunities.
     - **1)** Renovate existing building to a use concurrent with the parks mission.
     - **2)** Develop displays explaining the ecological systems within the park.
   - **D.** Design day use area for visitor safety and expanded use.
     - **1)** Re-configure parking and access drive to the boat ramp.
     - **2)** Establish picnic area near waterfront.
     - **3)** Define parking areas.
     - **4)** Repair or rebuild dock for current needs.

Park Administration/Operations

1. Provide quality administrative and operational services.
   - **A.** Provide staff with appropriate training opportunities in visitor services, resource management, park operations and interpretation.
   - **B.** Maintain park amenities, signage and support facilities in good repair.
2. Provide support facilities adequate for park surveillance and maintenance.
   - **A.** Establish a ranger residence closer to the park entrance.
   - **B.** Establish a shop area with building to house maintenance equipment and an office.

Management Coordination

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

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

existing within park boundaries. In addition, the FFWCC aids the Division with wildlife management programs, including the development and management of Watchable Wildlife programs. The Department of State, Division of Historical Resources (DHR) assists staff to assure protection of archaeological and historical sites. The Department of Environmental Protection (DEP), Office of Coastal and Aquatic Managed Areas (CAMA) aids staff in aquatic preserves management programs. The Big Bend Seagrasses Aquatic Preserve is adjacent to the park.

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 Monday, October 17, 2005. The purpose of this meeting was to present this draft management plan to the public. An Advisory Group meeting was held on Tuesday, October 18, 2005. The purpose of this meeting was to provide the Advisory Group members the opportunity to discuss this draft management plan.

Other Designations

Econfina River 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 park is a component of the Florida Greenways and Trails System.

All waters within the unit have been designated as Outstanding Florida Waters, pursuant to Chapter 62-302 Florida Administrative Code. Surface waters in this unit are also classified as Class III waters by DEP. This unit is bordered by the Big Bend Seagrasses 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

Econfina River property is a low, flat, often wet part of an extensive zone of similar topography known as the Gulf Coastal Lowlands. Over 90 percent of the Econfina property stands at an elevation of eight feet above mean low water or lower. The great majority of the property's natural communities are wetlands, or areas that are at least seasonally inundated. The highest point on the property (11-12 feet) is located on the most northerly finger of the park west of County Road 14.

The Econfina property gradually slopes from disturbed flatwoods, through hydric hammock, to a band of marine-influenced coastal salt marsh toward the Gulf. The salt marsh, which fringes the irregular low wave energy coastline, is dissected by numerous tidal creek branches and drainages from interior freshwater seepage areas. Some creeks connect to circular ponds presumably of sinkhole origin. More than 30 scattered hammock islands occur on marshy limestone pinnacles or relic sand dunes of three to five feet in elevation. Some of these islands are part of the expansive marsh vista.

Econfina topography has been altered by road construction throughout the tract. Raised roadbeds have been constructed throughout the hydric hammock and connect with some of the higher,

isolated island areas such as Boar Island and Bird Island. Small borrow pits and ditches occur throughout the park usually in conjunction with dredge and fill maintenance, or construction of adjacent lesser roads. Three large borrow pits that were created for roadbed fill remain along County Road 14.

Geology

The Econfina River property rests on an ancient marine terrace within the Gulf Coastal Lowlands. Pleistocene seas alternately flooded and retreated from this region, depositing a step-like series of marine terraces. Econfina is situated within the lowest, the Silver Bluff Terrace.

Two limestone strata, the Ocala and the Suwannee, characterize Taylor County geology. Eocene age Ocala Limestone, the lower strata, is an important unit of the Floridan Aquifer system. Oligocene Suwannee Limestone is the uppermost unit under all of western Taylor County, including Econfina. The formation forms a regionally flat, seaward sloping karst plain in coastal Jefferson and Taylor Counties.

At Econfina, the top of the Suwannee Limestone varies in depth from surface outcrop to about 30 feet below the surface. The limestone surface is highly eroded, containing numerous solution pipes, holes, small caves, sinks and pinnacles. Although some of these features may be seen on Econfina, they are generally masked by in-filling with younger, unconsolidated sands and clayey sands. In shallower spots of the Econfina River, the Suwannee Limestone bed is visible and forms shoals separating deeper pools.

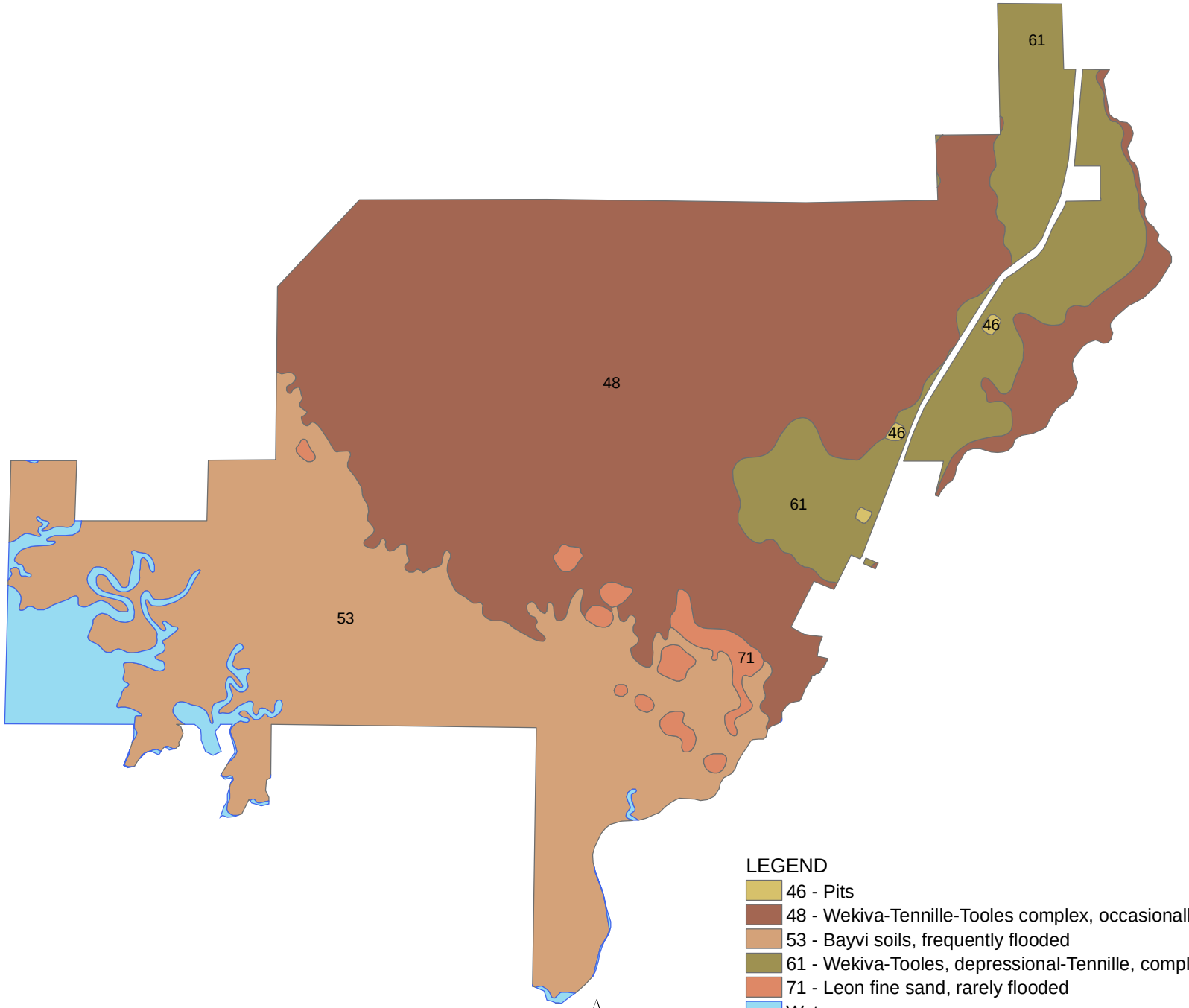
The Suwannee Limestone is the uppermost component of the Floridan aquifer system in western Taylor County. Numerous shallow domestic wells draw freshwater from this component, and at Econfina, freshwater discharges through numerous small springs and seeps.

Soils

Taylor County soils had just recently been surveyed by the Natural Resources Conservation Service at the time this plan was written. Consequently, this information had not yet been published by the time this plan was finalized (see Addendum 3). The specific soils information will therefore be added in the next management plan update. For the purposes of this plan, however, soils descriptions from comparable areas in adjacent Wakulla County can be used.

The soils of Econfina River State Park are similar to the nearby soils of St. Marks National Wildlife Refuge Area and the Aucilla Wildlife Management Area as presented on the general soils map for that county. Coastal marsh soils in the Refuge are mapped as Bayvi-Isles-Estero soils. At Econfina, comparable habitats are those covered by needlerush, sawgrass and cordgrass. Flatwoods areas are marked as Tooles-Nutall-Chaires fine sands on the Wakulla County map. These are wet sandy soils, sometimes loamy subsoil with limestone beneath. These soils are similar to those soils of the flatwoods at Econfina River and the high, isolated islands covered by scrubby oaks. Soils of the hydric hammock and bottomland forest are probably Tooles-Nutall, soils of depressions and drainage way. These, according to the USDA 1988 description, are nearly level, very poorly drained sandy soils that have loamy subsoil underlain by limestone.

At Econfina River, efforts to restore natural surface flow hydrology and native plant communities will continue in order to provide for the conservation of soil resources and for the control and prevention of soil erosion.



ECONFINA RIVER
STATE PARK

SOILS MAP

Minerals

There are no known records of commercial limestone mining within Econfina other than for the purpose of local roadbed construction. Recent limestone and dolomite mining activities have occurred throughout Taylor County and two active mines are located approximately five miles north of the tract in the Powell Hammock area.

Chert, synonymous with flint, is a hard, dense sedimentary rock consisting of very small interlocking quartz crystals. It can be found deposited as concretions or nodules within limestone on the Econfina tract. When chert fractures, its surface remains smoothly curved. Econfina chert was worked on site by Native Americans to produce hand cutting or scraping tools and projectile points. This is evidenced by scattered chert debitage on some areas of the property, and an Archaic Period chert quarry (Master Site File 8TA0033) located just off the Econfina property.

Hydrology

Both surface and subsurface hydrological factors, in conjunction with soils and topography, will be important factors in determining utilization for recreation.

The bulk of Taylor County's consumptive water is drawn from near-surface limestone of the Floridan aquifer. The top of this aquifer locally corresponds to the top of the Suwannee Limestone that is zero to 30 feet below the surface. The shallow sands and clayey sands commonly contain freshwater which is in hydrologic continuity with the underlying limestone of the Floridan aquifer. Domestic wells near the coast are typically drilled into the limestone to depths of 10 to 80 feet, though some deeper wells in excess of 100 feet reach the Ocala Limestone. Locally, the portion of the Floridan aquifer containing potable water may attain a thickness in excess of 500 feet.

The potentiometric gradient within the Floridan aquifer is to the southwest near the Econfina River and it drops from about 10 feet, several miles inland from the property, to zero near the mouth of the Econfina River. When the potentiometric surface exceeds the elevation of the land, discharge from the Floridan aquifer occurs through springs and seeps.

The most well developed spring is Milnor Spring, an intermittently flowing spring with a bowl about 20 yards wide and less than 15 feet deep. Divers entering the spring bowl during a no flow period found the vent impassable and clogged with submerged logs. A slough, sometimes seasonally dry, connects the spring with the Econfina River located about 400 yards away. Recharge to the Floridan aquifer occurs from an average yearly rainfall of 52 inches in northeastern Taylor County. Some recharge occurs in the unit, but most occurs in high-recharge areas in neighboring Lafayette, Suwannee and Madison Counties.

The principle surface hydrological feature is Econfina River on the property's eastern boundary. This river is not to be confused with Econfina Creek in Washington and Bay Counties. The Econfina River begins at the Taylor-Madison county line in the swamps of San Pedro Bay. It winds for 43 miles in a southwesterly direction across Taylor County and empties into the Gulf of Mexico. This blackwater river drains about 299 square miles of rural area comprised mainly of low elevation woodland communities.

The Econfina is considered a small river, compared to other Florida rivers. At its upper reaches, it has an average flow of 135 cubic feet per second. The river remains narrow and creek-like for much of its distance until a few hundred yards upstream of the Econfina Landing where it widens to 75 to 100 feet. Moving downstream, the Econfina continues to widen, reaching 600 feet at the

end of the property, which is roughly 1.6 miles below the Econfina Landing. Within another .6 miles, the river terminates at the open Gulf and is approximately 1500 feet wide at its mouth. Depths vary from a few inches at limestone shoals to over 10 feet.

The Econfina River is tidally influenced at least as far upstream as the Econfina Landing. Although the mean coastal variation is only about two feet, combinations of conditions such as prolonged southerly winds holding water in the river, and spring tides, can produce a tidal range of four feet at the Econfina Landing.

The 1990 DNR *Florida Rivers Assessment* reported Econfina River water quality to be good. However, there has been some water quality degradation since the 1970s though the cause is unclear.

Numerous tidal creeks and streams, tidal swamps, dome swamps, marsh lakes, swamp lakes and tidal marshes occur throughout the unit. Because of its low elevation, the entire tract is greatly affected by hydrological forces such as precipitation, tidal variation and tropical storms. Due to these forces, a great percentage of the property is regularly inundated. Landward of the coastal marsh, it is primarily the hydric hammock community that becomes flooded, but with excessive rainfall, adjacent flatwood communities may also be flooded. Regardless of the time of year, regular thundershower activities can render large areas of the property inaccessible by vehicle for extended periods.

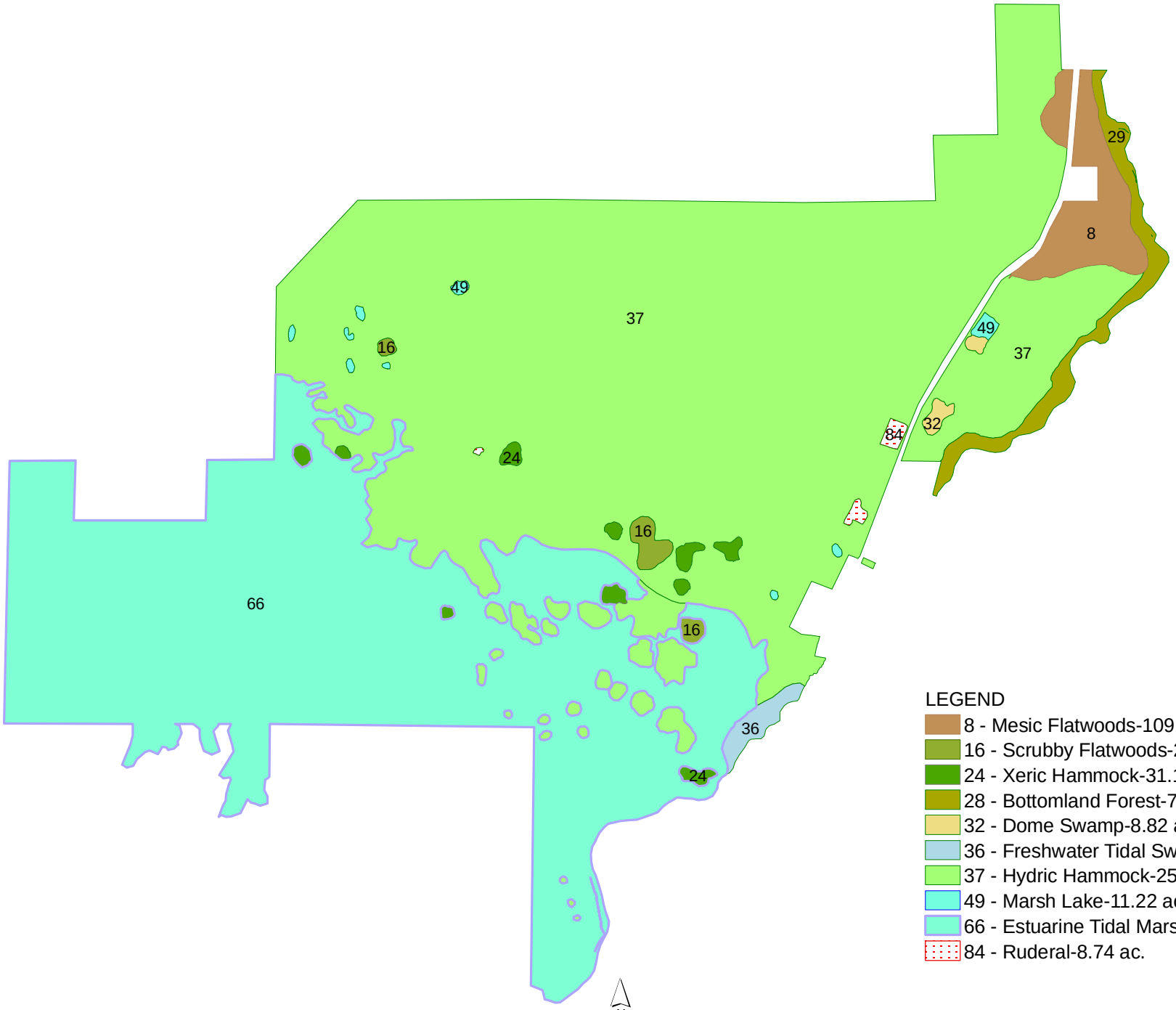
Econfina's very low elevation and immediate proximity to the coast make it very vulnerable to hurricanes and associated storm surges. These events completely flood the entire Econfina tract. The upriver location of Econfina Landing and the buffering of an expansive marsh does not provide protection from this aspect of a hurricane, additionally the southwest facing coastline of this part of the Big Bend generally receives larger waves during storms which results in more severe coastal erosion.

Natural Communities

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

The park contains nine 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.

Management of two additional natural communities, estuarine mollusk and estuarine seagrass bed, fall under the jurisdiction of the Division of State Lands. The estuarine mollusk reef community is an unsurveyed region of oyster bars occurring at the mouths of Snipe, Bowden and Little Bowden Creeks. The estuarine seagrass bed community is an unsurveyed, near shore fragment of what is probably one of the most extensive and important natural communities on



ECONFINA RIVER
STATE PARK

NATURAL COMMUNITIES
MAP

the Florida West Coast. That portion within state waters has been incorporated into the Big Bend Seagrasses Aquatic Preserve.

Mesic flatwoods. The mesic flatwood community is one of the park's most heavily disturbed natural communities. For restoration purposes, this community will retain its natural community designation as opposed to being given a ruderal classification. Institution of prescribed fire will be an important step.

The mesic flatwoods have been heavily exploited because the higher elevation and drier conditions made pine removal less difficult. The entire community was logged two or more times, most recently clear-cut in the mid- 1980s, and replanted with slash pine. The largest remnant slash pines in this community, found along fence lines, are 65 to 80 years old.

The small area of mesic flatwoods located in the northeast portion of the park has been converted to pine plantation. As a result, there is less herbaceous ground cover at lowered densities. Off-site hardwoods and shrubs have moved in as well. Pines were planted at a density of approximately 350 - 400 pines per acre. The dominant remaining flora includes slash pine, loblolly pine, live oak, laurel oak, water oak, saw palmetto, wax myrtle, gall berry, blueberries, St. John's wort and bracken fern.

Within the mesic slash pine flatwoods are two ephemeral wetlands. Initial surveys revealed that dozens of wildlife species utilize this wetland, including 20 to 30 species of amphibians and reptiles. In an average year, it is estimated that thousands of amphibians hatch out in this wetland.

Dominant vegetation within the pond is buttonbush, coastal plain willow and mermaid weed. This wetland has been altered by a powerline right-of-way that has been cut through it to reach a hunting camp across the river. Efforts to protect this wetland from further degradation should be made.

Initial wildlife surveys have yet to be conducted for the ephemeral wetland located to the south. It is smaller and retains water for a shorter period, but is also valuable. Further studies should be conducted at this site.

Scrubby flatwoods. The scrubby flatwoods community has been impacted by logging in the mid-1980s and replanted with slash pine. At some sites within this community remnant, sand ridges have been scraped down, removed and used for fill.

Dominant remaining flora includes slash pine, sand live oak, myrtle oak, saw palmetto, rusty lyonia and sparkleberry.

Typical management of such an area would involve infrequent fires. Yet given the areas proximity to the Gulf of Mexico, hurricanes and tropical storms may also have a significant influence on shaping natural conditions and process. The elevated scrubby flatwoods has maintained delineation from surrounding communities.

Xeric hammock. This community type is primarily restricted to the driest, highest centers of coastal hydric hammock. These areas were once dunes and have remained slightly elevated above the surrounding marsh or hammock. Despite planting of slash pines in some areas, this community is in fair condition. The dominant flora includes live oak, laurel oak, saw palmetto,

various Vacciniums, beautyberry, St. John's Wort and yaupon holly.

Bottomland forest. The bottomland forest community occurs as a narrow band along the Econfina River. This community has received only minor impact as the result of some logging.

Dominant flora includes water oak, live oak, swamp chestnut oak, diamond-leaf oak, red maple, sweetgum, river birch, southern magnolia, American elm, dogwood, redbud, American holly, wax myrtle, cabbage palm, loblolly pine and slash pine.

Dome. These areas have been heavily disturbed by logging activities for cypress, and are merely remnants of the former community. In addition, feral hogs have been a problem, rooting up vegetation and damaging this community in search of food.

Dominant remaining flora includes pond cypress, swamp tupelo, slash pine, red maple, swamp bay, sweet bay, netted-chain-fern, poison ivy, Spanish moss, coastal plain willow, giant cane, wax myrtle, St. John's wort, sawgrass, lizard's tail, water hyssop, buttonbush and green arum.

Freshwater tidal swamp. The freshwater tidal swamp community occurs south of the boat ramp, as a narrow band running for approximately one-half mile along the Econfina River upstream of normal surface intrusion of salt water. A major continual impact to this community is wave action from boat wakes that may increase erosion. It also receives periodic saltwater intrusion from higher than average tides associated with tropical weather events and severe spring tides.

Dominant flora includes cabbage palm, bald cypress, southern magnolia, red cedar, swamp bay, wax myrtle, saltbush and pickerelweed.

Hydric hammock. While mapped as a single community in this plan hydric hammock as it occurs in this park is best described by three sub associations as follows: inland hydric hammock, coastal hydric hammock and mesic hydric hammock.

The inland hydric hammock sub association is one of the single largest areas of this type in the Florida state park system. It is a wet, calcareous, diverse hardwood hammock with a variety of midstory and overstory tree species forming a dense canopy. Understory vegetation tends to be sparse and aggregated on slightly more elevated sites. Dominant flora includes cabbage palm, diamond-leaf oak, red cedar, swamp ash, black gum, red maple, swamp bay, sweetbay, water oak, southern magnolia, wax myrtle, saw palmetto, poison ivy, yaupon holly, American holly, hackberry, sweetgum, loblolly pine, American elm, swamp chestnut oak, peppervine, Virginia creeper, lizard's tail, giant cane, purple and blue flag iris, sawgrass, carex, and ferns. The inland hydric hammock acts as a buffer and filtering system for the adjacent coastal marshes and estuarine community. The community itself receives little direct marine influence.

The inland hydric hammock has received some impacts from road building and associated digging of borrow pits. This community tends to become flooded and remains inundated for several weeks to months at a time. Slightly higher elevations within this community have experienced pine, cedar and select hardwood removal. Palm harvesting was conducted during the 1980s for commercial landscaping purposes, and in some areas, numerous holes remain in the ground from where these palms were removed. The primary management measure for this community would be to insure natural hydrological patterns remain intact.

The coastal hydric hammock sub association occurs on scattered islands within the tidal marsh, and on a low chain of discrete, slightly elevated islands strung along an ecotonal area, separating the high salt marsh from other interior plant communities. Some areas within this ecotone show some of the characteristics of Prairie Hammock. This sub association is regularly affected by marine influences. The coastal islands, within the tidal marsh, generally consist of an outer vegetative ring of cabbage palm, red cedar and Christmas berry, which is the more heavily marine-influenced hammock portion of the islands. The center of an island may consist of wet-mesic flatwoods (slash pine-saw palmetto), an oak-dominated xeric hammock community or some combination thereof. Alternatively, the island may be uniformly coastal hydric hammock. A history of severe disturbance such as fire or storms or a combination of both may favor greater densities of slash pines and cabbage palms on some islands. Dominant flora includes cabbage palm, saw palmetto, red maple, swamp bay, water oak, live oak, laurel oak, southern magnolia, red cedar, slash pine, loblolly pine, wax myrtle, yaupon holly, Christmas berry, saltbush, greenbriar, poison ivy and sawgrass.

The final mesic hydric hammock is a drier, mixed pine hardwood sub association. Dominant flora includes cabbage palm, red cedar, wax myrtle, saw palmetto, yaupon holly, American holly, slash pine, loblolly pine, live oak, laurel oak and southern magnolia. Overstory and midstory trees not usually found this close to the coast include pignut hickory and spruce pine. Both these tree species have also been noted as occurring rarely in mesic hammock pockets on the St. Marks National Wildlife Refuge (Rheinman, 1989). Overall, this community resembles mesic mixed pine-hardwood forests found further inland dominated by magnolia and hickory. This community occurs as a series of slightly elevated islands. It grades into coastal hydric hammock, marine tidal marsh, and inland hydric hammock.

Marsh lake. The larger marsh lakes are identified on the natural communities map. Numerous small marsh lakes occur throughout the tract, including some inaccessible brackish coastal marsh lakes. These were not mapped or surveyed due to small size and inaccessibility.

The dominant freshwater marsh lake vegetation includes spikerush, St. John's wort, coastal plain willow, maidencane, wax myrtle, buttonbush, pickerelweed, starrush, bulrush and cattails. Sawgrass is the overall dominant plant.

Estuarine tidal marsh. This community is part of a continuous natural community running from Wakulla County southward through Pasco County. This community may be one of the most extensive marshes in the United States, and is the pristine community in this park. The estuarine tidal marsh community is extremely important because of the numerous wildlife species that either utilize the marsh directly for food or shelter during some phase of their life cycles, or indirectly rely on the high productivity of the marsh. The marsh also acts as a buffer and filter at the land/sea interface, protecting both the marine and upland environments.

Dominant flora consists of black needlerush, saltgrass, saltmeadow cordgrass, Distichlis, gulf cordgrass, marsh elder, sea oxeye, marsh fleabane, perennial glasswort, saltbush and Christmasberry.

At various locations where hydric hammock interfaces with slender fingers of estuarine tidal marsh there is an ecotonal band including freshwater species (too narrow to map). These include sawgrass, soft rush, cattails, and bulrush.

Ruderal. These areas consist primarily of borrow pits, and past logging and palm harvested

areas. Borrow pits occur throughout the unit. These areas were formed when fill was taken for roads and other construction activities. The larger borrow pits now form temporary and permanent lakes.

Developed. These areas include roads, parking lots, public use and boat ramp areas, and residential areas.

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.

Corkwood *Leitneria floridana*, has been positively confirmed within the park. This species occurs throughout the hydric hammock community along roadsides and around water bodies. Corkwood is locally frequent in the Big Bend region of the state and is thriving within the park. Econfina may represent one of the largest populations of this species on public lands.

Needle palm was observed in the inland hydric hammock. It is considered commercially exploited statewide.

Other rare plant species known to occur within the Econfina River drainage and suspected to occur within the tract, but not yet recorded, include southern maidenhair fern, Godfrey's sandwort, and spoonflower.

The expansive salt marsh with its many tidal creeks, seepage streams and lakes is important habitat for other designated species such as Marian's marsh wren, Wakulla seaside sparrow and least bittern. The overall wetlands nature of the property attracts various wading birds including little blue herons, tricolored herons, black-crowned night herons and great white egrets. Eagles and ospreys are common fly-overs as well.

Atlantic sturgeon and the Suwannee bass have been recorded from the Econfina River, though not yet formally confirmed from waters within the park. In addition, the blackbanded sunfish, listed as rare by the Florida Committee on Rare and Endangered Plants and Animals (FCREPA) has been recorded in the Econfina River.

Bobcats, otters, Florida black bears and American alligators also occur here.

Cultural Resources

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

No thorough, formal archaeological investigation of the tract has been conducted. At present, 15 sites have been recorded within the park in the Florida Master Site File. The sites are 8TA--275, 33, 197,196, 195, 193, 194, 198, 199, 192, 191, 201, 200, 4 and16. Several other sites are known to exist at elevated spots along Bird Island Road, near Clark and Boar Islands and there is potential for the existence of additional sites elsewhere within the park. The known sites include Deptford/Swift Creek and Deptford/Weedon Island middens, a burial mound site, a possible village site, an Archaic Period quarry site, and a possible camp site. During the initial faunal survey of the tract, prehistoric point fragments, chert debitage, and pottery fragments were observed on the surface at various sites.

Small-scale illegal digs by "pot hunters" have occurred at Econfina. In addition, surface material was removed without proper documentation prior to state acquisition.

The only historic site existing within the park is an abandoned camp located south of the boat ramp. This site may have been an old fishing or hunting camp or served as an encampment area for laborers engaged in turpentine activities on pine islands within the tract.

RESOURCE MANAGEMENT PROGRAM

Special Management Considerations

Timber Management Analysis

Chapters 253 and 259, Florida Statutes, require an assessment of the feasibility of managing timber in land management plans for parcels greater than 1,000 acres if the lead agency determines that timber management is not in conflict with the primary management objectives of the land. The feasibility of harvesting timber at this park during the period covered by this plan was considered in context of the Division's statutory responsibilities, and an analysis of the park's resource needs and values. The long-term management goal for forest communities in the state park system is to maintain or re-establish old-growth characteristics to the degree practicable, with the exception of early successional communities such as sand pine scrub and coastal strand.

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

Additional Considerations

Management authority at Econfina River State Park extends 400-Feet from mean high water where park lands are directly bordered by Sovereign Submerged Waters.

Management Needs and Problems

1. Cultural resources surveys need to be conducted within the unit.
2. Protection of surface and subsurface hydrology continues to be a priority. Largely, the closing of unnecessary roads and time will be the most important factors in helping to protect sheet flow throughout the hydric hammock. However, a more interactive approach is necessary where roads transect wetland areas. The stretch of Marsh Island Road that transects a portion of the tidal marsh is of particular interest. It would be in the public's best interest to keep this road open so that hikers, bicyclists and possibly equestrian enthusiasts could view the pristine vistas of this vital natural community. Offering visitors

the opportunity to view such an expansive portion of estuarine tidal marsh will help them grasp the significant role this natural community plays in marine ecology. However, this section of Marsh Island Road should be evaluated in order to determine how a more natural tidal influence could be restored to that portion of the marsh landward of the road. Installation of culverts, bridge sections or low-water crossings might be appropriate.

3. Feral hogs are the chief exotic species of concern on the property. Damage to the wetland communities has occurred. The size of the resident hog population has declined significantly because of trapping through a hog removal contract. Efforts to remove feral hogs are an important step in the recovery and protection of natural resources and should be continued.
4. Development near the Econfina River property, including silvicultural activities, should be monitored for possible degrading impacts on water quality of the river and its ecosystem. Water quality monitoring should be investigated and the design plan coordinated through DEP and the Suwannee River Water Management District.
5. Prescribed fire should be considered as a management tool in flatwoods areas where access and containment are deemed feasible.
6. Staffing with onsite personnel is essential to the protection of the cultural and natural resources. Much has been done to improve gating, signage and fencing, yet additional staffing is needed to address the problem of unauthorized intrusions and basic land management needs.
7. The floral and faunal inventories conducted for this plan represent a major initial inventory effort, but these inventories are by no means complete. A thorough inventory of biota is needed.
8. A professional geological and soils mapping survey to identify and map significant karst features and soil types is needed.
9. Programs are needed to locate and monitor populations of designated species. Authorities in the field such as academic professionals might be encouraged to conduct a portion of these studies.

Management Objectives

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

1. Perform a Phase I cultural resources survey**.** Identify and monitor all significant cultural resources.
2. Assess hydrological patterns. Identify blockages to natural sheet flow. Seek funding to restore natural hydrology through the use of culverts and bridges. Restore natural contours where appropriate. Coordinate with DEP and SRWMD to consider the value of installing one or two monitoring wells on the property.
3. Continue feral hog removal. Evaluate the feasibility of installing hog proof fencing between the park and adjacent privately owned property.
4. Coordinate with the DEP and SRWMD to consider the need to collect baseline data of surface waters within the park.
5. Reintroduce fire into appropriate mesic flatwoods areas in conjunction with timber management/restoration efforts.
6. Control unauthorized access through maintenance of gating, fencing and signage.
7. Continue Surveys. Continue surveys in order to compile an accurate and complete list of

biota, with emphasis placed on identification of listed species.

8. Continue to evaluate the road system. Consider closing all roads that are not used for natural/cultural resource management or recreation/education.

Management Measures for Natural Resources

Hydrology

The primary hydrological concern existing within the park is the alteration of water flow and drainage patterns. This hydrological alteration occurred when dredge and fill activities were conducted for road construction.

The area showing the highest evidence of impact is along Marsh Island Road. Approximately a one-quarter mile section of the road was constructed across the high, marine tidal marsh. Dredging was conducted in order to construct a fill road, and only two culverts were placed in this section. Because of an inadequate amount of culverts in this section of the road, rainfall drainage and tidal flow have been altered. The area north of the road, which was once marine tidal marsh, is being invaded by non-marsh woody vegetation and eventually could succeed into coastal hydric hammock. The addition of more culverts may help impede the encroachment of woody vegetation and ultimately help restore this area to a more pristine tidal marsh condition. Park, district and BNCR staff should determine if this should be a district wide management priority.

The second similar area of concern is along Bird Island Road. This is the longest road within the tract, and a considerable amount of dredge and fill activity was conducted to construct it. Throughout the hydric hammock community, this road was elevated and now forms an unnatural levee to water flow. Some culverts have been placed along this road. This area should be periodically monitored to determine if additional efforts are needed.

Econfina River tract with its associated wetlands acts as a large buffer and filter to the coastal marshes and delicate Econfina estuarine system. Any proposed alterations resulting in potential impact to the Econfina River and its surrounding wetlands within the tract, need to be carefully evaluated. Detailed review and assessment of design plans should accompany proposed park development projects that are located along the river or in areas that effect wetlands.

Preservation of this large tract of marsh and hammock along the low coastline of the Big Bend will provide for the conservation of water resources and for the control and prevention of soil erosion.

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.

Evaluation of the existing fire type communities is a continual process updated annually in the district burn plan. As prescribed fire is introduced, community and burn zone delineation may change. Currently two burn zones have been designated.

Zones A and B. These zones have been greatly altered by human activity. The zones have been logged, raked, lightly bedded and then planted as a slash pine plantation. In 2004, the trees were 14 years old and 35-45 feet in height. The stand density is estimated at 350-400 stems per acre, including regeneration that is more recent. A light thinning of overstory pines may improve restoration efforts for this area. While fire may accomplish this, it would be ecologically sound and monetarily advantageous to postpone burning for approximately five years. At that time market value should be reviewed in coordination with the Florida Division of Forestry. If feasible, a portion of these pines could be harvested for sale. The income from this selective timber sale could be used to finance restoration of impacted natural communities at the park. A partial cut would serve to re-establish a more natural overstory density, and serve to break up heavy understory fuels prior to burning.

If a partial harvest of the pines is deemed impractical, then initial burns should be conducted in the winter with predominantly backing and small strip or spot head fires to minimize flame height and intensity.

Hardwood trees such as oaks, cherry, and sweetgum co-dominate the overstory with the planted slash pine and are of similar age and height. A dense ground cover of herbs and shrubs including wax myrtle, gallberry and saw palmetto, make up the understory.

Zone A in the upper northeast portion of the unit, east of County Road 14, is bordered on the east by Econfina River and by a service road to the south. Zone B is situated in the upper northeast portion of the unit just south of Zone A. The bottomland forest along The Econfina River forms the eastern boundary of Zone B. The southern portion of Zone B grades into hydric hammock. No information is available on prior burn history for these zones.

Recommendations. These zones should be prescribed burned every two to five years. The first burn should take place during the winter to accomplish fuel reduction. The overall fire regime should include growing season burns (April - August). Growing season burns will promote herbaceous growth and more effectively reduce invasive hardwoods. Objectives of burning these zones are to reduce understory fuel loads, control hardwood growth, promote grasses/forbs and improve wildlife habitat. County Road 14 will serve as a fire break for both Zones A and B. A firebreak will need to be constructed for the north boundary. The fire will be allowed to burn naturally into the surrounding bottomland forest and hydric hammock areas. A ten acre out parcel exists in Zone B. The Park Manager should coordinate with the owner of this parcel to burn this area in conjunction with Zones A and B, if the landowner desires. If the landowner is unwilling to burn the property, then a fire break will have to be constructed around the parcel. County Road 14 is the only smoke concern for these Zones. This very low use rural road is not considered a critical smoke sensitive area.

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.

Protection of the land from any activities that would deplete the natural resources, as well as hydrological and fire type community restoration will provide good habitats for local designated species. Over time, these land management practices may encourage recruitment of gopher

tortoises and other upland species of special concern.

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.

There are no known widespread, highly invasive exotic plants that presently pose a serious management problem at the park. However, some exotic herbaceous species may be present along roads and other disturbed areas. A more thorough plant inventory would be needed to confirm this. Additionally, the only exotic invertebrates thus far identified are fire ants. Recent vertebrate surveys confirmed only the feral hog and transient hunting dogs as exotics.

The most threatening exotic species within Econfina remains to be feral hogs. Feral hogs have caused light to severe damage to nearly all natural areas within the unit. Wetland areas have received the heaviest impact, with other natural areas receiving light to moderate impact. Impact within the hydric hammock community has been the heaviest. Damage consists of rooting and digging through the soil. Prior to trapping, many wetland areas had rings of mud encircling them 20 feet wide, where no ground cover remained intact. This causes runoff and erosion problems resulting in water quality degradation, and decreased water quality for fish and breeding amphibians. In addition, shelter and breeding habitat for ground-dwelling birds, mammals, amphibians, reptiles and invertebrates is destroyed through soil and leaf litter disturbance. Hogs are also harmful, unnatural predators consuming large numbers of invertebrate and vertebrate species, and competing with native species for mast. The damaging effects of hogs at Econfina have had unmeasured but potentially severe impacts on small animals, particularly amphibians and reptiles. In nearly all ecosystems of Florida, amphibians and reptiles are one of the single most important vertebrate wildlife species, because they make up the bulk of the upper level food chain. Hogs are also causing extensive damage to native plants by consuming them, destroying their habitat and not allowing them to reseed. There is a current contract at Econfina to remove the hogs. This removal effort has been very successful and has been a major component in the areas restoration plan. Yet the problems that hogs pose to the tract will remain an issue. As found in many cases, hogs find a way around or under fences necessitating regular repair. Management measures for the elimination of feral hogs will also be difficult due to continuing recruitment from adjacent areas. The undeveloped nature of Taylor County provides habitat for hog populations, not only on lands adjacent to the park, but throughout the Big Bend region. Until a secure fence is in place and all hogs inside the fence are removed, hogs will remain a resource management problem.

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.

Alligators occur commonly throughout the tract but are no danger unless they are fed or harassed. There is no authorized public swimming area at the tract; therefore, there should be no reason to control these animals unless they pose an immediate threat to humans.

Venomous snakes, especially pygmy rattlesnakes and water moccasins are common throughout

the tract, but are rarely encountered and pose no threat unless they are harassed. If venomous snakes persist in a high use area, Park Service staff will move them to a more remote area of the park.

The park's many wetlands give rise seasonally to high populations of mosquitoes and sand flies. In order to adhere to a natural process approach to land management, the park does not request to control these or any other native insects.

Econfina River State Park is contiguous with the extensive black bear habitat of the Florida's Big Bend region. Currently, bear encounters at the park are rare. If bears begin to rummage through park trash receptacles at the boat ramp, then bear proofing measures based on proven FWC design will be implemented.

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.

There are currently no known cultural resources identified as requiring active management other than protection from physical disturbance through periodic patrol efforts.

Research Needs

Natural Resources

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

1. A thorough floral survey of the Econfina tract is needed with emphasis on locations of threatened and endangered species.
2. A thorough survey of freshwater/estuarine fauna in river, ponds, lakes and tidal creeks is needed.
3. Research natural fire regimes of flatwoods as well as other natural, pyric communities within the unit.
4. GPS/GIS mapping of all significant geological features on the property.
5. Investigate need/feasibility of water quality monitoring.
6. Further research into extent of hydrological alteration and means of restoration.

Cultural Resources

Econfina River State Park has the potential for unrecorded prehistoric cultural resources. Research of the known cultural resource sites, as well as new cultural resources surveys by

historians, archaeologists, and other scholars should be strongly encouraged. Necessary permits need to be obtained from Division of Historical Resources and Florida Park Service. Specific areas of research concentration needed to improve management of the unit are as follows:

1. Land use history research. This would include original survey notes, any documented activities by early previous owners, and oral history records from more recent former owners or users of the property.
2. Complete cultural/archaeological site survey.

Resource Management Schedule

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

Land Management Review

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

This park has not been the subject of a land management review.

LAND USE COMPONENT

INTRODUCTION

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

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

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

EXTERNAL CONDITIONS

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

Econfina River State Park is located within Taylor County about 25 miles west of Perry in the northwestern part of the state. The populations of Taylor County, and the adjacent Jefferson, Leon, and Wakulla have grown 25.31 percent since 1990, and are projected to grow an additional 33.33 percent by 2020 (BEBR, University of Florida, 2000). As of 2000, 18 percent of residents in these counties were in the 0-14 age group, 51.7 percent in the 15-44 age group, 21.3 percent in the 45-64 age group, and 9 percent were aged 65 and over. This is much higher than the state average in the 15-44 and lower in the 65+ group (BEBR, University of Florida, 2000). The universities in Tallahassee account for the higher percentage in the 15-44 age groups. Nearly 349,200 people reside within 50 miles of the park, which includes the cities of Tallahassee and Perry (U.S. Census Bureau, 2000).

Econfina River State Park recorded 12,400 visitors in 2003-2004 FY year. This represents a net 11.8 percent increase over the last five years. By Division estimates, these visitors contributed $440,635 in direct economic impact and the equivalent of 8.8 jobs to the local economy (Florida Department of Environmental Protection, 2004).

Existing Use of Adjacent Lands

Econfina River State Park has the Econfina River for most of its eastern boundary. The parcels east of the Econfina River are managed by the Suwannee River Water Management District (SRWMD), Fish and Wildlife Conservation Commission (FWCC) as part of the Big

Bend Wildlife Management Area. North and West of the State Park, is the Snipe Island unit owned by FWCC and managed by the Forestry Company on a five-year agreement (until July 2008). The waters south of the park are part of the Big Bend Seagrasses Aquatic Preserve. Some development exists on an outparcel within the park boundaries along County Road 14 and the Econfina River. Econfina on the Gulf is an angler's resort with a RV park, concession and small conference facilities. Single-family housing, a fire department, and another RV park are also located on outparcels. Across the Econfina River are private residential properties.

Access to the park is via County Road 14 from State Road 98. County Road 14 has recently been widened and resurfaced. It runs through the park for a couple miles, will have to be monitored for stormwater run-off, and increased driving speeds.

The rural location and adjacent public lands limits much of the urban encroachment many other parks encounter. Econfina River State Park concerns are water quality impacts and exotic species control, especially feral hogs. The Snipe Island Unit and the Big Bend Wildlife Management Area allow hunting. Other activities offered on these adjacent properties are hiking, horseback riding, camping, off-road biking and fishing.

Planned Use of Adjacent Lands

Adjacent future land uses according to the Comprehensive Plan for Taylor County are Agriculture, Conservation and Water Oriented Commercial. The park is designated Conservation (Taylor County, 1990). No changes to the existing land uses are expected. The SRWMD is developing a greenway trail linking all public lands in the Big Bend area. The FFWC has developed the Big Bend Saltwater Paddling Trail from the Aucilla River to the Suwannee River. Econfina River is one of the designated overnight stops on the paddling trail. The Division of Recreation and Parks fully supports these collaborative trails and will work to include the recreational linkage.

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

Developable upland is limited to less than 4 percent of the parklands. Approximately 40 percent of the property is wetlands and another 56 percent are seasonally flooded. Trails have been established in the seasonally flooded areas.

Water Area

The Econfina River and the Gulf of Mexico, bordering the park on the east and south, provide boating and fishing activities. A number of borrow pits exist on park property. The larger of

the borrow pits associated with the construction of County Road 14 contains surface water. None of these interior water bodies is suitable for recreation.

Shoreline

The shoreline of the Econfina River is almost entirely bottomland forest, estuarine tidal marsh and freshwater tidal swamp. The exception is the developed area at the boat launch. This area has a bulkhead and fill. The majority of outparcels north of the boat launch also have shorelines altered with fill material.

Natural Scenery

The near pristine condition of some of the natural communities plays an important part in visitor experience. Views across the estuarine tidal marsh and out to the Gulf are outstanding. The xeric hammock is part of an ancient marine terrace with old sand dunes as high points in hydric hammock and tidal marsh.

Natural Features

The river and associated tidal marshes are outstanding natural features. The marshes are part of a continuous natural community extending from Wakulla County through Pasco County; one of the most extensive marshes in the United States. In addition, this pristine community provides habitat for numerous wildlife species.

Archaeological and Historical Features

A formal archeological investigation is needed to identify the sites cultural resources. Known cultural sites are briefly described in the resource management component of this plan. Some of these sites may be suitable for public interpretation in the future.

Assessment of Use

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

Past Uses

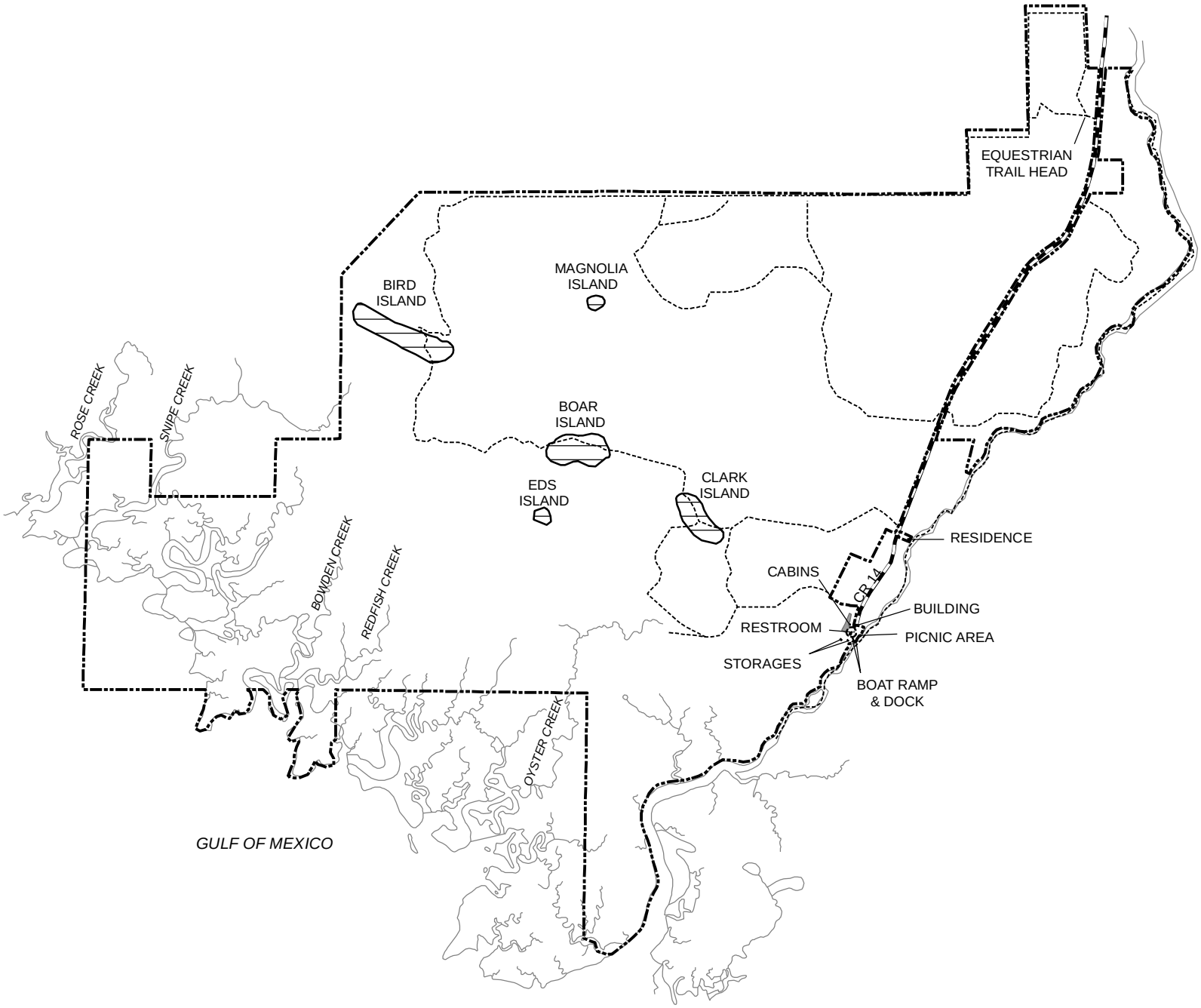
Prior to acquisition by the state, the upland communities were used as pine plantations. The upland property adjacent to the river was a private camping resort. Recreational hunting and boating activities were also popular on the property.

Recreational Uses

Boating and fishing in the Econfina River and Gulf of Mexico are popular activities. The boat ramp provides access to these waters and picnicking is available near the boat ramp. Excellent opportunities for wildlife observation and nature study are a result of the outstanding condition of the natural communities. The park's trail system provides hiking, horseback riding and bicycling. Standard camping is available on privately owned lands on County Road 14 just north of the boat ramp.

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



ECONFINA RIVER
STATE PARK

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

BASE MAP

decisions involving the use of protected zones are made on a case-by-case basis after careful site planning and analysis. At Econfina River State Park the estuarine tidal marsh, freshwater tidal swamp, bottomland forest, dome swamp and marsh lake have been designated as protected zones as delineated on the Conceptual Land Use Plan.

Existing Facilities

Recreation Facilities. All the built facilities are at the end of County Road 14 by the boat ramp. A double boat ramp with convenience docks is used consistently. Support facilities for the area include stabilized parking, a composting toilet, kiosk and picnic pavilion. This boat ramp/picnic area also has an empty building used as a restaurant by the previous owners, a small double cabin rented for overnight use, and a boathouse and dock along the bulkhead. Management for the cabin is handled by a concessionaire. The dock and boathouse have sections that are rotten and are a safety hazard.

Facilities outside of the boat ramp area are limited to multi-use trails and trailheads. Nine miles of trails follow old roads through the hydric hammock and mesic flatwoods communities. An equestrian trailhead is located in the north east off County Road 14. A canoe trail follows the Econfina River.

Boat Ramp/Picnic Area

Pavilion (1)
Restroom (composting)
Boat Ramp (2 lanes)
Cabin - duplex
Building (former restaurant)
Dock and Boat House

Trails

Multi-use (9 miles)
Hiking (4 miles)
Trailhead – equestrian
Canoe (5 miles)

Support Facilities

Ranger Residence (1)
Parking in picnic area (50-60cars)

CONCEPTUAL LAND USE PLAN

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

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

CONCEPTUAL LAND USE PLAN

PAGE 1 OF 2

Legend

- Park Boundary
- Proposed Facility
- Trails
- Proposed Trails
- Protected Zone

SNIPE ISLAND UNIT

RESIDENCE/
SHOP FACILITIES

VOLUNTEER HOST SITES

GROUP CAMP

ECONFINA RIVER

CR 14

BIRD ISLAND
PRIMITIVE CAMPSITE

BOAR ISLAND
PRIMITIVE CAMPSITE

TRAILHEAD

ONE-WAY
LOOP ROAD

H/C PARKING

INSET

PADDLERS PRIMITIVE
CAMPSITE

OVERLOOK

MARSH ISLAND
PRIMITIVE CAMPSITE

GULF OF MEXICO

ECONFINA RIVER

BIG BEND WILDLIFE MANAGEMENT AREA

2000 0 N 2000 4000 Feet

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ECONFINA RIVER STATE PARK

CONCEPTUAL LAND USE PLAN

INSET - PAGE 2 OF 2

RELOCATE ENTRANCE

RESTROOM

RENOVATE BUILDING

PICNIC AREA

PAVILION

REPLACE DOCK

LANDSCAPE

BOAT RAMP

Legend

- Park Boundary
- Proposed Development Area
- Proposed Facility
- Trails
- ProposedTrail
- Protected Zone

200 0 N 200 400 Feet

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

ECONFINA RIVER STATE PARK

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

Potential Uses and Proposed Facilities

Econfina River State Park has limited facility development potential because of the large expanse of wetlands, the county road running through the park, and residential and RV resort uses located on out-parcels at the center of the upland area. However, some of these same features give the park great opportunities for education and interpretation. Six of the nine natural communities in the park are wetland communities, providing an outdoor classroom of hydric systems. Additionally, views of the extensive estuarine tidal marsh and bird watching are excellent. Expansion of the day use facilities to take advantage of expanded recreational opportunities should be explored.

Recreation Facilities

Trails. Continued trail access into the interior of the park is recommended along existing jeep trails. An equestrian trailhead has been established off County Road 14 and the expanded parking at the boat ramp accommodates larger horse trailers. A main hiking trailhead is proposed for Clark Island, west of the boat ramp area. One-way vehicular traffic in a loop arrangement along existing jeep roads will allow development of this trailhead without further impact on the wetland communities adjacent to existing service roads. The proposed trailhead should have the basic start-up package of stabilized parking, small composting restroom, informational kiosk, and sign-in station. South of this trailhead, closer to the marsh area, a small parking area for 2-3 cars should be established for handicap users. The area is too small to be the main trailhead but would provide a shorter walk to a marsh overlook. A well-located overlook would give the visitor great views and appreciation for one of the most extensive marshes in the United States. The existing hiking trailhead is at the end of a private road and difficult to locate. The trail should be extended to the main parking area for those wishing to hike from there.

Trail development coordination with adjacent land managers should continue to be a priority. The Suwannee River WMD is planning a greenway trail linking public lands in the Big Bend area. The trail will go from Hickory Mound across the Econfina River, the State Park, Snipe Island Unit and to the St. Marks Wildlife Refuge. When the greenway trail reaches the State Park boundary, it will be connected and marked. Coordination will also continue with the Florida Trails Association and the Southern Trailriders Association in developing and marking trails. Canoe trail development is also a priority. The Econfina River canoe trail is linked to the Big Bend Saltwater Paddling Trail from the U.S. 98 boat ramp south. The Division is working in partnership with the FWCC in providing connections and facilities.

Camping. Primitive campsites are recommended at three locations along the hiking/equestrian trail system. One campsite on a marsh island at the southern end of the park should be restricted to hike-in campers, since the access routes to these locations extend through the low salt marsh community and not suitable for horses. The proposed campsites on Boar Island and Bird Island will be available for equestrians and hikers on the multi-use trail.

A primitive campsite for paddlers on the Big Bend Saltwater Paddling Trail should be established along the Econfina River south of the boat ramp. This site should be accessible by

water and have cleared areas for tents and canoe pull up. It should be pack in/ pack out and a fire ring the only facility provided. FWCC will handle reservation and management for this site from September – June. Park staff will be responsible the remaining two months.

The mesic flatwoods east of County Road 14 has the greatest potential for an equestrian and group camping area. Before development however, restoration, including timbering and burning, would have to be completed. It would also be advantageous if the outparcel in this area could be acquired before development. A trail connecting the existing trailhead to the trails east of County Road 14 should be developed and the camp located off this segment. The existing jeep road should be stabilized to accommodate access for horse trailers. The camping area would have a large pavilion, cooking shelter and restroom. Six to nine sites each with a stabilized surface large enough for a horse trailer and tie line should be provided.

Boat Ramp/Picnic Area. This is the main use area of the park. The boat ramp is the major focus, however, with some reorganization of the space it could become a destination for picnicking and hiking as well.

Econfina River State Park is managed from Tallahassee and there is a need for a base within the park for park staff and park patrol. The building near the boat ramp and picnic area, once used as a restaurant, is in good shape. This building would serve the immediate need for an office and be an information area for visitors. Interpretation could be greatly enhanced at Econfina River State Park if a central location were established for trail guides and information. The longer-term use of the building should be determined after a thorough investigation of visitor needs.

The cabin next to the restaurant was originally built as a restroom and later converted to a duplex cabin. It is in poor shape and should be removed. A small restroom to meet current wastewater permitting requirements should be constructed in this space. This would replace the existing composting restroom that is not adequate.

The existing picnic area has a pavilion surrounded by road access to the boat ramp. The waterfront has an open grass area, bulkhead along the shoreline, and good views down the river. The wide unpaved road separates the use areas. Reconfiguring vehicle access to the boat ramp and parking area would provide a more useable, pleasant picnic area. The pavilion would need to be moved closer to the waterfront and the pay station moved to a newly configured entrance. Some new stabilized roadway and parking would have to be installed and portions of the old roadway re-planted.

The existing dock and boathouse are a safety hazard and should be repaired or replaced. It should have tie-up spaces for five boats and an area for pier fishing and relaxing. This would expand the uses of the picnic area.

Support Facilities

The existing ranger residence needs to be relocated. The existing site is within a residential area, on a disconnected parcel. It floods frequently because of the close proximity to the river. Near the north end of the park, off County Road 14, is a better residence location. It would be convenient for surveillance over the park's north side and the proposed equestrian/group camp. Additionally, this would provide space for a 2-bay shop facility with lockable storage. After establishing a new ranger residence, the existing ranger residence property could be sold. Two host sites, located in the shop area, would provide volunteer support for this park which shares staffing with the rest of the Tallahassee area parks.

Facilities Development

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

Recreation Facilities

Trails

Stabilized Parking
Stabilized Road
Composting Restroom
Sign-in Station
Kiosk
Observation Overlook
Interpretive Signs

Camping

Large Picnic Shelter
Cooking Shelter
Primitive Equestrian/Group Camp
Stabilized Tent Sites (4)

Boat Ramp/Picnic Area

Renovate Building
Landscaping
Picnic Pavilion (medium)
Restroom
Stabilized Parking
Stabilized Road
Dock

Support Facilities

Ranger Residence
2-Bay Shop (with lockable storage)
Volunteer Host Sites (2)

Existing Use and Optimum Carrying Capacity

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

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

Optimum Boundary

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

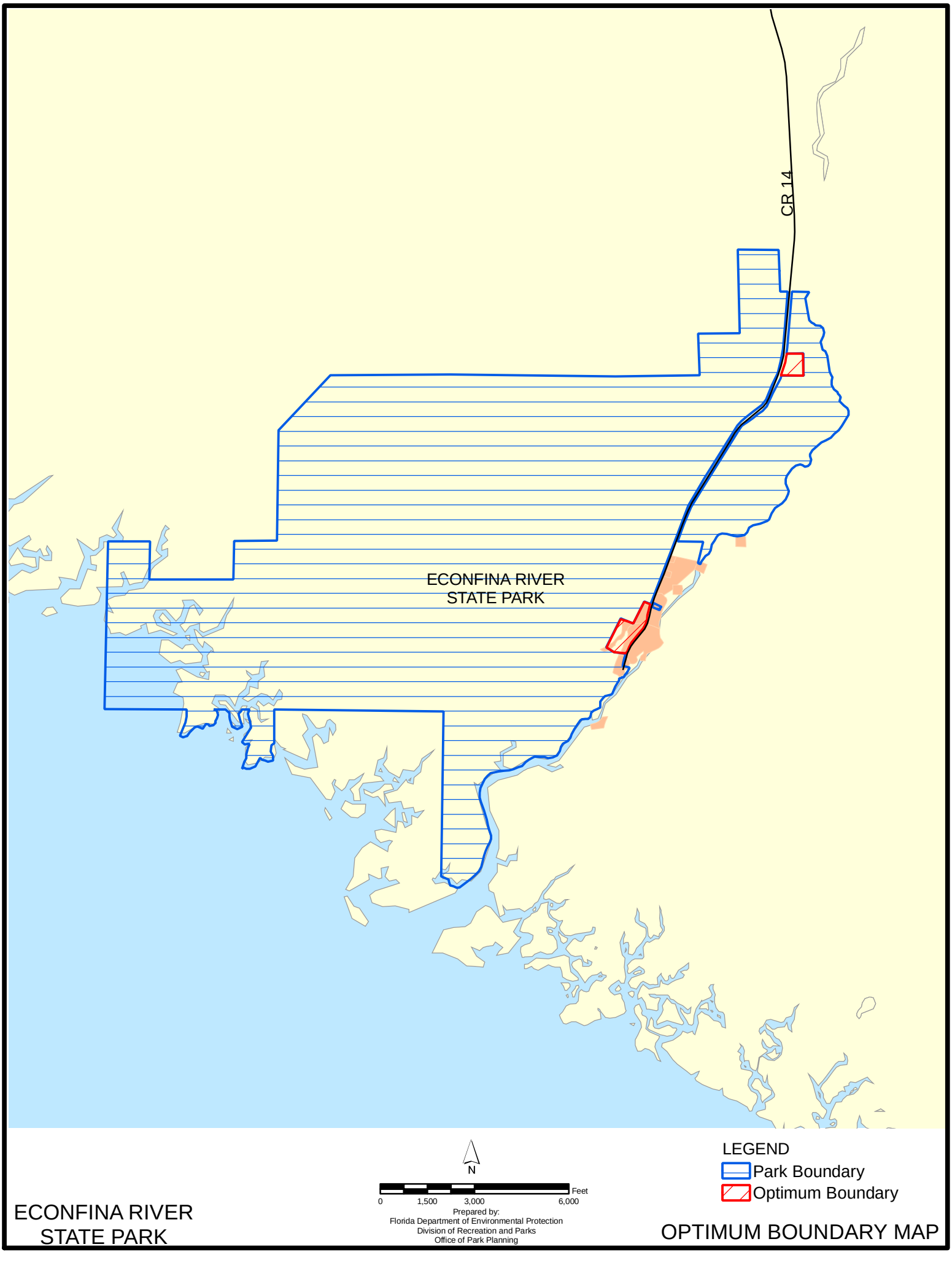
Table 1--Existing Use And Optimum Carrying Capacity

	Existing Capacity		Proposed Additional Capacity		Estimated Optimum Capacity	
Activity/Facility	**One Time**	**Daily**	**One Time**	**Daily**	**One Time**	**Daily**
Trails						
Equestrian	180	360			180	360
Hiking	80	320			84	336
Canoe	50	100			50	100
Picnicking	8	16	8	16	16	32
Boat Launch	180	360			180	360
Camping						
Group			30	30	30	30
Primitive			16	16	16	16
Educational Center			30	60	30	60
TOTAL	**498**	**1,156**	**84**	**122**	**586**	**1,294**

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 park. These parcels may include public as well as privately owned lands that improve the continuity of existing park lands, provide additional natural and cultural resource protection, and/or allow for future expansion of recreational activities.

Approximately 30.7 acres have been identified as desirable for acquisition. The addition of these lands will enhance the park boundary for management purposes and will provide uplands suitable for development of recreational and support facilities.


CR 14
ECONFINA RIVER
STATE PARK
N
0
1,500
3,000
6,000
Feet
Prepared by:
Florida Department of Environmental Protection
Division of Recreation and Parks
Office of Park Planning
LEGEND
Park Boundary
Optimum Boundary
ECONFINA RIVER
STATE PARK
OPTIMUM BOUNDARY MAP

Addendum 1—Acquisition History and Advisory Group Report

Sequence of Acquisition

On December 24, 1987, the Board of Trustees of the Internal Improvement Trust Fund (Trustees) bought an undivided 69 percent interest in the property which later became Econfina River State Park. The property was purchased from Alfred F. Mackay et al for $900,000 under Save Our Coast (SOC) program. On September 26, 1988, the Trustees bought the remaining an undivided 31 percent interest in the property from The Nature Conservancy for $414,637.

Title Interest

The Trustees hold fee simple title to Econfina River State Park.

Management Authority

The Trustees conveyed management authority of Econfina River State Park to the Department of Environmental Protection, Division of Recreation and Parks (Division) on March 23, 1989, under Lease No. 3540 for a period of fifty(50) years. The lease will expire on March 23, 2039.

Special Conditions on Use

In accordance with the Division of Recreation and Parks lease agreement with Trustees, the property is designated single-use to provide resource-based public outdoor recreation and other related uses. Uses such as, water resource development projects, water supply projects, stormwater management projects, linear facilities and sustainable agriculture and forestry (other than those forest management activities specifically identified in this plan) are not consistent with this plan.

Outstanding Reservations

Following is a listing of outstanding rights, reservations, and encumbrances which apply to Econfina River State Park.

Instrument: ..... Warranty Deed
Instrument Holder: ..... A. F. Mackay et al(AFM)& the Nature (NC)
Beginning Date: ..... AFM, December 24, 1987; NC, September 26, 1988
Ending Date: ..... No ending date is given.
Outstanding Rights, Uses, Etc.: ..... The sell of the property is subject to 1/4 or 1/2 undivided interest in and to all the oil, gas and other minerals in specific portions of subject lands; right-of-way of State Road S-14; a certain drainage easement to the State of Florida; and any portion of the sovereignty lands and all rights and interests of the United States of America and/or the State of Florida controlling the property.

The Honorable Daryll Gunter, Chairman
Taylor County Board of County Commissioners
316 W. Green Street
Perry, Florida 32347

Mr. Brian Polk, Manager
Tallahassee/St. Marks GEOpark
1022 DeSoto Park Drive
Tallahassee, Florida 32301

Mr. John K. Fish, District Manager
Perry District Office
Florida Division of Forestry
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Florida Game & Fresh Water Fish Commission
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Lake City, Fl 32055

Chad Bedee, Manager
Big Bend Aquatic Preserve
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Crystal River, Florida 34428

Ms. Carlene Dinart
Florida Trail Association
P.O. Box 33
Wacissa, Fl. 32361

Mr. Joe Spooner, President
Southern Trailriders Association
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Mr. Eric Draper, President
Apalachee Audubon Society
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Tallahassee, Florida 32303

Linda Jamison, Chair
Big Bend Sierra Club
Oceanography Department
Florida State University
Tallahassee, Fl. 32306-4320

Mr. (Jerry) W. G. Aman
10735 Mount Gilead Church Rd
Perry, Florida 32331

The Advisory Group appointed to review the proposed unit management plan for Econfina River State Park met at Econfina on the Gulf in Lamont, Florida on October 18, 2005. The Honorable Mr. Gunter, Mr. Rolando Garcia, Mr. Chad Bedee, and Mr. Eric Draper did not attend. Mr. John Fish sent an e-mail in advance of the meeting. All other appointed Advisory Group members were present. Attending park staff were Mr. Daniel Jones, Mr. Eric Kiefer, Mr. Brian Polk, Mr. John McKenzie, Mr. Tom Nobles, Mr. Mark Stevenson, Ms. Susan Lee and Ms. Carol Perfit. Mr. Ray Williams, Mr. Mack Ruff, and Mr. Carl Sumner attended as observers.

Ms. Perfit began the meeting by explaining the purpose of the advisory group, reviewing the meeting procedures and providing a brief overview of the Division's planning process. She then asked the Advisory Group members to comment on the plan.

Summary of Advisory Group Comments

Ms. Carlene Danart, representing Florida Trail Association, said she was impressed with the plan, especially the maps and trail locations. She felt the river trails should be a high priority because of their popularity. The more popular a trail is the less maintenance required. The park should only establish the number of trails that can be maintained. Good signage is important and trails should be marked for easy visibility from both the roadside and along the trail. Park staff explained that all the trails have been mapped using GPS and trail maps are available with the coordinates.

Mr. Joe Spooner, representing Southern Trailriders Association, noted that signage is also a concern for trail riders. It is difficult to read pedestrian signs from horseback and better signage is needed to guide riders into, through and out of a trail system. He announced that the Southern Trail Riders and the City of Tallahassee are working to bring a trail specialist, Mike Rider, to conduct a 3-day workshop on trail design. Another area of concern to riders is the designated eq uestrian parking area that presents difficulties for maneuvering 40-foot horse trailers. Mr. Nobles mentioned a newer, more maneuverable parking area near the boat ramp. Mr. Spooner volunteered Southern Trailriders Association for trail maintenance.

Ms. Linda Jamison, representing the Sierra Club, walked the trails and talked to visitors, while reviewing the plan. She is glad to see the park has an overnight facility, but noted several concerns with the park. In the area of boater interests, the faucets need repair in the fish cleaning area and there is a large boulder underwater in the boat launching area that presents a hazard. Signage is needed to prevent boaters from damaging seagrass beds and possibly harming grouper nurseries. Regarding hikers, she feels that more signage is needed and possibly birding sheets could be supplied. Brian Polk replied that the sheets exist and will soon be posted online. The plan calls for a central location to place trail guides.

Ms. Jamison is also concerned with some of the effects horses can have on the environment. She feels horses should be kept from the coastal areas to prevent erosion around tidal areas and to protect horses from insects. Mosquitoes, in large numbers along the coast, could present a problem to horses. She noticed evidence of horse damage on smaller crossings and feels these should be widened and reinforced. In addition, horse’s hooves denude vegetation causing damage to gopher tortoise habitat as well. Corralling horses presents a problem with waste collection and a solution needs to be thoroughly thought out. One solution would be liners under the corrals and trails. She brought up the idea that non-indigenous seeds could be introduced to

areas from horse manure and passed on research papers to John McKenzie supporting evidence of amphibian decline where RoundUp was used. Ms. Jamison feels the co-use of trails by bikers, hikers and equestrians is not always a good idea. Carol Perfit explained that in heavily used areas, trails users are separated if possible. Ms. Jamison pointed out that a possible deterrent to entering sensitive areas would be the use of lush vegetative screening. The timbering plans to return to natural communities are a good idea and the restoration of the natural sheet flow would be excellent. She asked if ATVs are allowed. Carol Perfit replied that ATVs are not allowed in Florida State Parks.

Mr. Joe Spooner responded to some of Linda Jamison's comments regarding horses. He feels that equestrians do not ride during high insect season and the mosquito problem is not unique to the park. Horse trails are abundant in parks so he does not feel overuse causing erosion concerns is a problem. Thirdly, he is not concerned about the introduction of invasive seeds from manure since horses do not naturally eat invasive species. Rye grass seed, the exception, will sprout from manure but the sprouts are quickly eaten by deer.

Mr. Jerry Aman, representing adjacent landowners, said he agree with the plan and has no further comment.

Summary of Observers Comments

Mr. Mack Ruff, Mr. Ray Williams and Mr. Carl Sumner spoke as representatives from the neighboring Camp Misery Hunt Club. The hunt club is adjacent to the east. Mr. Ruff expressed concern regarding an incident last year when hunt dogs crossed the river and entered park property. The incident ended up in court. They would like an agreement with the park service allowing hunters to retrieve their dogs from park property. Brian Polk said he was not notified until later about that particular incident and did not agree with the way the matter was handled. He met with the park patrol but staff changes will make constant communication with them important.

Carl Sumner feels it is hypocritical for the park to allow hog hunters to bring in unleashed 'catch dogs' but will not let an unleashed 'nose dog' in. Brian Polk explained the conditions where unleashed dogs can be used. Tom Nobles said the park is going to revisit the contract soon and this issue will be addressed. Brian Polk suggested park personnel get phone numbers and names to work directly with the Camp Misery Hunt Club.

Ray Williams said the club just wants a friendly working agreement with neighbors. Danny Jones responded that he will make sure that the new park manager and Mark Stevenson and Tom Nobles continue to work with the Florida park patrol and park rangers on this issue.

Ms. Perfit thanked everyone for participating and adjourned the meeting.

Summary of Submitted Comments

Mr. John Fish of the Florida Division of Forestry, sent regrets that he was not able to attend the meeting. He did not have any comments or suggestions

Staff Recommendation

The Advisory Group approves the proposed Econfina River State Park Unit Management Plan as presented with the following recommendations:

Land Use Component

Facilities

- Expand discussion on uses for the empty building.
- Change discussion of boat dock/house to allow repair or replacement.

Overall corrections and updates will be made.

Addendum 2—References Cited

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Addendum 3—Soils Descriptions

Pits. This map unit consists of excavations from which soil and other geologic material have been removed for use in road construction, foundations, septic tank absorption fields, or other purposes. The sides of the excavations have short, steep side slopes. Most pits are abandoned. Areas that have been excavated below the normal seasonal high water table usually contain water.

Wekiva-Tennille-Tooles complex, occasionally flooded. Shrub bogs-bay swamps-hardwood hammocks along the lower coastal plain of the Big Bend.

Wekiva:
Surface layer: 0-6 inches-black fine sand
Subsurface layer: 6-14 inches-yellowish brown fine sand
Subsoil: 14-21 inches-light gray fine sandy loam
Bedrock: 21 inches-soft, weathered, fractured limestone.

Tennille:
Surface layer: 0-6 inches-black fine sand
Substratum: 6-14 inches-brown and dark grayish brown fine sand
Bedrock: 14 inches-soft, weathered, fractured limestone

Tooles:
Surface layer: 0-8 inches-very dark gray fine sand
Subsurface layer: 8-23 inches-brown fine sand
Subsoil: 23-35 inches-yellowish brown fine sand
35-46 inches-light gray sandy clay loam
46-55 inches-pale yellow clay loam
Bedrock: 55 inches-pale yellow clay loam

Available water capacity is low. These soils are occasionally flooded for brief periods of time. These soils are nearly level with a moderate to high level of organic matter in the surface layer. This soils map unit typically serves timber production and wildlife habitat.

Bayvi muck, frequently flooded. Extensive saltmarsh systems along the low energy coastline of Taylor County.
Surface layer: 0-5 inches-black muck
Subsurface layer: 5-17 inches-black mucky loamy sand
Substratum: 31-53 inches-grayish brown sand
53-80 inches-gray sand

Bayvi soils that have limestone bedrock within a depth of 80 inches; Leon-like, Lynn Haven-like, and Nutall-like soils that have tidal influence; soils that have a dark, organic-stained subsoil, a loamy subsoil, or limestone at a depth of 40 to 60 inches; soils that have a loamy subsoil over limestone at a depth of 40 to 60 inches; and Tennille-like soils, some that have a thick, dark surface layer; in positions similar to those of the Bayvi soil

Most of of the areas mapped as Bayvi muck support native vegetation and provide wildlife habitat.

Wekiva-Tooles, depressional-Tennille complex, rarely flooded. This soil type occurs as 10 to more than 170 acre rounded to long and narrow or irregular flats and depressions in the lowlands on the lower coastal plain.

Wekiva:
Surface: 0-6 inches-black fine sand
Subsurface layer: 6-14 inches-yellowish brown fine sandy loam
Bedrock: 21 inches-soft, weathered, fractured limestone

Tooles:
Surface layer: 0-8 inches-very dark gray fine sand
Subsurface layer: 8-23 inches-brown fine sand
Subsoil: 23-35 inches-yellowish brown fine sand
35-46 inches-light gray sandy clay loam
46-55 inches-pale yellow clay loam
Bedrock: 55 inches-soft, weathered, fractured limestone

Tennille
Surface layer 0-6 inches-black fine sand
Substratum: 6-14 inches-brown and dark grayish brown fine sand.
Bedrock: 14 inches-soft, weathered, fractured limestone

Tooles-Tennille-Wekiva complex, depressional. 5-30 acre rounded to long and narrow or irregular depressions in lowlands on the lower coastal plain

Tooles:
Surface layer: 0-8 inches-very dark gray fine sand
Subsurface layer: 8-23 inches-Brown fine sand
Subsoil: 23-35 inches-yellowish brown fine sand
Bedrock: 55inches-soft, weathered, fractured limestone

Tennille:
Surface: 0-6 inches-black fine sand
Substratum: 6-14 inches-brown and dark grayish brown fine sand
Bedrock: 14 inches-soft, weathered, fractured limestone

Wekiva
Surface layer: 0-6 inches-black fine sand
Subsurface layer: 6-14 inches-yellowish brown fine sand
Subsoil: 14-21 inches-yellowish brown fine sandy loam
Bedrock: 21 inches-soft, weathered, fractured limestone

Tooles-Wekiva complex. These areas consist of mesic-upland hardwood hammocks.

Tooles:
Surface layer: 0-8 inches-very dark gray fine sand
Subsurface layer: 8-23 inches-yellowish brown fine sand
Subsoil: 23-35 inches-yellowish brown fine sand

35-46 inches-light gray sandy clay loam
46-55 inches- pale yellow clay loam
Bedrock: 55 inches-soft, weathered, fractured limestone

Wekiva:
Surface layer: 0-6 inches-black fine sand
Subsurface layer: 6-14 inches-yellowish brown fine sand
Subsoil: 14-21 inches-yellowish brown fine sandy loam
Bedrock: 21 inches-soft, weathered, fractured limestone

Leon fine sand, rarely flooded. 5-more than 75 acres of flatwoods within lowlands on the lower coastal plain.
Surface layer: 0-6 inches-very dark gray fine sand
Subsurface layer: 6-11 inches-grayish brown fine sand
11—25 inches light gray fine sand
Subsoil: 25-30 inches-black fine sand
30-34 inches-dark reddish brown fine sand
Substratum: 34-56 inches-dark yellowish brown fine sand
56-80 inches-yellowish brown fine sand

Addendum 4—Plant And Animal List

Common Name	***Scientific Name***	**Primary Habitat Codes (for designated species)**
Cinnamon fern	*Osmunda cinnamomea*	
Resurrection fern	*Polypodium polypodioides*	
Braken fern	*Pteridium aquilinum*	
Netted chain-fern	*Woodwardia areolata*	
Southern red cedar	*Juniperus silicicola*	
Slash pine	*Pinus eliottii*	
Spruce pine	*Pinus glabra*	
Loblolly pine	*Pinus taeda*	
Pondcypress	*Taxodium ascendens*	
Baldcypress	*Taxodium distichum*	
Bushy beardgrass	*Andropogon glomeratus*	
Broomsedge	*Andropogon virginicus*	
Cane	*Arundinaria gigantea*	
Yellow canna	*Canna flaccida*	
Sedge	*Carex albolutescens*	
Sedge	*Carex sp.*	
Spikegrass	*Chasmanthium sp.*	
Sawgrass	*Cladium jamaicense*	
Starrush	*Dichromena colorata*	
Saltgrass	*Distichlis spicata*	
Spikerush	*Eleocharis cellulosa*	
Green-fly orchid	*Epidendrum conopseum*	
Sugarcane plumegrass	*Erianthus giganteus*	
Spider lily	*Hymenocallis rotata*	
Purple flag iris	*Iris tridentata*	
Blue flag iris	*Iris virginica*	
Softrush	*Juncus effusus*	
Shorerush	*Juncus marginatus*	
Blackrush,Needlerush	*Juncus roemerianus*	
Rush	*Juncus polycephalus*	
Two flower melic	*Melica mutica*	
Wood grass	*Oplismenus setarius*	
Maidencane	*Panicum hemitomon*	
Green arum	*Peltandra virginica*	
Needle palm	*Rhapidophyllum hystrix*	
Sedge	*Rhynchospora megalocarpa*	
Widgeon grass	*Ruppia maritima*	
Cabbage palm	*Sabol palmetto*	
Nutrush	*Scleria sp.*	
Saw palmetto	*Serenoa repens*	
Knotroot foxtail	*Setaria geniculata*	
Bamboo vine	*Smilax laurifolia*	
Wild sarsaparilla	*Smilax pumica*	
Salt meadow cordgrass	*Spartina patens*	
Gulf cordgrass	*Spartina spartinae*	

*** Non-Native Species**

Common Name	***Scientific Name***	**Primary Habitat Codes (for designated species)**
Spring ladies tresses	*Spiranthes vernalis*	
Spanish moss	*Tillandsia usneoides*	
Eastern gamagrass	*Tripsacum dactyloides*	
Southern cattail	*Typha domingensis*	
Common cattail	*Typha latifolia*	
Spanish bayonet	*Yucca aloifolia*	
Weak-leaf yucca	*Yucca flaccida*	
Red maple	*Acer rubrum*	
Red buckeye	*Aesculus pavia*	
False bastard indigo	*Amorpha fruticosa*	
Pepper vine	*Ampelopsis arborea*	
Saltbush,sea myrtle	*Baccharis halimifolia*	
Smooth water hyssop	*Bocopa monnieri*	
River birch	*Betula nigra*	
Cross vine	*Bignonia capreolata*	
Sea Oxeye daisy	*Borrichia frutescens*	
Blueheart	*Buchnera floridana*	
Bumelia	*Bumelia reclinata*	
Beautyberry	*Callicarpa americana*	
Trumpet vine	*Campsis radicans*	
Vanilla plant	*Carphephorus odoratissimus*	
Water hickory	*Carya aquatica*	
Pignut Hickory	*Carya glabra*	
Sugarberry,Hackberry	*Celtis laevigata*	
Buttonbush	*Cephalanthus occidentalis*	
Redbud	*Cercis canadensis*	
Thistle	*Cirsium horridulum*	
Stinging nettle	*Cnidoscolus stimulosus*	
Flowering dogwood	*Cornus florida*	
Green haw	*Crataegus viridis*	
Climbing hydrangea	*Decumaria barbara*	
Persimmon	*Diospyros virginiana*	
Florida elephant’s foot	*Elephantopus elatus*	
----------	*Erigeron vernus*	
Popash	*Fraxinus caroliniana*	
Pumpkin ash	*Fraxinus profunda*	
Southern gaura	*Gaura angustifolia*	
Water locust	*Gleditsia aquatica*	
Hawk’s beard,Hawkweed	*Hieracium megacephalon*	
Marsh,Whorled pennywort	*Hydrocotyle umbellata*	
St. John’s wort	*Hypericum sp.*	
Musky mint	*Hyptis alata*	
Gallberry	*Ilex glabra*	
American holly	*Ilex opaca*	
Yaupon holly	*Ilex vomitoria*	

*** Non-Native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Morning glory	*Ipomoea sp.*	
Marsh elder	*Iva frutescens*	
----------	*Iva imbricata*	
Seaside mallow	*Kosteletzkya virginica*	
Corkwood	*Leitneria floridana*	
Sea Lavender	*Limonium carolinianum*	
Sweetgum	*Liquidamber styraciflua*	
----------	*Lobelia paludosa*	
Christmas berry	*Lycium carolinianum*	
Staggerbush,Rusty lyonia	*Lyonia ferruginea*	
Southern magnolia	*Magnolia grandiflora*	
Sweetbay	*Magnolia virginiana*	
Angle-pod	*Matelea gonocarpa*	
Red mulberry	*Morus rubra*	
Waxmyrtle,Southern bayberry	*Myrica cerifera*	
Blackgum,Swamp tupelo	*Nyssa biflora*	
Ogeechee tupelo	*Nyssa ogeeche*	
Prickly pear	*Opuntia humifusa*	
Virginia creeper,Woodbine	*Parthenocissus quinquefolia*	
Swampbay	*Persea palustris*	
Mistletoe	*Phoradendron serotinum*	
Capeweed	*Phyla nodiflora*	
Camphorweed	*Pluchea camphorata*	
Marsh fleabane	*Pluchea foetida*	
Perennial marsh fleabane	*Pluchea rosea*	
----------	*Polyprepum procumbens*	
Pickerelweed	*Pontederia cordata*	
Mermaid weed	*Proserpinaca pectinata*	
False dandelion	*Pyrrhopappus carolinianus*	
Sand live oak	*Quercus geminata*	
Laurel oak	*Quercus hemisphaerica*	
Swamp laurel oak	*Quercus laurifolia*	
Myrtle oak	*Quercus myrtifolia*	
Water oak	*Quercus nigra*	
Live oak	*Quercus virginiana*	
Winged sumac	*Rhus copallina*	
Sand blackberry	*Rubus cuneifolius*	
Wild petunia	*Ruellia caroliniensis*	
Perennial glasswort	*Salicornia virginica*	
Coastal plain willow	*Salix caroliniana*	
Lyre-leaf sage	*Salvia lyrata*	
Pineland pimpernel	*Samolus parviflorus*	
Lizard's tail	*Saururus cernuus*	
Horse nettle	*Solanum carolinense*	
Corkwood	*Stillingia aquatica*	

*** Non-Native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Poison ivy	*Toxicodendron radicans*	
American elm	*Ulmus floridana*	
Sparkleberry	*Vaccinium arboreum*	
Highbush blueberry	*Vaccinium corymbosum*	
Shiny blueberry	*Vaccinium myrsinites*	
Southern arrow-wood	*Viburnum dentatum*	
Sand vetch	*Vicia acutifolia*	
Florida violet	*Viola floridana*	
Summer grape	*Vitis aestivalis*	
Scuppernong	*Vitis rotundifolia*	
	FISH	
Pirate perch	*Aphredoderus sayanus*	53,47
Flier	*Centrarchus macropterus*	53,47
Sheepshead minnow	*Cyprinodon variegatus*	53,47
Sunfish	*Enneacanthus sp.*	53,47
Mosquitofish	*Gambusia holbrooki*	53,47
Flagfish	*Jordanella floridae*	53,47
Warmouth	*Lepomis gulosus*	53,47
Striped mullet	*Mugil cephalus*	53,63
Golden shiner	*Notemigonus crysoleucas*	53,47
Molly	*Peocilia latipinna*	53,47
Redbreast sunfish	*Lepomis auritus*	53
Bluegill	*Lepomis macrochirus*	53
Redear sunfish	*Lepomis microlophus*	53
Florida largemouth bass	*Micropterus salmoides floridanus*	53
Suwannee bass	*Micropterus notius*	53
Spotted sucker	*Minytrema melanops*	53
Atlantic needlefish	*Strongylura marina*	53,63
Red drum	*Sciaenops ocellatus*	63
	AMPHIBIANS	
Mole salamander	*Ambystoma talpoideum*	35,8,41,28,30
Southeastern slimy salamander	*Pletodon grobmani*	35,8,41,28,30
Southern Toad	*Bufo terrestris*	23,15,35,8
Eastern narrow-mouthed frog	*Gastrophryne carolinensis*	All
Gray treefrog	*Hyla chrysocelis*	41,28,23
Green treefrog	*Hyla cinerea*	41,28,23
Pine-woods treefrog	*Hyla femoralis*	8,35,41
Squirrel treefrog	*Hyla squirella*	41,28,23
Southern spring peeper	*Pseudacris crucifer*	41,28,23
Florida chorus frog	*Pseudacris nigrita*	30,47
Little grass frog	*Pseudacris ocularis*	30,47
Ornate chorus frog	*Pseudacris ornata*	30,47

*** Non-Native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Bullfrog	*Rana catesbeiana*	30,47
Bronze frog	*Rana clamitans*	30,47
Southern leopard frog	*Rana utricularia*	30,47,34
Eastern spadefoot toad	*Scaphiopus holbrooki*	23,15
	REPTILES	
American alligator	*Alligator mississippensis*	37,47,53
Snapping turtle	*Chelydra serpentina*	34,30,47,53
Eastern chicken turtle	*Deirochelys reticularia*	34,30,47
Striped mud turtle	*Kinosternon bauri*	34,30,47
Eastern mud turtle	*Kinosternon subrubrum*	34,30,47,63
Florida cooter	*Pseudemys floridana*	34,30,47,63
Gulf coast box turtle	*Terrapene carolina*	63,8,41,15
Green anole	*Anolis carolinensis*	All
Six-lined racerunner	*Cnemidophorus sexlineatus*	All
Southeastern five-lined skink	*Eumeces inexpectatus*	23,8,35,41,15
Broad-headed skink	*Eumeces laticeps*	All
Island Glass Lizard	*Ophisaurus compressus*	23,8,35,41,15
Eastern Glass Lizard	*Ophisaurus ventralis*	23,8,35,41,15
Southern fence lizard	*Sceloporus undulatus*	8,41,15
Ground skink	*Scincella lateralis*	All
Florida cottonmouth	*Agkistrodon piscivorus*	34,30,47,53,63
Northern scarlet snake	*Cemophora coccinea*	23,8,41,15
Southern black racer	*Coluber constrictor*	23,8,41,15
Eastern diamondback	*Crotalus adamanteus*	23,8,41,15
Southern ringneck snake	*Diadophis punctatus*	35,41
Red rat snake,Corn snake	*Elaphe guttata*	23,8,41,15
Gray rat snake,Oak snake	*Elaphe obsoleta*	23,8,41,15
Eastern mud snake	*Farancia abacura*	28,53
Scarlet kingsnake	*Lampropeltis triangulam*	23,8,41,15
Banded water snake	*Nerodia fasciata*	47,53
Gulf salt marsh snake	*Nerodia clarkii clarkii*	63
Dusky pygmy rattlesnake	*Sistrurus miliarius*	23,8,41,15
Florida red-bellied snake	*Storeria occipitomaculata*	23,8,41,15
Blue-striped ribbon snake	*Thamnophis sauritus*	23,8,35,41,28,30
Blue-striped garter snake	*Thamnophis sirtalis*	23,8,35,41,28,30
	BIRDS	
Scott's seaside sparrow	*Ammodramus maritimus peninsulae*	63
American white pelican	*Pelecanus erythrorhynchos*	34,63
Brown pelican	*Pelecanus occidentalis*	63
Double-crested cormorant	*Phalacrocorax auritus*	34,63
Anhinga	*Anhinga anhinga*	34,63

*** Non-Native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Great blue heron	*Ardea herodias*	34,63
Great egret	*Casmerodius albus*	34,63
Snowy egret	*Egretta thula*	34,63
Little blue heron	*Egretta caerulea*	34,63
Tricolored heron	*Egretta tricolor*	34,63
Cattle egret	*Bubulcus ibis*	34,63
Green-backed heron	*Butorides striatus*	34,63
Black-crowned night heron	*Nycticorax nycticorax*	34,63
Yellow-crowned night heron	*Nyctanassa violacea*	34,63
Least bittern	*Ixobrychus exilis*	63
Wood stork	*Mycteria americana*	34,63
Red-breasted merganser	*Mergus serrator*	34,63
Black vulture	*Coragyps atratus*	All
Turkey vulture	*Cathartes aura*	All
Osprey	*Pandion haliaetus*	34,63
American swallow-tailed kite	*Elanoides forficatus*	28
Mississippi kite	*Ictinia mississippiensis*	28,53,81
Bald eagle	*Haliaeetus leucocephalus*	34,47,63
Northern harrier	*Circus cyaneus*	34,47,63
Red-shouldered hawk	*Buteo lineatus*	35
Red-tailed hawk	*Buteo jamaicensis*	35
American kestrel	*Falco sparverius*	81,82
Wild turkey	*Meleagris gallopavo*	35
Clapper rail	*Rallus longirostris*	34,63
Sora	*Porzana carolina*	34,63
Greater yellowlegs	*Tringa melanoleuca*	34,63
Laughing gull	*Larus atricilla*	63
Mourning dove	*Zenaida macroura*	All
Yellow-billed cuckoo	*Coccyzus americanus*	8,35,15,81,82
Barred owl	*Strix varia*	35
Chuck-will's widow	*Caprimulgus carolinensis*	35
Chimney swift	*Chaetura pelagica*	81
Belted kingfisher	*Ceryle alcyon*	34,63
Red-bellied woodpecker	*Melanerpes carolinus*	8,15,35,81
Yellow-bellied sapsucker	*Sphyrapicus varius*	35,81
Northern flicker	*Colaptes auratus*	15,35
Pileated woodpecker	*Dryocopus pileatus*	15,35
Acadian flycatcher	*Empidonax virescens*	23,35
Eastern phoebe	*Sayornis phoebe*	28,35
Great crested flycatcher	*Myiarchus crinitus*	28,35
Purple martin	*Progne subis*	81
Tree swallow	*Tachycineta bicolor*	47,53
Blue jay	*Cyanocitta cristata*	28,35,81
Fish crow	*corvus ossifragus*	34,63
Carolina chickadee	*Parus carolinensis*	35

*** Non-Native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Tufted titmouse	*Parus bicolor*	35
Carolina wren	*Thryothorus ludovicianus*	35,81
Marian's Marsh wren	*Cistothorus palustris*	34,63,47
Ruby-crowned kinglet	*Regulus calendula*	28,35
Blue -gray gnatcatcher	*Polioptila caerulea*	28,35
Hermit thrush	*Catharus guttatus*	28,35
Wood thrush	*Hylocichla mustelina*	35,81
American robin	*Turdus migratorius*	All
Gray catbird	*Dumetella carolinensis*	81,82
Mockingbird	*Mimus polyglottos*	8,15,41,81,82
Brown thrasher	*Toxostoma rufum*	8,15,81,82
White-eyed vireo	*Vireo griseus*	28,35
Solitary vireo	*Vireo solitarius*	28,35
Red-eyed vireo	*Vireo olivaceus*	28,35
Northern parula	*Parula americana*	28,35
Yellow-rumped warbler	*Dendroica coronata*	15,23,28,35,41
Yellow-throated warbler	*Dendroica dominica*	23,28,35
Pine warbler	*Dendroica pinus*	8,41,15
Palm warbler	*Dendroica palmarum*	23,15,35
Black and white warbler	*Mniotilta varia*	23,28,35
Prothonotary warbler	*Protonotaria citrea*	28,35
Common yellowthroat	*Geothlypis trichas*	28,35,34
Hooded warbler	*Wilsonia citrina*	28,35
Summer tanager	*Piranga rubra*	28,35
Northern cardinal	*Cardinalis cardinalis*	28,35,81
Indigo bunting	*Passerina cyanea*	23,81
Rufous-sided towhee	*Pipilo erythrophthalmus*	23,35,28
Chipping sparrow	*Spizella passerina*	23,35,28,81
Wakulla Seaside sparrow	*Ammodramus maritimus*	63
Red-winged blackbird	*Agelaius phoeniceus*	34,63
Boat-tailed grackle	*Quiscalus major*	34,63
Common grackle	*Quiscalus quiscalus*	81,82
Brown-headed cowbird	*Molothrus ater*	81,82
	MAMMALS	
Oppossum	*Didelphis marsupialis*	8,28,35
Eastern mole	*Scalopus aquaticus*	15,23
Florida black bear	*Ursus americanus*	28,35
Raccoon	*Procyon lotor*	8,15,23,28,35
River otter	*Lutra canadensis*	53,63
Gray fox	*Urocyon cinereoargenteus*	8,41,35
Florida bobcat	*Lynx rufus*	8,35
Eastern gray squirrel	*Sciurus carolinensis*	8,15,23,28,35,41,81,82
Eastern woodrat	*Neotoma floridana*	8,28,35,41

*** Non-Native Species**

Econfina River State Park—Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Cotton mouse	*Peromyscus gossypinus*	8,15,23,41
Eastern harvest mouse	*Reithrodontomys humilis*	8,15,23,41
Hispid cotton rat	*Sigmodon hispidus*	8,15,23,41
Eastern cottontail	*Sylvilagus floridanus*	8,15,41
Marsh rabbit	*Sylvilagus palustris*	34,35
White-tailed deer	*Odocoileus virginianus*	8,15,23,28,35,41,81
Nine-banded armadillo	*Dasypus novemcinctus*	8,15,23,28,35,41,81
Feral hog	*Sus scrofa*	8,15,23,28,35,41,81
Manatee	*Trichechus manatus*	53

*** Non-Native Species**

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

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

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

Lacustrine--Continued
45. Marsh Lake
46. River Floodplain Lake
47. Sandhill Upland Lake
48. Sinkhole Lake
49. Swamp Lake

Riverine
50. Alluvial Stream
51. Blackwater Stream
52. Seepage Stream
53. Spring-Run Stream

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

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

Subterranean
77. Aquatic Cave
78. Terrestral Cave

Miscellaneous
79. Ruderal
80. Developed

MTC Many Types Of Communities
OF Overflying

Addendum 5—Designated Species List

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.

LEGAL STATUS

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

LE	=	Listed as Endangered Species in the List of Endangered and Threatened Wildlife and Plants under the provisions of the Endangered Species Act. Defined as any species that is in danger of extinction throughout all or a significant portion of its range.
PE	=	Proposed for addition to the List of Endangered and Threatened Wildlife and Plants as Endangered Species.
LT	=	Listed as Threatened Species. Defined as any species that is likely to become an endangered species within the near future throughout all or a significant portion of its range.
PT	=	Proposed for listing as Threatened Species.
C	=	Candidate Species for addition to the list of Endangered and Threatened Wildlife and Plants. Defined as those species for which the USFWS currently has on file sufficient information on biological vulnerability and threats to support proposing to list the species as endangered or threatened.
E(S/A)	=	Endangered due to similarity of appearance.
T(S/A)	=	Threatened due to similarity of appearance.

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.

Econfina River State Park—Plants

Common Name/ *Scientific Name*	Designated Species Status FDA	USFWS	FNAI
Corkwood *Leitneria floridana*	LT		G3,S3

Econfina River State Park—Plants

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

Econfina River State Park—Animals

Common Name/ *Scientific Name*	Designated Species Status FFWCC	USFWS	FNAI
FISH			
Suwannee bass *Micropterus notius*	LS		G3,S3
REPTILES			
American alligator *Alligator mississippiensis*	LS	LT(S/A)	G5,S4
Gopher tortoise *Gopherus polyphemus*	LS		G3,S3
Eastern diamondback rattlesnake *Crotalus adamanteus*			G4,S3
Gulf saltmarsh snake *Nerodia clarkii clarkii* G4T3,S3?			
BIRDS			
Scott's seaside sparrow *Ammodramus maritimus peninsulae*		LS	G4T3,S3
Great egret *Ardea alba* G5,S4			
Snowy egret *Egretta thula*		LS	G5,S3
Little blue heron *Egretta caerulea*		L	G5,S4
Tricolored heron *Egretta tricolor*		LS	G5,S4
Swallow-tailed kite *Elanoides forficatus*			G5,S2
Least Bittern *xobrychus exilis*			G5,S4
Wood stork *Mycteria americana*	LE	LE	G4,S2
Bald eagle *Haliaeetus leucocephalus*	LT	LT	G4,S3
American kestrel *Falco sparverius paulus*		LT	G5T4,S3
Marian's marsh wren *Cistothorus palustris*		LS	G5T3,S3

Common Name/ *Scientific Name*	**Designated Species Status** FFWCC	USFWS	FNAI
Black-crowned night heron			
Nycticorax nycticorax			G5,S3
Yellow-crowned night heron			
Nyctanassa violacea			G5,S3
Osprey			
Pandion haliaetus			S3,S4
Brown pelican			
Pelecanus occidentalis		LS	G4,S3
MAMMALS			
Florida black bear			
Ursus americanus		LT	G5T2,S2
Manatee			
Trichechus manatus	LE	LE	G2,S2

Addendum 6—Priority Schedule And Cost Estimates

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

Resource Management

1.	Phase I Archaeological Resources Survey	**$15,000**
2.	Hydrological Restoration (Estimated cost of additional culverts along Bird Island Road and Marsh Island Road, if determined to be necessary) Material costs:	**$30,000-$50,000**
3.	Prescribed Fire, staffing, equipment (reoccurring every 2-3 years)	**$3,000**
4.	Initial Flora & Fauna Surveys	**$15,000**
5.	Water Monitoring Program, if determined necessary (Estimated initial cost)	**$10,000**
	(Estimated annual reoccurring cost)	**$1,500**
6.	Monitoring of Threatened / Endangered species (Staff, Equipment) estimated annual cost	**$1,500**
7.	Exotic removal efforts (Staff hours coordinating trapping efforts) Estimated annual cost)	**$1,500**

Visitor Services

8. 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 **$30,000/yr. recurring**

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

Capital Improvements

Boat Ramp/ Picnic Area	$210,500.00
Camping	$233,000.00
Support Facilities	$344,000.00
Trails	$196,500.00
Total with contingency	**$1,180,800.00**

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

Additional Information

FNAI Descriptions

DHR Cultural Management Statement

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Mesic Flatwoods - flatland with sand substrate; mesic; subtropical or temperate; frequent fire; slash pine and/or longleaf pine with saw palmetto, gallberry and/or wiregrass or cutthroat grass understory.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Flatwoods/Prairie Lake - generally shallow basin in flatlands with high water table; frequently with a broad littoral zone; still water or flow-through; sand or peat substrate; variable water chemistry, but characteristically colored to clear, acidic to slightly alkaline, soft to moderately hard water with moderate

mineral content (sodium, chloride, sulfate); oligo-mesotrophic to eutrophic.

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

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

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

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

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

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

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

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

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

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

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

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

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

MARINE/ESTUARINE (The distinction between the Marine and Estuarine Natural Communities is often subtle, and the natural communities types found under these two community categories have the same

descriptions. For these reasons they have been grouped together.) - Subtidal, intertidal and supratidal zones of the sea, landward to the point at which seawater becomes significantly diluted with freshwater inflow from the land.

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

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

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

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

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

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

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

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

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

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

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

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

DEFINITIONS OF TERMS Terrestrial and Palustrine Natural Communities

Physiography

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

Hydrology

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

Climatic Affinity of the Flora

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

Fire

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

LATIN NAMES OF PLANTS MENTIONED IN NATURAL COMMUNITY DESCRIPTIONS

anise - *Illicium floridanum*
bays:
- swamp bay -*Persea palustris*
- gordonia -*Gordonia lasianthus*
- sweetbay -*Magnolia virgiana*

beakrush - *Rhynchospora* spp.
beech - *Fagus grandifolia*
blackgum - *Nyssa biflora*
blue palmetto - *Sabal minor*
bluestem - *Andropogon* spp.
buttonbush - *Cephalanthus occidentalis*
cabbage palm - *Sabal palmetto*
cacti - *Opuntia* and *Harrisia* spp., predominantly *stricta* and *pentagonus*
cane - *Arundinaria gigantea* or *A. tecta*
cattail - *Typha* spp.
cedars:
- red cedar - *Juniperus silicicola*
- white cedar - *Chamaecyparis thyoides* or *C. henryi*

cladonia - *Cladonia* spp.
cypress - *Taxodium distichum*
dahoon holly - *Ilex cassine*
diamondleaf oak - *Quercus laurifolia*
fire flag - *Thalia geniculata*
Florida maple - *Acer barbatum*
gallberry - *Ilex glabra*
gums:
- tupelo - *Nyssa aquatica*
- blackgum - *Nyssa biflora*
- Ogeechee gum - *Nyssa ogeche*

hackberry - *Celtis laevigata*
hornbeam - *Carpinus caroliniana*
laurel oak - *Quercus hemisphaerica*
live oak - *Quercus virginiana*
loblolly pine - *Pinus taeda*
longleaf pine - *Pinus palustris*
magnolia - *Magnolia grandiflora*
maidencane - *Panicum hemitomon*
needle palm - *Rhapidophyllum hystrix*
overcup oak - *Quercus lyrata*
pickerel weed - *Pontederia cordata* or *P. lanceolata*
pignut hickory - *Carya glabra*
pop ash - *Fraxinus caroliniana*
pond apple - *Annona glabra*
pond pine - *Pinus serotina*
pyramid magnolia - *Magnolia pyramidata*
railroad vine - *Ipomoea pes-caprae*
red cedar - *Juniperus silicicola*
red maple - *Acer rubrum*
red oak - *Quercus falcata*
rosemary - *Ceratiola ericoides*
sagittaria - *Sagittaria lancifolia*
sand pine - *Pinus clausa*
saw palmetto - *Serenoa repens*
sawgrass - *Cladium jamaicensis*
scrub oaks - *Quercus geminata, Q. chapmanii, Q. myrtifolia,Q. inopina*
sea oats - *Uniola paniculata*
seagrape - *Coccoloba uvifera*
shortleaf pine - *Pinus echinata*
Shumard oak - *Quercus shumardii*
slash pine - *Pinus elliottii*
sphagnum moss - *Sphagnum* spp.
spikerush - *Eleocharis* spp.
spruce pine - *Pinus glabra*
St. John's wort - *Hypericum* spp.
swamp chestnut oak - *Quercus prinus*
sweetgum - *Liquidambar styraciflua*
titi - *Cyrilla racemiflora*, and *Cliftonia monophylla*
tuliptree - *Liriodendron tulipfera*
tupelo - *Nyssa aquatica*
turkey oak - *Quercus laevis*
water oak - *Quercus nigra*
waterlily - *Nymphaea odorata*
white cedar - *Chamaecyparis thyoides*
white oak - *Quercus alba*
willow - *Salix caroliniana*
yucca - *Yucca aloifolia*

A. GENERAL DISCUSSION

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

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

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

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

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

B. STATUTORY AUTHORITY

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

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

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

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

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

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

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

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

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

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

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

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

C. MANAGEMENT POLICY

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

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

It should be noted that while many archaeological and historical sites are already recorded within state--owned or controlled--lands, the majority of the uplands areas and nearly all of the inundated areas have

not been surveyed to locate and assess the significance of such resources. The known sites are, thus, only an incomplete sample of the actual resources - i.e., the number, density, distribution, age, character and condition of archaeological and historic sites - on these tracts. Unfortunately, the lack of specific knowledge of the actual resources prevents formulation of any sort of detailed management or use plan involving decisions about the relative historic value of individual sites. For this reason, a generalized policy of conservation is recommended until the resources have been better addressed.

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

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

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

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

4. If in the course of management activities, or as a result of development or the permitting of dredge activities (see 403.918(2)(6)a, F.S.), it is determined that valuable historic or archaeological sites will be damaged or destroyed, the Division reserves the right, pursuant to 267.061(1)(b), F.S., to require salvage measures to mitigate the destructive impact of such activities to such sites. Such salvage measures would be accomplished before the Division would grant permission for destruction of the affected site areas. The funding needed to implement salvage measures would be the responsibility of the managing agency planning the site destructive activity. Mitigation of historic structures at a minimum involves the preparation of measured drawings and documentary photographs. Mitigation of archaeological resources involves the excavation, analysis and reporting of the project findings and must be planned to occur sufficiently in advance to avoid project construction delays. If these services are to be contracted by the state agency, the selected consultant will need to obtain an Archaeological Research Permit from the Division of Historical Resources, Bureau of Archaeological Research (see 267.12, F.S. and Rules 1A-32 and 1A-46 F.A.C.).

5. For the near future, excavation of non-endangered (i.e., sites not being lost to erosion or development) archaeological site is discouraged. There are many endangered sites in Florida (on

both private and public lands) in need of excavation because of the threat of development or other factors. Those within state-owned or controlled lands should be left undisturbed for the present - with particular attention devoted to preventing site looting by "treasure hunters". On the other hand, the archaeological and historic survey of these tracts is encouraged in order to build an inventory of the resources present, and to assess their scientific research potential and historic or architectural significance.

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

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

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

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

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

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

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

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

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

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

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

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

9. New additions, exterior alterations, or related new construction shall not destroy materials that characterize the property. The new work shall be differentiated from the old and shall be

compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

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

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

D. MANAGEMENT IMPLEMENTATION

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

1. All land managing agencies should contact the Division and send U.S.G.S. 7.5 minute quadrangle maps outlining the boundaries of their various properties.
2. The Division will in turn identify site locations on those maps and provide descriptions for known archaeological and historical sites to the managing agency.
3. Further, the Division may also identify on the maps areas of high archaeological and historic site location probability within the subject tract. These are only probability zones, and sites may be found outside of these areas. Therefore, actual ground inspections of project areas may still be necessary.
4. The Division will send archaeological field recording forms and historic structure field recording forms to representatives of the agency to facilitate the recording of information on such resources.
5. Land managers will update information on recorded sites and properties.
6. Land managers will supply the Division with new information as it becomes available on previously unrecorded sites that their staff locate. The following details the kind of information the Division wishes to obtain for any new sites or structures that the land managers may report:

A. Historic Sites

(1) Type of structure (dwelling, church, factory, etc.).
(2) Known or estimated age or construction date for each structure and addition.
(3) Location of building (identify location on a map of the property, and building placement, i.e., detached, row, etc.).
(4) General Characteristics: (include photographs if possible) overall shape of plan (rectangle, "L" "T" "H" "U", etc.); number of stories; number of vertical divisions of bays; construction materials (brick, frame, stone, etc.); wall finish (kind of bond, coursing, shingle, etc.); roof shape.
(5) Specific features including location, number and appearance of:
- **(a)** Important decorative elements;
- **(b)** Interior features contributing to the character of the building;
- **(c)** Number, type, and location of outbuildings, as well as date(s) of construction;
- **(d)** Notation if property has been moved;
- **(e)** Notation of known alterations to building.

B. Archaeological Sites

(1) Site location (written narrative and mapped location).
(2) Cultural affiliation and period.
(3) Site type (midden, burial mound, artifact scatter, building rubble, etc.).

(4) Threats to site (deterioration, vandalism, etc.).
(5) Site size (acreage, square meters, etc.).
(6) Artifacts observed on ground surface (pottery, bone, glass, etc.).
(7) Description of surrounding environment.

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

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

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

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

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

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

E. ADMINISTERING AGENCY

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

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

Contact Person

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