BIG SHOALS PUBLIC LANDS

MANAGEMENT PLAN

APPROVED

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

DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES
Division of Forestry

FISH AND WILDLIFE CONSERVATION COMMISSION

SUWANEE RIVER WATER MANAGEMENT DISTRICT

FEBRUARY 11, 2005

Department of Environmental Protection

Jeb Bush
Governor

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

Colleen Castille
Secretary

February 11, 2005

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

Re: Big Shoals Public Lands Lease #3541 and #3592

Dear Ms. White:

On February 11, 2005, the Acquisition and Restoration Council recommended approval of the Big Shoals Public Lands 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 Big Shoals Public Lands. Pursuant to Sections 253.034 and 259.032, Florida Statutes, and Chapter 18-2, Florida Administrative Code this plan's ten-year update will be due on February 11, 2015.

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

Sincerely,

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

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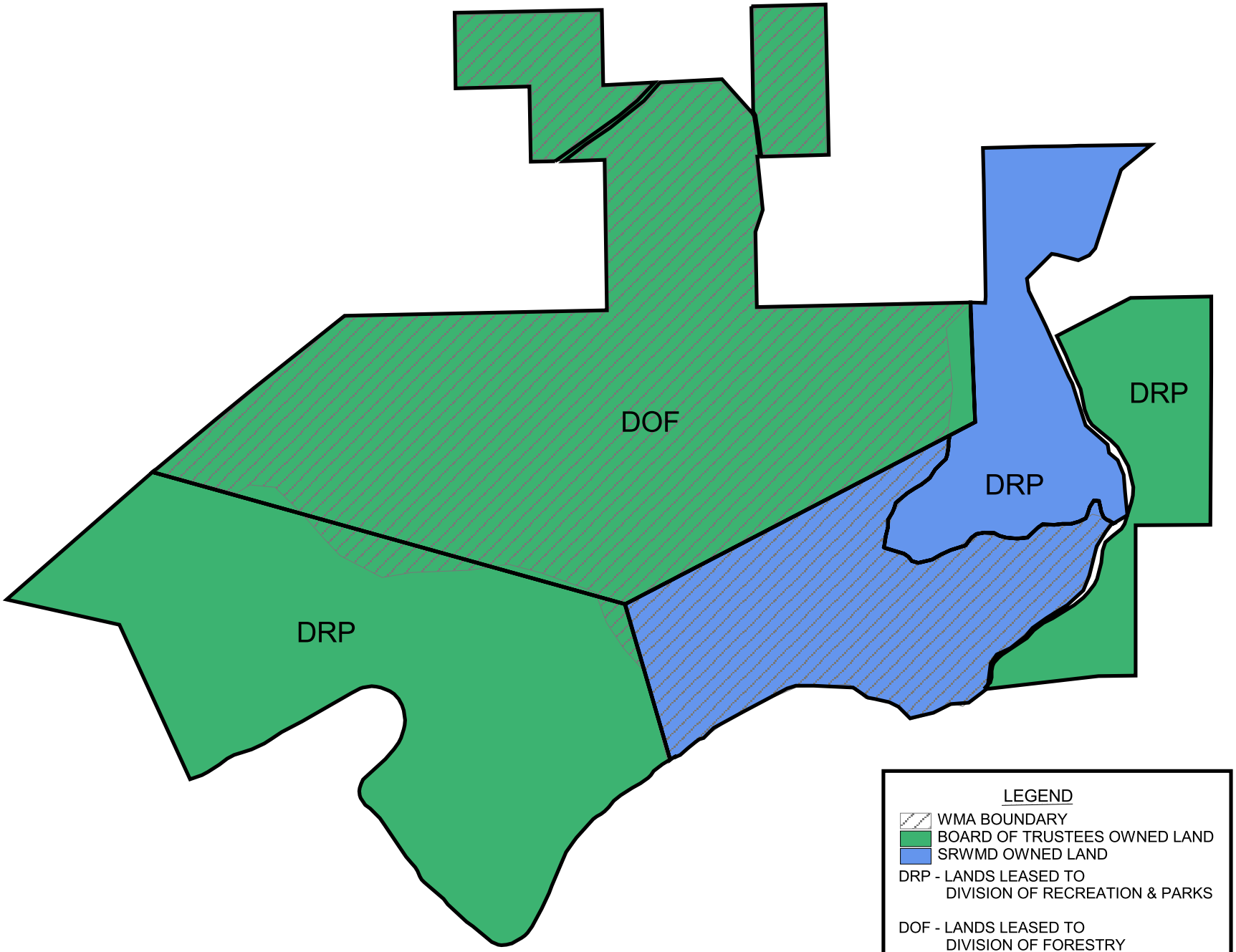
INTRODUCTION

Between 1986 and 1989, the State of Florida and the Suwannee River Water Management District (SRWMD) acquired almost 4,000 acres to protect in perpetuity "the Big Shoals," the largest whitewater area in Florida. This acquisition was also intended to protect unique vistas and upland areas, historic sites along the Suwannee River, the river floodplain and the potential to experience this special landscape. Views of the Suwannee River from atop a steep bluff provide a natural vista seldom encountered elsewhere in Florida. Waters seeping from the uplands along this bluff support an almost primeval natural community, the baygall, which contain mosses and ferns that thrive amongst the gnarled roots of the hardwoods that tower overhead. Hardwood forests with open understories, reminiscent of forests further north, are drained by intermittent streams that tumble through ravines cut into the slopes of the river bluffs. Downslope, in or near the river floodplain, yet other examples of high quality natural communities exist, including flatwoods dominated by longleaf pine. These areas provide visitors with a rare opportunity to view natural Florida in a relatively undisturbed state. The resource-based recreational opportunities associated with the Suwannee River, and especially the Big and Little Shoals rapids, have traditionally drawn many visitors to the area. This unique property, located in Hamilton and Columbia Counties, is currently managed by a combination of state agencies and the SRWMD.

The original CARL project, known as the Brown Tract, was purchased from The Nature Conservancy (TNC) in 1986, with subsequent acquisitions by the SRWMD (see Addendum 1). For this plan, total acreage has been calculated based on the composition of natural communities, in addition to ruderal and developed areas. Currently, the public lands addressed in this management plan comprise approximately 3,372 acres.

Fee simple title interest in these public lands is divided between the Board of Trustees of the Internal Improvement Trust Fund (Board) and the SRWMD. Management of the property is subdivided among three agencies: the Florida Department of Agriculture and Consumer Services, Division of Forestry (DOF), the Florida Department of Environmental Protection, Division of Recreation and Parks (Division), and the SRWMD. The DOF holds the Board lease on the northern 1,673 acres of the Hamilton County property known as Big Shoals State Forest. The Division holds the Board lease for the southwest (1,012 acres) portion of the property within Hamilton County and for a smaller parcel (288 acres) located on the opposite side of the Suwannee River in Columbia County. The SRWMD owns the southeast 983 acres of the Hamilton County portion of the property and leases the northern half of this area to the Division. The lands under lease to the Division comprise Big Shoals State Park. The Florida Fish and Wildlife Conservation Commission (FWC) regulate recreational hunting on the roughly 2,140-acre Big Shoals Wildlife Management Area (WMA), which includes the DOF property and a portion of SRWMD land. The Agency Boundaries Map delineates these jurisdictional boundaries.

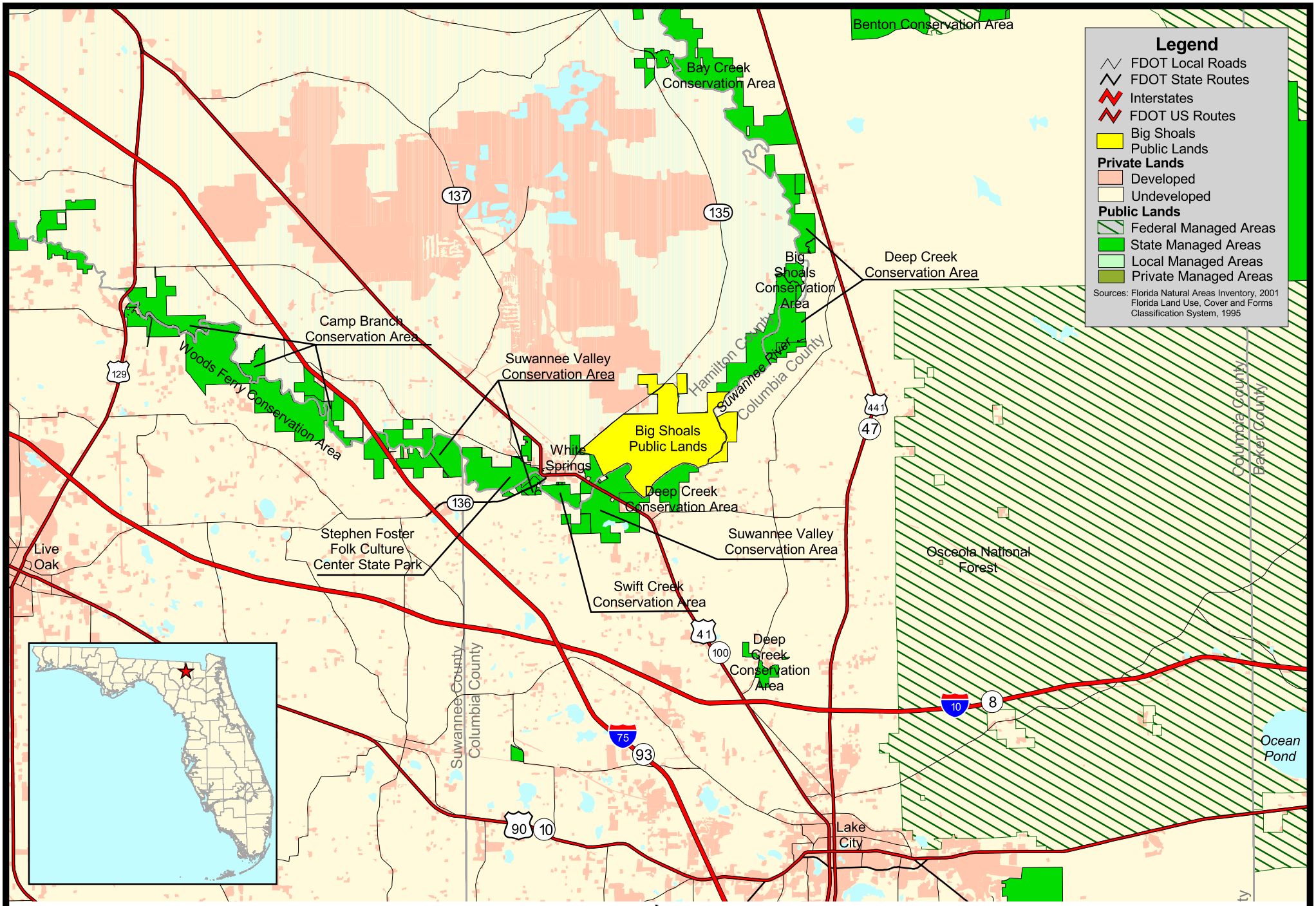
This plan addresses the proposed management of this property, collectively referred to as Big Shoals Public Lands (BSPL). Although the DOF, the Division, the SRWMD and the FWC have different legislative mandates and management missions, they share a unified vision for addressing the management and protection of natural resources and the management of visitor use on the BSPL. This plan conveys an inter-agency consensus about the property's qualities and the desired future conditions regarding resource management and public access for outdoor recreation. Access to BSPL is from County Road 135 about 0.75 miles north of the intersection of County Road 135 and U.S. Highway 41 in White Springs (see Vicinity Map). The Vicinity Map also reflects significant land and water resources existing near the property.



BIG SHOALS
PUBLIC LANDS

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

AGENCY
BOUNDARIES



Big Shoals Public Lands

Vicinity Map

PURPOSE AND SCOPE OF THE PLAN

This plan serves as the basic statement of policy and direction for the management of those lands co-managed by DOF, FWC and Division known collectively as Big Shoals Public Lands. It identifies the objectives, criteria and standards that guide each aspect of the unit's 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 June 17, 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 property. The resource management component provides a detailed inventory and assessment of the natural and cultural resources of the property. 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 property 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 property to accommodate secondary management purposes ("multiple uses") was analyzed. These secondary purposes were considered within the context of the Agencies' statutory responsibilities and an analysis of the resource needs and values of the property. This analysis considered the natural and cultural resources, management needs, aesthetic values, visitation and visitor experiences. These compatible secondary management purposes are addressed under the Management Authority and Responsibility section below, and in the Resource Management Component of the plan. Uses such as, water resource development projects, water supply projects, stormwater management projects, linear facilities, communication towers and antennas, and sustainable agriculture are not consistent with this plan or the management purposes of the property and should be discouraged.

The potential for generating revenue to enhance management was also analyzed. The principal sources of revenue for BSPL are derived from timber harvesting, visitor fees and charges, and hunting permits.

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

Division of Forestry

The primary mission for Big Shoals State Forest is to protect and manage the unique resources of the state forest through a stewardship ethic to assure these resources will be available for future generations. This will be accomplished by implementing sound ecosystem management principles, which will:

- restore, maintain, and protect in perpetuity all native ecosystems,
- insure long-term viability of biological species considered rare, endangered, threatened, or of special concern,
- integrate human use through multiple-use management, not emphasizing any particular use over the others or over improvement, maintenance and protection of native ecosystems,
- practice sustainable forest management utilizing sound silvicultural techniques.

These general objectives will be used to achieve the specific objectives and purposes for which Big Shoals State Forest was acquired.

Specific authority for the DOF's management of public lands is derived from Chapters 253.034 and 589.04 of the Florida Statutes. Management of the DOF portion of BSPL under the multiple-use concept complies with the State Lands Management Plan, providing balanced public utilization of the property, while at the same time protecting the value and resources of the land. Multiple uses will include, but are not limited to: archaeological and historical resources, ecosystem restoration, timber management, recreation, wildlife management, watershed management and environmental education.

Sound ecosystem management is an overall goal for the property. Local demands and geographic factors influence the array of uses to be applied to any area of the state forest. Only uses compatible with the state forest and its ecosystems will be implemented. The goal of the DOF is to protect and manage ecosystems, to maintain biological diversity and to integrate public use through wise use of the total resource.

Division of Recreation and Parks

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

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

The Trustees have also granted management authority of certain sovereign submerged lands to 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 Division 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 near shore areas and to provide authority to manage activities that could adversely impact public recreational uses.

Many operating procedures are standard system wide and are set by policy. These procedures are outlined in the Division's Operations Manual (OM) 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.

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 restoration and management of natural systems. Development is directed toward providing public access to and within the property, and to providing recreational facilities, in a reasonable balance, that are both convenient and safe. Program emphasis is on interpretation of the natural, aesthetic and educational attributes of the property.

In the development of this plan, the potential of the Division's portions of BSPL to accommodate secondary management purposes ("multiple uses") was analyzed. It was determined that timber management for 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.

Suwannee River Water Management District

The SRWMD is authorized to acquire land for water management, water supply, and protection of water resources under Florida Statute 373.59. The statute directs the SRWMD to manage the lands in an environmentally acceptable manner and to restore them to their natural state to the extent practicable. The lands are also to be open for recreational activities to the extent possible considering the environmental sensitivity and suitability of the lands.

The two primary management goals on SRWMD lands are to promote a non-structural floodplain management policy and to maintain a forested floodplain within the 100-year floodplain of the rivers within the SRWMD. The lands reduce the effects of flooding through the attenuation of floodwaters and serve as a buffer that minimizes the flow of pollution from human activities into the ground and surface water resources of the region.

Fish and Wildlife Conservation Commission

The FWC, a cooperating agency in the management of BSPL, is charged with the responsibility to manage fish and wildlife for the benefit of people and the long-term welfare of the resource. A portion of the BSPL has been designated and established by the FWC as a Wildlife Management Area and is administered in accordance with Article IV, Section 9, Florida Constitution, and Chapters 253, 259, 327, 370, 372, 373, 375, 378, 403, 487, 597 and 870, Florida Statutes.

Goals and Objectives

The following goals and objectives express the long-term intent in managing BSPL. At the

beginning of the process to update this management plan, the Agencies 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 property 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 land management and development activities are reviewed each year as part of the legislative budget process. The State Agencies prepare an annual legislative budget request based on the priorities established for their agencies. The agencies also aggressively pursue a wide range of other funds and staffing resources, such as grants, volunteers and partnerships with other agencies, local governments and the private sector, for supplementing normal legislative appropriations to address unmet needs. The ability of the agencies 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.

Inter-Agency Management Goals and Objectives

I. Continue to integrate the management responsibilities of the participating agencies at BSPL.

1. Coordinate and execute an effective management strategy for BSPL.

A. Agency representatives will hold regular inter-agency coordination meetings, at least semi-annually, organized and facilitated by an annually rotating chairperson.

B. Cooperatively manage BSPL in a manner consistent with this management plan and agencies' policies and missions.

C. Develop and execute an operational agreement to govern the sharing of resources, staff, and management costs in an equitable manner.

D. Help achieve the work force necessary for quality management and protection of the BSPL by coordinating the agencies' work plans, annual budget requests and allocations.

2. Continue a coordinated approach to visitor management so that the jurisdictional boundaries do not affect the public use and enjoyment of BSPL's outdoor recreation resources.

A. Coordinate the development of recreational and interpretive improvements and programs among all managing agencies to avoid duplication of services, conceptual land use plan inconsistencies, and to ensure the presentation of a coherent, consistent educational message.

B. Utilize a unified signage and orientation system where possible.

II. Identify, preserve, protect and actively manage natural resources.

1. Restore fire-maintained natural communities.

A. Develop and implement a plan for restoration of the property's fire-maintained natural communities. Multiple restoration techniques will be used, including prescribed burning, tree girdling, application of herbicides to invasive species, and replanting of groundcover and canopy species that have been eliminated or reduced in numbers over the years.

B. Focus timber management efforts on restoration of longleaf pine communities through prescribed burning, and silvicultural techniques such as selective thinning and regeneration harvests, where appropriate.

2. Assess the damage caused by southern pine beetles and initiate restoration of clearcut areas.

A. Inspect areas cleared due to pine beetle infestations for new outbreaks and initiate

prescribed burning and replanting of longleaf pines as necessary.

3. Restore hydrology and improve water quality by rehabilitating fire lines and by relocating or stabilizing unwisely routed roads and trails.
   - **A.** Restore unneeded fire lines and correct any related hydrological problems.
   - **B.** Evaluate service roads and trails to determine effects on natural hydrology and water quality. Management measures to preserve natural hydrology and water quality or to correct problem areas may include, but are not limited to, the installation of fording mats or culverts in appropriate locations.
   - **C.** Periodically monitor areas with a potential for erosion, and initiate corrective measures where necessary.
4. Reduce habitat fragmentation by abandoning unneeded roads.
   - **A.** Non-essential service roads and fire lanes will be abandoned and restored to the appropriate natural community.
5. Control invasive exotic plant and animal species through appropriate methods.
6. Conserve and protect listed species and their habitats.
   - **A.** Maintain and improve productive habitat for gopher tortoises and their burrow commensals.
   - **B.** Assess, in cooperation with the FWC, the potential restoration of the wading bird rookery in Shoals Pond.
   - **C.** Maintain and improve habitat for hooded pitcher plants and other rare plant species.
7. Conduct research and monitoring programs to gain a better understanding of historic, existing and changing resource conditions.
   - **A.** Coordinate information-gathering efforts of researchers and other agencies so that comprehensive inventories of plant and animal species can be completed**.**
   - **B.** Compile information about past land use practices that have affected today's natural resources.
   - **C.** Conduct a survey of existing firelines to determine potential impacts to natural communities and identify significant barriers to community restoration.
8. Monitor land use activities outside BSPL that may impact natural and cultural resources or the visitor experience, and increase public awareness of resource management needs of the property.
   - **A.** Participate in the land use planning process by attending local government meetings, contacting planning departments and coordinating with regulatory authorities when appropriate.
   - **B.** Participate as guest speakers at civic association and other special interest group meetings.

III. Identify, preserve, protect and actively manage cultural resources consistent with state agency responsibilities as identified under the Florida Historic Preservation Act, Chapter 267, F.S.

1. Increase monitoring of cultural resources and document changes observed.
   - **A.** Establish photo points and photograph certain sensitive cultural resource sites on a regular schedule.
   - **B.** Visit selected cultural resources on at least a semiannual basis. Add notes taken during site visits to the data collection kept for each resource.
   - **C.** Monitor sites for vandalism and discourage casual trails through interpretative signage where appropriate.
   - **D.** Monitor the condition of sites showing evidence of disturbance through erosion.
2. Conduct archaeological investigations necessary for a holistic understanding of cultural resources that consider the full range of sites' associations.
   - **A.** Pursue funding for a comprehensive, integrated archaeological survey of all areas

proposed for major or moderate disturbances.

B. Continue to work with the Division of Historical Resources (DHR) to record new sites as they are encountered, and update existing records in the Florida Master Site File.

C. Enlist assistance of the CARL Archaeological Survey in protection and survey of cultural resources.

3. Ensure that development activities minimize impacts to cultural resources.

A. Conduct ground disturbing activities in accordance with each agency's policy in consultation with DHR.

B. Minimize the impact of development activities on the cultural landscape in the immediate vicinity of the Suwannee River.

IV. Promote public access and interpretation.

1. Develop a unified statement for interpretation for the natural and cultural resources at BSPL.

2. Provide for increased visitor access and environmental education at BSPL by coordinating the development and management of the proposed recreation facilities.

3. Promote BSPL as a gateway to Florida's natural resources and beauty in conjunction with Stephen Foster State Folk Culture Center and other public lands.

4. Maintain a trail system brochure that shows trails and facilities, and interprets the natural communities and cultural resources of BSPL.

5. Provide local chambers of commerce and tourism development organizations with information on the public facilities at the BSPL.

V. Pursue acquisition of additional properties to meet future operational needs.

1. Expand the property's boundaries to provide a buffer between sensitive natural communities and potential future development, including mining, and to improve access and enhance recreational opportunities.

Agency Specific Management Goals and Objectives

Division of Forestry

1. Continue sustainable forest management and ecosystem management activities on Big Shoals State Forest.

A. Restore native biological communities and the health and vigor of the forest ecosystem through prescribed burning and by reforesting upland areas, both naturally and artificially, with the proper species.

B. Maintain the forest over the long term through natural and artificial regeneration of the appropriate species and by creating and perpetuating a forest exhibiting old growth characteristics, that yields both economic and ecological benefits.

C. Provide a sustainable supply of forest products, insuring that timber management and harvesting complements ecosystem management objectives.

D. Coordinate with the other managers in conducting forest management and restoration activities, where consistent with the management objectives of the properties.

2. Provide the opportunity for compatible multiple use activities on the state forest portion of BSPL.

A. Continue to include the state forest in the WMA system.

B. Emphasize the protection of listed species when conducting land management activities.

Division of Recreation and Parks

1. Continue to provide quality resource based outdoor recreational and interpretive programs and facilities on lands leased to Division.

A. Provide facilities and use areas to support canoe/kayak access, primitive camping, hiking, biking and equestrian trail opportunities, nature study and picnicking.

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. Improve existing canoe/kayak access and portage points.

B. Develop a primitive group camping area near the Godwin Bridge Use Area.

C. Expand picnic opportunities with additional facilities at the Godwin Bridge and Little Shoals Use Areas.

D. Relocate the equestrian trailhead to the Little Shoals Entrance.

E. Provide additional static interpretive displays in main use areas and at significant natural and cultural features to educate visitors and encourage responsible use.

F. Construct the Woodpecker Trail, a paved shared-use trail connecting the Little Shoals and the Godwin Bridge entrances.

G. Provided controlled access to and enhance views of the Big and Little Shoals by bridging wet areas, constructing boardwalks, overlooks and selective clearing of vegetation.

3. Pursue funding and partnerships to meet basic operational requirements.

A. Establish staffing levels sufficient to meet management responsibilities as additional facilities are established on Division lands.

B. Maintain a prioritized list of equipment needed for daily operations and resource management.

C. Acquire additional equipment necessary to meet the management needs of the property through the Division budget process, outside funding sources, and/or loans of equipment through cooperative agreements between agencies.

D. Develop programs and partnerships with local schools and community organizations.

E. Recruit and maintain volunteers to assist with management and interpretation of the property.

F. Conduct routine safety and maintenance inspections of facilities and public areas and correct deficiencies as needed. Assure compliance with state and federal safety guidelines.

G. Continue to improve universal access to public facilities in compliance with the Americans with Disabilities Act.

H. Provide staff with appropriate training opportunities in visitor services, resource management, operations and interpretation.

4. Improve protection of resources and management of public access on the Columbia County parcel.

A. Seek funds for fencing and clearly marking the boundaries of the parcel.

B. Establish reliable land-based access to the southern end of the parcel through acquisition or legal easement to enhance resource and visitor management.

C. After boundaries are secured and damage resulting from unauthorized four-wheel drive traffic has been reduced, stabilize roads in the eastern parcel in an environmentally sensitive manner.

D. Regularly monitor visitor use impacts at the canoe portage and camping site once access is improved.

Suwannee River Water Management District

1. Provide protection of water resources and flood control in the Big Shoals Conservation Area.

A. Preserve floodplain areas to maintain storage capacity and attenuate floodwaters.

B. Maintain the forested floodplain to serve as a pollution-filtering buffer between

adjacent private properties and the river.

C. Maintain historical water regimes and restore those that have been impacted by past management or existing facilities.

D. Protect surface water features and groundwater interfaces from activities that may degrade their functioning as habitat or water recharge and transportation system.

Fish and Wildlife Conservation Commission

1. Provide a WMA consistent with the cooperative arrangement among the managing agencies at BSPL.

A. Work with cooperating agencies to ensure compatibility of hunting activities with other public use activities on BSPL.

2. Assure the long-term welfare of the fish and wildlife resources of BSPL.

A. Work with the other cooperating agencies to avoid habitat fragmentation by closing unnecessary roads and trails.

B. Assist cooperating agencies with technical recommendations regarding management of fish and wildlife resources.

Management Coordination

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

The DOF, assists the Division, SRWMD and FWC staff with the development of wildfire emergency plans, timber sales, multiple use management and the authorization required for prescribed burning. The FWC assists DOF, Division and SRWMD staff in the enforcement of state laws pertaining to wildlife, freshwater fish and other aquatic life existing within the BSPL boundaries. In addition, the FWC aids the other agencies with wildlife management programs, including the development and management of Watchable Wildlife programs. The Division provides agency partners with resource management, management plan development and recreation planning and management assistance. The DHR assists agency staff to assure protection of archaeological and historical sites. The DEP, Bureau of Beaches and Wetland Resources aids agency staff in the development of erosion control projects. The managing agencies are also coordinating with the University Of Florida College Of Veterinary Medicine on multi-year study of Upper Respiratory Tract Disease in gopher tortoises at BPSL.

This plan proposes to continue to integrate the management responsibilities of the participating agencies at BSPL. For this purpose a two-tiered coordination system is recommended. The first tier coordinates issues such as work plans, resource management, visitor services and management on short-term cycles. The second tier coordinates issues such as agency budget requests, funding allocations, and management costs. Meetings are scheduled to ensure all work plans are reviewed by the four management agencies and coordinated as necessary. Consensus on all work plans is the desired result. Disputes may be taken to agency heads for resolution when necessary.

Public Participation

The managers provided an opportunity for public input by conducting a public workshop and an advisory group meeting. A public workshop was held on June 29, 2004. The purpose of this meeting was to present this draft management plan to the public. An Advisory Group meeting was held on June 30, 2004. The purpose of this meeting was to provide the Advisory Group members the opportunity to discuss this draft management plan.

Other Designations

BSPL 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. Big Shoals Public Lands are 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 not within or adjacent to an aquatic preserve as designated under the Florida Aquatic Preserve Act of 1975 (section 258.35, Florida Statutes).

RESOURCE MANAGEMENT COMPONENT

INTRODUCTION

At Big Shoals Public Lands resource management programs have been implemented for the purpose of conserving the natural and cultural resources of statewide significance. This component of the unit plan describes the natural and cultural resources of the property and identifies the methods that will be used to manage them. The stated management measures in this plan are consistent with the managing agencies' overall mission in ecosystem management. Cited references are contained in Addendum 2.

Resource management at Big Shoals Public Lands can be described as 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 public lands are often components of larger ecosystems, their proper management is often affected by conditions and occurrences beyond their 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 public lands/ecosystem impacts.

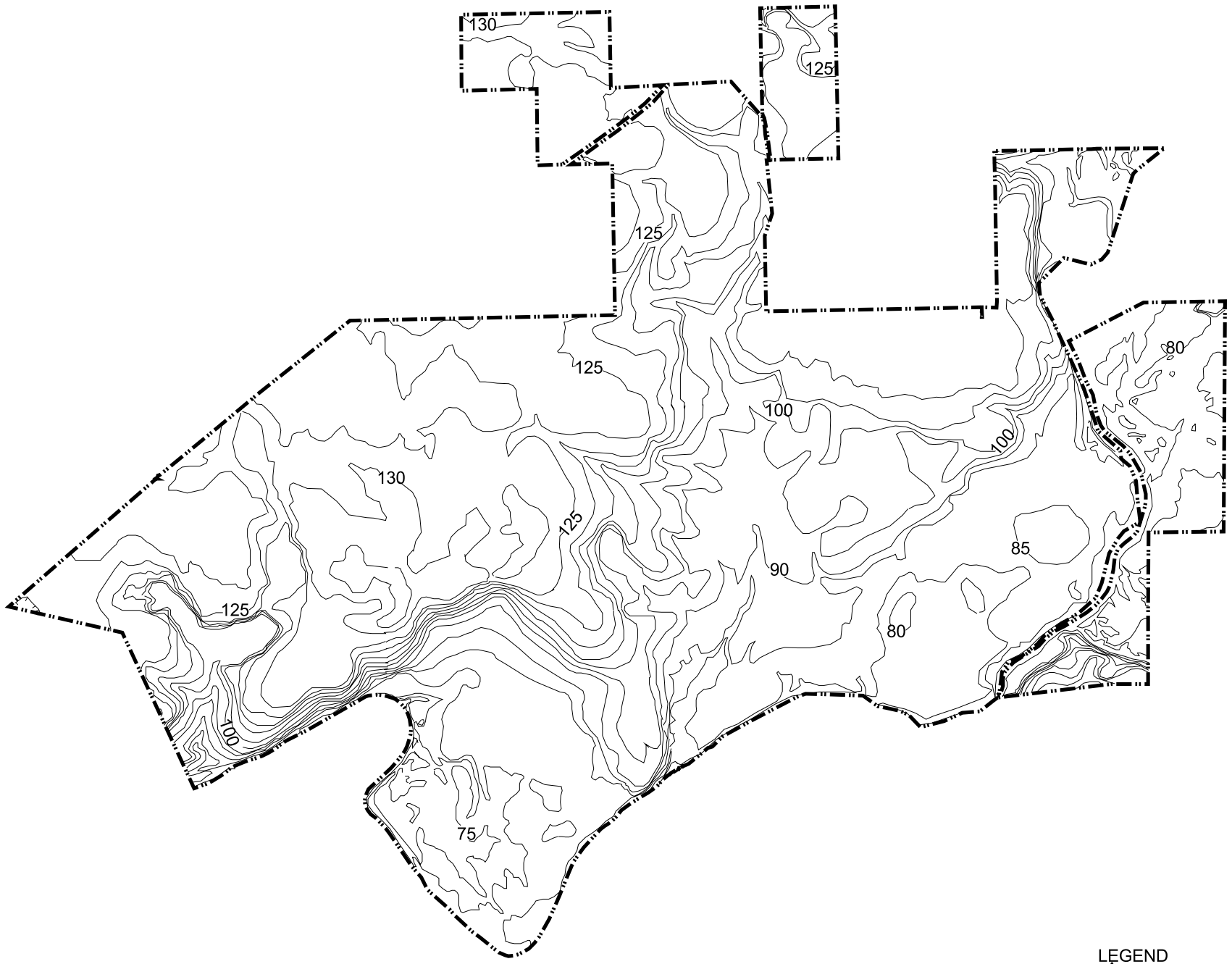
RESOURCE DESCRIPTION AND ASSESSMENT

Natural Resources

Topography

BSPL is located in the Northern Physiographic Zone of the state. Near BSPL two topographic regions meet, the Gulf Coastal Lowlands and the Northern Highlands; these regions are divided by a topographic break called the Cody Scarp. In certain places, the Gulf Coastal Lowlands extend into the Northern Highlands along major rivers and streams; here they are called the River Valley Lowlands (Ceryak et al. 1983). The lower elevations at BSPL are located in this River Valley Lowlands region, while the higher elevations, those above approximately 110-ft, are part of the Northern Highlands.

Topographic relief within BSPL ranges from flat expanses to steep slopes and ravines (see Topographic Map). Two large ravines occur along local drainage systems. One ravine, containing an unnamed drainage in the western end of the property, leads from a baygall to the Suwannee River. The other contains Robinson Branch, located in the eastern parcel. On the Hamilton County side of the Suwannee River, the southwestern end of a steep bluff provides a scenic view of the river. The northeastern portion of this bluff slopes downward into a flat expanse that extends to the river. Another smaller bluff parallels the Four-Mile



LEGEND
Park Boundary
Topographic Lines

N

1000 0 1000 2000 Feet

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

BIG SHOALS PUBLIC LANDS

TOPOGRAPHIC MAP

Branch drainage where it enters the river. Several smaller slopes are also associated with the Long Branch drainage system in the northern part of the SRWMD property. Numerous shallow depressions occur throughout the property. Elevations range from about 135 feet mean sea level (m.s.l.) to below 65 feet m.s.l. along the river channel.

The Big Shoals in the Suwannee River, for which the property is named, is the largest whitewater rapids in the state. Another smaller set of rapids, the Little Shoals, occurs downstream of the Big Shoals. Both of these shoals occur because of dolomitic and silicified sediments that are relatively more resistant to fluvial processes than other sediments in the exposed geologic formation.

There have been no extensive alterations of the topography at BSPL.

Geology

This region is underlain in descending order (youngest to oldest) by unnamed and undifferentiated marine terrace deposits, the Hawthorn Formation, St. Marks Formation, Suwannee Limestone, Ocala Group, Avon Park Limestone, Lake City Limestone, Oldsmar Limestone and Cedar Keys Formation.

Surficial material consists of Pleistocene and Pliocene sediments deposited by fluctuations of sea level. In general, these deposits are fine-grained to medium-grained quartz sand with minor amounts of organic material, clays, and heavy minerals. They cover the upper Suwannee River basin and are absent only due to erosion by surface water.

The upper part of the Hawthorn Formation, of Miocene Age, normally occurs as phosphatic, clayey sands and pale blue-green, phosphatic clays. Sandy, phosphatic dolomites and limestones dominate the lower portion.

The St. Marks formation, also Miocene in origin, is a very pale orange, sandy, silty, occasionally fossiliferous and micritic limestone. This thin, discontinuous deposit occurs locally as erosional remnants.

Suwannee Limestone, an Oligocene formation, is generally found as a very pale orange, moderately indurate, very porous calcarenite with numerous foraminifera, mollusks and echinoids present.

The Ocala Group, of Eocene Age, typically consists of three limestone formations of similar character. In this region, however, only two formations can be distinguished. The upper stratum is the Crystal River Formation, a very pale orange to very light gray, moderately indurated, biogenic and very micritic limestone containing many larger foraminifera. The lower stratum is the Williston Formation, a very pale orange to very light gray, moderately indurated, biogenic and medium-grained limestone displaying many smaller foraminifera.

Other Eocene deposits include the Avon Park Limestone, the Lake City Limestone and the Oldsmar Limestone. In this vicinity, Avon Park Limestone occurs primarily as a dolomite with numerous molds and casts of foraminifera. Lake City Limestone is predominantly a gray-brown, dense microcrystalline dolomite with occasional thin beds of limestone, chert and carbonaceous material, often impregnated with anhydrite and gypsum. Lastly, Oldsmar

Limestone is essentially composed of dolomite and limestone, with anhydrite, gypsum and glauconite in lesser amounts.

The Cedar Keys Formation is the only Paleocene deposit encountered. It occurs as a slightly gypsiferous and foraminiferous dolomite.

No human alteration of the property's geological formations is apparent.

Soils

Nineteen soil types occur in Hamilton County, and six soil types occur in Columbia County within BSPL (Natural Resource Conservation Service (NRCS) no date, Howell 1984). Addendum 3 contains complete soil descriptions. The majority of these soils range from somewhat poorly drained to occasionally flooded. Small areas of a well-drained soil occur in the uplands (see Soils Map).

Recent soil disturbance at BSPL is not extensive. On the Columbia County property, foot traffic from canoeists ascending or descending the riverbanks as they bypass the rapids at the Big Shoals has caused some riverbank erosion. Unauthorized jeep trails in the eastern, unfenced tract capture surface waters after heavy rainfall events, causing erosion of the trails and artificial channeling. The bike trail, which follows the contours of the large bluff on the west side of the river, has no serious erosion problems. Several steep sections of the trail and a creek crossing could develop erosion problems as trail use increases unless appropriate management action is taken.

Past soil disturbances have been variable in intensity. Reportedly, much of the uplands were once planted in cotton. Soil characteristics were undoubtedly changed by this practice and an agricultural hardpan likely developed. Native vegetation would have been almost completely removed. Management activities will utilize best management practices to prevent further soil erosion and conserve soil and water resources on site.

Minerals

Phosphate is mined extensively on private lands north and northwest of the property. Deposits of commercial value may also exist within the confines of BSPL. PCS Phosphate owns mineral rights on a small portion of the DOF property south of State Road 135.

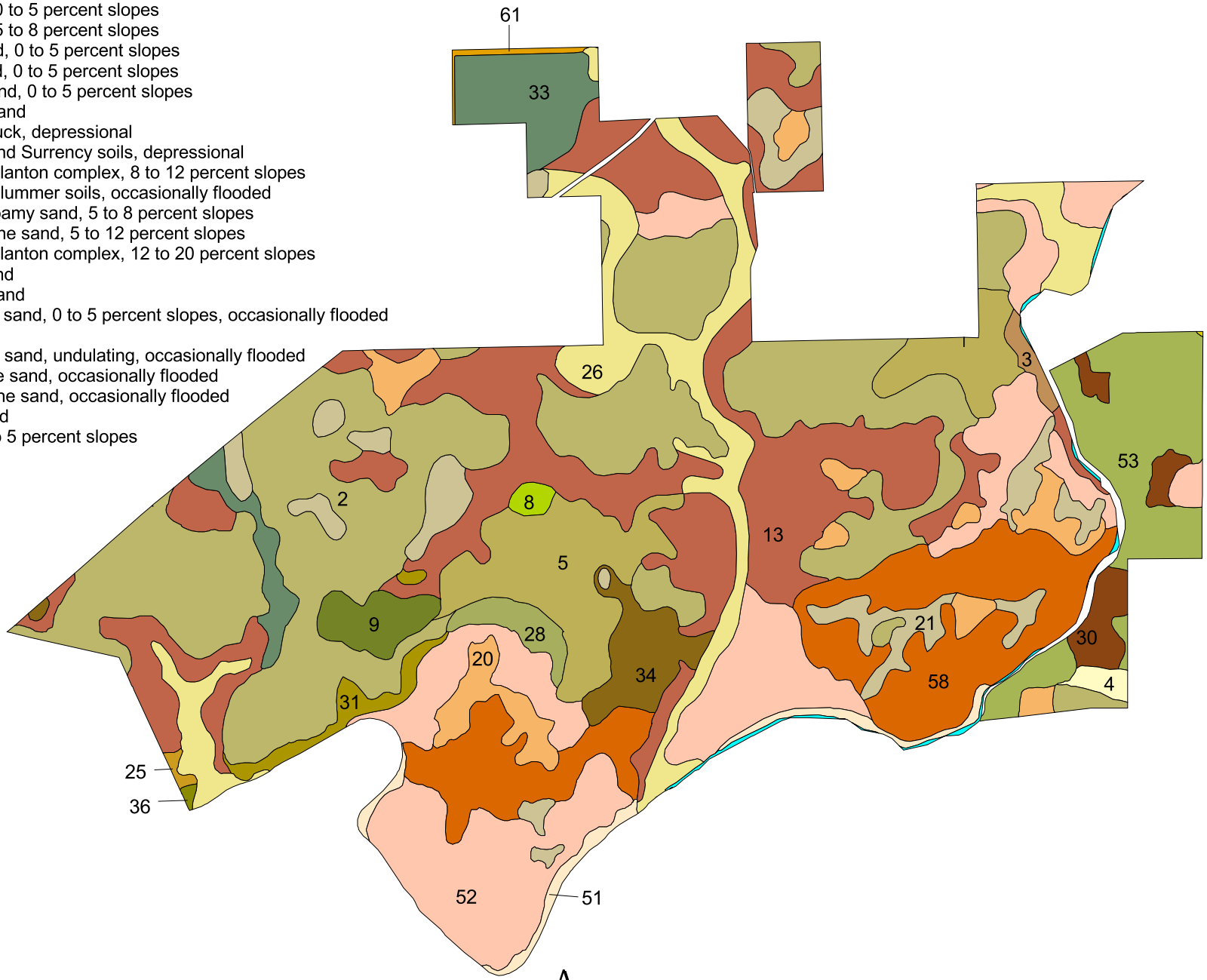
Hydrology

BSPL is located on the Suwannee River a short distance upstream of White Springs, Florida. It lies within the upper Suwannee River basin, which drains 1,273 square miles of territory, excluding the Alapaha and Withlacoochee Rivers (Hand et al. 1994). The Okeefenokee Swamp, located in southeastern Georgia, is the headwaters of the Suwannee River. From its headwaters, the river generally follows a southwesterly course before emptying into the Gulf of Mexico approximately 235 miles away. The upper reaches of the Suwannee River drainage basin are fed mainly by runoff. Confining beds over 300 feet deep prevent discharge from the Floridan aquifer so groundwater is generally not an important water input in the upper basin. The mean annual flow of the Suwannee River at White Springs is 1,858 cubic feet per second (Fernald and Patton 1984).

Other surface waters at BSPL include at least four streams, several seepage wetlands and numerous depressions that hold water after rainfall. In the western parcel, an unnamed

LEGEND

- 2 - Albany fine sand, 0 to 5 percent slopes
- 3 - Alpin sand, 0 to 5 percent slopes
- 4 - Alpin sand, 5 to 8 percent slopes
- 5 - Blanton sand, 0 to 5 percent slopes
- 8 - Chipley sand, 0 to 5 percent slopes
- 9 - Foxworth sand, 0 to 5 percent slopes
- 13 - Mascotte sand
- 20 - Pamlico muck, depressional
- 21 - Plummer and Surrency soils, depressional
- 25 - Wampee-Blanton complex, 8 to 12 percent slopes
- 26 - Mascotte-Plummer soils, occasionally flooded
- 28 - Wampee loamy sand, 5 to 8 percent slopes
- 30 - Lakeland fine sand, 5 to 12 percent slopes
- 31 - Wampee-Blanton complex, 12 to 20 percent slopes
- 33 - Pelham sand
- 34 - Plummer sand
- 36 - Blantin fine sand, 0 to 5 percent slopes, occasionally flooded
- 50 - Plits
- 51 - Bigbee fine sand, undulating, occasionally flooded
- 52 - Pelham fine sand, occasionally flooded
- 53 - Plummer fine sand, occasionally flooded
- 58 - Sapelo sand
- 61 - Arents, 0 to 5 percent slopes
- Water



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

BIG SHOALS
PUBLIC LANDS

SOILS MAP

intermittent stream that originates outside BSPL eventually joins with a seepage stream that originates in a baygall located in an area called Bottom Bay. This unnamed stream flows to the Suwannee River through a ravine. Flows in this stream and in others on the property are highly variable, with water input depending largely on local rainfall. Groundwater seepage may at times be the only water source for this stream; in the absence of rainfall, seepage also maintains water input to Bottom Bay. Another stream on the west side of the river is Four-Mile Branch. Upper segments of Four-Mile Branch traverse lands managed by the SRWMD and DOF. Its headwaters are located beyond state property, partially on lands being mined for phosphate. Several other intermittent seepage streams head toward the river from baygalls along the steep bluff.

Robinson Branch and an unnamed drainage-way transect the eastern parcel in Columbia County. The headwaters of Robinson Branch are in the Osceola National Forest. After leaving the national forest, Robinson Branch traverses private lands before entering the BSPL and emptying into the Suwannee River. The unnamed drainageway, which lies north of Robinson Branch, connects the Suwannee River with a series of wetlands lying primarily outside BSPL boundaries.

The Suwannee River was one of the least polluted rivers in Florida in 1984 (Fernald and Patton). This blackwater river has been designated an Outstanding Florida Water by the Florida Department of Environmental Protection (DEP); its waters are considered to be of Class III quality. Water quality in the upper Suwannee River basin is generally good to fair (Hand et al. 1994). There are approximately seven active water quality monitoring stations along the upper Suwannee River basin in the vicinity of BSPL. All of these stations are maintained by the SRWMD as a part of the Surface Water Improvement Act Program. The stations closest to BSPL include one located on Robinson Branch, two along Falling Creek, one along Deep Creek and one just below White Springs. Many of the stations are located strategically near point sources of pollution. The DEP's Northeast District also monitors four biological reference sites that include among their measurements several water quality parameters; these sites include one on Robinson Creek (= Branch), one on Falling Creek and two others on creeks upstream of BSPL.

Regionally, three aquifers exist. The surficial or water table aquifer is the uppermost. It is comprised of Miocene and younger sands and clayey sands ranging from 20 to 150 feet thick. These layers occur above the confining Hawthorn Formation. Recharge occurs through percolation of rainfall and high river flows. Water is discharged by evapotranspiration, lateral seepage, and percolation into underlying aquifers via breaches.

A secondary artesian aquifer originates in the sand and limestone layers of the lower Hawthorn Formation. Recharge is chiefly via the surficial aquifer. Discharge occurs laterally along the Cody Scarp, and into streams that have cut through confining strata into this aquifer.

Carbonates laid down in the Tertiary Period make up the Floridan aquifer in North Florida. These include the Lake City Limestone, Avon Park Limestone, Ocala Group, Suwannee Limestone and St. Marks Formation. The aquifer can be up to 1,100 feet thick near BSPL (Meyer 1962). Its depth, however, varies with local conditions. Locally, the aquifer is confined (Ceryak et al. 1983); it is recharged by water that leaks through breaches in the overlying, confining beds of the Hawthorn formation. Recharge can also occur when the

Suwannee River reaches flood stage, causing the stream to rise above the piezometric surface of the aquifer, and consequently reversing the flow of springs and seeps. Normally, however, the water level of the river is lower than the piezometric surface of the aquifer, resulting in discharge of water at springs and seeps along its course.

BSPL contains numerous fire lines that should be inspected to determine their impact on hydrological functions. Where fire lines are causing hydrological disturbances or are no longer necessary, they should be restored to the greatest extent practical.

Threats to water quality at BSPL include municipal and industrial sources. Several municipal and industrial wastewater treatment plants on tributaries of the Suwannee River contribute point sources of pollution (Hand et al. 1994). Mining for phosphates by PCS Phosphate has created water quality problems in tributaries upstream and downstream of BSPL. Upstream, Hunter Creek exhibits high levels of phosphorous, and the original channel of Roaring Creek is being mined for phosphates. Downstream, Swift Creek contains high loadings of phosphates, organic nitrogen, sulfates, and fluorides (Hand et al. 1994).

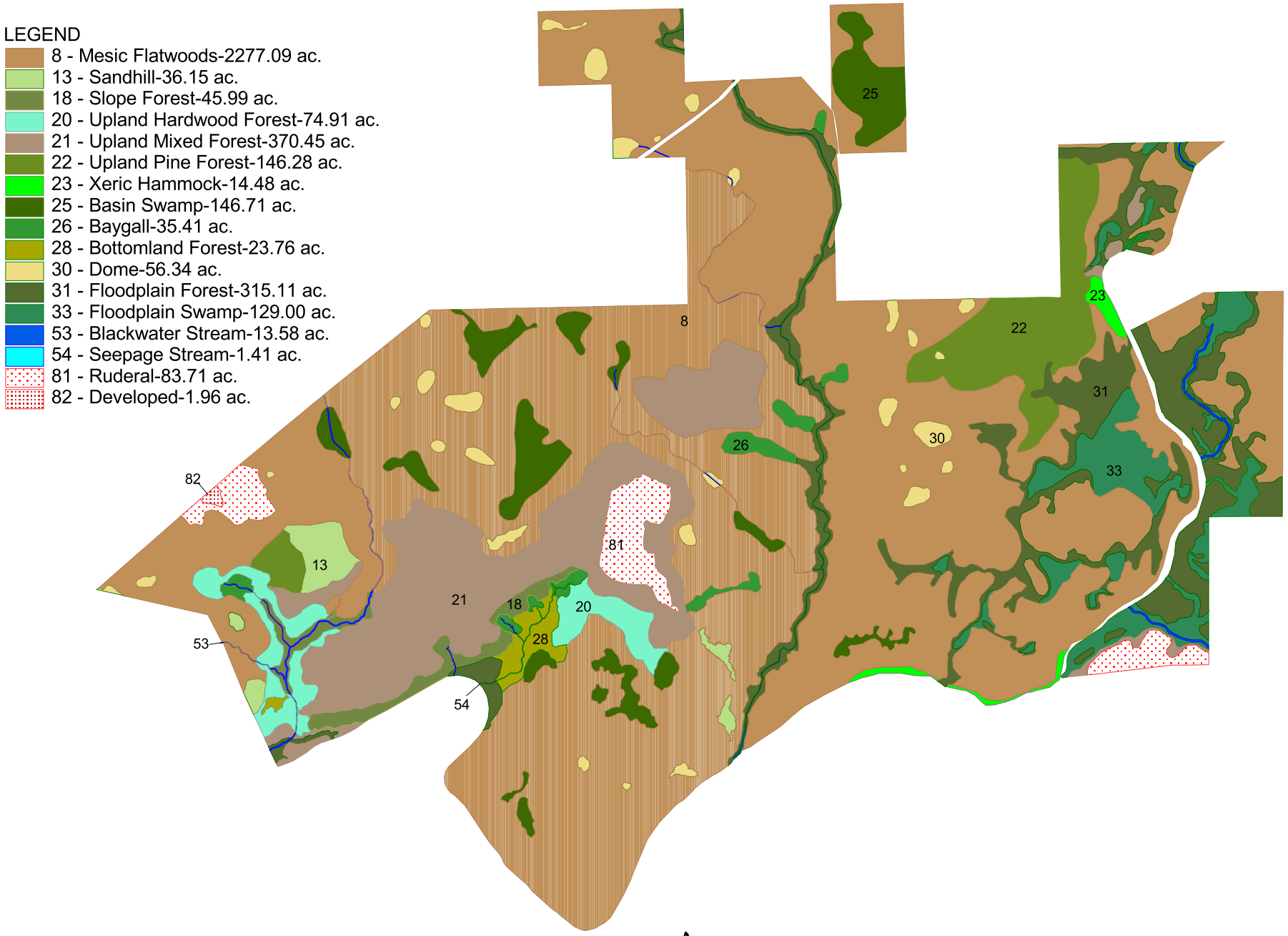
Of the streams found at BSPL, Four-Mile Branch and the unnamed stream that joins the seepage stream at Bottom Bay have the highest probability of being impacted by phosphate mining. Water quality in these streams, which originate on or near lands being mined for phosphates, could be degraded if effluent from mining operations spills into them. Large changes in these streams' sediment loads are not expected. Sediments are expected to settle out where the channels of these waterways become diffuse as they traverse several wetlands. Changes in water chemistry could threaten water quality throughout the drainage, however. Mining operations that withdraw large quantities of groundwater may also decrease the seepage flow that sustains certain natural communities.

Other streams as well as groundwater could be affected by increased development or other land uses in the area. Another stream in the area, Falling Creek, empties into the Suwannee River directly across from the western parcel of the property. Changes in the water quality of Falling Creek could therefore affect BSPL.

Natural Communities

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

Big Shoals Public Lands contain 15 distinct natural communities (see Natural Communities Map) in addition to ruderal and developed areas. 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.



BIG SHOALS
PUBLIC LANDS

NATURAL COMMUNITIES
MAP

Mesic flatwoods. BSPL are dominated by mesic flatwoods. In his resource assessment report for the Florida Natural Areas Inventory, J. Merrill Lynch (1984) considered the mesic flatwoods at BSPL to be "one of the best examples of this natural community found along the upper Suwannee River." Currently, these flatwoods range from relatively intact areas dominated by longleaf pine (*Pinus palustris*) to heavily disturbed areas having few pines. Loblolly pines (*Pinus taeda*) and invasive hardwoods dominate many previously disturbed areas. Some areas of mesic flatwoods in good condition are dominated by slash pine (*Pinus elliottii*) rather than longleaf pine, particularly in the eastern portions of the SRWMD property. Disturbed areas are found on higher elevations on the plateaus above the slope forests in Hamilton County and on the Division lands on the Columbia County parcel. The highest quality mesic flatwoods are located adjacent to the Suwannee River floodplain in the southern portion of the Hamilton County parcel. All of these areas have been impacted to some extent by previous land uses. About 55 acres of mesic flatwoods were clear-cut in the past decade to control southern pine beetle outbreaks on the Division property alone.

Longleaf pines dominate the lower elevation mesic flatwoods adjacent to the Suwannee River floodplain within the Division property. Although undoubtedly logged in the past, these flatwoods retain the characteristic species and aspect of a typical longleaf pine flatwoods. The invasion of fire-intolerant species such as laurel oaks (*Quercus hemisphaerica*), water oaks (*Quercus nigra*) and loblolly pines due to fire suppression remains a serious problem in these areas. Although much of this area received a prescribed burn in March of 1992, several additional fire events will be required to reach a maintenance condition. Southern pine beetle outbreaks in this area in 1995-96 and 2000-01, coupled with a drought, restricted burning in this area. One zone in this lower mesic flatwoods plateau was burned again in the spring of 2003. The remaining zones are scheduled for burning to take advantage of normal rainfall conditions and a lull in the southern pine beetle activity.

The flatwoods have also been impacted by the plowing of fire lines both before and after state acquisition. Several miles of existing fire lines were mistakenly re-plowed in 1990 on Division managed land (Younker, 1990). Although some restoration of the lines has occurred, the situation warrants additional inspection to determine if restoration efforts are needed to prevent long-term impacts.

The mesic flatwoods located on higher elevations in the Hamilton County portion of BSPL have been subjected to more intensive logging and agricultural uses than some of the lower elevation areas. Loblolly pine is the dominant canopy species in these areas, with slash pine and longleaf pine scattered about. Many of the upland areas may have been cultivated at one time or subjected to livestock grazing; more research into past land use practices is needed to verify these suppositions. Fire suppression has encouraged invasive hardwoods to become dominant in some areas. Southern pine beetles have also affected the area. The application of prescribed fire on a regular basis should restore many of these areas to a more natural aspect. Complete restoration of the mesic flatwoods in this area is likely to require some removal of tree species and planting of longleaf pines and ground cover species.

Most of the flatwoods zones on the higher elevations of BSPL have been burned once or twice since state acquisition. Periodic southern pine beetle outbreaks have slowed the progress of restoration in these areas as well.

The mesic flatwoods located on the Columbia County parcel, east of the Big Shoals, is in the poorest condition. Although more research is needed on past land use practices in this area as well, it appears that logging took place here more recently than in other areas of BSPL. Much of the area is characterized by an understory of titi (*Cyrilla racemiflora*), gallberry (*Ilex glabra*), *Vaccinium* species, and *Lyonia* species; hardwoods such as laurel oak and water oak are becoming established in some areas. At a minimum, restoration of these flatwoods will require replanting of longleaf pines and the periodic application of prescribed fire. Ground cover restoration may also be required in some areas along with the removal of hardwoods.

Sandhill. Limited areas of sandhill occur in the western section of BSPL. Some small patches of sandhill occur on the upper reaches of the longleaf-dominated mesic flatwoods. These areas are small, but may increase in size as prescribed fires restore natural ecotones. Additional sandhill areas are found on higher elevations adjacent to upland pine forests, upland mixed forests, and mesic flatwoods. Although many of these areas were labeled xeric hammock by Lynch (1984), it is likely that they are advanced successional stages of logged and fire-suppressed sandhill. Remnant turkey oaks (*Quercus laevis*), longleaf pines, and wiregrass (*Aristida beyrichiana*) are still present in some of these areas. Gopher tortoises are also found in some of the sandhill areas, particularly in clearings and along roadways.

Slope forest. The slope forest at BSPL is perhaps the unique natural community on the property. Rare in eastern Florida, slope forests share many species with upland hardwood and upland mixed forests but occur on steep slopes. These slope forests are dominated by swamp chestnut oak (*Quercus michauxii*), American beech (*Fagus grandifolia*), southern magnolia (*Magnolia grandiflora*), and pignut hickory (*Carya glabra*), in addition to other mesophytic hardwoods. Lynch (1984:60) states that the slope forests at BSPL are "excellent examples of mature second-growth slope forest communities." This community occurs in two areas at BSPL within the Division property, and in one area within the SRWMD property. The best example occurs along a blackwater stream south of Bottom Bay in the western part of the unit. A second area occurs along the ridge that extends northeast from the Little Shoals, and the third area occurs to the north of the Godwin Bridge use area.

A primary resource concern within the slope forest is the possibility of future erosion along service roads and recreational trails. Due to the steep slopes and unstable soils characteristic of this community, certain types of recreational use may prove to be incompatible in some areas unless effective management actions are taken. Existing roads and trails, however, do not appear to be causing unacceptable damage under current levels of use.

Upland hardwood forest. Upland hardwood forests also occur at BSPL. The species composition of this community is very similar to that of upland mixed forest; where the two communities occur together differentiation between them may at times be difficult. Upland hardwood forest is more common in the Florida panhandle, while upland mixed forest occurs more frequently in peninsular Florida.

Although the upland hardwood forest at BSPL could be lumped with the upland mixed forest, it is of such unique stature that it is considered in this plan to be a separate community type. The presence of American beech and spruce pine (*Pinus glabra*) helps distinguish upland hardwood forest from upland mixed forest. Both these species approach the southeastern limits of their range at BSPL. The upland hardwood forest occurs on Division property along

the tops of the valley walls and grades into slope forest downslope. The upland hardwood forest also grades into mesic flatwoods in some areas and upland mixed forest in others. Early successional stages of upland hardwood forest may be virtually identical to successional upland mixed forest. In most cases, only the areas of highest quality upland hardwood forest have been assigned this community designation within the property, while the disturbed areas have been designated as upland mixed forest.

Upland mixed forest. Upland mixed forest at BSPL occurs primarily in the western half of the property. The acreage today probably far exceeds the original extent. Even allowing for the fire shadow effect of the Suwannee River and various ravines, it is unlikely that all of the areas currently included in the upland mixed forest category now exist because of natural shielding from frequent fire. Human suppression of fire in naturally occurring fire-maintained communities undoubtedly also played a role. Long-term fire exclusion in upland pine forest and mesic flatwoods typically results in the gradual succession of those communities to upland mixed forest.

Other human-derived factors may have also contributed to the evolution of upland mixed forest on the property. In fact, this community designation at BSPL is often used as a catchall for a number of upland community types that have been significantly disturbed in the past and have failed since then to revert to their former natural state. This lack of recovery may be attributable to the large scale and the severity of landscape disturbances associated with past logging and farming activities at BSPL, especially when those activities were followed by long-term fire suppression. Revegetation of those fire-suppressed disturbed areas over an extended period would have favored pioneer species such as loblolly pine and laurel oak. The result would have been a forest type now common at BSPL, namely one composed of opportunistic, weedy hardwoods and pines. For lack of a better term, this forest may be designated as upland mixed forest. The upland mixed forest at BSPL is interspersed with drier areas that resemble xeric hammock but are probably in fact previously disturbed and fire-suppressed sandhills.

Additional research on the history of land use at BSPL is needed. More extensive ground truthing is also needed to refine mapping delineations of the upland mixed forest. Mapping of remnant species may be useful for determining the original extent of fire-adapted community types and deciding which areas should be restored and which should be allowed to continue on the successional path to upland mixed forest.

Upland pine forest. Upland pine forest is often transitional between upland mixed forest and sandhill. It is prone to relatively rapid invasion by hardwoods when fire is suppressed. In addition, large areas of upland pine forest were cleared for agricultural use. It is likely that this community was once much more extensive than it is now at BSPL. What was not lost to agriculture probably has succeeded to upland mixed forest in the absence of a natural fire regime. Areas that were once cultivated and then were abandoned have reforested over the years and now appear to be upland mixed forest. As additional fieldwork locates remnant species in the uplands and maps their distribution, additional areas of upland pine forest may be documented and targeted for restoration.

Two areas have been designated as upland pine forest based on soil types and the presence of remnant plant species that are typical of upland pine forest. A small area is located in the

western portion of the Division property. A larger area is found in the eastern portion of the Hamilton County property straddling the boundary between the DOF and SRWMD lands. These areas are in relatively poor condition, but have not succeeded to upland mixed forest now.

Xeric hammock. Typically, xeric hammock develops within fire shadows where natural fires infrequently burn. At BSPL two areas have been designated as xeric hammock based on species composition and general appearance, although the origins of these xeric hammocks differ somewhat.

A relatively large area of xeric hammock occurs at the top of the bluff above the Suwannee River in the Godwin Bridge area of the SRWMD property. It is likely that past human use of this area and fire suppression have resulted in the development of this xeric hammock. The area may actually have once been upland pine forest. The area is dominated by large evergreen oaks with a few scattered pines and an open understory. This area is one of the few areas along the Suwannee that is out of the reach of typical or extreme flood events.

A second area of xeric hammock occurs on the southern edge of the SRWMD property along the ridge of the primary river levee. These narrow areas are probably best described as "river levee"; however, that designation is not currently included in the FNAI system of natural communities. These sandy well-drained ridges are dominated by large evergreen oaks with an understory that includes many species from the adjacent mesic flatwoods such as saw palmetto (*Serenoa repens*). These levees are frequently impacted by the flooding of the Suwannee River, but do not appear to burn frequently. For lack of a better term, they are designated xeric hammock.

Basin swamp. Several large basin swamps occur within the mesic flatwoods at BSPL. Although they overlap in species composition with dome communities, basin swamps tend to be larger and more irregular in outline. Most of the basin swamps are in relatively good condition. Although the hydroperiod and species composition of basin swamps resemble those of floodplain swamps, basin swamps are normally isolated from river or stream flow during times of ordinary high water. During extreme floods, however, the basin swamps at BSPL would be flooded by the Suwannee River.

Baygall. Baygalls are found within BSPL. Typically, these communities occur near the bases of slopes where seepage provides a nearly constant supply of water. Some of the baygalls are located to the northeast of Little Shoals near the bottom of a slope on which slope forest grows. Another baygall, also on Division property, is found near the northern end of the Bottom Bay area to the north of Little Shoals.

Several baygalls occur on DOF and SRWMD property and drain into Four-Mile Creek. These baygalls occur within low depressions in the mesic flatwoods rather than at the base of the slope forest. Smaller baygalls also occur at the base of a slope in the northeast portion of the SRWMD property, but these have not been accurately mapped at this time.

These baygalls have a relatively open understory with an almost continuous layer of mosses and sphagnum moss carpeting the soil and the tangled tree roots. Typical overstory species include loblolly bay (*Gordonia lasianthus*), southern magnolia, and sweet bay (*Magnolia*

virginiana). In most cases, small converging seepage streams are associated with the baygalls. In the case of the baygall within Bottom Bay and the baygalls along Four-Mile Creek, blackwater streams drain the general vicinity.

Bottomland forest. Limited areas of bottomland forest have been identified at BSPL. Bottomland forest typically occurs on low-lying plateaus just above the floodplains of streams and rivers. At BSPL, however, most of the lower plateaus are covered by mesic flatwoods. The floodplain communities in the western portion of the property are relatively restricted due to the local topography. Slope forest tends to occupy the steep slopes that rise from the banks of the Suwannee River. The bottomland forest at BSPL is located just upslope of the floodplain forest, which lies east of Little Shoals. Lynch (1984) also classified this area as bottomland forest, although it is not as typical an example as found elsewhere in the Suwannee River basin. This area rarely floods, but is distinct from the upland hardwood forest and slope forest located upslope. The bottomland forest is found on ground that is more level and tends to have more evergreen hardwoods and loblolly pines in the canopy than do the upland hardwood forest and slope forest. The bottomland forest also grades into the baygall communities located to the north, into the basin swamps and mesic flatwoods to the southeast, and into floodplain forest to the southwest.

The bottomland forest has been timbered in the past, but it has recovered nicely and is now considered to be in good condition. Additional fieldwork will be needed to identify any additional bottomland forest that may occur on the Columbia County parcel or within limited areas of the SRWMD property.

Dome. Dome communities dominated by cypress (*Taxodium distichum*) occur at BSPL, mainly within the mesic flatwoods of the DOF and SRWMD properties. Domes tend to be smaller and more circular in shape than the larger basin swamps that also occur within the mesic flatwoods. Some of the domes may have been impacted in the past by various fire suppression activities. Additional inspections of these isolated wetlands will be necessary in order to make accurate assessments of their condition.

Floodplain forest. Floodplain forest occurs on lower elevations in the Suwannee River floodplain. By definition, floodplain forests flood frequently, usually on an annual basis. They occur on slightly higher elevations than the floodplain swamps, which are usually flooded for most of the year. The floodplain forest on the Hamilton County Division parcel is somewhat limited in extent due to the presence of steep slopes along parts of the Suwannee River and to the domination of much of the 10-year floodplain below the slope forest by mesic flatwoods and basin swamps. Floodplain forest is likely limited to the 2-year floodplain and would normally occur at elevations below about 72 m.s.l. at the downstream (western) end of the property and 78 m.s.l. at the upstream (eastern) end.

The largest areas of floodplain forest occur on SRWMD lands near Big Shoals Pond and associated drainageways and on the Columbia County side of the river within a large, diffuse floodplain area. Floodplain forest also occurs north of the Godwin Bridge area on SRWMD lands. Limited amounts of floodplain forest are also found at the confluences of the blackwater stream tributaries of the Suwannee River, and along the levees associated with the Suwannee River.

The floodplain forest was undoubtedly impacted during early logging efforts in the Suwannee River floodplain, but it now appears to be in relatively good condition in most cases. Some natural erosion occurs during flood periods, but this erosion appears to have been accelerated on the Columbia County parcel near the Big Shoals due to visitor use of the area as a canoe portage and as an unofficial overnight camping area.

Floodplain swamp. The floodplain swamp is found downslope of the floodplain forest predominately in backwaters and low areas behind the primary river levee. These areas are frequently flooded by the river and may actually funnel some of the extra river flow during high water events if connections to the river exist at more than one location. Big Shoals Pond is classified as floodplain swamp since it has a direct connection with the Suwannee River during high water events. Floodplain swamp is usually flooded most of the year and is dominated by cypress and other species that can withstand long hydroperiods. The pond is also the location of an historic rookery.

As with the floodplain forest, logging of the floodplain swamp probably occurred relatively early due to the proximity to the river. Floodplain swamp is relatively resilient and is recovering from historical impacts with little additional management.

Blackwater stream. Several blackwater streams are found within BSPL, including the Suwannee River itself. BSPL contains approximately 6.25 miles of frontage along the Suwannee River in Hamilton County and 1.5 miles in Columbia County. Additional information on the Suwannee River is contained in the Hydrology section of the Resource Description and Assessment.

Other blackwater streams and their tributaries flowing through BSPL include Four-Mile Branch, Long Branch and a smaller, unnamed stream that originates north of the property and passes through the Top Bay area. The upper reaches of Four-Mile Branch pass through lands managed by the DOF. Portions of the headwaters of Four-Mile Branch and Long Branch are located north of State Road 135, partly on private lands that are mined for phosphate. The mineral rights on part of the DOF property north of State Road 135 are partially owned by a private individual. Another source of the headwaters of Four-Mile Branch is located on DOF property south of State Road 135. PCS Phosphate owns mineral rights on this portion of the DOF property. To detect potential impacts from these mining operations, the water quality and quantity of Four-Mile Branch and the unnamed stream that passes through Top Bay should be monitored periodically. Additional information on water quality issues is included in the Hydrology section of the Resource Description and Assessment.

Robinson Branch is another blackwater stream that passes through BSPL. It originates within the Osceola National Forest and empties into the Suwannee River in the Columbia County portion of BSPL just downstream of the Big Shoals. Water quality is currently monitored by the SRWMD and the DEP Northeast District. Hand et al (1994) lists water quality of Robinson Branch as good.

Seepage stream. In most cases at BSPL, seepage streams are associated with the slope forests. These seepage streams vary in length. The seepage streams northeast of Little Shoals originate along the face of the slope forest and descend to the Suwannee River floodplain. In several cases, these streams originate in or pass through baygalls located near the base of the

slope. Another seepage stream originates in and passes through the Bottom Bay area. Although this stream does receive some surface runoff, it appears to be mainly fed by seepage. It joins a larger blackwater stream that emerges from the Top Bay area. In most cases, the streams at BSPL have multiple water sources including groundwater, direct runoff from the uplands during rainfall events, and discharge from basin wetlands or baygalls. The predominant water source usually defines the type of stream.

Ruderal. Ruderal areas at BSPL are primarily abandoned pastures or old fields. The open field at the west entrance off State Road 135 is currently being invaded by loblolly pines; these will be replaced by longleaf pines.

A second ruderal area, another abandoned pasture, is located in the southern part of the DOF property and includes a small area within the Division property as well. The Division section of this area is being colonized by loblolly pines, and these will be replaced with longleaf pines. Longleaf pines have been planted on the DOF portion of the field.

A third ruderal area is located on the south boundary of the Columbia County parcel. It is an old pasture area that is contiguous with private pastureland and agricultural fields that lie further south. This old pasture grades into upland mixed forest downslope and to the north along the Suwannee River and along Robinson Branch. This area was probably upland pine forest at one time based on remnant southern red oaks. Restoration of this limited area to upland pine forest may not be worthwhile considering the condition of the adjacent private lands. The only legal access to this area is by crossing Robinson Branch from the northern part of the property, which is only possible at lower water levels. Any future facilities development or active resource management in this area will depend upon the establishment of reliable access.

Developed. Developed areas within the Division property at BSPL include a staff residence, and two small parking areas with composting toilets. This site contains numerous non-indigenous plant species that are known to be invasive. These exotics have been treated by Division staff using appropriate mechanical and chemical means and will be retreated as necessary.

Additional development is located on the SRWMD property leased to Division at the Godwin Bridge entrance. This site includes a staff residence, restroom facility, and parking areas for the canoe launch and trailhead. A FWC game check station is located on the DOF property near State Road 135.

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 (FWC), and the Florida Department of Agriculture and Consumer Services (FDACS) as endangered, threatened or of special concern. Addendum 5 contains a list of the designated species and their designated status for this property. Management measures will be addressed later in this plan.

Most of the listed plant species occur in various wetlands. One species in particular, the hooded pitcherplant (*Sarracenia minor*) has increased in certain areas of the property due to

southern pine beetle outbreaks. The removal of the tree canopy has stimulated the growth of this species. A resource management evaluation for pitcherplants was conducted on the Division portion of BPSL in 1998 (Johnson 2001).

Many of the listed animals range beyond the boundaries of BSPL. However, gopher tortoises and their commensal species are known to occur on BSPL. The persistence of this tortoise population is dependent on the perpetuation of open, fire-maintained habitat. The timber rattlesnake, also known to occur here, is interesting because the BSPL population is near the southern end of the range for the species.

Several designated species have historically been harvested for meat in the region. These include the gopher tortoise, Suwannee (river) cooter (*Pseudemys concinna suwanniensis*), and alligator snapping turtle (*Macrochelys temminckii*). Harvest or possession of gopher tortoises is now prohibited statewide. However, Suwannee cooters have a bag limit of two per person per day with seasonal restrictions and alligator snappers have a bag limit of one per person per day. Harvest of these species, or any other turtle for that matter, is prohibited within Division boundaries. The area under jurisdiction of the Division includes a 400-foot zone from the edge of mean high water along sovereign submerged lands of the Suwannee River. Where emergent wetland vegetation exists, the zone extends waterward 400 feet beyond the vegetation. In effect, harvest of wildlife, with the exception of fish, is prohibited along the length of the Suwannee River where the river passes through, or along the boundary of, Division property at BSPL.

Special Natural Features

One of the more notable features of BSPL is its series of rapids. The Big Shoals and the Little Shoals rapids provide a genuine whitewater experience seldom encountered in Florida. The natural levees and terraces associated with the river are also of interest. A levee's configuration can change quickly when inundated by floodwaters. The property's ravine systems and the associated slope forest and seepages are also noteworthy, as they are rare in this part of the state.

Cultural Resources

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

The Florida Master Site File (FMSF) lists 19 sites within the unit (see Addendum 6)

Two cultural resource areas had been identified before 1998. In 1998 and 1999, Ryan J. Wheeler located and evaluated seventeen additional sites: ten prehistoric sites, three historic sites, three multicomponent sites and one historic structure in the entire property (Wheeler

1999) as shown in Addendum 6. BSPL was also included in a Cultural Resource Management Evaluation by DEP and DHR staff (Warzeski 1999).

Twelve sites or site components tentatively dated to the Archaic period were located at BSPL, consisting primarily of lithic or artifact scatters, as well as a lithic quarry site. An additional site containing sand-tempered pottery sherds is of post-Archaic date but of unknown cultural period.

There is also a significant nineteenth and early twentieth century presence in the region, as is confirmed by recent documentary and archaeological research (Wheeler 1999). Eight sites or site components have been located. These include: remains of an early bridge; surface or subsurface deposits associated with turpentine/timber or homesteading activities; and one standing structure.

Prehistoric Sites

Godwin Bridge Site (HA317). This site, accessed easily from Old Godwin Bridge Road, contains subsurface lithic material as well as surface lithic scatters in exposed areas. Because a large area of erosion toward the northern end of the site exposed numerous coral and chert flakes, as well as some bifacially worked artifacts and a coral hammerstone, it is assessed to be in fair condition.

Road 12 (HA319). This lithic scatter consists of numerous chert and coral flakes in the rutted Road 12, near the intersection with Road 1. There is probably a subsurface component, although no shovel tests have been made. Because of the lack of observed diagnostic artifacts and the fact that the subsurface component is poorly understood, the site is assessed to be in fair condition.

Road 7 Site (HA323). This site is a thin scattering of coral and chert flakes and shatter present in Road 7 where it meets the western boundary fence. There is probably a subsurface component, although no shovel tests have been made. Because the subsurface component is poorly understood, the site is assessed to be in fair condition.

Little Shoals (HA325). The site consists of a thin scatter of coral flakes around the outcrop at the Little Shoals. Because of past surface collecting, continued erosion, and the lack of observed diagnostic artifacts, the site is assessed to be in fair condition.

Observation Platform Site (HA326). The site is a thin lithic scatter of coral and chert flakes and shatter. One diagnostic artifact--the tip of a projectile point whose shape is suggestive of Archaic period points--was observed. The site is assessed to be in good condition.

Palmetto Island (HA328). This lithic scatter of coral and chert flakes and shatter occurs near the eastern end of Road 18 where it meets the trail to the Big Shoals. There is probably a subsurface component, although no shovel tests have been made. Because of the lack of observed diagnostic artifacts and the fact that the subsurface component is poorly understood, the site is assessed to be in fair condition.

Long Branch Trail No. 1 (HA329). This site, a thin lithic scatter over a broad area, consists of coral and shatter. The site has experienced some damage due to erosion. There is probably

a subsurface component, although no shovel tests have been made. Because of the lack of observed diagnostic artifacts and the fact that the subsurface component is poorly understood, the site is assessed to be in fair condition.

Long Branch Trail No. 2 (HA330). This site, a thin lithic scatter consisting of coral and shatter, occurs around the margin of Long Branch where it crosses the hiking trail. There is probably a subsurface component, although no shovel tests have been made. Because of the lack of observed diagnostic artifacts and the fact that the subsurface component is poorly understood, the site is assessed to be in fair condition.

Lucky Hole (HA332). This site, an artifact scatter with subsurface deposits, was found by shovel testing along the trail leading from the end of Road 6 and following the floodplain bluff to the SW. The lithic material consists of coral flakes and one St. Andrews Complicated Stamped sherd indicative of the late Deptford period. Based on the lithic assemblage, the site appears to be a continuation of HA177. It is assessed to be in good condition.

Big Shoals (CO111). The site is purported to be the lithic quarry associated with the geologic outcrop of the Big Shoals. It consists of a lithic scatter as well as some subsurface material (coral and chert flakes). Apparently, the terrestrial component of the site contains only minor deposits, as the majority of the material is in the river itself. The site is assessed to be in fair condition.

Robinson Hill (CO774). This lithic scatter consists of chert and coral flakes observed in the old pasture just south of Robinson Branch. The site is assessed to be in fair condition, with some disturbance from land clearing.

Multicomponent Sites

Hooker's Homestead/Ravine Top (HA177) - Located on the crest of a ridge, this site, B. Hooker's homestead (c. 1833-1843), is representative of an early nineteenth century homestead. Artifacts include transfer painted pearlware, a kaolin pipe bowl, annular painted pearlware, square-cut nails, glass fragments, an iron hoe, and scrub cattle bones/teeth. The site also contains lithic material (chert and coral flakes) of an unspecified prehistoric date. The site is in good condition.

Check Station (HA318) - This site consists of an uplands artifact scatter containing aboriginal sherds as well as twentieth century whiteware sherds. The extent of its subsurface component is not well understood. Because the site shows evidence of minor disturbance, it is assessed to be in fair condition.

Boundary Line (HA320) - This artifact scatter is located on a small "island" of high ground between a swamp and small sluggish creek drainage. Artifacts consist of decorative violet glassware, whiteware sherds and lithic material, indicating both aboriginal and 20th century material. There is probably a subsurface component, although no shovel tests have been made. Because the subsurface component is poorly understood, the site is assessed to be in fair condition.

Road 2 Scatter (HA327) - This upland site consists of a thin artifact scatter, containing coral and chert flakes as well as twentieth century materials. It is assessed to be in good condition.

Historic Sites

Old Godwin Bridge (HA321; also CO773). This site comprises steel bridge pilings and associated debris from Old Godwin Bridge located on two sides of the river, and thus in both Hamilton and Columbia Counties. This bridge may have been constructed as early as the late nineteenth century. It was certainly in place by the early twentieth century, based on a 1912 map, and aerial photographs show that it was in existence at least until 1957. The remaining bridge pilings, each 3' in diameter and c. 15' in height, are of the Lally Column Pier type associated with turn of the century pin-connected truss bridges in Florida (see Wheeler 1999). Although rusty, the pilings are generally in good condition. The higher road and concrete bridge approach will eventually experience damage from erosion.

Downing and Tippins Turpentine Camp (HA322). The site consists of a thin scatter of building materials and household debris and an artesian well associated with a 1910's-30's naval stores related camp and farm. There is some evidence of damage from past land clearing activities. The site is assessed to be in fair condition.

Little Shoals Bridge Foundation (HA324). This site, which includes 19th century bridge ruins and a historic road segment, consists of cuts made into solidified clay/dolomite of the Hawthorn Formation to receive vertical and horizontal timbers of a bridge foundation. These alterations possibly date to the early to mid-nineteenth century. Apparently, the old stage road from Alligator (Lake City) crossed the river there and then went to White Springs and Pulaski (Jasper). The site shows gradual deterioration due to erosion, as well as some damage from canoe keels dragged across the shoals. It is assessed to be in fair condition.

Old House (HA331). This 1920s-30s wood frame vernacular structure had a sheet metal roof, and vertical board walls. The building, which was supported by truncated pyramidal concrete piers, consisted of a main structure and an appended kitchen in the rear; a covered porch in the front and a porch in the rear; and front and rear doors. At least two frame outbuildings, partially collapsed, were in the vicinity. Numerous modifications had substantially altered the character-defining features of the structure, and lack of maintenance had contributed to its general state of disrepair. The structure was assessed to be in poor condition. It was determined that removal of the structure and reuse of the location for a ranger residence would not adversely impact the cultural resources of BSPL. The structure was subsequently removed and a ranger residence was established on the site.

RESOURCE MANAGEMENT PROGRAM

Special Management Considerations

Timber Management Analysis

Chapters 253.036, Florida Statutes, requires an assessment by a qualified professional forester to determine the multiple-use potential of parcels greater than 1,000 acres if the lead agency determines that timber resource management is not in conflict with the primary management objectives of the parcel. The feasibility of harvesting timber during the period covered by this plan was considered in context of the Agencies' statutory responsibilities, and an analysis of the BSPL resource needs and values.

Timber management guidelines for the listed natural community types will be aimed at

producing uneven aged pine stands as follows as follows:

- Mesic flatwoods. Silvicultural activities will favor longleaf and slash pine. Targeted species for removal will include loblolly pine and invasive hardwood species atypical to this community type. Forested areas considered by managing agencies to have too high a basal area of slash and/or loblolly pine will be scheduled for a thinning harvest. Ongoing harvest on DOF managed lands will be aimed toward the reduction of merchantable pine basal area to approximately 65 square feet per acre. Some forested areas, which solely feature loblolly pine, will be final harvested to remove the off-site pines. Subsequently, these areas will be appropriately site prepared and planted to longleaf pine.

- Sandhill/Upland pine forest. Silvicultural activities will be aimed toward the removal of off-site pine species and invasive hardwood species when feasible. Completion of these activities will facilitate prescribed burning, the planting efforts of longleaf pine or the natural seeding of existing longleaf.

- Ruderal. Silvicultural activities will be aimed toward the removal of off-site pine species and invasive hardwood species. Reforestation efforts will include the planting of longleaf pine seedlings and selected hardwood species.

On DOF managed lands, completion of thinning harvests on 511 acres has served to improve overall forest health and enhance understory plant diversity. Ongoing thinnings will target a similar residual stand basal area. In some forested areas, likely old field sites, loblolly pine is the sole or dominant pine species present. For such areas, silviculture activities will focus on the removal of these off-site pines, along with any present atypical hardwoods. Upon timber harvest completion, these areas will be site prepared as necessary and planted to longleaf pine. In similar areas dominated by loblolly, but where slash and/or longleaf pines are featured, the latter are to be retained and the off-site pines removed. Completion of such harvests on these areas will also facilitate the planting efforts of longleaf pine, or if sufficient, the natural seeding of established residual longleaf and/or slash pines.

In addition to planned harvests, the DOF has overseen timber salvage sale operations on nearly 120 acres on BSPL. One of these salvage operations was a 50-acre thinning on the state forest portion of BSPL. This thinning was conducted following a wildfire and subsequent black turpentine beetle infestation in a mesic flatwoods area that contained mature, slash, longleaf and loblolly pines. The loblolly pines were more adversely affected by this event. The other salvage operations were mostly clearcut harvests that were necessary to control multiple outbreaks of southern pine beetle (SPB). Although infestations of SPB were not a problem during 2003, a continued emphasis should be placed on conducting thinning harvests as needed in areas with higher pine densities to improve forest health and minimize the risk of future attacks by these forest pests.

Within the scope of this plan, the Division of Forestry will conduct timber harvests on the State Forest portion of BSPL. These will occur within the upland mixed forest and mesic flatwoods community types. Activities will focus on the removal of older, mature loblolly pines and any atypical hardwoods. If established, longleaf and slash pines will be retained. Upon timber harvest completion, each area will be site prepared via the use of herbicidal application and/or prescribed fire and subsequently planted to longleaf pine.

On SRWMD lands at BSPL, timber activities, such as harvesting, site preparation, and replanting, is an integral part of the natural community restoration activities. Timber harvests are used to thin stands to promote growth, prevent and control forest insect pest outbreaks, and remove off-site species. If off-site species are removed as part of the restoration effort then the site is either prepared for replanting with the appropriate overstory pine species (restoration to a pine-dominated natural community) or natural regeneration and succession are encouraged (restoration of a hardwood-dominated natural community). A timber assessment was conducted on SRWMD lands at BSPL in 1991 (Canal Forest Resources, Inc. 1992).

The SRWMD plans timber harvests on approximately 348 acres at BSPL. Approximately 39 acres is aimed toward ecological restoration of upland mixed forest and sandhill through selective thinning of slash pine. Approximately 308 acres of mesic flatwoods is scheduled for selective thinning which is aimed toward the improvement of forest health, reduction of possible forest pest outbreaks, and to promote the diversity of understory species.

On Division managed lands, the long-term management goal for forest communities is to maintain or re-establish old-growth characteristics to the degree practicable. Due to pre-acquisition fire exclusion and silvicultural and agricultural practices which have impacted the present timber composition, resulting conditions may include the presence of off-site species within identified natural community types, inadequate stocking of preferred species or overstocked conditions of preferred and off-site species. The timber assessment required by Chapters 253 and 259, Florida Statutes, was conducted by Neal White of the Division of Forestry and partially based upon information obtained and compiled by Allison Mead and Tim Worley of the Division of Forestry and Ginger Morgan of the Division of Recreation and Parks.

The timber assessment identified two stands on the portion of BSPL managed by the Division as likely candidates for timber harvesting as part of a natural community restoration program. Stand 1 is a 12-acre site of loblolly pine on an old field site located just west of the Little Shoals entrance. The stand consists of sawtimber, chip and saw, and pulpwood sized trees averaging about 180 per acre. Most of the pines are in the larger and smaller size classes. Restoration goals for this site include replacement of the offsite loblolly pines with longleaf pines, and if feasible, restoration of the native flatwoods groundcover and understory. The second stand includes about 40 acres of longleaf pine flatwoods located southwest of the Little Shoals entrance along State Road 135. The stand averages about 100 trees per acre and is dominated by multiple size classes of longleaf pine with some large loblolly and slash pines. This site has experienced a long period of fire exclusion and a selective thinning is recommended to remove offsite loblolly pines to reduce competition with longleaf and slash pines and reduce the potential for southern pine beetle activity. The long-term goal is to restore the mesic flatwoods community and to promote longleaf pine growth and regeneration.

On Division Managed lands, timber harvests will be conducted to minimize soil disturbance and road damage. Harvesting will be curtailed during wet weather to avoid rutting and damage to soil profiles and local topography. Cultural resources lie within or adjacent to Stands 1 and 2. HA322 contains historical components from an early 20th century turpentine camp and HA318 is an artifact scatter with aboriginal and 20th century components. A DHR

compliance review will be completed prior to harvesting and buffers will be established as necessary.

To the extent possible, the timing of timber sales should be coordinated with the DOF to coincide with similar sales on other parts of BSPL.

Timber sales on Trustees property will be administered by the DOF. SRWMD will monitor timber sales on their property. A fee will be charged by the DOF for administering sales on lands upon which the DOF is not the lead manager. This fee has been mutually agreed to, in the Memorandum of Agreement, FDACS #5163, between DOF and Division. Usually, timber sales will be advertised for competitive bids and sold on a lump sum basis to the highest bidder. A minimum acceptable bid, based on the particular class of timber to be sold, local stumpage prices, and logging conditions will be set prior to bids being opened. Salvage sales, in which it is necessary to remove fire or insect damaged timber rapidly, may be sold on a per ton basis.

Other timber sales targeting the removal of off-site species for restoration purposes may occur at BSPL if agreed to by the land management agencies involved. In addition, all sites at BSPL will be surveyed and flagged for gopher tortoise burrows prior to any timber removal involving heavy equipment.

The DOF will be responsible for most artificial reforestation taking place on BSPL during the tenure of this plan. However, on the Division managed portion, however, reforestation will be conducted by the Division using plant stock derived from local seed sources. When pine restocking is needed, the Division will contract with the DOF or others to process locally collected seed and grow containerized seedlings at the DOF or another nursery. The seedlings will then be randomly hand planted at selected sites.

Expenditures will be paid for by the agency upon whose land the reforestation is taking place. Generally, longleaf will be the preferred pine species for planting unless ground cover plants indicate a site should be planted to slash pine. Prescribed burning will be the preferred method for preparation of sites for reforestation. Where burning is impractical and the sensitivity of the resource permits the use of alternative methods, mechanical and/or chemical site preparation may be considered. Selection of the site prep method(s) appropriate for each site will be the responsibility of the agency assigned to manage the site.

Additional Considerations

Insects and Diseases. The BSPL has a history of outbreaks of southern pine beetles. Accordingly, multi-agency operational and strategic plans will include not only recognition of that history, but also specific long-range strategies to avoid and/or minimize losses to such outbreaks in the future. Management strategies to accomplish these objectives have been implemented and include the thinning of pine stands to reduce overcrowding and the conducting of prescribed burns under conditions which minimize stress to pines. Should other insect/disease outbreaks occur, the DOF's Forest Health Section will be consulted to develop and implement appropriate scientifically sound responses and/or management prescriptions.

In compliance with Florida Statute 388.4111, all lands contained within BPSL have been evaluated and subsequently designated as environmentally sensitive and biologically highly

productive. Such designation is appropriate and consistent with the previously documented natural resources and ecosystem values and affords the appropriate protection for these resources from arthropod control practices that would impose a potential hazard to fish, wildlife, and other natural resources existing on this property. After approval of this plan, the local arthropod control agency will be contacted and will be provided a description of the management objectives for BSPL. The local arthropod control agency must then prepare a public lands control plan that is subsequently approved by the ~~DOF~~ managing agencies prior to conducting any arthropod control activities for BSPL.

400-foot sovereign lands management zone. The Division has management authority over a 400-foot zone from the edge of mean high water along the Suwannee River where it passes through or alongside land leased to the Division. Where emergent wetland vegetation exists, the zone extends waterward 400 feet beyond the vegetation. Within this zone, staff will enforce Division regulations. All wildlife within this zone, with the exception of fish, is protected from harvest, as stated in the Designated Species section, above. In addition, pre-cut timber harvesting (dead head logging) is prohibited within this zone.

Management Needs and Problems

Natural Resources

1. Fire-maintained natural communities need restoration.

A. An integrated plan to restore fire-maintained natural communities is needed to guide restoration. Historical fire exclusion and past agricultural practices have dramatically altered some natural communities and encouraged succession to non fire-maintained communities. This has occurred primarily in upland areas of the western parcel. These areas have become almost completely dominated by fire-intolerant hardwoods and offsite pines such as loblolly pine. Herbaceous plant species characteristic of fire-maintained communities are decidedly sparse or completely absent. Small pockets of remnant vegetation do exist, however. These indicate that certain areas were formerly covered by sandhill, upland pine forest or mesic flatwoods. An active prescribed fire program and other management measures need to be employed to enhance and enlarge the patches of remnant vegetation, particularly groundcover species.

B. Many fire-maintained communities, such as the mesic flatwoods, contain offsite loblolly pines that were established during periods of fire-exclusion. Removal of offsite pines and restoration of the longleaf pines are necessary in many sites.

2. Infestations of southern pine beetles have killed mature pines of all species, and clearcuts to control beetle infestations have occurred in several of the property's natural communities.

A. Fire-maintained natural communities in BSPL have become susceptible to invasion by southern pine beetles due to the predominance of off-site pines such as loblolly pines. Due to a number of factors, including the historical harvesting of indigenous longleaf pines and the lengthy periods of fire exclusion over the past 50-60 years, loblolly pine has become a dominant canopy member in some of the property's fire-maintained natural communities. Several areas were clear-cut to halt the spread of the southern pine beetles during outbreaks. Another consequence of the southern pine beetle invasion has been extra caution in the scheduling of prescribed fires for fear of overly stressing trees and increasing their susceptibility to infestation by beetles. Prescribed burning was curtailed during the 1995-97 and 2000-01 outbreaks.

3. Hydrology and water quality may have been affected by fire line plowing and the unwise routing of roads and trails.
   - **A.** Some of the fire lines on the property may have affected drainage patterns in several natural communities at BSPL. The full impacts of the unrestored fire lines remain unknown, but they may include ponding of water in old scars, accelerated drainage, diversion of runoff from wetlands, and the interconnection of low-lying areas that were previously isolated. These areas should be inspected to determine if any hydrological problems exist and appropriate action should be taken to correct problems.
   - **B.** Roads and trails cross wetlands in several locations, creating the potential for soil erosion, the impoundment of surface waters, and degradation of water quality. Impacted wetlands include seepage streams, blackwater streams and basin swamps.
   - **C.** Roads and trails located on steep slopes may result in the destruction of ground cover and cause soil compaction and erosion, which could alter natural hydrology by channeling surface waters.
4. Natural communities have been fragmented.
   - **A.** Some of the property's interior roads, particularly in upland areas of the western parcel, are superfluous and no longer function either as necessary fire lines or as operational service roads. These roads fragment the natural landscape. They may act as open tunnels through the woodlands that encourage intrusion by undesirable species. They may also shrink functional habitat of species that prefer isolation.
5. The resources of the eastern parcel are unfenced and not clearly posted, there is no official land-based access to the southern portion of the parcel, and there is insufficient control and monitoring of public use of the parcel.
   - **A.** The unmarked, unfenced boundary of the Columbia County parcel hampers management in several ways. It is currently accessed unofficially by land and water, and there has been little control or management of this use. Access for management purposes is currently provided along an unimproved road by consent of a private landowner, but is often impassable due to high water. A legal easement to the eastern parcel exists north of Robinson Branch. However, this area is also often wet and may be unsuitable for construction of an access road. Protection and management of resources is difficult at best when boundaries are neither secure nor well defined. For example, prescribed burning cannot be conducted until fire-lines are established along the boundaries of the property.
   - **B.** Unregulated use of this parcel has resulted in the degradation of wetlands and other communities. This parcel is also used by canoeists that are portaging the rapids at the Big Shoals. The riverbank at the site of the portage is steep and slippery, and some stream bank erosion has occurred. An area of high ground near the rapids is also a popular camping site for canoeists.
6. Monitoring and research efforts need to be expanded to provide information on the property's natural resources.
   - **A.** Comprehensive inventories of the property's plant and animal species are lacking. Additional fieldwork leading to more accurate mapping of the property's natural communities will aid in the planning of restoration efforts for those communities.
   - **B.** Research into past land use practices that have had an effect on today's natural resources is also needed to guide managers in community restoration activities.
   - **C.** Research into the affects of the old existing fire lines should be conducted to determine the impact(s) these are having on the existing natural communities and if

they are a significant barrier to community restoration.

Cultural Resources

1. Known cultural resources require increased monitoring.
   - **A.** Information is lacking on the current condition of cultural sites within the BSPL.
   - **B.** Agency personnel do not visit or monitor many of the sites on a regular basis.
   - **C.** Some sites may be at risk for vandalism.
2. Additional unrecorded cultural sites are likely to occur within the preserve.
   - **A.** Additional cultural resource surveys are needed to document additional sites.
3. Development and maintenance operations in the BSPL are likely to cause additional ground disturbance.

Management Objectives

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

Natural Resources

1. Restore fire-maintained natural communities.
   - **A.** Develop and implement a plan for restoration of the property's fire-maintained natural communities. Multiple restoration techniques will be used, including prescribed burning, tree girdling, application of herbicides to invasive species, and replanting of groundcover and canopy species that have been eliminated or reduced in numbers over the years.
   - **B.** Focus timber management efforts on restoration of longleaf pine communities through prescribed burning, and silvicultural techniques such as selective thinning and regeneration harvests, where appropriate.
2. Assess the damage caused by southern pine beetles and initiate restoration of clearcut areas.
   - **A.** All pine beetle clear cuts on Division lands have been mapped. Clear cuts will be prescribed burned and replanted with longleaf pines as necessary.
3. Restore hydrology and improve water quality by rehabilitating problematic fire lines and by relocating or stabilizing unwisely routed roads and trails.
   - **A.** Restore unneeded fire lines and correct any related hydrological problems.
   - **B.** Evaluate service roads and trails to determine effects on natural hydrology and water quality. Management measures to preserve natural hydrology and water quality or to correct problem areas may include, but are not limited to, the installation of fording mats or culverts in appropriate locations.
   - **C.** Periodically monitor areas with a potential for erosion, and initiate corrective measures where necessary.
4. Reduce habitat fragmentation by abandoning unneeded roads.
   - **A.** Non-essential service roads and fire lanes will be abandoned and restored to the appropriate natural community.
5. Control invasive exotic plant and animal species through appropriate methods.
6. Conserve and protect listed species and their habitats.
   - **A.** Maintain and improve productive habitat for gopher tortoises and their burrow

commensals.

B. Assess, in cooperation with the FWC, the potential restoration of the wading bird rookery in Shoals Pond.

C. Maintain and improve habitat for hooded pitcher plants and other rare plant species.

7. Improve protection of resources in the eastern parcel by locating, marking and fencing boundary lines and by establishing an official land-based access route to the southern portion of the parcel.

A. Establishment of legal, reliable land-based access to the southern end is important for proper management, including management of visitor use, monitoring of visitor impacts, and management of prescribed burns. After boundaries are secured and damage resulting from unauthorized four-wheel drive traffic has been reduced, roads in the eastern parcel should be stabilized in an environmentally sensitive manner.

B. Improved access to the site will allow monitoring of visitor use impacts. Current plans for formalizing the canoe portage and camping sites will also be monitored for impacts to resources.

8. Conduct research and monitoring programs to gain a better understanding of historic, existing and changing resource conditions.

A. Coordinate information-gathering efforts of researchers and other agencies so that comprehensive inventories of plant and animal species can be completed.

B. Compile information about past land use practices that have affected today's natural resources.

C. Conduct a survey of existing fire lines to determine potential impacts to natural communities and identify significant barriers to community restoration.

Cultural Resources

1. Increase monitoring of cultural resources and document changes observed.

A. Establish photo points and photograph certain sensitive cultural resource sites on a regular schedule. Periodic photography will allow comparison of future conditions with previous ones, and will enhance the monitoring of selected cultural sites.

B. Visit selected cultural resources on at least a semiannual basis. Add notes taken during site visits to the data collection kept for each resource.

C. Sites should be patrolled for vandalism and casual trails should be discouraged through interpretative signage where appropriate.

D. Monitor the condition of sites showing evidence of disturbance through erosion.

2. Conduct archaeological investigations necessary for a holistic understanding of cultural resources that consider the full range of sites' associations.

A. Pursue funding for a comprehensive, integrated archaeological survey of all areas proposed for major or moderate disturbances.

B. Continue to work with the Division of Historical Resources to record new sites as they are encountered, and update existing records in the Florida Master Site File.

C. Enlist assistance of the CARL Archaeological Survey in protection and survey of cultural resources.

3. Ensure that development activities minimize impacts to cultural resources.

A. Conduct ground disturbing activities in accordance with each agency's policy in consultation with the Division of Historical Resources.

B. Minimize the impact of development activities on the cultural landscape in the immediate vicinity of the Suwannee River.

Management Measures for Natural Resources

Hydrology

The proper regulatory agencies will be asked to keep the agencies' district staffs apprised of any declines in surface water quality or any suspected contamination of groundwater. Both the Northeast District of the DEP and the SRWMD monitor the water quality of several streams in the area (see the introductory Hydrology section for details). In addition, assistance will be requested from regulatory agencies and governing bodies to expand the routine monitoring of the property's surface waters and groundwater. These actions are prudent as the local phosphate mining industry has the potential to degrade water quality and alter hydrology both in and around BSPL.

Any alterations of the property's hydrological systems will be evaluated and restoration measures will be initiated as appropriate. Service roads and trails that cross wetlands and seepage slopes, as well as roads that traverse mesic flatwoods, and possibly others, will be evaluated to determine effects on natural hydrology and water quality. Management measures to preserve natural hydrology and water quality or to correct problem areas may include, but are not limited to, the installation of fording mats or culverts in appropriate locations.

Areas of the property where there is a potential for erosion problems will be monitored periodically. Monitoring could include a regularly scheduled series of photopoints. If problems arise, corrective measures will be taken. Foot traffic from boaters portaging the rapids at BSPL is likely occurring more than would result from natural processes. It will be necessary to provide visitors with a more structured, resource friendly recreational experience at the portage site.

Management will comply with best management practices to maintain or improve the existing water quality on site and will take measures to prevent soil erosion or other impacts to water resources.

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 property is partitioned into burn zones, and burn prescriptions are implemented for each zone. The BSPL 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.

Prescribed burns are coordinated among the land management agencies wherever possible. Staffs from each agency work together to ensure burning goals and objectives are met. This includes the utilization of multiple agency teams.

There are three fire-maintained natural communities in BSPL, namely mesic flatwoods, sandhill, and upland pine forest. The other communities, including wetlands, may also be affected by fire to some extent, particularly when they border a fire-maintained community. Allowing fire to penetrate wetland boundaries is an important factor in maintaining wetland ecotones

The DOF utilizes a comprehensive fire management program on state forests that includes prevention, detection, suppression and prescribed burning. This program is the responsibility of the DOF's Suwannee District (District 6) under the direction of the DOF District Manager. Personnel and equipment from DOF's Suwannee District are utilized for establishment of fire lines as necessary, rehabilitation of existing fire lines, construction of new fire lines, maintenance of perimeter fire lines and prescribed burning. Guidelines outlined by the DOF fire management policy are used. The Division is primarily responsible for prescribed burning on Division lands; however, interagency cooperation on all prescribed burns is essential. The Division staff and equipment from the Stephen Foster State Folk Culture Center and other state park units in the area are used for maintenance of firebreaks and prescribed burning as necessary. Emphasis is placed on prescribed burning and fire prevention education, to help reduce wildfire occurrences and for smoke management.

Each natural community will be burned with an average fire-return interval appropriate for the community type and for the stage of restoration achieved. In general, fire-return intervals follow those recommended by the Florida Natural Areas Inventory (FNAI, FDNR 1990). Sandhills and upland pine forests historically burned every 2 to 5 years while mesic flatwoods may have burned every 1 to 8 years. An all-season burning program will be established utilizing existing practices plus recent research findings. In many zones, winter burning under mild conditions will be required to reduce fuel loads before lightning season burning can be safely initiated. To the greatest extent possible, areas to be burned will be spread in a mosaic pattern. Whenever possible, existing roads and natural breaks will be used to contain and control prescribed and natural fires. Specific prescribed burning plans will be prepared annually. The smoke screening system will be utilized as a smoke management tool and to minimize the impacts of smoke. Additional work to refine maps of community types and to determine burn regimes appropriate for restoration will be conducted. New burn zones will be delineated, and additional firebreaks will be identified and established as necessary.

Priority areas for burns are natural communities that would degrade if not burned on the appropriate fire-return interval and areas where burns have already been conducted to begin the restoration process. Accordingly, overgrown areas containing remnant sandhill and upland pine species will be identified and mapped. Remnant species of particular importance are longleaf pine and wiregrass; these provide fine fuels and are likely to be able to carry fire even when the general area is overgrown with invasive hardwoods. When burn zones containing isolated patches of longleaf pine and wiregrass are first burned, there will need to be a deliberate attempt to ignite those patches individually to ensure that fire reaches those spots.

Additional firebreaks need to be established in some areas. Firebreak locations need to be identified in the eastern parcel, particularly along the boundaries. Firebreak locations have recently been installed in the southwestern portion of Hamilton County. Wherever possible, existing firebreaks will be used in lieu of creating new fire-lines. Existing firebreaks include roads, trails, old fire plow lines, and natural breaks such as wetlands. If new fire-lines need to be created, soil disturbance will be kept to a minimum. Existing fire-lines will be maintained mainly by discing, although alternate methods will be used under certain circumstances.

Most of the higher quality mesic flatwoods have experienced at least one non-lightning season prescribed burn since state acquisition. In some cases, follow-up burns have not been

scheduled in recent years due to ongoing southern pine beetle activity in the area and severe drought conditions, which have limited burning operations. The return of a normal rainfall pattern and a lull in pine beetle activity in 2002-03 have allowed a resumption of the burn program, however, continued evaluation of the pine beetle threat will be necessary. A special effort will be made to increase the burn frequency of zones that have experienced excessive fire return intervals in the past. In order to accomplish this task there will be increased reliance upon coordination and sharing of staff and equipment among the management agencies at BSPL. A steady but cautious transition from winter to lightning season burning is the goal of the prescribed fire program for the flatwoods at BSPL.

Designated Species Protection

The welfare of designated species is an important concern of the managers. 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 managers will consult and coordinate with appropriate federal, state and local agencies for management of designated species.

In most instances, the designated species known to occur on the property do not require special management. The gopher tortoise, however, would benefit from natural community restoration and an active prescribed burn program. Areas with large numbers of gopher tortoises, typically in the sandhill and upland pine communities, should be targeted for burning and the removal of invasive hardwoods.

The University Of Florida College Of Veterinary Medicine is currently using BSPL as one of their study sites for a multi-year study of upper respiratory tract disease (URTD) in gopher tortoises. Previous URTD studies by the FWC have also used BSPL as a study site.

Management of hooded pitcherplants on the property will focus on maintaining natural fire regimes and hydrological regimes in the flatwoods and seepage areas where this species occurs. Thinning of pine stands is likely to have a positive impact on this species if soil disturbance is minimized. Dense stands of loblolly pines will be removed and replaced with longleaf pines where necessary. Longleaf pines should be planted at a lower density within stands of hooded pitcherplants to provide a more open canopy (Johnson 2001).

Comprehensive surveys of plants and animals will aid in the management of designated species. Coordination with other agencies or researchers will be critical to the successful compilation of needed information. There are other listed plant and animal species likely to occur at BSPL, but they have not yet been recorded. Efforts will be made to survey for unique plant species at critical times to increase the chances of detecting groups such as spring ephemerals or those that bloom following fire. Locations of public use facilities, including roads and trails were analyzed in the drafting of the conceptual land use plan. Additional analysis will be conducted prior to construction to avoid disturbance of sensitive species and to avoid unnecessary habitat fragmentation.

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 managers to remove exotic species from native natural communities.

In general, invasive exotic non-indigenous plants are not a problem at BSPL. At present, the only species causing concern were located around a former residence along State Road 135. These species include Japanese climbing fern (*Lygodium japonicum*), wandering jew (*Tradescantia fluminensis*), chinaberry (*Melia azedarach*) and Chinese privet (*Ligustrum sinense*). These species have been treated with herbicide or removed mechanically. Success of eradication will be checked on a regular schedule and follow-up treatments will be applied as needed. An active program of monitoring for invasion by exotics is in place.

Feral hogs at BSPL fluctuate both in numbers and in the degree of damage they cause to natural communities. Recent observations seem to indicate a decline in the property's hog population. Hogs are currently legal game during hunting seasons on the established WMA.

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 managers will consult and coordinate with appropriate federal, state and local agencies for management of designated species that are considered a threat or problem.

Other than fire-intolerant, invasive woody plant species such as laurel oak (*Quercus laurifolia*), there are no known problem species at BSPL.

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.

Visitation to the Big Shoals occurs primarily from canoe traffic. Little Shoals is accessed both by canoe and by vehicle or pedestrian traffic from the south through the SRWMD's "Marsh Tract."

Little Shoals Bridge Foundation (HA324) shows some evidence of damage from canoe keels being dragged across the shoals. The Division staff will monitor the condition of this site using photopoints taken at regular intervals. In addition, staff will use interpretive signage to educate visitors about the fragility of this non-renewable resource.

Surface collection of artifacts as well as more intense vandalism or looting, constitute a major threat to the sites. Visitors have routinely surface collected the lithic quarries at Big Shoals (CO111) and Little Shoals (HA325) for silicified coral and artifacts. Staff will discourage

vandalism using interpretive signage placed at access points that includes warnings against collecting artifacts in terrestrial and aquatic environments of BSPL.

Several sites, including Big Shoals (CO111); Little Shoals (HA325); and the Godwin Bridge Site (HA317) show evidence of disturbance through erosion. In particular, the Little Shoals Bridge Foundation Ruins (HA324) are experiencing considerable erosion and eventually the river will erase the bridge foundation that was cut into the Hawthorn Formation clay. The historic road and concrete bridge approach components at Old Godwin Bridge (CO773) will eventually deteriorate due to erosion. Staff will monitor the condition of these sites using photopoints taken at regular intervals. Plans to develop recreational facilities on BSPL may impact some of the known cultural resources and may uncover previously unknown sites. Because of the number of known archaeological sites and the potential for new sites to be found in the region, both major and minor disturbances to the area will be supervised by a trained archaeological monitor.

Research Needs

Any research or other activity that involves the collection of plant or animal species on BSPL requires written authorization or a collecting permit from the respective agency managing the portion of BSPL utilized for the project.

Research projects may be performed on certain areas of the forest on a temporary or permanent basis for obtaining information, which expands the knowledge of forestry and ecosystem management. The agencies cooperate with the U.S. Forest Service, the University of Florida, non-profit organizations and other educational institutions and governmental agencies whenever feasible. All research projects on the state forest lands must be authorized in writing by the DOF's Forest Ecologist.

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.

A potential list of research needs is as follows:

Natural Resources

- Knowledge of the size and distribution of populations of designated species.
- Inventories of flora and fauna.
- Better definition of the boundaries and distribution of natural communities.
- Coordination with the FWC and the USFWS on the monitoring of riverine animal species.
- Monitoring of ground and surface waters for changes in quality caused by off-site land use practices.
- Monitoring of quality and quantity of water flow in seepage areas.

Cultural Resources

- BSPL has not undergone a comprehensive cultural resources survey. A Phase I survey of the entire property, and Phase II survey of selected areas, would aid in management of cultural resources, including further documentary research and oral history research, especially into 19th century and early 20th century occupation and use.
- Further historical research is needed for the Old Godwin Bridge (CO773) to establish the

exact dates of its construction and use, as well as information concerning the contractor and type of bridge.

- Further historical research is needed to document the activities of the homestead at Hooker's Homestead/Ravine Top (HA177) and the Downing & Tippins Turpentine Camp (HA322). Considering the unusually good preservation at the homestead site, and the potential for oral history at the turpentine camp, these sites may both be eligible for National Register nomination.
- Research into prehistoric habitation in the area would shed light on the little-known Deptford period occupation of the Suwannee River Valley; the Check Station (HA318) and Lucky Hole (HA332) sites both appear to represent this cultural period.

Resource Management Schedule

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

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.

The DOF and The Division properties were subject to a land management review on January 22, 1998 (see Addendum 8). The review team made the following determinations:

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

LAND USE COMPONENT

INTRODUCTION

Land use planning and park development decisions for BSPL are based on the dual responsibilities of preserving representative examples of original natural Florida and its cultural resources, and providing 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 facilities. Input to the plan is provided by experts in environmental sciences, cultural resources, operation and management, through public workshops, and environmental groups. With this approach, the objective is to provide quality development for resource-based recreation with a high level of sensitivity to the natural and cultural resources.

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

Big Shoals Public Lands are located within Hamilton and Columbia County, just outside White Springs, in the northeastern part of the state. The 2000 combined populations of Hamilton (10,930) and Columbia County (42,613) have grown over 30 percent since 1990, and are projected to grow an additional 17 percent by 2010 (Bureau of Economic and Business Research (BEBR), University of Florida, 2002). For comparison, the actual and projected average growth rates for the state of Florida are, 24 and 16 percent, for the same periods. As of 2000, 21 percent of residents in these counties were in the 0-14 age group, 43 percent in the 15-44 age group, 24 percent in the 45-64 age group, and 14 percent were aged 65 and over. This age distribution reflects a slightly younger population than the state average for these groupings (BEBR, University of Florida, 2000). Nearly 578,000 Floridians reside within 50 miles of BSPL, which includes the cities of Jacksonville, Lake City and Gainesville (U.S. Department of Commerce, 2000).

Visitation estimated by the Division has ranged from a high of 19,773 in 2000-01 (earliest year recorded) to a low of 13,506 in 2002-03. By Division estimates, visitors to BSPL contributed nearly $500,000 in direct economic impact and the equivalent of 10 jobs to the local economy in 2002-03 (Florida Department of Environmental Protection, 2003). The property is currently one of the lesser visited units in the Division District 2. Participation in

FWC managed hunts at the Big Shoals WMA have ranged from a high of 423 in 1999-00 to a low of 309 in 2001-02. Most recently, 335 individuals participated in hunts during 2002-03.

Existing Use of Adjacent Lands

Adjacent development includes low-density residential and agricultural land-uses within a rural setting. The Suwannee River and its floodplain serve to buffer the east and southern boundaries of the property. County Road 135 runs along the northwest boundary, cutting through the northernmost portion of BSPL. Extensive phosphate mining has occurred in the area north of County Road 135. Pine plantations and open pastures are located across the Suwannee River south and east of the property and along the northern boundary. White Springs, a short distance to the west, is the nearest developed area with medium density residential and limited commercial development concentrated along State Road 41 and 135.

Significant conservation lands lie within 15 miles of the BSPL including a variety of Suwannee River Water Management District Conservation Areas (Fort Union, Bay Creek, Cypress Creek, Deep Creek, Swift Creek, Suwannee Valley, Woods Ferry, Camp Branch, Benton and Belmont), Stephen Foster Folk Culture Center State Park, J.M. Bethea State Forest and Osceola National Forest. Anchored by the Suwannee River, these areas provide a full spectrum of resource based recreation opportunities including, swimming, boating, canoeing, fishing, picnicking, hiking (including the Florida National Scenic Trail), biking, horseback riding, camping, and nature study.

Planned Use of Adjacent Lands

Agriculture-1, 4 and 5 and Medium Density Residential (up to eight units per acre) land use designations occur on lands adjacent to BSPL (Columbia County, 1997 and Hamilton County, 1996). Density restrictions on surrounding agricultural lands maintain open lands and a pastoral landscape. However, large areas are periodically cleared for silviculture, which detract from the surrounding aesthetics, and phosphate mining is an acceptable land use within this land use designation. The area designated residential is confined to the extreme western tip of BSPL and is an extension of the urbanizing White Springs area. It is likely that surrounding agricultural lands will gradually transition into residential and commercial uses as the White Springs area grows, which will create additional management challenges at BSPL. In addition, phosphate mining is still active in the area and mining interests have expressed a desire to mine a portion of BSPL along the northern boundary under jurisdiction of the DOF. Land use changes may have implications for the use of prescribed fire, spread of exotic species, altered hydrology, habitat loss and the visitor experience.

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.

BSPL contain over 3,000 acres of natural landscapes within easy reach of over half a million Florida residents, and easily accessible to tourists traveling on Interstate 75, Interstate 10 and U.S. Highway 41. The property's topographic relief ranges from relatively flat expanses to steep slopes and ravines. Under normal water conditions, shoreline bluffs rise up to 80 feet above the river in some places. However, the river fluctuates drastically and can rise to levels that overflow the steep banks. The upland natural communities of the BSPL include mesic flatwoods, sandhill, slope forest, upland hardwood forest, upland mixed forest, upland pine forest and xeric hammock. The wetland communities include basin swamp, baygall, bottomland forest, dome, floodplain forest, blackwater stream and seepage stream. These natural features and communities provide a broad array of recreational and educational opportunities for visitors.

Suwannee cooters, Suwannee bass, sturgeon, river otters and gopher tortoises are among the listed plant and animal species found on this property. All listed species will be protected under the established management policies of the four agencies. Visitor impacts to listed species will be carefully monitored to identify unacceptable impacts in advance. The diversity of listed and non-listed wildlife supported by the natural communities of the property, and the proximity of the river, provide for "watchable wildlife" activities at numerous locations.

The Suwannee River is the second largest river in Florida. Its origin is in the Okeefenokee Swamp, and it winds lazily in a southwesterly direction through Florida before emptying into the Gulf of Mexico. Altogether, the river is 235 miles long, 207 miles of which are in Florida. BSPL abut the Suwannee River for approximately 6.25 miles. The stretch of this blackwater river that meanders through BSPL is quite scenic, relatively wide (approaching 200 feet in places) and lined with high limestone bluffs. Although several houses are visible from the river along areas of privately owned shoreline, the area maintains a feeling of old Florida. The Suwannee River and its shoals are the most significant natural features of the property. As the name "Big Shoals" implies, this area of the Suwannee River contains the largest and most active white water rapids in Florida. Another set of smaller rapids, the Little Shoals, exists downstream of the Big Shoals, alongside the southwestern boundary of the property. These shoals provide a unique experience for paddlers and should be approached with caution when whitewater is present.

Nine sites of pre-historic importance, four sites of historic importance and six multi-component sites, of prehistoric and historic importance, are included in the Florida Master Site File for BSPL. These sites include the Big Shoals Quarry, the Little Shoals historic homestead, both sides of the old Godwin Bridge and the FWC check station. The abundance of cultural resources at BSPL requires careful planning and development of recreational facilities while presenting opportunities to enhance the interpretive experience for visitors.

The visual resources of the BSPL are exceptional. The interior of the site offers outstanding opportunities for study of many of Florida's unique plant communities, while views along the riverbank provide expansive vistas, uninterrupted by modern development. The visual character of this property provides a quality setting for quiet nature observation, scenery appreciation and nature photography.

Assessment of Use

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

Past Uses

The White Springs area has been used by humans since the medicinal and healing powers of the springs' "milky waters" (caused by Sulfur deposits in the limestone layers of the aquifer system in the northern stretches of the Suwannee River) were discovered. The White Springs have been popular with Paleo-Indians, Native Timucuan, Seminole Indians, European settlers and 19th century tourists.

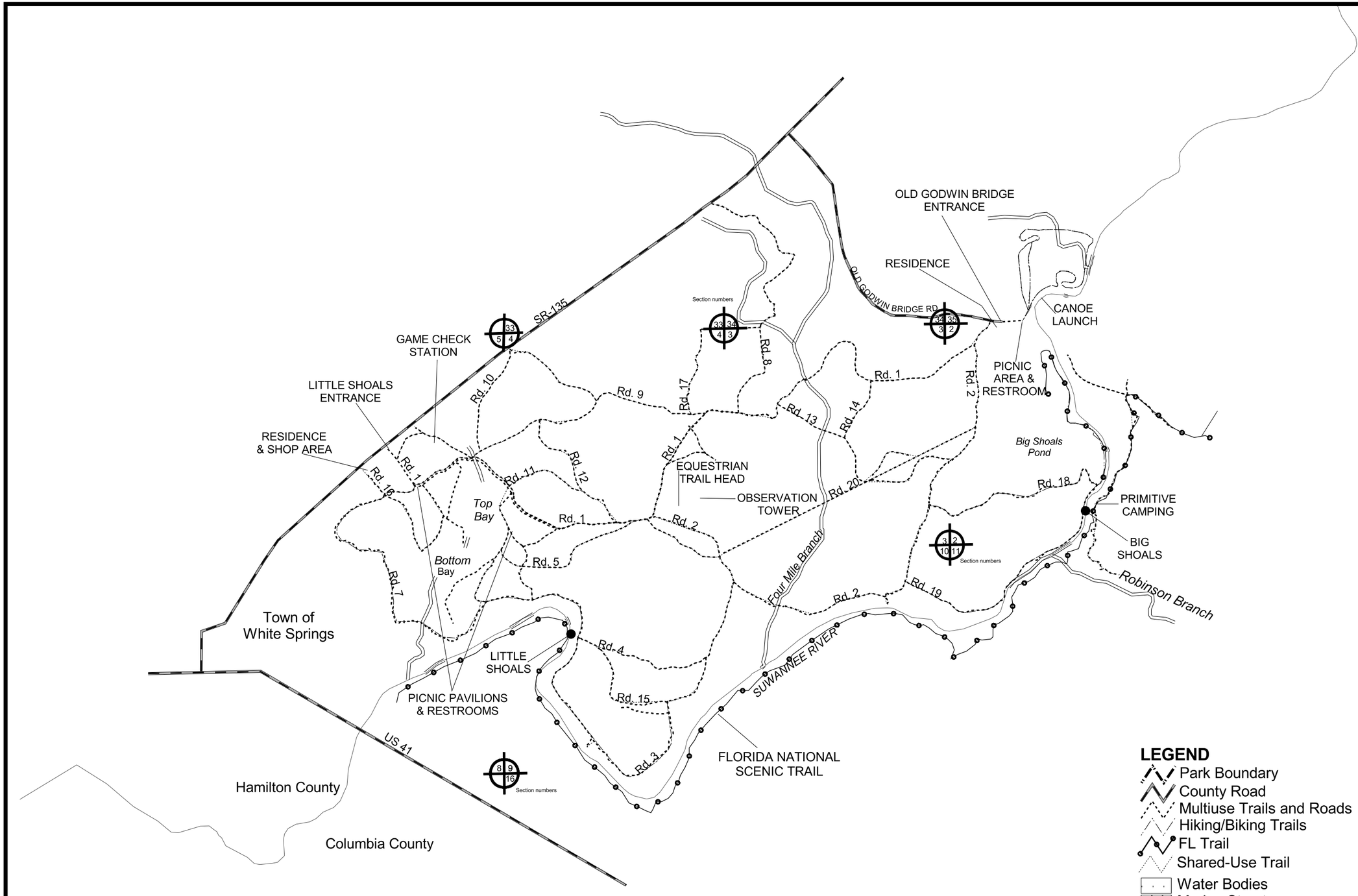
Mineral Springs, the settlement that developed around the springs, was also known to plantation and pioneer families as "Rebel's Refuge" during the Civil War. The timber industry fueled the town's incorporation in 1885, and the downtown spring was developed into a prosperous vacation designation. During its heyday, the town boasted more than 500 hotel and boarding rooms, most of which were destroyed in a 1911 fire. The spring house (currently part of Stephen Foster State Folk Culture Center facilities) and 110 other downtown historic structures and gardens are listed on the National Register of Historic Places.

The Hamilton County portion of the BSPL is on the fringes of the White Springs community. Several homesteads from the 19th century are located on the property. There is also evidence that the property was used for timbering and cotton production, which would be consistent with the historical agricultural base of the local economy. The property was acquired from TNC in 1986. Before that, under the James Graham Foundation's ownership, Occidental Agriculture Chemical Product Company held mining rights to BSPL and other adjacent parcels. It was during this period that cows grazed in the northeastern portion, while canoeists blazed trails through the site in order to ride the "Big Shoals." Since 1989 the DOF, the Division, the SRWMD and the FWC have been managing BSPL.

On the Columbia County portion of BSPL, there is evidence of 19th century occupation - a post office was located in Suwannee Shoals in 1845. It is likely that this settlement was served by Hewitt's Ferry and later by the Godwin Bridge. In the 1880s, some thought was given to using the shoals for hydroelectric power. When the Godwin Bridge went out of service in the late 1950s, the Suwannee Shoals community seems to have shifted further east toward Old River Road.

Recreational Uses

Canoeing, kayaking, fishing, limited hunting, primitive camping, hiking, bicycling and horseback riding are the recreational activities currently available at BSPL. An extensive trail network has been established using miles of jeep roads and fire-lanes to provide public access to most areas of BSPL, including the Suwannee River and the Big and Little Shoals. Bicyclists are currently the primary users of the trail system on the Hamilton County side of the Suwannee River. The Florida National Scenic Trail (FNST) has a segment, soon to be certified with the Division, which runs along the Suwannee River through its Columbia County parcel. The BSPL provides a critical protected link along the Suwannee River for this 1,300-mile hiking trail that spans the length of the state.



BIG SHJOALS
PUBLIC LANDS

BASE MAP

Four types of hunting seasons currently provide 42 days of hunting opportunity on BSPL. These seasons include archery (Monday through Saturday for three consecutive weeks, beginning on the fourth Monday in September), muzzle loading gun (Friday, Saturday, and Sunday for two consecutive weekends beginning on the fourth Friday in October), small game (Monday through Saturday for two consecutive weeks, beginning on the third Monday in December), and spring turkey (two Thursday through Saturday hunts beginning on the third Thursday of March with the second hunt taking place 21 days later). All hunts are managed by the FWC.

Other Uses

Easement # 28002 between the Trustees and the Suwannee Valley Electric Cooperative, Inc. was granted in 1988 for an electric distribution line through a portion of Section 34, Township 1 South, Range 16 East (along the Old Godwin Bridge Road). The land management agencies do not favor the further fragmentation of natural communities with non-conservation uses. Easements for linear facilities will be discouraged where possible. If there are no alternatives to keep a new linear facility from being placed on BSPL, then the corridor system will be used. This system will encourage facilities to use established routes through public property in order to congregate these facilities in one compact area. The managing agencies will also encourage the use of underground cable where scenic considerations are important. Easements for incompatible uses of CARL lands are subject to the review and approval of the Trustees and will follow the procedure outlined in Chapter 18-2.021, Florida Administrative Code covering such uses.

The mineral rights on two sections of the DOF portion of BSPL are partially owned by individuals. The first parcel is owned by E. D. Olson, who has an undivided one-half interest in and to all oil, gas and other minerals in, on or under the North 1/2 of Northeast 1/4, Section 33, and the Southeast 1/4, Section 34, located in Township 1 South, Range 16 East. The second parcel is owned by an unidentified individual (or company) who has an exception for a one-half undivided interest in and to all of the oil, gas, and other minerals of every kind and character. This parcel is the West 1/2 of the Northeast 1/4 of Section 34, Township 1 South, Range 16 East. The land management agencies will discourage mining on BSPL, and look into the possibility of acquiring these outstanding mining rights.

Protected Zones

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

At BSPL, the following areas have been designated as protected zones as delineated on the Conceptual Land Use Plan, with the exception of the roads and developed trail corridors discussed below: sandhill, upland hardwood forest, slope forest, basin swamp, baygall, bottomland forest, dome, floodplain forest, floodplain swamp, blackwater stream, and seepage stream natural communities, areas of gopher tortoise concentrations, and known cultural sites. These protected zones comprise over 26 percent of BSPL.

Existing Facilities and Uses

Trails and Interpretation. Nearly 24 miles of trails for hiking, bicycling and equestrian use have been established at BSPL. Portions of the existing jeep roads and fire lanes have been converted into a trail network, with both single- and multi-purpose trails. Trailheads are located at the Little Shoals Entrance, Little Shoals Picnic Area and Godwin Bridge Entrance and off service road 1 in the interior of BSPL. The interior location is an equestrian trailhead managed by the DOF and consists of trail directional signage and a grassed parking area near an old-field and stand of planted pines. Limited interpretive signage is located at each of the primary use areas.

Godwin Bridge Use Area. The Godwin Bridge Entrance is the only vehicular access point on the Suwannee River at BSPL. A canoe/kayak launch, picnic area with scattered picnic tables and grills, restroom, and paved access drive with gravel roadside parking comprise public facilities in this area. The Big Shoals portage site is located a short distance downriver on the shoreline of the Columbia County parcel. Canoeists and kayakers remove their boats above the shoals and launch them again several hundred feet downriver. A small clearing along the portage route is a popular primitive camping area with no facilities provided other than fire rings and no public vehicular access. A Division residence is located just outside the gate to the Godwin Bridge use area.

Little Shoals Entrance. The Little Shoals Entrance serves as the primary trailhead on the west side of BSPL. A composting restroom and medium picnic shelter are the only facilities currently located at this site. A Division staff residence and shop area is located a short distance west of the entrance road.

Little Shoals Use Area. The use area is located a short distance southeast of the Little Shoals Entrance and includes a composting restroom, and small picnic shelter. Access from the Little Shoals Entrance is via service roads 1 and 6.

Wildlife Management Area. The Big Shoals Wildlife Management Area (WMA) includes those areas managed by the DOF and is divided into a Zone A and Zone B (see Agency Boundaries Map). A game check station is located northwest of the Little Shoals Entrance. Designated parking areas for hunters have been established along the shoulder of existing service roads. An observation platform is located near the old field in the center of BSPL. Other than the equestrian trailhead described above, no other facilities are located within the WMA.

The following is a comprehensive listing of facilities at Big Shoals Public Lands:

Trails
Big Shoals Hiking Trail (1.2 mi.)
Florida National Scenic Trail (hiking) (1.6 mi.)
Shared-use (hiking/biking) (7.5 mi.)
Shared-use (hiking/biking/equestrian) (15.2 mi.)

Godwin Bridge Use Area
Canoe launch
Scattered picnic tables and grills
Interpretive sign
Restroom
Gravel roadside parking
Paved loop access road
Division staff residence

Big Shoals Portage
Primitive camping area

Little Shoals Entrance
Composting restroom
Medium picnic shelter
Interpretive sign
Division staff residence and shop area

Little Shoals Use Area
Composting restroom
Small picnic shelter

Wildlife Management Area
Check station and necropsy shed
Water well
Observation platform

CONCEPTUAL LAND USE PLAN

The following narrative represents the current conceptual land use proposal for BSPL. As new information is provided regarding the environment of the property, 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 property 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 managers assess potential impacts of proposed uses on the resources of the property. Uses that could result in unacceptable impacts are not included in the conceptual land use plan. Potential impacts are more thoroughly identified and assessed through the site planning process once funding is available for the development project.

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

Potential Uses and Proposed Facilities

BSPL provides the base for a regional framework of publicly owned and managed landscapes in the White Springs area. Staff has approached planning for this site within the context of the White Springs community, the vision for its revitalization, the recreational mandates of each of the managing agencies, and a regional recreational initiative known as the Suwannee River Wilderness Trail (SRWT).

The SRWT envisions a system of public and private recreation and visitor service sites along 160 miles of the Suwannee River making the region's outstanding outdoor recreation and heritage resources more available to the public. Recreational "hubs" will provide bases from which visitors may explore the surrounding areas by canoe, boat, bicycle, horseback, or on foot, or enjoy local public lands and cultural sites for activities such as swimming, picnicking, fishing, birding and wildlife observation, nature study and interpretive programs. The implementation of this concept will provide single- and multi-day opportunities for a variety of nature and heritage

PRIMITIVE
GROUP CAMP
*Tent Camping Area
*Campfire Circle
*Restroom
*Outside Showers

OLD GODWIN BRIDGE
USE AREA
*Replace Canoe Launch
*Picnic Shelters
*Interpretive Kiosk
*Honor Box Fee Station

PHOSPHATE MINING
LANDS

LITTLE SHOALS
ENTRANCE
*Relocated Equestrain Trailhead
*Woodpecker Trail Trailhead
*Potable Water
*Interpretive Kiosk
*Honor Box Fee Station
*Paved Park Drive

SR 136

OLD GODWIN BRIDGE ROAD

First Phase of
Woodpecker Trail

FNST
*Potential northern
extension

RESIDENCE &
SHOP AREA
*Shop & Maintenance
Buildings

COLUMBIA COUNTY
PARCEL
*Improved Canoe/Kayak
Landing & Launch Sites
*Organize Primitive Camping
*Restroom

Enhanced Access &
Views of Shoals

TOWN OF
WHITE SPRINGS

Potential Future
Routings for
Woodpecker Trail

US 41

SUWANNEE RIVER

LITTLE SHOALS
USE AREA
*Picnic Shelters
*Scattered Tables & Grills
*Nature Trails
*Improved Access Road & Parking

LEGEND

- PROPOSED FACILITIES
  PROPOSDE WOODPECKER TRAIL (Phase 2)
- LITTLE SHOALS ACCESS ROAD
- EXISTING WOODPECKER TRAIL & FNST
- PROTECTED ZONES
- BIG SHOALS PUBLIC LANDS BOUNDARY
- STEPHEN FOSTER CULTURE CENTER STATE PARK
- SRWMD LANDS

N

2000 0 2000 4000 Feet

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

BIG SHOALS
PUBLIC LANDS

CONCEPTUAL
LAND USE PLAN

based tours, whether outfitted and guided by local businesses, or organized by individual visitors. A major interpretive theme throughout the SRWT is the discussion and practice of Leave-No-Trace outdoor ethics.

While BSPL is not marketed as a destination along the SRWT, its proximity to the northern most hub (Stephen Foster Folk Culture Center State Park) and position along the river shoals ensures that some visitors attracted by the SRWT will make their way to the property. In order to enhance visitor experiences, support the SRWT concept and manage anticipated increases in visitor demand, several recreational improvements are proposed. Existing recreational activities at BSPL are appropriate and should be continued. This plan proposes an expansion of the existing trail system, improvements to existing picnic, water access, primitive camping and interpretive facilities, and the establishment of a group camping area. Additional improvements are recommended to clarify jurisdictional boundaries, provide reliable service access to the Columbia County side and address maintenance and storage needs.

Recreation Facilities

Proposed Facilities and Cultural Resources. Known cultural resources are present near areas with existing and proposed facilities. For example, The Downing and Tippins Turpentine Camp and Check Station cultural sites are located near the Little Shoals Entrance, the Godwin Bridge site overlaps with the proposed picnic area at the Godwin Bridge use area and the Big Shoals Quarry site comprises a large portion of the Big Shoals portage area. A compliance review will be conducted with the DHR prior to ground disturbing activity associated with development of these projects. Additional archaeological investigations may be necessary to determine precise boundaries of the cultural sites, the range of sites and their potential association, cultural contexts and significance and the implications for ground disturbing activity prior to construction. Information gained from the archaeological work will be used to inform the design of facilities to minimize resource impacts and may require the modification of conceptual locations of facilities as identified in this plan.

Interpretation. Public lands create benefits by not only providing quality outdoor recreation, but by expanding public awareness of Florida's natural and cultural resources, and inspiring environmental citizenship. To enhance visitor education and focus future planning and development efforts, four interpretive themes have been developed for this plan. These themes link the various recreational activities with the landscape, providing visitors with opportunities to experience a variety of recreation and educational program combinations.

- **Hydrology.** BSPL reveal the hydrological and geological processes that shaped the Suwannee River Basin.
- **Fire.** BSPL reveal the continuum of fire-adapted plant communities in a landscape shaped by fire and altered by humans.
- **Culture.** BSPL contain physical evidence of continuous human occupation, culture and land use over the past several thousand years.
- **Wildlife.** The presence of many animal and bird species at BSPL provides excellent opportunities for wildlife observation. Interpretive programming at BSPL should include information on wildlife identification and methods for non-obtrusive observation of wildlife.

Interpretation of these themes should occur throughout the property, as an integral part of the educational programs provided by each of the managing agencies through presentations, talks and tours, brochures, interpretive materials and static interpretive signage.

As the first phase of implementation, interpretive zones have been designated. An interpretive zone is a geographic area exhibiting natural, cultural or aesthetic values, or associated with a historic event, activity or person. These zones focus the educational and interpretive programs on a specific aspect of the site, and color the recreational experience provided to visitors of BSPL. At BSPL, interpretive hydrological zones have been designated around the Big and Little Shoals, and the wetland communities in the Little Shoals area, Four Mile Creek and the 10-year floodplain. Portions of the various types of fire-adapted communities have been designated as prescribed fire interpretive zones. The following areas have been designated as interpretive cultural zones: Big and Little Shoals, the Big Shoals quarry site, Little Shoals historic homestead site and the Old Godwin Bridge. Unsupervised public access to the known cultural sites on the property is not recommended. However, educational and interpretive tours by qualified staff and volunteers should be important components of future interpretive programs.

The incorporation of educational and interpretative facilities and programs to raise public awareness of the existence and importance of the resources of BSPL are integral to this plan. Environmental stewardship issues need to be brought to the attention of recreational users to balance public access with the protection and management of the natural and cultural resources.

Static interpretive displays, such as fiberglass embedded interpretive signs and multi-sided kiosks, should be made available at the primary use areas of the property. Trail brochures with designated interpretive stops at key locations along the trail system could promote an understanding about natural and cultural resources in the more remote areas of BSPL. These improvements will inform the public regarding resource management and restoration activities occurring at BSPL in order to implement the thematic interpretation concept discussed above, and to illuminate the larger preservation, stewardship and land use purposes for which the land was acquired.

Trails. Big Shoals Public Lands are considered a destination point for local and regional ecotourism initiatives by the town of White Springs, Hamilton County, the SRWMD and the Division. The four agencies participating in the assembling of this management plan for BSPL support White Springs community revitalization, ecotourism and outdoor recreation initiatives, and intend to continue coordination and cooperative efforts to link White Springs to the publicly-owned and managed properties at the appropriate locations.

Woodpecker Trail. The Woodpecker Trail will be a multi-purpose paved recreational trail that is envisioned to connect BSPL with Stephen Foster Folk Culture Center State Park and the Town of White Springs. The first phase of the Trail was completed in 2004 with funding from the federal Intermodal Surface Transportation Efficiency Act (ISTEA) program and connects the Little Shoals and Godwin Bridge entrances within BSPL. The meandering trail is separated from existing service roads by a vegetative buffer, except where limited by environmental conditions. The 10-foot wide asphalt trail will serve pedestrians, skaters and bicyclists.

Several options exist to extend the Woodpecker Trail into White Springs. One option is for the trail to be aligned along the State Road 135 corridor and local roads in White Springs. Trail connections beyond the BSPL boundary will require the support and initiative of

other government agencies to secure funding and ensure operational and public safety issues are adequately addressed. A second option is to route the trail west from the Little Shoals Entrance and then south through the Barnett Tract of the Swift Creek Conservation Area (SCCA), across US 41 and then west through other tracts of the SCCA towards Stephen Foster Folk Culture State Park. Existing jeep trails on these public lands provide a logical trail corridor. Advantages of the latter option include less potential conflicts with vehicular traffic and the reduced need for ROW acquisition. However, environmental constraints on the SCCA may prove challenging to constructing a paved shared use trail. Whatever routing is pursued, completing the vision of the Woodpecker Trail is considered important to its viability as a recreational trail. It is recommended that representatives from the Division, SRWMD, Hamilton County, White Springs, DOT and the bicycling community discuss the merits of these two routings and develop a plan to complete the Woodpecker Trail. Both alternative routings are included on the BSPL Conceptual Land Use Plan.

Big Shoals Hiking Trail. The Big Shoals Hiking Trail meanders south from the Godwin Bridge Use Area and provides views of the Big Shoals from the steep banks of the western shoreline. Hikers can hear the roar of white water before catching a glimpse of the rapids when water levels are just right. Visitors are drawn to the water's edge to get better views of the shoals, which requires climbing down a steep bank and trampling shoreline vegetation. To enhance views of the Big Shoals and address the blazing of social trails down the bank, it is recommended that an observation platform be constructed and a small amount of shoreline vegetation thinned. This facility is recommended to be sited where public access is currently focused, at a spot on the bluff that provides upstream views of the shoals, and will be designed to preserve views of the Suwannee River shoreline as experienced by the earliest inhabitants of the region.

Florida National Scenic Trail. Long-range plans for the FNST call for extending the trail north and south of the Columbia County parcel as land or right-of-way is acquired. The Division will coordinate extending the FNST with the Florida Trail Association as lands are made available.

Shared-Use Trails. The trail experience for all users at BSPL will be evaluated, including parking, vehicle circulation, trail lengths and conditions, access to scenic points of interest and the establishment of trail rest stops. Improvements aimed at enhancing the trail experience will maintain public safety, the visitor experience of other users and protect sensitive resources.

Site Circulation and Signage. Site circulation is based on simplifying access and orientation. Trail orientation and directional signage will be provided at BSPL trailheads. Separation of uses, as well as the establishment of the main use areas ensures that users have a clearer spatial understanding of the trail network. This trail network is to be implemented as a multi-level system, allowing users at different ability levels enjoyment of this resource. In addition, a coordinated system of trail marking and site signage should be implemented by the managing agencies to facilitate orientation of trail users.

Trail Management. When necessary, service roads that are used as multi-purpose trails may still be used for administrative purposes. These administrative purposes include, but are not limited to, prescribed fire activity, logging, maintenance and law enforcement.

Periodic flooding may require temporary closure of some sections of trail. If flooding problems persist, it may be necessary to reroute sections of the trail network.

The success of the BSPL system of trails is contingent on the participation and long-term commitment from members of each group of trail users. The managing agencies will continue to meet with user groups to address management issues related to the trail system. If necessary, education programs for trail etiquette and use, especially on the multi-purpose trails, will be developed in conjunction with the various trail user groups. Volunteer labor to maintain these trails will be necessary for the agencies to provide a quality trail experience into the future.

Godwin Bridge Use Area. Recommended improvements for day use facilities include the addition of picnic shelters to the existing picnic area, hitching posts and bicycle racks for those arriving to the area by horseback or bicycle, and replacement of the existing canoe/kayak launch. A mix of picnic shelters should be provided to accommodate individuals, families, small and large groups. Erosion control measures, and slope stabilization should be pursued along the access route and riverbank as part of the canoe/kayak launch replacement. As previously mentioned, a multi-paneled interpretive kiosk is recommended in this area to present the BSPL interpretive themes to visitors.

To provide an opportunity for extended stays and to support canoe/kayak travel along the Suwannee River, a primitive group camp is recommended in a portion of the upland pine forest north of the parking area between the Longbranch Trail and the property boundary. A restroom, outside showers, medium picnic shelter and campfire circle are recommended facilities at the site. An existing service road should be extended to the site to allow for the loading and unloading of supplies. If the existing parking area proves insufficient to accommodate day users and campers, a slight expansion of parking for the group camp may be necessary.

Little Shoals Entrance. The Woodpecker Trailhead is proposed along the existing entrance road, a short distance from State Road 135. Parking for up to 20 vehicles and potable water are recommended additions to the existing picnic shelter and composting restroom that serve users in this area. This area is also proposed to serve as a trailhead for equestrians. An area of planted pines is recommended for clearing to accommodate the parking of up to 15 horse trailer rigs. The design of facilities in this area will address site circulation needs of visitors arriving by vehicle, bicyclists, pedestrians and equestrians. It is recommended that equestrian users be directed along the Woodpecker Trail corridor a short distance to a point suitable to connect to the existing shared use trail network. Once developed, this trailhead will replace the existing equestrian trailhead currently located off Road 1 in the interior of BSPL on land managed by the DOF.

Little Shoals Use Area. Additional improvements are recommended to enhance access to one of the most beautiful locations in BSPL - the Little Shoals. An additional picnic shelter, scattered tables and grills, bicycle racks, hitching posts, potable water, and parking for up to 20 vehicles are recommended to support public use of the area. The entrance road is recommended to be improved from State Road 135 to the Little Shoals Use Area to accommodate increases in vehicular traffic. As use increases, the existing composting restroom may require upgrading to handle the additional capacity.

A nature trail is recommended to extend from the use area to an overlook of the Little Shoals that will enhance views of and control access to this unique natural feature. Due to significant topographical relief and frequent flooding in the area, portions of the trail will require the use of

boardwalks. It is recommended that the observation platform be sited near the end of Road 4. As discussed in relation to the Big Shoals, this facility will be designed to limit impacts to the Suwannee River view shed.

Canoeing/Kayaking. Canoeing and kayaking are recreational activities experiencing rapid growth in popularity in Florida. Overnight canoe camping and extended trips are recreational activities with large potential along the Suwannee River. As discussed, the Division is currently involved in the planning of the SRWT, an initiative to coordinate the planning of recreational use along the river corridor by linking existing recreation facilities and enhancing opportunities for extended stays along the river.

Traditionally, the Columbia County parcel of BSPL has been used by canoeists and backpackers hiking the Florida Trail for overnight camping. The use of this site for camping is recommended to be maintained at its current location. Facilities are recommended to be kept to a minimum and would include clearly designated camping areas, fire rings and a restroom once access is improved to this area (see discussion below). Existing canoe/kayak portage sites are proposed to be ramped and stabilized to improve ease of access and address erosion problems. Interpretive and educational information concerning nearby cultural sites should be incorporated into the site's development. Additional primitive overnight camping locations are proposed on SRWMD lands located both upstream and downstream of BSPL (Falling Creek property).

Access to the Columbia County parcel to meet operational and resource management needs requires crossing private land on unimproved roads that are in poor condition and impassable at times of high water. A legal easement is needed so that the Division can secure reliable access and pursue improvements to this road. The short-term goal is to make the route safe and accessible for use as a service and emergency road by Division personnel. The long-term goal is to make this section of the property accessible for resource management and recreational activities. The access issues and conditions should be addressed in conjunction with the portage and proposed camping area improvements.

Public notification and education at boating access points along the Suwannee River and on-site notification and enforcement efforts will be important components in the face of continued growth of water-based recreational activities. In addition to these measures, signs warning of potentially hazardous water conditions will be maintained at all water access locations and upstream of the Big Shoals. To the extent possible, these signs should be centrally located, with the express purpose of making visitors aware of the approaching shoals.

Wildlife Management Area and Hunting. To accommodate additional recreational interests, changes to the configuration of the WMA and the hunting season format have been implemented. The configuration of the WMA boundary now excludes nearly all Division-managed portions of BSPL (see Agency Boundaries Map). In order to clarify jurisdictional boundaries in the field and exclude the entirety of Division lands from the WMA, Division and DOF will coordinate amending their respective leases so that management boundaries are aligned consistent with the current WMA boundary along Roads 1 and 2.

Vehicular access for hunters is permitted from the check station entrance road, and on designated roads within the WMA. Parking is allowed within designated parking areas along the vehicular roads within the WMA as designated by the FWC. Vehicular use of the roads within the WMA for the non-hunting public will be phased out as public recreational facilities are developed on

Division managed lands, though specific accommodations will be provided for in case of special need as determined on a case-by-case basis by the inter-agency coordinating group.

Changes to the hunting season format have eliminated the general gun and general gun-hog seasons, reducing the number of hunting days from 48 to 42. The muzzleloading gun season has been extended by three days. In addition, restrictions on public access and use during the hunting seasons have been eliminated. Notification will be posted at all entry points advising visitors of the hunting season dates. Awareness of the hunting seasons and the WMA boundary will be fostered and coordinated by all four agencies. The need for additional signage to clarify WMA boundaries for hunters and other recreational users will be evaluated and implemented, if necessary. It is recommended that public vehicular access into the WMA be allowed for hunting purposes only once proposed facilities are implemented at use areas within Division managed lands. However, public access to the WMA via the network of BSPL trails is to be permitted year-round. Entry during hunting season will be allowed one and one-half hours before sunrise, and exit required one and one-half hours after sunset. Regular operating hours (8:00 AM to sunset) will be observed at all other times.

Hunting is an important recreational activity at BSPL and the co-managing agencies support maintaining hunting access as a compatible resource-based recreation option. As part of the annual inter-agency coordination meeting, a review of recreational use-levels and their compatibility with the existing hunting seasons will continue. Additional management actions may be necessary, including adjustments to the hunting season schedule or modifications to other patterns of public use, to address conflicts if they arise. To establish accurate recreational use-levels, trail traffic counters are recommended at primary trail access points.

Support Facilities

Honor box fee collection stations are recommended at the Little Shoals and Godwin Bridge entrances. In the future, as visitation and staffing increases, consideration will be given to constructing small entrance stations to collect fees at the property.

Standard shop facilities, including a four-bay shop and flammable storage building, are recommended to be located within the vicinity of the staff residence near the Little Shoals Entrance. Shop facilities should be sited an appropriate distance from public use areas, screened by vegetation and sited to minimize impacts to the cultural site at this location.

Facilities Development

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

Trails

Woodpecker Trail (phase 2)
Extension of FNST (approx. .5 mi.)
Big Shoals observation platform
Trail directional and interpretive signage
Trail traffic counters

Godwin Bridge Use Area

Primitive Group Camp
Replace canoe/kayak launch

Slope stabilization
Picnic shelters
Interpretive kiosk
Bike racks and hitching posts
Honor box fee collection station

Little Shoals Entrance
Woodpecker Trailhead parking (up to 20 vehicles)
Equestrian trailhead parking (up to 15 horse trailer rigs)
Potable water
Interpretive kiosk
Honor box fee collection station

Little Shoals Use Area
Picnic shelter
Scattered picnic tables and grills
Little Shoals observation platform
Nature trail with boardwalks
Interpretive kiosk
Bike racks and hitching posts
Improved road access
Parking (up to 20 vehicles)
Potable water

Columbia County Parcel
Stabilized canoe/kayak portage sites
Upgrade access road
Restroom
Interpretive signage

Residence and Shop Area
Four-bay shop
Flammable storage building

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

Optimum Boundary

The optimum boundary map reflects lands identified for direct management as part of BSPL. As additional needs are identified through public use, development, research, and as adjacent land uses change on private properties, modification of the unit's optimum boundary may occur for the enhancement of natural and cultural resources, recreational values and management efficiency. At this time, no lands are considered surplus to the needs of the property.

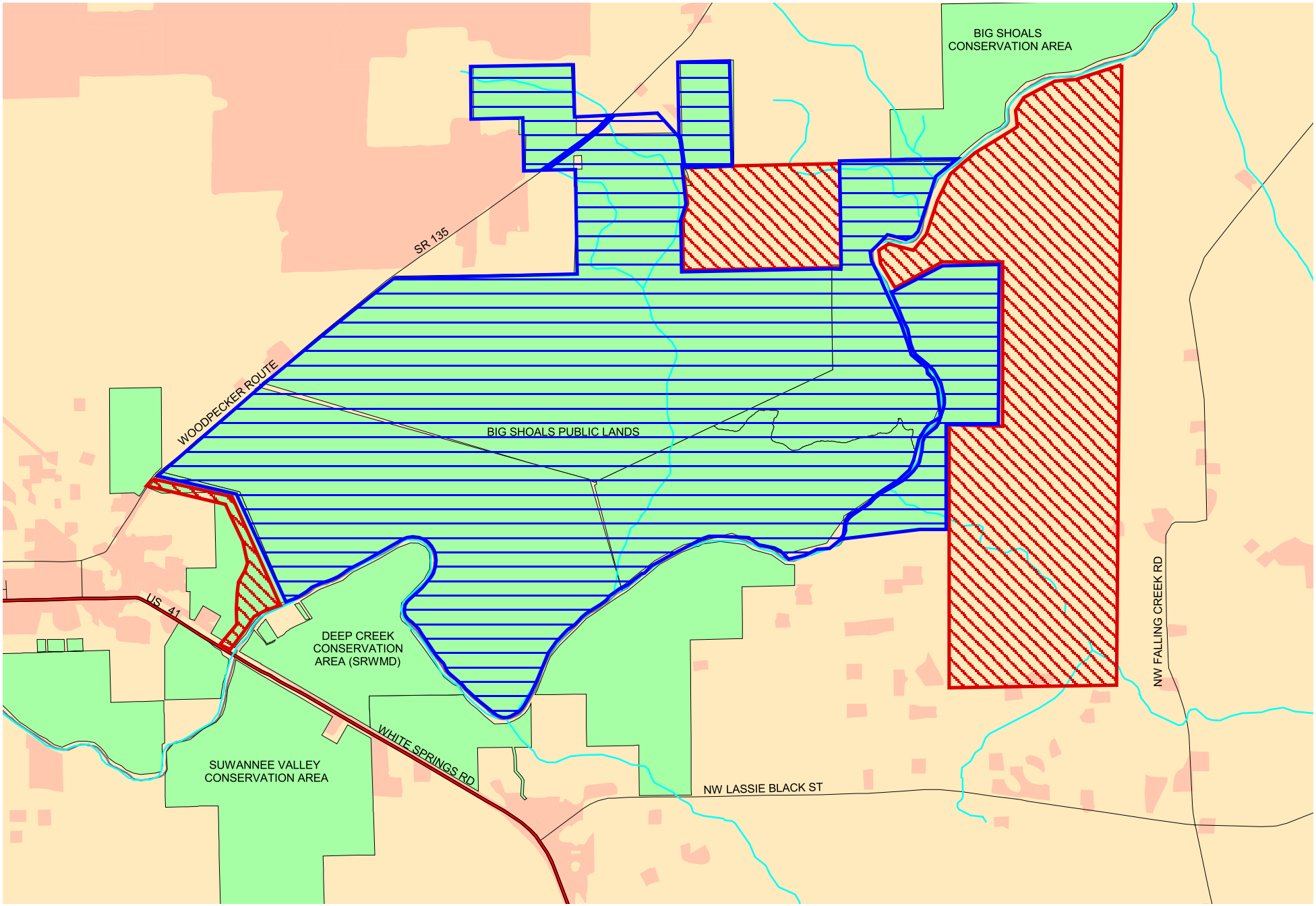
Identification of lands on the optimum boundary map is solely for planning purposes and not for regulatory purposes. A property’s identification on the optimum boundary map is not for use by any party or other government body to reduce or restrict the lawful right of private landowners. Identification 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.

Table 1--Existing Use And Optimum Carrying Capacity

	Existing Capacity		Proposed Additional Capacity		Estimated Optimum Capacity	
Activity/Facility	**One Time**	**Daily**	**One Time**	**Daily**	**One Time**	**Daily**
Trails						
Shared Use	227	908			227	908
Woodpecker Trail*	68	272			68	272
Hiking only	70	280	12	48	82	328
Picnicking						
Godwin Bridge Use Area	40	80	72	144	112	224
Little Shoals Use Area	8	16	64	128	72	144
Camping						
Group camp			40	40	40	40
Canoe/kayak camping	24	24				
Hunting	35	35			35	35
TOTAL	**472**	**1,615**	**188**	**360**	**636**	**1,951**

* Does not include proposed future extension into the Town of White Springs.

Acquisition of the parcel along the northern boundary would provide a more uniform management boundary, and allow for the potential abandonment of the existing county road that runs through the property. Abandonment of the county road would provide greater security to the adjacent state lands, allow for improvements to the entrance road, and buffer one of the property's primary public use areas. The area along the southwest boundary is known as the Barnett Tract and currently managed by the SRWMD as part of the Swift Creek Conservation Area. Adding this parcel to BSPL is considered important to assist in conducting prescribed burns and providing and enhancing recreational trail opportunities. Lands identified adjacent to the Columbia County parcel are part of the Pinhook Swamp Florida Forever project and would protect portions of the Robinson Branch and Deep Creek drainages, provide additional uplands for potential recreational development, including extending the Florida National Scenic Trail to the north and south of BSPL and expand options for improving access in this area.



BIG SHOALS PUBLIC LANDS

2000 0 N 2000 4000 Feet

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

LEGEND
Park Boundary
Optimum Boundary

OPTIMUM BOUNDARY MAP

Addendum 1—Acquisition History

Purpose of Acquisition

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

Sequence of Acquisition

On November 19, 1986, the Trustees acquired a 1,299.47–acre property in Hamilton and Columbia counties, constituting the initial area of Big Shoals State Park, from the Nature Conservancy. The Columbia County portion of the property, about 287.7 acres, was a donation; the Hamilton County portion of the property, about 1,011.77 acres, was a purchase. The purchase, which cost $1,760, 429.22, was funded under the CARL program. Since this initial acquisition, the Division of Recreation and Parks (DRP) has leased 352.61 acres from the Suwannee River Water Management District (SRWMD) to manage the property as part of Big Shoals State Park. These properties constitute the current area under management by DRP, which is approximately 1,652.08 acres.

The entire 1,673 acre Big Shoals State Forest, which was originally a portion of the area known as the Brown Tract CARL Project, was also purchased by the Nature Conservancy on November 19, 1986. The State of Florida subsequently purchased the property from the Nature Conservancy using Preservation 2000 bond funds from the CARL program. It became a state forest in March of 1989 when the Trustees conveyed management authority of this portion of Big Shoals to the Department of Agriculture and Consumer Services, Division of Forestry (DOF).

Management Leases

On March 15, 1989, the Trustees leased property to DOF and DRP under Lease No. 3592 and 3541, respectively. The lease periods are for fifty (50) years, which will expire on March 14, 2039.

On September 12, 2000, the SRWMD leased approximately 352.61 acres to the DRP. This lease is for a period of twenty (20) years, and it will expire on September 12, 2020.

According to the two leases from the Trustees and SRWMD, DRP manages their lands to develop, conserve, and protect the natural and cultural resources of the property and to use the property for resource-based public outdoor recreation.

Title Interest

The Trustees and the SRWMD hold fee simple title to Big Shoals Public Lands.

Special Conditions on Use

Portions of Big Shoals Public Lands under management by DRP are designated single-use to provide resource-based public outdoor recreation and other park related uses. Uses such as water resource development projects, water supply projects, stormwater management projects, linear facilities and sustainable agriculture and forestry (other than those management activities specifically identified in this plan) are not consistent with this plan or the management purposes of the property.

The DOF managed portions of BSPL are designated for multiple-use management with the DOF acting as lead agency as stated in Multiple Agency Lease Agreement Number 3592. Authority for multiple-use management is given under Chapters 253 and 589, Florida Statutes. There are no legislative or executive constraints specifically directed towards BSSF.

Sound ecosystem management is an overall goal for the property. Multiple-use will include, but is not limited to the following activities: timber management, recreation, wildlife management, watershed management and environmental education. The goals of the DOF are to protect and manage ecosystems, to restore and maintain biological diversity, and to integrate public use through multiple-use of the forest resources. Multiple-use resource management and the practice of sustainable forestry will provide for the greatest public benefit in perpetuity, while at the same time protecting all the values and resources of the land. Local demands and geographic factors influence the array of uses to be applied to any area of the forest. Only uses compatible with the forest and its ecosystems will be implemented. Forest management practices should ensure that all resources of the forest are sustained for the future. Sustainable forest management will be practiced to ensure long-term forest health.

Outstanding Reservations

Following is a listing of outstanding rights, reservations, and encumbrances that apply to Big Shoals Public Lands.

Instrument:.....Warranty Deed
Instrument Holder:.....The Nature Conservancy
Beginning Date:.....June 5, 1991
Ending Date: .....Forever
Outstanding Rights, Uses, Etc.: .....The deed is subject to mineral rights and an easement for purposes of ingress and egress.

Instrument:.....Easement
Instrument Holder:.....Trustees
Beginning Date:.....March 17, 1988
Ending Date: .....For a period of 50 years.
Outstanding Rights, Uses, Etc.: .....The easement allows the Suwannee Valley Electric Cooperative, Inc. to construct, operate, and maintain an electric distribution line through a portion of Section 34, Township 1 South, Range 16 East.

Instrument:.....Special Warranty Deed
Instrument Holder:.....The Nature Conservancy
Beginning Date:.....November 19, 1986
Ending Date: .....No specific date is given.
Outstanding Rights, Uses, Etc.:.....The deed is subject to mineral rights and royalty transfer to E.D. Olsen, an outfall ditch easement from R.A. Barnett to the State of Florida, and the right of access to the James Graham Brown Foundation.

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Big Shoals Public Lands

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The Advisory Group appointed to review the proposed land management plan for Big Shoals Public Lands met at Stephen Foster Folk Culture Center State Park on June 30, 2004. Gary Dockter represented Loye Barnard, Chandler Otis represented Lys Burden and Brad Ellis represented Mark Crow. The Honorable George Skinner, Will Brown, Chris Menhennett, Gary Anderson and Donnie Bryan did not attend. All other appointed Advisory Group members were present. Attending staff included David Speake with the Division of Forestry (DOF), Jeremy Dixon with the Fish and Wildlife Conservation Commission (FWC), Kevin Patton, Dan Pearson, Don Younker and Michael Kinnison with the Division of Recreation and Parks (DRP).

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

Summary of Advisory Group Comments

Chandler Otis (Suwannee Bicycle Association) indicated his primary concern was maintaining access to trails for biking at BSPL. He discussed a recent organized ride at BSPL and would like to see more special event opportunities provided for bicyclists. He explained that the cycling community could provide volunteers to construct and maintain trails, if needed. He closed by expressing appreciation for the access provided and noting the positive working relationship among co-managing agencies.

John Wester (PCS Phosphate) encouraged the use of best management practices for maintaining fire lines to limit hydrological impacts. He questioned the cost effectiveness of using containerized seedlings when replanting pines. Staff explained that a mix of hand and machine planting is used and that acreages that are replanted are relatively small. Mr. Wester discussed PCS Phosphate's mineral rights to lands within and adjacent to BSPL. He explained that PCS Phosphate has applied to the state for permission to abandon mineral rights on all but 40 acres at BSPL in exchange for the rights to mine other state lands in the area. He indicated that the state has yet to issue a response to this request. Randy Ogburn expressed concern that the area proposed for mining at BSPL would be visible to the public from Old Godwin Bridge Road and emphasized the importance of initiating reclamation work as mining progresses. He also asked about future opportunities for public comment on the mining issue at BSPL. Staff responded that they would have to research the public comment process (The following information was obtained following the Advisory Group meeting: According to the DEP, Bureau of Mine Reclamation, the issue of mineral rights at BSPL is currently being reviewed. If a permit were pursued in the future to mine at BSPL, the Bureau would notify "interested parties" of the permit application. Interested parties include the appropriate local government, relevant state agencies, and the regional planning council and water management district. If you are not sure your interest is represented and want to receive future notifications contact the Bureau at 850-488-8217). Mr. Weston asked for clarification on plans for improving the canoe portage. Staff explained that proposed improvements had been designed and permitted and discussed the general plans for shoreline stabilization and construction of a launch. Mr. Weston also noted that Chinese tallow is present at BSPL but not mentioned in the plan. He closed by discussing the importance of educating the public

about the naval stores industry and protecting associated cultural resources. Ms. Subic responded that the naval stores industry is a topic of existing education programs. Mr. Pearson discussed the opportunity of establishing an interpretive stop off SR 135 near the historic turpentine camp.

David Speake (DOF) stated that the Division of Forestry goal at BSPL is one of multiple use management. He explained that the growth of longleaf pines would be encouraged over other pine species to reestablish fire dependent communities and guard against pine beetle infestations.

Gary Dockter (Save Our Suwannee, Inc.) asked how development of the Suwannee River Wilderness Trail (SRWT) would affect canoeing carrying capacity. Mr. Kinnison discussed the challenge of establishing a carrying capacity on an open river. He explained that plans for improving canoe/kayak access and portages would help to address impacts from increased use and reviewed efforts to collect baseline data and establish a recreational use-monitoring program as part of the development of the SRWT. Dan Pearson added that Stephen Foster is being promoted as one of seven hubs associated with the SRWT, with additional facilities planned there to address anticipated increases in use. He acknowledged the potential impacts from increased visitation but noted that planned improvements at water access points and the development of a monitoring protocol will address them.

Randy Ogburn (Hamilton County Commissioner) stated that BSPL has enhanced the local economy, is sensitive to adjacent landowners and balances rights of access with environmental protection. He reiterated his concern about phosphate mining and its impacts to the visitor experience along Godwin Bridge Road, and emphasized the need to address this in a reclamation plan. John Weston responded that PCS Phosphate would be sensitive to the park, and is willing to work with the county to address their concerns. He suggested that mining could provide enhanced recreational opportunities.

Ann Opgenorth (equestrian user) stated that trails are popular with equestrians and that users have been able to coexist with hunters. She discussed the need to improve signage for trail orientation and suggested a color-coded system similar to what has been implemented at O'Leno State Park. She stated that changes to the trail system have reduced ride lengths for equestrians and emphasized the need to maintain enough trail for a quality riding experience. She explained that gravel in the trail is a problem for horses and that parking is insufficient for horse trailers. She also asked that equestrians be given access to sites that are more scenic and that small rest stops with picnic tables be established along the trail.

Donald Neale (Florida Trail Association) discussed the reestablishment of the Florida Trail at BSPL and the need to acknowledge its presence in the plan.

David Auth (Sierra Club) suggested the name of BSPL be changed to Big Shoals State Park. Staff explained that the current name reflects that the property is co-managed by four state land managing agencies. Mr. Auth indicated that his primary concern was related to resource protection and asked for clarification on current environmental education efforts. Mr. Patton and Ms. Subic discussed existing signage and programming activities, such as guided walks and talks at local schools. Mr. Auth also recommended that the plan include information on visitation and expenditures since the last plan update so that budget and public use trends

could be compared. He stated that animals would not cross the paved surface of the Woodpecker Trail and asked for clarification on the trail's width. Mr. Kinnison explained that the trail would be ten feet wide in order to meet existing trail design standards. Mr. Auth disagreed with including an optimum capacity in the Existing Use and Optimum Carrying Capacity table, and felt that the proposed capacities were excessive. He discussed the importance of the bibliography being comprehensive and up to date, particularly as it relates to resource audits and reviews of BSPL. Staff discussed the various review processes, including resource management audits, land management reviews, a recent pitcher plant evaluation and the management plan update process. Mr. Auth recommended including element occurrence maps for listed species. Mr. Pearson responded that data has been collected on gopher tortoises and timber rattlers, but that locations of listed species are not included to discourage potential harassment by the public. Mr. Dixon stated that he had some additional information on species that were currently not included in the plan. Mr. Auth asked for clarification on existing camping opportunities. He also asked why the proposed location for the group camp was selected and expressed concern that camping facilities would grow in the future. Mr. Patton clarified that primitive canoe camping on the Columbia County parcel is the only camping provided. Mr. Kinnison and Mr. Pearson explained the rationale for the group campsite and the clarified the facilities that would be provided for group camping. Mr. Auth closed by stating that access to the Big Shoals should remain primitive.

Frank Sedmera (Audubon Society) stated that the current plan had improved in several areas, particularly in dealing with restoration and maintenance of natural systems, and was a reflection of the commitment of staff involved. He suggested including a pie graph on the budget that would show a comparison of funding for resource management and protection and facility development. Mr. Sedmera asked if there were any outstanding mineral rights within or near BSPL in Columbia County. Mr. Kinnison responded that outstanding mineral rights were restricted to the Hamilton County portion of BSPL. Mr. Sedmera stated that he does not support opening the Big Shoals to equestrian access. He recommended closing off public access to the Columbia County parcel and shifting the canoe portage to the Hamilton County side of the river until improvements to the portage area were complete and service access improved. Mr. Pearson replied that it was not practical to stop people from camping on the Columbia County side and shifting the portage would create additional shoreline impacts. He stated that plans for improving the existing portage and organizing camping could be achieved with the current access. He explained that the DRP has a deeded easement but environmental conditions are not conducive to building another road. He added that acquiring additional property could improve opportunities for access in the future.

Harold Barry (adjacent landowner) stated that staff could use his property for emergency or service access to the Columbia County parcel but noted the need for reliable, permanent access to the area. Staff discussed the problems presented by wetlands and water bodies such as Robinson Branch. Mr. Barry added that the parcel is well used and that he was opposed to restricting public access, except for ATVs.

Johnny Bullard (Stephen Foster Citizen Support Organization) thanked agency staff for providing outdoor classroom learning opportunities for local school groups. He stated that these education programs were very interactive and popular with students and that it was important to maintain them.

Charlie Houder (Suwannee River Water Management District) commended staff on the management planning process and stated that BSPL is a premier example of interagency cooperation. He emphasized the importance of regular interagency meetings to strengthen coordination of management activities, and would like additional District lands addressed in future plan updates.

Joseph McKire (Mayor of White Springs) complemented staff on their work and commended the advisory group process. He discussed how land ownership has changed over time and affected public access and the conditions of resources in the area. He expressed support for agency efforts to maintain and expand public access and restore the land. He also emphasized the importance of coordination between the agencies given their different missions and priorities. He stated that a guide was needed to orient visitors to the recreation opportunities available at BSPL. He closed by emphasizing the need to include White Springs in future planning processes for area public lands.

Wendell Hannum (American Canoe Adventures) stated that he was supportive of the management of BSPL and that conditions of resources have improved since the area came under public ownership. He indicated that he believes visitation and use patterns have not changed significantly over the last five years. He added that while proposed portage improvements would help with shoreline erosion on the Columbia County parcel, conditions were not deteriorating and erosion was largely due to periodic flooding of the river.

Scott Johns (Fish and Wildlife Conservation Commission) stated that changes to hunting to accommodate other recreational users had diminished hunting participation over time at BSPL. However, he added that equilibrium appears to have been reached with other users that are acceptable to the hunting community as long as current levels of access are maintained. He recommended including language in the plan that indicates a long-term commitment to providing hunting opportunities at BSPL.

Jeremy Dixon (Fish and Wildlife Conservation Commission) discussed the need to craft a management plan that provides enough specificity to be meaningful but includes flexibility to allow for adaptive management as conditions change and new challenges present themselves.

Valinda Subic (Division of Recreation and Parks) explained that Stephen Foster was the focus of recreational facility development to promote access to the Suwannee River. She discussed DRP progress on addressing resource management needs at BSPL, particularly as it relates to prescribed burning, and acknowledged Kevin Patton's contribution to meeting burn goals. She indicated that a dedicated management position at BSPL would help improve the resource management program.

Staff Recommendation

Staff recommends approval of the proposed management plan for Big Shoals Public Lands as presented with the following recommendations.

Natural Resources

- Exotic species -- Chinese tallow will be identified in the plan as present at BSPL.
- Animal list -- Addendum 4 will be revised to include all known species.

Public Access

- Florida Trail -- The Land Use Component will be revised to reflect the presence of the Florida Trail at BSPL.
- Trail orientation -- The plan currently calls for implementing a coordinated system of trail orientation and directional signage to facilitate navigation by trail users. Agency staff will address this issue at the next coordination meeting and develop a plan for its implementation.
- Hunting access -- The Land Use Component will be revised to clarify the intent to maintain hunting access at BSPL.
- Equestrian access -- The equestrian experience at BSPL will be evaluated, including parking, vehicle circulation, trail lengths and conditions, access to scenic points of interest and the establishment of trail rest stops. Maintaining public safety, the visitor experience of other users and protecting sensitive resources will guide management decisions involving equestrian access.

Addendum 2—References Cited

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Addendum 3—Soils Descriptions

HAMILTON COUNTY

(2) Albany fine sand, 0 to 5 percent slopes - This soil is nearly level to gently sloping and somewhat poorly drained. It is in low areas on the uplands and low ridges on the flatwoods. Typically, this soil has a surface layer of dark grayish brown fine sand about 9 inches thick. The subsurface layer, to a depth of 57 inches, is light yellowish brown grading to pale yellow fine sand. The upper part of the subsoil, to a depth of 63 inches, is light yellowish brown fine sandy loam. The lower part, to a depth of 80 inches, is gray sandy clay loam.

(3) Alpin sand, 0 to 5 percent slopes - This soil is deep, nearly level to gently sloping, and excessively drained. It is in broad areas on the uplands. Typically, this soil has a surface layer of dark grayish brown sand about 4 inches thick. The subsurface layer is sand. The upper part of the subsurface layer, to a depth of 15 inches is yellowish brown. The lower part, to a depth of 47 inches, is yellow. The lower layers to a depth of 80 inches or more are very pale brown grading to pinkish white sand and contains thin lamellae of strong brown loamy sand.

(5) Blanton sand, 0 to 5 percent slopes - This soil is nearly level to gently sloping moderately well drained. It is in broad, low areas on the uplands. Typically, the soil has a surface layer of dark grayish brown sand about 9 inches thick. The subsurface layer, to a depth of 54 inches, is yellowish brown grading to very pale brown sand. The upper part of the subsoil, to a depth of 63 inches, is yellowish brown sandy clay loam. The lower part, to a depth of 80 inches, is light brownish gray to gray sandy clay loam. The subsoil has brown and gray mottles.

(8) Chipley sand, 0 to 5 percent slopes - This soil is nearly level to gently sloping, and somewhat poorly drained. It is in broad low areas on the uplands and low ridges on the flatwoods. Typically, this soil has a surface layer of very dark gray sand about 8 inches thick. The underlying material is brown sand to a depth of 16 inches, pale brown sand to 56 inches, and light brownish gray sand to 80 inches or more.

(9) Foxworth sand, 0 to 5 percent slopes - This soil is nearly level to gently sloping and moderately well drained. It is on the flatwoods. Typically, this soil has a surface layer of dark brown sand about 7 inches thick. The underlying material to a depth of 55 inches, is yellowish brown grading to brownish yellow sand. The lower part, to a depth of 80 inches, is very pale brown, grading to white sand.

(13) Mascotte sand - This soil is nearly level and poorly drained. It is on flatwoods areas and areas bordering swamps and depressions. Typically, this soil has a surface layer of black sand about 5 inches thick. The subsurface layer is light brownish gray sand about 8 inches thick. The upper subsoil is stained with organic matter. It is 2 inches of very dark brown loamy sand, and 2 inches of dark reddish brown loamy sand. The transitional layer between the subsoils is light gray sand 19 inches thick. The lower subsoil is gray fine sandy loam. The underlying material is reddish gray loamy sand that extends to depths greater than 80 inches.

(20) Pamlico muck, depressional - This soil is nearly level and very poorly drained. It is in swamps and depressions. Typically, this soil has a surface layer of dark reddish brown muck over black muck about 25 inches thick. The underlying layer, to a depth of 80 inches, is grayish brown sand grading to very dark gray sandy clay loam.

(21) Plummer and Surrency soils, depressional - These soils are nearly level and very

poorly drained. They are in swamps and depressions. Typically, Plummer soil has a surface layer of very dark gray sand about 9 inches thick. The subsurface layer is grayish brown grading to light brownish gray sand to a depth of 36 inches, and light gray sand to 52 inches. The subsoil layer is light gray sandy loam grading to sandy clay loam to 80 inches or more.

(25) Wampee-Blanton sands, 8 to 12 percent slopes - This map unit consists of moderately sloping to moderately steep, somewhat poorly drained soils that formed in sandy and loamy marine deposits. These soils are on side slopes on the uplands. Typically, the Wampee soil has a surface layer of gray loamy sand about 6 inches thick. The subsurface layer, to a depth of 26 inches, is brown grading to light brownish gray loamy sand. The subsoil, to a depth of 51 inches, is light brownish gray, gravelly sandy clay loam. The substratum, to a depth of 80 inches, is pale yellow sandy clay.

(26) Mascotte and Plummer soils, occasionally flooded - This unit is nearly level and poorly drained. It is on flatwoods areas and areas bordering swamps and depressions. Typically, the Mascotte soil has a surface layer of very dark gray sand about 5 inches thick. The subsurface layer is grayish brown sand about 7 inches thick. The upper part of the upper subsoil is stained with organic matter. It is 2 inches of black sand, 6 inches of very dark grayish brown sand and 8 inches of dark reddish brown sand. The transitional layer between the subsoils is brown loamy sand 7 inches thick. The lower subsoil is 3 inches of light gray sandy loam and 7 inches of light gray sandy clay loam grading to light gray sandy loam that extends to depths greater than 80 inches.

(28) Wampee loamy sand, 5 to 8 percent slope - This unit consists of moderately sloping to moderately steep, somewhat poorly drained soils that formed in sandy and loamy marine deposits. These soils are on side slopes on the uplands. Typically, this soil has a surface layer of gray loamy sand about 6 inches thick. The subsurface layer, to a depth of 26 inches, is brown, grading to light brownish gray loamy sand. The subsoil, to a depth of 51 inches, is light brownish gray sandy clay loam. The substratum, to a depth of 80 inches, is pale yellow sandy clay.

(31) Wampee-Blanton complex, 12 to 20 percent slopes - This map unit consists of strongly sloping, somewhat poorly drained to moderately well drained soils. They are on side slopes on the uplands. Typically, the Wampee soil has a surface layer of gray loamy sand about 6 inches thick. The subsurface layer, to a depth of 26 inches, is brown grading to light brownish gray loamy sand. The subsoil, to a depth of 51 inches, is light brownish gray, gravelly sandy clay loam. The substratum, to a depth of 80 inches, is pale yellow sandy clay.

(33) Pelham sand - This soil is nearly level and poorly drained. It is in wet lowland positions on the uplands and on narrow to broad flatwoods. Typically, this soil has a surface layer of very dark gray sand about 7 inches thick. The subsurface layer is dark gray grading to grayish brown sand to a depth of 25 inches. The subsoil layer is grayish brown sandy loam grading to gray and dark gray sandy clay loam to 80 inches or more.

(34) Plummer sand - This soil is nearly level and poorly drained. It is in wet lowland positions on the uplands and on narrow to broad flatwoods. Typically, this soil has a surface layer of very dark gray sand about 9 inches thick. The subsurface layer is grayish brown grading to light brownish gray sand to a depth of 36 inches, and light gray sand to 52 inches. The subsoil layer is light gray sandy loam grading to sandy clay loam to 80 inches or more.

(36) Blanton fine sand, 0 to 5 percent slopes, occasionally flooded - This soil is nearly level to gently sloping, moderately well drained. It is in low terraces on the river floodplains. This soil is occasionally flooded for long durations following prolonged, high intensity rains. Typically, the soil has a surface layer of dark grayish brown sand about 9 inches thick. The subsurface layer, to a depth of 54 inches, is yellowish brown grading to very pale brown fine sand. The upper part of the subsoil, to a depth of 63 inches, is yellowish brown sandy clay loam. The lower part to a depth of 80 inches is light brownish gray to gray sandy clay loam. The subsoil has brown and gray mottles.

(51) Bigbee fine sand, undulating, occasionally flooded - This soil is deep, nearly level to strongly sloping, and excessively drained. It is on river and creek terraces. Typically, this soil has a surface layer of light brownish gray fine sand about 9 inches thick. The underlying layers are fine sand. The upper part, to a depth of 20 inches, is dark yellowish brown. The middle part, to a depth of 55 inches, is pale brown grading to brown. The lower part, to a depth of 80 inches, is light gray.

(52) Pelham fine sand, occasionally flooded - This soil is nearly level and poorly drained. It is in wet lowland positions on the floodplains of streams. Typically, this soil has a surface layer of very dark gray sand about 7 inches thick. The subsurface layer is dark gray grading to grayish brown sand to a depth of 25 inches. The subsoil layer is grayish brown sandy loam grading to gray and dark gray sandy clay loam to 80 inches or more.

(58) Sapelo sand - This soil is nearly level and poorly drained. It is on flatwoods areas and areas bordering swamps and depressions. Typically, this soil has a surface layer of black sand about 7 inches thick. The subsurface layer is dark gray grading to gray sand about 12 inches thick. The upper subsoil is 9 inches thick and stained with organic matter. It is very dark brown sand in the upper part, and dark yellowish brown sand in the lower part. The transitional layer between the subsoils is very pale brown grading to pale brown sand 20 inches thick. The lower subsoil is light gray grading to light brownish gray sandy clay loam extending to depths greater that 80 inches.

(61) Arents, 0 to 5 percent slopes - The map units in this group consist of nearly level to gently sloping soils, which have has been reworked by manmade earth moving equipment during phosphate mining. This soil also consists of colloidal clay (slime) settled in holding ponds where pumped from the mines. Some are stratified with sandy, loamy, and clayey layers; and some are clayey to a depth of 80 inches or more. This map unit is in the southern part of the county

COLUMBIA COUNTY

(1) Albany fine sand, 0 to 5 percent slopes - This is a somewhat poorly drained, nearly level to gently sloping soil on broad flats bordering poorly defined drainageways and in undulating areas. The areas of this soil range from about 4 to more than 200 acres. Typically, the surface layer is grayish brown fine sand about 7 inches thick. The subsurface layer is fine sand and extends to a depth of 55 inches. In the upper 8 inches, it is pale brown; in the next 15 inches, it is pale brown mottled with yellow and white; and in the next 25 inches, it is white with brownish yellow mottles. The upper 10 inches of the subsoil is pale yellow loamy fine sand and has yellowish brown and white mottles. Below that, the subsoil is gray sandy clay loam with yellowish brown mottles to a depth of 80 inches or more.

(2) Albany fine sand, 0 to 5 percent slope, occasionally flooded - This is a somewhat poorly drained, nearly level to gently sloping soil on broad flats and low-lying, undulating terrain in flood-prone areas. This soil is flooded occasionally for long periods after intense, heavy rainfall. Typically, the surface layer is grayish brown fine sand about 7 inches thick. The subsurface layer is fine sand and extends to a depth of 55 inches. In the upper 8 inches, it is pale brown; in the next 15 inches, it is pale brown with yellow and white mottles; and in the lower 25 inches, it is white with brownish yellow mottles. The subsoil is gray sandy clay loam with yellowish brown mottles, and it extends to a depth of 80 inches or more.

(20) Chipley fine sand, 0 to 5 percent slopes - This is a moderately well drained, nearly level to gently sloping soil in somewhat depressed areas and on flats in the uplands. Typically, the surface layer is gray fine sand about 7 inches thick. Fine sand extends to a depth of 80 inches. In sequence downward, 23 inches is very pale brown and has yellow mottles; the next 10 inches is light gray and has very pale brown mottles; the next 20 inches is very pale brown and has brownish yellow, white, and yellowish red mottles; and the lowermost 20 inches is white with brownish yellow and yellow mottles.

(33) Leon fine sand, 0 to 2 percent slope, occasionally flooded - This is a poorly drained, nearly level soil in broad areas in the flatwoods along river plains. Typically, the surface layer is grayish brown fine sand about 3 inches thick. The fine sand subsurface layer extends to a depth of 12 inches and is light brownish gray. The fine sand subsoil extends to a depth of 23 inches. The upper 4 inches are very dark gray; the next 4 inches are dark brown; and the lower 3 inches are very dark grayish brown., The fine sand substratum extends to a depth of 80 inches or more. The upper 3 inches are dark brown, the next 28 inches are yellowish brown, and the lower 26 inches are very pale brown.

(49) Pelham fine sand, 0 to 2 percent, occasionally flooded - This is a nearly level, poorly drained soil in shallow depressions and along tributaries of creeks and rivers. This soil is flooded occasionally for long periods after unusually high rainfall. Typically, the surface layer is black fine sand abut 8 inches thick. The subsurface layer is fine sand. In the upper 4 inches it is grayish brown, in the next 8 inches it is dark grayish brown, and in the next 9 inches it is light gray. The subsoil extends to a depth of 80 inches or more. In the upper 3 inches it is light brownish gray sandy loam with light gray sand pockets, in the next 24 inches it is gray sandy clay loam with yellowish brown and yellow and reddish brown mottles, and in the lower 24 inches it is light gray sandy clay loam with reddish brown and brownish yellow mottles.

(53) Plummer fine sand, occasionally flooded - This is a poorly drained, nearly level soil on the floodplains of rivers and streams. This soil is flooded occasionally after heavy and prolonged rains. The slope is less than 2 percent. Typically, the surface layer is dark gray fine sand about 4 inches thick. The subsurface layer is light gray fine sand to a depth of 55 inches. The subsoil is gray sandy clay loam and has pockets of sandy clay. This layer extends to a depth of 80 inches or more.

Addendum 4—Plant And Animal List

Big Shoals Public Lands

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
	PTERIDOPHYTES	
Ebony spleenwort	*Asplenium platyneuron*	
Florida shield fern	*Dryopteris ludoviciana*	
Japanese climbing fern *	*Lygodium japonicum*	
Cinnamon fern	*Osmunda cinnamomea*	26
Royal fern	*Osmunda regalis*	26
Resurrection fern	*Polypodium polypodiodes*	
Bracken fern	*Pteridium aquilinum*	
Netted chain fern	*Woodwardia areolata*	
Virginia chain fern	*Woodwardia virginica*	
	GYMNOSPERMS	
Southern red cedar	*Juniperus salicicola*	
Slash pine	*Pinus elliottii*	
Spruce pine	*Pinus glabra*	
Longleaf pine	*Pinus palustris*	
Loblolly pine	*Pinus taeda*	
Bald cypress	*Taxodium distichum*	
	ANGIOSPERMS	
Monocots		
Broomsedge	*Andropogon* sp.	
Splitbeard bluestem	*Andropogon ternarius*	
Nodding-nixie	*Apteria aphylla*	
Jack-in-the-pulpit	*Arisaema triphyllum*	
Wiregrass	*Aristida beyrichiana*	
Switch cane	*Arundinaria gigantea*	
Pindo palm *	*Butia capitata*	
Chapman's sedge	*Carex chapmanii*	20
Longleaf chasmanthium	*Chasmanthium sessiliflorum*	
Pipewort	*Eriocaulon* sp.	
Greenfly orchid	*Epidendrum conopseum*	20
Yellow star-grass	*Hypoxis* sp.	
Rush	*Juncus* sp.	
Bog-button	*Lachnocaulon* sp.	
Duckweed	*Lemna* sp.	
Basketgrass	*Oplismenus setarius*	
Golden club	*Orontium aquaticum*	
Panic grass	*Panicum* sp.	
Needle palm	*Rhapidophyllum hystrix*	26
Beakrush	*Rhynchospora* sp.	
Dwarf palmetto	*Sabal minor*	
Cabbage palm	*Sabal palmetto*	

* Non-native Species

Big Shoals Public Lands

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Saw palmetto	*Serenoa repens*	
Blue-eyed grass	*Sisyrinchium* sp.	
Wild sarsaparilla	*Smilax glauca*	
Greenbriar	*Smilax laurifolia*	
Sarsaparilla vine	*Smilax pumila*	
Lopsided Indiangrass	*Sorghastrum secundum*	
Duckweed	*Spirodella* sp.	
Spanish-moss	*Tillandsia usneoides*	
Wandering Jew *	*Tradescantia fluminensis*	
Common cattail	*Typha latifolia*	
Yellow-eyed grass	*Xyris* sp.	
Adam's needle	*Yucca filamentosa*	
Rain lily	*Zephyranthes atamasco*	18
Dicots		
Southern red maple	*Acer rubrum*	
Red buckeye	*Aesculus pavia*	
Pepper vine	*Ampelopsis arborea*	
Devil’s walking stick	*Aralia spinosa*	
Butterfly-weed	*Asclepias tuberosa*	
Dog banana	*Asimina parviflora*	
Saltbush	*Baccharis halimifolia*	
Wild indigo	*Baptisia* sp.	
Ratten-vine	*Berchemia scandens*	
River birch	*Betula nigra*	
Cross-vine	*Bignonia capreolata*	
False nettle	*Boehmeria cylindrica*	
Beautyberry	*Callicarpa americana*	
Trumpet-vine	*Campsis radicans*	
Hornbeam	*Carpinus caroliniana*	
Pignut hickory	*Carya glabra*	
Mockernut hickory	*Carya tomentosa*	
Sugarberry	*Celtis laevigata*	
Coinwort	*Centella asiatica*	
Buttonbush	*Cephalanthus occidentalis*	
Redbud	*Cercis canadensis*	
Partridge-pea	*Chamaecrista fasciculata*	
Fringe tree	*Chionanthus virginica*	
Tread softly	*Cnidoscolus stimulosus*	
Horse-balm	*Collinsonia* sp.	
Squaw root	*Conopholis americana*	
Flowering dogwood	*Cornus florida*	
Swamp dogwood	*Cornus foemina*	
Parsley haw	*Crataegus marshallii*	

* Non-native Species

Big Shoals Public Lands

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Dwarf-thorn	*Crataegus uniflora*	
Croton	*Croton* sp.	
Titi	*Cyrilla racemiflora*	
Climbing hydrangea	*Decumaria barbara*	
Persimmon	*Diospyros virginiana*	
Pink sundew	*Drosera capillaris*	
Elephant's foot	*Elephantopus elatus*	
Beechdrops	*Epifagus virginiana*	
Coral bean	*Erythrina herbacea*	
Strawberry bush	*Euonymus americanus*	
Dog fennel	*Eupatorium compostifolium*	
Spurge	*Euphorbia* sp.	
American beech	*Fagus grandiflora*	
Water ash	*Fraxinus caroliniana*	
Gardenia *	*Gardenia jasiminoides*	
Dwarf huckleberry	*Gaylussacia dumosa*	
Yellow jessamine	*Gelsemium sempervirens*	
Loblolly bay	*Gordonia lasianthus*	
Hedge hyssop	*Gratiola* sp.	
Witch hazel	*Hamamelis virginiana*	
Innocence	*Hedyotis procumbens*	
Marsh pennywort	*Hydrocotyle* sp.	
St. Andrew's cross	*Hypericum hypericoides*	
Large gallberry	*Ilex coriacea*	
Possum haw	*Ilex decidua*	
Gallberry	*Ilex glabra*	
American holly	*Ilex opaca*	
Yaupon holly	*Ilex vomitoria*	
Virginia willow	*Itea virginica*	
Wicky	*Kalmia hirsuta*	
Crepe myrtle *	*Lagerstromemia indica*	
Pinweed	*Lechea* sp.	
Fetterbush	*Leucothe racemosa*	
Chinese privet *	*Ligustrum sinense*	
Sweetgum	*Liquidambar styraciflua*	
Cardinal flower	*Lobelia cardinalis*	33
Coral honeysuckle	*Lonicera sempervirens*	
Primrose willow	*Ludwigia* spp.	
Sky-blue lupine	*Lupinus diffusus*	
Rusty lyonia	*Lyonia ferruginea*	
Fetterbush	*Lyonia lucida*	
Southern magnolia	*Magnolia grandiflora*	
Sweetbay	*Magnolia virginiana*	
Chinaberry *	*Melia azedarach*	

* Non-native Species

Big Shoals Public Lands

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Partridge berry	*Mitchella repens*	
Indian pipes	*Monotropa uniflora*	
Red mulberry	*Morus rubra*	
Wax myrtle	*Myrica cerifera*	
Swamp tupelo	*Nyssa biflora*	
Ogeechee tupelo	*Nyssa ogeche*	
Black gum	*Nyssa sylvatica* var. *biflora*	
Prickly pear cactus	*Opuntia humifusa*	
Wild olive	*Osmanthus americanus*	
Hop-hornbeam	*Ostrya virginiana*	
Virginia creeper	*Parthenocissus quinquefolia*	
Maypop	*Passiflora incarnata*	
Passionflower	*Passiflora lutea*	
Redbay	*Persea borbonia*	
Swampbay	*Persea palustris*	
Mistletoe	*Phoradendron serotinum*	
Butterwort	*Pinguicula caerulea*	8
Golden aster	*Pityopsis graminifolia*	
Water elm	*Planera aquatica*	
Marsh fleabane	*Pluchea* sp.	
Milkwort	*Polygala lutea*	
Jointweed	*Polygonum* sp.	
Carolina laurel cherry	*Prunus caroliniana*	
Black cherry	*Prunus serotina*	
Hog plum	*Prunus umbellata*	
Chapman's oak	*Quercus chapmanni*	
Southern red oak	*Quercus falcata*	
Sand live-oak	*Quercus geminata*	
Blue-jack oak	*Quercus incana*	
Turkey oak	*Quercus laevis*	
Laurel oak	*Quercus laurifolia*	
Sand post oak	*Quercus margaretta*	
Swamp chestnut oak	*Quercus michauxii*	
Dwarf live oak	*Quercus minima*	
Water oak	*Quercus nigra*	
Bluff oak	*Quercus sinuata*	
Live oak	*Quercus virginiana*	
Indian azalea *	*Rhododendron simsii*	
Swamp honeysuckle	*Rhododendron viscosum*	
Winged sumac	*Rhus copallina*	
Swamp rose	*Rosa palustris*	
Rose *	*Rosa* sp.	
Sand blackberry	*Rubus cuneifolius*	
Southern dewberry	*Rubus trivialis*	

* Non-native Species

Big Shoals Public Lands

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Sorrel	*Rumex* sp.	
Carolina willow	*Salix caroliniana*	
Elderberry	*Sambucus canadensis*	
Chinese tallowtree *	*Sapium sebiferum*	
Hooded pitcher plant	*Sarracenia minor*	8
Sassafras	*Sassafras albidum*	
Lizard's tail	*Saururus cernuus*	
Sebastian bush	*Sebastiania fruticosa*	
Gum bully	*Sideroxylon lanuginosa*	
Corkwood	*Stillingia aquatica*	
Sweetleaf	*Symplocos tinctoria*	
American basswood	*Tilia americana*	
Poison ivy	*Toxicodendron radicans*	
Forked blue-curls	*Trichostema dichotomum*	
Winged elm	*Ulmus alata*	
American elm	*Ulmus americana*	
Cedar elm	*Ulmus crassifolia*	
Bladderwort	*Utricularia* sp.	
Sparkleberry	*Vaccinium arboreum*	
Highbush blueberry	*Vaccinium corymbosum*	
Shiny blueberry	*Vaccinium myrsinites*	
Deerberry	*Vaccinium staminium*	
Nanny berry	*Viburnum nudum*	
Southern black haw	*Viburnum obovatum*	
Rusty-haw	*Viburnum rufidulum*	
Violet	*Viola* sp.	
Muscadine grape	*Vitis rotundiflora*	

*** Non-native Species**

Big Shoals Public Lands

Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
	FISH	
Gulf sturgeon	*Acipenser oxyrhynchus desotoi*	53
Yellow bullhead	*Ameiurus natalis*	53
American eel	*Anguilla rostrata*	53
Bowfin	*Amia calva*	53
Pirate perch	*Aphredoderus sayanus*	53
Flier	*Centrarchus macropterus*	53
Bannerfin shiner	*Cyprinella leedsi*	53
Blacktail shiner	*Cyprinella venusta*	53
Brown darter	*Etheostoma edwini*	53
Lake chubsucker	*Erimyzon sucetta*	53
Lined topminnow	*Fundulus lineolatus*	53
Eastern mosquitofish	*Gambusia holbrooki*	53
Channel catfish	*Ictalurus punctatus*	53
Florida brook silverside	*Labidesthes sicculus*	53
Longnose gar	*Lepisosteus osseus*	53
Florida gar	*Lepisosteus platyrhincus*	53
Redbreast sunfish	*Lepomis auritus*	53
Warmouth	*Lepomis gulosus*	53
Bluegill	*Lepomis macrochirus*	53
Shellcracker	*Lepomis microlophus*	53
Stumpknocker	*Lepomis punctatus*	53
Suwannee bass	*Micropterus notius*	53
Largemouth bass	*Micropterus salmoides*	53
Spotted sucker	*Minytrema melanops*	53
Golden shiner	*Notemigonus crysoleucas*	53
Sailfin shiner	*Notropis hypselopterus*	53
Weed shiner	*Notropis texanus*	53
Tadpole madtom	*Noturus gyrinus*	53
Speckled madtom	*Noturus leptacanthus*	53
Blackbanded darter	*Percina nigrofasciata*	53
Hogchoker	*Trinectes maculatus*	53
	AMPHIBIANS	
Frogs and Toads		
Florida cricket frog	*Acris gryllus dorsalis*	53, 30
Oak toad	*Bufo quercicus*	30, 8
Southern toad	*Bufo terrestris*	MTC
Eastern narrowmouth toad	*Gastrophryne carolinensis*	18, 20
Green treefrog	*Hyla cinerea*	MTC
Pinewoods treefrog	*Hyla femoralis*	MTC
Squirrel treefrog	*Hyla squirella*	MTC
Spring peeper	*Pseudacris crucifer*	30, 26, 21

* Non-native Species

Big Shoals Public Lands

Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Gopher frog	*Rana capito*	13
Bronze frog	*Rana clamitans*	30, 25, 26
Southern leopard frog	*Rana sphenocephala*	30, 8, 53
Eastern spadefoot	*Scaphiopus holbrookii*	8, 21, 22
Salamanders		
Dwarf salamander	*Eurycea quadridigitata*	18, 20
Eastern newt	*Notophthalmus viridescens*	18, 25
Southeastern slimy salamander	*Plethodon grobmani*	18, 20
Eastern mud salamander	*Pseudotriton montanus*	18, 26
REPTILES		
Crocodilians		
American alligator	*Alligator mississippiensis*	53
Turtles		
Snapping turtle	*Chelydra serpentina*	30, 25, 33
Gopher tortoise	*Gopherus polyphemus*	13, 22, 21
Striped mud turtle	*Kinosternon baurii*	30, 25, 33
Eastern mud turtle	*Kinosternon subrubrum*	30, 25, 33
Alligator snapping turtle	*Macrochelys temminckii*	53
Suwannee cooter	*Pseudemys concinna suwanniensis*	53
Florida box turtle	*Terrapene carolina bauri*	20, 21, 8
Yellow-bellied slider	*Trachemys scripta scripta*	53
Snakes		
Florida cottonmouth	*Agkistrodon piscivorus conanti*	30, 53, 8
Racer	*Coluber constrictor*	8, 21
Eastern diamondback rattlesnake	*Crotalus adamanteus*	8
Timber rattlesnake	*Crotalus horridus*	18, 20
Ringneck snake	*Diadophis punctatus*	8, 21
Gray rat snake	*Elaphe obsoleta spiloides*	8
Scarlet kingsnake	*Lampropeltis triangulum elapsoides*	8, 21
Eastern coachwhip	*Masticophis flagellum*	13
Eastern coral snake	*Micrurus fulvius*	21
Dusky pygmy rattlesnake	*Sistrurus miliarius barbouri*	8, 21
Florida redbelly snake	*Storeria occipitomaculata*	8, 21
Eastern garter snake	*Thamnophis sirtalis*	8, 21
Lizards		
Green anole	*Anolis carolinensis*	MTC
Six-lined racerunner	*Cnemidophorus sexlineatus*	13
Five-lined skink	*Eumeces fasciatus*	28, 21

* Non-native Species

Big Shoals Public Lands

Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Broad-headed skink	*Eumeces laticeps*	21
Southern fence lizard	*Sceloporus undulatus*	13
Ground skink	*Scincella lateralis*	21
	BIRDS	
Anhingas		
Anhinga	*Anhinga anhinga*	53
Herons & Bitterns		
Great Blue Heron	*Ardea herodias*	53, 33
Cattle Egret	*Bubulcus ibis*	81
Green-backed Heron	*Butorides striatus*	53
Great Egret	*Casmerodius albus*	53, 33
Little Blue Heron	*Egretta caerulea*	53, 33
Black-crowned Night Heron	*Nycticorax nycticorax*	53
Storks		
Wood Stork	*Mycteria americana*	33
Ducks & Geese		
Wood Duck	*Aix sponsa*	53, 30
Vultures		
Turkey Vulture	*Cathartes aura*	MTC
Black Vulture	*Coragyps atratus*	MTC
Hawks, Eagles, & Kites		
Sharp-shinned Hawk	*Accipiter striatus*	MTC, OF
Red-tailed Hawk	*Buteo jamaicensis*	81, 8
Red-shouldered Hawk	*Buteo lineatu*	31, 21
Bald Eagle	*Haliaeetus leucocephalus*	MTC
Quails, Turkey, & Pheasants		
Northern Bobwhite	*Colinus virginianus*	81, 8
Wild Turkey	*Meleagris gallopavo*	21, 20
Sandpipers		
Spotted Sandpiper	*Actitis macularia*	53
Doves & Pigeons		
Ground Dove	*Columbina passerina*	81, 13
Mourning Dove	*Zenaida macroura*	81
Cuckoos & Anis		
Yellow-billed Cuckoo	*Coccyzus americanus*	21
Owls		
Great Horned Owl	*Bubo virginianus*	20, 21, 22
Barred Owl	*Styrix varia*	MTC

* Non-native Species

Big Shoals Public Lands

Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Hummingbirds		
Ruby-throated Hummingbird	*Archilochus colubris*	21
Kingfishers		
Belted Kingfisher	*Ceryle alcyon*	53
Woodpeckers		
Yellow-shafted Flicker	*Colaptes auratus*	13, 8
Pileated Woodpecker	*Dryocopus pileatus*	18, 21
Red-bellied Woodpecker	*Melanerpes carolinus*	MTC
Red-headed Woodpecker	*Melanerpes erythrocephalus*	8, 13, 22
Downy Woodpecker	*Picoides pubescens*	MTC
Flycatchers		
Eastern Wood-Pewee	*Contopus virens*	13, 21
Acadian Flycatcher	*Empidonax virescens*	31, 21
Great crested Flycatcher	*Myiarchus crinitus*	8
Eastern Phoebe	*Sayonoris phoebe*	8, 81
Eastern Kingbird	*Tyrannus tyrannus*	81
Swallows		
Barn Swallow	*Hirando rustica*	81, 53
Tree Swallow	*Iridoprocne bicolor*	81, 53
Jays & Crows		
American Crow	*Corvus brachyrhynchos*	MTC
Fish Crow	*Corvus ossifragus*	MTC
Blue Jay	*Cyanocitta cristata*	MTC
Titmice		
Tufted Titmouse	*Baeolophus bicolor*	8
Carolina Chickadee	*Poecile carolinensis*	MTC
Nuthatches		
Brown-headed Nuthatch	*Sitta pusilla*	8
Wrens		
Carolina Wren	*Thryothorus ludovicianus*	MTC
House Wren	*Troglodytes aedon*	8, 13
Thrashers		
Gray Catbird	*Dumetella carolinensis*	MTC
Northern Mockingbird	*Mimus polyglottos*	MTC
Brown Thrasher	*Toxostoma rufum*	MTC
Kinglets, Thrushes, & Veery		
Hermit Thrush	*Catharus guttatus*	21, 18
Blue-gray Gnatcatcher	*Polioptila caerulea*	MTC

*** Non-native Species**

Big Shoals Public Lands

Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Ruby-crowned Kinglet	*Regulus canledula*	MTC
Eastern Bluebird	*Sialia sialis*	81
American Robin	*Turdus migratorius*	MTC
Vireos		
Yellow-throated Vireo	*Vireo flavifrons*	8, 21
White-eyed Vireo	*Vireo griseus*	MTC
Red-eyed Vireo	*Vireo olivaceus*	21, 31
Warblers, Blackbirds, Etc.		
Red-winged Blackbird	*Agelaius phoeniceus*	MTC
Bay-breasted Warbler	*Dendroica castanea*	21, 33
Yellow-rumped Warbler	*Dendroica coronata*	MTC
Yellow-throated Warbler	*Dendroica dominica*	13, 21
Magnolia Warbler	*Dendroica magnolia*	21, 22, 28, 31
Yellow Warbler	*Dendroica petechia*	8
Chestnut-sided Warbler	*Dendroica pensylvanica*	13, 21, 28
Pine Warbler	*Dendroica pinus*	8
Black-throated Green Warbler	*Dendroica virens*	13, 21, 22
Common Yellow-throat	*Geothlypis trichas*	30, 8
Orchard Oriole	*Icterus spurius*	81
Black-and-white Warbler	*Mniotilta varia*	21, 22, 28, 31
Brown-headed Cowbird *	*Molothrus ater*	81
Northern Parula	*Parula americana*	MTC
Prothonotary Warbler	*Prothonaria citrea*	31, 30
American Redstart	*Setophaga ruticilla*	21, 22, 28, 31
Common Grackle	*Quiscalus quiscula*	MTC
Hooded Warbler	*Wilsonia citrina*	18, 21
Tanagers		
Summer Tanager	*Piranga olivacea*	21, 8
Scarlet Tanager	*Piranga rubra*	21
Grosbeaks, Sparrows, & Buntings		
Northern Cardinal	*Cardinalis cardinalis*	MTC
Blue Grosbeak	*Guiraca caerulea*	81
Indigo Bunting	*Passerina cyanea*	81, 8
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	20, 21
Eastern Towhee	*Pipilo erthrophthalmus*	8
White-throated Sparrow	*Zonotrichia albicollis*	8, 21
	MAMMALS	
Marsupials		
Opossum	*Didelphis virginiana*	MTC
Edentates		

* Non-native Species

Big Shoals Public Lands

Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Armadillo *	*Dasypus novemcinctus*	MTC
Lagomorphs		
Eastern cottontail	*Sylvilagus floridanus*	MTC
Rodents		
Beaver	*Castor canadensis*	53
Southern flying squirrel	*Glaucomys volans*	MTC
Southeastern pocket gopher	*Geomys pinetis*	81
Gray squirrel	*Sciurus carolinensis*	MTC
Insectivores		
Eastern mole	*Scalopus aquaticus*	21
Carnivores		
River otter	*Lutra canadensis*	53
Bobcat	*Lynx rufus*	MTC
Raccoon	*Procyon lotor*	MTC
Artiodactyls		
White-tailed deer	*Odocoileus virginianus*	MTC
Feral pig *	*Sus scrofa*	MTC

*** Non-native Species**

TERRESTRIAL

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

PALUSTRINE

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

LACUSTRINE

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

LACUSTRINE—Continued

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

RIVERINE

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

ESTUARINE

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

MARINE

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

SUBTERRANEAN

79. Aquatic Cave
80. Terrestral Cave

MISCELLANEOUS

81. Ruderal
82. Developed

MTC Many Types Of Communities

OF Overflying

Addendum 5—Designated Species List

Big Shoals Public Lands

Designated Species

Plants

Common Name/ *Scientific Name*	**Designated Species Status** FDA	USFWS	FNAI
Chapman's sedge			
Carex chapmanii	LE		G3 S3
Greenfly orchid			
Epidendrum conopseum	CE		
Cardinal flower			
Lobelia cardinalis	LT		
Cinnamon fern			
Osmunda cinnamomea		CE	
Royal fern			
Osmunda regalis	CE		
Butterwort			
Pinguicula caerulea	LT		
Needle palm			
Rhapidophyllum hystrix	CE		
Hooded pitcherplant			
Sarracenia minor	LT		
Rainlily			
Zephyranthes atamasco	LT		

Big Shoals Public Lands

Designated Species

Animals

Common Name/ *Scientific Name*	**Designated Species Status** FFWCC	USFWS	FNAI
	FISH		
Gulf sturgeon *Acipenser oxyrhynchus desotoi*	LS	LT	G3T2, S2
Bannerfin shiner *Cyprinella leedsi*			G3G4, S3
Suwannee bass *Micropterus notius*	LS		G3, S3
	AMPHIBIANS		
Florida gopher frog *Rana capito*	LS		G3G4, S3
	REPTILES		
American alligator *Alligator mississippiensis*	LS	LT(S/A)	G5 S4
Eastern diamondback rattlesnake *Crotalus adamanteus*			G4, S3
Timber rattlesnake *Crotalus horridus*			G4, S3
Gopher tortoise *Gopherus polyphemus*	LS		G3, S3
Alligator snapping turtle *Macrochelys temminckii*	LS		G3G4, S3
Suwannee cooter *Pseudemys concinna suwanniensis*	LS		G5T3, S3
	BIRDS		
Little Blue Heron *Egretta caerulea*	LS		G5,S4
Bald Eagle *Haliaeetus leucocephalus*	LT	LT	G4, S3
Wood Stork *Mycteria americana*	LE	LE	G4, S2
Black-crowned Night-heron *Nycticorax nycticorax*			G5, S3

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

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

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

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

FNAI GLOBAL RANK DEFINITIONS

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

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

LEGAL STATUS

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

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

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

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

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

PT = Proposed for listing as Threatened Species.

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

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

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

STATE

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

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

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

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

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

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

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

Addendum 6—Florida Master Site File List Of Cultural Sites

FMSF No.	Site Name	Period	Site Type	Agency
HA177	Hooker's Homestead/ Ravine Top	Archaic(?); early 19th century	Subsurface artifacts	DRP
HA317	Godwin Bridge Site	Archaic(?)	Lithic scatter	SRWMD
HA318	Check Station	Aboriginal ceramic; Deptford(?); 20th century	Artifact scatter	DOF
HA319	Road 12	Archaic(?)	Lithic scatter	DRP
HA320	Boundary Line	Archaic(?); 20th century	Artifact scatter	SRWMD
HA321, CO773	Old Godwin Bridge	20th century	Bridge Ruins	SRWMD/ DRP
HA322	Downing & Tippins Turpentine Camp	20th century; African-American	Naval stores-related; historic town	DRP
HA323	Road 7 Site	Archaic(?)	Lithic scatter	DRP
HA324	Little Shoals Bridge Foundation	19th century	Bridge ruins	DRP
HA325	Little Shoals	Archaic(?)	Lithic scatter/ quarry	DRP
HA326	Observation Platform Site	Archaic	Lithic scatter	DOF
HA327	Road 2 Site	Archaic(?); 20th century	Artifact scatter	DRP
HA328	Palmetto Island	Archaic(?)	Lithic scatter	SRWMD
HA329	Long Branch Trail No. 1	Archaic(?)	Lithic scatter	SRWMD
HA330	Long Branch Trail No. 2	Archaic(?)	Lithic scatter	SRWMD
HA331	Old House	20th century	Structure	DRP
HA332	Lucky Hole	Archaic(?); Deptford or Santa Rosa/Swift Creek	Artifact Scatter	DRP
CO111	Big Shoals	Archaic(?)	Lithic scatter/ quarry	DRP
CO774	Robinson Hill	Archaic(?)	Lithic Scatter	DRP

Addendum 7—Priority Schedule And Cost Estimates

Estimates are developed for the funding and staff resources needed to implement the management plan based on goals, objectives and priority management activities. The land managing agencies at BSPL pursue a wide range of funding 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 each agency 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. Restore fire-maintained natural communities through prescribed fire. 0-10 years. Estimated Cost: $150,000; Equipment Costs: $50,000. **Total Estimated Cost: $200,000**.

2. Monitor southern pine beetle activity on BSPL and establish control measures to be applied on short notice to beetle outbreaks. 0-10 years. **Estimated Cost: $20,000**.

3. Restore the natural communities affected by southern pine beetle impacts. 0-10 years. **Estimated Cost: $10,000**.

4. Restore natural communities in the central field area. 0-10 years. **Estimated Cost: $22,000.**

5. Continue timber marking on approximately 250 acres. 0-10 years. **Estimated Cost: $10,000.**

6. Restore the natural hydrology and water quality of areas damaged by artificial soil disturbance. 1-10 years. **Estimated Cost: $20,000.**

7. Prepare and manage the public hunts in the WMA. Estimated Cost: $40,000; Check station supplies and necropsy shed maintenance. Estimated Cost: $15,000; Biological data collection and reporting. Estimated Cost: $30,000; Maintain observation platform, portable toilet, signs, and brochures as needed. Estimated Cost: $10,000. 0-10 years. **FWC Total Estimated Cost: $ 95,000.**

8. Continue the exotics control program within BSPL. Conduct follow-up treatments of exotics. Continue to monitor the property for new infestations of exotic plants. Map and treat infestations as needed. 0-10 years. Includes equipment, herbicide and staff. **Estimated Cost: $6,000**.

9. Continue to monitor listed species within the park. Includes continued mapping of rare plant species, and monitoring of other listed species. Implement protective measures as needed. 0-10 years. **Estimated Cost: $25,000.**

10. Pursue funding for a Phase 1 survey of cultural resources. Develop and implement programs to document and stabilize historic and archaeological sites. Provide protective measures for cultural resources. 0-10 years. **Estimated Cost: $45,000**.

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

11. Maintain the administrative roads and shared-use trails. 0-10 years. **Estimated Cost: $42,000**.

12. Enhance resource protection by securing boundaries of the property. Clarify boundary locations, and improve and maintain boundary fencing. 0-10 years. **Estimated Cost: $60,000**.

VISITOR SERVICES/RECREATION

1. Manage public access, through education, interpretive programs, signage, brochures and enforcement of rules and regulations to protect natural and cultural resources. 0-10 years. **Estimated Cost: $120,000**.

2. DRP funding and staffing to meet basic operational requirements. 0-10 years. Estimated Expense and OCO Costs: $200,000; Estimated Staffing Costs: $515,112. **DRP Total Estimated Cost: $715,112**.

3. DOF funding and staffing to meet basic operational requirements. 0-10 years. Estimated expense and OCO costs: $200,000; Estimated staffing costs: $240,000; **DOF Total Estimated Cost $440,000.**

4. FWC funding and staffing to meet basic operational requirements. 0-10 years. Estimated Expense and OCO Costs: $110,000; Estimated Staffing Costs: $220,000. **FWC Total Estimated Cost: $330,000**.

5. SRWMD funding and staffing to meet basic operational requirements. 0-10 years. **SRWMD Total Estimated Cost: $23,000**.

Total Estimated Cost: $2,186,000.00

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

Capital Improvements	
Development Area or Facilities	**Estimated Cost**
Columbia County Parcel	$210,000.00
Godwin Bridge Use Area	$336,000.00
Little Shoals Entrance	$67,000.00
Little Shoals Use Area	$466,500.00
Support Facilities	$184,600.00
Trails	$363,900.00
Total w/contingency	$1,953,600.00

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.

Addendum 8—Additional Information

FNAI Descriptions

DHR Cultural Management Statement

DOF And DRP Land Management Review Reports with Responses

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]).

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

D. MANAGEMENT IMPLEMENTATION

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

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

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

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

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

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

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

A. Historic Sites

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

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

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

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

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

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

B. Archaeological Sites

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

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

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

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

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

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

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

E. ADMINISTERING AGENCY

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

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

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

Land Management Review of Big Shoals State Forest, Hamilton County

(Lease No. 3592): January 22, 1998

Prepared by Division of State Lands Staff

Robert Clark, Environmental Administrator
William Howell, OMCM
Amy Knight, Planner

for

the Big Shoals State Forest Management Review Team

February 3, 1998

Management Review Team Members

Agency Represented	Team member appointed	Team member in attendance
DEP/DRP	Mr. Clifton Maxwell	Mr. Clifton Maxwell
DEP Northeast District	Mr. Don Jensen	Mr. Don Jensen
DACS/DOF	Mr. Scott Crosby	Mr. Scott Crosby
GFC	Mr. Frank Smith	Mr. Frank Smith
Soil and Water Cons. District	Mr. J. L. Bullard (Hamilton Co.)	Mr. J. L. Bullard
County Commission	Mr. Lamar Hill	none
Conservation Organization	Ms. Judy Hancock (Sierra Club)	Ms. Judy Hancock
Private Land Manager	Mr. Don Pattee (Champion International)	Mr. Don Pattee

Process for Implementing Regional Management Review Teams

Legislative Intent and Guidance:

Section 8 of CS/CS/HBs 1119 & 1577 (§259.036, F. S.) was enacted to determine whether state-owned conservation, preservation, and recreation lands are being managed for the purposes for which they were acquired and in accordance with adopted land-management plans. It establishes land management review teams to evaluate the extent to which the existing management plan provides sufficient protection to threatened or endangered species, unique or important natural or physical features, geological or hydrological functions, or archaeological features, and to evaluate the extent to which the land is being managed for the purposes for which it was acquired and the degree to which actual management practices, including public access, are in compliance with the adopted management plan. If a land-management plan has not been adopted, the review shall consider the extent to which the land is being managed for the purposes for which it was acquired and the degree to which actual management practices are in compliance with the management policy statement and management prospectus for that property. If the land management review team determines that reviewed lands are not being managed for the purposes for which they were acquired or in compliance with the adopted land management plan, management policy statement, or management prospectus, or if the managing agency fails to address the review findings in the updated management plan, the Department shall provide the review findings to the Board, and the managing agency must report to the Board its reasons for managing the lands as it has. No later than the second board meeting in October of each year, the Department shall report the annual review findings of its land management review team.

Review Site

The management review of Big Shoals State Forest considered 1,673 acres of uplands in Hamilton County that are managed by DACS/Division of Forestry. The team evaluated the extent to which current management actions are sufficient, whether the land is being managed for the purpose for which it was acquired, and whether actual management practices, including public access, are in compliance with the management plan. LAMAC approved the management plan on May 4, 1994, and the next management plan update is due in May, 1999.

Review Team Analysis

The management review checklist was analyzed as follows: The checklist consisted of two parts: a plan review section that answered whether or not the management plan sufficiently addressed protection/ restoration/ management needs for a series of items; and a field review section that scored to what extent sufficient management actions were being taken for a series of items.

Review Team Findings

Checklist results

Inadequate items: Plan review

I.A.3.b Rare Plant Monitoring	Inventory and monitoring of rare plant species should be implemented and described in the management plan.
III.E.1.d Ground water	Monitoring of ground water should be implemented and addressed in the plan.
III.H.1 Incompatible Adjacent	Incompatible adjacent property uses should be addressed in the plan. Land Use
III.H.2 Storm water/effluent	Storm water runoff from adjacent lands should be addressed in the plan.
III.I.1.b Sanitary facilities	Sanitary facilities should be addressed in the plan.
III.I.3.b Equipment	Additional equipment for resource management, especially for burning, is needed and should be addressed in the plan.
III.I.4. Staff	Additional personnel for resource management, especially personnel with burning experience, are needed, and staffing needs should be addressed in the plan.

Inadequate items: Field review

V.A.2 Utility corridors	Utility corridors were found to be inconsistent with the purposes for which land was acquired.

*** Denotes items that received low scores in both the plan and field review sections.**

Recommendations to the managing agency

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

1. Water quality and quantity of streams on the property should be monitored, and appropriate management actions should be taken.

2. The management plan should address all items in the review checklist.

3. The Division of Forestry should develop recreation, resource management, and game components of the management plan in cooperation with the 3 other agencies (DRP, GFC, SRWMD) involved in the management of the Big Shoals tracts.

The management plan update must include responses to the checklist items and the recommendations that are identified above. The checklist items should be addressed in relation to the category(ies) in which they received a low score, e.g. whether the plan sufficiently addressed protection/ restoration/ management needs, or whether sufficient management actions were being taken.

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

After completing the checklist, team members were asked to answer "yes" or "no" to this question and given the opportunity to provide general comments. All team members agreed that this land is being managed for the purpose for which it was acquired.

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

After completing the checklist, team members were asked to answer "yes" or "no" to this question and given the opportunity to provide general comments. Five of seven team members agreed that actual management practices, including public access, were in compliance with the management plan for this land.

The following addresses the "Checklist results" and the "Recommendations to the managing agency" sections of the Land Management Review of Big Shoals State Forest on January 22, 1998. Each item from the review is listed along with the page/section it can be found in the Management Plan.

CHECKLIST RESULTS:

Rare Plant Monitoring::
Addressed in Inter-agency Management Goals and Objectives section
Addressed in Designated Species section
Addressed in Designated Species Protection section

Ground water:
Addressed in Inter-agency Management Goals and Objectives section
Addressed in Hydrology section
Addressed in Hydrology section
Addressed in Hydrology and water quality section

Incompatible Adjacent Land Use:
Addressed in Agency Specicfc Management Goals and Objectives section
Addressed in External Conditions section

Storm water/effluent:
Addressed in Inter-agency Management Goals and Objectives section
Addressed in Other Designations section
Addressed in Hydrology section
Addressed in Hydrology section
Addressed in Hydrology and water quality section

Sanitary facilities:
Addressed in Potential Uses and Proposed Facilities section

Equipment:
Addressed in Prescribed Burning section

Staff:
Addressed in Prescribed Burning section

Utility corridors:
Addressed in Other Uses section

RECOMMENDATIONS TO THE MANAGING AGENCY

1. Addressed in Inter-agency Management Goals and Objectives section
   Addressed in Other Designations section
   Addressed in Hydrology section
   Addressed in Hydrology section
   Addressed in Hydrology and water quality section

2. The Management Plan complies with appropriate Statutes and Rule.

3. Addressed in Agency Specicfc Management Goals and Objectives section
   Addressed in Management Measures for Natural Resources section
   Addressed in Organized Recreation program section

Land Management Review of Big Shoals, Hamilton and Columbia Counties

(Lease No. 3541): January 22, 1998

Prepared by Division of State Lands Staff

Robert Clark, Environmental Administrator
William Howell, OMCM
Amy Knight, Planner

for
the Big Shoals Management Review Team

February 3, 1998

Management Review Team Members

Agency Represented	Team member appointed	Team member in attendance
DEP/DRP	Mr. Clifton Maxwell	Mr. Clifton Maxwell
DEP Northeast District	Mr. Don Jensen	Mr. Don Jensen
DACS/DOF	Mr. Scott Crosby	Mr. Scott Crosby
GFC	Mr. Frank Smith	Mr. Frank Smith
Soil and Water Cons. District	Mr. J. L. Bullard (Hamilton Co.)	Mr. J. L. Bullard
County Commission	Mr. Lamar Hill (Hamilton Co.)	none
Conservation Organization	Ms. Judy Hancock (Sierra Club)	Ms. Judy Hancock
Private Land Manager	Mr. Don Pattee (Champion International)	Mr. Don Pattee

Process for Implementing Regional Management Review Teams

Legislative Intent and Guidance:

Section 8 of CS/CS/HBs 1119 & 1577 (§259.036, F. S.) was enacted to determine whether state-owned conservation, preservation, and recreation lands are being managed for the purposes for which they were acquired and in accordance with adopted land-management plans. It establishes land management review teams to evaluate the extent to which the existing management plan provides sufficient protection to threatened or endangered species, unique or important natural or physical features, geological or hydrological functions, or archaeological features, and to evaluate the extent to which the land is being managed for the purposes for which it was acquired and the degree to which actual management practices, including public access, are in compliance with the adopted management plan. If a land-management plan has not been adopted, the review shall consider the extent to which the land is being managed for the purposes for which it was acquired and the degree to which actual management practices are in compliance with the management policy statement and management prospectus for that property. If the land management review team determines that reviewed lands are not being managed for the purposes for which they were acquired or in compliance with the adopted land management plan, management policy statement, or management prospectus, or if the managing agency fails to address the review findings in the updated management plan, the Department shall provide the review findings to the Board, and the managing agency must report to the Board its reasons for managing the lands as it has. No later than the second board meeting in October of each year, the Department shall report the annual review findings of its land management review team.

The management review of Big Shoals considered 1,281 acres of uplands in Hamilton and Columbia Counties that are managed by DEP/Division of Recreation and Parks. The team evaluated the extent to which current management actions are sufficient, whether the land is being managed for the purpose for which it was acquired, and whether actual management practices, including public access, are in compliance with the management concept developed for the Big Shoals Corridor CARL Project (1985 - 1988). A management plan is currently being developed for this site.

Subsequent to this review it was found that the Division of Recreation and Parks (DRP) had granted an interim "Use Agreement" to the Department of Agriculture and Consumer Services/Division of Forestry (DOF) as adjacent property managers. The agreement specified that DOF would provide security, protection and related management activities on Big Shoals (Lease No. 3541) for a ten year period beginning in August 1989.

Review Team Analysis

The management review checklist was analyzed as follows: The checklist consisted of a field review section that scored to what extent sufficient management actions were being taken for a series of items.

Review Team Findings

Checklist results

Inadequate items: Plan review

I.A.1.b Sandhill	Management actions should be increased to protect, restore, and maintain the sandhill communities, and such actions should be addressed in the plan.
I.A.2.b. Rare Animal Monitoring	Inventory and monitoring of rare animal species should be implemented and described in the management plan.
I.A.3.b Rare Plant Monitoring	Inventory and monitoring of rare plant species should be implemented and described in the management plan.
III.A.1 Prescribed burning: maintenance	Burn quality/season of burn should be addressed in the plan, Naturalcommunityand an appropriate burn plan should be implemented.
III.A.2 Frequency of Prescribed Burning	Burn frequency should be addressed in the plan, and an appropriate burn plan should be implemented.

III.C.2.b Non-native Plants:	Monitoring of non-native plants should be implemented and addressed in the plan.
III.D.1.d Ground water	Monitoring of ground water should be implemented and addressed in the plan.
III.E.4.a Trespassing	The problem of unauthorized camping should be addressed in the plan and controlled through increased management.
III.F Boundary delineation	Boundary should be defined and marked on Columbia Co. parcel, and boundary delineation issues should be described in the plan.
III.G.1 Incompatible Adjacent	Incompatible adjacent property uses should be addressed in theLand Useplan, and appropriate solutions should be developed.
III.G.2 Storm water/effluent	Storm water runoff from adjacent lands should be addressed in the plan, and an appropriate solution should be developed if possible.
III.G.3 Inholdings/additions	Acquisition of important adjacent lands, especially those that could provide public access on the Columbia Co. parcel, should be addressed in the plan, and a solution to the public access problem should be actively pursued.
III.H.4. Staff	Additional personnel for resource management are needed and staffing needs should be addressed in the plan.

Inadequate items: Field review

III.H.1.a Waste Disposal	Increased waste management, including additional trash cans, is needed.
III.H.1.b Sanitary facilities	Increased sanitary facilities are needed.
IV. Education/public outreach	Additional educational signage and public outreach should be provided.

*** Denotes items that received low scores in both the plan and field review sections.**

Recommendations to the managing agency

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

1. Water quality and quantity of streams on the property should be monitored, and appropriate management actions should be taken if necessary.

2. A Type 1 management plan should be submitted by February 1999.

3. The management plan should address all items in the review checklist.

4. The Division of Recreation and Parks should develop recreation and resource management components of the management plan in cooperation with the 3 other agencies (DOF, GFC, SRWMD) involved in the management of the Big Shoals tracts.

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

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

After completing the checklist, team members were asked to answer "yes" or "no" to this question and given the opportunity to provide general comments. All team members agreed that this land is being managed for the purpose for which it was acquired.

Are actual management practices, including public access, in compliance with the management concept?

After completing the checklist, team members were asked to answer "yes" or "no" to this question and given the opportunity to provide general comments. The majority of team members agreed that actual management practices, including public access, were in compliance with the management concept for this land.

Florida Department of Environmental Protection

Memorandum

December 2, 1998

TO: Mr. Robert Clark, EA
Division of State Lands

FROM: Albert Gregory, Chief, Office of Park Planning
Dana C. Bryan, Chief, Bureau of Natural
& Cultural Resources
Division of Recreation and Parks

SUBJECT: Response to Land Management Review (LMR) for Big Shoals Unit

The Land Management Review dated February 3, 1998, determined that the management of the Big Shoals Unit meets the two tests prescribed by law. The review team concluded that the land is being managed for the purposes for which it was acquired and in accordance with the land management plan (LMP).

The following comments are provided by field staff and our offices in response to specific concerns and recommendations that were included in the LMR. We have identified land management plan revisions and field management actions we plan to take to address the review team's concerns.

Checklist Results - Plan & Field Reviews:

I.A.1.b. - Sandhill: Agree. Management of sandhills is a priority in DRP and will be addressed in the LMP. The sandhills will be managed in accordance with accepted and normal procedures utilized to restore and maintain this community.

I.A.2.b. - Rare Animal Monitoring: Agree. DOF is responsible for field management under an interium use agreement. The LMP will address needs to survey and monitor listed species.

I.A.3.b. - Rare Plant Monitoring: Agree. DOF is responsible for field management under an interim use agreement. The LMP will address needs to survey and monitor listed species. (Note: FNAI completed a survey of natural communities and rare plants at Big Shoals in June 1998.)

III.A.1. - Maintenance of Natural Communities (1.3): Agree. The LMP will address use of prescribed fire.

III.A.2. - Frequency: Agree. The LMP will address burn plans and designate additional burn zones. Burn frequencies will be determined on a case-by-case basis depending on biological community, burn history, natural community condition, and existing fuel loads.

III.C.2.b. - Non-native Plants, Monitoring: Agree. DOF is responsible for field management under an interim use agreement. The LMP will address exotic plant control measures. A review of the site has already been conducted and control measures have been established. If any others are noted during future surveys of the flora and fauna, we will address them at that time. However, exotic plants do not represent a significant problem on this unit.

III.D.1.d. - Ground water monitoring: Disagree at this time. However, staff will discuss the issue with the SRWMD. If there is a need for such monitoring, we will request their assistance.

III.E.4.a. - Trespass camping: Agree. DOF is responsible for field management under an interim use agreement. The LMP and an Interagency Recreation Plan will address this problem and will attempt to provide suitable provisions for canoe camping.

III.F. - Boundary Delineation: Agree. The LMP will address the boundary lines. A survey of the Columbia County parcel has been completed.

III.G.1. - Land use: Disagree. The LMP will address any adjoining uses that could be seriously impacting resources of the park. Although we have no control over adjacent land uses, staff will make every reasonable effort to ensure that park resources are protected including recommending actions be taken by the appropriate regulatory agencies to ensure that any there will not be any material impacts on park resources as a result of adjacent land uses or zoning.

III.G.2. - Storm water/effluent: Disagree. The LMP will address any stormwater issues that are impacting park resources, but we have no authority to control such problems. In cases where we believe the stormwater discharge from adjacent lands is violating state standards or is damaging park resources and lands, we will notify the proper regulatory agencies.

III.G.3. - Inholdings/additions: Agree. The LMP will address public access issues and ways to resolve them. An easement is already owned for the Columbia County lands. Lands included on the DRP inholdings/ additions list are prioritized and purchased as moneys and willing sellers become available.

III.H.1.a. - Waste: Agree. DOF is responsible for field management under an interim use agreement. The LMP will address this concern and proper containers will be provided when public access is developed by DRP.

III.H.1.b. - Sanitary facilities: Agree. DOF is responsible for field management under an interim use agreement. The LMP will address the need for such facilities and efforts will be

made to acquire and install the facilities. A composting toilet is scheduled for installation and has been purchased.

III.H.4. - Staff: Agree. DOF is responsible for field management under an interim use agreement. The LMP will address staffing needs. (Note: The DRP has requested two FTE park ranger positions for Big Shoals in the FY 1999-2000 Legislative Budget Request.) However, no new staff can be assigned to this park unit unless the new positions are appropriated by the Legislature or reassigned from other units. This later action is not appropriate at this time according to Division staff allocation research.

IV. - Education/Public Outreach: The LMP will address education/ public outreach needs. During future development, efforts will be made to provide for additional signage and outreach and these efforts will be coordinated with those of other managing agencies.

Recommendations:

1) Agree. However, such monitoring should be limited to situations where problems are apparent and should be conducted where streams enter state lands. If considered necessary, DRP will encourage other Divisions within DEP and the SRWMD to establish monitoring locations outside of the park boundaries.

2) Agree. A Type 1 LMP should be developed by the end of FY98-99.

3) Agree. The draft LMP covers items required by rule which are also included in the checklist.

4) Agree. An interagency working group to coordinate recreational and resource management has already been formed between DRP, DOF, FGFWFC, DHR, and SRWMD.

Thank you for the opportunity to comment on the LMR.

AG/DCB/mb

cc: Torrey Johnson, Chief, Parks District 2