Blackwater River State Park

APPROVED
Unit Management Plan

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Division of Recreation and Parks
February 19, 2016

Florida Department of Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Jonathan P. Steverson
Secretary

February 23, 2016

Ms. Sine Murray
Division of Recreation and Parks
Department of Environmental Protection
3900 Commonwealth Boulevard, MS 525
Tallahassee, Florida 32399-3000

RE: Blackwater River State Park - Lease #2333

Dear Ms. Murray:

On **February 19, 2016**, the Acquisition and Restoration Council recommended approval of the **Blackwater River State Park** management plan. Therefore, the Division of State Lands, Office of Environmental Services, acting as agent for the Board of Trustees of the Internal Improvement Trust Fund, hereby approves the **Blackwater River State Park** management plan. The next management plan update is due February 19, 2026.

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

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INTRODUCTION

Blackwater River State Park is located in Santa Rosa County (see Vicinity Map). Access to the park is from Interstate 10, exit 31 (State Road 87) north to U.S Highway 90, east to Deaton Bridge Road (see Reference Map). The Vicinity Map also reflects significant land and water resources existing near the park.

Blackwater River State Park was initially acquired on February 23, 1968 as a conveyance from the State of Florida Department of Agriculture and Consumer Affairs to the Board of Trustees of the Internal Improvement Trust Fund (Trustees). Currently, the park comprises 635.83 acres. The Trustees hold fee simple title to the park and on June 14, 1968, the Trustees leased (Lease Number 2333) the property to the DRP under a 99-year lease. The current lease will expire on June 13, 2067.

Blackwater River State Park is designated single-use to provide public outdoor recreation and other park-related uses. There are no legislative or executive directives that constrain the use of this property (see Addendum 1).

Purpose and Significance of the Park

The purpose of Blackwater River State Park is to provide exceptional opportunities for resource conservation and resource-based outdoor recreational activities for the enjoyment of Florida residents and visitors.

Park Significance

- In 1980 the park was certified as a Registered State Natural Feature for its exceptional illustration of Florida's natural history.

- The Blackwater River, unmodified for most of its entire length, is considered one of the cleanest rivers in the Panhandle. This wild and natural river draws attention from scientists studying the insect life on its unusual shifting sandy bottom.

- One of the largest and oldest Atlantic white cedars stands among the many that line the river and, in 1982, it was recognized as a Florida Champion tree.

- The park provides habitat for a number of imperiled plant and animal species. Listed plants include the white-topped pitcherplant, parrot pitcherplant, trumpet, panhandle lily, and pine lily, among others. Red-cockaded woodpeckers have successfully been reintroduced into the park's pinelands.

- Designated as a Florida Paddling Trail, the swiftly flowing Blackwater River, with tea-dark waters that curve around brilliant white sandy banks, provides one of the finest paddling experiences in the state.

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

Purpose and Scope of the Plan

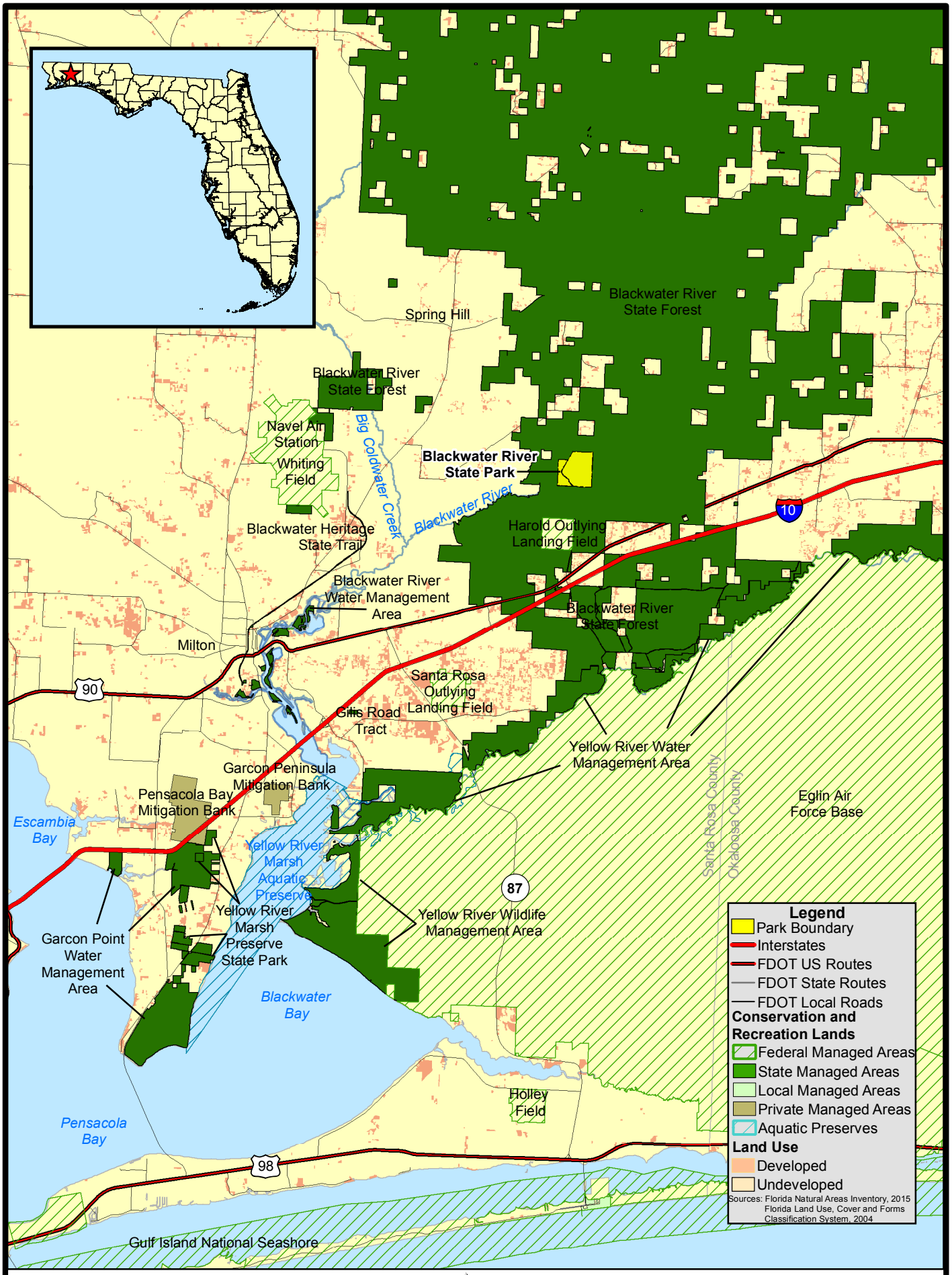
This plan serves as the basic statement of policy and direction for the management of Blackwater River State Park as a unit of Florida's state park system. It identifies the goals, objectives, actions and criteria or standards that guide each aspect of park administration, and sets forth the specific measures that will be implemented to meet management objectives and provide balanced public utilization. The plan is intended to meet the requirements of Sections 253.034 and 259.032, Florida Statutes, Chapter 18-2, Florida Administrative Code, and is intended to be consistent with the State Lands Management Plan. With approval, this management plan will replace the 2004 approved plan.

The plan consists of three interrelated components: the Resource Management Component, the Land Use Component and the Implementation Component. The Resource Management Component provides a detailed inventory and assessment of the natural and cultural resources of the park. Resource management needs and issues are identified, and measurable management objectives are established for each of the park's management goals and resource types. This component provides guidance on the application of such measures as prescribed burning, exotic species removal, imperiled species management, cultural resource management and restoration of natural conditions.

The Land Use Component is the recreational resource allocation plan for the park. Based on considerations such as access, population, adjacent land uses, the natural and cultural resources of the park, current public uses and existing development. Measurable objectives are set to achieve the desired allocation of the physical space of the park. These objectives identify use areas and propose the types of facilities and programs as well as the volume of public use to be provided.

The Implementation Component consolidates the measurable objectives and actions for each of the park's management goals. An implementation schedule and cost estimates are included for each objective and action. Included in this table are (1) measures that will be used to evaluate the DRP's implementation progress, (2) timeframes for completing actions and objectives and (3) estimated costs to complete each action and objective.

All development and resource alteration proposed in this plan is subject to the granting of appropriate permits, easements, licenses, and other required legal



BLACKWATER RIVER STATE PARK

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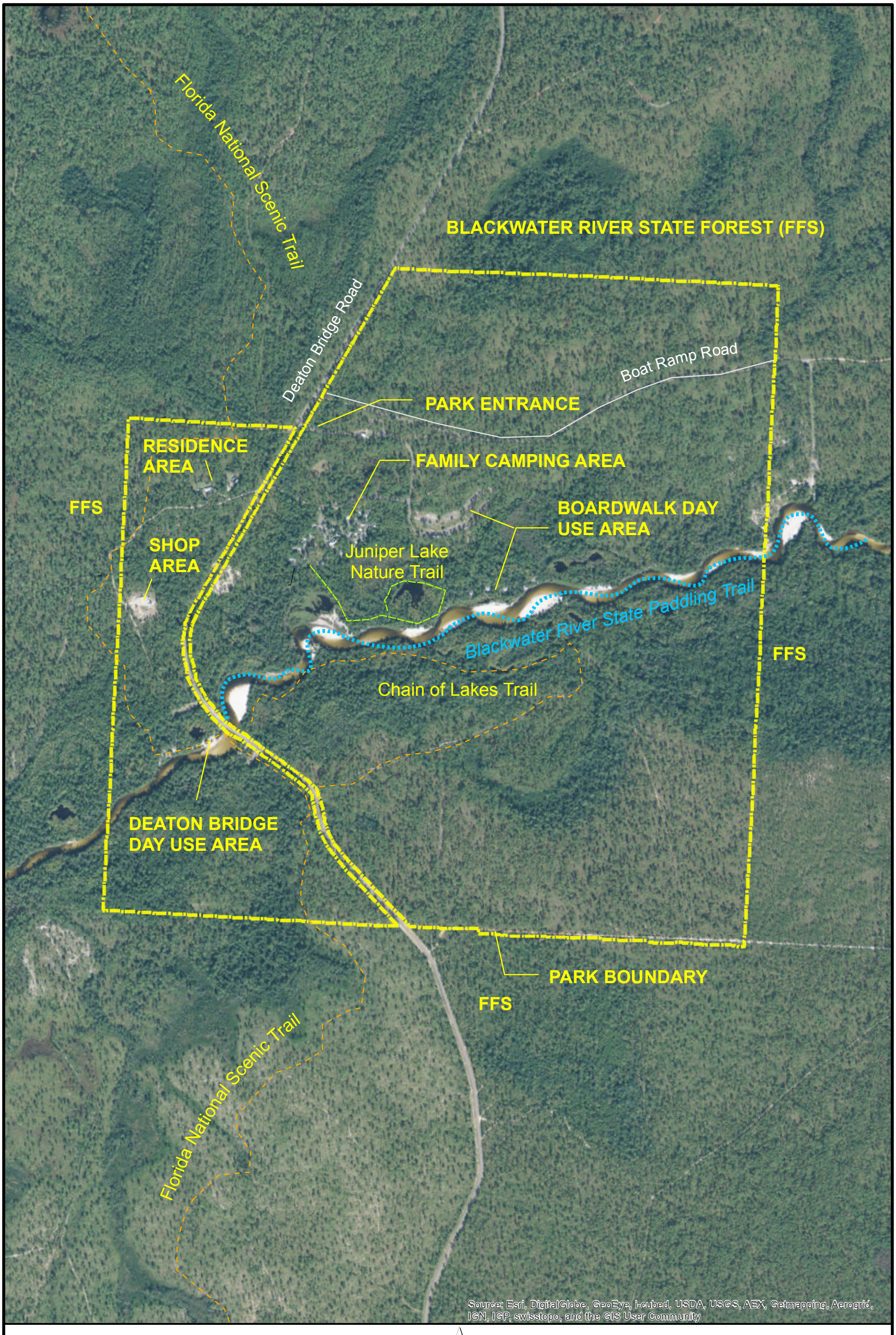
Florida Department of Environmental Protection
Division of Recreation and Parks
Office of Park Planning

VICINITY MAP



BLACKWATER RIVER STATE PARK

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0 500 1,000 2,000 Feet

Florida Department of Environmental Protection
Division of Recreation and Parks
Date of aerial 2014

REFERENCE MAP

instruments. Approval of the management plan does not constitute an exemption from complying with the appropriate local, state or federal agencies.

In the development of this plan, the potential of the park to accommodate secondary management purposes was analyzed. These secondary purposes were considered within the context of the DRP's statutory responsibilities and the resource needs and values of the park. This analysis considered the park natural and cultural resources, management needs, aesthetic values, visitation and visitor experiences. For this park, it was determined that hardwood chippings/biomass fuel reduction activities and wiregrass seed harvesting could be accommodated in a manner that would be compatible and not interfere with the primary purpose of resource-based outdoor recreation and conservation. This compatible secondary management purpose is addressed in the Resource Management Component of the plan. Uses such as water resource development projects, water supply projects, stormwater management projects, linear facilities and sustainable agriculture and forestry (other than those forest management activities specifically identified in this plan) are not consistent with this plan.

The potential for generating revenue to enhance management was also analyzed. Visitor fees and charges are the principal source of revenue generated by the park. It was determined that hardwood chippings/biomass fuel reduction activities and wiregrass seed harvesting would be appropriate at this park as additional sources of revenue for land management since it they are compatible with the park's primary purpose of resource-based outdoor recreation and conservation.

The DRP may provide the services and facilities outlined in this plan either with its own funds and staff or through an outsourcing contract. Private contractors may provide assistance with natural resource management and restoration activities or a concessionaire may provide services to park visitors in order to enhance the visitor experience. For example, a concessionaire could be authorized to sell merchandise and food and to rent recreational equipment for use in the park. A concessionaire may also be authorized to provide specialized services, such as interpretive tours, or overnight accommodations when the required capital investment exceeds that which the DRP can elect to incur. Decisions regarding outsourcing, contracting with the private sector, the use of concessionaires, etc. are made on a case-by-case basis in accordance with the policies set forth in the DRP's Operations Manual (OM).

Management Program Overview

Management Authority and Responsibility

In accordance with Chapter 258, Florida Statutes and Chapter 62D-2, Florida Administrative Code, the Division of Recreation and Parks (DRP) 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 Board of Trustees of the Internal Improvement Trust Fund (Trustees) has granted management authority of certain sovereign submerged lands to the DRP under Management Agreement MA 68-086 (as amended January 19, 1988). The management area includes a 400-foot zone from the edge of mean high water where a park boundary borders sovereign submerged lands fronting beaches, bays, estuarine areas, rivers or streams. Where emergent wetland vegetation exists, the zone extends waterward 400 feet beyond the vegetation. The agreement is intended to provide additional protection to resources of the park and nearshore areas and to provide authority to manage activities that could adversely affect public recreational uses.

Many operating procedures are standardized system-wide and are set by internal direction. These procedures are outlined in the OM that covers such areas as personnel management, uniforms and personal appearance, training, signs, communications, fiscal procedures, interpretation, concessions, public use regulations, resource management, law enforcement, protection, safety and maintenance.

Park Management Goals

The following park goals express the DRP's long-term intent in managing the state park:

- Provide administrative support for all park functions.
- Protect water quality and quantity in the park, restore hydrology to the extent feasible and maintain the restored condition.
- Restore and maintain the natural communities/habitats of the park.
- Maintain, improve or restore imperiled species populations and habitats in the park.
- Remove exotic and invasive plants and animals from the park and conduct needed maintenance-control.
- Protect, preserve and maintain the cultural resources of the park.
- Provide public access and recreational opportunities in the park.
- Develop and maintain the capital facilities and infrastructure necessary to meet the goals and objectives of this management plan.

Management Coordination

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

The Florida Department of Agriculture and Consumer Services (FDACS), Florida Forest Service (FFS), assists the DRP staff in the development of wildfire emergency plans and provides the authorization required for prescribed burning. The Florida Fish and Wildlife Conservation Commission (FWC) assists staff in the enforcement of state laws pertaining to wildlife, freshwater fish and other aquatic life existing within the park. In addition, the FWC aids the DRP with wildlife management programs, including imperiled species management. The Florida Department of State (FDOS), Division of Historical Resources (DHR) assists staff to ensure protection of archaeological and historical sites.

Public Participation

The DRP provided an opportunity for public input by conducting a public workshop and an Advisory Group meeting to present the draft management plan to the public. These meetings were held on October 13 and 14, 2015, respectively. Meeting notices were published in the Florida Administrative Register, October 5, 2015, [VOL 41/193], included on the Department Internet Calendar, posted in clear view at the park, and promoted locally. The purpose of the Advisory Group meeting is to provide the Advisory Group members an opportunity to discuss the draft management plan (see Addendum 2).

Other Designations

Blackwater River State Park is not within an Area of Critical State Concern as defined in Section 380.05, Florida Statutes, and it is not presently under study for such designation. The park is a component of the Florida Greenways and Trails System, administered by the Department's Office of Greenways and Trails.

All waters within the park have been designated as Outstanding Florida Waters, pursuant to Chapter 62-302, Florida Administrative Code. Surface waters in this park are also classified as Class III waters by the Department. This park is not within or adjacent to an aquatic preserve as designated under the Florida Aquatic Preserve Act of 1975 (Section 258.35, Florida Statutes).

RESOURCE MANAGEMENT COMPONENT

Introduction

The Florida Department of Environmental Protection (DEP), Division of Recreation and Parks (DRP) in accordance with Chapter 258, Florida Statutes, has implemented resource management programs for preserving for all time the representative examples of natural and cultural resources of statewide significance under its administration. This component of the unit plan describes the natural and cultural resources of the park and identifies the methods that will be used to manage them. Management measures expressed in this plan are consistent with the DEP's overall mission in ecosystem management. Cited references are contained in Addendum 3.

The DRP's philosophy of resource management is natural systems management. Primary emphasis is placed on restoring and maintaining, to the degree possible, the natural processes that shaped the structure, function and species composition of Florida's diverse natural communities as they occurred in the original domain. Single species management for imperiled species is appropriate in state parks when the maintenance, recovery or restoration of a species or population is complicated due to constraints associated with long-term restoration efforts, unnaturally high mortality or insufficient habitat. Single species management should be compatible with the maintenance and restoration of natural processes, and should not imperil other native species or seriously compromise park values.

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

Because park units are often components of larger ecosystems, their proper management can be affected by conditions and events that occur beyond park boundaries. Ecosystem management is implemented through a resource management evaluation program that assesses resource conditions, evaluates management activities and refines management actions, and reviews local comprehensive plans and development permit applications for park/ecosystem impacts.

The entire park is divided into management zones that delineate areas on the ground that are used to reference management activities (see Management Zones Map). The shape and size of each zone may be based on natural community type, burn zone, and the location of existing roads and natural fire breaks. It is important to note that all burn zones are management zones; however, not all management zones include fire-dependent natural communities. Table 1 reflects the management zones with the acres of each zone.

Table 1. Blackwater River State Park Management Zones			
Management Zone	**Acreage**	**Managed with Prescribed Fire**	**Contains Known Cultural Resources**
BR-01A	244.61	Y	No
BR-01B	56.21	Y	Yes
BR-02	61.74	Y	Yes
BR-03	79.02	Y	Yes
BR-04	101.7	Y	Yes
BR-05	92.52	Y	No

Resource Description and Assessment

Natural Resources

Topography

Topography rises from 25 feet in the river bottom to 150 feet in the southwestern section of the park. Blackwater River State Park is located in the southern part of the physiographic region known as the Western Highlands of the Coastal Plains. This region is the southward-facing plateau cut by many streams (Marsh 1996), of which Blackwater River is one.

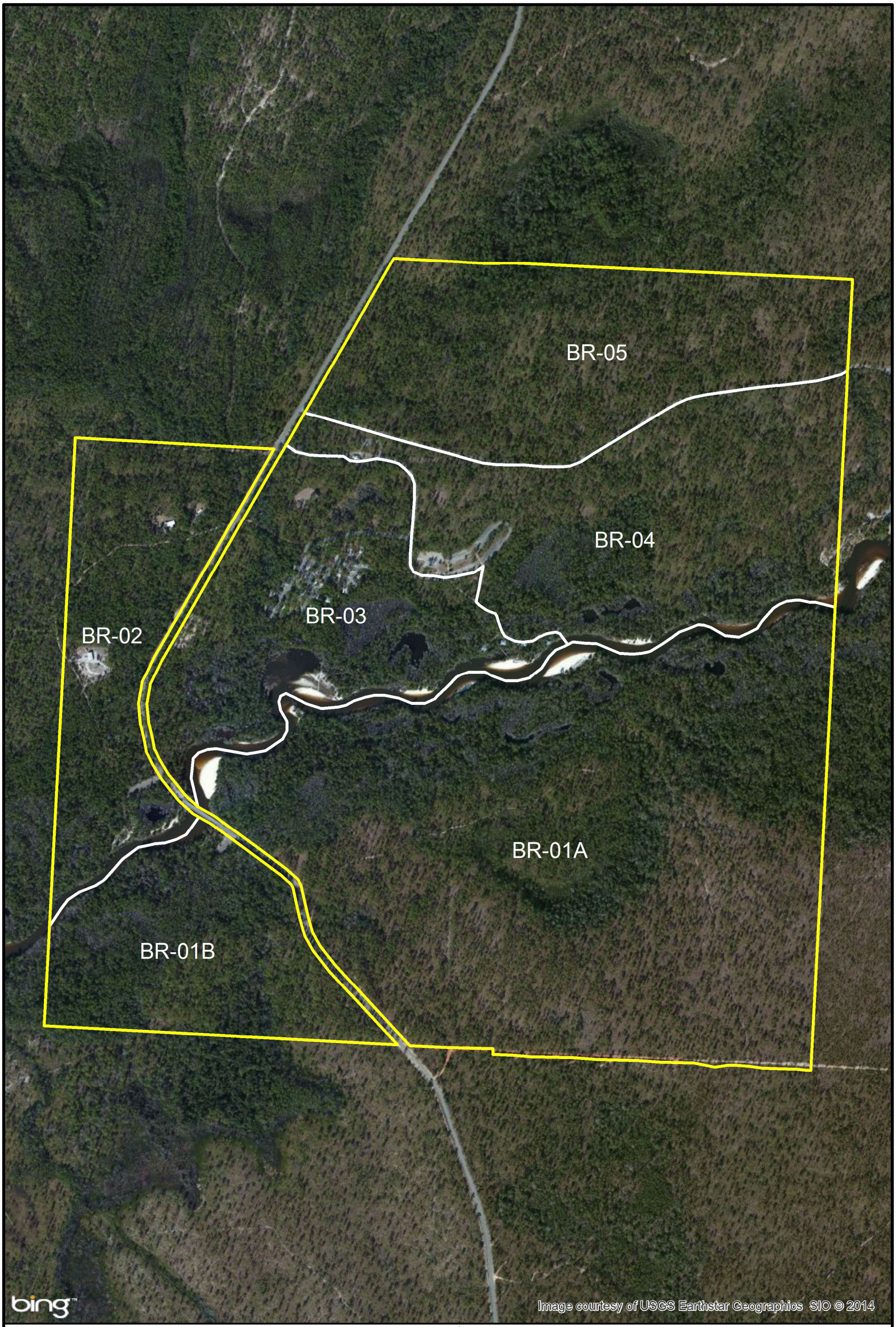
Geology

Santa Rosa County lies on the northern flank of the Gulf Coast geosyncline and exhibits a southwestward dip in subsurface formations which often configures stream drainages to the south and southwest. Subsurface geology of the park is more like the central Gulf Coast of Alabama, Mississippi and Louisiana than peninsular Florida. Only two formations from the peninsula show up in Santa Rosa County. They are the Tampa and Ocala groups.

From the oldest formation, layers in the stratigraphy of this area have been described as Hatchetigbee, Tallahatta, Ocala, Bucatunna, Chickasawhay Limestone, Tampa, Pensacola Clay and Citronelle. The latter formation with the iron-cemented oxides of Pleistocene age may perch water tables to form small ponds in the region. Steepheads are common throughout the region but none are located inside the park. The river itself has a sand bottom, and meanders, with wide sandbars formed on the inside curves as forces of the current cut into the banks of yellow clay on the outside turns.

Soils

Soils in this county are primarily unconsolidated sands, silts and clay. Soils at the park are ultisols and entisols, deeply drained soils. Soil series range from very poorly drained to moderately drained (see Soils Map).



BLACKWATER RIVER
STATE PARK

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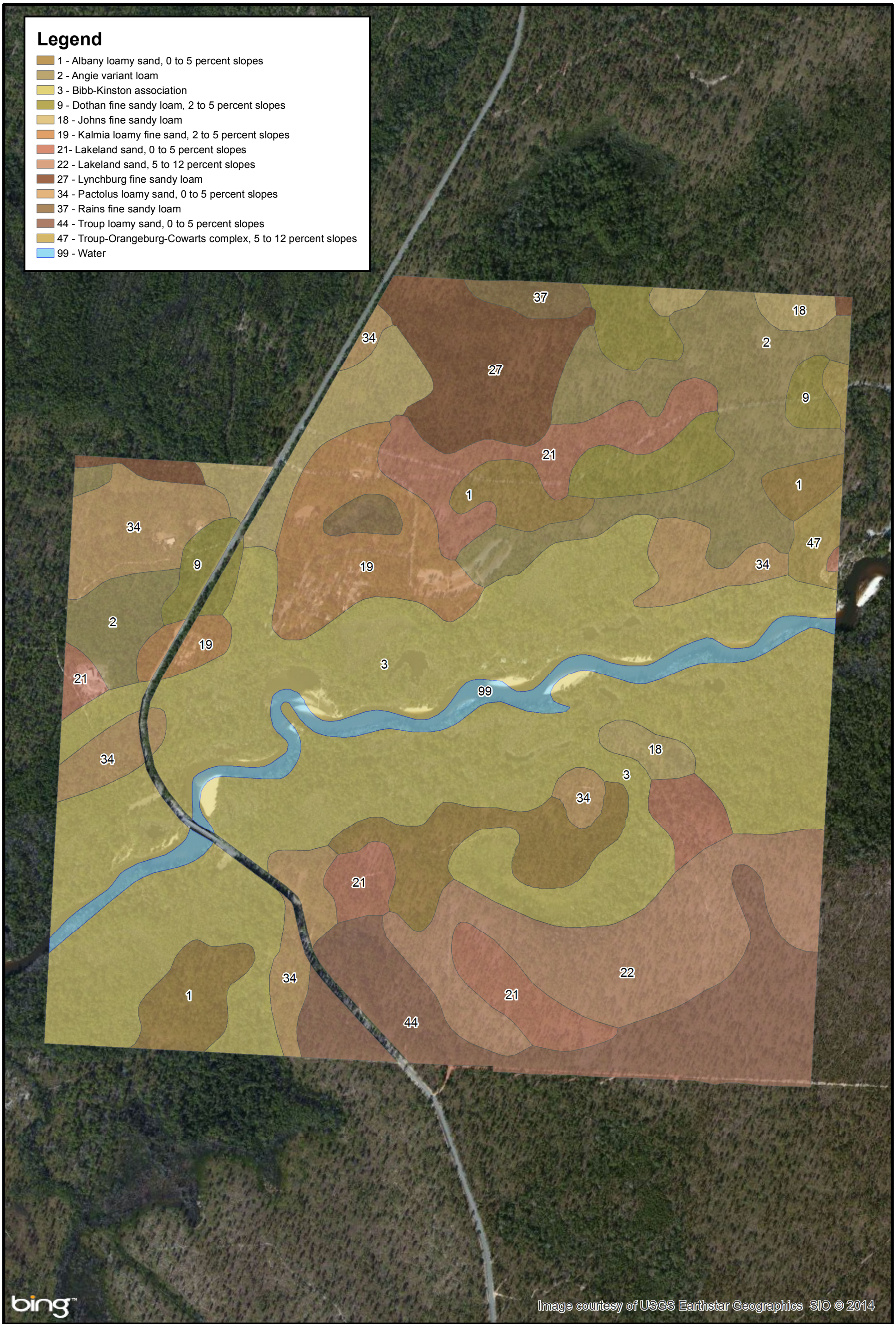
Florida Department of Environmental Protection
Division of Recreation and Parks
Date of aerial 2011

MANAGEMENT ZONES MAP



BLACKWATER RIVER
STATE PARK

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Florida Department of Environmental Protection
Division of Recreation and Parks
Date of aerial 2011

SOILS MAP

Stabilization activities are warranted for areas of the Blackwater River streambank where visitor use impacts vegetation and where erosion has increased. These activities may include vegetative planting of eroding river banks, root ball installations using Best Management Practices (BMP's) and relocation of short trail segments and redirection of visitor impacts to low-energy streambank settings. Park staff worked with local Florida Forest Service (FFS) staff in recent years to close vehicular access onto park lands from an adjacent FFS boat ramp/camping area on the park's east boundary to decrease erosion (Zone BR-04).

Addendum 4 contains complete descriptions of the park's soil types.

Minerals

No commercially important minerals are known at this park. Sand, gravel or clay has been excavated on park lands prior to park service management for improvements or construction of roads and/or bridges. The borrow pit (Zone BR-01A) is in a stable vegetated condition and no grading or replanting is recommended at this time.

Hydrology

Blackwater River has its headwaters in the Conecuh National Forest in Alabama and flows through Okaloosa and Santa Rosa counties, draining some 700 square miles within Florida. About 40 miles of the river extends from the Alabama-Florida State line, much of it pristine and wild. Several other creeks, such as Big Coldwater Creek, Juniper Creek and Clear Creek flow into the river at certain points, collectively producing 43 cu. ft./second flow at the Baker gage (Thorpe 1997). The major source of the water for the river system is ground water from the Sand and Gravel Aquifer with smaller amounts provided by surface runoff.

Blackwater River is considered one of the cleanest water bodies in the Florida panhandle and is an Outstanding Florida Water (OFW). The ground water in this county is an abundant source of the softest and least mineralized ground water in Florida. The river is not dammed and water levels fluctuate naturally. Maintenance of present hydrologic regime is exceedingly important. The river rises out of its banks and into the floodplain during periods of extended rainfall with floodplains inundated from 2 to 6 weeks annually. Natural erosion is part of the pristine nature of this river. General threats to the pristine nature of this river include point source pollution, gully erosion from agricultural fields and cattle, and pesticides. Localized threats within the park include riverbank erosion accelerated by visitors climbing up and down the banks. The FFS has been accessing unpaved roads and addressing pesticide use and gully erosion on managed lands within Blackwater River State Forest, thus reducing sedimentation and pollution upstream.

Campground upgrades in recent years have addressed erosional concerns in that area with sites stabilized, roads paved and by installation of a crossdrain and outfall weir. In addition, the main parking lot received stormwater swales, substantially

reducing impacts to basin swamp, seepage streams and the floodplain communities.

Staff have been working on engineering with Three Rivers Resource Conservation and Development Council (RC&D), DEP and the National Resources Conservation Service (NRCS) to design a root wad stabilization project for the south riverbank where previous activity associated with river use was accelerating streamside erosion. The public using this area have been redirected to the north side of the river for boat retrieval and river access.

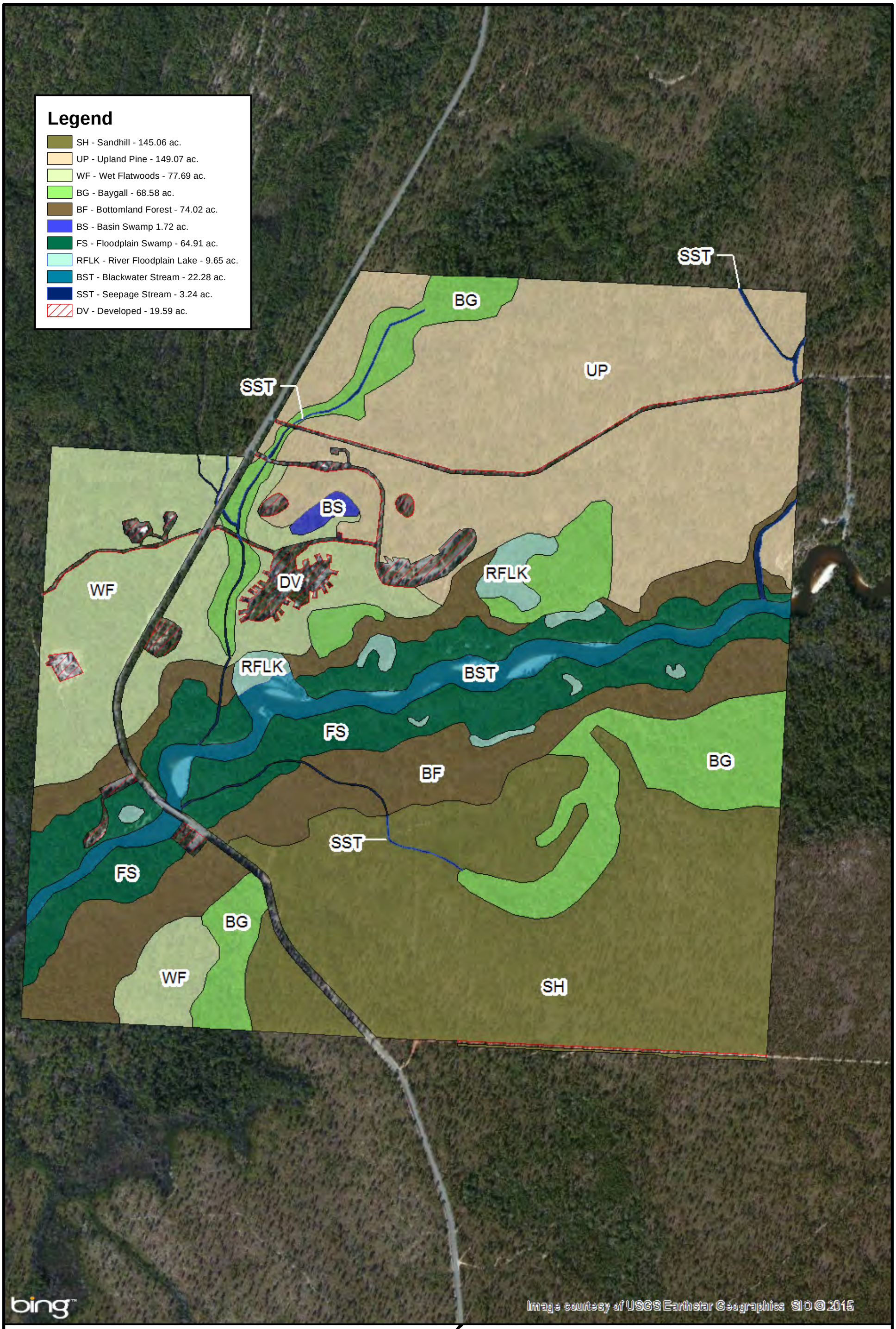
Natural Communities

This section of the management plan describes and assesses each of the natural communities found in the state park. It also describes the desired future condition (DFC) of each natural community and identifies the actions that will be required to bring the community to its desired future condition. Specific management objectives and actions for natural community management, exotic species management, imperiled species management and restoration are discussed in the Resource Management Program section of this component.

The system of classifying natural communities employed in this plan was developed by the Florida Natural Areas Inventory (FNAI). The premise of this system is that physical factors such as climate, geology, soil, hydrology and fire frequency generally determine the species composition of an area, and that areas that are similar with respect to those factors will tend to have natural communities with similar species compositions. Obvious differences in species composition can occur, however, 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. Some physical influences, such as fire frequency, may vary from FNAI's descriptions for certain natural communities in this plan.

When a natural community within a park reaches the desired future condition, it is considered to be in a "maintenance condition." Required actions for sustaining a community's maintenance condition may include, maintaining optimal fire return intervals for fire dependent communities, ongoing control of non-native plant and animal species, maintaining natural hydrological functions (including historic water flows and water quality), preserving a community's biodiversity and vegetative structure, protecting viable populations of plant and animal species (including those that are imperiled or endemic), and preserving intact ecotones linking natural communities across the landscape.

The park contains 10 distinct natural communities as well as impounded and developed areas (see Natural Communities Map). A list of known plants and animals occurring in the park is contained in Addendum 5.



BLACKWATER RIVER
STATE PARK

0 250 500 1,000 Feet

Florida Department of Environmental Protection
Division of Recreation and Parks
Date of aerial 2011

NATURAL COMMUNITIES

Basin Swamp

Desired future condition: Forested basin wetlands that are highly variable in size, shape and species composition and will have an extended hydroperiod typically 200-300 days. While mixed species canopies are common, the dominant trees will be pond cypress and swamp tupelo. Other canopy species can include slash pine (*Pinus elliottii*), red maple (*Acer rubrum*), dahoon holly (*Ilex cassine*), sweetbay (*Magnolia viginiana*), and sweetgum (*Liquidambar styraciflua*). Depending upon fire history and hydroperiod, the understory shrub component can be throughout or concentrated around the perimeter. Shrub species can include a variety of species including wax myrtle (*Myrica cerifera*), and white titi (*Cyrilla racemiflora*). The herbaceous component is also variable and may include a wide variety of species such as maidencane (*Panicum hemitomon*), ferns and sphagnum moss (*Sphagnum* spp.). Soils will be typically acidic, nutrient poor peats often overlying a clay lens or other impervious layer.

Description and assessment: The basin swamp is a small area located in management zone BR-03 near the entrance station. The community is considered to be in good condition. A crossdrain was placed under the campground road during recent upgrades to prevent flooding of the roadway. This action should not have adversely effected natural hydroperiod within the swamp but changes in vegetation should be noted. A new infestation of cogon grass appeared to be associated with campground construction activity.

General management measures: Basin swamps should be allowed to burn on the same frequency and seasonality as the adjacent upland pine community, allowing fires to naturally burn across ecotones every 2-3 years. Fires should be appropriately planned to avoid high severity fuel consumption within the swamp. Monitoring for and treatment of exotic plant species will continue as well as monitoring for imperiled species.

Baygall

Desired future condition: Baygall consists of a wet densely forested, peat filled depression typically near the base of a slope. Seepage from adjacent uplands will maintain saturated conditions. Medium to tall trees will mainly consist of sweetbay, and red bay (*Persea borbonia)*. Occasionally sparse pines (*Pinus* spp.) may also exist. A thick understory consisting of gallberry (*Ilex glabra*), fetterbush (*Lyonia lucida*), dahoon (*Ilex cassine*), titi (*Cyrilla racemiflora*), and red maple will be typical with climbing vines such as greenbriar (*Smilax* spp.) and muscadine grape (*Vitis* spp.) will usually be abundant. While the Optimal Fire Return Interval for this community is 25-100 years it is recommended that frequent fires from adjacent sandhill community be allowed to enter baygall ecotone (FRI 2-4).

Description and assessment: Baygall is found in all management zones. Ecotonal areas adjacent to floodplain, stream and upland pine communities are frequently found to contain pitcherplants, butterworts and other imperiled species that benefit from edge effect. Sweetbay, swamp bay, swamp tupelo and buckwheat tree are

common understory subcanopy (Kindell et al 1997). The community is considered to be in good condition where upland fires have burned into or across the ecotone. Areas in poor condition occur where tropical storm blow downs and fire exclusion have created areas of dense rough. Consideration, planning and implementation may be given to biomass fuel reduction in areas of BR-01B and BR-04 after reconnaissance of possible seepage slope components and consultation with district staff and FFS. Areas bounded by upland pine communities are generally in fair to good condition.

General management measures: Baygall should be allowed to burn on the same frequency and seasonality as the adjacent fire type community (2-4 years), allowing fires to naturally burn across ecotones. Hardwood control of common sweetleaf and large gallberry would likely be enhanced by switching adjacent zones to predominantly growing season burns. Hardwood chipping/biomass fuel reduction may be appropriate in areas with low fire periodicity and dense stands of titi. Monitoring for and treatment of exotic plant species will continue.

Blackwater Stream

Desired future condition: Blackwater stream can be characterized as perennial or intermittent watercourses originating in lowlands where extensive wetlands with organic soils collect rainfall and runoff, discharging it slowly to the stream. The stained waters will be laden with tannins, particulates, and dissolved organic matter derived from drainage through adjacent swamps resulting in sandy bottoms overlain by organic matter. Emergent and floating vegetation (including golden club (*Orontium aquaticum*), (grasses and sedges) may occur but is often limited by steep banks and dramatic seasonal fluctuations in water levels. Desired conditions include minimizing disturbance and alterations and preserving adjacent natural communities.

Description and assessment: The Blackwater River bisects the park east to west. Water is relatively fast moving and has the color of strong tea from tannins. Snag and fallen trees abound, lending a particularly beautiful aspect to the river. Hardness and pH are generally low. The water quality of the river and many stream in the watershed are rated as an Outstanding Florida Water (Lewis 2010). The river is considered to be in generally good condition. Residential development, agriculture and silviculture occur upstream of the park. Trash and possibly additional pollutants enter the stream in this area. Pesticides and other chemical residues are washed into the stream from agricultural fields and conservation area roads where the roads cross the river.

General management measures: Monitoring for human-caused bank erosion should continue and the damage restored as appropriate (consider using woody material to stabilize stream banks and provide habitat diversity for macroinvertebrates and fishes).

Because this community is primarily maintained by hydrology, hydrologic disturbances affecting the Blackwater River and seepage streams such as flow and

level will affect this community within the park. Public education and outreach should be reviewed to heighten pollution awareness, encourage anti-littering and reduce erosion from foot and boat traffic. Livery services should be evaluated for best management practices and possibly engaged in public outreach and river quality support programs.

The trestle design of the current bridge across Blackwater River on Deaton Bridge Road collects woody debris against bridge pilings, especially during periods of flooding. This material is removed by Santa Rosa County road crews. Coordination with the FFS and the county should be considered to potentially recover this material for deposition on the downstream portion of the river, providing habitat for macroinvertebrates and fishes.

Bottomland Forest

Desired future condition: Bottomland forest is a fairly low-lying, mesic to hydric community, prone to periodic flooding. Vegetation will consist of a mature closed canopy of deciduous and evergreen trees. Overstory species may consist of species such as sweetgum, sweetbay, loblolly bay (*Gordonia lasianthus*), water oak (*Quercus nigra*), live oak (*Quercus virginiana*), loblolly pine (*pinus taeda*), and Atlantic white cedar (Chamaecyparis thyoides). Red maple, Common sweetleaf (*Symplocus tinctoria*) and bald cypress (*Taxodium distichum*) may also be present. Under story may be open or dense. Understory species will typically include wax myrtle, presence of groundcover is variable and may consist of panic grass (Panicum spp.) and Southern waxy sedge (*Carex glaucescens*).

Description and assessment: The bottomland forest occurs on both sides of the river bordering the floodplain swamp in management zones BR-02 and BR-03. The area covered by this community is seasonally inundated. The community supports temperate vegetation consisting of mixed hardwood species including water oaks, tulip trees and sweetbays as well as islands of slash pine. Most of the forest above the 20-foot contour line along the edges of Blackwater River has been mapped as bottomland forest. This community was impacted by past logging activities but has largely recovered due to recruitment from adjacent, undisturbed areas. Accordingly, the condition of this community, depending on the amount of groundcover disturbance is rated in good to excellent condition. Fires are rare to absent but frequent fires from adjacent communities should be allowed to enter forest ecotone.

General management measures: Monitoring for erosion and other hydrologic disturbances will continue. Monitoring and treatment of new exotic plant infestations will continue.

Floodplain Swamp

Desired future condition: Floodplain swamp will be a frequently or permanently flooded community in low lying areas along streams and the Blackwater River. Soils will consist of a mixture of sand, organics, and alluvial materials. The closed canopy will typically be dominated by bald cypress but commonly includes tupelo species

(*Nyssa* spp.) as well as red maple and water oak. Trees bases are typically buttressed. Understory and groundcover will typically be sparse to moderate.

Description and assessment: The floodplain swamp occurs along both sides of the river from the edge of the river to about 40 feet in elevation in management zones BR-02 and BR-03. While bald cypress was cut decades ago, it is still common. The species composition is quite diverse, with large individuals of many tree species being present. At the edge of the floodplain swamp community, several distinctive trees have been found. These include the Florida champion Atlantic white cedar. Exotic plants, especially mimosa (*Albizia julibrissin*), and Chinese privet (*Ligustrum sinense*), that were introduced upstream have spread down river into the edge of the floodplain swamp. Removal of these exotics needs to continue to insure they do not spread throughout the swamp. With periodic flooding, there will be a continuous source of infestation. There are scattered areas of bank erosion and soil compaction in the floodplain forest due to boats pulling up and parking in certain areas. These eroded areas need to be restored. The condition of the floodplain swamp is considered to vary from fair to good to excellent depending on the impact of erosion.

General management measures: The floodplain swamp will require moderate direct management. Monitoring for human caused bank erosion should continue and the streambank restored as appropriate. The south side of the river is the area of greatest concern. Because this community is primarily maintained by hydrology, hydrologic disturbances affecting the Blackwater River and seepage streams such as flow and level changes will affect this community within the park. Monitoring and treatment for new exotic plant infestations will continue.

River Floodplain Lake and Swamp Lake

Desired future condition: River floodplain lake and swamp lake communities can be characterized as shallow open-water zones, with or without floating or submerged aquatic plants, which are surrounded by basin swamp or floodplain swamp. Although water levels may fluctuate substantially, they will generally be permanent water bodies but may become dry during extreme droughts. Water flow will generally be non-existent to very slow moving. Existing vegetation can include American white waterlily (*Nymphaea odorata*), yellow pond-lily (*Nuphar lutes*) and duckweed (*Lemna* sp.). Emergent plants may also occur but the community should be considered a marsh if emergents dominate the water body. Substrates will be variable and may be comprised of peat, sand, alluvial clay or any combination of these. The water column for a swamp lake will typically be highly tannic with a moderate mineral content. Floodplain lake waters will generally be circumnuetral, hard or moderately hard water with high mineral content. Desired future conditions will include minimizing disturbance in adjacent uplands that may result in an increase in sedimentation.

Description and assessment: Floodplain lakes occur in old oxbows or between sandy levees of the previous river channel along both sides of the blackwater stream in management zones BR-02 and BR-03. The species composition is quite diverse,

with changes related to whether the lakes have more or less open water and whether they are relatively shallow or deep. The condition of the floodplain lakes is considered to vary from good to excellent depending on visitor use or erosion impacts.

General management measures: The river floodplain lakes will require little direct management. Monitoring for human caused erosion and new exotic plant infestations should continue and the appropriate BMP or treatment applied. Because this community is primarily maintained by hydrology, hydrologic disturbances affecting the Blackwater River and seepage streams such as flow and level changes will affect this community.

Sandhill

Desired future condition: The dominant pine of sandhill, is longleaf pine (*Pinus palustris*) and slash pine (*Pinus elliottii*). Herbaceous cover will be 80% or greater, typically of wiregrass (*Aristida beyrichiana*), and is less than 3 feet in height. In addition to groundcover and pines characteristics, there will be scattered individual trees, clumps, or ridges of onsite oak species (usually turkey oaks (*Quercus laevis*), sand post oak (*Quercus margaretta*), and bluejack oak (*Quercus incana*)). In old growth conditions, sand post oaks will commonly be 150-200 years old, and some turkey oaks will be over 100 years old. The optimal fire return interval for this community is 2-3 years.

Native offsite species such as laurel oak, water oak and sweetgum should be uncommon and occur primarily in the ecotone between sandhill and baygall or bottomland forest. Non-native herbaceous species and grasses should not be present. Gopher tortoise and associates should be present across the landscape.

Description and assessment: Unlike the upland pine forest north of the river, sandhill is characterized by coarse, well-drained, sandy soils dominated by wiregrass, sparkleberry, turkey oaks and widely scattered longleaf pines. Sandhill is located primarily in BR-01A with some habitat occurring across Deaton Bridge Road into BR-01B. Most of this community is considered to be in good condition where the community exists in a relatively undisturbed state. Much of the native groundcover species survived logging prior to park acquisition in the 19th and 20th centuries and regeneration has largely occurred with the frequent application of prescribed burns and natural regeneration. There are at least two logging tracks/lines visible on aerial photographs that need to be monitored for continued herbaceous regeneration. There is a clear delineation between this sandhill and baygall that line seepage streams and the bottomland forest along the river. Florida fox squirrel and gopher tortoise are known to occur in this community but the status of their populations has not been verified at this time.

General management measures: The entire sandhill habitat in the park is adjacent to similar conservation lands to the south. The western portion of this community (Zone BR-01B) is usually burned in conjunction with FWC's Hutton Unit lands south of the park. Burns should occur more often during the growing season, although

fires during the dormant season will also benefit the community. Prescribed fire is the primary method to be used to control densities of sandhill-occurring oak species, including turkey oak, sand post oak and bluejack oak. The sandhills need to be burned once every 2-3 years. Exotic plant species monitoring will continue in this community with aggressive treatment to follow detection of new infestations. Surveys should be conducted post-burn for gopher tortoise, Florida fox squirrel and gopher frog presence or absence at the appropriate season. Limited harvest areas for wiregrass could support small scale harvest for sandhill restoration on nearby conservation lands.

Seepage Stream

Desired future condition: Narrow, relatively short perennial or intermittent stream formed by percolating water from adjacent uplands. Water color will be clear to slightly colored, with a fairly slow flow rate and fairly constant temperature. Bottom substrate is typically sandy, but may include gravel or limestone.

Description and assessment: These streams run throughout the park and are a very important part of the character of the park. The streams are small, mostly clear, sandy bottomed, cool watercourses, with relatively sparse vegetation. They may disappear into the ground and resurface several meters downslope. The Hynote Branch is one example of a seepage stream and streams are largely in good to excellent condition except where firelines may intersect. As DRP management of this area continues, the community will be improved by control of surface erosion, and restoration of native groundcover in the adjacent upland pine communities.

General management measures: Here a nearly undisturbed network of seepage streams and associated intact slope forest exists. As DRP management of this region continues, the community will be improved by elimination of non-stabilized parking for a portion of the Florida National Scenic Trail (by redirecting to stabilized parking nearby), control of surface erosion near firelines and restoration of native groundcover in the adjacent upland pine communities. Fires should be allowed to enter the community's ecotone.

Upland Pine

Desired future condition: The dominant tree species will be longleaf pine. Herbaceous cover will be less than three feet in height and is comparable to sandhill, but has a higher density of understory shrubs and saplings. In addition to groundcover and pine characteristics noted previously, mature hardwood trees will be scattered throughout (usually southern red oak (*Quercus falcata*), bluejack oak, sand post oak, mockernut hickory (*Carya alba*), flowering dogwood (*Cornus florida*), and sassafras (*Sassafras albidum*). Pitcherplants and other carnivorous plant species are present and abundant in some areas. Common shrubs include coastal sweet- pepperbush (*Clethra alnifolia*), fetterbush, large gallberry (*Ilex coriacea*) and wax myrtle. The optimal fire return interval for this community is 2-3 years.

Description and assessment: Upland pine exists in zones BR-03, BR-04 and BR-05 north and east of the campground and river picnic area, running between the bottomland forest and seepage streams further east and west. The majority of the zone is a mix of mesic longleaf and slash pine. The RCW cluster JU02 is located herein. The understory is dominated by wiregrass and fire dependent, flowering plants. Three species of pitcherplants occur sporadically throughout the zone. Boat Ramp Road bisects the upland pine community. Cogon grass was spread along the roadsides by road maintenance work prior to paving. Paving has resulted in slowing the spread of this exotic and limiting erosion at the boat ramp at the end of the road. In conjunction with paving, FFS erected vehicle barricades to reduce impacts at the FFS primitive camping area adjacent to park lands on the east boundary. The FFS also assists with control of cogon grass along its road J28.

General management measures: For the most part this natural community is in burn maintenance requiring active fire management, exotic plant removal, and erosion monitoring. For the portions of upland pine that border seepage stream, fire will be allowed to burn into the seepage stream as needed for fire management and hardwood control. In both zones BR-04 and BR-05 mechanical treatment of the RCW cluster is indicated and timing of burns is communicated to the FWC biologist monitoring the cluster. The upper portion of this community is usually burned in conjunction with FFS forest lands north of the park. Aggressive exotic plant species removal will continue in this community. Defensible space will be maintained around all structures in areas managed with prescribed fire or at risk of wildfires. Natural regeneration of the area adjacent to the FFS primitive camping area should lead to a fairly rapid improvement of this previously impacted area.

Wet Flatwoods

Desired future condition: Dominant pines will be longleaf pine and slash pine. Bald cypress (*Taxodium ascendens*) may reach canopy in some locations. The canopy will be open, with pines being widely scattered and of at least three age classes. Native herbaceous cover is at least 80 percent. Pitcherplants (*Sarracenia psittacina, S. leucophylla* and *S. purpurea*) and other plants such as terrestrial orchids may be present and abundant in some areas. Common shrubs will include coastal sweet pepperbush, fetterbush (*Lyonia lucida*), large gallberry, titi (*Cyrilla racemiflora*), and wax myrtle (*Myrica cerifera*). The Optimal Fire Return Interval for this community is 2-4 years.

Description and assessment: Wet flatwoods are found in management zones BR-02 and BR-03. Longleaf pine and/or slash pine may have been cut out of the wet flatwoods in the late 19th century. This community borders bottomland forest along the river to the south and is interspersed with seepage streams. Restoration may require some planting of longleaf pine to diversify the forest. In addition, Japanese climbing fern, Japanese honeysuckle and Chinese wisteria are linearly distributed near the shop road and residence. After storm events in 2004 and 2005, downed trees throughout the park made it difficult to obtain burn authorizations. Portions of the community with an increasing number of hardwoods have been targeted with prescribed burns intended to promote longleaf pine and herbaceous plants while

reducing woody species and titi along seepage streams (Johnson 2011). Recent burns have provided visitors with easy viewing of white-top and purple pitcherplants, and swamp and Florida flame azaleas.

General management measures: Prescribed fire should be applied to this community every 2-4 years. This community has been disturbed in the past due to naval stores industry, timber harvests, exotic plant infestations and possibly by logging roads. Prescribed fire is effective at naturally thinning the stand but fire intensity should be heightened by switching burns to the growing season. Staff will continue to control invasive exotic plant species in or adjacent to developed areas of the park. Defensible space will be maintained around all structures in areas managed with prescribed fire or at risk of wildfires.

Altered Land Cover Types

Developed

Desired future condition: The developed areas within the park will be managed to minimize the effect of the developed areas on adjacent natural areas. Priority invasive plant species (Florida Exotic Plant Pest Council (FLEPPC) Category I and II species) will be removed from all developed areas. Other management measures include proper stormwater management and development guidelines that are compatible with prescribed fire management in adjacent natural areas.

Description and assessment: Developed areas consist of the ranger station, family campgrounds, picnic areas with pavilions and restrooms, shop area, resident and volunteer sites, drainfields and parking lots. Two paved FFS roads (Deaton Bridge Road and J28 bisect the park and lead to other areas of Blackwater River State Forest and an adjacent boat landing and primitive campground.

General management measures: Staff will continue to control invasive exotic plant species in developed areas of the park. Defensible space will be maintained around all structures in areas managed with prescribed fire or at risk of wildfires.

Imperiled Species

Imperiled species are those that are (1) tracked by FNAI as critically imperiled (G1, S1) or imperiled (G2, S2); or (2) listed by the U.S. Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FWC) or the Florida Department of Agriculture and Consumer Services (FDACS) as endangered, threatened or of special concern.

A pair of red-cockaded woodpeckers (*Picoides borealis*) (RCWs) was translocated by FWC to the park in 2008 after the recruitment cluster was enlarged from a single inactive cavity tree with the addition of 4 adjacent artificial cavity trees modified in 2007 by FWC staff. FWC biologists monitor and band birds as required under the USFWS Recovery Plan for the red-cockaded Woodpecker (2003). The first fledgling was banded in 2011. This cluster has expanded into an adjacent burn zone and the

total number of cavity trees stands at ten. As many as thirteen RCWs have been spotted feeding in the park near the cluster. There are two clusters nearby on adjacent conservation lands.

While reticulated flatwoods salamanders (*Ambystoma bishopi*) are not known to occur in the park, surveys of likely habitats are recommended as their presence may have an effect on management activities over the expected range. The FWS is willing to assist with survey efforts.

There are old records of gopher frogs (*Rana capito*) occurring in Blackwater River State Park. There are no recent records of gopher frogs; however, the habitat still exists, and the frog may be rediscovered at the park.

Gopher tortoises (*Gopherus polyphemus*) occur in small numbers in the sandhill community and are monitored in conjunction with prescribed burning, upon which they are dependent. The exact number of tortoises is not known at this time, but ongoing restoration of longleaf pine/wiregrass habitats positively impacts the population. One active subadult burrow was located in 2012. In 2014, the Joseph W. Jones Ecological Research Center, under contract with FWC, completed a pilot survey for gopher tortoises at the park using line transect distance sampling.

Eastern indigo snakes (*Drymarchon corais couperi*) have been documented in the past but none have been seen in this century. They would likely be a candidate for re-introduction as captive breeding, population viability analysis and spatially explicit modeling programs are approved and evaluated. These snakes are dependent on a healthy gopher tortoise population for a sheltered “refuge” from winter cold in the panhandle.

Several of the rare plant species in the park are either directly or indirectly dependent on frequent fire for their continued existence and benefit from proactive prescribed burning. Such species that occur in upland pine and associated seepage streams include sweet, white-top and purple pitcherplants and four orchids and two butterworts. It may necessary to develop a plan for population enhancement of sweet pitcherplant (*Sarracenia rubra*) as recent attempts to relocate this plant have proved unsuccessful. It is also very likely that long-term reproductive success of several plant species in the park, such as Florida flame azalea and mountain laurel, depend on maintaining ecotonal areas between upland pine or sandhill and bottomland forests. In northern states, fire is now known to play a role in maintenance of stands of mountain laurel; whether or not this is the case at the park is presently unknown.

Many of the imperiled butterflies also are directly or indirectly dependent on frequent fire for their continued existence and benefit from proactive prescribed burning. Such species that occur in upland pine and associated seepage streams include dusky and reversed roadside-skippers. A FWC grant provided a naturalist to identify and record butterflies on Blackwater in 2004 and 2006. Two new state records were established during this monitoring effort.

Table 2 contains a list of all known imperiled species within the park and identifies their status as defined by various entities. It also identifies the types of management actions that are currently being taken by the DRP staff or others, and identifies the current level of monitoring effort. The codes used under the column headings for management actions and monitoring level are defined following the table. Explanations for federal and state status as well as FNAI global and state rank are provided in Addendum 6.

Table 2. Imperiled Species Inventory

Common and Scientific Name	Imperiled Species Status				Management Actions	Monitoring Level
	FWC	USFWS	FDACS	FNAI		
PLANTS						
Grass pink *Calopogon pallidus*			LT		1,10	Tier 2
Rosebud orchid *Cleistes divaricata*			LT	G4,S1	1,10	Tier 2
Spoon-leaved sundew *Drosera intermedia*			LT	G5,SE	10	Tier 1
Mountain laurel *Kalmia latifolia*			LT	G5,S3	1,10	Tier 1
Southern red lily *Lilium catesbaei*			LT		1,10	Tier 2
Panhandle lily *Lilium iridollae*		LE	LE	G2,S2	1,10	Tier 2
Erect pricklypear *Opuntia stricta*			LT		1,10	Tier 1
Yellow butterwort *Pingulicula lutea*			LT		1,10	Tier 1
Southern butterwort *Pinguicula primuliflora*			LE	G3,G4, S3	1,10	Tier 1

Table 2. Imperiled Species Inventory						
Common and Scientific Name	**Imperiled Species Status**				**Management Actions**	**Monitoring Level**
	FWC	**USFWS**	**FDACS**	**FNAI**		
Yellow fringed orchid *Platanthera ciliarus*			LT		1,10	Tier 1
Snakemouth orchid *Pogonia ophioglssoides*			LT		1,10	Tier 1
Flame azalea *Rhododendron austrinum*			LE	G3,S3	1,9,10	Tier 1
White-top pitcherplant *Sarracenia leucophylla*			LE	G3,S3	1,2,10	Tier 1
Purple pitcherplant *Sarracenia purpurea*			LT		1,2,10	Tier 1
Parrot pitcherplant *Sarracenia psitticina*			LT		1,10	Tier 1
Sweet pitcherplant *Sarracenia rubra*		LT	LT	G4,S3	1,2,3,10	Tier 2
INVERTEBRATES						
Dusky roadside-skipper *Amblyscirtes alternata*				G2,G4, S1,S2	1,2,10	Tier 1
Reversed roadside-skipper *Amblyscirtes reversa*				G3,G4, S1	1,2,10	Tier 1

Table 2. Imperiled Species Inventory						
Common and Scientific Name	**Imperiled Species Status**				**Management Actions**	**Monitoring Level**
	FWC	**USFWS**	**FDACS**	**FNAI**		
Baker's pocket gopher aphodius beetle *Aphodius bakeri*				G3,G4, S2	1,10	Tier 1
Broad-sided pocket gopher aphodius beetle *Aphodius platypleuris*				G3G4, S2	1,10	Tier 1
Hessel's hairstreak *Callophrys hesseli*				G3,G4, S2	Sensitive Data	Sensitive Data
Peter's cheumatopsyche caddisfly *Cheumatopsyche petersi*				G3,S2	10	Tier 1
Florida pearly eye *Enodia portlandia floralee*				G4,TU, S2,S3	1,10	Tier 1
Mottle duskywing *Erynnis martialis*				G3,S1	1,10	Tier 1
Blue sand-river mayfly *Homoeoneuria dolani*				G3,G4, S1, S2	10	Tier 1
Elerob's microcaddisfly *Oxyethira elerobi*				G3,G4, S2,S3	10	Tier 1
Bronze clubtail *Styrulus townesi*				G3, S1	10	Tier 1

Table 2. Imperiled Species Inventory						
Common and Scientific Name	**Imperiled Species Status**				**Management Actions**	**Monitoring Level**
	FWC	**USFWS**	**FDACS**	**FNAI**		
AMPHIBIANS						
Gopher frog *Lithobates capito*	SSC			G4,S4 S3	1,2,3,10	Tier 1
REPTILES						
American alligator *Alligator mississippiensis*	FT(S/A)	LT(S/A)		G5, S4	10	Tier 1
Eastern indigo snake *Drymarchon corais coupen*	FT	LT		G3,S3	1,2,3,8,10	Tier 2
Gopher tortoise *Gopherus polyphemus*	ST			G3,S3	1,2,3, 6,7,10	Tier 3
Southern hognose snake *Heterodon simus*	N	N		G2,S2	10	Tier 1
Alligator snapping turtle *Macroclemys temmincki*	SSC	LE		G4T4, S3?	10	Tier 1
Common kingsnake *Lampropeltis getula*	N	N		G5, S2,S3		Tier 1
Mississippi green water snake *Nerodia cyclopion*	N	N		G5,S1		Tier 1
BIRDS						

Table 2. Imperiled Species Inventory						
Common and Scientific Name	**Imperiled Species Status**				**Management Actions**	**Monitoring Level**
	FWC	**USFWS**	**FDACS**	**FNAI**		
Southeastern American kestrel *Falco sparverius paulus*	ST	LT		G5,T4, S3	1,10	Tier1
Little blue heron *Egretta caerulea*	SSC	N		G5,S4	10	Tier 1
Tricolored heron *Egretta tricolor*	SSC	N		G5,S4	10	Tier 1
Snowy egret *Egretta thula*	SSC	N		G5,S3	10	Tier 1
Red-cockaded woodpecker *Picoides borealis*	FE	LE		G3, S2	1,2,3,5,7, 10	Tier 3
MAMMALS						
Florida black bear *Ursus americanus floridanus*	N	N		G2,S2	10,13	Tier 1

Management Actions:

1. Prescribed Fire
2. Exotic Plant Removal
3. Population Translocation/Augmentation/Restocking
4. Hydrological Maintenance/Restoration
5. Nest Boxes/Artificial Cavities
6. Hardwood Removal
7. Mechanical Treatment
8. Predator Control
9. Erosion Control
10. Protection from visitor impacts (establish buffers)/law enforcement
11. Decoys (shorebirds)
12. Vegetation planting
13. Outreach and Education
14. Other

Monitoring Level:

Tier 1. Non-Targeted Observation/Documentation: includes documentation of species presence through casual/passive observation during routine park activities (i.e. not conducting species-specific searches). Documentation may be in the form of *Wildlife Observation Forms*, or other district specific methods used to communicate observations.

Tier 2. Targeted Presence/Absence: includes monitoring methods/activities that are specifically intended to document presence/absence of a particular species or suite of species.

Tier 3. Population Estimate/Index: an approximation of the true population size or population index based on a widely accepted method of sampling.
Tier 4. Population Census: A complete count of an entire population with demographic analysis, including mortality, reproduction, emigration, and immigration.
Tier 5. Other: may include habitat assessments for a particular species or suite of species or any other specific methods used as indicators to gather information about a particular species.

Detailed management goals, objectives and actions for imperiled species in this park are discussed in the Resource Management Program section of this component and the Implementation Component of this plan.

Exotic and Nuisance Species

Exotic species are plants or animals not native to Florida. Invasive exotic species are able to out-compete, displace or destroy native species and their habitats, often because they have been released from the natural controls of their native range, such as diseases, predatory insects, etc. If left unchecked, invasive exotic plants and animals alter the character, productivity and conservation values of the natural areas they invade.

The upland pine and wet flatwoods, floodplain swamp and bottomland forest can be subject to the aggressive spread of exotic plants. Where highly competitive exotic plants have become established, annual removal plans will be developed to eliminate them from the natural communities they have invaded. Several highly invasive exotic plants are currently being treated including cogon grass, Japanese climbing fern and Japanese honeysuckle. As listed in the species list, an additional Category I (Chinese privet) and a Category II species (Mimosa) have occurred in the park. They were not found during the survey of management zones this year but the infestation area will be monitored for recurrence.

The species most prevalent on the property is cogon grass. It occurs in dozens of acres within the upland pine and wet flatwoods. Much of the cogongrass infestation is the result of contaminated equipment being used for road grading and mowing within the park. Numerous dense patches of cogon grass both north and south of the boat ramp road have been treated and retreated by both park and FFS staff. Park staff currently revisits existing patches as resources allow and monitors for new occurrences. Monitoring and treatment efforts for invasive exotic plant species are ongoing. Efforts are underway to GPS and map all known locations of exotic plants in the park. Since 2004, 34 acres of invasive exotic plants have been treated at the park.

All the exotic plant species are a threat to the integrity of the unit's natural communities and are in conflict with the DRP goal of preserving and maintaining examples of the natural Florida. Park staff has successfully obtained several grants to treat exotic plants; these efforts will continue.

Table 3 contains a list of the FLEPPC Category I and II invasive, exotic plant species found within the park (FLEPPC 2013). The table also identifies relative distribution for each species and the management zones in which they are known to occur. An

explanation of the codes is provided following the table. For an inventory of all exotic species found within the park, see Addendum 5.

Table 3. Inventory of FLEPPC Category I and II Exotic Plant Species

Common and Scientific Name	FLEPPC Category	Distribution	Management Zone (s)
PLANTS			
Mimosa *Albizia julibrissin*	I	0	BR-01B
Cogon grass *Imperata cylindrica*	I	2	BR-03
		6	BR-05, BR-04
Chinese privet *Ligustrum sinense*	I	0	BR-03, BR-01A
Japanese honeysuckle *Lonicera japonica*	I	2	BR-02
Japanese climbing fern *Lygodium japonicum*	I	2	BR-04, BR-03, BR-02
Chinese wisteria *Wisteria sinensis*	II	0	BR-01A
		2	BR-02, BR-03

Distribution Categories:

0 No current infestation: All known sites have been treated and no plants are currently evident.
1 Single plant or clump: One individual plant or one small clump of a single species.
2 Scattered plants or clumps: Multiple individual plants or small clumps of a single species scattered within the gross area infested.
3 Scattered dense patches: Dense patches of a single species scattered within the gross area infested.
4 Dominant cover: Multiple plants or clumps of a single species that occupy a majority of the gross area infested.
5 Dense monoculture: Generally, a dense stand of a single dominant species that not only occupies more than a majority of the gross area infested, but also covers/excludes other plants.
6 Linearly scattered: Plants or clumps of a single species generally scattered along a linear feature, such as a road, trail, property line, ditch, ridge, slough, etc. within the gross area infested.

Exotic animal species include non-native wildlife species, free ranging domesticated pets or livestock, and feral animals. Because of the negative impacts to natural systems attributed to exotic animals, the DRP follows standard protocols to actively remove exotic animals from state parks, with priority being given to those species, such as feral hogs, that cause the greatest ecological damage.

In some cases, native wildlife may also pose management problems or nuisances within state parks. A nuisance animal is an individual native animal whose presence or activities create special management problems. Examples of animal species from which nuisance cases may arise include raccoons, grey squirrels, venomous snakes, alligators, and black bears that are in public areas. Nuisance animals are dealt with

on a case-by-case basis in accordance with the DRP's Nuisance and Exotic Animal Removal Standard.

Nine-banded armadillos (*Dasypus novemcinctus*) are sometimes found in the park. Armadillos rooting can disrupt small areas of vegetation, decimate arthropod communities, may prey on small snakes and ground nesting bird eggs and compete with native wildlife species for food resources. Evidence of disturbance can be found throughout the park. Park staff currently remove armadillo. Park staff monitors for the animals and their ground disturbance. Since 2004, park staff efforts have resulted in the removal of 19 nuisance and exotic animals.

Coyotes (*Canis latrans*) have been occasionally seen on the property. Direct impacts to the park resources from these animals have not been documented, though these species compete with native species for resources.

Red imported fire ant mounds should be treated prior to spring mating flights with an approved pesticide (bait) in recreational areas and/or areas important to ground nesting birds, snakes and rodents.

Detailed management goals, objectives and actions for management of invasive exotic plants and exotic animals are discussed in the Resource Management Program section of this component.

Special Natural Features

The primary attraction is Blackwater River itself, which has been called one of the purest rivers in the country, has a shifting sand bottom and is still in nearly unmodified state for almost its entire length. The swiftly flowing tea-dark river curves around brilliant white sandy banks and beaches. Periodic flooding inundates the low-lying areas of the floodplain. This wild and natural river, which is protected in the park and by the 189,384 acre state forest that surrounds much of it, draws attention from scientists studying the insect life on its unusual bottom.

Cultural Resources

This section addresses the cultural resources present in the park that may include archaeological sites, historic buildings and structures, cultural landscapes and collections. The Florida Department of State (FDOS) maintains the master inventory of such resources through the Florida Master Site File (FMSF). State law requires that all state agencies locate, inventory and evaluate cultural resources that appear to be eligible for listing in the National Register of Historic Places. Addendum 7 contains the FDOS, Division of Historical Resources (DHR) management procedures for archaeological and historical sites and properties on state-owned or controlled properties; the criteria used for evaluating eligibility for listing in the National Register of Historic Places, and the Secretary of Interior's definitions for the various preservation treatments (restoration, rehabilitation, stabilization and preservation). For the purposes of this plan, significant archaeological site, significant structure and significant landscape means those cultural resources listed or eligible for listing

in the National Register of Historic Places. The terms archaeological site, historic structure or historic landscape refer to all resources that will become 50 years old during the term of this plan.

Condition Assessment

Evaluating the condition of cultural resources is accomplished using a three-part evaluation scale, expressed as good, fair and poor. These terms describe the present condition, rather than comparing what exists to the ideal condition. 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 assessment is usually a cause for concern. Poor describes an unstable condition where there is palpable, accelerating decline, and physical integrity is being compromised quickly. A resource in poor condition suffers obvious declines in physical integrity from year to year. A poor condition suggests immediate action is needed to reestablish physical stability.

Level of Significance

Applying the criteria for listing in the National Register of Historic Places involves the use of contexts as well as an evaluation of integrity of the site. A cultural resource's significance derives from its historical, architectural, ethnographic or archaeological context. Evaluation of cultural resources will result in a designation of NRL (National Register or National Landmark Listed or located in an NR district), NR (National Register eligible), NE (not evaluated) or NS (not significant) as indicated in the table at the end of this section.

There are no criteria for use in determining the significance of collections or archival material. Usually, significance of a collection is based on what or whom it may represent. For instance, a collection of furniture from a single family and a particular era in connection with a significant historic site would be considered highly significant. In the same way, a high quality collection of artifacts from a significant archaeological site would be of important significance. A large herbarium collected from a specific park over many decades could be valuable to resource management efforts. Archival records are most significant as a research source. Any records depicting critical events in the park's history, including construction and resource management efforts, would all be significant.

The following is a summary of the FMSF inventory. In addition, this inventory contains the evaluation of significance.

<u>Prehistoric and Historic Archaeological Sites</u>

Desired future condition: All significant archaeological sites within the park that represent Florida's cultural periods or significant historic events or persons are

preserved in good condition in perpetuity, protected from physical threats and interpreted to the public.

Description: Archaeological evidence from the park and nearby sites demonstrates prehistoric Native American habitation near the area's rivers and seepage streams. It is well documented that early pioneers migrated to the area from Georgia and Alabama in the second quarter of the 19th century, although no associated archaeological sites have been confirmed in the park yet. The park contains two distinct kinds of archaeological sites. The first is a prehistoric Native American scatter site and the other site's surface objects are associated with the Historic period, perhaps associated with 19th century period of American Settlement.

An archaeological predictive model has been completed for the park (Collins et. al. 2012). The model predicts areas of high, medium, and low probability for archaeological sites. The model indicates that approximately 132 acres of park property is designated as high sensitivity. Most of this area is in the sandhill community on the south side of the Blackwater River. Other high sensitivity zones are located in the Deaton Bridge Day Use, Campground, and the Boardwalk Day Use Area on the north side of the river. The model identified 146 acres of medium sensitivity areas, most of which are located in the uplands on the north side of the park.

Condition assessment: The two archaeological sites in the park are in fair condition. The site next to water suffers from erosion; much of this is associated with natural events such as hurricanes. Construction in adjacent conservation lands has impacted a portion of the site. The other site is adjacent to motor vehicle use, may have been impacted by park facility development and suffers from similar erosional events. No looting has been documented since the last planning period. The historic site would benefit from management action to control erosion and prevent degradation from vehicular use patterns.

General management measures: Preservation measures to be implemented include protection from damage from resource management, natural causes, construction or human damage including looting. Stabilization techniques include the use of protective vegetation, or other methods to prevent erosion, removal of large trees or burial of the site. A recommended treatment will be indicated in the table for each site listed as NRL, NR or NE.

Historic Structures

Desired future condition: All significant historic structures and landscapes that represent Florida's cultural periods or significant historic events or persons are preserved in good condition in perpetuity, protected from physical threats and interpreted to the public.

Description: There are no historic structures in Blackwater River State Park. Seven structures representing early park support facilities are slated for demolition before reaching the fifty year threshold for the historic designation.

Resource Group SR2166 consists of the Blackwater Turpentine Road. It was recently identified in the southeast corner of the park during the University of South Florida archaeological predictive modeling project (Collins et. al. 2012). The resource group consists of four linear segments that come together at an elevated area adjacent to the Blackwater River. It is probable that these represent historic trails or roads associated with turpentine activities on the property during the late 19th and early 20th century.

Condition Assessment: The roads are in poor condition. Only portions of these linear features are recognizable.

General Management Measures: Preservation measures to be implemented include protection from damage from resource management, natural causes, and construction. Stabilization techniques include the use of protective vegetation or other methods to prevent erosion.

Collections

Desired future condition: All historic, natural history and archaeological objects within the park that represent Florida's cultural periods, significant historic events or persons, or natural history specimens are preserved in good condition in perpetuity, protected from physical threats and interpreted to the public.

Description: Blackwater River State Park maintains a collection of historic, natural history and archaeological objects. These items include various types of artifacts from the turpentine era (e.g. herty cups, turpentine gutters, catface pine log), pine needle basketry, animal taxidermy (fox squirrel, coral snake), turtle shells (gopher tortoise, alligator snapper, Florida cooter), framed certificates (state natural feature registration, Atlantic white cedar Florida Champion Tree), and photographs.

General Management Measures:
The park staff needs to develop a Scope of Collections Statement that contains a statement of interpretive themes. This will serve to guide the park's interpretative program and determine which items should be included in a collection. Items should only be accepted for the collection if they fit within the goals of the Scope of Collection and the park's interpretive themes.

Detailed management goals, objectives and actions for the management of cultural resources in this park are discussed in the Cultural Resource Management Program section of this component. Table 4 contains the name, reference number, culture or period, and brief description of all the cultural sites within the park that are listed in the Florida Master Site File. The table also summarizes each site's level of significance, existing condition and recommended management treatment. An explanation of the codes is provided following the table.

Table 4: Cultural Sites Listed in the Florida Master Site File					
Site Name and FMSF #	**Culture / Period**	**Description**	**Significance**	**Condition**	**Treatment**
SR827 NN-(Blackwater River Borrow Pit)	Prehistoric Native American/ unknown	Archaeological Site	NE	P	P
SR1915-Shop	Historic or European/unknown	Archaeological Site	NE	P	ST
SR02166 Blackwater Turpentine Roads	Late 19th century	Resource Group	NE	P	ST

Significance:

NRL National Register listed
NR National Register eligible
NE not evaluated
NS not significant

Condition

G Good
F Fair
P Poor
NA Not accessible
NE Not evaluated

Recommended Treatment:

RS Restoration
RH Rehabilitation
ST Stabilization
P Preservation
R Removal
N/A Not applicable

Resource Management Program

Management Goals, Objectives and Actions

Measurable objectives and actions have been identified for each of the DRP's management goals for Blackwater River State Park. Please refer to the Implementation Schedule and Cost Estimates in the Implementation Component of this plan for a consolidated spreadsheet of the recommended actions, measures of progress, target year for completion and estimated costs to fulfill the management goals and objectives of this park.

While, the DRP utilizes the ten-year management plan to serve as the basic statement of policy and future direction for each park, a number of annual work plans provide more specific guidance for the DRP staff to accomplish many of the resource management goals and objectives of the park. Where such detailed planning is appropriate to the character and scale of the park's natural resources, annual work plans are developed for prescribed fire management, exotic plant management and imperiled species management. Annual or longer- term work plans are developed for natural community restoration and hydrological restoration. The work plans provide the DRP with crucial flexibility in its efforts to generate and implement adaptive resource management practices in the state park system.

The work plans are reviewed and updated annually. Through this process, the DRP's resource management strategies are systematically evaluated to determine their effectiveness. The process and the information collected is used to refine techniques, methodologies and strategies, and ensures that each park's prescribed management actions are monitored and reported as required by Sections 253.034 and 259.037, Florida Statutes.

The goals, objectives and actions identified in this management plan will serve as the basis for developing annual work plans for the park. The ten-year management plan is based on conditions that exist at the time the plan is developed, and the annual work provide the flexibility needed to adapt to future conditions as they change during the ten-year management planning cycle. As the park's annual work plans are implemented through the ten-year cycle, it may become necessary to adjust the management plan's priority schedules and cost estimates to reflect these changing conditions.

Natural Resource Management

Hydrological Management

Goal: Protect water quality and quantity in the park, restore hydrology to the extent feasible and maintain the restored condition.

The natural hydrology of most state parks has been impaired prior to acquisition to one degree or another. Florida's native habitats are precisely adapted to natural drainage patterns and seasonal water level fluctuations, and variations in these factors frequently determine the types of natural communities that occur on a particular site. Even minor changes to natural hydrology can result in the loss of plant and animal species from a landscape. Restoring state park lands to original natural conditions often depends on returning natural hydrological processes and conditions to the park. This is done primarily by filling or plugging ditches, removing obstructions to surface water "sheet flow," installing culverts or low-water crossings on roads, and installing water control structures to manage water levels.

Objective: Conduct/obtain an assessment of the park's hydrological restoration needs.

Action 1 Develop a sequential and prioritized hydrological restoration plan.

Action 2 Conduct a hydrological study of the park's current surface features including ditches.

In some instances, roads, firelanes and routes from logging operations have altered natural drainage. As funds become available a hydrological study of the park's current surface water features including any ditches needs to be conducted. Historical sheet flow of the property needs to be determined. The feasibility of restoration needs to be determined and the impact of the restoration evaluated. Negative impacts, such as flooding developed areas should be assessed and mitigated for if possible. A sequential and prioritized hydrological restoration plan should then be developed and used as a tool to aid park management in the restoration of the park's hydrology.

Objective: Restore natural hydrological conditions and functions to approximately 1 acre of seepage stream natural community.

Action 1 Install one low-water crossing.

Install one low-water crossing (LWC) in zone BR-02 along the northern boundary to reduce perimeter break impacts using standards developed for LWCs comprised of geo-textile web and inert material such as granite. Installation should reduce damage to the stream where crossing is required for fire control without substantially altering surface drainage. Park staff will consult with the water management district and DEP to obtain required permits for work in wetlands. A well-proven standard design has been effective at multiple District 1 parks and this plan will be submitted during consultation with DEP and/or the Army Corps of Engineers (ACE) as indicated.

Natural Communities Management

Goal: Restore and maintain the natural communities/habitats of the park.

As discussed above, the DRP practices natural systems management. In most cases, this entails returning fire to its natural role in fire-dependent natural communities. Other methods to implement this goal include large-scale restoration projects as well as smaller scale natural communities' improvements. Following are the natural community management objectives and actions recommended for the state park.

<u>Prescribed Fire Management</u>

Prescribed fire is used to mimic natural lightning-set fires, which are one of the primary natural forces that shaped Florida's ecosystem. Prescribed burning increases the abundance and health of many wildlife species. A large number of

Florida's imperiled species of plants and animals are dependent on periodic fire for their continued existence. Fire-dependent natural communities gradually accumulate flammable vegetation; therefore, prescribed fire reduces wildfire hazards by reducing these wild land fuels.

All prescribed burns in the Florida state park system are conducted with authorization from the FFS. Wildfire suppression activities in the park are coordinated with the FFS.

Objective: Within 10 years, have 391 acres of the park maintained within the optimum fire return interval.

Action 1 Develop/update annual burn plan.
Action 2 Manage fire dependent communities by burning between 116 and 191 acres annually, as identified in the annual burn plan.

Table 5 contains a list of all fire-dependent natural communities found within the park, their associated acreage and optimal fire return interval, and the annual average target for acres to be burned.

Table 5. Prescribed Fire Management

Natural Community	**Acres**	**Optimal Fire Return Interval (Years)**
Sandhill/Baygall	159.3	2-3
Upland Pine/Basin Swamp/Seepage stream	143.1	2-3
Wet Flatwoods/Seepage stream	91.4	2-3
Annual Target Acreage*	116 - 196	

*Annual Target Acreage Range is based on the fire return interval assigned to each burn zone. Each burn zone may include multiple natural communities.

The park is partitioned into management zones including those designated as burn zones (see Management Zones Table and Map). Prescribed fire is planned for each burn zone on the appropriate interval. The park's burn plan is updated annually because fire management is a dynamic process. To provide adaptive responses to changing conditions, fire management requires careful planning based on annual and very specific burn objectives. Each annual burn plan is developed to support and implement the broader objectives and actions outlined in this ten-year management plan.

Blackwater River State Park initially had difficulty achieving annual targeted burn acreage after the tropical storm seasons of 2004 and 2005. Deadwood and downed trees as well as impacts to park infrastructure and structures against prescribed burning due to high fuel loading under drought conditions meant dealing with older age class shrubby hardwoods when prescribed burns were again implemented. All management zones are now in maintenance rotation however, seasonality of burn and fire intensity will need to be evaluated in order to achieve resource management objectives in BR-02 and BR-01a and BR-01B.

The goal of the park's burn program is to expand all burn zones to their presumed original area of fire-type community. In many units, fire is permitted to carry naturally from upland habitats into hardwood-dominated bottoms, and extinguish naturally due to lack of fuel or mesic/hydric conditions.

The annual targeted burn acreage is 116 – 196 acres per year. Burning is accomplished in the park with the assistance of staff from other state parks and cooperating agencies. Additional park service staff comes from adjoining counties and from the Gulf Coastal Plains Ecosystem Partnership (GCPEP) partners to assist or conduct burns in conjunction with park lands. Fire zone preparation is largely conducted in-house but the Ecosystem Support Team (EST) has assisted when felling trees, or by providing heavy equipment operators to augment park staff. Burns are sometimes conducted in conjunction with neighboring conservation lands (FFS & FWC) in order to burn larger-contiguous landscapes, allowing fireline prep to function as internal lines so that erosional impacts are minimized.
Hardwood density has been reduced, herbaceous plant growth has increased and desired wildlife species have increased and moved into new areas. The prescribed burning in combination with other restoration efforts has halted the progression of succession in many of the upland areas. Deer, turkey and quail have cover for protection; gopher tortoise and Florida fox squirrel have open areas to move from site to site. The regeneration of ground vegetation throughout uplands allows gopher tortoises to forage on lush grasses and other plants needed for food. Monitoring is indicated to more clearly define population densities and the presence/absence of other commensals, such as eastern indigo snakes and gopher frogs.

Annually, park staff meets with district staff to evaluate the park's burn program and plan for the next year. Burn prescriptions are updated to reflect changes in ground vegetation and large scale events that may influence planning for the next cycle. The park also provides this projected burn plan in map and shape file format to FFS and the Department of Defense (DOD) prior to a joint training. In this way, smoke plumes from nearby prescribed fires can be adjusted for by Air Operations I limiting impacts to NAS Whiting Field, a primary pilot training base and for Harold OLF, an Outlying Field due south of the park.

In order to track fire management activities, the DRP maintains a statewide burn database. The database allows staff to track various aspects of each park's fire management program including individual burn zone histories and fire return intervals, staff training/ experience, backlog, if burn objectives have been met, etc.

The database is also used for annual burn planning which allows the DRP to document fire management goals and objectives on an annual basis. Each quarter the database is updated and reports are produced that track progress towards meeting annual burn objectives.

Natural Communities Restoration

In some cases, the reintroduction and maintenance of natural processes is not enough to reach the natural community desired future conditions in the park, and active restoration programs are required. Restoration of altered natural communities to healthy, fully functioning natural landscapes often requires substantial efforts that may include mechanical treatment of vegetation or soils and reintroduction or augmentation of native plants and animals. For the purposes of this management plan, restoration is defined as the process of assisting the recovery and natural functioning of degraded natural communities to desired future condition, including the re-establishment of biodiversity, ecological processes, vegetation structure and physical characters.

Examples that would qualify as natural communities' restoration, requiring annual restoration plans, include large mitigation projects, large-scale hardwood removal and timbering activities, roller-chopping and other large-scale vegetative modifications. The key concept is that restoration projects will go beyond management activities routinely done as standard operating procedures such as routine mowing, the reintroduction of fire as a natural process, spot treatments of exotic plants, and small-scale vegetation management.

Currently there is not a need for natural community restoration at this park. All natural community enhancements can be accomplished with routine resource management practices such as prescribed burning.

Natural Communities Improvement

Improvements are similar to restoration but on a smaller, less intense scale. This typically includes small-scale vegetative management activities or minor habitat manipulation. Following are the natural community/habitat improvement actions recommended at the park.

Objective: Conduct habitat/natural community improvement activities on 3 acres of bottomland forest and blackwater stream communities.

Action 1 Develop improvement plan.
Action 2 Implement improvement plan.

Develop engineering for root wad application and streamside stabilization in BR-01A and BR-01B where visitor use patterns have accelerated streamside erosion. Subsequent to initial project completion monitor target areas for re-vegetation and bank stabilization. In the past, canoe outtakes posed a serious threat to the shoreline of the river west of Deaton Bridge, eroding substrate from the floodplain and banks along the river. With the redirection of visitor use to the north side of the

river, damage has decreased; however, boats and visitors use are still accelerating erosion in several areas where they stop and pull up to the bank along the river. Park staff should work with law enforcement to insure they are aware of the threat to the resources due imprudent use along the river. Park staff should monitor known sites of shore erosion and document new sites as necessary. As funds become available it may be necessary to stabilize and replant eroded river shoreline areas.

Park staff have been working with Three Rivers RC&D, DEP and NRCS to develop a strategy for streamside stabilization and restoration. All applicable state rules and statutes will be followed where necessary to effectively restore erosion of the Blackwater River's streambank within park boundaries.

Objective: Conduct natural community/habitat improvement activities on 45 acres of baygall community.

Action 1 Evaluate biomass fuel reduction.
Action 2 Implement biomass fuel reduction.

As discussed above, the DRP practices natural systems management. In most cases, this entails returning fire to its natural role in both fire-dependent natural communities and adjacent communities where fire plays a role in establishing edge effect. Other methods to implement this goal include smaller scale natural community improvements. Evaluate condition of two areas of baygall in zones BR-01B and BR-04 for imperiled species composition, discuss with district and consult with FFS about the efficacy and desirability of implementing biomass fuel reduction in these areas. Implement if community restoration is enhanced over continuing role of prescribed burns.

Imperiled Species Management

Goal: Maintain, improve or restore imperiled species populations and habitats in the park.

The DRP strives to maintain and restore viable populations of imperiled plant and animal species primarily by implementing effective management of natural systems. Single species management is appropriate in state parks when the maintenance, recovery or restoration of a species or population is complicated due to constraints associated with long-term restoration efforts, unnaturally high mortality or insufficient habitat. Single species management should be compatible with the maintenance and restoration of natural processes, and should not imperil other native species or seriously compromise park values.

In the preparation of this management plan, the DRP staff consulted with staff of the FWC's Imperiled Species Management or that agency's Regional Biologist and other appropriate federal, state and local agencies for assistance in developing imperiled animal species management objectives and actions. Likewise, for imperiled plant species, the DRP staff consulted with FDACS. Data collected by the USFWS, FWC, FDACS and FNAI as part of their ongoing research and monitoring programs will be reviewed by park staff periodically to inform management of decisions that may have an impact on imperiled species at the park.

Ongoing inventory and monitoring of imperiled species in the state park system is necessary to meet the DRP's mission. Long-term monitoring is also essential to ensure the effectiveness of resource management programs. Monitoring efforts must be prioritized so that the data collected provides information that can be used to improve or confirm the effectiveness of management actions on conservation priorities. Monitoring intensity must at least be at a level that provides the minimum data needed to make informed decisions to meet conservation goals. Not all imperiled species require intensive monitoring efforts on a regular interval. Priority must be given to those species that can provide valuable data to guide adaptive management practices. Those species selected for specific management action and those that will provide management guidance through regular monitoring are addressed in the objectives below.

Objective: Continue to compile and update baseline imperiled species occurrence inventory lists for plants and animals.

Action 1 Update the species list for the park.

DRP staff will continue to update the imperiled species inventory list for the park. Partnerships with other agencies, organizations and academic institutions to assist in the inventory will be developed when possible.

Objective: Monitor and document four selected imperiled animal species in the park.

Action 1 Develop monitoring protocols for gopher frog and eastern indigo snake.

Action 2 Implement monitoring protocols for those species listed above and red-cockaded woodpecker and gopher tortoise.

Gopher tortoises will be monitored in occupied habitats, in conjunction with prescribed burns and restoration activities that are completed each year. As sandhill habitat is maintained, it may become possible to re-stock gopher tortoises into areas where they have been extirpated. These actions will be planned in accordance with the current FWC Gopher Tortoise Management Plan and the DRP Gopher Tortoise Management and Restocking Standard. Gopher tortoise surveys will follow the FWC statewide protocol for monitoring gopher tortoises, using the line transect distance sampling method developed by Smith et.al. (2009).

Red-cockaded woodpeckers (RCWs) were re-introduced into the park in 2008 in accordance with the previous plan. The lone existing cavity was joined to four longleaf pines adapted with artificial cavities to form recruitment cluster JU02. The cluster is monitored for the park by FWC biologists in accordance with the FWS' Recovery Plan for the Red-cockaded Woodpecker (2003) These birds are rarely visible, except during the breeding season or periods of territorial defense. Staff sighted as many as thirteen individuals feeding near the cluster in 2010. The cluster has expanded to include an additional five cavity trees. There are two clusters nearby within conservation lands east and west of the park.

Two commensals of a keystone species, the gopher tortoise, have not been documented on the park in more than a decade. Gopher frogs (*Rana capito*) and eastern indigo snake (*Drymarchon corais coupen)* were known to occur on park lands shortly after the park was established. Eastern indigo snakes require deep burrows for refuge during the relatively cold winters in the panhandle. Gopher frogs also use the burrows which maintain a fairly constant temperature and humidity throughout the year and protect this species from drying out. The respective recovery plans will be used to develop protocols for monitoring.

Professional biologists are assisting the park in monitoring additional imperiled animal species. As the number of plant and animal species known from the park increases due to monitoring efforts, so does the number of imperiled species, which currently includes more than 42 species listed by either state and/or federal agencies. Individual treatment of management strategies for each species is not included here for space considerations. Each species is tracked and monitored to the extent possible. Whenever possible, assistance is sought to better survey and monitor as well as improve our knowledge of each of these listed species.

Objective: Monitor and document 2 selected imperiled plant species in the park.

Action 1	Develop monitoring protocols for sweet pitcherplant.
Action 2	Implement monitoring protocols for the one listed above and panhandle lily.

Panhandle lily (*Lilium iridollae*) are found in BR-03 and BR-04 management zones of the park. It is likely that recent hardwood control in zone BR-05 that additional plants may allow additional plants to be located. Staff will continue to monitor for occurrences during the appropriate season in conjunction with prescribed fire application. Sweet pitcherplant (*Sarracenia rubra*) has not been relocated on the park since 2004 although they historically were known to occur within park lands (Johnson 2001).

Objective: Restore priority imperiled species populations within the park.

Action 1	Augment the population of sweet pitcherplant with seed grown plants.
Action 2	Reestablish a population of gopher frogs.
Action 3	Reestablish a population of eastern indigo snakes

The park should develop specific management plans for the highest priority imperiled species likely to be impacted by management actions. Management actions such as prescribed burning and streamside restoration and hydrological restorations are expected to benefit species such as the red-cockaded woodpecker and sweet pitcherplant. If the latter population does not rebound from appropriate application of prescribed fire, it may become necessary to augment populations with plants grown from seed sourced to the watershed of the Blackwater River.

Gopher tortoises are present in the park, and appear to be emigrating from adjacent areas of the Blackwater River State Forest onto park lands. In 2007 monitoring in the sandhill community revealed only inactive burrows, in the spring of 2012 one sub-adult active burrow was located near the southern boundary of the park. The sandhill/ baygall improvement project currently planned should provide expanded gopher tortoise habitat on the park. Assistance to monitor the current number of tortoises and population dynamics should be sought from nearby colleges and universities, environmental organizations, etc.

If gopher frogs (*Rana capito*) and eastern indigo snake (*Drymarchon corais coupen)* are not relocated on the park after monitoring for them, consideration will be given to re-establishing populations in consultation with division, district, FWS and FWC staff following the respective FWS Recovery Plan guidelines.

Exotic Species Management

Goal: Remove exotic and invasive plants and animals from the park and conduct needed maintenance control.

The DRP actively removes invasive exotic species from state parks, with priority being given to those causing the ecological damage. Removal techniques may include mechanical treatment, herbicides or biocontrol agents.

Objective: Annually treat 7 acres of exotic plant species in the park.

Action 1	Annually develop/update exotic plant management work plan.
Action 2	Implement annual work plan by treating seven acres, annually, and continuing maintenance and follow-up treatments as needed.

An exotic plant removal plan is recommended that maps infested areas by management zone and determines priorities for treatment. The plan will provide guidance for subsequent annual work plans. The number of acres of exotic plants treated per year is likely to vary widely depending on the status of current infestations and any new infestations that might arise during the life of this management plan. Cogon grass will continue to be treated promptly and repeatedly. Though many of the large cogon grass patches have been reduced by herbicide treatments to smaller more manageable areas, efforts should remain ongoing to retreat known infestations and scout new infestations. Finding new populations of invasive exotic plants before they become established will help prevent larger infestations and reduce the cost and effort needed to control them.

Priority should be given to FLEPPC Category I and II species when treating exotic plant species in the park. Non-invasive exotic plants that occur within the park will be removed whenever possible; however, ornamentals that are known to be non-invasive and occur in landscaping around residences may remain. All other scattered invasive exotic plant species will be treated upon detection and mapped

for follow-up treatments. Any cut stumps will be treated with appropriate herbicide to prevent re-sprouting.

All known and newly detected locations of exotic plants should be recorded and mapped using GPS. The park should develop an exotic plant management plan that complies with the DRP standards procedures for scouting, marking, treatment scheduling, treatment progress, retreatment, herbicide use, as well as herbicide needs.

Objective: Practice preventative measures to avoid accidental introduction and spread of exotics within park.

Action 1 Develop preventative measures.
Action 2 Implement preventative measures.

Guidelines for clean fill dirt, mowing, as well as cleaning and inspecting equipment that enters the park are recommended. New infestations of exotics can be prevented by ensuring that contractors such as mowers and loggers clean their equipment before entering the park and do not spread exotics by moving from a contaminated area of the park without cleaning their equipment.

Objective: Implement control measures on 4 exotic animal species in the park.

Action 1 Continue control activities on armadillos and coyotes.
Action 2 Relocate feral cats and stray dogs to county animal control facilities.

Control activities will focus on areas where armadillos are causing the most damage. Park staff actively removes armadillos from the property. Armadillos and coyotes eat invertebrates, salamanders, ground nesting rodents/birds and detritivores and their digging and rooting activities can have an adverse impact on soils.

Contractual services to remove coyotes should be investigated if imperiled species impacts are observed. The park also occasionally has to remove feral or stray cats and dogs from the property. These animals should be turned over to the county animal control facility.

Special Management Considerations

Timber Management Analysis

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

DRP's statutory responsibilities and an analysis of the park's resource needs and values. The long-term management goal for forest communities in the state park system is to maintain or re-establish old-growth characteristics to the degree practicable, with the exception of those communities specifically managed as early successional.

A timber management analysis was not conducted for this park since its total acreage is below the 1,000-acre threshold established by statute. Timber management will be re-evaluated during the next revision of this management plan.

Arthropod Control Plan

All DRP lands are designated as "environmentally sensitive and biologically highly productive" in accordance with Ch. 388 and Ch. 388.4111 Florida Statutes. By policy of the Department since 1987, use of aerial adulticide is not allowed, but application of larvicide and ground adulticide (truck spraying in public use areas) is allowed. The DRP does not authorize new physical alterations of marshes through ditching, or water control structures. Mosquito control plans temporarily may be set aside under declared threats to public or animal health, or during a Governor's Emergency Proclamation. The local mosquito control district has proposed a treatment plan, the DRP responded within the allotted time and reached consensus with the mosquito control district.

Additional Considerations

Blackwater River State Park is a representative of FDEP in FDACS Contract #003325, a Memorandum of Understanding among The Longleaf Alliance, The Nature Conservancy, DOD, FFS, and other state, federal and private parties - which forms the basis of the Gulf Coastal Plains Ecosystem Partnership (GCPEP). GCPEP was formed in 1996 to conserve and restore longleaf pine ecosystem. Its success depends on internal and external collaboration among partners. As a result, over the 15 years, the MOU has grown to include 11 partners with 1.05 million acres under management. This MOU provides for collaborative effort and research to include: hydrological research and restoration, exotic plants assessment and treatment, imperiled species monitoring, prescribed burn preparation, staff fire training and day-of-burn implementation and mapping. Partners with small crews in-house often join with staff from GCPEP, the EST and partners to field fire crews sufficient to the needs of the unit. This MOU and the GCPEP partners are an integral part of the natural resource management of Blackwater River State Park.

Special management considerations at Blackwater River State Park consist of taking precautions and active management to protect and enhance imperiled species, particularly rare plant species. In addition, the slopes, riverbank and fragile soils are highly vulnerable to erosion. Special planning and precautions are needed to ensure the preservation of trails, firebreaks and new/existing facilities due to the risk of flooding, erosion and stream siltation.

Cultural Resource Management

Cultural resources are individually unique, and collectively, very challenging for the public land manager whose goal is to preserve and protect them in perpetuity. The DRP is implementing the following goals, objectives and actions, as funding becomes available, to preserve the cultural resources found in Blackwater River State Park.

Goal: Protect, preserve and maintain the cultural resources of the park.

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. All activities related to land clearing, ground disturbing activities, major repairs or additions to historic structures listed or eligible for listing in the National Register of Historic Places must be submitted to the FDOS, Division of Historical Resources (DHR) for review and comment prior to undertaking the proposed project. Recommendations may include, but are not limited to concurrence with the project as submitted, monitoring of the project by a certified archaeological monitor, cultural resource assessment survey by a qualified professional archaeologist, modifications to the proposed project to avoid or mitigate potential adverse effect. In addition, any demolition or substantial alteration to any historic structure or resource must be submitted to DHR for consultation and the DRP must demonstrate that there is no feasible alternative to removal and must provide a strategy for documentation or salvage of the resource. Florida law further requires that the DRP consider the reuse of historic buildings in the park in lieu of new construction and must undertake a cost comparison of new development versus rehabilitation of a building before electing to construct a new or replacement building. This comparison must be accomplished with the assistance of DHR.

Objective: Assess and evaluate 3 of 3 recorded cultural resources in the park.

Action 1	Complete two assessments/evaluations of archaeological sites.
Action 2	Complete documentation of seven historic structures prior to removal.

The park intends to have two previously unevaluated but recorded cultural sites evaluated and condition assessments updated during the plan period. Park staff will attempt to locate sites and provide information to include but not limited to any threats to the site's condition such as natural erosion; vehicular damage; bicycle or pedestrian damage; looting; construction including damage from firebreak construction; animal damage; plant or root damage or other factors that might cause deterioration of the site. Site assessments should be documented on appropriate forms and a copy sent to DHR to be filed in the Blackwater River State Park master files. A copy of this information should also be maintained at the park and district offices. The park will prioritize preservation projects identified by the assessments/evaluations.

Objective: Compile reliable documentation for all recorded historic and archaeological resources.

Action 1	Ensure all known sites are recorded or updated in the FMSF.
Action 2	Follow DHR management procedures for ground disturbing and land altering activities.
Action 3	Develop and adopt a Scope of Collections Statement.
Action 4	Conduct oral history interviews.
Action 5	Compile a park administrative history.

Seven structures within Blackwater River State Park will become eligible for listing in the Florida Master Site File during the upcoming planning period. These are slated for demolition in the future. Measures to document the structures prior to removal will include photographs and written descriptions. Copies will be kept at the park and sent to the district.

Any future development in the park will follow DHR management procedures (see Addendum 7 – Cultural Information). The appropriate cultural resource management measures will be identified based on the location and scope of the project.

A Scope of Collections will need to be developed should the park acquire any collection items. An administrative history needs updating, this will help interpret the history of the park. Oral histories of local historians and research through park records need to be done to help document the park's history.

Once having physically located the resources, park management should develop patrol and monitoring plans that will permit them to issue an annual condition report and summary for the resources. Consequently, the FMSF should be updated as needed. Such monitoring measures should include training personnel to review resource conditions and establishing photo points.

The general objective for the management of the cultural resources of Blackwater River State Park is to protect, preserve and interpret the prehistoric and historic resources. Park management will ensure adequate staff, materials and administrative support so that cultural resources management activities are conducted.

As the composition of park staff changes over time, efforts should be made to insure that there is always at least one staff member who is a certified archaeological monitor. Management should ensure that park personnel are adequately trained in cultural resource management and establish a park library to support the training. Unit staff will ensure that any ground disturbing activities shall be conducted in accordance with DHR guidelines and will be monitored by appropriately trained personnel. Management should develop professional relationships with area university archaeologists and area law enforcement officials to discuss cultural resource management issues and opportunities.

Objective: Bring 2 of 3 recorded cultural resources into good condition.

Action 1	Develop and implement annual monitoring programs for 3 cultural sites.
Action 2	Create and implement a cyclical maintenance program for each cultural resource.
Action 3	Bring 2 of 3 priority sites into good condition.

A cyclical maintenance plan should be developed and implemented to help guide the park with needed preservation of its two sites. Park staff should develop and implement a preservation and maintenance plan for all cultural resources. Management measures for cultural resources should include development of a phased plan for managing the currently identified recorded sites in the context of their surroundings. This should include developing a workable written plan for the physical management of the identified cultural resources. The plan should outline approved methodologies for executing the plan and training staff and volunteers in managing the cultural resources of the park. Management should arrange for a Level I survey in all areas planned for development and utilize development project funds to accomplish the survey. Such a survey aims to identify and record features (including historic roads and trails) to be avoided during construction.

Site SR1915, the Shop site, is an unspecified historic site potentially in need of stabilization if not rehabilitation as well. This site suffers from erosion problems and may have been heavily disturbed over the duration of the construction of the Shop, the Shop rebuild and subsequent work duties by park staff. As a protective measure, the park should fence off access to the site. The park has consulted with experts who have recommended stabilization by means of silt fence installation for stabilization and eliminating raking of this area to conceal artifacts that are washing out and prevent further erosion. Site SR02166, the Blackwater Turpentine Roads Resource Group will be stabilized.

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 located in the Implementation Component of this management plan.

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 are being managed for the purposes for which they were acquired and in accordance with their approved land management plans. The DRP considered recommendations of the land management review team and updated this plan accordingly.

Blackwater River State Park was subject to a land management review on April 1, 1999. The review team made the following determinations:

- The land is being managed for the purpose for which it was acquired.
- 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 the state park system are based on the dual responsibilities of the Florida Department of Environmental Protection (DEP), Division of Recreation and Parks (DRP). These responsibilities are to preserve representative examples of original natural Florida and its cultural resources, and to provide outdoor recreation opportunities for Florida's citizens and visitors.

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

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

External Conditions

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

Blackwater River State Park is located within Santa Rosa County, about ten miles northeast of Milton in the northwest part of the state. More than 720,000 people live within 50 miles of the park, which includes the cities of Pensacola, Fort Walton Beach, Niceville, Destin, DeFuniak Springs and Crestview (U.S. Census 2015).

According to U.S. Census data, approximately 13 percent of residents in Santa Rosa County identify as black, Hispanic or Latino or another minority group. Just over 38 percent of residents can be described as youth or seniors. Per

capita income in the county is $25,845 as compared to the statewide average of $26,236 (U.S. Census 2015).

The park is located in the Northwest vacation region, which includes Escambia, Santa Rosa, Okaloosa, Walton, Holmes, Washington, Bay, Jackson, Calhoun, Gulf, Liberty, and Franklin counties (Visit Florida 2012). According to the 2012 Florida Visitor Survey, 14.9 percent of domestic visitors to Florida visited this region. Of the 11.5 million domestic visitors who came to this region in 2012, approximately 93 percent traveled for leisure. Visiting the beach/waterfront was the most popular activity for those visitors, followed by shopping and dining. Summer was the most popular season for visitors. Most visitors traveled by ground transportation (94 percent) reporting an average stay of 3.8 nights and spending an average of $126 per person per day (Visit Florida 2012).

There are many resource-based recreation areas within 15 miles of the park including Blackwater River State Forest, Blackwater Heritage State Trail, Yellow River Marsh Preserve State Park, Eglin Air Force Base, Garcon Point Water Management Area, Yellow River Water Management Area, and Blackwater River Water Management Area. These lands and waters support an array of resource-based outdoor activities including hiking, biking, horseback riding, swimming, fishing, hunting, picnicking, camping, paddling, wildlife viewing, and nature study.

Existing Use of Adjacent Lands

The park is surrounded on all sides by Blackwater River State Forest. The FFS manages this land to conserve forest resources and provide resource-based recreation opportunities. No change in the surrounding land use is anticipated during this planning period.

Planned Use of Adjacent Lands

The Future Land Use designation for Blackwater River State Forest is Conservation/Recreation (CON/REC). Permitted uses within this category include both active recreation sites and passive conservation areas. Passive conservation areas include open spaces, picnic areas, wilderness and wetland preserves, etc. Uses in these areas shall be strictly passive in nature and impervious cover shall be limited to not more than 10% of the site (Santa Rosa County 2009). The zoning for properties around the park is State (Santa Rosa County 2014). With the Future Land Use and Zoning designations, the county defers to the State of Florida and allows for the use and development of the property as specified in the property's approved management plan (Statler, pers. comm. 2015).

Florida Greenways and Trails System (FGTS)

The Florida Greenways and Trails System (FGTS) is made up of existing, planned and conceptual non-motorized trails and ecological greenways that

form a connected, integrated statewide network. The FGTS serves as a green infrastructure plan for Florida, tying together the greenways and trails plans and planning activities of communities, agencies and non-profit organizations throughout Florida. Trails include paddling, hiking, biking, multi-use and equestrian trails. The Office of Greenways and Trails maintains a priority trails map and gap analysis for the FGTS to focus attention and resources on closing key gaps in the system.

In some cases, existing or planned priority trails run through or are adjacent to state parks, or they may be in close proximity and can be connected by a spur trail. State parks can often serve as trailheads, points-of-interest, and offer amenities such as camping, showers and laundry, providing valuable services for trail users while increasing state park visitation.

The Florida National Scenic Trail Side Trail branches off the main trail at Yellow River Ravines and runs north through Blackwater River State Forest to the Florida/Alabama state line for a distance approximately 44 miles. The trail skirts the west side of Blackwater River State Park where hikers can gain access to the Side Trail from a trailhead located near the Deaton Road bridge.

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.

Recreational Resource Elements

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

Land Area

Approximately one-half of the parks 636 acres consists of well-drained uplands, which are conducive to land-based recreation including camping and trail activities. The remaining half of the property is composed of wetlands or seasonally flooded areas offering limited land-based recreational opportunities.

Water Area

Approximately 1.25 miles of the Blackwater River is contained within the park's boundaries. The river is the park's primary recreation resource, offering abundant opportunities for swimming, paddling, and fishing. The Blackwater River is a designated Florida Paddling Trail. This 31-mile trail winds through the Blackwater State Forest and ends at Deaton Bridge Road on the park's west side. Several small floodplain lakes, remnants of the old river channel are located on each side of the river. These small, secluded water bodies provide interesting, scenic destinations for trail users.

Shoreline

Over 13,000 linear feet of shoreline on the Blackwater River are contained within the unit boundaries. Landward access to this shoreline is generally limited because of the border of floodplain communities following the river's course. Paddlers, boaters, and fishermen have free access to the broad sandbars located at each bend of the river.

Natural Scenery

Vistas of the Blackwater River are the predominant visual resources of this park. Visual access, however, is generally limited to the area of the bridge and the main picnic/swimming area due to the floodplains and steep, densely vegetated riverbanks.

Significant Habitat

The wet flatwoods, upland pine, and sandhill natural communities provide habitat for an array of imperiled species. These areas provide abundant wildlife observation and nature study opportunities for iconic coastal plains species such as pitcher plants, red-cockaded woodpeckers, fox squirrels, and gopher tortoise.

Natural Features

The park's primary natural feature is the Blackwater River. This pristine blackwater stream, with its shifting sand bottom and alternating pattern of cut banks and sandbars, is nearly unmodified for most of its entire length. This wild and natural river, protected by the state forest that surrounds it, is a premier paddling destination and draws attention from scientists studying the insect life on its unusual bottom. One of the state's largest and oldest Atlantic white cedars is located in the floodplain swamp in the riverside picnic area. It was recognized as a Florida Champion in 1982.

Archaeological and Historical Features

The park contains two recorded archaeological sites, one of which is a prehistoric Native American scatter site and the other possibly dating to the 19th century historic period. The two site are relatively insignificant and offer only limited opportunities for on-site interpretation.

Assessment of Use

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

Past Uses

The property was extensively timbered by private owners in the early 1900s. The Florida Board of Forestry, predecessor to the Florida Forest Service, obtained title to the property in 1938 and subsequently conveyed it for use as a state park in 1968.

Future Land Use and Zoning

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

The Future Land Use designation for the park is Conservation/Recreation (CON/REC). Permitted uses within this category include both active recreation sites and passive conservation areas. Passive conservation areas include open spaces, picnic areas, wilderness and wetland preserves, etc. Uses in these areas shall be strictly passive in nature and impervious cover shall be limited to not more than 10% of the site (Santa Rosa County 2009). The zoning for the park is State (Santa Rosa County 2014). With the Future Land Use and Zoning designations, the county defers to the State of Florida and allows for the use and development of the property as specified in the property's approved management plan. No conflicts to park development and management are anticipated (Statler, Pers. Comm. 2015).

Current Recreational Use and Visitor Programs

Paddling, swimming, fishing, camping, hiking, picnicking, wildlife viewing, and nature study are the recreational activities available at Blackwater River State Park. The campground offers 30 sites just a short walk from the river. The picnic area has three, covered pavilions overlooking the river. Hiking is available on the short Juniper Lake Nature Trail, the one-mile Chain of Lakes Trail, and the side trail of the Florida National Scenic Trail which runs along the west side of the park.

The bridge on Deaton Bridge Road is the terminus of the Blackwater River Paddling Trail. Intense visitor use of the bridge area for canoe landing and swimming has created some operational problems during the busy paddling season. To spread out the use areas and reduce user conflicts in this conjested area, a small picnic area was developed on the south side of the river opposite the main landing area. Also, the main swimming area was moved to the opposite side of the river on the north side of the bridge.

Blackwater River State Park recorded 70,383 visitors in FY 2013/2014. By DRP estimates, the FY 2013/2014 visitors contributed $ 5.5 million in direct economic impact, the equivalent of adding 77 jobs to the local economy (FDEP 2014).

Blackwater River State Park is one of nine Florida State Parks that contains a certified segment of the Florida National Scenic Trail (FNST). Formerly the Florida Trail, the FNST was designated in the park in June 2005, as part of the three-party certification agreement between DRP, the U.S. Forest Service and the Florida Trail Association. As prescribed by the agreement, the DRP and the FTA coordinate all programs and activities related to the trail.

Protected Zones

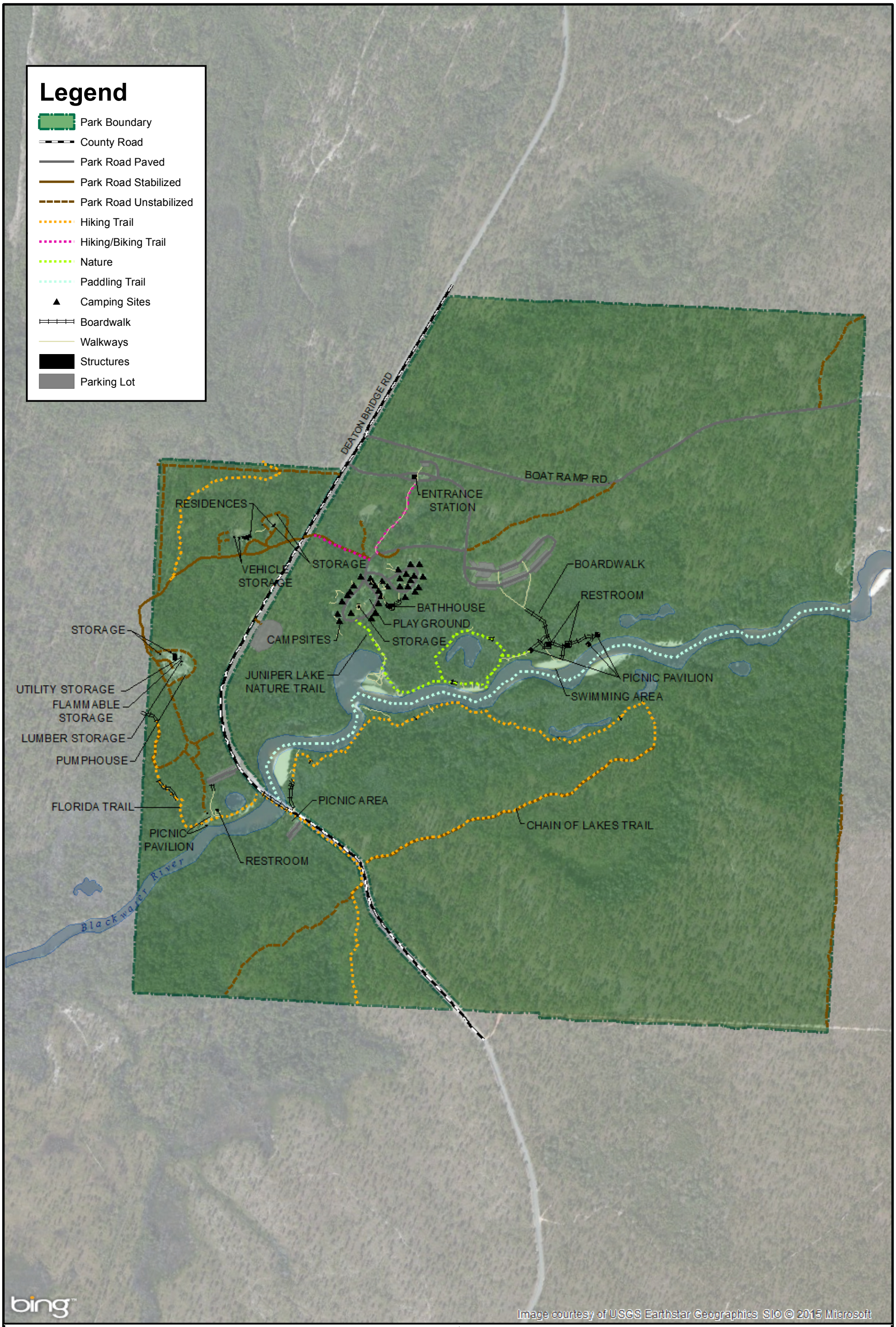
A protected zone is an area of high sensitivity or outstanding character from which most types of development are excluded as a protective measure. Generally, facilities requiring extensive land alteration or resulting in intensive resource use, such as parking lots, camping areas, shops or maintenance 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 Blackwater River State Park all wetlands and floodplain as well as blackwater river, seepage stream, baygall, floodplain swamp, bottomland forest, river floodplain lake, sandhill and known imperiled species habitat have been designated as protected zones. The park's current protected zone is delineated on the Conceptual Land Use Plan.

Existing Facilities

Recreational Facilities

There are two day-use areas, one located by the Deaton Bridge (Deaton Bridge Day Use Area) and the main picnic area (Boardwalk Day Use Area) accessed from within the park. The Deaton Bridge Day Use Area experiences the heaviest use. The north bank of the river near the bridge has the take-out point for canoe concessionaires and a picnic area with two small shelters and a restroom. A boardwalk connects the parking lot and picnic area. A large sand bar on the



BLACKWATER RIVER
STATE PARK

N

0 250 500 1,000 Feet

Florida Department of Environmental Protection
Division of Recreation and Parks
Date of aerial 2011

BASE MAP

south side is very popular for swimming in the summer months. This is accessed by a boardwalk on the east side of Deaton Bridge Road. Also located on the south side of the river is a small picnic area with scattered tables and grills. The recent renovation of the bridge added a pedestrian lane. This separation of vehicle and foot traffic has made travel across the river safer.

The Boardwalk Day Use Area within the park contains three large pavilions and two medium restrooms all accessed from the main parking lot by boardwalks. This picnic area was designed and constructed on pilings to accommodate the seasonal flood of the river. Boardwalks connect the picnic area user to a wide sandbar, the river, and the parking area.

The existing campground has 30 standard campsites. Originally built in the 1960's, the campground was upgraded during the last planning period to include municipal water, sewer improvements, accessible sites, and bathhouse renovations. Two short nature trails provide visitors an opportunity to experience the natural communities, including several of the small swamp lakes.

Support Facilities

Support facilities are located in the entrance area and the shop/residence area. The entrance area includes a ranger station and a paved parking area. The shop/residence area includes two staff residences, two volunteer campsites, a shop building, and one equipment shelter (see Base Map).

Campground
Standard campsites (30)
Bathhouse
Storage/laundry building
Volunteer campsite

Boardwalk Day Use Area
Large picnic shelters (3)
Restrooms (2)
Boardwalk
Paved parking (208 spaces)

Deaton Bridge Day Use Area
Small picnic shelters (2)
Picnic tables (5)
Boardwalk
Paved parking 2 lots/105 spaces)
Overflow parking area

Trails
Juniper Lake Nature Trail (.5 mi.)
Chain of Lakes Trail (1 mi.)
Florida National Scenic Trail – Side Trail (1 mi.)

Entrance Area
Ranger station

Shop/Residence Area
Staff residence (2)
Shop building
Equipment shelter
Volunteer campsite (2)

Conceptual Land Use Plan

The following narrative represents the current conceptual land use proposal for this park. The conceptual land use plan is the long-term, optimal development plan for the park, based on current conditions and knowledge of the park's resources, landscape and social setting (see Conceptual Land Use Plan). The conceptual land use plan is modified or amended, as new information becomes available regarding the park's natural and cultural resources or trends in recreational uses, in order to adapt to changing conditions. Additionally, the acquisition of new parkland may provide opportunities for alternative or expanded land uses. The DRP develops a detailed development plan for the park and a site plan for specific facilities based on this conceptual land use plan, as funding becomes available.

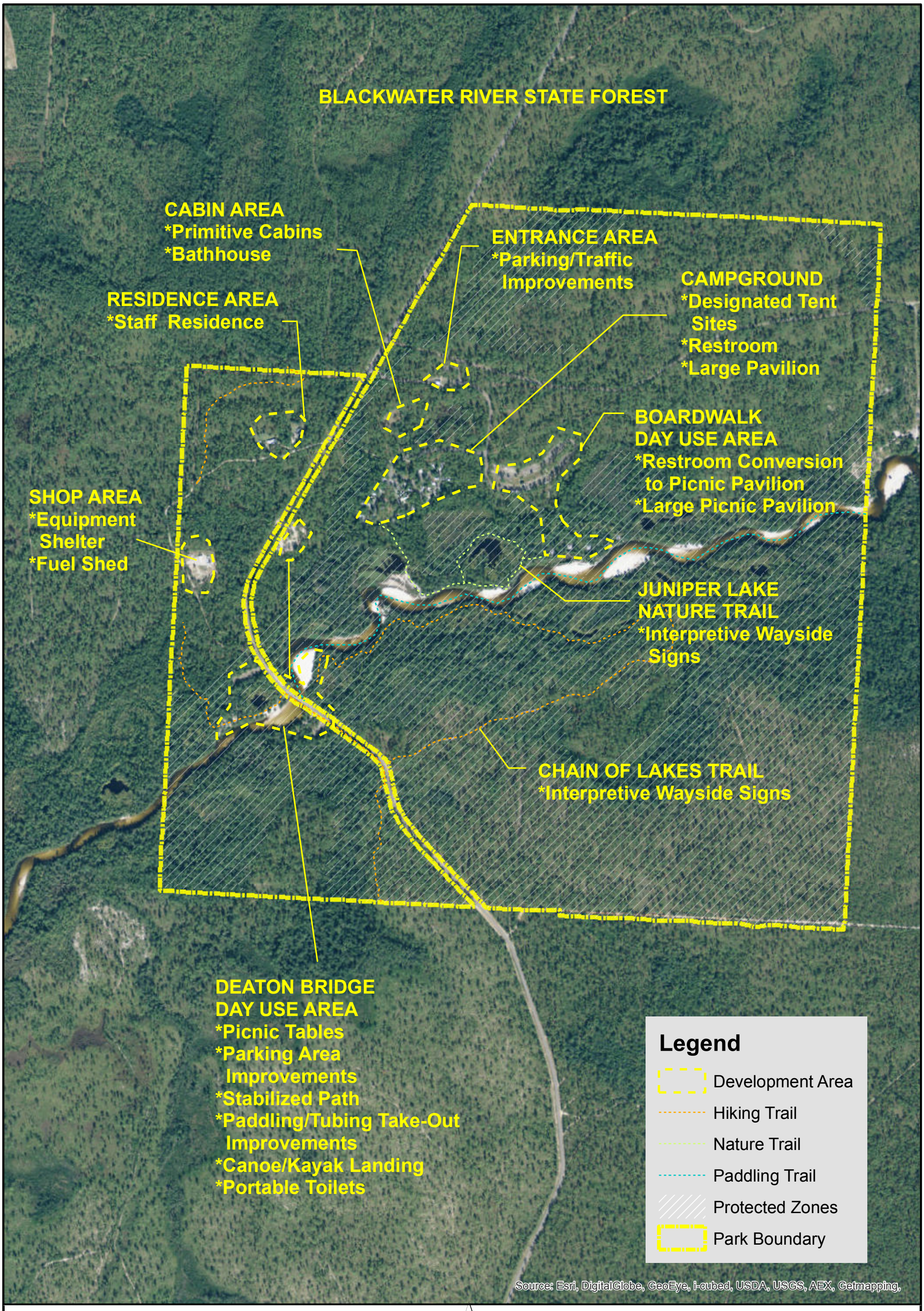
During the development of the conceptual land use plan, the DRP assessed the potential impact of proposed uses or development on the park resources and applied that analysis to determine the future physical plan of the park as well as the scale and character of proposed development. Potential resource impacts are also identified and assessed as part of the site planning process once funding is available for facility development. At that stage, design elements (such as existing topography and vegetation, sewage disposal and stormwater management) and design constraints (such as imperiled species or cultural site locations) are investigated in greater detail. Municipal sewer connections, advanced wastewater treatment or best available technology systems are applied for on-site sewage disposal. Creation of impervious surfaces is minimized to the greatest extent feasible in order to limit the need for stormwater management systems, and all facilities are designed and constructed using best management practices to limit and avoid resource impacts. Federal, state and local permit and regulatory requirements are addressed during facility development. This includes the design of all new park facilities consistent with the universal access requirements of the Americans with Disabilities Act (ADA). After new facilities are constructed, park staff monitors conditions to ensure that impacts remain within acceptable levels.

Potential Uses

Public Access and Recreational Opportunities

Goal: Provide public access and recreational opportunities in the park.

The existing recreational activities and programs of this state park are appropriate to the natural and cultural resources contained in the park and should be continued. New and/or improved activities and programs are also recommended and discussed below.



BLACKWATER RIVER
STATE PARK

N

0 320 640 1,280 Feet

Florida Department of Environmental Protection
Division of Recreation and Parks
Date of aerial; 2014

CONCEPTUAL LAND USE PLAN

Objective: Maintain the park's current recreational carrying capacity of 1,272 users per day.

The park will continue to provide opportunities for swimming, picnicking, family camping, paddling, fishing, hiking and nature/interpretive walks. Special events will continue to be offered on a regular basis.

Objective: Expand the park's recreational carrying capacity by 224 users per day.

Considering the popularity and relatively high occupancy rate of the Blackwater River State Park campground, camping opportunities will be expanded in the park with tent, hammock, and primitive cabin camping options. Picnicking opportunities will be expanded based on the findings that the level of service for picnicking facilities in northwest Florida is below the statewide average (FDEP 2013). Enhancements are proposed for the Deaton Bridge Day Use Area to improve the visitor experience in that heavily used area.

Objective: Continue to provide the current repertoire of 2 interpretive, educational and recreational programs on a regular basis.

Two interpretive programs are currently offered in the park. For the roving ranger program, a park ranger walks through the recreational use areas to answer visitor's question and give impromptu talks about the park's natural and cultural history. The scheduling of this program varies but usually occurs on a weekly basis. A self-guided interpretive program is provided on the Chain of Lakes Trail and the Juniper Lake Nature Trail. Wayside interpretive signs provide visitors with information about the ecology of the forested wetlands along the Blackwater River.

Objective: Develop 2 new interpretive, educational and recreational programs.

Two interpretive programs are proposed for the next planning period. A ranger-guided canoe/kayak tour will be offered for small groups of paddlers to learn about the unique ecology of the Blackwater River. Ranger-guided tours are planned for the Juniper Lake Nature Trail and the Chain of Lakes Trail to teach visitors about the park's unique vegetation and wildlife and the natural communities that support them.

Proposed Facilities

Capital Facilities and Infrastructure

Goal: Develop and maintain the capital facilities and infrastructure necessary to implement the recommendations of the management plan.

The existing facilities of this state park are appropriate to the natural and cultural resources contained in the park and should be maintained. New construction, as discussed further below, is recommended to improve the quality and safety of the recreational opportunities, to improve the protection of park resources, and to streamline the efficiency of park operations. Efforts will be made to obtain wildlife-proof waste receptacles as funds become available. The following is a summary of improved and/or new facilities needed to implement the conceptual land use plan for Blackwater River State Park:

Objective: Maintain all public and support facilities in the park.

All capital facilities, trails and roads within the park will be kept in proper condition through the daily or regular work of park staff and/or contracted help.

Objective: Improve/repair 7 existing facilities.

Major repair projects for park facilities may be accomplished within the ten-year term of this management plan, if funding is made available. These include the modification of existing park facilities to bring them into compliance with the Americans with Disabilities Act (a top priority for all facilities maintained by the DRP). The following discussion of other recommended improvements and repairs are organized by use area within the park.

Deaton Bridge Day Use Area: Paddling opportunities will be enhanced with the addition of a canoe/kayak landing at the south side picnic area. The intent of this facility is to relieve congestion at the Deaton Bridge take-out by providing individual paddlers with their own landing separate from the commercial livery landing on the north side. The canoe livery parking/staging area in the uplands on the north side of the river will be improved with designated parking and traffic circulation and the addition of picnic tables. A stabilized path will be provided from this parking area to the river to provide pedestrians with safe access to the river. Improvements will be made to the paddling/tubing pickup area on the north side of the river to better protect the shoreline and enhance visitor safety and accessibility. Portable toilets will be provided at this location and at the south side picnic area to increase restroom capacity during high-use weekends in the warm season.

Boardwalk Day Use Area: One of the picnic pavilions is threatened by the encroaching river. Regular river flooding is steadily eroding the bank and may soon start to undermine the structure. The pavilion is still stable and useable but will have to be removed if and when it is ever deemed a safety hazard. To offset this anticipated loss, one of the two restrooms will be converted to a picnic shelter as only one restroom is sufficient to service the number of visitors that typically use this area. Hammock camping for groups up to 12 will be provided in one of the existing pavilions. This riverside location in a beautiful grove of white cedars would provide a unique camping experience. This overnight use would be by reservation only to avoid conflicts with day users. It is recommended that one large picnic pavilion be provided in the uplands close

to the parking lot. This location will provide picnickers with good views into the surrounding upland pine forest and an alternative picnic site during times of river flooding.

Campground: Camping opportunities will be expanded in the family camping area with the addition of a designated tent camping area for up to 12 sites. The proposed location for this facility is within an area of flatwoods between the existing campground and the picnic area parking lot. A restroom will be provided in this area to service the tent campers. The existing storage building in the family campground will be replaced with a new building/pavilion to provide interpretive, vending, and laundry services.

Trailhead Areas: Additional trailside signage will be provided along the Juniper Lake Nature Trail and the Chain of Lakes Trail to enhance self-guided interpretive programs on these trails. The park will cooperate with the Florida Trail Association to provide wayfinding signs at key locations to avoid conflicts between park visitors and hikers on the Florida National Scenic Side Trail. The feasibility of providing additional connections of park trails to the Florida National Scenic Side Trail will be explored.

Entrance Area: Traffic and parking improvements will be provided at the ranger station to alleviate traffic congestion that frequently occurs in this area.

Residence Area: One new staff residence is proposed for the Residence Area.

Shop Area: Facilities proposed for the shop area include one equipment/storage shelter and a new fuel shed.

Objective: Construct 1 new facility.

Cabin Area: The addition of a cabin camping will expand the types of camping opportunities offered at the park. The cabin area will provide up to six primitive cabins on a small bluff overlooking the existing campground. A bathhouse will be provided in this area to service the cabin campers.

Facilities Development

Preliminary cost estimates for these recommended facilities and improvements are provided in the Ten-Year Implementation Schedule and Cost Estimates (Table 7) located in the Implementation Component of this plan. These cost estimates are based on the most cost-effective construction standards available at this time. The preliminary estimates are provided to assist DRP in budgeting future park improvements, and may be revised as more information is collected through the planning and design processes. New facilities and improvements to existing facilities recommended by the plan include:

Deaton Bridge Day Use Area
Canoe/kayak landing (southside)
Picnic tables (5)
Portable toilets
Parking improvements
Stabilized path
Paddling/tubing take-out improvements (northside)

Campground
Large pavilion
Designated tent sites (12)
Restroom

Cabin Area
Primitive cabins (6)
Bathhouse

Trailhead Areas
Interpretive Wayside Signs (10)

Boardwalk Day Use Area
Convert restroom to picnic pavilion
Large picnic pavilion

Entrance Area
Parking/traffic improvements

Residence Area
Staff residence

Shop Area
Equipment/storage shelter
Fuel shed

Recreational Carrying Capacity

Carrying capacity is an estimate of the number of users a recreation resource or facility can accommodate and still provide a high quality recreational experience and preserve the natural values of the site. The carrying capacity of a unit is determined by identifying the land and water requirements for each recreation activity at the unit, and then applying these requirements to the unit's land and water base. Next, guidelines are applied which estimate the physical capacity of the unit's natural communities to withstand recreational uses without significant degradation. This analysis identifies a range within which the carrying capacity most appropriate to the specific activity, the activity site and the unit's classification is selected (see Table 6).

The recreational carrying capacity for this park is a preliminary estimate of the number of users the unit could accommodate after the current conceptual development program has been implemented. When developed, the proposed new facilities would approximately increase the unit's carrying capacity as shown in Table 6.

Table 6. Recreational Carrying Capacity						
	Existing Capacity*		Proposed Additional Capacity		Estimated Recreational Capacity	
Activity / Facility	One Time	Daily	One Time	Daily	One Time	Daily
Trails						
Shared Use	50	200			50	200
Picnicking	160	320	40	80	200	400
Swimming	195	390			195	390
Fishing						
Shoreline	35	70			35	70
Boating						
Canoeing/Kayaking	26	52			26	52
Camping						
Standard	240	240			240	240
Tent only			96	96	96	96
Primitive cabin			36	36	36	36
Hammock			12	12	12	12
TOTAL	**706**	**1272**	**184**	**224**	**890**	**1496**

*Existing capacity revised from approved plan according to DRP guidelines.

Optimum Boundary

At this time, no additional lands have been identified for management as part of the park. No lands are considered surplus to the needs of the park.

IMPLEMENTATION COMPONENT

The resource management and land use components of this management plan provide a thorough inventory of the park's natural, cultural and recreational resources. They outline the park's management needs and problems, and recommend both short and long-term objectives and actions to meet those needs. The implementation component addresses the administrative goal for the park and reports on the Division of Recreation and Parks (DRP) progress toward achieving resource management, operational and capital improvement goals and objectives since approval of the previous management plan for this park. This component also compiles the management goals, objectives and actions expressed in the separate parts of this management plan for easy review. Estimated costs for the ten-year period of this plan are provided for each action and objective, and the costs are summarized under standard categories of land management activities.

Management Progress

Since the approval of the last management plan for Blackwater River State Park in 2004, significant work has been accomplished and progress made towards meeting the DRP's management objectives for the park. These accomplishments fall within three of the five general categories that encompass the mission of the park and the DRP.

Park Administration and Operations

- Installed "volunteer village" in residence area.
- Increased number of burn bosses for prescribed burn program.
- Added shared duties of Biological Scientist II with Big Lagoon State Park.

Resource Management

Natural Resources

- Brought prescribed burn program to agency standard and removed 83% of backlogged fire type acreage.
- Conducted butterfly inventory with FWC personnel and tick inventory with University of Georgia.
- Installed artificial red-cockaded woodpecker (RCW) cavity boxes and re-introduced RCW to park, breeding population established and expanding.
- Fenced riverside (north and south) to curtail impacts at picnic area south of Deaton Bridge and north cutbank.
- Identified areas with sweet pitcherplants (*Sarracenia rubra*).
- Treated approximately 50 infested acres for invasive exotic plants over 995 gross acres in 4 years.
- Documented gopher tortoise and fox squirrel populations in two new management zones.

- Worked with FFS to get Boat Ramp Road paved in order to prevent further distribution of cogongrass and limit siltation to river corridor.

Cultural Resources

- University of South Florida and AIST used LiDAR Data and predictive modeling to survey areas of interest in the park on October 25, 2011.
- Five collections accessioned.

Recreation and Visitor Services

- Added two interpretive signs for "Great Florida Birding Trail."
- Participated in Santa Rosa county Beaches to Woodlands Tours.
- Participated in Gulf Coast Diplomacy Council's public diplomacy program.
- Participated in National Trails Day activities.
- Boy Scouts installed interpretive signs on Chain of Lakes Trail
  Relocated Florida Trail parking to paved parking area for water quality impacts.

Park Facilities

- Rebuilt shop building, replaced all tools and equipment in interior, secured area with standard fencing.
- Upgraded camp area restroom, stabilized campsites, added municipal water, electric and sewage, addressed ADA accessibility and added swales to prevent stormwater impacts to river quality.
- Added accessible sidewalk from North Bridge Parking lot to picnic area and restroom.
- Added sidewalks connecting accessible parking to sidewalks in main picnic area.
- Added accessibility crosswalks where recommended.
- Renovated entrance station to include lobby area.
- Re-roofed pavilions and bathhouses in main use area (Bldgs. 21-25), added accessible grill platforms.
- Installed automatic gates along main park drive for camper convenience.
- Upgraded wastewater from north bridge picnic area to lift station transfer into shop compound drainfield to avoid water quality impacts in floodplain.
- Installed pavilion at north bridge picnic area.

Management Plan Implementation

This management plan is written for a timeframe of ten years, as required by Section 253.034 Florida Statutes. The Ten-Year Implementation Schedule and Cost Estimates (Table 7) summarizes the management goals, objectives and actions that are recommended for implementation over this period, and beyond. Measures are identified for assessing progress toward completing each objective and action. A time frame for completing each objective and action is provided. Preliminary cost estimates for each action are provided and the estimated total costs to complete

each objective are computed. Finally, all costs are consolidated under the following five standard land management categories: Resource Management, Administration and Support, Capital Improvements, Recreation Visitor Services and Law Enforcement.

Many of the actions identified in the plan can be implemented using existing staff and funding. However, a number of continuing activities and new activities with measurable quantity targets and projected completion dates are identified that cannot be completed during the life of this plan unless additional resources for these purposes are provided. The plan's recommended actions, time frames and cost estimates will guide the DRP's planning and budgeting activities over the period of this plan. It must be noted that these recommendations are based on the information that exists at the time the plan was prepared. A high degree of adaptability and flexibility must be built into this process to ensure that the DRP can adjust to changes in the availability of funds, improved understanding of the park's natural and cultural resources, and changes in statewide land management issues, priorities and policies.

Statewide priorities for all aspects of land management are evaluated each year as part of the process for developing the DRP's annual legislative budget requests. When preparing these annual requests, the DRP considers the needs and priorities of the entire state park system and the projected availability of funding from all sources during the upcoming fiscal year. In addition to annual legislative appropriations, the DRP pursues supplemental sources of funds and staff resources wherever possible, including grants, volunteers and partnerships with other entities. The DRP's ability to accomplish the specific actions identified in the plan will be determined largely by the availability of funds and staff for these purposes, which may vary from year to year. Consequently, the target schedules and estimated costs identified in Table 7 may need to be adjusted during the ten-year management planning cycle.

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.

Goal I: Provide administrative support for all park functions.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	**Continue day-to-day administrative support at current levels.**	Administrative support ongoing	C	**$332,000**
Objective B	**Expand administrative support as new lands are acquired, new facilities are developed, or as other needs arise.**	Administrative support expanded	UFN	**$58,000**

Goal II: Protect water quality and quantity in the park, restore hydrology to the extent feasible, and maintain the restored condition.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	**Conduct/obtain an assessment of the park's hydrological needs.**	Assessment conducted	LT	**$51,000**
Action 1	Develop a sequential and prioritized hydrological restoration plan.	Plan completed	UFN	$6,000
Action 2	Conduct a hydrological study of the park's current surface water features including existing ditches.	Study completed	UFN	$45,000
Objective B	**Restore natural hydrological conditions and function to approximately 1 acre of Seepage Stream**	# Acres restored or with restoration underway	UFN	**$54,000**
Action 1	Install 1 low-water crossing.	# Crossings/culverts installed	UFN	$54,000

Goal III: Restore and maintain the natural communities/habitats of the park.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	**Within 10 years have 391 acres of the park maintained within optimal fire return interval.**	# Acres within fire return interval target	LT	**$63,000**
Action 1	Develop/update annual burn plan.	Plan updated	C	$19,000
Action 2	Manage fire dependent communities for ecosystem function, structure and processes by burning between 116 and 196 acres annually, as identified by the annual burn plan.	Average # acres burned annually	C	$44,000
Objective B	**Conduct habitat/natural community restoration activities on 3 acres of bottomland forest and blackwater stream communities.**	# Acres restored or with restoration underway	UFN	**$21,000**
Action 1	Develop site specific restoration plan	Plan developed	ST	$3,000
Action 2	Implement restoration plan	# Acres with	UFN	$18,000
Objective C	**Conduct habitat/natural community improvement activities on 45 acres of baygall community.**	# Acres improved or with	UFN	**$15,000**
Action 1	Evaluate biomass fuel reduction	Evaluation completed	ST	$500
Action 2	Implement biomass fuel reduction	# acres treated	ST	$14,500

* 2015 Dollars
ST = actions within 2 years
LT = actions within 10 years
C = long term or short term actions that are continuous or cyclical
UFN = currently unfunded need

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.

Goal IV: Maintain, improve or restore imperiled species populations and habitats in the park.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	**Update baseline imperiled species occurrence inventory lists for plants and animals, as needed.**	List updated	C	**$26,000**
Action 1	Update species list for the park.	List updated	C	$26,000
Objective B	**Monitor and document 4 selected imperiled animal species in the park.**	# Species monitored	C	**$33,000**
Action 1	Develop monitoring protocols for 2 selected imperiled animal species including gopher frog and Eastern indigo snake.	# Protocols developed	ST	$16,500
Action 2	Implement monitoring protocols for 4 imperiled animal species including those listed in Action 1 above and red-cockaded woodpecker and gopher tortoise	# Species monitored	C	$16,500
Objective C	**Monitor and document 2 selected imperiled plant species in the park.**	# Species monitored	C	**$18,000**
Action 1	Develop monitoring protocols for 1 selected imperiled plant species including sweet pitcherplant.	# Protocols developed	ST	$1,500
Action 2	Implement monitoring protocols for 2 imperiled plant species including those listed in Action 1 above and panhandle lily.	# Species monitored	C	$16,500
Objective D	**Restore priority imperiled species populations within the park.**	# Species restored	UFN	**$27,000**
Action 1	Augment the population of sweet pitcherplant with seed grown plants	# Seedlings planted	UFN	$6,000
Action 2	Reestablish a population of gopher frogs	Viable population established	UFN	$10,500
Action 3	Reestablish a population of Eastern indigo snake	Viable population established	UFN	$10,500

Goal V: Remove exotic and invasive plants and animals from the park and conduct needed maintenance-control.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	**Annually treat 7 acres of exotic plant species in the park.**	# Acres treated	C	**$27,000**
Action 1	Annually develop/update exotic plant management work plan.	Plan developed/updated	C	$18,000
Action 2	Implement annual work plan by treating 7 acres in park, annually, and continuing maintenance and follow-up treatments as needed.	Plan implemented	C	$9,000
Objective B	**Practice preventative measures to avoid introduction and spread of exotics within the park**	# Measures implemented	C	**$6,000**
Action 1	Develop preventative measures	# Measures developed	ST	$2,000
Action 2	Implement preventative measures	# Measures implemented	C	$4,000
Objective C	**Implement control measures on 4 exotic animal species in the park.**	# Species for which control	C	**$16,000**
Action 1	Continue control activities on armadillos and coyotes.	# removed	C	$6,000
Action 2	Relocate feral cats and stray dogs to county animal control facility.	# relocated	C	$10,000

* 2015 Dollars
ST = actions within 2 years
LT = actions within 10 years
C = long term or short term actions that are continuous or cyclical
UFN = currently unfunded need

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.

Goal VI: Protect, preserve and maintain the cultural resources of the park.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	**Assess and evaluate 2 of 9 recorded cultural resources in the park.**	Documentation complete	LT	**$3,000**
Action 1	Complete 2 assessments/evaluations of archaeological sites. Prioritize preservation and stabilization projects.	Assessments complete	LT	$3,000
Objective B	**Compile reliable documentation for all recorded historic and archaeological sites.**	Documentation complete	C	**$9,000**
Action 1	Ensure all known sites are recorded or updated in the Florida Master Site File.	# Sites recorded or updated	ST	$600
Action 2	Conduct Level 1 archaeological survey for priority areas identified in the archaeological predictive model	Survey completed	UFN	$7,000
Action 3	Develop and adopt a Scope of Collections Statement.	Document completed	UFN	$400
Action 4	Conduct oral history interviews.	Interviews complete	UFN	$600
Action 5	Compile a park administrative history.	Report completed	UFN	$400
Objective C	**Bring 1 of 9 recorded cultural resources into good condition.**	# Sites in good condition	UFN	**$11,000**
Action 1	Design and implement regular monitoring programs for 2 cultural sites	# Sites monitored	C	$4,000
Action 2	Create and implement a cyclical maintenance program for each cultural resource.	Programs implemented	C	$5,000
Action 3	Bring 1 of 2 priority sites into good condition	Projects completed	UFN	$2,000

Goal VII: Provide public access and recreational opportunities in the park.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	**Maintain the park's current recreational carrying capacity of 1,272 users per day.**	# Recreation/visitor	C	**$886,000**
Objective B	**Expand the park's recreational carrying capacity by 224 users per day.**	# Recreation/visitor	UFN	**$156,000**
Objective C	**Continue to provide the current repertoire of 2 interpretive, educational and recreational programs on a regular basis.**	# Interpretive/education programs	C	**$10,000**
Objective D	**Develop 2 new interpretive, educational and recreational programs.**	# Interpretive/education programs	UFN	**$10,000**

* 2015 Dollars
ST = actions within 2 years
LT = actions within 10 years
C = long term or short term actions that are continuous or cyclical
UFN = currently unfunded need

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.

Goal VIII: Develop and maintain the capital facilities and infrastructure necessary to meet the goals and objectives of this management plan.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	**Maintain all public and support facilities in the park.**	Facilities maintained	C	**$554,000**
Objective B	**Continue to implement the park's transition plan to ensure facilities are accessible in accordance with the American with Disabilities Act of 1990.**	Plan implemented	LT	**$30,000**
Objective C	**Improve and/or repair 7 existing facilites.**	# Facilities/Miles of Trail/Miles of Road	UFN	**$1,290,000**
Objective D	**Construct 1 new facility.**	# Facilities/Miles of Trail/Miles of Road	UFN	**$467,000**
Objective E	**Expand maintenance activities as existing facilities are improved and new facilities are developed.**	Facilities maintained	UFN	**$385,000**

Summary of Estimated Costs

Management Categories		Total Estimated Manpower and Expense Cost* (10-years)
Resource Management		**$380,000**
Administration and Support		**$390,000**
Capital Improvements		**$1,787,000**
Recreation Visitor Services		**$2,001,000**
Law Enforcement Activities[1]		

1Law enforcement activities in Florida State Parks are conducted by the FWC Division of Law Enforcement and by local law enforcement agencies.

* 2015 Dollars
ST = actions within 2 years
LT = actions within 10 years
C = long term or short term actions that are continuous or cyclical
UFN = currently unfunded need

Addendum 1—Acquisition History

Purpose of Acquisition:

The Board of Trustees of the Internal Improvement Fund (Trustees) of the State of Florida acquired the initial area of Blackwater River State Park for the establishment of a park area to provide public, resource-based recreation.

Sequence of Acquisition:

On February 23, 1968, the Trustees obtained title to a 360-acre property that constituted the initial area of Blackwater River State Park. This property was conveyed to the Trustees by the Florida Board of Forestry, predecessor to Department of Agriculture and Consumer Services. Subsequent to the initial acquisition, the Trustees acquired a 276-acre property and added it to the park. The current area of the park is approximately 636 acres.

Title Interest:

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

Lease Agreement:

On June 14, 1968, the Trustees leased Blackwater River State Park to the Florida Board of Parks and Historic Memorials, predecessor to the Division of Recreation and Parks (DRP), under Lease number 2333. This 99-year lease will expire on June 13, 2067. According to the lease, the DRP manages the park for the purpose of public outdoor recreation, park, conservation, historic and related purposes.

Special Conditions on Use:

Blackwater River State Park is designated as a single-use property to provide resource-based public outdoor recreation and other park related uses. Uses such as water resource development projects, water supply projects, storm-water management projects, and linear facilities and sustainable agriculture and forestry are not consistent with the purposes for which the DRP manages the park.

Outstanding Reservations:

The following is a list of outstanding rights, reservations and encumbrances that apply to Blackwater River State Park.

Type of Instrument:…… Deed
Grantor:…… The United States of America
Grantee:…… The Florida Board of Forestry
Beginning Date:…… November 4, 1955
Ending Date:…… Perpetuity
Outstanding Encumbrance:…The deed is subject to the condition that the subject land shall be used for public purposes, and if at anytime said land ceases to

be so used the estate thereby conveyed shall immediately revert to and become revested in the United States.

Addendum 2—Advisory Group Members and Report

Elected Officials

The Honorable W.D. "Don" Salter, Chair
Santa Rosa County Board of County Commissioners

Agency Representatives

Ferlain Hoover, Park Manager
Blackwater River State Park

Barbara Almario, Area Wildlife Biologist
Florida Fish and Wildlife Conservation Commission

David Creamer, Recreation Coordinator
Blackwater State Forest

John Salter, Chair
Blackwater Soil and Water Conservation District

Tourism / Economic Development Representative

Julie Morgan, Director
Santa Rosa Tourist Development Office

Environmental Groups

Dana Timmons, Presidents' Council
Francis M. Weston Audubon Society

Amy Hines, President
Longleaf Pine Chapter
Florida Native Plant Society

Recreational User Groups

Helen Wigersma, Chair
Western Gate Chapter
Florida Trail Association

Thomas McLaulin, President
Florida Paddling Trails Association

Adjacent Landowner

Lamar Christenberry

The Advisory Group meeting for Blackwater River State Park was held at the Blackwater Heritage Trail visitor center on October 14, 2015. Grace Quina represented David Creamer, John Veasey represented Thomas McLaulin, Jason Tritt represented John Salter, and Barbara Albrecht represented Dana Timmons. Amy Hines was unable to attend. All other Advisory Group members were in attendance. Attending staff were Danny Jones, Tony Tindell, Anne Harvey, Ferlain Hoover, Gerard Greco and David Copps.

Mr. Copps began the meeting by explaining the purpose of the Advisory Group, reviewing the meeting agenda, and summarizing the comments from the public hearing that was held the previous evening. Mr. Copps then asked each member of the Advisory Group to express his or her comments on the draft plan.

Summary of Advisory Group Comments

Don Salter (Santa Rosa County Commission) stated that the park and surrounding state forest lands are very important assets to the region because they help to protect water quality while providing multiple conservation uses. He recommended a meeting of the County, Florida Forest Service, and Florida Park Service to discuss the roles and responsibilities for road maintenance in the area. He said good communication between the agencies is key.

Helen Wigersma (Western Gate Chapter, Florida Trail Association) expressed a concern with potential bicycle conflicts on the Florida National Scenic Trail (FNST). She recommended that the park tell bicycle rental concessionaires to educate and inform their clients that bicycles are not allowed on the FNST. Ms. Wigersma recommended that wayfinding/informational signage be placed at appropriate locations in the park to prevent user conflicts between park visitors and hikers on the FNST. She recommended two sign locations including the Deaton Bridge area and the Hutton Unit area. Ms. Wigersma asked if the Florida Trail Association (FTA) storage shed would be impacted by the improvements proposed for the Shop Area. Ferlain Hoover said that the addition of the proposed equipment shelter shouldn't pose any conflicts with the FTA structure. She recommended that the park's recent participation in National Trails Day activities should be mentioned in the accomplishments section of the plan. Ms. Wigersma stated her approval of the language in the plan that stresses the need to clean maintenance equipment to prevent the spread of exotic invasive species. She stated that the FTA would be interested in working with the park to create additional linkages between the FNST and park trails to provide additional day use opportunities for FNST hikers.

Julie Morgan (Santa Rosa County Tourist Development Office) stated her interest in promoting regional camping and trail opportunities to attract visitors to the area. She said that she has reached out to Paddle Florida to encourage them to explore the possibility of establishing a recurring paddling trip on the Blackwater River for serious paddlers interested in participating in multi-night trips. She said that log jams south of the park pose a serious obstruction for paddlers and asked if a clear

channel could be created to extend the length of the Blackwater River paddling trail. Ferlain Hoover said that the extensive jam is probably too large to clear. Ms. Morgan stated that the Tourist Development Office is also very much interested in promoting regional recreational opportunities including bicycle trails and hiking on the Florida National Scenic Trail.

Grace Quina (Florida Forest Service) stated that the Florida Forest Service would be happy to cooperate with the Tourist Development Office to promote outdoor recreational opportunities in the Blackwater State Forest.

Barbara Almario (Florida Fish and Wildlife Conservation Commission) stated that black bears are moving north towards the park. She recommended that black bear management be discussed in the unit management plan to provide clear guidance for dealing with nuisance bears in recreational areas. Ferlain Hoover said the park will follow the standard Florida Park Service protocol for dealing with nuisance bears. Ms. Almario said the specific guidance should be provided in the unit management plan because problems will certainly arise within the next ten years. She also said that the management plan should mention feral hogs as a potential threat to the park within the ten year planning cycle. Ms. Almario asked if the paddling concessionaires have to collect trash in the river as part of their permit requirements. Ferlain Hoover explained the concessionaires pay a user fee, but no permits are required. She said that she likes the provision of additional camping opportunities in the park and the addition of the canoe/kayak landing in the Deaton Bridge Day Use Area.

John Veasey (West Florida Canoe and Kayak Club/Florida Paddling Trails Association) mentioned that the Florida Forest Service requires that paddling volunteers fill out information forms before conducting any river log clearing for accountability purposes. He said that volunteers don't like to fill out paperwork. Mr. Veasey said that it would be very difficult to create a clear channel in the Blackwater River down to the Yellow River because of the extensive log jam. He expressed concern about the Gulf Regional Airspace Strategic Initiative (GRASI) that would allow the military to operate training exercises in the Blackwater River State Forest. He asked if the Florida Park Service will allow for training exercises in the state park. Anne Harvey said that the military has agreed to stay at least 2,000 feet away from the park boundary. Grace Quina told Mr. Veasey that the Florida Forest Service requires a permit to pull logs from the Blackwater River and burn them on the bank for liability reasons. She said that a burn pile of 8 feet x 8 feet or less does not need a permit. Mr. Veasey said that the permit requirements seem like bureaucratic overreach. Mr. Christenberry said that the requirement is meant to protect forest landowners from wildfires and the volunteer workers from liability. Mr. Veasey stated his concern for the amount of litter that he has observed in the river.

Jason Tritt (Blackwater Soil and Water Conservation District) stated that he is a member of a local bicycle club that always stresses the fact that no bicycles are allowed on the Florida National Scenic Trail. Helen Wigersma stated that she

appreciates the area bicycle clubs and their cooperation with hiking trail rules. She pointed out that it is usually random individuals that cause problems.

Barbara Albrecht (Francis M. Weston Audubon Society) stressed the importance of educating visitors about the sensitive nature of the region's sandy soils and associated natural communities. She said that log jams on the Blackwater River were created by past, upstream mining operations. She acknowledged the problem that log jams cause for paddlers but described the very valuable habitat that they provide for aquatic organisms. She stated concern about the wood removal from the river after storms and said that it needs to stay in the river for habitat reasons. Ms. Albrecht recommended that the logs removed during channel clearing operations be left along the bank to provide wildlife habitat. She said that Audubon is excited about conducting botanical surveys in the park. She encouraged the park to provide better access into natural areas for the benefit of elderly and disabled visitors. Ms. Albrecht said that she likes the fact that the military has agreed to stay 2,000 feet away from the park boundary when conducting military training exercises. She stressed that the Florida-specific list of imperiled species be used for environmental assessments of military activities associated with GRASI, as the U.S. Fish and Wildlife Service list provides less protection.

Lamar Christenberry (Adjacent Landowner) stated his concern about the flooding on Deaton Bridge Road in regards to the safety of motorist. He recommended that up to three depth markers be installed along the road to guide travelers when crossing the river during flood stage. He said this would help motorists understand water depths and allow for better judgements on whether or not to cross. Mr. Christenberry clarified the different types of bicyclists and recommended that biking improvement consider on-road riders as well as the off-roaders. He stated that there should be language in the plan that states how the park fits into and the role it plays in the larger regional system of green spaces and conservation lands. Anne Harvey replied that the park's relationship with the Gulf Coastal Plains Ecosystem is mentioned in the plan, particularly in regards to cooperating with other agencies to burn larger, contiguous landscapes for the benefit of regional ecosystems. Mr. Christenberry said that he understands the habitat value of logs in the river but said that dead wood in swimming areas is dangerous and should be removed from those areas.

Summary of Public Comments

Robin Armstrong said that he came to the meeting to learn about paddling activities and facilities proposed in the management plan.

Staff Recommendations

Suggestions received from the Advisory Group meeting resulted in the following modifications to the draft management plan:

- Language will be added to the plan concerning DRP standard protocols for nuisance black bears and feral hogs.
- Language will be added to the plan stating that the park will cooperate with the Florida Trails Association to provide wayfinding signs at key locations in the park to avoid conflicts between park users and hikers on the Florida National Scenic Side Trail and to explore the feasibility of providing additional connections of park trails to the Side Trail.
- Blackwater River State Park's recent participation in National Trails Day activities will be mentioned in the Accomplishments section of the plan.

One Advisory Group member recommended that depth markers be installed on Deaton Bridge Road to inform motorists of water depths during flood stage. Road and bridge maintenance is the responsibility of Santa Rosa County. The park will work with the county on potential improvements to Deaton Bridge Road.

With these modifications, DRP staff recommends approval of the proposed management plan for Blackwater River State Park.

Notes on Composition of the Advisory Group

Florida Statutes Chapter 259.032 Paragraph 10(b) establishes a requirement that all state land management plans for properties greater than 160 acres will be reviewed by an advisory group:

"Individual management plans required by s. 253.034(5), for parcels over 160 acres, shall be developed with input from an advisory group. Members of this advisory group shall include, at a minimum, representatives of the lead land managing agency, co-managing entities, local private property owners, the appropriate soil and water conservation district, a local conservation organization, and a local elected official."

Advisory groups that are composed in compliance with these requirements complete the review of State park management plans. Additional members may be appointed to the groups, such as a representative of the park's Citizen Support Organization (if one exists), representatives of the recreational activities that exist in or are planned for the park, or representatives of any agency with an ownership interest in the property. Special issues or conditions that require a broader representation for adequate review of the management plan may require the appointment of additional members. DRP's intent in making these appointments is to create a group that represents a balanced cross-section of the park's stakeholders. Decisions on appointments are made on a case-by-case basis by DRP staff.

Addendum 3 – References Cited

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Addendum 4—Soil Descriptions

(1) Albany loamy sand, 0 to 5 percent slopes - This nearly level, somewhat poorly drained soil is on lower elevations of uplands. Included with this soil in mapping are small areas of Troup and Plummer soils. This Albany soil has a seasonal high water table 12 to 30 inches below the surface for 1 to 2 months in most years. Available water capacity is very low in the surface and subsurface layers and medium in the subsoil. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. Natural fertility is low.

(2) Angie variant loam - This moderately well drained, nearly level soil is primarily on broad flats between streams and along drainageways. Slopes are smooth to concave. Areas of this soil range in size from 10 to 60 acres. In this Angie Variant soil the water table is between depths of 30 to 50 inches for more than 6 months. During dry periods, the water table will drop below a depth of 60 inches for as long as 1 month. Permeability is moderate to moderately slow above a depth of 7 inches and slow or very slow below this depth. The slow permeability causes water to stand on the surface during periods of excessive rainfall. Available water capacity and organic matter content are moderate. Natural fertility is low. Internal drainage under natural conditions is slow.

(3) Bibb-Kinston association - These poorly drained, nearly level soils are in drainageways and on flood plains along streams. Slopes range from 0 to 2 percent. The areas are interspersed with depressions, old stream channels, and meandering sloughs. Bibb and Kinston soils occur in a regular and repeating pattern. The Bibb soil is near the stream edge, and the Kinston soil is in the wider areas generally back from the stream edge. The areas of each soil are large enough to map separately, ranging from about 10 to 160 acres. Mapped areas of this association are generally long and narrow and range from about 40 acres to more than 400 acres in size. In the Bibb soil the water table is at a depth of less than 10 inches for 6 months or more during most years. The soil is also subject to frequent flooding. Permeability is moderate and available water capacity is medium. Natural fertility is moderate.

(8) Dothan fine sandy loam, 2 to 5 percent slopes - This well drained, gently sloping soil is on broad and narrow ridgetops in the uplands. Slopes are smooth to concave. Areas of this soil range mostly from 20 to 100 acres in size, but some areas are as small as 5 acres. In this Dothan soil the water table is normally above a depth of 6 feet. After heavy rainfall the water table is perched at a depth of 42 to 48 inches for 1 to 2 weeks. Available water capacity is medium. Natural fertility and organic matter content are low. Permeability is moderate in the upper park of the subsoil and moderately slow in the lower part. Runoff is moderate on unprotected areas and the erosion hazard is moderate.

(18) Johns fine sandy loam - This somewhat poorly drained to moderately well drained, nearly level soil is on stream terraces primarily along the larger streams. Slopes range from 0 to 2 percent. Areas of this soil range mostly

from 10 to 120 acres in size, but a few areas are as small as 5 acres. In this Johns soil the water table is at a depth of 18 to 36 inches from 2 to 6 months most years. Available water capacity is moderate. Natural fertility is low. Permeability is moderately rapid above a depth of 19 inches, moderate between depths of 19 and 35 inches, and rapid below a depth of 35 inches. Runoff is slow.

(19) Kalmia loamy fine sand, 2 to 5 percent slopes - This well drained, gently sloping soil is on stream terraces, primarily along the large streams in the county. Slopes are smooth to concave. Areas of this soil range mostly from 10 to 70 acres in size, but a few areas are as small as 5 acres. In this Kalmia soil the water table is at a depth of more than 6 feet. Available water capacity is low above a depth of about 14 inches, moderate between depths of 14 and 39 inches, and low below a depth of 39 inches, and rapid below a depth of 39 inches. Runoff is medium and the erosion hazard is moderate.

(21) Lakeland sand, 0 to 5 percent slopes - This excessively drained, nearly level to gently sloping soil is primarily on broad ridgetops in the uplands. Slopes are smooth to concave. Areas of this soil range mostly from 40 to more than 300 acres in size, but some areas are larger than 1,000 acres and some are as small as 5 acres. In the Lakeland soil the water table is at a depth of more than 72 inches. Available water capacity is low or very low. Organic matter content and natural fertility are very low. Permeability is very rapid. Runoff is slow, and erosion hazard is slight.

(22) Lakeland sand, 5 to 12 percent slopes - This excessively drained, sloping to strongly sloping soil is primarily on upland hillsides leading to drainageways and around depressions. Slopes are smooth to concave. Areas of this soil range mostly from 30 to 100 acres in size, but some areas are as small as 5 acres. In this Lakeland soil the water table is at a depth of more than 72 inches. Available water capacity is low or very low. Organic matter content and natural fertility are very low. Permeability is very rapid. Runoff is slow to medium. The erosion hazard is moderate where the soil is not protected.

(27) Lynchburg fine sandy loam - This somewhat poorly drained nearly level soil is found along narrow drainageways, around depressions, and on low flats betwen small streams. Slopes are less than 2 percent. Areas of this soil range mostly from 10 to more than 100 acres in size, but a few areas are as small as 5 acres. In this Lynchburg soil the water table is at a depth of less than 12 inches from 1 to 3 months during spring and winter in most years. Available water capacity is medium. Natural fertility is low. Permeability is moderate above a depth of about 25 inches and moderately slow below a depth of about 25 inches. Internal drainage is moderately slow to slow and response to artifical drainage is moderately slow. Runoff is slow.

(34) Pactolus loamy sand, 0 to 5 percent slopes - This moderately well drained to somewhat poorly drained nearly level to gently sloping sil is on low

positions in the uplands. Slopes are smooth to concave. Areas of this soil range mostly from 10 to more than 200 acres in size, but some areas are as small as 5 acres. In this Pactolus soil the high water table is at a depth of 18 to 30 inches from 2 to 4 months during most years. Available water capacity, natural fertility and organic matter content are low. Permeability is rapid. Runoff is slow and the erosion hazard is slight.

(37) Rains fine sandy loam - This poorly drained nearly level soil is in low-lying positions on the Coastal plain. Slopes are less than 2 percent. Areas of this soil range from 5 to 40 acres in size. Inthis Rains soil the water table is at a depth of less than 10 inches or is above the surface for 2 to 6 months in most years. Available water capacity is moderate. Natural fertility is low. Permeability is moderately rapid above a depth of 5 inches and moderate below this depth. Internal drainage is moderately slow to slow and response to artifical drainage is moderately slow. Runoff is slow.

(44) Troup loamy sand, 0 to 5 percent slopes - This well drained, nearly level to gently sloping soil is primarily on broad ridgetops in the uplands. Slopes are smooth to concave. Areas of this soil range mostly from 40 acres to more than 300 acres in size, but some areas are larger than 1000 acres and some are as small as 5 acres. In this Troup soil the water table is at a depth of more than 6 feet. Available water capacity is low in the surface and subsurface layers and medium in the subsoil. Natural fertility and organic matter content are low. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. Runoff is slow and erosion hazard is slight.

(47) Troup-Orangeburg-Cowarts complex, 5 to 12 percent slopes - This complex consists of sloping to strongly sloping, well drained soils on side slopes. Slopes are smooth to concave. The areas of the indiviaul soils are so intermixed that they could not be separated in mapping. The individual areas range from 1 to 15 acres in size. Mapped areas of this complex range from 5 to 200 acres. The Troup soils have slopes of 5 to 12 percent. This soil has slow runoff, and the erosion hazard is moderate in unprotected areas. Natural fertility and organic matter content are low. Permeability is rapid above a depth of 52 inches and moderate below this depth. Available water capacity is low in the surface and subsurface layer and medium in the subsoil. The water table is below a depth of 72 inches.

(99) Water – Channel of Blackwater River

Addendum 5 – Plant and Animal List

Blackwater River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat (for designated species)
Chives	*Allium schoenoparsum*	
Three-seeded mercury	*Acalypha gracilens*	
Southern red maple	*Acer rubrum*	
Sugar maple	*Acer saccharum*	
Red buckeye	*Aesculus pavia*	
Wild hoarhound	*Ageratina aromatica*	
Harvest lice	*Agrimonia microcarpa*	
Ajuga, bugle	*Ajuga reptans*	
Mimosa*	*Albizia julibrissin*	
Mushroom sp.	*Amanita citrina*	
Prince feather	*Amaranthus hypocondriacus*	
Common ragweed	*Ambrosia artemisiifolia*	
Pepper vine	*Ampelopsis arborea*	
Hog peanut	*Amphicarpaea bracteata*	
Bluestem, broomsedge	*Andropogon virginicus var. glaucus*	
Dwarf snapdragon	*Antirrhinum majus*	
Marsh parsley	*Apium leptophyllum*	
Columbine	*Aquilegia canadensis*	
Devil's-walkingstick	*Aralia spinosa*	
Green dragon	*Arisaema dracontium*	
Wiregrass	*Aristida stricta*	
Snakeroot	*Aristolochia serpentaria*	
Cane	*Arundinaria gigantea*	
Milkweed	*Asclepias perennis*	
Butterfly-weed	*Asclepias tuberosa*	
Milkweed	*Asclepias variegata*	
Pawpaw	*Asimina longifolia var. spatulata*	
Small-fruited pawpaw	*Asimina parviflora*	
Cast iron plant	*Aspidistra elatior*	
Ebony spleenwort	*Asplenium platyneuron*	
Climbing aster	*Aster carolinianus*	
Aster	*Aster sagittifolius*	
White-topped aster	*Aster tortifolius*	
Yellow foxglove	*Aureolaria flava*	
Mosquito fern	*Azolla caroliniana*	
Groundsel tree	*Baccharis glomesuliflora*	
Angel wing begonia	*Begonia hybrid 'Lucerna'*	
Mixed colors begonia	*Begonia semperflorens*	
Shrimp plant	*Beloperone guttata*	
Rattan vine	*Berchemia scandens*	
Beggar tick	*Bidens alba*	
Cross vine	*Bignonia capreolata*	
False nettle	*Boehermia cylindrica*	
Southern grape fern	*Botrychium biternatum*	
Rattlesnake fern	*Botrychium virginianum*	
Sekito ornamental cabbage	*Brassica oleracea*	
Dwarf curled kale	*Brassica oleracea 'Acephala*	
Black-haw, gum bumelia	*Bumelia lanuginosa*	
Pindo palm	*Butia capitata*	
American boxwood	*Buxus sempervirens*	
Fancy-leafed caladium	*Caladium bicolor*	

*** Non-native Species**

Blackwater River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat (for designated species)
Pot marigold	*Calendula officinalis*	
Beautyberry	*Callicarpa americana*	
Sweet shrub	*Calycanthus floridus*	AF,FS
-------	*Calyptocarpus vialis*	
Camellia	*Camellia japonica*	
Camellia sasanqua	*Camellia sasanqua*	
Trumpet vine	*Campsis radicans*	
Canna - 4 color varieties	*Canna indica*	
Sedge	*Carex albolutescens*	
Sedge	*Carex amphibola*	
Sedge	*Carex cherokeenis*	
Sedge	*Carex comosa*	
Sedge	*Carex crus-corvi*	
Sedge	*Carex digitalis*	
Sedge	*Carex floridana*	
Sedge	*Carex gigantea*	
Sedge	*Carex joori*	
Sedge	*Carex leptalea*	
Sedge	*Carex louisianica*	
Sedge	*Carex lupulina*	
Sedge	*Carex striatula*	
Sedge	*Carex texax*	
Sedge	*Carex tribuloides*	
Sedge	*Carex willdenowii*	
Deer tongue	*Carphephorus sp.*	
Ironwood	*Carpinus caroliniana*	
Bitternut hickory	*Carya cordiformis*	
Pignut hickory	*Carya glabra*	
Mockernut hickory	*Carya tomentosa*	
Wild sensitive plant	*Cassia nictitans*	
Madagascar periwinkle	*Catharanthus sp.*	
New Jersey tea	*Ceanothus americanus*	
Cockcomb	*Celosia argentea cristata*	
Plumosa, prince feather	*Celosia argentea pyramidalis*	
Hackberry	*Celtis laevigata*	
Butterfly-pea	*Centrosema virginianum*	
Buttonbush	*Cephalanthus occidentalis*	
Hornwort	*Ceratophyllum demersum*	
Redbud	*Cercis canadensis*	
Wild chervil	*Chaerophyllum tainturieri*	
Spikegrass	*Chasmanthium nitidum*	
Spikegrass	*Chasmanthium sessiliflorum*	
Florist chrysanthemum	*Chrysanthemum indicum*	
Ox-eye daisy	*Chrysanthemum leucanthemum*	
Water hemlock	*Cicuta mexicana*	
Camphor tree*	*Cinnamomum camphora*	
Thistle	*Cirsium horridulum*	
Sawgrass	*Cladium jamaicense*	
Lichen	*Cladonia sp.*	
Butterfly pea	*Clitoria mariana*	
Tread softly	*Cnidoscolus stimulosus*	

*** Non-native Species**

Blackwater River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat (for designated species)
Coralbeads	*Cocculus carolinus*	
Coleus	*Coleus blumei*	
Taro*	*Colocasia esculenta*	
Dayflower	*Commelina erecta*	
Mist flower	*Conoclinium coelestinum*	
Tickseed	*Coreopsis gladiata*	
Lance-leaved coreopsis	*Coreopsis lanceolata*	
Dogwood	*Cornus asperilolia*	
Flowering dogwood	*Cornus florida*	
'Cherokee Princess'	*Cornus florida hybrid*	
'Cloud 9'	*Cornus florida hybrid*	
'Plena'	*Cornus florida hybrid*	
Stiff cornel dogwood	*Cornus foemina microcarpa*	
Stiff cornel dogwood	*Cornus foemina foemina*	
Pampas grass	*Cortaderia selloana*	
Parsley haw	*Crataegus marshallii*	
Hawthorn	*Crataegus pulcherrima*	
Dwarf thorn	*Crataegus uniflora*	
Green haw	*Crataegus viridis*	
Swamp lily	*Crinum americanum*	
Milk and wine crinum lily	*Crinum powelli*	
Star of east	*Crocosmia crocosmiiflora*	
Crocus	*Crocus candidus*	
Rabbit-bells	*Crotalaria rotundifolia*	
Silver croton	*Croton argyranthemus*	
Rush	*Crotonopsis linearis*	
Baldwin florsedge	*Cyperus globulosus*	
Leatherwood	*Cyrilla racemiflora*	
Wood vamp climbing hydrangea	*Decumaria barbara*	
Beggar's ticks	*Desmodium rotundifolium*	
----------	*Dichanthelium commutatum*	
----------	*Dichanthelium dichotomum*	
Panic grass	*Dichanthelium laxiflorum*	
Pony-foot	*Dichondra carolinensis*	
Poor-Joe	*Diodia teres*	
Buttonweed	*Diodia virginiana*	
Yam	*Dioscorea villosa*	
Persimmon	*Diospyros virginiana*	
Dwarf sundew	*Drosera brevifolia*	
Leatherwood fern	*Dryopteris ludoviciana*	
Indian strawberry	*Duchesnia indica*	
Dyschoriste	*Dyschoriste oblongifolia*	
Purple coneflower	*Echinacea purpurea*	UHF,AF
Brazilian elodea*	*Egeria densa*	
Silverthorn elaegnus	*Elaegnus pungens*	
Florida Elephant's-foot	*Elephantopus elatus*	
Elephant's-foot	*Elephantopus carolinianus*	
Virginia wild rye	*Elymus virgincus*	
Green-fly orchid	*Epidendrum conopseum*	
Beech drops	*Epifagus virginiana*	
Sugarcane plumegrass	*Erianthus giganteus*	

*** Non-native Species**

Blackwater River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat (for designated species)
White-tops	*Erigeron strigosus*	
Coralbean	*Erythrina herbacea*	
Tasmanian blue gum	*Eucalyptus globulus*	
Cider gum	*Eucalyptus gunni*	
Strawberry bush	*Euonymus americanus*	
Aureo-picta euonymus	*Euonymus japonica*	
White thoroughwort	*Eupatorium album*	
Dog fennel	*Eupatorium capillifolium*	
Dog fennel	*Eupatorium compositifolium*	
Ageratum	*Eupatorium incarnatum*	
Boneset	*Eupatorium perfoliatum*	
Spurge	*Euphorbia discoidalis*	
Spurge	*Euphorbia excerta*	
American beech	*Fagus grandifolia*	
Fescue	*Festuca optiflora*	
White ash	*Fraxinus americana*	
Popash, Carolina ash	*Fraxinus caroliniana*	
Green ash	*Fraxinus pennsylvanica*	
Pumpkin ash	*Fraxinus profunda*	
Goblin gaillardia	*Gaillardia arstata hybrid*	
Milk pea	*Galactia elliottii*	
Wild licorice	*Galium circaezans*	
Goosegrass	*Galium pilosum*	
Sweet-scented bedstraw	*Galium uniflorum*	
Southern gaura	*Gaura angustifolia.*	
Dangleberry	*Gaylussacia frondosa*	
Yellow jessamine	*Gelsemium sempervirens*	
Cranesbill	*Geranium carolinianum*	
Gerbera daisy	*Gerbera jamesonnii*	
Large-flowered sword lily	*Gladiolus sp.*	
Water locust	*Gleditsia aquatica*	
Sweet everlasting	*Gnaphalium obtusifolium*	
Witch hazel	*Hamamelis virginiana*	
Mushroom sp.	*Hapalopilus croceus*	
English ivy*	*Hedera helix*	
Innocence	*Hedyotis procumbens*	
Bitter weed	*Helenium amarum*	
Rockrose	*Helianthemun arenicola*	
Annual sunflower	*Helianthus annuus*	
Rough sunflower	*Helianthus hirsutus*	
Day lily 'Astec gold'	*Hemerocallis fulva var.*	
Day lily 'Yellow'	*Hemerocallis fulva var.*	
Day lily 'Garnet and gold'	*Hemerocallis fulva var.*	
Halberd-leaved marhmallow	*Hibiscus militaris*	
Rose-of-Sharon	*Hibiscus syriacus*	
Hawkweed	*Hieracium gronovii*	
Amaryllis	*Hippeastrum equestre*	
Dutch hyacinth*	*Hyacinthus orientalis*	
Hortensia hydrangea	*Hydrangea macrophylla*	
Oakleaf hydrangea	*Hydrangea quercifolia*	
Hydrilla*	*Hydrilla verticillata*	

* Non-native Species

Blackwater River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat (for designated species)
Swamp pennywort	*Hydrocotyle verticillata*	
Mushroom sp.	*Hygrophores subsordius*	
Spider lily	*Hymenocallis rotata*	
St.Andrew's-cross	*Hypericum hypericoides*	
Swamp stargrass	*Hypoxis leptocarpa*	
Mint	*Hyptis mutabilis*	
Carolina holly	*Ilex ambigua*	
Dwarf Clarissa holly	*Ilex aquifolium hybrid*	
Ferox holly	*Ilex aquifolium hybrid*	
Dahoon holly	*Ilex cassine*	
Large or sweet gallberry	*Ilex coriacea*	
Deciduous holly	*Ilex decidua*	
Inkberry, Gallberry	*Ilex glabra*	
American holly	*Ilex opaca*	
Savannah holly	*Ilex opaca hybrid*	
East Palatka holly	*Ilex opaca hybrid*	
Yaupon holly	*Ilex vomitoria*	
Balsam impatiens	*Impatiens balsamina*	
Busy Lizzy impatiens	*Impatiens Wallerana*	
Wild potato vine	*Ipomoea pandurata*	
Cypress vine	*Ipomoea quamoclit*	
Blue morning glory	*Ipomoea trichocarpa*	
Virginia willow	*Itea virginica*	
Rush	*Juncus coriaceus*	
Shore rush	*Juncus marginatus*	
Rush	*Juncus polycephalus*	
Dwarf juniper	*Juniperous 'Andora compacta'*	
Southern red cedar	*Juniperus silicicola*	
Spiral juniper	*Juniperus 'Torulosa'*	
Water willow	*Justicia ovata*	
Dwarf dandelion	*Krigia virginicum*	
Blue lettuce	*Lactuca floridana*	
Crape myrtle	*Lagerstroemia indica*	
Pinweed	*Lechea mucronata*	
Duckweed	*Lemna obscura*	
Poor man's pepper	*Lepidium virginicum*	
Bush clover	*Lespedeza sp.*	
Blazing star	*Liatris chapmanii*	
Blazing star	*Liatris elegans*	
Glossy privet*	*Ligustrum lucidum*	
Golden privet*	*Ligustrum ovalifoium*	
Spice bush	*Lindera benzoin*	
Blue toad-flax	*Linaria canadensis*	
Sweetgum	*Liquidambar styraciflua*	
Lily turf	*Liriope muscari*	
Lily turf	*Liriope spicata*	
Twayblade	*Listera australis*	
Cardinal flower	*Lobelia cardinalis*	
Bellflower	*Lobelia floridana*	
Japanese honeysuckle*	*Lonicera japonica*	
Coral honeysuckle	*Lonicera sempervirens*	

*** Non-native Species**

Blackwater River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat (for designated species)
Water primrose	*Ludwigia repens*	
Hurricane lily	*Lycoris radiata*	
Japanese climbing fern*	*Lygodium japonicum*	
Staggerbush	*Lyonia fruticosa*	
Fringed loosestrife	*Lysimachia lanceolata*	
Southern magnolia	*Magnolia grandiflora*	
Saucer magnolia	*Magnolia soulangiana*	
Sweet bay	*Magnolia virginiana*	
Green adder's-mouth orchid	*Malaxis unifolia*	AF,FS
Crab apple	*Malus angustifolia*	
Angle pod	*Matelea gonocarpa*	
Mecardonia	*Mecardonia acuminata*	
Chinaberry*	*Melia azedarach*	
Melonette	*Melothria pendula*	
Climbing hempweed	*Mikania scandens*	
Garden four-o'clock	*Mirabilis jalapa*	
Partridge berry, twin berry	*Mitchella repens*	
Miterwort	*Mitreola petiolata*	
Horse mint	*Monarda punctata*	
Indian pipe	*Monotropa uniflora*	
Red mulberry	*Morus rubra*	
Banana tree	*Musa acuminata*	
Wax myrtle	*Myrica cerifera*	
Parrot's-feather*	*Myriophyllum brasiliense*	
Southern naiad	*Najas guadalupensis*	
Nandina*	*Nandina domestica*	
Various cultivars	*Narcissus sp.*	
Water-cress	*Nasturtium microphyllum*	
Hurricane lily	*Nerine sp.*	
Yellow water lily	*Nymphaea mexicana*	
Swamp tupelo	*Nyssa sylvatica var. biflora*	
Cut-leaved evening primrose	*Oenothera laciniata*	
Star of Bethlehem	*Ornathagolum thyrsoides*	
Sensitive fern	*Onoclea sensibilis*	
Mondo grass*	*Ophiopogon japonicus*	
Woodsgrass; Basketgrass	*Oplismenus setarius*	
Prickly-pear cactus	*Opuntia humifusa*	
Wild olive	*Osmanthus americana*	
Tea olive	*Osmanthus fragrans*	
Cinnamon fern	*Osmunda cinnamomea*	
Royal fern	*Osmunda regalis*	
Lady's sorrel	*Oxalis corniculata*	
Lady's sorrel	*Oxalis dillenii*	
Maidencane	*Panicum hemitomon*	
Blackberry lily hybrid	*Paradancana norrissii hybrid*	
Whitlow-wort	*Paronychia baldwinii*	
Virginia creeper	*Parthenocissus quinquefolia*	
Thin paspalum	*Paspalum setaceum*	
Passionflower	*Passiflora incarnata*	
Yellow passion flower	*Passiflora lutea*	
Geranium	*Pelargonium hortorum hybrid*	

*** Non-native Species**

Blackwater River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat (for designated species)
Redbay	*Persea borbonia*	
Swampbay	*Persea palustris*	
Parsley	*Petroselinum crispum*	
Garden petunia	*Petunia hybrida*	
Bean vine, wild bean	*Phaseolus polystachyus*	
Florida phlox	*Phlox floridana*	
Mistletoe	*Phoradendron serotinum*	
Red-leaf photinia	*Photinia glabra*	
----------	*Phyllanthus urinaria*	
Ground cherry	*Physalis sp.*	
Obedient plant	*Physostegia leptophylla*	
Pokeberry; Pokeweed	*Phytolacca americana*	
Shortleaf pine	*Pinus echinata*	
Slash pine	*Pinus elliottii*	
Spruce pine	*Pinus glabra*	
Longleaf pine	*Pinus palustris*	
Loblolly pine	*Pinus taeda*	
Piriqueta	*Piriqueta carolinana*	
Japanese pittosporum*	*Pittosporum tobira*	
Variegated pittosporum	*Pittosporum tobira var.*	
Golden aster	*Pityopsis sp.*	
Hoary plantain	*Plantago virginica*	
Little club-spur orchid	*Platanthera clavellata*	AF,FS
Southern rein-orchid	*Platanthera flava*	
Marsh fleabane, camphor weed	*Pluchea camphorata*	
Annual bluegrass	*Poa annua*	
Yew podocarpus	*Podocarpus macrophylla*	
Polygala	*Polygala grandiflora*	
Bachelor button	*Polygala nana*	
Wild water-pepper	*Polygonum hydropiperoides*	
Pinkweed	*Polygonum pensylvanicum*	
Smartweed	*Polygonum sp.*	
Resurrection fern	*Polypodium polypodioides*	
Rustweed	*Polypremum procumbens*	
Christmas fern	*Polystichum acrostichoides*	
Pickerelweed	*Pontederia cordata*	
Shadow witch orchid	*Pontheiva racemosa*	
Cottowood	*Populus deltoides*	
Purslane rose	*Portulaca sp.*	
Illinois pondweed	*Potamogeton illinoensis*	
Gall-of-the-earth	*Prenanthes serpentaria*	
Wildplum	*Prunus americana*	
Carolina laurel cherry	*Prunus caroliniana*	
Wild cherry	*Prunus serotina*	
Ornamental cherry	*Prunus sp.*	
Hog plum	*Prunus umbellata*	
Bracken fern	*Pteridium aquilinum*	
Mock bishop's weed	*Ptilimnium capillaceum*	
Firethorn	*Pyracantha coccinea*	
False dandelion	*Pyrrhopappus carolinianus*	
White oak	*Quercus alba*	

* Non-native Species

Blackwater River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat (for designated species)
Bluff oak	*Quercus austrina*	
Southern red oak	*Quercus falcata*	
Laurel oak	*Quercus hemisphaerica*	
Bluejack oak	*Quercus incana*	
Turkey oak	*Quercus laevis*	
Diamond oak	*Quercus margaretta*	
Swamp chestnut oak	*Quercus michauxii*	
Dwarf live oak	*Quercus minima*	
Water oak	*Quercus nigra*	
Runner oak	*Quercus pumila*	
Live oak	*Quercus virginiana*	
Pale meadow beauty	*Rhexia mariana*	
Meadow beauty	*Rhexia petiolata*	
Azalea-Southern Indian hybrids	*Rhododendron indicum*	
Azalea - Kurume hybrids	*Rhododendron obtusum*	
Swamp honeysuckle	*Rhododendron serrulatum*	
Winged sumac	*Rhus copallina*	
Rhynchosia	*Rhynchosia difformis*	
Dollarleaf	*Rhynchosia reniformis*	
Beakrush	*Rhynchospora caduca*	
Beakrush	*Rhynchospora microcarpa*	
Beakrush	*Rhynchospora mixta*	
Ornamental rose	*Rosa hybrids*	
Swamp rose	*Rosa palustris*	
Rosemary	*Rosmarinus officinalis*	
Highbush blackberry	*Rubus argutus*	
Sand blackberry	*Rubus cuneifolius*	
Dewberry	*Rubus trivialis*	
Black-eyed susan	*Rudbeckia hirta*	
Wild petunia	*Ruellia caroliniensis*	
Sourdock	*Rumex hastatulus*	
Dwarf palmetto	*Sabal minor*	
Cabbage palm	*Sabal palmetto*	
White sabatia	*Sabatia brevifolia*	
Swamp pink	*Sabatia calycina*	
Pearlwort	*Sagina decumbens*	
Eel grass	*Sagittaria kurziana*	
Arrowhead	*Sagittaria lancifolia*	
Carolina willow	*Salix caroliniana*	
Lyre-leaved sage	*Salvia lyrata*	
Perennial blue sage	*Salvia sp.*	
Pineland pimperel	*Samolus parviflorus*	
Black snakeroot	*Sanicula canadensis*	
Sassafras	*Sassafras albidum*	
Lizard's tail	*Saururus cernuus*	
Sensitive brier	*Schrankia microphylla*	
Bulrush	*Scirpus lineatus*	
Nutrush	*Scleria oligantha*	
Nutrush	*Scleria triglomerata*	
Skullcap	*Scutellaria integrifolia*	
Sebastian bush	*Sebastiania fruticosa*	

*** Non-native Species**

Blackwater River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat (for designated species)
Dusty miller	*Senecio cineraria*	
Butter weed	*Senecio glabellus*	
Saw palmetto	*Serenoa repens*	
Knotroot	*Setaria geniculata*	
Purple heart	*Setcreasea purpurea*	
Indian hemp	*Sida rhombifolia*	
Rosinweed	*Silphium simpsonii*	
Water parsnip	*Sium suave*	
Greenbrier	*Smilax auriculata*	
Catbrier	*Smilax bona-nox*	
Greenbrier	*Smilax ecirrhata*	
Wild sarsaparilla	*Smilax glauca*	
Sarsaparilla vine	*Smilax pumila*	
Jackson-brier	*Smilax smallii*	
Greenbrier	*Smilax tamnoides*	
Coral greenbrier	*Smilax walteri*	
Horse nettle	*Solanum carolinese var. floridanum*	
Goldenrod	*Solidago candensis var. scabra*	
Sweet goldenrod	*Solidago odora*	
Prairie wedgescale	*Sphenopholis obtusata*	
Indian pink	*Spigelia marilandica*	
------	*Spilanthes americana*	
Nodding ladies'-tresses	*Spiranthes odorata*	
Little ladies'-tresses	*Spiranthes tuberosa*	
Bridalwreath	*Spireae arguta*	
Mushroom sp.	*Stereum ostrim*	
Queen's delight	*Stillingia sylvatica*	UHF,UP
Black cat grass	*Stipa avenacea*	
Stoke's aster	*Stokesia laevis*	
Stylisma	*Stylisma humistrata*	
Stylodon	*Stylodon careus*	
Horse sugar, sweetleaf	*Symplocos tinctoria*	
Bald cypress	*Taxodium distichum*	
Hoary pea	*Tephrosia spicata*	
Rice-paper plant	*Tetrapanax papyriferus*	
Wood fern, southern shield fern	*Thelypteris kunthii*	
Basswood	*Tilia americana*	
Spanish moss	*Tillandsia usneoides*	
Crane-fly orchid	*Tipularia discolor*	
Poison ivy	*Toxicodendron radicans*	
Climbing dogbane	*Trachelospermun difforme*	
Windmill palm	*Trachycarpus fortunei*	
Tragia	*Tragia urens*	
Mushroom sp.	*Tricholoma sp.*	
Tall redtop	*Tridens flavus*	
Carolina clover	*Trifolium carolinianum*	
Red trillium	*Trillium sessile*	
Venus' looking-glass	*Triodanis biflora*	
Venus' looking-glass	*Triodanis perfoliata*	
Cattail	*Typha sp.*	
Winged elm	*Ulmus alata*	

*** Non-native Species**

Blackwater River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat (for designated species)
American elm	*Ulmus americana var. floridana*	
Sparkleberry	*Vaccinium arboreum*	
Highbush blueberry	*Vaccinium corymbosum*	
Blueberry	*Vaccinium darrowii*	
Elliott blueberry	*Vaccinium elliotti*	
Shiny blueberry	*Vaccinium myrsinites*	
Deerberry	*Vaccinium stamineum*	
Eelgrass	*Vallisneria americana*	
Verbena	*Verbena brasilienses*	
Ironweed	*Vernonia angustifolia var. mohrii*	
Southern arrow-wood	*Viburnum dentatum*	
Possum haw	*Viburnum nudum*	
Walter viburnum	*Viburnum obovatum*	
Rusty haw, southern black haw	*Viburnum rufidulum*	
Violet	*Viola* affinis	
Violet	*Viola esculenta*	
Florida violet	*Viola floridana*	
Violet	*Viola septemloba*	
Violet	*Viola walteri*	
Garden pansy	*Viola wittrockiana*	
Summer grape	*Vitis aestivalis*	
Downy grape	*Vitis cinerea var. floridana*	
Muscadine grape	*Vitis rotundifolia*	
Frost grape	*Vitis vulpina*	
Voehmena	*Voehmena cylindrica*	
American wisteria	*Wisteria frutescens*	
Chinese wisteria*	*Wisteria sinensis*	
Virginia chain fern	*Woodwardia virginica*	
Bear grass, weak-leaf yucca	*Yucca flaccidailamentosa*	
Atamasco lily	*Zephyranthes atamasco*	
Dreamland coral zinnia	*Zinnia elegans hybrid*	
Indian rice	*Zizania aquatica*	

*** Non-native Species**

Blackwater River State Park

Animals

Common Name	*Scientific Name*	Primary Habitat (for all species)
	MOLLUSKS	
Clam	*Elliptio jayensis*	BST
Snail	*Helisoma duryi*	BST
Ram's-horn Snail	*Goniobasis floridense*	BST
Apple Snail	*Pomacea paludosa*	BST
	ANNELIDA	
Earthworm	*Lumbricus terrestris*	UHF,DS,AF,FS
	ARTHROPODS	
Black Widow Spider	*Latrodectus mactans*	UHF,DS,AF,FS
Crab-like Spiny Orb Weaver	*Gasteracantha cancriformis*	UHF,DS,AF,FS
Golden-silk Spider	*Nephila clavipes*	UHF,DS,AF,FS
Carolina Wolf Spider	*Lycosa carolinensis*	UHF,UP,DS,AF,FS
Daddy-long-legs	*Leiobunum sp.*	Throughout
Deer Tick	*Ixodes scapularis*	Throughout
Cave Isopod	*Adellus sp. (undescribed)*	ACV
Woodville Karst Cave Crayfish	*Procambarus orcinus*	ACV
Big Blue Spring Cave Crayfish	*Procambarus horsti*	ACV
Blue Crab	*Callinectes sapidus*	BST
Hobbs' Cave Amphipod	*Crangonyx hobbsi*	ACV
Florida Cave Amphipod	*Crangonyx grandimanus*	ACV
Cave Amphipod	*Crangonyx floridanus*	ACV
Amphipod	*Crangonyx hobbsi*	ACV
Swimming Little Florida Cave Isopod	*Remasellus parvus*	ACV
Ebony Jewelwing Damselfly	*Calopteryx maculata*	BST
Orange Bluet Damselfly	*Enallagma signatum*	BST
Other Damselflies Sp.	*Calopteryx dimidiata*	BST
	Hetaerina titia	BST
	Lestes disjunctus australis	BST
	Lestes vigilax	BST
	Argia fumipennis atra	BST
	Argia moesta	BST
	Argia sedula	BST
	Argia tibialis	BST
	Enallagma cardenium	BST
	Enallagma civile	BST
	Enallagma concisum	BST
	Enallagma daeckei	BST
	Enallagma dubium	BST
	Enallagma durum	BST
	Enallagma geminatum	BST
	Enallagma pallidum	BST
	Enallagma pollutum	BST
	Enallagma vesperum	BST
	Enallagma weewa	BST
	Ischnura hastata	BST

***** **Non-native Species**

Blackwater River State Park

Animals

Common Name	*Scientific Name*	Primary Habitat (for all species)
	Ischnura kellicotti	BST
	Ischnura posita	BST
	Ischnura prognata	BST
	Ischnura ramburii	BST
	Nehalennia integricollis	BST
	Telebasis byersi	BST
Common Green-darter Dragonfly	*Anax junius*	Throughout
Regal Darner Dragonfly	*Coryphaeschna ingens*	Throughout
Palmetto Walkingstick	*Anismorpha buprestoides*	Throughout
Southeastern Lubber Grasshopper	*Romalea microptera*	Throughout
Broad-winged Katydid	*Microcentrum rhombifolium*	Throughout
House Cricket	*Acheta domestica*	Throughout
Field Cricket	*Gyrillus pennsylvanicus*	Throughout
Northern Mole Cricket	*Gryllotalpa hexadactyla*	Throughout
Carolina Mantid Praying Mantis	*Stagmommantis carolina*	Throughout
American Cockroach	*Periplaneta americana*	Throughout
German Cockroach	*Blattella germanica*	Throughout
Eastern Subterranean termite	*Reticulitermis flavipes*	Throughout
Common Water Strider	*Gerris remigis*	BST
Leaf-footed Bug	*Acanthocephala femorata*	BST
Black Turpentine Beetle	*Dendroctonus terebrans*	UHF,UP
Ips Engraver Beetle	*Ips sp.*	UHF,UP
Green June Beetle	*Cotinus nitida*	DS,AF,FS
Two-spotted Lady Beetle	*Adalia bipunctata*	Throughout
Pyralis Firefly	*Photinus pyralis*	Throughout
Pipevine Swallowtail Butterfly	*Battus philenor*	Throughout
Zebra Swallowtail Butterfly	*Eurytides marcellus*	Throughout
Black Swallowtail Butterfly	*Papilio polyxenes*	Throughout
Giant Swallowtail Butterfly	*Papilio cresphontes*	Throughout
Eastern Tiger Swallowtail	*Papilio glaucus*	Throughout
Spicebush Swallowtail Butterfly	*Papilio troilus*	Throughout
Palamedes Swallowtail Butterfly	*Papilio palamedes*	Throughout
Orange Sulphur Butterfly	*Colias eurytheme*	Throughout
Cloudless Sulphur Butterfly	*Phoebis sennae*	Throughout
Little Yellow Butterfly	*Eurema lisa*	Throughout
Sleepy Orange Butterfly	*Eurema nicippe*	Throughout
Gray Hairstreak Butterfly	*Strymon melinus*	Throughout
Red-banded Hairstreak Butterfly	*Calycopis cecrops*	Throughout
Gulf Fritillary Butterfly	*Agraulis vanillae*	Throughout
Variegated Fritillary Butterfly	*Euptoieta claudia*	Throughout
Zebra Butterfly	*Heliconius charithonius*	Throughout
Phaon Crescent Butterfly	*Phycoides phaon*	Throughout
Texan Crescent Butterfly	*Phycoides texana*	Throughout
Pearl Crescent Butterfly	*Phycoides tharos*	Throughout
Common Buckeye Butterfly	*Junonia coenia*	Throughout
Red-spotted Purple Butterfly	*Limenitis arthemis*	Throughout
Viceroy Butterfly	*Limenitis archippus*	Throughout
Southern Pearly-eye Butterfly	*Enodia portlandia*	Throughout
Appalachian Satyre Butterfly	*Satyrodes appalachia*	Throughout

*** Non-native Species**

Blackwater River State Park

Animals

Common Name	*Scientific Name*	Primary Habitat (for all species)
Carolina Satyre Butterfly	*Hermeuptychia sosybius*	Throughout
Gemmed Satyre Butterfly	*Cyllopsis gemma*	Throughout
Little Wood Satyre Butterfly	*Megisto cymela*	Throughout
Monarch Butterfly	*Danaus plexippus*	Throughout
Queen Butterfly	*Danaus gilippus*	Throughout
Silver-spotted Skipper	*Epargyreus clarus*	Throughout
Long-tailed Skipper	*Urbanus proteus*	Throughout
Whirlabout Skipper	*Polites vibex*	Throughout
Lace-winged Roadside Skipper	*Ambylscirtes aesculapius*	Throughout
Fiery Skipper	*Hylephila phyleus*	Throughout
Common Checkered Skipper	*Pyrgus communis*	Throughout
Least Skipper	*Ancyloxypha numitor*	Throughout
Deer Fly	*Chrysops sp.*	Throughout
Black Horse Fly	*Tabanus atratus*	Throughout
House Fly	*Musca domestica*	Throughout
Love Bug	*Plecia nearctica*	Throughout
Summer Mosquitoes	*Aedes sp.*	Throughout
House Mosquitoes	*Culex pipiens*	Throughout
Cow Killer "Velvet Ant"	*Dasymutilla occidentalis*	UHF,UP
Red Fire Ant	*Solenopsis invicta*	UHF,UP
Eastern Yellow Jacket	*Vespula maculifrons*	UHF,UP
Honey Bee	*Apis mellifera*	Throughout
American Bumble Bee	*Bombus pennsylvanicus*	Throughout
Oak Gallmaking Cynipids	*Amphibolips quercusracemaria*	UHF,UP
	Andricus quercusfoliatus	UHF,UP
	Andricus quercuspetiolicola	UHF,UP
	Belonocnema quercussvirens	UHF,UP
	Callirhytis cornigera	UHF,UP
	Callirhytis quercusbatatoides	UHF,UP
	Callirhytis quercusrugosa	UHF,UP
	Callirhytis quercusventricosa	UHF,UP
	Callirhytis seminator	UHF,UP
	Dryocosmus nova	UHF,UP
	Dryocosmus quercuslaurifoliae	UHF,UP
	Dryocosmus quercusnotha	UHF,UP
	Disholcaspis quercusglobulus	UHF,UP
	Disholcaspis quercussuccinipes	UHF,UP
	Disholcaspis quercusvirens	UHF,UP
	Neuroterus nova	UHF,UP
	Neuroterus quercusbatatus	UHF,UP
	Xystoteras sp.	UHF,UP
	FISH	
Shad	*Alosa alabamae*	BST
Bowfin	*Amia calva*	BST
American Eel	*Anguilla rostrata*	BST
Pirate Perch	*Aphredoderus sayanus*	BST
Sheepshead	*Archosargus probatocephalus*	BST
Flier	*Centrarchus macropterus*	BST
Sheepshead Minnow	*Cyprinodon variegatus*	BST

*** Non-native Species**

Blackwater River State Park

Animals

Common Name	*Scientific Name*	Primary Habitat (for all species)
Gizzard Shad	*Dorosoma cepedianum*	BST
Everglades Pygmy Sunfish	*Elassoma evergladei*	BST
Okefenokee Pygmy Sunfish	*Elassoma okefenokee*	BST
Banded Pygmy Sunfish	*Elassoma zonatum*	BST
Bluespotted Sunfish	*Enneacanthus gloriosus*	BST
Lake Chubsucker	*Erimyzon sucetta*	BST
Redfin Pickeral	*Esox americanus*	BST
Swamp Darter	*Etheostoma fusiforme*	BST
Golden Topminnow	*Fundulus chrysotus*	BST
Eastern Starhead Topminnow	*Fundulus escambia*	BST
Seminole Killifish	*Fundulus seminolis*	BST
Mosquitofish	*Gambusia holbrooki*	BST
Least Killifish	*Heterandria formosa*	BST
White Catfish	*Ictalurus catus*	BST
Yellow Bullhead	*Ictalurus natalis*	BST
Brown Bullhead	*Ictalurus nebulosus*	BST
Channel Catfish	*Ictalurus punctatus*	BST
Flagfish	*Jordanella floridae*	BST
Brook Silverside	*Labidesthes sicculus*	BST
Longnose Gar	*Lepisosteus osseus*	BST
Florida Gar	*Lepisosteus platyrhincus*	BST
Redbreast Sunfish	*Lepomis auritus*	BST
Warmouth	*Lepomis gulosus*	BST
Bluegill	*Lepomis macrochirus*	BST
Dollar Sunfish	*Lepomis marginatus*	BST
Redear Sunfish	*Lepomis microlophus*	BST
Spotted Sunfish	*Lepomis punctatus*	BST
Pygmy Killifish	*Leptolucania ommata*	BST
Bluefin Killifish	*Lucania goodei*	BST
Largemouth Bass	*Micropterus salmoides*	BST
Spotted Sucker	*Minytrema melanops*	BST
Striped Mullet	*Mugil cephalus*	BST
Golden Shiner	*Notomigonus crysoleucase*	BST
Ironcolor Shiner	*Notropis chalybaeus*	BST
Dusky Shiner	*Notropis cummingsae*	BST
Pugnose Minnow	*Notropis emiliae*	BST
Redeye Chub	*Notropis harperi*	BST
Sailfin Shiner	*Notropis hypselopterus*	BST
Coastal Shiner	*Notropis petersoni*	BST
Tadpole Madtom	*Noturus gyrinus*	BST
Speckled Madtom	*Noturus leptacanthus*	BST
Blackbanded Darter	*Percina nigrofasciata*	BST
Sailfin Molly	*Poecilia latipinna*	BST
Black Crappie	*Pomoxis nigromaculatus*	BST
Hogchoker	*Trinectes maculatus*	BST
	AMPHIBIANS	
Slimy Salamander	*Plethodon glutinosus*	DS,AF,FS
Eastern Narrow-mouthed Toad	*Gastrophryne carolinensis*	UHF,UP
Eastern Spadefoot Toad	*Scaphiopus holbrookii*	UHF,UP

***** **Non-native Species**

Blackwater River State Park

Animals

Common Name	*Scientific Name*	Primary Habitat (for all species)
Fowlers Toad	*Bufo woodhousei fowleri*	UHF,UP
Gray Teefrog	*Hyla chrysoscelis*	DS,AF,FS
Green Treefrog	*Hyla cinerea*	DS,AF,FS
Spring Peeper	*Hyla crucifer*	DS,AF,FS
Pinewoods Treefrog	*Hyla femoralis*	UHF,UP
Squirrel Treefrog	*Hyla squirella*	UHF,UP
Bull Frog	*Rana catesbeiana*	DS,AF,FS
Pig Frog	*Rana grylio*	DS,AF,FS
Southern Leopard Frog	*Rana utricularia*	DS,AF,FS
Southern Toad	*Bufo terrestris*	UHF,UP
Siren	*Siren sp.*	DS,AF,FS
	REPTILES	
Florida Snapping Turtle	*Chelydra serpentina*	FS,BST
Suwannee Cooter	*Chrysemys concinna suwanniensis*	FS,BST
Gopher Tortoise	*Gopherus polyphemus*	UP
Eastern Mud Turtle	*Kinosternon subrubrum*	FS,BST
Alligator Snapping Turtle	*Macroclemys temminckii*	FS,BST
River Cooter	*Pseudemys concinna*	FS,BST
Florida Cooter	*Pseudemys floridana*	FS,BST
Stinkpot	*Sternotherus odoratus*	FS,BST
Gulf Coast Box Turtle	*Terrapene carolina major*	UHF,UP,AF
Yellow-bellied Slider	*Trachemys scripta*	FS,BST
Florida Softshell Turtle	*Trionyx ferox*	FS,BST
American Alligator	*Alligator mississippiensis*	FS,BST
Green Anole	*Anolis carolinensis*	Throughout
Fence Lizard	*Sceloporus undulatus hyacinthinus*	UHF,UP
Six-lined Racerunner	*Cnemidophorus sexlineatus*	UHF,UP
Eastern Glass Lizard	*Ophisaurus ventalis*	UHF,UP
Broad-headed Skink	*Eumeces laticeps*	UHF,AF
Southeastern Five-lined Skink	*Eumeces inexpectatus*	UHF,UP,AF
Ground Skink	*Scincella laterale*	UHF,UP
Eastern Cottonmouth	*Agkistrodon piscivorus*	DS,AF,FS
Black Racer	*Coluber constrictor*	UHF,UP
Eastern Diamondback Rattlesnake	*Crotalus adamanteus*	UHF,UP
Dusky Pigmy Rattlesnake	*Sistrurus miliarius barbouri*	UHF,UP
Ring-necked Snake	*Diadophis punctatus*	UHF,UP,AF
Scarlet Snake	*Cemophora coccinea*	UHF,UP,AF
Scarlet King Snake	*Lampropeltis triangulum*	UHF,UP,AF
Red Rat Snake	*Elaphe guttata*	UHF,AF,FS
Gray Rat Snake	*Elaphe obsoleta spiloides*	UHF,AF,FS
Eastern Hognose	*Heterodon platyrhinos*	UHF,UP
Eastern Kingsnake	*Lampropeltis getulus*	UHF,UP,AF,FS
Coachwhip	*Masticophis flagellum*	UHF,UP
Coral Snake	*Micrurus fulvius*	UHF,UP,AF
Southern Watersnake	*Nerodia fasciata*	DS,FS,BST
Brown Watersnake	*Nerodia taxispilota*	DS,FS,BST
Red-bellied Watersnake	*Natrix erythrogaster*	DS,FS,BST
Banded Watersnake	*Natrix fasciata*	DS,FS,BST

***** **Non-native Species**

Blackwater River State Park

Animals

Common Name	*Scientific Name*	Primary Habitat (for all species)
Rough Green Snake	*Opheodrys aestivus*	AF,FS
Pine Snake	*Pituophis melanoleucus*	UHF,UP
Eastern Garter Snake	*Thamnophis sirtalis*	UHF,DS,AF,FS
	BIRDS	
Common Loon	*Gavia immer*	BST
Pied-billed Grebe	*Podilymbus podiceps*	BST
Horned Grebe	*Podiceps auritus*	BST
Great Cormorant	*Phalacrocorax carbo*	BST
Double-crested Cormorant	*Phalacrocorax auritus*	BST
Anhinga	*Anhinga anhinga*	BST
Great Blue Heron	*Ardea herodias*	BST
Great Egret	*Ardea alba*	BST
Snowy Egret	*Egretta thula*	BST
Little Blue Heron	*Egretta caerulea*	BST
Tricolored Heron	*Egretta tricolor*	BST
Green Heron	*Butorides virescens*	BST
Black-crowned Night-Heron	*Nycticorax nycticorax*	BST
Yellow-crowned Night-Heron	*Nycticorax violaceus*	
White Ibis	*Eudocimus albus*	BST
Roseate Spoonbill	*Ajaia ajaja*	BST
Wood Stork	*Mycteria americana*	BST
Black Vulture	*Coragyps atratus*	Throughout
Turkey Vulture	*Cathartes aura*	Throughout
Wood Duck	*Aix sponsa*	FS,BST
Green-winged Teal	*Anas crecca*	BST
American Black Duck	*Anas rubripes*	BST
Mallard	*Anas platyrhynchos*	BST
Blue-winged Teal	*Anas discors*	BST
Northern Shoveler	*Anas clypeata*	BST
Gadwall	*Anas strepera*	BST
Eurasian Wigeon	*Anas penelope*	BST
American Wigeon	*Anas americana*	BST
Canvasback	*Aythya valisineria*	BST
Redhead	*Aythya americana*	BST
Ring-necked Duck	*Aythya collaris*	BST
Greater Scaup	*Aythya marila*	BST
Lesser Scaup	*Aythya affinis*	BST
Common Goldeneye	*Bucephala clangula*	BST
Hooded Merganser	*Lophodytes cucullatus*	BST
Red-breasted Merganser	*Mergus serrator*	BST
Osprey	*Pandion haliaetus*	FS,BST
Swallow-tailed Kite	*Elanoides forficatus*	Throughout
Snail Kite	*Rostrhamus sociabilis*	BST
Mississippi Kite	*Ictinia mississippiensis*	Throughout
Bald Eagle	*Haliaeetus leucocephalus*	Throughout
Northern Harrier	*Circus cyaneus*	BST
Sharp-shinned Hawk	*Accipiter striatus*	Throughout
Copper's Hawk	*Accipiter cooperii*	UHF,UP,AF,FS
Red-shouldered Hawk	*Buteo lineatus*	UHF,UP,AF,FS

***** **Non-native Species**

Blackwater River State Park

Animals

Common Name	*Scientific Name*	Primary Habitat (for all species)
Broad-winged Hawk	*Buteo platypterus*	UHF,UP,AF,FS
Red-tailed Hawk	*Buteo jamaicensis*	UHF,UP,AF,FS
Golden Eagle	*Aquila chrysaetos*	OF
American Kestrel	*Falco sparverius*	UHF,UP
Merlin	*Falco columbarius*	UP
Peregrine Falcon	*Falco peregrinus*	UHF,UP
Wild Turkey	*Meleagris gallopavo*	UHF,UP,AF,FS
Northern Bobwhite	*Colinus virginianus*	UHF,UP
Sora	*Porzana carolina*	AF,FS,BST
Purple Gallinule	*Porphyrula martinica*	BST
Common Moorhen	*Gallinula chloropus*	BST
American Coot	*Fulica americana*	BST
American Oystercather	*Haematopus palliatus*	BST
Limpkin	*Aramus guarauna*	FS,BST
Sandhill Crane	*Grus canadensis*	UHF,UP
Killdeer	*Charadrius vociferus*	FS,BST
Solitary Sandpiper	*Tringa solitaria*	FS,BST
Spotted Sandpiper	*Actitis macularia*	FS,BST
Common Snipe	*Gallinago gallinago*	FS,BST
American Woodcock	*Scolopax minor*	UHF,AF,FS
Laughing Gull	*Larus atricilla*	BST
Bonaparte's Gull	*Larus philadelphia*	BST
Ring-billed Gull	*Larus delawarensis*	BST
Black Tern	*Chlidonias niger*	BST
Foreter's Tern	*Sterna forsteri*	BST
Sooty Tern	*Sterna fuscata*	BST
Mourning Dove	*Zenaida macroura*	UHF,UP,AF
Yellow-billed Cuckoo	*Coccyzus americanus*	UHF,AF,FS
Common Barn Owl	*Tyto alba*	UHF,AF,FS
Eastern Screech Owl	*Otus asio*	UHF,AF,FS
Great Horned Owl	*Bubo virginianus*	UHF,AF,FS
Barred Owl	*Strix varia*	UHF,UP,AF,FS
Common Nighthawk	*Chordeiles minor*	UHF,UP
Chuck-will's-widow	*Caprimulgus carolinensis*	UHF,AF,FS
Whip-poor-will	*Caprimulgus vociferus*	UHF,AF,FS
Chimney Swift	*Chaetura pelagica*	UHF,UP,AF,FS
Ruby-throated Hummingbird	*Archilochus colubris*	UHF,AF,FS
Belted Kingfisher	*Ceryle alcyon*	BST
Red-headed Woodpecker	*Melanerpes erythrocephalus*	UHF,UP
Red-bellied Woodpecker	*Melanerpes carolinus*	UHF,UP
Yellow-bellied Sapsucker	*Sphyrapicus varius*	UHF,UP,AF,FS
Downy Woodpecker	*Picoides pubescens*	UHF,UP
Hairy Woodpecker	*Picoides villosus*	UHF,UP
Northern Flicker	*Colaptes auratus*	UHF,UP
Pileated Woodpecker	*Dryocopus pileatus*	UHF,UP,AF,FS
Eastern Wood-Pewee	*Contopus virens*	UHF,UP
Eastern Phoebe	*Sayornis phoebe*	UHF,UP
Acadian Flycatcher	*Empidonax virescens*	UHF,UP
Great Crested Flycatcher	*Myiarchus crinitus*	UHF,UP
Eastern Kingbird	*Tyrannus tyrannus*	UHF,UP
Purple Martin	*Progne subis*	UHF,UP,AF,FS

*** Non-native Species**

Blackwater River State Park

Animals

Common Name	*Scientific Name*	Primary Habitat (for all species)
Tree Swallow	*Tachycineta bicolor*	AF,FS
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	AF,FS
Bank Swallow	*Riparia riparia*	AF,FS
Barn Swallow	*Hirundo rustica*	AF,FS
Blue Jay	*Cyanocitta cristata*	UHF,UP,AF
American Crow	*Corvus brachyrhynchos*	Throughout
Fish Crow	*Corvus ossifragus*	UHF,UP,FS,BST
Carolina Chickadee	*Parus carolinensis*	UHF,UP,AF,FS
Tufted Titmouse	*Parus bicolor*	UHF,UP
Red-breasted Nuthatch	*Sitta canadensis*	UHF,UP,AF
White-breasted Nuthatch	*Sitta carolinensis*	UHF,UP,AF
Brown-headed Nuthatch	*Sitta pusilla*	UHF,UP
Brown Creeper	*Certhia americana*	UHF,UP,AF
Carolina Wren	*Thryothorus ludovicianus*	UHF,UP,AF,FS
House Wren	*Troglodytes aedon*	UHF,UP
Winter Wren	*Troglodytes troglodytes*	UHF,UP
Marsh Wren	Cistothorus palustris	AF,FS,BST
Sedge Wren	*Cistothorus platensis*	FS,BST
Golden-crowned Kinglet	*Regulus satrapa*	*UHF,AF,FS*
Ruby-crowned Kinglet	*Regulus calendula*	UHF,UP
Blue-gray Gnatcatcher	*Polioptila caerulea*	UHF,UP
Eastern Bluebird	*Sialia sialis*	UHF,UP
Veery	*Catharus fuscescens*	UHF,UP
Gray-cheeked Thrush	*Catharus minimus*	UHF,UP
Swainson's Thrush	*Catharus ustulatus*	UHF,UP
Hermit Thrush	*Catharus guttatus*	UHF,UP
Wood Thrush	*Hylocichla mustelina*	UHF,UP
American Robin	*Turdus migratorius*	UHF,UP,AF,FS
Gray Catbird	*Dumetella carolinensis*	UHF,UP,FS
Northern Mockingbird	*Mimus polyglottos*	UHF,UP,AF,FS
Brown Thrasher	*Toxostoma rufum*	UHF,UP
Cedar Waxwing	*Bombycilla cedrorum*	UHF,UP,AF,FS
Loggerhead Shrike	*Lanius ludovicianus*	UP
White-eyed Vireo	*Vireo griseus*	UHF,UP
Solitary Vireo	*Vireo solitarius*	UHF,UP,AF,FS
Yellow-throated Vireo	*Vireo flavifrons*	UHF,UP
Red-eyed Vireo	*Vireo olivaceus*	UHF,UP
Golden-winged Warbler	*Vermivora chrysoptera*	UHF,UP
Tennessee Warbler	*Vermivora peregrina*	UHF,UP
Orange-crowned Warbler	*Vermivora celata*	UHF,UP,AF
Northern Parula	*Parula americana*	UHF,UP,AF
Black-throated Blue Warbler	*Dendroica caerulescens*	UHF,UP
Chestnut-sided Warbler	*Dendroica pensylvanica*	UHF,UP
Magnolia Warbler	*Dendroica magnolia*	UHF,UP
Yellow-rumped Warbler	*Dendroica coronata*	UHF,UP
Yellow-throated Warbler	*Dendroica dominica*	UHF,UP
Pine Warbler	*Dendroica pinus*	UHF,UP
Palm Warbler	*Dendroica palmarum*	UHF,UP,AF,FS
Cerulean Warbler	*Dendroica cerulea1*	UHF,UP,AF
Blackpoll Warbler	*Dendroica striata*	UHF,UP

*** Non-native Species**

Blackwater River State Park

Animals

Common Name	*Scientific Name*	Primary Habitat (for all species)
Black-and-white Warbler	*Mniotilta varia*	UHF,UP,FS
American Redstart	*Setophaga ruticilla*	UHF,UP,FS
Prothonotary Warbler	*Protonotaria citrea*	UHF,UP,AF,FS
Worm-eating Warbler	*Helmitheros vermivorus*	UHF,AF,FS
Ovenbird	*Seiurus aurocapillus*	UHF,AF,FS
Northern Waterthrush	*Seiurus noveboracensis*	AF,FS,BST
Louisiana Waterthrush	*Seiurus motacilla*	AF,FS,BST
Kentucky Warbler	*Oporornis formosus*	UHF,UP,AF
Common Yellowthroat	*Geothlypis trichas*	UHF,BST
Hooded Warbler	*Wilsonia citrina*	UHF,UP
Wilson's Warbler	*Wilsonia pusilla*	UHF,UP
Blue-winged Warbler	*Vermivora pinus*	UHF,UP
Summer Tanager	*Piranga rubra*	UHF,UP
Scarlet Tanager	*Piranga olivacea*	UHF,UP,AF
Northern Cardinal	*Cardinalis cardinalis*	UHF,21,AF,FS
Blue Grosbeak	*Guiraca caerulea*	UHF,AF,FS
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	UHF,UP
Indigo Bunting	*Passerina cyanea*	UHF,UP
Rufous-sided Towhee	*Pipilo erythrophthalmus*	UHF,UP
Chipping Sparrow	*Spizella passerina*	UHF,UP
Field Sparrow	*Spizella pusilla*	UHF,UP
Fox Sparrow	*Passerella iliaca*	UP
Song Sparrow	*Melospiza melodia*	UHF,UP
Swamp Sparrow	*Melospiza georgiana*	UHF,AF,FS
White-crowned Sparrow	*Zonotrichia leucophrys*	UHF,UP
White-throated Sparrow	*Zonotrichia albicollis*	UHF,UP
Dark-eyed junco	*Junco hyemalis*	UHF,AF,FS
Red-winged Blackbird	*Agelaius phoeniceus*	AF,FS
Rusty Blackbird	*Euphagus carolinus*	AF,FS
Boat-tailed Grackle	*Quiscalus major*	UHF,AF,FS
Common Grackle	Quiscalus quiscula	UHF,AF,FS
Brown-headed Cowbird	Molothrus ater	UHF,UP
Orchard Oriole	*Icterus spurius*	UHF
Purple Finch	*Carpodacus purureus*	UHF,AF
Pine Siskin	*Carduelis pinus*	UHF,UP
American Goldfinch	*Carduelis tristis*	UHF,AF,FS
	MAMMALS	
Nine-banded armadillo *	*Dasypus novemcinctus*	UHF,UP,AF,FS
Opossum	*Didelphis marsupialis*	UHF,UP,AF
Eastern mole	*Scalopus aquaticus*	UHF,UP,AF
Marsh rabbit	*Sylvilagus palustria*	AF,FS
Eastern cottontail	*Sylvilagus floridanus*	UHF,UP
Gray squirrel	*Sciurus carolinensis*	UHF,UP,AF
Fox squirrel	*Sciurus niger*	UP
Southern flying squirrel	*Glaucomys volans*	UHF,UP,AF
Cotton mouse	*Peromyscus gossypinus*	UHF,UP
Golden mouse	*Ochrotomys nuttalli*	UHF,UP
Gray fox	*Urocyon cinereoargenteus*	UHF,UP,AF
Florida black bear	*Ursus americanus floridanus*	UHF,UP,AF,FS

*** Non-native Species**

Blackwater River State Park
Animals

Common Name	*Scientific Name*	Primary Habitat (for all species)
Raccoon	*Procyon lotor*	UHF,AF,FS
River otter	*Lutra canadensis*	FS,BST
Bobcat	*Felis rufus*	UHF,UP,AF
West Indian manatee	*Trichechus manatus latirostris*	BST
White-tailed deer	*Odocoileus virginianus*	UHF,UP,AF,FS
Southeastern bat	*Myotis austroriparious*	UHF,AF,FS,
Eastern pipistrel	*Pipistrellus subflavus*	UHF,AF,FS
Seminole bat	*Lasiurus seminolus*	UHF,AF,FS,BST
Red bat	*Lasiurus borealis*	UHF,AF,FS
Eastern yellow bat	*Lasiurus intermedius*	UHF,AF,FS

*** Non-native Species**

Primary Habitat Codes

TERRESTRIAL

Beach Dune	BD
Coastal Berm	CB
Coastal Grassland	CG
Coastal Strand	CS
Dry Prairie	DP
Keys Cactus Barren	KCB
Limestone Outcrop	LO
Maritime Hammock	MAH
Mesic Flatwoods	MF
Mesic Hammock	MEH
Pine Rockland	PR
Rockland Hammock	RH
Sandhill	SH
Scrub	SC
Scrubby Flatwoods	SCF
Shell Mound	SHM
Sinkhole	SK
Slope Forest	SPF
Upland Glade	UG
Upland Hardwood Forest	UHF
Upland Mixed Woodland	UMW
Upland Pine	UP
Wet Flatwoods	WF
Xeric Hammock	XH

PALUSTRINE

Alluvial Forest	AF
Basin Marsh	BM
Basin Swamp	BS
Baygall	BG
Bottomland Forest	BF
Coastal Interdunal Swale	CIS
Depression Marsh	DM
Dome Swamp	DS
Floodplain Marsh	FM
Floodplain Swamp	FS
Glades Marsh	GM
Hydric Hammock	HH
Keys Tidal Rock Barren	KTRB
Mangrove Swamp	MS
Marl Prairie	MP
Salt Marsh	SAM
Seepage Slope	SSL
Shrub Bog	SHB
Slough	SLO
Slough Marsh	SLM
Strand Swamp	STS
Wet Prairie	WP

LACUSTRINE

Clastic Upland Lake	CULK
Coastal Dune Lake	CDLK
Coastal Rockland Lake	CRLK
Flatwoods/Prairie	FPLK
Marsh Lake	MLK
River Floodplain Lake	RFLK
Sandhill Upland Lake	SULK
Sinkhole Lake	SKLK
Swamp Lake	SWLK

RIVERINE

Alluvial Stream	AST
Blackwater Stream	BST
Seepage Stream	SST
Spring-run Stream	BST

SUBTERRANEAN

Aquatic Cave	ACV
Terrestrial Cave	TCV

ESTUARINE

Algal Bed	EAB
Composite Substrate	ECPS
Consolidated Substrate	ECNS
Coral Reef	ECR
Mollusk Reef	EMR
Octocoral Bed	EOB
Seagrass Bed	ESGB
Sponge Bed	ESPB
Unconsolidated Substrate	EUS
Worm Reef	EWR

Addendum 6—Imperiled Species Ranking Definitions

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 Fish and Wildlife Conservation 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 fabricated 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 or 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 or local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction of other factors.
S4..... apparently secure in Florida (may be rare in parts of range)
S5..... demonstrably secure in Florida
SH ..... of historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker)
SX..... believed to be extinct throughout range
SA..... accidental in Florida, i.e., not part of the established biota
SE..... an exotic species established in Florida may be native elsewhere in North America
SN ..... regularly occurring but widely and unreliably distributed; sites for conservation hard to determine
SU ..... due to lack of information, no rank or range can be assigned (e.g., SUT2).
S?..... Not yet ranked (temporary)
N ..... Not currently listed, nor currently being considered for listing, by state or federal agencies.

LEGAL STATUS

FEDERAL

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

LE ..... Listed as Endangered Species in the List of Endangered and Threatened Wildlife and Plants under the provisions of the Endangered Species Act. Defined as any species that is in danger of extinction throughout all or a significant portion of its range.
PE ..... Proposed for addition to the List of Endangered and Threatened Wildlife and Plants as Endangered Species.
LT ..... Listed as Threatened Species. Defined as any species that is likely to become an endangered species within the near future throughout all or a significant portion of its range.

PT ..... Proposed for listing as Threatened Species.
C ..... Candidate Species for addition to the list of Endangered and Threatened Wildlife and Plants. Defined as those species for which the USFWS currently has on file sufficient information on biological vulnerability and threats to support proposing to list the species as endangered or threatened.
E(S/A) ..... Endangered due to similarity of appearance.
T(S/A) ..... Threatened due to similarity of appearance.
EXPE, XE..... Experimental essential population. A species listed as experimental and essential.
EXPN, XN .... Experimental non-essential population. A species listed as experimental and non-essential. Experimental, nonessential populations of endangered species are treated as threatened species on public land, for consultation purposes.

STATE

ANIMALS .. (Listed by the Florida Fish and Wildlife Conservation Commission - FWC)

FE ..... Federally-designated Endangered

FT ..... Federally-designated Threatened

FXN..... Federally-designated Threatened Nonessential Experimental Population

FT(S/A) ..... Federally-designated Threatened species due to similarity of appearance

ST..... Listed as Threatened Species by the FWC. 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 therefore is destined or very likely to become an endangered species within the near future.
SSC..... Listed as Species of Special Concern by the FWC. 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 that, in the near 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 7—Cultural Information

These procedures apply to state agencies, local governments, and non-profits that manage state-owned properties.

A. General Discussion

Historic resources are both archaeological sites and historic structures. Per Chapter 267, Florida Statutes, '*Historic property' or 'historic resource' means any prehistoric district, site, building, object, or other real or personal property of historical, architectural, or archaeological value, and folklife resources. These properties or resources may include, but are not limited to, monuments, memorials, Indian habitations, ceremonial sites, abandoned settlements, sunken or abandoned ships, engineering works, treasure trove, artifacts, or other objects with intrinsic historical or archaeological value, or any part thereof, relating to the history, government, and culture of the state."*

B. Agency Responsibilities

Per State Policy relative to historic properties, state agencies of the executive branch must allow the Division of Historical Resources (Division) the opportunity to comment on any undertakings, whether these undertakings directly involve the state agency, i.e., land management responsibilities, or the state agency has indirect jurisdiction, i.e. permitting authority, grants, etc. No state funds should be expended on the undertaking until the Division has the opportunity to review and comment on the project, permit, grant, etc.

State agencies shall preserve the historic resources which are owned or controlled by the agency.

Regarding proposed demolition or substantial alterations of historic properties, consultation with the Division must occur, and alternatives to demolition must be considered.

State agencies must consult with Division to establish a program to location, inventory and evaluate all historic properties under ownership or controlled by the agency.

C. Statutory Authority

Statutory Authority and more in depth information can be found at:
http://www.flheritage.com/preservation/compliance/guidelines.cfm

D. Management Implementation

Even though the Division sits on the Acquisition and Restoration Council and approves land management plans, these plans are conceptual. Specific information regarding individual projects must be submitted to the Division for review and recommendations.

Managers of state lands must coordinate any land clearing or ground disturbing activities with the Division to allow for review and comment on the proposed project. Recommendations may include, but are not limited to: approval of the project as submitted, cultural resource assessment survey by a qualified professional archaeologist, modifications to the proposed project to avoid or mitigate potential adverse effects.

Projects such as additions, exterior alteration, or related new construction regarding historic structures must also be submitted to the Division of Historical Resources for review and comment by the Division's architects. Projects involving structures fifty years of age or older, must be submitted to this agency for a significance determination. In rare cases, structures under fifty years of age may be deemed historically significant. These must be evaluated on a case by case basis.

Adverse impacts to significant sites, either archaeological sites or historic buildings, must be avoided. Furthermore, managers of state property should make preparations for locating and evaluating historic resources, both archaeological sites and historic structures.

E. Minimum Review Documentation Requirements

In order to have a proposed project reviewed by the Division, certain information must be submitted for comments and recommendations. The minimum review documentation requirements can be found at: http://www.flheritage.com/preservation/compliance/docs/minimum_review_documentation_requirements.pdf .

* * *

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

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

Phone: (850) 245-6425

Toll Free: (800) 847-7278
Fax: (850) 245-6435

The criteria to be used for evaluating eligibility for listing in the National Register of Historic Places are as follows:

1) Districts, sites, buildings, structures, and objects may be considered to have significance in American history, architecture, archaeology, engineering, and/or culture if they possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- **a)** are associated with events that have made a significant contribution to the broad patterns of our history; and/or
- **b)** are associated with the lives of persons significant in our past; and/or
- **c)** embody the distinctive characteristics of type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; and/or
- **d)** have yielded, or may be likely to yield, information important in prehistory or history.

2) Ordinarily cemeteries, birthplaces, or graves of historical figures; properties owned by religious institutions or used for religious purposes; structures that have been moved from their original locations; reconstructed historic buildings; properties primarily commemorative in nature; and properties that have achieved significance within the past 50 years shall not be considered eligible for the *National Register*. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:

- **a)** a religious property deriving its primary significance from architectural or artistic distinction or historical importance; or
- **b)** a building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or
- **c)** a birthplace or grave of an historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life; or
- **d)** a cemetery which derives its primary significance from graves of persons of transcendent importance, from age, distinctive design features, or association with historic events; or

e) a reconstructed building, when it is accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and no other building or structure with the same association has survived; or a property primarily commemorative in intent, if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or

f) a property achieving significance within the past 50 years, if it is of exceptional importance.

Restoration is defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project.

Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations and additions while preserving those portions or features that convey its historical, cultural or architectural values.

Stabilization is defined as the act or process of applying measures designed to reestablish a weather resistant enclosure and the structural stability of an unsafe or deteriorated property while maintaining the essential form as it exists at present.

Preservation is defined as the act or process of applying measures necessary to sustain the existing form, integrity and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.

Addendum 8 —Land Management Review

Memorandum

Florida Department of
Environmental Protection

June 15, 1999

TO: Mr. Robert Clark, Program Administrator
Division of State Lands

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

SUBJECT: Response to Land Management Review (LMR); Blackwater River State Park

The Land Management Review (LMR) dated April 26, 1999, determined that the management of the Blackwater River State Park 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.

The following comments are provided by field staff and our offices in response to the results recorded for specific items and, where appropriate, recommendations in the LMR. We have identified land management plan revisions and field management actions we intend to take on the referenced item or the recommendation.

Plan review, checklist items:

I.B.1.b. - Red-cockaded woodpecker, Monitoring: Agree. We will mention the single, inactive cavity tree in the next updated plan. There are no records to document that the tree cavity has ever been used during the history of the park. We will occasionally confirm that the cavity is still inactive, but regular monitoring is not required.

I.B.2.b. - Gopher tortoise, Monitoring: Agree. We will address plans to conduct observations of this species in the next updated plan. A survey of burrows will be performed after fire events to document the number of active and inactive burrows.

I.C.1.b. - Baygall species, Monitoring: Agree. The decision on whether we need to monitor listed species in this community will be made in the next plan revision process.

III.B.1. - Restoration, Roads: Agree. This matter will be addressed in the next updated plan.

III.B.2. - Restoration, Floodplain: Agree. The degree of natural erosion and decision on whether or not any restoration is needed will be discussed in the next updated plan.

III.B.5. - Restoration, Borrow pits: Agree. The natural recovery of the borrow pit will be mentioned in the next updated plan.

III.D.1.b. - Armadillos, Monitoring: Agree. We will address ongoing efforts to monitor armadillos in the next updated plan.

III.D.2.b. - Cogongrass, Monitoring: Agree. We will mention activities undertaken to control this species and ongoing surveys regarding cogongrass (and other invasive exotic plants) in the next updated plan.

III.D.4.a. - Mimosa, Control: Agree. See the above comments.
III.D.4.b. - Mimosa, Monitoring: Agree. See the above comments.

III.E.2. - Hydrologic disturbance: Disagree. We do not believe that the existing roads are creating a hydrologic disturbance. This fact could be mentioned in the next updated plan.

III.E.3.a. - Ground water quality, Monitoring: Disagree. Except in cases where there are either known or suspected problems (such as the vicinity of old cattle vats or where wells are located in areas near domestic or industrial waste treatment facilities or waste streams), ground water quality monitoring is not cost beneficial. We will review and mention, as needed, any past efforts which may have been undertaken to collect ambient ground water quality information.

III.E.4.b. - Surface water quantity: Disagree. The question of monitoring surface water quantity is similar to that for monitoring water quantity (see above comments). Monitoring should only be conducted in cases where offsite activities are considered to be a potentially serious problem that could impact natural resources or recreational uses of the park. DRP will contact the WMD for assistance in monitoring surface water quantity for any parks when this appears to be the case. Otherwise, DRP does not plan to have quantity monitoring conducted at state parks.

<u>Field review, checklist items</u>:

I.B.3.a. - Blackmouth shiner, Inventory: Agree. See below.
I.B.3.b. - Blackmouth shiner, Monitoring: Agree. See below.

The decision to inventory and monitor listed fish species is the responsibility of the FWC. We will advise FWC of the LMR recommendations for inventory and monitoring of this listed species.

I.B.5.a. - Endemic invertebrates, Inventory: Agree. We will contact appropriate agency staff, have them review this matter, and if appropriate, request that they conduct an inventory of endemic invertebrates.

III.E.1. - Soil erosion/disturbances: Agree. Soil erosion problems will be discussed in the next updated plan.

III.E.4.a. - Surface water quality: Disagree. Monitoring of surface waters is recommended and pursued if the circumstances indicate there are existing problems or in cases where DEP monitoring stations are needed to establish background water quality conditions in Florida's more pristine ecosystems. Monitoring purely for the purposes of documenting surface water quality conditions is usually unnecessary. Water quality monitoring surveys are costly and should be reserved for situations where the natural resources and public health and safety appear to be threatened because of nearby sources of pollution. The relative water quality condition can generally be determined by observing the condition of the biological communities found in the waters. If the communities are experiencing noticeable stress, DRP will take appropriate action to determine what is causing the problem including enlisting the aid of other agencies to help monitor surface water quality.

III.E.4.b. - Surface water quantity: See comments above under plan review.

III.I.3.a. - Buildings: Agree. Additional buildings, especially a shop complex, are needed. Although funding for construction will be pursued, construction of buildings is contingent on DRP and DEP budget resources and priorities and also on legislative action.

III.I.4. - Staff: Agree. Additional staff are needed to manage the natural and cultural resources and recreational activities. However, no new staff can be assigned to this or any park unit unless the new positions are appropriated by the Legislature or reassigned from other units. Additional staff is needed by many of our parks which is why we regularly seek positions, volunteers, and partners to help us overcome staff deficiencies.

III.I.5. - Funding: Agree. Additional funds will be pursued. Funding is always contingent on DRP and DEP budget resources and priorities and also on legislative action.

Recommendations to the managing agency:

1) Consider river bank restoration and revegetation at the picnic area. The Division will evaluate river bank restoration and revegetation needs at the picnic area and develop a plan of action that is consistent with the application of natural systems management. This plan will also consider impacts associated with the proposed bridge replacement and should not be implemented until the bridge project is completed.

Thank you for the opportunity to comment on the LMR.

DCB/AG/mb
cc: Ed Higgins, Chief, Parks District 1