

TEN-YEAR LAND MANAGEMENT PLAN
FOR THE
BLACKWATER RIVER STATE FOREST
SANTA ROSA AND OKALOOSA COUNTIES



PREPARED BY THE
FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES
FLORIDA FOREST SERVICE

APPROVED ON
MONTH DD, 2026

TEN-YEAR LAND MANAGEMENT PLAN
FOR THE
BLACKWATER RIVER STATE FOREST



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BLACKWATER RIVER STATE FOREST
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LAND MANAGEMENT PLAN EXECUTIVE SUMMARY

LEAD AGENCY: Florida Department of Agriculture and Consumer Services (FDACS),
 Florida Forest Service (FFS)
 COMMON NAME: Blackwater River State Forest (BRSF)
 LOCATION: Santa Rosa and Okaloosa Counties
 ACREAGE TOTAL: 226,659.52 acres

Historic Natural Communities	Approximate Acreage*
Upland Pine**	141,531
Sandhill**	29,972
Bottomland Forest	29,127
Seepage Slope	7,064
Mesic Flatwoods**	1,848
Baygall	1,487
Wet Flatwoods**	1,005
Blackwater Stream	753

Historic Natural Communities	Approximate Acreage*
Upland Hardwood Forest	709
Upland Mixed Woodland	629
Floodplain Swamp	536
Dome Swamp	158
Depression Marsh	79
Shrub Bog	55
Wet Prairie**	38
River Floodplain Lake	1

*Acreage discrepancies may occur based on FNAI polygons

**Includes restoration community acreage

TIITF LEASE AGREEMENT NUMBER: 3686 and 2346

USE: Single Multiple

MANAGEMENT AGENCY

FDACS, Florida Forest Service
 Florida Fish and Wildlife Conservation Commission
 Northwest Florida Water Management District
 Department of State, Division of Historical Resources

RESPONSIBILITY

General Forest Resource Management
 Wildlife Resources and Laws
 Water Resources
 Historical and Archaeological Resource Management

DESIGNATED LAND USE:

Multiple-Use State Forest

SUBLEASES:

Okaloosa County, Munson Volunteer Fire Dept., FL
 Fish and Wildlife Conservation Commission

ENCUMBRANCES:

Multiple private access and utility easements

TYPE ACQUISITION:

Federal Land Transfer, P2000, Florida Forever, and
 Forest Legacy Program

UNIQUE FEATURES:

Blackwater River system and bluffs, seepage slopes
 (pitcher plant bogs), depression marshes, mature
 longleaf pine forests, red-cockaded woodpeckers

ARCHAEOLOGICAL / HISTORICAL:

Two hundred forty-five (245) known sites

MANAGEMENT NEEDS:

Longleaf pine restoration, erosion and sediment control,
 and boundary resolution

ACQUISITION NEEDS:

109,663 Additional acres in the Optimal Management
 Boundary with 57,857 acres residing in Santa Rosa
 County and 51,806 in Okaloosa County

SURPLUS ACREAGE:

None

PUBLIC INVOLVEMENT:

Blackwater River State Forest Liaison Committee;
 2012, 2017 and 2021 Land Management Reviews;

Management Plan Advisory Group and Public Hearing;
and FDEP Acquisition and Restoration Council Public
Hearing - -

DO NOT WRITE BELOW THIS LINE (FOR DIVISION OF STATE LANDS USE ONLY)

ARC Approval Date: _____ TITF Approval Date: _____

Comments:

I. Introduction

Blackwater River State Forest (BRSF), Florida's largest state forest, is comprised of approximately 226,659.52 acres located in the western panhandle of Florida in Okaloosa and Santa Rosa Counties. BRSF is named for the Blackwater River, which runs through the forest for approximately 30 miles. The Blackwater River is one of the last remaining shifting sand bottom streams still in its natural state for almost its entire length. BRSF was initially leased from the Federal government in 1938 and purchased in 1954. The original transfer consisted of roughly 183,184 acres. Over the years, through the FDEP Preservation-2000 and Florida Forever Programs, the USFS Forest Legacy Program, and through private donations, along with in-holding and additions funds, 43,325 acres were added to the forest totaling 226,659.52 acres.

BRSF is designated for multiple-use management and is managed by the Department of Agriculture and Consumer Services (FDACS), Florida Forest Service (FFS). The unique features of BRSF include the longleaf pine and wiregrass ecosystems, which, in combination with the Conecuh National Forest and Eglin Air Force Base, forms the largest contiguous tract managed for longleaf pine in the world. This ecosystem once covered over 90 million acres in the southeastern United States. Today, only about 5.2 million acres of this ecosystem remains intact with approximately 2.4 million acres currently in Florida. Longleaf pine communities are some of the richest in plant and animal diversity, including many species classified as threatened or endangered.

Major community groups represented on the forest include upland pine, bottomland forest, floodplain swamp, sandhill, and seepage slopes. Significant species sighted on the forest include the bald eagle, red cockaded woodpecker, gopher tortoise, and flatwoods salamander. Major recreational activities enjoyed at BRSF include canoeing / kayaking, hiking, horseback riding, camping, fishing, OHV riding, swimming, hunting, wildlife viewing, and mountain bike riding.

A. General Mission and Management Plan Direction

The primary mission of the Florida Forest Service (FFS) is to “protect Florida and its people from the dangers of wildland fire and manage the forest resources through a stewardship ethic to assure they are available for future generations.”

Management strategies for BRSF center on the multiple-use concept, as defined in Sections 589.04(3) and 253.034(2)(a), Florida Statutes (F.S.). Implementation of this concept will utilize and conserve state forest resources in a harmonious and coordinated combination that will best serve the people of the state of Florida, and that is consistent with the purpose for which BRSF was acquired. Multiple-use management for BRSF will be accomplished with the following strategies:

- Practice sustainable forest management for the efficient generation of revenue and in support of state forest management objectives;
- Provide for resource-based outdoor recreation opportunities for multiple interests;
- Restore and manage healthy forests and native ecosystems ensuring the long-term viability of populations and species listed as endangered, threatened, or rare, and other components of biological diversity including game and non-game wildlife and plants;
- Protect known archaeological, historical, and cultural resources;
- Restore, maintain, and protect hydrological functions, related water resources, and health of associated wetland and aquatic communities; and

- Provide research and educational opportunities related to natural resource management.

This management plan is provided according to requirements of Sections 253.034, 259.032, and 373, F.S. and was prepared utilizing guidelines outlined in Section 18-2.021 of the Florida Administrative Code (F.A.C.). It is not an annual work plan or detailed operational plan but provides general guidance for the management of BRSF for the next ten-year period and outlines the major concepts that will guide management activities on the forest.

B. Past Accomplishments

Data regarding past management activities and public use on BRSF have been compiled monthly and are available from the forest manager. A table has been prepared for this plan that summarizes the accomplishments for each of the past 12 years. See Exhibit A. The table does not attempt to account for all activities on the forest but summarizes major activities. Among the most notable accomplishments have been the following:

- Forest Management
 - Thinned 21,298 acres
 - Salvage thinned approximately 2,029 acres of tornado damage
 - Clearcut 4,137 acres
 - 1,545 acres of loblolly pine
 - 491 acres of slash pine
 - 2,101 acres of sand pine
 - Harvested 617,904 tons of timber
 - Produced 14,712 bushels of longleaf pine green cones
 - Produced 1,348 pounds of pine seed
 - Generated \$10,310,663 of total revenue
 - Planted 4,323 acres of longleaf pine; 231 acres were planted in bareroot
 - Conducted Timber Stand Improvement on 7,313 acres
 - 2,897 acres of pre-merchantable sand pine removal
 - 2,395 acres of hexazinone herbicide for longleaf release
 - 2,021 acres of understory herbicide for underbrush control
 - Completed and implemented annual updates to the silviculture plans
 - Updated forest stands in 2023
 - Created and implemented a systematic forest inventory plan
 - Acquired 16,238.79 acres
 - Certified by Sustainable Forestry Initiative under the Forest Management Standard
- Fire Management
 - Prescribed Burned 769,585 acres since the implementation of the previous plan
 - 434,225 dormant season acres
 - 335,360 growing season acres
- Road / Boundary Management
 - Maintained 7,776 miles of road
 - Installed, replaced, or overhauled 89 bridges
 - Installed or replaced 141 culverts
 - Replaced 25 low water crossings

- Maintained 364 miles of boundary
- Recreation Management
 - Opened Clear Creek Off-highway Vehicle Riding Area with bathrooms, gatehouse, fencing, and 25 miles of Off Highway Vehicle (OHV) trails
 - Added and fenced 25 additional miles of OHV trail at Clear Creek on westside of Redbird Trail
 - Added two (2) pole barns, one (1) picnic pavilion, four (4) electric campsites, solar panels, and one (1) dump station on the eastside of Redbird Trail
 - Added a total of 32 unisex bathrooms and two (2) non-unisex bathrooms across six (6) campgrounds
 - Converted one (1) bathhouse at Hurricane North into four (4) unisex bathrooms
 - Converted campsites at Krul Campground 2 from dirt to pavement
 - Increased electric campsites at Hurricane North Recreation Area from 13 to 18
 - Re-decked approximately 250 feet of boardwalk at Bone Creek Recreation Area and re-decked swimming pier
 - Built concrete seawalls at Krul Recreation Area on the north and south sides of the swimming area
 - The FFWCC installed new fishing pier with plastic decking boards at Karick North Recreation Area
 - Removed two (2) deteriorated fishing piers at Hurricane Lake North and Bear Lake
 - Added Camp Host sites and septic tanks at Krul Campground 2, Krul gatehouse, and Clear Creek
 - Converted all campsites in fee areas from an iron ranger payment system to an online reservation system through Reserve America
 - Converted Krul Lake day use parking to an online reservation system
 - Removed old swimming pier without ledger beam construction at Krul and built wider pier with ledger beams throughout the length of the 190' pier
 - Converted approximately 800 ft of Krul Lake Boardwalk from wood decking to concrete.
 - Re-decked approximately 2,650 feet of Krul Lake Boardwalk
 - Volunteers provided an average of 22,960 hours of service across 2021 through 2023
- Biological Management
 - Completed ten-year management plan for red-cockaded woodpeckers
 - Expanded the red-cockaded woodpecker population from 94 potential breeding groups to 176 potential breeding groups
 - Treated a total of 16,125.25 acres of invasive plant species
 - 1,912 acres were cogongrass treatments
- Education / Public Outreach
 - Held 512 events either on the state forest or pertaining to the state forest
 - Hosted the Munson Heritage Festival every October except 2020 and 2021 (pandemic)
 - Operation Outdoor Freedom hosted average of six (6) hunts per year

C. Goals / Objectives for the Next Ten-Year Period

The following goals and objectives provide direction and focus management resources for the next ten-year planning period. Funding, agency program priorities, and the potential for wildfire during the planning period will determine the degree to which these objectives can be met. Management activities on BRSF during this management period must serve to conserve, protect, utilize, and enhance the natural and historical resources and manage resource-based public outdoor recreation, which is compatible with the conservation and protection of this forest. Most of the management operations will be conducted by the FFS, although appropriate activities will be contracted to private sector vendors or completed with the cooperation of other agencies. All activities will enhance the property's natural resource or public recreational value.

The management activities listed below will be addressed within the ten-year management period and are defined as short-term goals, long-term goals, or ongoing goals. Short-term goals are goals that are achievable within a two-year planning period, and long-term goals are achievable within a ten-year planning period. Objectives are listed in priority order for each goal. Other activities will be completed with minimal overhead expense and existing staff.

➤ GOAL 1: Sustainable Forest Management

Objective 1: Continue to update and implement the Five-Year Silviculture Action Plan including reforestation, timber harvesting, prescribed burning, understory restoration, and timber stand improvement activities and goals. (Ongoing objective)

Performance Measures:

- Annual updates of the Five-Year Silviculture Action Plan completed
- Continued implementation of the Five-Year Silviculture Action Plan (acres treated)

Objective 2: Continue to implement the FFS process for developing stand descriptions and conducting forest inventory, including maintaining a GIS database containing forest stands, roads, and other attributes (including but not limited to: rare, threatened, and endangered species, archaeological and historical resources, and invasive species locations). (Ongoing objective)

Performance Measures:

- Update GIS database and re-inventory all attributes as required by FFS procedures
- Number of acres inventoried

Objective 3: Remove merchantable loblolly (*Pinus tadea*) and sand pine (*Pinus clausa*) plantations in stands where soils, historic vegetation, and practical management abilities indicate other pine species, particularly longleaf pine (*Pinus palustris*) or slash pine (*Pinus elliottii*) should dominate. Ensure clearcutting and replanting are in compliance with Sustainable Forestry Initiative (SFI) standards. Focus restoration efforts on the Ates Pasture, Yellow River, and Rayonier acquisition areas first. (Ongoing objective)

Performance Measures:

- Implementation of harvest operations of offsite loblolly and sand pine
- Number of acres planted in longleaf or slash pine

Objective 4: Conduct timber sales at appropriate times to promote forest health and productivity, maximize revenue generation, and ensure sustainability of forest resources.

Planned sales should be available at the beginning of the fiscal that they will be sold in order to best take advantage of good timber markets. (Ongoing objective)

Performance Measure: Conduct timber sales in accordance with the objective

Objective 5: Conduct timber stand improvement operations to reduce hardwood and offsite pine encroachments where longleaf pine has been re-established, when restoration of longleaf pine and/or natural groundcover is imminent, or when the encroachment of such species would cause a negative permanent alteration to the stand. Treatments should be geared to both releasing longleaf pine for maximum sunlight and reduction of shade to live, native groundcover. (Ongoing objective)

Performance Measures:

- Acres treated with timber stand improvement
- Response of longleaf pine and/or ground cover

➤ **GOAL 2: Public Access and Recreational Opportunities**

Objective 1: Maintain public access and recreational opportunities that are compatible with multiple-use management. (Ongoing objective)

Performance Measure: Number of visitor opportunities per day

Objective 2: Evaluate the potential for additional public access and recreational areas for public use on BRSF that are compatible with multiple-use management. Recreational opportunities will fall under the scope of multiple-use management in accordance with watershed protection, conservation, ecosystem restoration; and as detailed in the purpose for acquisition. (Short-term objective)

Performance Measure: List of viable access points and visitor opportunities for consideration

Objective 3: Continue to safely integrate human use into BRSF, follow the Five-Year Outdoor Recreation Plan and update annually. (Ongoing objective)

Performance Measures:

- Continued implementation of the Five-Year Outdoor Recreation Plan
- Annual updates of the Five-Year Outdoor Recreation Plan completed

Objective 4: Continue to involve and meet with the Liaison Committee. The purpose of Liaison Committee meetings is to facilitate communication between the FFS and committee members (and the groups they represent) about state forest management and to obtain feedback from these entities. The Committee consists of residents, community leaders and special interest group representatives (vendors, hunters, and other recreational users, etc.), environmental group representatives, and other public / private entities. (Ongoing objective)

Performance Measures:

- Liaison Committee remains organized
- Semi-annual meetings continue

Objective 5: Maintain cooperation with Florida Fish and Wildlife Conservation Commission (FWC) to develop specific hunting season quotas and bag limits, and to address hunting issues to be agreed upon at annual cooperator meeting between FFS and FWC. (Ongoing objective)

Performance Measures:

- Annual letter on agreed hunting issues
- Updated rules posted and WMA brochures available online at MyFWC.com

Objective 6: Recruit volunteers and volunteer organizations to assist with recreation and / or resource management. (Ongoing objective)

Performance Measure: Number of volunteers and organizations that assist with projects. Volunteers, which include, but are not limited to camp hosts, the Florida Trail Association, and the Southeastern Dog Hunters Association regularly volunteer on the forest to help with campground maintenance, hiking trail maintenance, and to beautify the forest with clean-up activities.

➤ **GOAL 3: Habitat Restoration, Improvement, and Fire Management**

Objective 1: The BRSF currently contains approximately 181,000 acres of fire-dependent communities. BRSF staff will plan and conduct prescribed burns in a manner that benefits these fire-dependent natural communities within the forest. To achieve an average fire-return interval of two (2) to four (4) years for most fire-dependent communities, FFS will attempt to conduct prescribed burns on an average of approximately 45,000 to 90,000 acres per year. Currently FFS staff estimates 139,000 acres at BRSF are within the desired fire-return interval. (Ongoing objective)

Performance Measures:

- Number of acres burned during the dormant and growing seasons
- Number of acres burned within target fire-return interval

Objective 2: Continue to annually update and implement the Five-Year Prescribed Burning Management Plan and the prescribed burning goals. (Ongoing objective)

Performance Measures:

- Annual updates of the Five-Year Prescribed Burning Management Plan completed
- Continued implementation of the Five-Year Prescribed Burning Management Plan (acres treated)

Objective 3: Reduce the threat of wildfire within the wildland urban interface on BRSF and the surrounding community through a comprehensive mitigation strategy that includes evaluating vegetative fuels near residential areas and identifying potential fuel reduction projects, constructing and maintaining firelines, and utilizing prescribed fire to reduce wildfire risk. (Ongoing objective)

Performance Measures:

- Evaluation complete
- Should the evaluation determine that fuel reduction is necessary, number of acres treated for fuel reduction and/or length of new fireline installed

Objective 4: Utilize prescribed fire to enhance restoration of native groundcover. Evaluate areas where native groundcover has been eliminated or heavily impacted from historical land use on a case-by-case basis for alternative methods to address reestablishment of native groundcover plants. Restore native groundcover where practical or heavily impacted from historical land use. (Long-term objective)

Performance Measure: Number of acres restored

➤ **GOAL 4: Listed and Rare Species Habitat Maintenance, Enhancement, Restoration, or Population Restoration**

Objective 1: In cooperation with FWC, maintain the Wildlife Management Strategy addressing the wildlife species for BRSF, with emphasis on imperiled species and associated management prescriptions for their habitats. (Ongoing objective)

Performance Measures:

- Imperiled species management strategy completed
- Baseline listed and rare species list completed for BRSF

Objective 2: In consultation with FWC, implement survey and monitoring protocols, where feasible, for listed and rare species. (Ongoing objective)

Performance Measure: Number of species for which monitoring is ongoing

Objective 3: Update the Red-cockaded Woodpecker Management Plan focusing on habitat management / enhancement and population sustainability and stabilization. Continue to manage Blackwater's population.

Performance Measures:

- New plan implemented
- Population continues to grow and/or remains stable

➤ **GOAL 5: Invasive Species Maintenance and Control**

Objective 1: Continue to follow and annually update the Five-Year Ecological Plan for BRSF, and continue to locate, identify, and control invasive species. (Ongoing objective)

Performance Measures:

- Total number of acres identified and successfully treated
- Annual updates of the Five-Year Ecological Plan completed
- Continue to maintain BRSF invasive database information annually

➤ **GOAL 6: Cultural and Historical Resources**

Objective 1: Ensure all known sites and newly discovered sites are recorded in the Department of State, Division of Historical Resources (DHR) Florida Master Site file. (Ongoing objective)

Performance Measure: Number of recorded sites

Objective 2: Monitor at least 10% of all recorded sites annually and send updates to the DHR Florida Master Site File as needed. Monitoring will be scheduled within one year following prescribed fire to allow for better monitoring. (Ongoing objective)

Performance Measure: Number of sites monitored. Reports submitted to DHR

Objective 3: Maintain at least two (2) qualified staff members as Archaeological Resource Management (ARM) Monitors. (Ongoing objective)

Performance Measure: Number of local staff trained as ARM Monitors

➤ **GOAL 7: Hydrological Preservation and Restoration**

Objective 1: Protect water resources during management activities through the implementation of Silviculture Best Management Practices (BMP) that are applicable to forest road maintenance and construction, construction of pre-suppression firelines, timber stand improvement activities, timber harvesting, sinkholes, etc. (Ongoing objective)

Performance Measure: Percent compliance with Silviculture BMP

Objective 2: Close, rehabilitate, or restore those roads, firelines, and trails that have evidence of erosion into surrounding water bodies causing alterations to the hydrology and / or water quality. (Ongoing objective)

Performance Measures:

- Number of roads, firelines, and trails closed, rehabilitated, and / or restored
- Number of culverts installed or maintained
- Number of low water crossings installed or maintained

Objective 3: Conduct or obtain a site assessment / study to identify potential hydrology restoration needs. Active washout sites will be prioritized for this assessment. (Short-term objective)

Performance Measure: Assessment conducted

➤ **GOAL 8: Capital Facilities and Infrastructure**

Objective 1: BRSF staff, along with help from volunteers, and/or user groups, will continue maintenance of 10 recreation areas with bathrooms. Nine (9) of these recreation areas allow for camping and day use. One facility is for day use activities only. There are 11 trailheads for hiking, mountain biking, horseback riding and off-highway vehicle riding on approximately 200 miles of trail. (Ongoing objective)

Performance Measure: The number of existing facilities, miles of roads, and miles of trails maintained

Objective 2: Continue to follow the Five-Year Roads and Bridges Management Plan and update annually. (Ongoing objective)

Performance Measures:

- Continued implementation of the Five-Year Roads and Bridges Management Plan
- Annual updates of the Five-Year Roads and Bridges Management Plan completed
- Survey existing roads and bridges for condition to determine any work that is needed
- Identification of any roads and bridges that can be closed or eliminated

Objective 3: Continue to implement the Five-Year Boundary Survey and Maintenance Management Plan and update annually. Approximately 20% of the forest boundary will be re-marked annually as necessary which includes harrowing, reposting signage, and repainting boundary trees. (Ongoing objective)

Performance Measures:

- Continued implementation of the Five-Year Boundary Survey and Maintenance Management Plan
- Percentage of forest boundary maintained annually per the State Forest Handbook guidelines

- Annual updates of the Five-Year Boundary Survey and Maintenance Management Plan completed

Objective 4: Survey parcels within BRSF where encroachments or other boundary disagreements exist to definitively determine proper boundary placement and eliminate inconsistencies. (Ongoing objective)

Performance Measures:

- Identification of all discrepancies
- Surveying boundary lines
- Creation of plan to address discrepancies
- Implementation of plan

II. Administration Section

A. Descriptive Information

1. Common Name of Property

The common name of the property is the Blackwater River State Forest (BRSF).

2. Legal Description and Acreage

BRSF is comprised of 226,659.52 acres, more or less.

BRSF is located in the northern portion of Santa Rosa and Okaloosa Counties. Numerous private land holdings exist within the forest boundaries. Similarly, several parcels of state land are isolated by private property. The property occupies part or most of the following:

- Sections 25, 26, 35, 36; Township 6 North; Range 28 West
- Sections 25-36; Township 6 North; Range 27 West
- Sections 25-36; Township 6 North; Range 26 West
- Sections 25-27, 29-35; Township 6 North; Range 25 West
- Sections 25-26, 35-36; Township 6 North; Range 24 West
- Sections 1, 3, 10-14, 24-26; Township 5 North; Range 28 West
- Sections 1-36; Township 5 North; Range 27 West
- Sections 1-36; Township 5 North; Range 26 West
- Sections 1-36; Township 5 North; Range 25 West
- Sections 1-2, 11-14, 19-35; Township 5 North; Range 24 West
- Sections 6-7, 19; Township 5 North; Range 23 West
- Sections 1, 36; Township 4 North; Range 28 West
- Sections 1-36; Township 4 North; Range 27 West
- Sections 1-36; Township 4 North; Range 26 West
- Sections 1-32; Township 4 North; Range 25 West
- Sections 3-8, 10-12, 26; Township 4 North; Range 24 West
- Sections 1-2, 10-14, 23-26, 35-6; Township 3 North; Range 28 West
- Sections 1-26, 28-32, 36; Township 3 North; Range 27 West
- Sections 1-36; Township 3 North; Range 26 West
- Sections 3, 5-7, 9, 11, 25, 16-22, 27-32; Township 3 North; Range 25 West
- Sections 1, 4-6, 8, 11-15, 22-26, 36; Township 2 North; Range 27 West
- Sections 2-11, 13-15, 17-19, 21-35; Township 2 North; Range 26 West

- Sections 19-20, 30; Township 2 North; Range 25 West
- Sections 3-5; Township 1 North; Range 26 West

For management purposes, the forest is divided into nine (9) management units (tracts). These nine units are: Coldwater, Sweetwater, Rock Creek, Horse Creek, Bone Creek, Juniper Creek, Floridale, West Boundary, and Yellow River. See Exhibit E for a map of the management units. Acreage acquired by funding source is identified in Table 1.

Table 1. BRSF Acreage by Funding Source

Funding Source	Acres
Other / USDA*	183,014.52
Florida Forever	23,893.42
Forest Legacy Program	12,661.57
P2000	6,129.86
Mitigation	609.94
Transfer	279.10
Exchanges	17.81
Donation	53.30

*Other / USDA includes a release of 230 acres to DRP in October 2000.

A complete legal description of lands owned by the Board of Trustees of the Internal Improvement Trust Fund (TIITF) is on record at the Blackwater Forestry Center Office, Florida Department of Environmental Protection (FDEP), and the FFS State Office in Tallahassee.

3. Proximity to Other Public Resources

Lands managed by state, federal, or local government for conservation of natural or cultural resources that are located within approximately 12 miles of the BRSF are mapped in Exhibit F and listed in Table 2.

Table 2. Nearby Public Conservation Lands and Easements

Tract	Agency	Distance
Blackwater River State Park	FDEP	Within forest boundary
Harold Outlying Field	US Navy	Within forest boundary
Yellow River Water Management Area	NFWFMD	Adjacent to southern border
Conecuh National Forest	USFS	Immediately to the north
NAS Whiting Field	US Navy	Immediately to the southwest
Eglin Air Force Base	US Air Force	1 mile to the south
Navy Greenways and Trails	FDEP	1 mile to the southwest
Blackwater Water Management Area	NFWFMD	4 miles west-southwest
Escribano Point	FWC	9 miles southwest
Garcon Point Water Management Area	NFWFMD	11.5 miles southwest

FDEP – Florida Department of Environmental Protection
 NFWFMD – Northwest Florida Water Management District

FWC – Fl. Fish and Wildlife Cons. Commission
 USFS – United States Forest Service

4. Property Acquisition and Land Use Considerations

a. Federal

BRSF was acquired as a land-use project by the U.S. Government in the mid-1930s. The property was acquired from various individuals and corporations such as the Bagdad Land and Lumber Company and the Okaloosa Land Company. The purpose of this land acquisition project was to resettle people who were attempting to subsist in a sub-marginal economy, thus alleviating the effects of the depression experienced in this area of Florida. Shortly after the U.S. Government acquired the property, it was turned over to the Soil Conservation Service (SCS) for administration. The State of Florida was granted management of the property in November 1938 by a fifty-year lease, with three (3) automatic extensions of fifteen years each.

In 1954, title to the property was transferred from the SCS to the U.S. Forest Service (USFS) which, in 1955, deeded the property to the State of Florida, Board of Forestry. The total size of this original acquisition was 183,184.57 acres.

b. P2000 and Florida Forever Acquisitions

Several parcels have been added to BRSF under the P2000 Acquisition Program, including the 1,249.80-acre Hutton 1 (northern) parcel acquired in April 1997 (located in Santa Rosa County on both sides of Juniper Creek, south of Red Rock Road and has been fully incorporated into the Juniper Creek Tract), and the 4,454.42-acre Hutton 2 Tract acquired in June 1997 (located near the Harold community and is now commonly referred to as the Hutton Unit).

During the mid- to late 2000's, under the Florida Forever Program, the state added the 4,623.80-acre Ates Pasture parcel (located in Santa Rosa County between Munson and Harold), the 11,208.54-acre Yellow River Ravines parcel (located in Santa Rosa and Okaloosa Counties south of US 90 between Harold and Holt), and the 1,026.42-acre TNC Rayonier parcels (located in Okaloosa County northwest of Baker). In 2010, the state purchased the 1,400.63-acre Clear Creek Tract (located northeast of Naval Air Station Whiting Field) under the Florida Forever and T. Mark Schmidt Off-Highway Vehicle programs.

From 2018 through 2024, the Florida Forever Program has provided funding for all or part of several acquisitions that are part of the Wolfe Creek Forest Project. A total of six sections of Wolfe Creek Forest were purchased containing a total of 11,293.39 acres. In 2022, Florida Forever provided a portion of the funding for the acquisition of 2,114.97 acres of land within the immediate vicinity of the Wolfe Creek Forest. In 2023, the Knobloch Family Foundation provided a much-needed donation that went toward the purchase of the 1,487.9-acre Wolfe Creek acquisition. Florida Forever provided all of the funding to acquire the 758.26-acre Wolfe Creek Forest Phase VI. This land acquisition provided much needed protection for Big Coldwater Creek and also protected land within close vicinity of NAS Whiting Field.

c. Forest Legacy Program

The Forest Legacy Program has been instrumental in providing all or part of the funding for many acquired parcels in the Wolfe Creek Forest project area in recent years. Program funds have been awarded numerous times in this area of Florida due to the potential for longleaf pine restoration. As of February 2025, Forest Legacy Program funding has been used to acquire nine (9) additional Wolfe Creek Forest project areas, which are now managed as part of BRSF. All acreage acquired with federal Forest Legacy Program funding must be managed in accordance with federal programmatic guidelines. The most current version of this document can be found at the following link: [Forest Legacy Program \(usda.gov\)](https://www.usda.gov/forestlegacy). Any future Forest Legacy Program-funded parcels acquired as part of BRSF will be managed as part of this Land Management Plan and to the Forest Legacy Program requirements.

d. Other Acquisitions

Several smaller parcels have been acquired over the years through mitigation and other means. These parcels range in size from two (2) to eighty (80) acres with a total acquisition of 713.83 acres. All parcel acquisitions 80 acres and above are identified in Table 3. Major tracts, including those acquired through the Forest Legacy Program, are depicted in Exhibit E.

Table 3. Parcel Acquisition

Parcel Name	Lease Date	Lease No.	Acres
USDA – Okaloosa Co.	11/22/1968	2346 / 3686	60,828.20
USDA – Santa Rosa Co.	11/22/1968	2346 / 3686	122,356.37
Estes	2/8/1994	3686	115.68
Phillips	2/8/1994	3686	120.42
Hutton 1	8/11/1997	3686	1,249.80
Hutton 2	8/11/1997	3686	4,454.42
Barnes / Stump Springs	12/9/1997	3686	150.40
FGT / Sowell	4/6/1999	3686	80.00
Cleavenger, Charles	8/1/2003	3686	237.10
Estes, John Edward	9/2/2003	3686	217.40
Cox, Benjamin	3/22/2004	3686	195.27
IP – Ates Pasture	2/25/2005	3686	4,623.80
TNC / Estes	1/31/2008	3686	358.65
Yellow River Ravines – Santa Rosa Co.	1/31/2008	3686	10,334.89
Yellow River Ravines – Okaloosa Co.	1/31/2008	3686	873.65
TNC / Rayonier	3/18/2009	3686	1,026.42
Falzone, Timothy	6/12/2009	3686	104.25
TNC – Estes	3/3/2010	3686	555.00
TNC	4/22/2010	3686	80.93
TNC	10/15/2012	3686	1,400.63
SSA Developers	10/15/2012	3686	172.59
Kennedy, Bobbie J.	10/15/2012	3686	89.90

Parcel Name	Lease Date	Lease No.	Acres
Woodall, James	10/15/2012	3686	159.40
FGT Donation	10/15/2012	3686	359.94
TPL From CF Florida, LLC	3/16/2018	3686	626.71
Paradise Bay	1/29/2019	3686	279.10
Legacy Acquisition	11/7/2019	3686	798.64
Legacy Acquisition	9/15/2020	3686	1,272.70
Legacy Acquisition	5/18/2022	3686	2,114.97
Legacy / Donation	5/20/2022	3686	1,699.57
Legacy / Florida Forever	12/5/2022	3686	1,789.77
WCF – Phase V Legacy / Florida Forever	5/4/2023	3686	3,598.87
WCF – Phase VI Florida Forever	5/4/2023	3686	758.26
WCF – Phase VII Florida Forever / Legacy	10/26/2023	3686	1,487.90
WCF – Phase VIII Legacy / Florida Forever	7/12/2024	3686	1,543.62
Pridgeon	2/24/2025	3686	101.66
Peadon	2/24/2025	3686	40.7

B. Management Authority, Purpose, and Constraints

1. Purpose for Acquisition / Management Prospectus

The land that was to become the BRSF was acquired by the Federal Government to revegetate, resettle, and protect the area following extensive deforestation by land and timber companies in the early 1900s. In the late 1930s at the request of Florida’s Governor, the land was leased to the State and the restoration process continued.

The Yellow River Tract was acquired to protect a high-quality example of an imperiled natural community and to protect threatened and endangered plant and animal species. Acquisition of this Tract allowed for a continuous corridor of public land from Eglin Air Force Base through the BRSF and to the Conecuh State Forest in Alabama. The acquisition of undeveloped land around the U.S. Navy’s Pensacola Naval Air Station satellite airfields enhance military training by preventing encroachment on military reservations.

Several smaller tracts were acquired through FDACS In-holdings and Additions land acquisition program to aid in the management of BRSF by acquisition of essential ownerships that were not acquired in the initial phases of the Florida Forever project. These parcels were identified as integral to the successful management of BRSF by allowing the introduction of prescribed fire to previously inaccessible areas, providing additional public access, and affording additional protections to environmentally sensitive areas.

2. Degree of Title Interest Held by the Board

The TIIF holds fee simple title to all 226,659.52 acres of BRSF. There are many sub-leases, easements, use agreements, and permits executed on the forest. The majority of these are small easements needed for power line access or ingress / egress to private property. Copies of the leases are on file at the Florida Department of Environmental Protection, Division of State Lands’ (DSL) office.

3. Designated Single or Multiple-Use Management

BRSF is managed under a multiple-use concept by the FFS, under the authority of Chapters 253 and 589, F.S. The FFS is the lead managing agency as stated in TITF Management Lease Number 3686 and 2346.

Multiple-use management is the harmonious and coordinated management of timber, recreation, conservation of fish and wildlife, forage, archaeological and historic sites, habitat and other biological resources, or water resources so that they are utilized in the combination that will best serve the people of the state, making the most judicious use of the land for some or all of these resources and considering the relative values of the various resources. Local demands, acquisition objectives, and other factors influence the array of uses that are compatible with and allowed on any specific area of the forest. This management approach is believed to provide for the greatest public benefit, by allowing compatible uses while protecting overall forest health, native ecosystems, and the functions and values associated with them.

4. Revenue Producing Activities

Numerous activities on BRSF provide for multiple-use management, as well as generate revenue to offset management costs. Revenue producing activities will be considered when they have been determined to be financially feasible and will not adversely impact management of BRSF. Current and potential revenue producing activities for the BRSF include, but are not limited to:

- *Timber Harvests* – Timber harvests on BRSF will be conducted on a regular basis to improve forest health, promote wildlife habitat, restore plant communities, and provide other benefits.
- *Recreation Fees* – Fees are currently collected for day use, camping (through an online reservation system), OHV riding on Clear Creek, and miscellaneous commercial vendor permits.
- *Apiary Leases* – Apiary leases may be issued to local vendors as space allows.
- *Miscellaneous Forest Product Sales* – Other miscellaneous forest product sales, including but not limited to, palm fronds and berries, pinecones, pine seed, pine straw and firewood, may be considered.

5. Conformation to State Lands Management Plan

Management of BRSF under the multiple-use concept complies with the State Lands Management Plan and provides optimum balanced public utilization of the property. Specific authority for the FFS’s management of public land is derived from Chapters 253, 259, and 589, F.S.

6. Legislative or Executive Constraints

There are no known legislative or executive constraints specifically directed toward BRSF. The only known constraint would be the reversion clause when the U.S. Government property was conveyed, which states the property must be used for public purposes.

FFS makes every effort to comply with applicable statutes, rules, and ordinances when managing BRSF. For example, when public facilities are developed on state forests, every effort is made to comply with Public Law 101-336, the Americans with Disabilities Act. As new facilities are developed, the universal access requirements of this law are followed in all cases except where the law allows reasonable exceptions (e.g., where handicap access is structurally impractical or where providing such access would change the fundamental character of the facility being provided).

7. Aquatic Preserve / Area of Critical State Concern

The property is not within an aquatic preserve or an area of critical state concern, nor is it in an area under study for such designation.

C. Capital Facilities and Infrastructure

1. Property Boundaries Establishment and Preservation

BRSF has approximately 616 miles of forest boundary that adjoins private or other public ownership. Boundaries are managed by state forest personnel in accordance with the guidelines of the State Forest Handbook. The BRSF boundary lines are to be maintained by periodic clearing, repainting and reposting of state forest boundary signs by FFS personnel. See Exhibit B.

2. Improvements

BRSF has a wide variety of facilities including maintenance and shop facilities, offices, meeting rooms, and recreation facilities to facilitate management and the needs of the public. Perhaps the most unique of these facilities is a 1950s era sawmill used to produce rough cut lumber for use in our bridge and building maintenance program. BRSF contains 131 structures owned by FFS. Included in this are 10 public water systems and six (6) private residences. See Exhibit D for a map of the buildings and improvements at BRSF.

Buildings / Recreation infrastructures present on BRSF include:

- BFC Machine Shop, 2,160 sq. ft.
- BFC Equipment Storage, 2,403 sq. ft.
- BFC Road and Bridge Crew Office, 572 sq. ft.
- BFC Storage Shed – Back Gate, 4,501 sq. ft.
- BFC Volunteer Fire Department (VFD) Building, 400 sq. ft.
- BFC Fuel Island, 169 sq. ft.
- BFC Mechanic Shop, 8,800 sq. ft.
- BFC Ft. Jackie, 1,326 sq. ft.
- BFC Forestry Center Office, 4,160 sq. ft.
- BFC Oil Storage, 140 sq. ft.
- BFC Electronics Shop, 1,232 sq. ft.
- BFC Sawmill, 5,944 sq. ft.
- BFC Equipment Storage / Timber Marker, 2,314 sq. ft.
- BFC Oil Change Facility, 1,155 sq. ft.
- BFC Fire Tower, 64 sq. ft.
- BFC Training Room/Warehouse, 3,960 sq. ft.

- BFC Welding Shop, 2,124 sq. ft.
- BFC Pump House, 360 sq. ft.
- BFC Communication Building, 80 sq. ft.
- BFC Timber Marker Office, 2,340 sq. ft.
- BFC Storage Facility, 1,064 sq. ft.
- BFC Deer Cleaning Facility, 576 sq. ft.
- BFC BW7 Pole Barn, 7,310 sq. ft.
- BFC Inmate Bathroom, 168 sq. ft.
- BFC Road and Bridge Pole Barn, 15,200 sq. ft.
- Coldwater Tower, 64 sq. ft.
- Coldwater Tower Pump House, 49 sq. ft.
- Coldwater Tower Pole Barn, 616 sq. ft.
- Krul Lake Grist Mill, 338 sq. ft.
- Krul Lake Day Use Picnic Cover, 260 sq. ft.
- Krul Lake Concession, 260 sq. ft.
- Krul Lake Pump House, 99 sq. ft.
- Krul Lake Volunteer Shed, 108 sq. ft.
- Krul Lake Residence, 1,943 sq. ft.
- Krul Lake Restrooms, 896 sq. ft.
- Krul Lake Campground #1 Restroom, 520 sq. ft.
- Krul Lake Campground #2 Restroom, 520 sq. ft.
- Krul Lake Air Strip Storage, 64 sq. ft.
- Krul Lake Storage, 63 sq. ft.
- Krul Lake Gate House, 117 sq. ft.
- Krul Lake Smoke House, 112 sq. ft.
- Krul Lake Sugar Kettle Shed, 403 sq. ft.
- Bear Lake Pavilion, 3,726 sq. ft.
- Bear Lake Pump House, 220 sq. ft.
- Bear Lake Residence, 1,860 sq. ft.
- Bear Lake Bathroom #1, 520 sq. ft.
- Bear Lake BBQ Shelter, 110 sq. ft.
- Bear Lake Storage Shed, 198 sq. ft.
- Bear Lake Bathroom #2, 520 sq. ft.
- CWRA Bath House, 858 sq. ft.
- CWRA Stables, 7,260 sq. ft.
- CWRA Kennels, 3,813 sq. ft.
- CWRA Kitchen and Dining, 2,100 sq. ft.
- CWRA Stables / Paddock, 4,238 sq. ft.
- CWRA Pavilion, 2,970 sq. ft.
- CWRA Kiosk, 56 sq. ft.
- CWRA Residence, 1,536 sq. ft.
- CWRA Office / Shop, 4,422 sq. ft.
- CWRA Equipment Shed, 3,224 sq. ft.
- CWRA BBQ Grill Facility, 360 sq. ft.

- CWRA Pump House, 193 sq. ft.
- CRWA Equine Waste Shed, 594 sq. ft.
- CRWA Paddock Stalls, 5,456 sq. ft.
- CWRA Female Bath House, 1,007 sq. ft.
- CWRA New Bath House, 667 sq. ft.
- CWRA New Kiosk, 63 sq. ft.
- CWRA Fire Hose, 12 sq. ft.
- CWRA Volunteer Stalls, 1,023 sq. ft.
- CRWA Barn #5, 3,751 sq. ft.
- Holt Training Center Dormitory #1, 1,380 sq. ft.
- Holt Training Center Dormitory #2, 1,380 sq. ft.
- Holt Training Center Classrooms, 1,380 sq. ft.
- Holt Training Center Kitchen and Dining Hall, 1,716 sq. ft.
- Holt Training Center Teaching Pavilion, 3,017 sq. ft.
- Holt Training Center Residence, 1,608 sq. ft.
- Holt Training Center Restrooms, 456 sq. ft.
- Holt Training Center Dormitory #3, 2,079 sq. ft.
- Holt Training Center Water System, 400 sq. ft.
- Holt Training Center DJJ Offices, 3,600 sq. ft.
- Holt Training Center Resident Storage Building, 80 sq. ft.
- Holt Training Center Resident Covered Swing, 90 sq. ft.
- Holt Training Center Pump House, 210 sq. ft.
- Jackson Trail Shelter #1 – North of Highway 4, 80 sq. ft.
- Jackson Trail Shelter #2 – South of Highway 4, 80 sq. ft.
- Camp Paquette South Bath House, 447 sq. ft.
- Camp Paquette Outdoor Pavilion, 2,470 sq. ft.
- Camp Paquette Pump House, 150 sq. ft.
- Camp Paquette North Bath House, 452 sq. ft.
- Chemical Storage, 600 sq. ft.
- Cold Storage Facility, 1,700 sq. ft.
- Fertilizer Storage, 2,000 sq. ft.
- Seed Orchard Office and Equipment Storage, 4,100 sq. ft.
- Seed Orchard Oil Storage Shed, 100 sq. ft.
- Carpentry Shop and OALE Office, 4,800 sq. ft.
- Seed Orchard Pump House, 100 sq. ft.
- Seed Orchard Residence, 1,610 sq. ft.
- Seed Orchard Storage, 1,230 sq. ft.
- Orchard Seed, 10,500 sq. ft.
- Orchard Shop, 2,000 sq. ft.
- Seed Orchard Storage Building with Side Shed, 420 sq. ft.
- Seed Orchard Storage / Pole Barn, 3,300 sq. ft.
- Seed Orchard Pole Barn – Tree Improvement Section, 3,200 sq. ft.
- Clear Creek OHV Gatehouse, 210 sq. ft.
- Clear Creek OHV Pavilion, 521 sq. ft.

- Clear Creek OHV Bathroom, 546 sq. ft.
- Clear Creek OHV Equipment Pole Barn, 640 sq. ft.
- Clear Creek OHV Camper Pole Barn, 1,004 sq. ft.
- Hurricane Lake North Bath House, 483 sq. ft.
- Hurricane Lake South Bath House, 320 sq. ft.
- Hurricane Lake South Pump House, 220 sq. ft.
- Hurricane Lake North Pump House, 252 sq. ft.
- Hurricane Lake North Storage, 275 sq. ft.
- Hurricane Lake South New Bath House, 520 sq. ft.
- Karick Lake South Restroom, 837 sq. ft.
- Karick Lake South Equipment Storage, 228 sq. ft.
- Karick Lake North Restroom, 837 sq. ft.
- Karick Lake South Storage Shed, 36 sq. ft.
- Karick Lake South Pump House, 210 sq. ft.
- Karick Lake North Pump House, 361 sq. ft.
- Karick Lake Deer Cleaning Facility, 576 sq. ft.
- Karick Lake North New Bath House, 520 sq. ft.
- Bone Creek Picnic Shelter, 1,444 sq. ft.
- Bone Creek Pump House, 190 sq. ft.
- Bone Creek Storage Shed, 117 sq. ft.
- Bone Creek Restroom, 460 sq. ft.
- Bone Creek Storage Building, 81 sq. ft.
- Station and Shop – Okaloosa Forestry Station, 7,650 sq. ft.
- Okaloosa Forestry Station Pump House, 560 sq. ft.

3. **On-Site Housing**

FFS may establish additional on-site housing (mobile / manufactured home) on BRSF if deemed necessary to alleviate security and management issues. The need and feasibility of additional housing for the state forest will be evaluated and established if considered appropriate by the Center Manager and approved by the FFS Director. Prior to the occurrence of any ground disturbing activity for the purpose of establishing on-site housing, a notification will be sent to DHR and FNAI for review and recommendations. This type of housing will not exceed three (3) homes per location with the possibility of more than one (1) on-site housing location occurring if considered necessary by the Center Manager and approved by the Director. Housing is prioritized based on FFS policy.

4. **Operations Infrastructure**

a. **Operations Budget**

For Fiscal Year 2024-2025, the total annual budget for BRSF was \$1,556,563.58. This amount includes expenses and contractual services. A summary budget for BRSF is contained in Exhibit W. Implementation of any of the activities within this management plan is contingent on availability of funding, other resources, and other statewide priorities.

b. Equipment

To carry out the mission of the FFS, BRSF maintains a diverse assemblage of equipment that includes fourteen (14) tractor / plow units, two (2) heavy tractors, eight (8) farm tractors, three (3) front-end loaders, four (4) dump trucks, eight (8) Type-6 engines, forty four (44) pickup trucks, two (2) SUVs, three (3) vans, four (4) ATVs, six (6) UTVs, and three (3) road graders. Additional equipment can be used from other resources throughout the Blackwater Forestry Center, when needed, for management activities.

c. Staffing

One hundred twenty (120) staff members are assigned to the Blackwater Forestry Center. Staff assigned to BRSF includes, but is not limited to, four (4) Forest Area Supervisors, three (3) Forestry Supervisor IIs, two (2) Forestry Supervisor Is, four (4) Foresters, one (1) Biological Scientist II, two (2) Park Service Specialists, seven (7) Recreation Park Rangers, ten (10) Road Crew Park Rangers, four (4) Senior Foresters, eight (8) Senior Forest Rangers, and fifteen (15) Forest Rangers.

The Foresters and Park Service Specialists will conduct the forest management activities pertaining to timber harvesting, reforestation, timber stand improvement. Timber sales will be prepared by the start of the fiscal year that they are to be sold, and the Foresters will oversee harvesting operations on assigned sales. Foresters will also help to plan and oversee timber stand improvement and reforestation operations. The Foresters and Park Service Specialists will also conduct forest inventory every year on approximately 10% of forest land.

The Biological Scientist II and one Park Ranger, under the direction of the Forest Ecology unit, will monitor and conduct management activities for the red-cockaded woodpecker population on the forest. They are also responsible for conducting surveys of seepage slopes, and other areas that may have high concentrations of threatened and endangered species.

The Forest Ecology unit also is responsible for the treatment and control of invasive species on the forest. The Forestry Supervisor II and two OPS Park Rangers carry out these duties year-round. The Forestry Supervisor II also represents the Florida Forest Service in the Six Rivers CISMA and also educates the public on an as-needed basis.

The Operations Section is responsible for prescribed burning, wildfire suppression, and fireline construction/maintenance on BRSF. All fire crews, regardless of assigned county, have an area of responsibility on the state forest.

The Recreation section is responsible for management of trails, primitive recreation sites, and campgrounds and day use areas including but is not limited to Krul, Bear Lake, Coldwater, Clear Creek, Camp Paquette, Hurricane Lake North, Hurricane Lake South, Karick Lake North, Karick Lake South, and Bone Creek. The lakes, boat ramps, and piers at Bear Lake, Hurricane Lake, and Karick Lake are the responsibility of the Florida Fish and Wildlife Conservation Commission.

The Maintenance section is responsible for the upkeep of vehicles and equipment, facilities, and roads. BRSF maintenance has 59 bridges, over 1,000 miles of roads, over 100 buildings, and over 200 pieces of equipment (including trucks) that are under the section's responsibility.

D. Additional Acquisitions and Land Use Considerations

1. Alternate Uses Considered

No alternate uses are being considered at this time. Alternate uses will be considered as requests are made and will be accommodated as appropriate if they are determined to be compatible with existing uses and with the management goals and objectives of the forest. Uses determined as incompatible include but are not limited to: water resource development projects, water supply projects, storm-water management projects, sewage treatment facilities, linear facilities, off highway vehicle use, dumping, mining, and oil well stimulation (e.g. hydraulic fracturing / fracking), or as determined by law, regulation, or other incompatible uses as described elsewhere in the management plan. Deadhead logging is not compatible with nor considered appropriate use within or adjacent to the state forest boundaries.

2. Additional Land Needs

There are 109,663 acres adjacent to the property which should receive priority for acquisition because they would benefit the management of the property. The FFS will work with these property owners, on a willing seller basis, to acquire these parcels.

Purchasing of additional land within the optimal management boundary would facilitate restoration, protection, maintenance, and management of the resources on BRSF. See Exhibit C.

3. Surplus Land Assessment

On conservation lands where FFS is the lead manager, FFS assesses and identifies areas for potential surplus land. This assessment consists of an examination of resource and operational management needs, public access and recreational use, and GIS modeling and analysis.

The evaluation of BRSF by FFS has determined that all portions of the area are being managed and operated for the original purposes of acquisition, as well as, center on the multiple-use concept, as defined in sections 589.04(3) and 253.034(2)(a) F.S. Implementation of this concept will utilize and conserve state forest resources in a harmonious and coordinated combination that will best serve the people of the state of Florida. Therefore, no portion of the BRSF is recommended for potential surplus.

4. Adjacent Conflicting Uses

During the development of this management plan, FFS staff identified and evaluated adjacent land uses, reviewed current comprehensive plans, and future land use maps in making the determination that there are currently no known conflicting adjacent land uses. Additionally, FFS staff maintains liaison with adjacent landowners to ensure that any conflicting future land uses may be readily identified and addressed.

FFS will cooperate with adjacent property owners, prospective owners, or prospective developers to discuss methods to minimize negative impacts on management, resources, facilities, roads, recreation, etc., and discuss ways to minimize encroachment onto the BRSF.

5. Compliance with Comprehensive Plans

This plan was submitted to the Board of County Commissioners in Okaloosa and Santa Rosa Counties for review and compliance with their local comprehensive plans. See Exhibit U.

6. Utility Corridors and Easements

Due to the size of BRSF and the existence of a significant acreage of private in-holdings, numerous utility corridors and easements exist on this forest. Included are easements for gas pipelines, power lines, and access. Copies of these easements are available upon request. The use of state forest property for utility lines, pipelines, linear facilities and transportation corridors has and will continue to be discouraged; however, with hundreds of miles of roads containing numerous private residences, it is inevitable that new easements will ultimately be issued.

FFS does not favor the fragmentation of natural communities with linear facilities. Consequently, easements for such uses will be discouraged to the greatest extent practical. Currently there are five (5) established utility corridors on BRSF. FFS does not consider BRSF suitable for any new linear facilities.

When such encroachments are unavoidable, previously disturbed sites will be the preferred location. The objectives, when identifying possible locations for new linear facilities, will be to minimize damage to sensitive resources (e.g., listed species and archaeological sites), minimize habitat fragmentation, limit disruption of management activities, including prescribed burns, and limit disruption of resource-based multiple use activities such as recreation.

Collocation of new linear facilities with existing corridors will be considered but will be used only where expansion of existing corridors does not increase the level of habitat fragmentation and disruption of management and multiple-use activities. FFS will further encourage the use of underground cable where scenic considerations are desirable. Easements for such utilities are subject to the review and approval of the TIITF. Requests for linear facility uses will be handled according to the Governor and the Cabinet's linear facilities policy.

E. Agency and Public Involvement

1. Responsibilities of Managing Agencies

FFS is the lead managing agency, responsible for overall forest management and public recreation activities, as stated in TIITF Management Lease Numbers 3686 and 2346. Pursuant to the management lease, the lead managing agency may enter into further agreements or subleases on any part of the forest.

FFS will cooperate with the DHR regarding appropriate management practices on historical or archaeological sites on the property as stated in Section 267.061, F.S. DHR will be

consulted prior to the initiation of ground disturbing activities by the FFS or any other agency involved with the forest as required per DHR guidelines.

FWC assumes law enforcement responsibilities, enforces hunting regulations, cooperatively sets hunting season dates with FFS, and conducts other wildlife management activities with input from FFS.

The NFWFMD will be consulted and involved in matters relating to water resources and hydrological restoration as appropriate.

2. Law Enforcement

Primary law enforcement responsibilities will be handled by FWC law enforcement officers. Rules governing the use of BRSF are stated in Chapter 5I-4, F.A.C. FWC will enforce fish and wildlife regulations and aid in enforcing state forest rules. FWC does not currently have an officer dedicated to patrolling and enforcement on BRSF. This task is shared among multiple FWC officers who also patrol and enforce laws on properties and waterways outside of BRSF.

The FDACS Office of Agricultural Law Enforcement (OALE) will assist with open burning and wildfire investigations as needed. The Okaloosa County and Santa Rosa County Sheriff's Offices provide additional assistance as needed.

Special rules under Chapter 5I-4 of the F.A.C. were promulgated for FDACS, FFS, to manage the use of state lands and better control traffic, and to oversee camping and other uses on BRSF.

3. Wildland Fire

FFS has the primary responsibility for prevention, detection, and suppression of wildfires wherever they may occur. FFS shall provide leadership and direction in the evaluation, coordination, allocation of resources, and monitoring of wildfire management and protection (F.S. 590.01). The FFS also has the responsibility of authorizing prescribed burns (F.S. 590.02 [1][i]).

4. Public and Local Government Involvement

This plan has been prepared and will be implemented by FFS. FFS responds to public involvement through liaison committees, management plan advisory groups, public hearings, and through ongoing direct contact with user groups. Land Management Review Teams, as coordinated by the DSL, have conducted reviews of management plan implementation in 2012, 2017 and 2021. See Exhibit T. The review teams' recommendations are addressed in this plan as appropriate.

A State Forest Liaison Committee of private citizens and representatives of forest user groups meet semi-annually to provide input on forest management activities and share their ideas with FFS staff to improve the forest.

This plan was developed with input from the BRSF Management Plan Advisory Group (MPAG) and was reviewed at a public hearing on December 3, 2025. A summary of the

advisory group's meetings and discussions, as well as written comments received on the plan, are included in Exhibit V. The Acquisition and Restoration Council (ARC) public hearing and meeting serve as an additional forum for public input and review of the plan.

5. Volunteers

Volunteers are important assets to BRSF. Volunteer activities may be one-time events or recurring projects and routine maintenance. Additional volunteer recruitment will be encouraged to assist with other activities to further the FFS's mission.

6. Friends of Florida State Forest

Friends of Florida State Forests, Inc. (FFSF) is a Direct Support Organization (DSO) of the Florida Forest Service. FFSF supports management activities and projects on Florida's state forests. FFSF is established by Florida Statute, supports programs within Florida's state forests and is governed by a board of directors representing all areas of the state. Through community support, FFSF assists the FFS to expand opportunities for recreation, environmental education, fire prevention, and forest management within Florida's state forests.

The FFSF program is referenced in Chapter 589.012, F.S. For more information visit: www.floridastateforests.org.

III. Archaeological / Cultural Resources and Protection

A. Past Uses

Private individuals and land and / or timber companies originally owned the area which is now BRSF. Under such ownership, the land was used in a variety of ways including hunting, logging, cattle grazing, farming, pecan orchards, and naval store operations. The property was extensively logged over in the early 1900s. The original tract of BRSF was acquired in the 1930s from tax delinquent private landowners by the U.S. Land Resettlement Administration in an attempt to provide sustenance farming for the poor. These lands were then leased to the Florida Board of Forestry in 1938, which established BRSF. The original tract from the Federal Government was in a cutover condition. There has been evidence of old logging railroad beds and roads, particularly, the Bagdad Lumber Company railroad that was utilized in the early 1900's. There is also historical recollection of old stagecoach roads that were utilized to cross the forest during the late 19th and early 20th centuries; though there is no documented occurrence that remains today.

The previous owners of the Juniper Creek Tract, Hutton Tract, IP Ates Pasture, Yellow River Ravines, TNC Rayonier parcels, Clear Creek, and Wolfe Creek Tracts were primarily commercial timber and timber investment companies. As such, the land was managed intensively for timber production with the uplands in plantation management consisting of slash, loblolly, and sand pine plantations, although some longleaf pine plantations are present. Hunting leases and food plots were scattered across these tracts.

B. Archaeological and Historical Resources

A review of information contained in the Florida Department of State, DHR, Florida Master Site file has determined there are 236 archaeological sites, three (3) standing structures, two (2) historical bridges, two (2) cemeteries and two (2) archaeological resource groups on BRSF. Florida Forest Service personnel have identified at least 15 other potential sites, as well as 18 manmade logging channels and over 500 possible points of evidence of old logging railroad beds, as well as 10 cemeteries that are not recorded in the Master Site File. Local field staff will work with DHR to confirm or verify whether these sites are archaeological sites or contain archaeological resources. None of the sites are eligible to be listed in the National Register of Historic Places. See Table 4 and Exhibit H for a cultural resource roster.

Table 4. Archaeological and Historical Sites on BRSF

Site ID	Site Name	Site Type
OK00110	Kennedy Bridge	Archaeological Site
OK00113	Burnhill Plantation Mill	Archaeological Site
OK00118	West Horse Creek	Archaeological Site
OK00119	East Horse Creek	Archaeological Site
OK00120	North Panther Creek	Archaeological Site
OK00121	Middle Panther Creek	Archeological Site
OK00122	Mare Creek	Archeological Site
OK00123	Lower Panther Creek	Archeological Site
OK00127	E H & A Okaloosa 25	Archeological Site
OK00128	E H & A Okaloosa 5	Archeological Site
OK00479	Boundary Line	Archeological Site
OK00507	NN	Archeological Site
OK00508	NN	Archeological Site
OK00509	NN	Archeological Site
OK00510	NN	Archeological Site
OK00511	NN	Archeological Site
OK00512	NN	Archeological Site
OK00513	NN	Archeological Site
OK00514	NN	Archeological Site
OK00515	NN	Archeological Site
OK00526	LM90-58	Archeological Site
OK00527	LM90-59	Archeological Site
OK00528	LM90-60	Archeological Site
OK00529	LM90-61	Archeological Site
OK00530	LM90-62	Archeological Site
OK00531	LM90-68	Archeological Site
OK00532	LM90-69	Archeological Site
OK00541	LM 92-4	Archeological Site
OK00542	LM 92-516	Archeological Site
OK00543	LM 92-7	Archeological Site

Site ID	Site Name	Site Type
OK00544	LM 92-8	Archeological Site
OK00545	LM 92-9/11	Archeological Site
OK00546	LM 92-10/12	Archeological Site
OK00547	LM 92-13	Archeological Site
OK00548	LM 92-14	Archeological Site
OK00550	LM 92-17	Archeological Site
OK00551	LM 92-18	Archeological Site
OK00552	LM 92-19	Archeological Site
OK00553	LM 92-20	Archeological Site
OK00554	LM 92-21	Archeological Site
OK00559	LM 92-26	Archeological Site
OK00566	LM 92-33	Archeological Site
OK00567	LM 92-34	Archeological Site
OK00569	LM 92-36	Archeological Site
OK00570	LM 92-37	Archeological Site
OK00571	LM 92-38	Archeological Site
OK00572	LM 92-39	Archeological Site
OK00573	LM 92-40	Archeological Site
OK00574	LM 92-41	Archeological Site
OK00575	LM 92-42	Archeological Site
OK00576	LM 92-43	Archeological Site
OK00577	LM 92-44	Archeological Site
OK00610	LM 92-46	Archeological Site
OK00611	LM 92-47	Archeological Site
OK00613	Left Field Hammock	Archeological Site
OK00614	LM 92-50	Archeological Site
OK00615	LM 92-51	Archeological Site
OK00616	LM 92-52	Archeological Site
OK00617	LM 92-53	Archeological Site
OK00618	LM 92-54/55	Archeological Site
OK00619	LM 92-56	Archeological Site
OK00620	LM 92-58	Archeological Site
OK00621	LM 92-59	Archeological Site
OK00622	LM 92-60	Archeological Site
OK00624	LM 92-61	Archeological Site
OK00625	LM 92-62	Archeological Site
OK00626	LM 92-63	Archeological Site
OK00627	LM 92-64	Archeological Site
OK00628	LM 92-65	Archeological Site
OK00629	LM 92-66	Archeological Site

Site ID	Site Name	Site Type
OK00630	LM 92-67	Archeological Site
OK00633	LM 92-70	Archeological Site
OK00634	92-71	Archeological Site
OK00684	Karick Lake	Archeological Site
OK00901	P19-1	Archeological Site
OK00902	P19-2	Archeological Site
OK00908	SITCO #23	Archeological Site
OK00909	SITCO #24	Archeological Site
OK00910	SITCO #25	Archeological Site
OK00911	SITCO #26	Archeological Site
OK00924	SITCO #33	Archeological Site
OK00925	SITCO #34	Archeological Site
OK00926	SITCO #35	Archeological Site
OK01659	Guest Lake Landing	Archeological Site
OK01660	Floridale #2	Archeological Site
OK01661	Floridale #3	Archeological Site
OK02248	Deer Toe Site	Archeological Site
OK02695	8OK2695	Archeological Site
OK02913	Bone Creek Road / Bone Creek #3	Bridge
OK02915	Peacock Road / Bailey Branch	Bridge
OK02942	Blackwater River Pilings	Archeological Site
OK02957	Logging Railroad R17	Archeological Site
SR00078	EH & A Santa Rosa 25	Archeological Site
SR00079	Coral Snake	Archeological Site
SR00242	NN	Archeological Site
SR00246	NN	Archeological Site
SR00247	NN	Archeological Site
SR00248	NN	Archeological Site
SR00249	Camp Lowery	Archeological Site
SR00250	NN	Archeological Site
SR00761	Sweetwater Creek 1	Archeological Site
SR00762	Sweetwater Creek 2	Archeological Site
SR00789	NN	Archeological Site
SR00797	NN	Archeological Site
SR00801	NN	Archeological Site
SR00803	NN	Archeological Site
SR00808	NN	Archeological Site
SR00809	NN	Archeological Site
SR00810	NN	Archeological Site
SR00811	NN	Archeological Site

Site ID	Site Name	Site Type
SR00812	NN	Archeological Site
SR00813	NN	Archeological Site
SR00814	NN	Archeological Site
SR00815	NN	Archeological Site
SR00816	NN	Archeological Site
SR00817	NN	Archeological Site
SR00818	NN	Archeological Site
SR00822	NN	Archeological Site
SR00823	NN	Archeological Site
SR00824	NN	Archeological Site
SR00825	NN	Archeological Site
SR00826	NN	Archeological Site
SR00828	SITCO Survey 2	Archeological Site
SR00829	NN	Archeological Site
SR00832	NN	Archeological Site
SR00833	NN	Archeological Site
SR00834	NN	Archeological Site
SR00835	NN	Archeological Site
SR00836	NN	Archeological Site
SR00837	NN	Archeological Site
SR00838	NN	Archeological Site
SR00839	Sweetwater Creek Mill	Archeological Site
SR00849	Long Branch GV	Archeological Site
SR00865	LM90-12	Archeological Site
SR00866	LM90-13	Archeological Site
SR00868	LM90-15	Archeological Site
SR00869	LM90-16	Archeological Site
SR00870	LM90-17	Archeological Site
SR00871	LM90-18	Archeological Site
SR00872	LM90-19	Archeological Site
SR00876	LM90-23	Archeological Site
SR00877	LM90-24	Archeological Site
SR00878	LM90-25	Archeological Site
SR00879	LM90-26	Archeological Site
SR00880	LM90-27	Archeological Site
SR00881	LM90-28	Archeological Site
SR00882	LM90-29	Archeological Site
SR00883	LM90-30	Archeological Site
SR00884	LM90-31	Archeological Site
SR00885	LM90-32	Archeological Site

Site ID	Site Name	Site Type
SR00886	LM90-33	Archeological Site
SR00887	LM90-34	Archeological Site
SR00888	LM90-35	Archeological Site
SR00889	LM90-36	Archeological Site
SR00890	LM90-37	Archeological Site
SR00891	Concord / Simmons Cemetery	Cemetery
SR00892	LM90-39	Archeological Site
SR00893	LM90-40	Archeological Site
SR00894	LM90-41	Archeological Site
SR00895	LM90-42	Archeological Site
SR00896	LM90-43	Archeological Site
SR00897	LM90-44	Archeological Site
SR00903	LM90-50	Archeological Site
SR00904	LM90-51	Archeological Site
SR00905	LM90-52	Archeological Site
SR00906	LM90-53	Archeological Site
SR00907	LM90-54	Archeological Site
SR00910	LM90-57	Archeological Site
SR00911	LM90-63	Archeological Site
SR00912	LM90-64	Archeological Site
SR00913	LM90-65	Archeological Site
SR00915	LM90-67	Archeological Site
SR00916	LM90-70	Archeological Site
SR00918	LM90-72	Archeological Site
SR00919	LM90-73	Archeological Site
SR00922	LM90-76	Archeological Site
SR00923	LM90-77	Archeological Site
SR00927	BW3-D	Archeological Site
SR01018	Springhill Transect 3	Archeological Site
SR01019	Springhill Transect	Archeological Site
SR01021	MCLELLAN Transect 3	Archeological Site
SR01028	Munson Post Office	Standing Structure
SR01031	Spears House	Standing Structure
SR01175	Floridale Transect 1	Archeological Site
SR01176	Floridale Transect 2A	Archeological Site
SR01177	Floridale Transect 2B	Archeological Site
SR01178	MCLELLAN Transect 2	Archeological Site
SR01194	LM91-1	Archeological Site
SR01196	LM91-3	Archeological Site
SR01197	LM92-2	Archeological Site

Site ID	Site Name	Site Type
SR01198	LM92-3	Archeological Site
SR01199	Gum Landing Hammock 1	Archeological Site
SR01200	Gum Landing Hammock 2	Archeological Site
SR01201	Gum Landing Hammock 3	Archeological Site
SR01215	NN	Archeological Site
SR01216	Sellersville Cemetery	Cemetery
SR01217	NN	Archeological Site
SR01218	NN	Archeological Site
SR01221	NN	Archeological Site
SR01222	NN	Archeological Site
SR01226	Big Juniper Mill	Archeological Site
SR01227	Reedy Creek Dam	Archeological Site
SR01231	Cotton's Chop Mill	Archeological Site
SR01233	Ates Creek Mill	Archeological Site
SR01237	Coon Camp Mill	Archeological Site
SR01240	Dixon Wasteway	Archeological Site
SR01243	Coldwater Creek Dam	Archeological Site
SR01264	P11-1	Archeological Site
SR01265	P11-2	Archeological Site
SR01266	P11-3	Archeological Site
SR01267	P16-1	Archeological Site
SR01269	SITCO #1	Archeological Site
SR01270	SITCO #2	Archeological Site
SR01271	SITCO #3	Archeological Site
SR01272	SITCO #4	Archeological Site
SR01273	SITCO #5	Archeological Site
SR01281	S3-15-1	Archeological Site
SR01285	S3-21-1	Archeological Site
SR01288	SITCO #8	Archeological Site
SR01290	SITCO #10	Archeological Site
SR01298	SITCO #11	Archeological Site
SR01299	J5SR001	Archeological Site
SR01300	J5SR002	Archeological Site
SR01301	SITCO #12	Archeological Site
SR01305	SITCO #16	Archeological Site
SR01306	SITCO #17	Archeological Site
SR01307	SITCO #18	Archeological Site
SR01308	SITCO #19	Archeological Site
SR01338	Wolftrap Branch	Archeological Site
SR01339	Darryl	Archeological Site

Site ID	Site Name	Site Type
SR01368	NN	Archeological Site
SR01382	Dixon Creek Log Ditch	Archeological Site
SR01399	Julian Mill	Archeological Site
SR01501	Miller Bluff West	Archeological Site
SR01502	Harold SE #2&3	Archeological Site
SR01503	West Pitts River Boat Ramp	Archeological Site
SR01915	Shop	Archeological Site
SR01916	Fish Hatchery Bridge	Archeological Site
SR02125	Louisville and Nashville (L&N) Railroad	Resource Group
SR02126	Bagdad Lumber Co. Railroad	Resource Group
SR02143	Herty Cup Cluster	Archeological Site
SR02144	Metal Cup Cluster	Archeological Site
SR02600	J22	Archeological Site
SR02722	Lighter Knot Dam	Archeological Site

C. Ground Disturbing Activities

Representatives of DHR and FNAI will be consulted prior to the initiation of proposed ground disturbing activity as required per DHR guidelines. FFS will make every effort to protect known archaeological and historical resources. FFS will follow the “Management Procedures for Archaeological and Historical Sites and Properties on State Owned or Controlled Lands” and will comply with all appropriate provisions of Section 267.061(2)(a,b) F.S. See Exhibit I. Any significant ground disturbing activity proposal will be submitted to DHR’s Compliance and Review office for review prior to undertakings and allow the Division a reasonable opportunity to comment. Ground disturbing activities not specifically covered by this plan will be conducted under the parameters of the “List of ARC / Division of State Lands Approved Interim Management Activities”.

D. Survey and Monitoring

Currently, six (6) local district FFS staff are trained by DHR as ARM Monitors. FFS will pursue opportunities for additional personnel to receive ARM Monitor training. FFS will consult with public lands archaeologists at DHR as necessary to determine an appropriate priority and frequency of monitoring at each of the listed sites, and any protection measures that might be required. Unless required on a more frequent basis, approximately 10% of all archaeological and historical sites within the forest will be monitored at least annually. FFS field staff will monitor the listed sites to note condition and any existing or potential threats.

Any known archaeological and historical sites will be identified on maps to aid state forest personnel and if necessary, law enforcement personnel in patrolling and protecting sites. Applicable surveys will be conducted by trained FFS staff or contracted archaeologists during the process of planning and implementing multiple-use management activities. FFS personnel will remain alert for any environmentally significant resource discoveries and protective actions will be taken as necessary. In addition, FFS will seek the advice and recommendations of DHR regarding any additional archaeological survey needs. Trained monitors will oversee limited types of ground disturbing activities in which DHR recommends monitoring. FFS will utilize

the services of DHR Public Lands archaeologists, when available, to locate and evaluate unknown resources, and to make recommendations in the management of known resources.

IV. Natural Resources and Protection

The primary purpose for FFS management of BRSF is protection of wetlands and associated natural communities through a stewardship ethic to assure these resources will be available for future generations. Management activities will be executed in a manner to minimize soil erosion and maintain and protect / enhance the hydrological resources on BRSF. If problems arise, corrective action will be implemented by FFS staff under the direction of FFS's Forest Hydrology Section. Efforts will be made to monitor and protect BRSF's waterbodies and their associated water quality and native plants and animals.

BRSF falls within the jurisdiction of the NFWFMD. FFS will coordinate with NFWFMD and / or FDEP, as necessary, on activities pertaining to water resource protection and management. Any activities requiring water management district permits will be handled accordingly. FFS will work with NFWFMD to ensure that levels and quality of ground and surface water resources are appropriately monitored.

A. Soils and Geologic Resources

1. Resources

Soil information for BRSF was obtained from the United States Department of Agriculture Natural Resources Conservation Service (NRCS). The predominant soils listed by the NRCS include: Lakeland sand; Troup loamy sand; Bibb-Kinston association; Dothan fine sandy loam; Kinston, Johnston, and Bibb soils; and Dorovan muck. Detailed information on all soils present on BRSF may be found in Exhibit J.

2. Soil Protection

In the 1930s, soil conservation was a stated reason for reserving the original parts of what is now BRSF. Logging, farming, and other human activities had removed much of the vegetation covering the highly erosive soils in the Blackwater River watershed. Sheet and rill erosion as well as many large gullies filled the streams with sediment.

Reforestation and careful management have stopped most of the erosion, however, there are ongoing issues. Unpaved forest roads continue to erode, washing sediment into streams and hundreds of turnout ditches, which require frequent cleaning. Unauthorized OHV use has damaged fragile vegetation and led to new erosion. Newly acquired lands, particularly the steep, sandy hills of the Yellow River Ravines Unit, have ongoing issues with OHV use. A large, active gully in the Julian Mill Creek drainage pours sediment into a wetland. There are also several other active gullies on Blackwater River State Forest; particularly in the Bone Creek and Juniper Tracts. Logging on steep slopes has the potential for soil compaction and erosion.

Management activities will be executed in a manner to minimize soil erosion. Silvicultural Best Management Practices (BMPs) will be strictly enforced. Primary and secondary roads, particularly those on steep slopes, will be paved or rocked when funding is available. Roads that are not necessary for public access and forest management will be closed. When

necessary, closed roads will be stabilized with berms and/or vegetation; otherwise, they will be allowed to naturally revegetate. If problems arise, corrective action will be implemented by FFS staff under the direction of the FFS Forest Hydrology section in conjunction with recommendations as contained in the most current version of the Florida Silviculture Best Management Practices Manual. Unauthorized OHV use will be discouraged by various methods, including signage, education, fences and gates, barrier construction, and law enforcement by FWC.

To provide necessary materials for road maintenance, a series of borrow pits are maintained across the forest. Currently, only four (4) borrow pits are being actively used across the forest. Many have been closed permanently due to the pits being exhausted of desirable soil, and others are closed due to vandalism and illegal dumping. See Exhibit Y. Pits that are permanently closed have had access closed off in order to allow natural revegetation of the site. If natural revegetation is not sufficient in a manner that reestablishes vegetative ground cover, the Florida Forest Service will reintroduce vegetation to the site.

B. Water Resources

The water resources on BRSF perform essential roles in the protection of water quality, groundwater recharge, flood control, and aquatic habitat preservation. In the interest of maintaining these valuable resource functions, state forest management personnel will work with the FFS Hydrology Section to incorporate wetland restoration into the overall resource management program as opportunities arise, particularly where wetland systems have been impaired or negatively impacted by previous management activities or natural disasters. See Exhibit L for a map of the water resources at BRSF.

1. Resources

The headwater tributaries of the Blackwater River lie in the Conecuh National Forest in southern Alabama, and the river proper begins just north of the Alabama-Florida state line. The Blackwater River and its three (3) major tributaries, Sweetwater Creek, Juniper Creek and Coldwater Creek, flows south through BRSF towards the Gulf of Mexico. The Blackwater River empties into Blackwater Bay in Milton, Florida.

In the BRSF area, practically the entire Blackwater River watershed has been protected in its natural state since the mid-1930s. Presently, only a few small holdings along the river and its tributaries are under private ownership. These holdings are generally used for recreational or agricultural purposes. The remaining river front property is within BRSF and administered by FFS.

2. Water Classification

The FDEP's Standards Development Section reports there are no waters on or near the site listed as exceptions to Class III in Subparagraphs 62-302.400, F.A.C.; therefore, all of the surface waters on or adjacent to the site are classified as Class III waters (Fish Consumption; Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife), which is the statewide default classification under Subsection 62-302.400, F.A.C.

There are no Outstanding Florida Waters (OFWs) on BRSF. However, parts of the state forest are covered by the Blackwater River State Park OFW, per subparagraph 62-302.700(9)(c)9, F.A.C., and the Blackwater River Special Water OFW, per subparagraph 62-302.700(9)(i)3, F.A.C. There are other OFWs downstream of BRSF, however, they are over 5 miles away from the nearest boundary of the state forest.

Other important managed areas that are within or adjacent to BRSF include the Blackwater River Wildlife Management Area. See Exhibit K.

The Yellow River is among the swiftest flowing rivers in Florida and drains about 1,300 square miles of mostly forested land. The river is narrow with clear tan water and a sand bottom resulting in a “yellow” appearance. It discharges through an extensive delta system into the northern portion of Blackwater Bay. The lower river is part of the Yellow River Marsh Aquatic Preserve and is designated an Outstanding Florida Water.

3. Water Protection

An objective for the acquisition and management of this public land was to optimize ecological restoration, protect and manage existing natural resources, and facilitate sensible public use. Concern over a continuous usable source of fresh water requires emphasis on protecting this vital resource. Water resource protection measures, at a minimum, will be accomplished using BMP guidelines as described in the most current version of Silviculture BMP Manual.

BRSF is cooperating with other agencies in monitoring water resources including groundwater quality and quantity. FFS will coordinate with NFWFMD, as necessary, on activities pertaining to water resource protection and management. Any activities requiring water management district permits will be handled accordingly. FFS will work with NFWFMD to monitor levels and quality of ground and surface water resources and to address hydrological restoration. NFWFMD has seven (7) groundwater monitoring wells of varying depths along the eastern and southeastern sides of the forest.

In addition, BRSF Resource Section staff has worked closely with FDEP on biological assessments of the water quality of the Blackwater River and its tributaries. According to the most recent assessment, Yellow River was previously classified as impaired due to several analytes being detected at higher levels but has since been delisted. The Blackwater River and its tributary, Coldwater Creek, are presently classified as impaired under section 303(d) of the Clean Water Act. Water bodies that do not meet applicable water quality standards are placed on the section 303(d) list of water bodies not meeting federal Clean Water Act standards. Water bodies on the 303(d) list require development of a Total Maximum Daily Load (TMDL) for each analyte found to not meet standards. TMDLs were developed for Yellow River, which allowed it to be removed from the 303(d) list.

Sedimentation is one of the primary reasons several of the forest’s water bodies are classified as being impaired. The majority of the sediment produced on the forest is from unpaved roads, user established roads, and primitive recreation sites. BRSF staff continues to address

these issues by closing unneeded roads, surfacing other roads, installing rock at low-water stream crossings, and restricting vehicle access to the more sensitive primitive recreation sites. Roads and primitive recreation sites are closed permanently or seasonally through installation of signs, gates, fencing, and traffic barricades. Since January 2014, FFS staff at Blackwater have overhauled 783 miles of roads, installed or replaced 135 culverts, and installed or repaired 24 low water crossings. FFS will continue to monitor and make necessary repairs and take proactive measures to prevent and reduce erosion when possible.

4. Swamps, Marshes, and Other Wetlands

In addition to the waterways, BRSF currently contains approximately 40,000 acres in ten hydric communities: baygall, blackwater stream, bottomland forest, depression marsh, dome swamp, floodplain swamp, river floodplain lake, seepage slope, shrub bog, and wet prairie. Maintenance of naturally occurring wetlands communities is a high priority and will be accomplished through appropriate management activities, including prescribed fire, adherence to Silviculture BMPs, and treatment of invasive species.

5. Wetlands Restoration

Wetland restoration objectives on BRSF include erosion control, restoration of hydrology and / or hydro-period, and restoration of wetland plant and animal communities. To achieve these objectives, restoration activities may involve road and soil stabilization, water level control structure removal or installation, invasive species control, site preparation and re-vegetation with native wetland species, and project monitoring. These activities may be conducted individually or concurrently, implemented by FFS personnel or by non-FFS personnel under mitigation or grant contractual agreements. Wetland restoration projects should be conducted in conjunction with other restoration activities indicated elsewhere in this plan.

Where applicable, BRSF with assistance from the FFS Forest Management Bureau, may pursue funding to develop and implement wetlands restoration projects. Additionally, cooperative research among FFS, other state agencies, and the federal government will provide valuable information in determining future management objectives of wetlands restoration.

6. Florida Department of Environmental Protection Basin Management Action Plan (BMAP)

Currently, BRSF does not reside in an active BMAP zone.

A Basin Management Action Plan (BMAP) is a "blueprint" for restoring impaired waters by reducing pollutant loadings to meet the allowable loadings established in a Total Maximum Daily Load (TMDL). It represents a comprehensive set of strategies, including, but not limited to: permit limits on wastewater facilities, urban and agricultural best management practices, conservation programs, financial assistance, and revenue generating activities, all designed to implement the pollutant reductions established by the TMDL. These broad-based plans are developed with local stakeholders, as they rely on local input and local commitment, and are adopted by Secretarial Order to be enforceable.

The BMAP provides for phased implementation under Subparagraph 403.067(7)(a)1, F.S. The phased BMAP approach allows for the implementation of projects designed to achieve incremental reductions, while simultaneously monitoring and conducting studies to better understand the water quality dynamics (sources and response variables) in the watershed.

C. Flora and Fauna Resources

1. Rare, Threatened, and Endangered Species

BRSF is part of an important wildlife corridor that includes Eglin Air Force Base, Conecuh National Forest, and the Yellow River Wildlife Management Area. The intent of FFS is to manage BRSF in a fashion that will minimize the potential for wildlife species to become imperiled. FFS employees continually monitor the forest for threatened or endangered species while conducting management activities. Specialized management techniques may be used, as necessary, to protect or increase protection of rare, threatened, and endangered species, as applicable for both plants and animals. See Table 5.

Table 5. Rare, Threatened, or Endangered Species Documented on BRSF

Common Name	Scientific Name	FNAI Global Rank*	FNAI State Rank*	Federal Status*	State Status*
<i>Plants</i>					
Pine barren false foxglove	<i>Agalinis georgiana</i>	G1	S1	N	E
Hairy wild indigo	<i>Baptisia calycosa</i> var. <i>villosa</i>	G3T3	S3	N	T
Sweet-shrub	<i>Calycanthus floridus</i>	G5	S2	N	E
Piedmont jointgrass	<i>Coelorachis tuberculosa</i>	G3	S3	N	T
Naked-stemmed panic grass	<i>Dichantherium nudicaule</i>	G3Q	S3	N	T
Trailing arbutus	<i>Epigaea repens</i>	G5	S2	N	E
Dwarf witch-alder	<i>Fothergilla gardenii</i>	G3G4	S1	N	E
Serviceberry holly	<i>Ilex amelanchar</i>	G4	S2	N	T
Coville's rush	<i>Juncus gymnocarpus</i>	G4	S2	N	E
Mountain laurel	<i>Kalmia latifolia</i>	G5	S3	N	T
Pineland bogbutton	<i>Lachnocaulon digynum</i>	G3G4	S3	N	T
Panhandle lily	<i>Lilium iridollae</i>	G3	S3	N	E
Boykin's lobelia	<i>Lobelia boykinii</i>	G2G3	SH	N	E
Hummingbird flower	<i>Macranthera flammea</i>	G3	S2	N	E
Narrowleaf Naiad	<i>Najas filifolia</i>	G3	S2	N	T
West Florida cowlily	<i>Nuphar advena</i> ssp. <i>ulvacea</i>	G5T2T3	S2	N	N
Primrose-flowered butterwort	<i>Pinguicula primuliflora</i>	G3G4	S3	N	E
Little club-spur orchid	<i>Plantanthera clavellata</i>	G5	S1	N	E
Yellow fringeless orchid	<i>Plantanthera integra</i>	G3G4	S2	N	E
Arkansas oak	<i>Quercus arkansana</i>	G3	S3	N	T
Small-flowered meadowbeauty	<i>Rhexia parviflora</i>	G2G3	S2	UR	E
Florida flame azalea	<i>Rhododendron austrinum</i>	G3	S3	N	E
Hairy-peduncled beaksedge	<i>Rhynchospora crinipes</i>	G3	S3	N	E
Gulf coast redflower pitcherplant	<i>Sarracenia rubra</i> ssp. <i>gulfensis</i>	G3G4T2T3	S2S3	N	T
Chaffseed	<i>Schwalbea americana</i>	G2	S1	E	E

Common Name	Scientific Name	FNAI Global Rank*	FNAI State Rank*	Federal Status*	State Status*
Plants					
Thorne's buckthorn	<i>Sideroxylon thornei</i>	G3	S1	N	E
Gulf coast silvery aster	<i>Symphotrichum concolor</i> var. <i>devestitum</i>	G5T2	S2	N	N
Harper's yellow-eyed grass	<i>Xyris scabrifolia</i>	G3	S3	N	T
Invertebrates					
A stonefly	<i>Acroneuria evoluta</i>	G5	S1	N	N
A mayfly	<i>Asioplax dolani</i>	G4	S1S2	N	N
Spring-loving psiloneuran caddisfly	<i>Agarodes libalis</i>	G3	S3	N	N
Zigzag blackwater river caddisfly	<i>Agarodes ziczac</i>	G3	S3	N	N
Lace-winged roadside skipper	<i>Amblyscirtes aesculapius</i>	G3G4	S2	N	N
Dusky roadside-skipper	<i>Amblyscirtes alternata</i>	G3G4	S2	N	N
Reversed roadside-skipper	<i>Amblyscirtes reversa</i>	G3G4	S1	N	N
Small pocket gopher aphodius beetle	<i>Aphodius aegrotus</i>	G3G4	S3?	N	N
Baker's pocket gopher aphodius beetle	<i>Aphodius bakeri</i>	G2G3	S2	N	N
Surprising pocket gopher aphodius beetle	<i>Aphodius dyspistus</i>	G3G4	S3?	N	N
Amber pocket gopher aphodius beetle	<i>Aphodius gambrinus</i>	G2	S1S2	N	N
Hubbell's pocket gopher aphodius beetle	<i>Aphodius hubbelli</i>	GNR	S3?	N	N
Large pocket gopher aphodius beetle	<i>Aphodius laevigatus</i>	G3G4	S3?	N	N
Rare pocket gopher aphodius beetle	<i>Aphodius pholetus</i>	G1G2	S1	N	N
Broad-sided pocket gopher aphodius beetle	<i>Aphodius platypleurus</i>	G2G3	S2	N	N
Long-clawed pocket gopher aphodius beetle	<i>Aphodius tanytarsus</i>	G2G3	S2S3	N	N
Gopher tortoise aphodius beetle	<i>Aphodius troglodytes</i>	G2G3	S2	N	N
Arogos skipper	<i>Atrytone arogos arogos</i>	G2G3T1T2	S2	N	N
A mayfly	<i>Baetisca becki</i>	G2G3	S2	N	N
Escambia mayfly	<i>Baetisca escambiensis</i>	G2G3	S1S2	N	N
Humpback mayfly	<i>Baetisca gibbera</i>	G5	S1S2	N	N
A mayfly	<i>Baetisca rogersi</i>	G4	S3	N	N
Brown elfin	<i>Callophrys augustinus</i>	G5	S2	N	N
Hessel's hairstreak	<i>Callophrys hesseli</i>	G3	S2	N	N
Frosted elfin	<i>Callophrys irus</i>	G2G3	S2	N	N
Spring azure	<i>Celastrina ladon</i>	G4G5	S2?	N	N
Gopher tortoise hister beetle	<i>Chelyoxenus xerobatis</i>	G2G3	S2	N	N
Peters' cheumatopsyche caddisfly	<i>Cheumatopsyche petersi</i>	G3	S2	N	N

Common Name	Scientific Name	FNAI Global Rank*	FNAI State Rank*	Federal Status*	State Status*
<i>Invertebrates</i>					
Floridian finger-net caddisfly	<i>Chimarra florida</i>	G4	S3S4	N	N
White-sand tiger beetle	<i>Cicindela wapleri</i>	G3G4	S2	N	N
Say's spiketail	<i>Cordulegaster sayi</i>	G3	S3	N	N
Eastern tailed blue	<i>Cupido comyntas</i>	G5	S2	N	N
American sand-burrowing mayfly	<i>Dolania americana</i>	G4	S2	N	N
Southeastern spinyleg	<i>Dromogomphus armatus</i>	G4	S3	N	N
Fluted elephant-ear	<i>Elliptio mcMichaeli</i>	G2G3	S1S2	N	N
Mottled duskywing	<i>Erynnis martialis</i>	G3	SH	N	N
Pocket gopher flower beetle	<i>Euphoria discicollis</i>	G2	S1S2	N	N
Gopher tortoise burrow fly	<i>Eutrichota gopheri</i>	G2	S2S3	N	N
Narrow pigtoe	<i>Fusconaia escambia</i>	G1G2	S1	T	FT
Selys' sunfly	<i>Helocordulia selysii</i>	G4	S4	N	N
A stonefly	<i>Helopicus subvarians</i>	G5	S3	N	N
Seminole skipper	<i>Hesperia attalus slossonae</i>	G3G4T3	S3	N	N
Eastern meske's skipper	<i>Hesperia meskei straton</i>	G3G4T3	S2S3	N	N
American rubyspot	<i>Hetaerina americana</i>	G5	S2	N	N
A mayfly	<i>Hexagenia bilineata</i>	G5	S2	N	N
Blue sand-river mayfly	<i>Homoeoneuria dolani</i>	G3G4	S1S2	N	N
A stonefly	<i>Hydroperla phormidia</i>	G3	S2	N	N
Twin-striped clubtail	<i>Hylogomphus geminatus</i>	G3G4	S3	N	N
A mayfly	<i>Isonychia bernerii</i>	G2G3	S1S2	N	N
A mayfly	<i>Isonychia sicca</i>	G5	S2S3	N	N
Elegant spreadwing	<i>Lestes inaequalis</i>	G5	S2	N	N
A stonefly	<i>Leuctra cottaquilla</i>	G2	S2	N	N
A stonefly	<i>Leuctra ferruginea</i>	G5	S2	N	N
A mayfly	<i>Macdunnoa brunnea</i>	G3G4	S2S3	N	N
Gopher tortoise robber fly	<i>Machimus polyphemi</i>	G2	S1S2	N	N
Elfin skimmer	<i>Nannothemis bella</i>	G4G5	S2	N	N
Smoky shadowfly	<i>Neurocordulia molesta</i>	G4	S2S3	N	N
Mourning cloak	<i>Nymphalis antiopa</i>	G5	S2	N	N
Smooth gopher tortoise onthophagus beetle	<i>Onthophagus polyphemi sparsisetosus</i>	G2G3T2	S1S2	N	N
Elerob's microcaddisfly	<i>Oxyethira elerobi</i>	G3G4	S2S3	N	N
Novasota oxyethiran microcaddisfly	<i>Oxyethira novasota</i>	G4G5	S2	N	N
Pescador's bottle-cased caddisfly	<i>Oxyethira pescadori</i>	G3G4	S3	N	N
A stonefly	<i>Perlinella zwicki</i>	G4	S2	N	N
Hodges' clubtail	<i>Phanogomphus hodgesi</i>	G3	S3	N	N
Westfall's clubtail	<i>Phanogomphus westfalli</i>	G2	S2	N	N
Oval june beetle	<i>Phyllophaga ovalis</i>	G1G2	S1S2	N	N
Slender polyphyllin scarab beetle	<i>Polyphylla gracillis</i>	G2G3	S2	N	N
Tawny sanddragon	<i>Progomphus alachuensis</i>	G3	S3	N	N

Common Name	Scientific Name	FNAI Global Rank*	FNAI State Rank*	Federal Status*	State Status*
<i>Invertebrates</i>					
Belle's sanddragon	<i>Progomphus bellei</i>	G3	S3	N	N
White sand-river mayfly	<i>Pseudiron centralis</i>	G5	S2S3	N	N
Elongate pocket gopher ptomaphagus beetle	<i>Ptomaphagus geomysi</i>	G2G3	S2	N	N
Schwarz' pocket gopher ptomaphagus beetle	<i>Ptomaphagus schwarzi</i>	G3	S3	N	N
King's hairstreak	<i>Satyrium kingi</i>	G3G4	S2	N	N
Santa rosa cebrionid beetle	<i>Selonodon santarosae</i>	G1	S1	N	N
A mayfly	<i>Siphloplecton brunneum</i>	G1G2	S1S2	N	N
Calvert's emerald	<i>Somatochlora calverti</i>	G3	S2S3	UR	N
Miccosukee mayfly	<i>Sparbarus miccosukee</i>	G1G2	S1S2	N	N
A mayfly	<i>Stenacron floridense</i>	G3G4	S3S4	N	N
Yellow-sided clubtail	<i>Stylurus potulentus</i>	G2	S2	N	N
Bronze clubtail	<i>Stylurus townesi</i>	G3	S2	N	N
Southeastern roachfly	<i>Tallaperla cornelia</i>	G4	S1	N	N
Gulf lilliput	<i>Toxolasma sp.</i>	G2	S2	N	N
<i>Fish</i>					
Gulf sturgeon	<i>Acipenser oxyrinchus desotoi</i>	G3T2T3	S2?	T	FT
Blacktip shiner	<i>Lythrurus atripiculus</i>	G4	S2	N	N
Bluenose shiner	<i>Pteronotropis welaka</i>	G3G4	S3S4	N	ST
<i>Amphibians</i>					
Reticulated flatwoods salamander	<i>Ambystoma bishopi</i>	G2	S1	E	FE
Eastern tiger salamander	<i>Ambystoma tigrinum</i>	G5	S3	N	N
Eglin ravine dusky salamander	<i>Desmognathus sp. 1</i>	G2G3Q	S2	N	N
Bog dwarf salamander	<i>Eurycea sphagnicola</i>	G1G2	S1S2	N	N
Pine barrens treefrog	<i>Hyla andersonii</i>	G4	S3	DL	N
Gopher frog	<i>Lithobates capito</i>	G2G3	S3	N	N
Florida bog frog	<i>Lithobates okaloosae</i>	G2	S2	N	ST
<i>Reptiles</i>					
Eastern copperhead	<i>Agkistrodon contortix</i>	G5	S2	N	N
Spiny softshell	<i>Apalone spinifera</i>	G5	S3	N	N
Eastern diamondback rattlesnake	<i>Crotalus adamanteus</i>	G3	S3	N	N
Eastern indigo snake	<i>Drymarchon couperi</i>	G3	S2?	T	FT
Gopher tortoise	<i>Gopherus polyphemus</i>	G3	S3	N	ST
Southern hognose snake	<i>Heterodon simus</i>	G2	S2S3	N	N
Northern mole kingsnake	<i>Lampropeltis rhombomaculata</i>	G5	S2	N	N
Alligator snapping turtle	<i>Macrochelys temminckii</i>	G3	S3	PT	N
Mimic glass lizard	<i>Ophisaurus mimicus</i>	G3	S2S3	N	N
Pine snake	<i>Pituophis melanoleucus</i>	G4	S3	N	ST
Coal skink	<i>Plestiodon anthracinus</i>	G5	S3	N	N
Eastern river cooter	<i>Pseudemys concinna concinna</i>	G5T5	S3	N	N

Common Name	Scientific Name	FNAI Global Rank*	FNAI State Rank*	Federal Status*	State Status*
Reptiles					
Southeastern crowned snake	<i>Tantilla coronata</i>	G5	S2S3	N	N
Birds					
Red-cockaded woodpecker	<i>Dryobates borealis</i>	G3	S2	T	FT
Hairy woodpecker	<i>Dryobates villosus</i>	G5	S3	N	N
Swallow-tailed kite	<i>Elanoides forficatus</i>	G5	S2	N	N
Bald eagle	<i>Haliaeetus leucocephalus</i>	G5	S3	N	N
Bachman's sparrow	<i>Peucaea aestivalis</i>	G3	S3	N	N
Florida prairie warbler	<i>Setophaga discolor paludicola</i>	G5T3	S3	N	N
Mammals					
Southeastern weasel	<i>Mustela frenata olivacea</i>	G5T4	S3?	N	N
Southeastern fox squirrel	<i>Sciurus niger niger</i>	G5T5	S3	N	N
Eastern chipmunk	<i>Tamias striatus</i>	G5	S3	N	N

*** STATUS / RANK KEY**

FNAI Global Rank: G1= Critically Imperiled, G2= Imperiled, G3= Rare, G4= Secure, G5= Demonstrably Secure, G#Q= Rare but questionable whether it is species or subspecies, G#T#Q= Rare but questionable whether it is species or subspecies, but validity as subspecies or variety is questioned, GU= Unrankable, GNA= Ranking not applicable, GNR= Temporarily not yet ranked, GNRTNR= Neither element nor taxonomic subgroup has yet been ranked.

FNAI State Rank: S1= Critically Imperiled in Florida, S2= Imperiled in Florida, S3= Rare in Florida, S4= Secure in Florida, S5= Demonstrably secure in Florida, SH= Of historical occurrence in Florida, SU= Unrankable, SNA= State ranking not applicable, SNR= Element not yet ranked

Federal Status (USFWS): C= Candidate species for which Federal listing agencies have sufficient information on biological vulnerability and threats to support proposing to list the species as Endangered or Threatened, E= Endangered, E,T= Endangered in a portion of its range, E,PDL= Endangered but proposed for delisting, E,PT= Endangered but proposed to be listed as threatened, E,XN= Endangered but tracked population is non-essential, N= Not currently listed, T= Threatened, PE= Proposed as endangered, PS= Population of species has federal status but entire species is not federally listed, PT= Proposed as threatened, SAT= Treated as Threatened due to similarity of appearance, SC= Species of concern; not listed, DL= Delisted, UR= Under review.

State Status (FWC): C= Candidate for listing, FE= Listed as Endangered Species at the Federal level by the USFWS, FT= Listed as Threatened Species at the Federal level by the USFWS, FT(S/A)= Federal Threatened due to similarity of appearance, N= Not currently listed, nor currently being considered for listing, ST= State population listed as Threatened by the FWC.

2. Florida Natural Areas Inventory

The Florida Natural Areas Inventory (FNAI) is the single most comprehensive source of information available on the locations of rare species and significant ecological resources throughout Florida. FNAI has reported the following:

a. **Element Occurrences**

FNAI reports several documented element occurrences of rare or endangered species within the vicinity of the property. Documented species are listed in Table 5.

Documented habitat includes baygall, blackwater stream, bottomland forest, depression marsh, dome swamp, floodplain swamp, mesic flatwoods, sandhill, seepage slope, shrub bog, upland hardwood forest, upland mixed woodland, upland pine, wet flatwoods, and wet prairie.

b. **Likely and Potential Habitat for Rare Species**

In addition to documented occurrences, other rare species and natural communities may be identified on or near the BRSF. Rare species and communities that have not been documented but that are likely or potential at the site are listed in Exhibit M.

c. Land Acquisition Projects

Portions of the site appear to be located within the Clear Creek / Whiting Field Phase I & II, Coastal Headwaters Longleaf Forest, Welannee Watershed Forest, and Wolfe Creek Forest Florida Forever Projects. See Exhibit G.

FNAI recommends that professionals familiar with Florida's flora and fauna conduct a site-specific survey to determine the current presence or absence of rare, threatened, or endangered species before expansions or alterations are made to any facilities.

3. Florida Fish and Wildlife Conservation Commission

The FWC Fish and Wildlife Research Institute (FWRI) reports numerous records of listed species occurrences or critical habitats within the confines of the property. This includes state and federally listed endangered or threatened species.

Other findings by the FWC include:

- a. Records of the Eastern indigo snake (*Drymarchon couperi*), gopher tortoise (*Gopherus polyphemus*), red-cockaded woodpecker (*Dryobates borealis*), reticulated flatwoods salamander (*Ambystoma bishopi*), Florida pine snake (*Pituophis melanoleucus mugitus*), and the Florida black bear (*Ursus americanus floridanus*) are found on or within one mile of BRSF.
- b. Strategic Habitat Conservation Areas (SHCAs) within one mile of the property for the Eastern indigo snake (*Drymarchon couperi*), gopher tortoise (*Gopherus polyphemus*), red-cockaded woodpecker (*Dryobates borealis*), reticulated flatwoods salamander (*Ambystoma bishopi*), Florida pine snake (*Pituophis melanoleucus mugitus*), and the Florida black bear (*Ursus americanus floridanus*).
- c. BRSF is located within an area of significant species richness which indicates the total number of species within potential habitat identified in a specific location.
- d. BRSF is within priority wetlands, which are wetlands significant to listed wetland-dependent vertebrates.

These data represent only those occurrences recorded by FWC staff and other affiliated researchers. The database does not necessarily contain records of all listed species that may occur in a given area. Also, data on certain species are not entered into the database on a site-specific basis. Therefore, one should not assume that an absence of occurrences in their database indicates that species of significance do not occur in the area. See Exhibit N.

The FWC recommends the review of management guidelines in the published FWC Gopher Tortoise Management Plan to guide management actions for the gopher tortoise (*Gopherus polyphemus*) on the area. The FWC Gopher Tortoise Management Plan provides beneficial resource guidelines for habitat management and monitoring of the gopher tortoise. For reference, the FWC Gopher Tortoise Species Management Plan can be accessed at MyFWC.com.

The FWC further recommends the review of management guidelines in FWC's published Species Action Plans for the management of imperiled, rare, and focal species. The FWC Species Action Plans provide beneficial resource guidelines for habitat management and monitoring of the respective species. For reference, the FWC Species Action Plans can be accessed at MyFWC.com.

4. **Game Species and Other Wildlife**

Wildlife management plays an important role in the management of resources on BRSF. FWC provides cooperative technical assistance in managing the wildlife and fish populations, setting hunting seasons, establishing bag and season limits, and overall wildlife and fish law enforcement on the forest.

BRSF currently makes up all or part of the following Wildlife Management Areas (WMAs): Blackwater WMA, the Yellow River WMA, the Blackwater Carr Unit, and the Blackwater Hutton Unit.

The Uplands Ecosystem Restoration Program (UERP) is a multi-agency demonstration on 14,919 acres where researchers and managers are examining the effects of forest management techniques on wildlife and other resources. The Quail Enhancement Area (QEA) consists of 18,366 acres and is managed to increase quail populations. This area has modified hunting regulations for quail in order to enhance the population.

FWC establishes wildlife food plots for utilization by deer, quail, dove, and non-game species. FFS and FWC cooperatively maintain 243 acres of wildlife openings, acres of planted food plots, and 169 acres of dove fields on BRSF ranging in size from 0.1 to 15.4 acres. Wildlife openings and food plots will be established and maintained in accordance with Chapter 5 of the FFS State Forest Handbook.

Hunting is allowed across most of BRSF. Separate parcels of land have been designated as fishing, still hunt, dog hunt, fox hunt, and field trial areas. General gun hunting with and without dogs, muzzleloading gun, archery and falconry are allowed. Game animals on the various WMAs on BRSF include deer, wild hog, turkey, gray squirrel, quail, rabbit, raccoon, opossum, armadillo, beaver, coyote, skunk, nutria, bobcat, otter, fox, game fish, frogs, and migratory birds including waterfowl, woodcock, crow, and dove. Persons using wildlife management areas are required to follow all regulations. Visit MyFWC.com for released quail permit information and hunting dates.

Other notable wildlife species found on BRSF include bald eagle (*Haliaeetus leucocephalus*), red-cockaded woodpecker (*Dryobates borealis*), gopher tortoise (*Gopherus polyphemus*) and flatwoods salamander (*Ambystoma bishopi*).

Non-game species will be managed and protected through the restoration and maintenance of native ecosystems found on BRSF. The current State Forest Handbook gives additional details for such topics as snag management and retention.

5. Survey and Monitoring

FFS may implement species-specific management plans developed by FWC and other agencies as applicable. FFS will cooperate with FWC and other agencies in the development of new wildlife management plans and monitoring protocols, as necessary. Such plans will be consistent with rule and statute promulgated for the management of such species.

Survey and restoration needs and locations will be determined through consultation with the FFS and FWC Biologists, FFS Foresters, and if there is public concern for specific species, local environmental organizations such as the Nature Conservancy or the Audubon Society. FFS and FWC biologists will work together to analyze data obtained from surveys and restoration to evaluate the effects of management practices on wildlife communities and revise ineffective management techniques.

Specialized forest and species management techniques will be used as necessary to protect and augment flora and fauna populations of, and habitat for, state- and federally-listed threatened and endangered species, and candidates for listing. FFS and FWC staff, guided by USFWS and FNAI biologists and species recovery plans, will coordinate to provide adaptive management and protection of sensitive species in the BRSF/BWMA. Volunteers, interns, and valid researchers may be utilized to help with management and protection of non-game species when necessary. FWC conducted drift fence surveys of herpetofauna in the BWMA and YRWMA from 2016 through 2022, and a survey of gopher tortoises is ongoing. In addition, FWC conducts annual surveys of the tiger salamander, flatwoods salamander, and Florida bog frog on the forest.

a. **Red Cockaded Woodpecker**

The federally threatened red-cockaded woodpecker (RCW; *Dryobates borealis*; recently downlisted from endangered) is perhaps the most closely monitored wildlife species on BRSF. The FFS is the primary manager of the RCW population on BRSF, with assistance from FWC and the Longleaf Alliance. Surveying is done year-round utilizing morning nest checks, surveying and checking cavity condition and activity status, and keeping count of hatchlings and fledglings. Spot checks to listen for presence of RCW's are periodically done in areas where there are no known RCWs but contain potential habitat. The Blackwater timber unit also surveys for RCW cavities while conducting timber inventory on approximately 20,000 acres each year.

In 2024, and in combination with Conecuh National Forest, the recovery goal of 250 potential breeding groups between both properties was finally reached. This significant milestone was reached due to the incredible effort and dedication exerted by staff on both properties, as well as numerous collaborators and volunteers. Future efforts with RCW management will involve proper forest management, monitoring, and limited human intervention when necessary.

b. **Flatwoods Salamander**

The reticulated flatwoods salamander (*Ambystoma bishopi*) has only been known to occur in a series of ephemeral ponds in the Yellow River Ravines Tract near Garnier Landing Road, which is located near the Santa Rosa-Okaloosa County line. The last

documented presence was in the 1990's; long before the state took acquisition of the property. The FFS and FWC have been working in collaboration to improve the habitat in and around the ponds. The FWC monitors the area for activity.

c. Tiger Salamander

The tiger salamander (*Ambystoma tigrinum*) is a far more widespread salamander species on BRSF and is a species of concern for FWC. The FWC has identified 133 ephemeral ponds where the salamander is either known to be or contain potential for good quality habitat. The tiger salamander is very similar to flatwoods salamander in that it prefers ephemeral ponds that have sparse overstory maintained by fire. The FWC monitors all tiger salamander ponds on a 3-year rotation, typically using dipnet surveys to capture specimens. The FFS also works with FWC to improve habitat on the most productive salamander ponds.

d. Bog Frog

The Florida bog frog (*Rana okaloosae*) is found along two streams in the Yellow River Ravines Tract. Each stream has a transmission line that crosses them, and the vegetation management of the right-of-way has resulted in good quality habitat for the frogs. The FWC and FFS have worked together to enhance habitat on both creeks going south from the transmission line, with moderate success. The primary methods of habitat enhancement are mechanical, herbicide, and burning. The Florida Forest Service Follows all applicable Wildlife Best Management Practices when conducting silvicultural operations around known bog frog locations.

e. Eastern Indigo Snake

The eastern indigo snake (*Drymarchon couperi*) has not been seen on BRSF for many years, though habitat seems to be good for this species. Efforts to reintroduce the snake to the adjacent Conecuh National Forest may result in this federally threatened species appearing once again on BRSF.

f. Gopher Tortoises

Belt transect surveys for gopher tortoise burrows have been conducted by FFS and FWC staff opportunistically, as needed, but generally in advance of land management activities that may impact tortoises (e.g., timber harvest). All surveys are done in cooperation with FWC. Additionally, FWC conducted a full Line Transect Distance Sampling (LTDS) survey on the West Boundary Unit of BRSF in 2016. The survey covered roughly 2,829 hectares (6,991 acres) and documented 284 tortoises, therefore estimating the population density within that unit at 0.10 tortoises per hectare (0.04 tortoises per acre, or 1 tortoise every 25 acres). FWC labeled this as a primary support population but do not intend to resurvey unless there are significant changes to the habitat or population due to the low density. Pilot LTDS surveys were also conducted on the Juniper Creek and Sweetwater Units, but no full surveys were conducted due to very low densities.

The FFS follows and utilizes the Best Management Practices for gopher tortoises to assist in meeting management objectives for both the species and the communities in which it is found.

g. Florida Black Bear

FFS will continue to cooperate with FWC to implement FWC's state-wide Florida Black Bear Management Plan, with an emphasis on maintaining sustainable black bear populations in suitable habitats throughout Florida for the benefit of the species and people.

h. Listed Plant Species

Pitcher plant bogs (seepage slopes) can be found scattered throughout the forest. They occur in isolated depressions of somewhat poorly drained soils. These natural communities contain a high diversity of rare plants. Steps being taken to preserve and protect these areas include the following:

- 1) Locating the pitcher plant bogs on a forest wide map. A map has been produced, and it is updated when additional information is obtained (Exhibit Z).
- 2) Periodic burning of the bogs to reduce competing vegetation and promote community health.
- 3) Exclusion of all heavy equipment and vehicular traffic to ensure they are not mechanically disturbed.

American chaffseed (*Schwalbaea americana*), a federally endangered species, has been documented at a single location near one of the many seepage slopes on the forest. This is a recent discovery on BRSF; one of only two occurrences in Florida, and the only one on state-owned conservation land. Once known historically from the Atlantic coastal plain, extending from Massachusetts to Florida, the species is now mainly found in the Carolinas and Georgia. Further surveys are needed to determine the location and extent of this and other rare plants on the forest.

All known locations of listed or rare flora are GIS mapped, and location data are shared with FNAI.

i. Other Rare Biota Surveys

Surveys are done as time and staffing allow. High quality plant communities continue to incur ad hoc surveys for both listed plants and animals. FFS will utilize FWC Species Action Plans for guidance both monitoring populations and for habitat management recommendations for rare and imperiled species, where appropriate.

Most of the isolated BRSF wetlands have received a cursory biological survey, with rare and significant plant and animal species observed and documented. Assistance will be offered to FWC for gopher tortoise burrow commensals monitoring, as well as monitoring for other rare species, as appropriate.

During routine management activities, incidental sightings of rare animals and plants are GIS-mapped by FFS staff. All rare species data is collected and sent to FNAI annually.

Surveys conducted by university researchers and students and knowledgeable naturalists on BRSF augment information provided by formal surveys conducted by FWC and other

cooperating agencies. The FFS will seek assistance from citizen science, colleges, universities, and other agencies to gather data on plant and animal species.

6. Gopher Tortoise Recipient Site Feasibility Assessment

The FFS has assessed the feasibility of establishing a gopher tortoise recipient site on BRSF. BRSF is comprised primarily of upland pine, sandhill, and bottomland forest communities, interspersed with 13 other natural community types across the forest. Despite the fact a vast majority of BRSF has soils with high clay content, and a naturally low gopher tortoise population, staff have identified roughly 629 acres which could be compatible with establishing a gopher tortoise recipient site. Specifically, the site is located along the southern boundary of the Juniper Tract, roughly a mile north of Interstate 10, and contains sandhill with a few embedded dome swamps. The overstory is longleaf pine, with a well-burned understory of diverse native groundcover. Soils across the sites range from well drained to excessively drained, except for about 3% of the area where dome swamps are located. A site-specific survey would need to be completed in order to determine the current stocking density of the site. No formal Line Transect Distance Sampling (LTDS) survey has been conducted on BRSF to date, namely due to low encounter rates during LTDS pilot surveys.

Operational budget, staffing levels, and technical capacity considerations preclude the FFS from installing a gopher tortoise recipient area on BRSF. The FFS would require financial and technical assistance from FWC to establish a recipient site on BRSF. Should that assistance be available, the FFS would be amenable to partnering and establishing a gopher tortoise recipient site.

D. Sustainable Forest Resources

FFS practices sustainable multiple-use forestry to meet the forest resource needs and values of the present without compromising the similar capability of the future. Sustainable forestry involves practicing a land stewardship ethic that integrates the reforestation, managing, growing, nurturing, and harvesting of trees for useful products with the conservation of soil, air and water quality, wildlife and fish habitat, and aesthetics. This is accomplished by maintaining and updating accurate estimates of standing timber in order to assure that the timber resources retain their sustainability. Forest inventories will be updated on a continual basis according to guidelines established by the FFS Forest Management Bureau.

E. Beaches and Dune Resources

No beaches occur on BRSF.

F. Mineral Resources

Gas and oil resources have been extracted from BRSF for over five decades. There were 19 permitted drilling sites on BRSF. Of those sites, eight (8) were never drilled, seven were dry holes which never produced oil or gas, and four (4) were protective wells. There are currently no active oil or gas wells on the forest. All sites are permanently closed and have been replanted with natural vegetation for reclamation.

At this time, DEP's Division of State Lands oversees, for the BOT, the execution of leases pertaining to oil, natural gas, etc. The BOT reviews and approves requests for activities such as oil exploration before surface activities are allowed on BRSF in accordance with Chapter 18-2, Florida Administrative Code. In 2011, seismic exploration for geological structures was successfully accomplished on the northern third of the forest with no impact to the resources or public use. Other parts of the forest may be explored in coming years. Another seismic exploration event occurred in 2015 in the northwestern corner of the forest. Oil and gas operations and any seismic testing activities will be closely monitored by FFS to ensure compliance with the appropriate forest land use or lease agreement. FFS recognizes the importance of managing and protecting sensitive resources and takes steps to ensure that such resources are not adversely impacted by oil and gas operations. This includes areas such as known archaeological, fossil, and historical sites, ecotones, wetlands, and sensitive species. FFS will also ensure that proper reclamation of the sites is completed when the leases are closed. Reclamation will be such that the areas of operation will be returned to a condition as close as possible to their original.

Sand, clay, and gravel have been excavated from borrow pits on the forest and used exclusively for improvements or construction of roads on the forest. See Exhibit Y.

G. Unique Natural Features and Outstanding Native Landscapes

The entire forest is part of an outstanding native landscape that consists of BRSF, Conecuh National Forest, and Eglin Air Force Base, and constitutes the largest contiguous area of mature longleaf pine forest ecosystem remaining in the world.

BRSF has the largest population of red-cockaded woodpeckers in state ownership. When considered together with Conecuh National Forest and Eglin Airforce Base, BRSF has a significant role in the long-term conservation and protection of this threatened species. Communication and cooperation between the three land managers concerning management of red-cockaded woodpeckers and the longleaf ecosystem is fostered by the Gulf Coastal Plan Ecosystem Partnership. Additional support and cooperation from partners such as The Nature Conservancy, The Longleaf Alliance, and NFWFMD will result in higher quality of management for all of the resources in this region, including red-cockaded woodpeckers. Management of longleaf pine ecosystems will be conducted in a manner to maintain and improve favorable conditions for the recovery of the red-cockaded woodpecker.

H. Research Projects / Specimen Collection

Research projects may be performed on the forest on a temporary or permanent basis for the purpose of obtaining information that furthers the knowledge of forestry and related fields. FFS cooperates with other governmental agencies, non-profit organizations, and educational institutions, whenever feasible, on this type of research. FFS will consider assisting with research projects when funds and staffing are available.

All research proposed on BRSF must be considered in accordance with the guidelines stated in the State Forest Handbook. Any requests for research shall be submitted in writing to the appropriate field staff and forwarded to the Forest Management Bureau for approval. Requests must include: a letter outlining the purpose, scope, methodology, and location of the proposed

research. Requests are subject to review by FFS foresters, biologists, the Forest Health Section, and the Forest Hydrology Section, as appropriate. Authorization to conduct research will require that the investigator provide copies of any reports or studies generated from any research to the FFS and the BRSF staff. Other special conditions may be applicable, and the authorization may be terminated at any point if the study is not in compliance.

Research projects / specimen collections that have been initiated on the property within the last 12 years include:

- FWC / FWRI (Scheick). September 9, 2014. Conduct research estimating Florida black bear (*Ursus americanus floridanus*) abundance in Florida.
- Smithsonian Conservation Biology Institute (Baker). 2015 & 2016. Conduct monitoring of faunal biodiversity using stationary mounted camera traps on BRSF.
- US EPA (Dr. Awkerman). 2015, 2016 & 2017. Conduct research assessing the suitability of juvenile fish data as a surrogate for juvenile amphibians in toxicology studies on BRSF.
- University of Florida (Dr. Bohn). July 21, 2015. Conduct research on *Lygodium japonicum* on BRSF.
- FNAI (Almquist). September 21, 2015. Study obligate invertebrate commensals (OICs) of gopher tortoises (*Gopherus polyphemus*) and collect voucher specimens of non-listed (state or federal) OICs.
- UNC Greensboro (Dr. Knapp). December 3, 2015. Use longleaf pine tree-ring data in combination with longleaf pine cone-mast data to determine the influence on cone crop on climate reconstructions.
- FWC / FWRI (Winchester & Gore). May 6, 2016. Conduct research on long-tailed weasels on BRSF.
- Oklahoma State University (Dr. Fishbein & Ksepka). May 19, 2016. Conduct tissue sampling for genetic research on species within the genus *Asclepias* (milkweeds).
- Clemson University (Dr. DeWalt). July 27, 2016. Collect fruit from goat's rue (*Tephrosia virginiana*) for genetic studies.
- University of Florida (Dr. Duncan). August 15, 2016. Conduct research on the ecology, natural history, distribution, and population dynamics of the southeastern pocket gopher (*Geomys pinetis*).
- USDA (Dr. Scheffer). March 31, 2017. Conduct research on the systematics and evolution of leafminer insects (genus *Phytomyza*) and their host hollies (genus *Ilex*).
- University of Florida, IFAS (Dr. Burkett-Cadena & Sloyer). June 2, 2017. Conduct research on spatial and temporal distributions of biting midges (*Culicoides spp.*).
- FSU (Dr. Anderson). 2018, 2019, 2021 & 2022. Collect herbarium specimens of plants not currently vouchered in a county, or plants in need of research material.
- University of Florida (Dr. Miller & Gott). 2018, 2019 & 2020. Conduct research on the biology and systematics of the Florida duskywings (Lepidoptera:Hesperiidae:Erynnis).
- UNC (Dr. Weakly & Schoonover). March 27, 2018. Investigate *Trichostema* mint taxonomy.
- Dr. Pau & Zampieri. March 30, 2018. Conduct research on the population dynamics of longleaf pine in Florida.

- Northland Environmental Services (Dr. Bess). May 2, 2018. Conduct status surveys for the rattlesnake master borer moth (*Papaipema eryngii*) in the Southeast Region.
- UNC Greensboro (Dr. Knapp & Mitchell). July 23, 2018. Use dendrochronological methods to examine the potential causal factors and spatiotemporal variability of anomalous growth in longleaf pine in western Florida.
- US National Arboretum (Conrad). July 25, 2018. Conduct research on the genetic diversity of state-endangered Ashe's magnolia (*Magnolia ashei*).
- New York Botanical Garden (Naczi & Naczi). August 10, 2018. Conduct research systematics of sedges (Family: Cyperaceae) and associated beetles (Order: Coleoptera).
- UGA (Long & Dr. Bennetzen). September 24, 2018. Conduct research on ants that are prey for different pitcher plant species (*Sarracenia* spp.) and to collect fluid samples from the pitcher plants and water samples.
- University of Florida (Dr. Warren). 2019, 2021, 2022 & 2023. Renewal to collect insect voucher specimens – Lepidoptera / Coleoptera / Diptera / Hymenoptera
- FWC (Teets, Doonan & Gillikin). 2019, 2020, 2021 & 2022. Conduct Long Term Bat Monitoring Program on five (5) state forests.
- Boise State University (Rosentreter). 2020, 2021 & 2023. Collect specimens of lichens not currently vouchered in a county, or to collect lichen species where additional research material is needed.
- University of Texas, El Paso (Dr. Lieb). March 3, 2020. Collect voucher specimens of amphibians and reptiles.
- University of Florida, McGuire Center (Dr. Slotten). 2020 & 2022. Collect voucher specimens of moths.
- Atlanta Botanical Garden (Smith). July 1, 2020. Investigate the role of hybridization and mycorrhizal fungal use in speciation patterns in terrestrial orchids (*Platanthera* sp.).
- Smithsonian Institution (Dr. Strong). 2020, 2021 & 2022. Renewal to collect plant materials at BRSF as herbarium specimens and as materials for future research.
- University of Florida, IFAS (Beiriger). 2020, 2022 & 2023. Investigate effects of non-native wood boring beetles.
- Florida Public Archaeology Network (Dr. Lees & Meyers). December 2, 2020. Conduct archaeological research at BRSF and update Florida Master Site File forms.
- FNAI (Price & Gundy). January 2, 2021. Conduct surveys for Westfall's clubtail (*Phanogomphus westfalli*) on BRSF.
- FNAI (Hill). 2021, 2022 & 2023. Surveys for Frosted Elfin, Arogos skipper, sawgrass skipper, and Duke's skipper.
- US EPA (Dr. Awkerman). March 5, 2021. Conduct acoustic research to monitor frog populations on BRSF.
- Northwest Florida State College (Dr. Bigham-Stephens). April 3, 2021. Investigate properties of the gulf pitcher plant (*Sarracenia rosea*) on BRSF.
- Clemson University (Sears & McTernan). 2021, 2022 & 2023. Climate change effects on fence lizard genetics.
- Mississippi State University (Hill). 2021, 2022 & 2023. Collect voucher specimens of insects.
- Atlanta Botanical Garden (Smith). May 3, 2021. Collect seed of hairy peduncled beakrush (*Rhynchospora crinipes*) from one population on BRSF for seed banking.

- Polly Hill Arboretum (Boland & Thomas). June 6, 2021. Collect seed from wild populations of *Stewartia malacodendron* to grow as part of an ex-situ living collection at Polly Hill Arboretum.
- University of Florida (Daniels & Kimmel). 2021 & 2022. Conduct research on multiple state forests regarding the giant scrub plasterer bee (*Caupolicana floridana*) and closely related *C. electa*.
- University of Florida (Dr. Hulcr & LeMay). August 2, 2021. Investigate ambrosia beetle (*Xyleborus ferrugineus*) taxonomy and genetics.
- UNC (Dr. Weakly & Schoonover). October 2, 2021. Investigate *Trichostema* mint taxonomy and phylogeny.
- University of Kentucky (Dr. DeWald). November 4, 2021. Collection of white oak acorns for genetics study.
- Texas Tech University (Wojtysiak & McIntyre). 2021 & 2022. Conduct research regarding Calvert's emerald dragonfly (*Hylogomphus geminatus*) on seven (7) state forests.
- ESS Group (Treacy). 2021 & 2022. Conduct research for the US EPA regarding streamflows on BRSF.
- Green Geophysics, Inc. (Smith). January 1, 2022. Conduct geophysical sampling on BRSF to investigate the risks to the nation's electric power grids throughout the lower conterminous U.S.
- University of Massachusetts, Boston (Dr. Moyers). March 3, 2022. Genetics of sundial lupine for habitat restoration.
- Adventure Scientists (Toshack). April 2, 2022. Genetics of white oak (*Quercus alba*) to combat poaching.
- Mississippi State University (Dr. Polinko). May 5, 2022. Investigation of how the longleaf pine ecosystem behaves across its native range with respect to silviculture treatment.
- Avon Park AFB (Orzell). May 8, 2022. Plant voucher collection, with a focus on grasses, sedges, and yellow fringeless orchid.
- New York Botanical Garden (Naczi). May 9, 2022. Plant voucher collection for pitcher plants and sedges for phylogenetic and taxonomic research.
- USDA (Conrad). July 2, 2022. Ashe magnolia seed collection.
- University of Florida (Torhorst & Dr. Wisely). October 3, 2023. Conduct research regarding soft-bodied ticks (*Ornithodoros turicata*) on eleven (11) state forests.
- Texas Tech University (Girgente & McIntyre). October 6, 2022. Renewal to conduct research regarding the twin-striped clubtail dragonfly (*Hylogomphus geminatus*) on seven (7) state forests.
- UGA (Long & Dr. Bennetzen). November 4, 2022. Conduct research regarding the population genetics and diversity of yaupon holly (*Ilex vomitoria*).
- University of New Mexico (Barrow & McDaniels). December 1, 2022. Collect amphibians and reptiles as voucher specimens and for research purposes on thirteen (13) state forests.
- Miami University (Moore & Bednar). February 2, 2023. Gulf sweet pitcherplant status and genetic diversity.
- Atlanta Botanical Garden (Coffey & Smith). March 1, 2023. Collect seeds, leaf tissue samples, and voucher specimens for Center for Plant Conservation's Florida Rare Plant Rescue Initiative.

- University of Florida (Willis & Dr. Smith). April 3, 2023. Investigate exobasidium fungal pathogen on ericaceous plants.
- University of Florida, FMNH (Dr. D. Soltis, Dr. P. Soltis & White). May 5, 2023. Conduct research regarding the phylogeography of four (4) species of yellow-eyed grasses (*Xyris* ssp.) at BRSF.
- Adventure Scientists (Eggers). July 2, 2023. Collect tuliptree samples for genetic research.
- Avon Park AFB (Orzell). July 3, 2023. Conduct study of yellow fringeless orchid.
- FWC / FWRI (Hassler). July 5, 2023. Conduct research investigating long-tailed weasel (*Mustela frenata*) and Eastern spotted skunk (*Spilogale putorius*) occurrence, habitat use, and diet composition within the Florida Wildlife Corridor study areas in North Florida.
- FWC / FWRI (Smith). September 4, 2023. Conduct research regarding the tri-colored bat (*Perimyotis subflavus*).

I. Ground Disturbing Activities

Although the FFS’s approach to handling ground disturbing activities is identified in other sections of this plan, the FFS’s overall approach to this issue is summarized here. FFS recognizes the importance of managing and protecting sensitive resources and will take steps to ensure that such resources are not adversely impacted by ground disturbing activities. Sensitive resources include areas such as known sensitive species locations; archaeological, fossil, and historical sites; ecotones, wetlands, and water resources. The process for evaluating and obtaining approval for ground disturbing activities is outlined in Appendix 2.A.6. of the State Forest Handbook.

When new pre-suppression firelines, recreational trails, or other low-impact recreational site enhancements are necessary, their placement will be reviewed by state forest field staff to avoid sensitive areas. For ground disturbing activities such as construction of buildings, parking lots, and new roads, the FFS will consult with FNAI, DHR, NFWFMD, and the ARC, as appropriate.

V. Public Access and Recreation

The primary recreation objective is to provide the public with passive outdoor recreational activities that are dependent on the natural environment. FFS will continue to promote and encourage public access and recreational use by the public while protecting resources and practicing multiple-use management.

Periodic evaluations will be conducted by FFS staff to monitor recreational impacts on resources. Modifications to recreational uses will be implemented should significant negative impacts be identified. New recreation opportunities and facilities, which are compatible with the primary goals and responsibilities of the FFS, will be considered only after FFS determines their compatibility with other forest uses and forest resources. Assessment of visitor impacts, outdoor recreation opportunities and facilities, and proposed changes will all be addressed in the Five-Year Outdoor Recreation Plan updates.

A. Existing Recreational Opportunities

A variety of recreational opportunities are available on BRSF. Recreation activities include hiking, camping, horseback riding, wildlife viewing, picnicking, bicycling, off-highway vehicle riding, swimming, fishing, and hunting. BRSF is part of the Florida National Scenic Trail, the FFS Trailwalker Program, and the FFS Trailtrotter Program. See Exhibit D for a map of the Recreation, Facilities, and Improvements.

BRSF currently operates 10 developed recreation areas. These areas have conveniences such as flush toilets, running water, picnic tables and grills. Okaloosa County operates the Wilderness Landing Recreational Area and Guest Lake Boat Ramp on BRSF. Wilderness landing has similar facilities to BRSF's developed recreation areas. Guest Lake has picnic tables, outhouse, and pavilions but no running water. There are also approximately 75 primitive recreation sites throughout the forest with no potable water or electricity and little to no infrastructure. They are used as picnic areas and primitive camping spots. These recreation sites are typically located near a sandbar or site next to a large creek such as Blackwater River, Coldwater Creek, or Juniper Creek.

1. Recreation Areas

Bear Lake Recreation Area - Bear Lake is a 107-acre artificial impoundment located on Bear Creek. The lake is characterized by flooded timber. The dam was constructed in 1959 and first opened to fishing in the spring of 1961. Bear Lake has 32 electric campsites, eight (8) non-electric campsites, boat ramp, hiking trail, mountain bike trail, dining hall with pavilion, and ten restrooms; eight (8) with showers.

Bone Creek Recreational Area - Bone Creek is a day use area with a swimming and fishing lake. There is a picnic area and pavilion with a 1.3 mile hiking trail. There are two boardwalks along the trail totaling approximately 700' through wetlands. Trees such as the Florida anise are found along this hiking trail. There are two restrooms near the trailhead.

Camp Paquette - Camp Paquette is a group camping facility for youth with four large camping sites. The facility offers group primitive camping, swimming, fishing, and hiking. There is a pavilion and two (2) restroom facilities with showers.

Coldwater Recreational Area - The Coldwater Recreational Area, bordered to the north by Coldwater Creek, was opened in 1974. The facility has been a prized recreation area for bird dog and fox hound field trial participants and horseback riders. It offers 56 electric campsites, horse stables, horse trails, dining hall, pavilion, and six (6) restrooms with showers.

Hurricane Lake Recreation Areas - Hurricane Lake is a 318-acre man-made lake located on Hurricane Creek. Hurricane Lake was constructed in 1971 and opened for fishing in 1973. It has two (2) improved recreation areas located on the north and south sides of the lake. The North Hurricane Lake Recreation Area has 18 electric campsites, boat ramp, four (4) restrooms with showers, and a primitive camping area for youth groups. The Florida National Scenic Trail can also be accessed from the North campground. The South Hurricane Lake Recreation Area has 18 non-electric campsites, boat ramp and four (4) restrooms with

showers.

Karick Lake Recreation Areas - Karick Lake is a 65-acre artificial impoundment on Deadfall Creek in northern Okaloosa County. A considerable amount of flooded timber provides fish habitat. The lake was constructed in 1965 and open to fishing in 1966. Karick Lake has two (2) improved camping areas located on the north and south sides of the lake with a hiking trail. The Karick Lake North Recreation Area has 15 electric campsites, and a boat ramp. The Karick Lake South Recreation Area also has 15 electric campsites, two (2) restrooms with showers, and a boat ramp.

Krul Recreation Area - Krul campgrounds are built next to a 6.5-acre man-made lake that is recharged from springs located on the north end of the lake. The recreation area has 45 electric campsites, swimming lake, day use picnic area, 2,900-foot boardwalk, suspension bridge over Sweetwater Creek, and ten (10) bathrooms; eight (8) with showers.

Clear Creek OHV Riding Area - Clear Creek OHV Riding Area is Blackwater River State Forest's newest recreation area opened in 2015. The facility has helped fill the demand for off-highway vehicle trail riding in northwestern Florida and southern Alabama. There are 52.9 miles of trails dedicated to off-highway vehicle riding. Motorcycles, all-terrain vehicles (ATVs), and utility task vehicles (UTVs) 65 inches or less in width are allowed to ride at the facility. The trails east of Redbird Trail are narrower and more challenging; designed for machines no larger than 50 inches in width. The trails west of Redbird Trail are wider and appropriate for machines 65 inches or less in width. There is a gatehouse for check-in, two (2) bathrooms, four (4) electric campsites, and a dump station.

Unimproved Recreation Sites – There are many opportunities to enjoy picturesque unimproved sites along watercourses. These locations are great for swimming, fishing, picnicking, and nature study. These sites are often uninhabited and are great places to enjoy the space and solitude of BRSF. These primitive sites include Kennedy Bridge, Red Rock, Bryant Bridge, Indian Ford, Camp Lowery, Juniper Creek Primitive Area, Jernigan Bridge, and Wilderness Landing.

Canoe Launch Sites – BRSF has access points along various waterways which allow the public to launch canoes and other non-motorized watercraft to enjoy the forest from the water. Approximately 47 miles of sand-bottom streams run through BRSF. The three (3) waterways that get the most usage are Blackwater River, Juniper Creek, and Coldwater Creek. The northern portions of Coldwater and Juniper Creeks have a large amount of blow down in the river. They are kept in their natural state and provide a large watershed sanctuary for wildlife. There are eight (8) primary canoe launches and / or pick up sites on BRSF used by canoe liveries as well as private canoe owners. Access to Blackwater River can be found at Kennedy Bridge, Bryant Bridge, and Johnson Float. Access to Coldwater Creek can be found at the Highway 4 Bridge and Jernigan Bridge adjacent to the Coldwater Recreation Area. Access to Juniper Creek can be found at Dewey Hardy Landing, Red Rock, and the Indian Ford pickup site.

2. Hiking Trails

BRSF offers abundant opportunities for day hikers and backpackers on 75.8 miles of established trails. 52.8 miles of the Florida National Scenic Side Trail and 11.3 miles of the Florida National Scenic Main Trail pass through BRSF. 11.7 miles are not part of the Florida National Scenic Trail and are typically loop trails near campgrounds. Most of the length of the Florida National Scenic Trail through BRSF is maintained by the Florida Trail Association. Other trails are spurs off of the Florida National Scenic Trail or are scenic loops near recreation areas.

Bear Lake Jackson Connector Trail – This is a 2.4-mile connector trail whose purpose is to bring together the Sweetwater Trail and Bear Lake Loop Trail with the Jackson Trail.

Bear Lake Loop Trail – This 3.5-mile loop trail begins at the Bear Lake campground and travels around the perimeter of the lake. It is part of the FFS's Trailwalker Program and the Great Florida Birding and Wildlife Trail and receives considerable use.

Blackwater River Trail – This trail is 6.4 miles and begins at the north boundary line of the Blackwater River State Park. It travels through the state park, the Hutton Unit Wildlife Management Area, and BRSF, eventually connecting to Highway 90. It is a segment of the Florida National Scenic Trail.

Bone Creek Trail – This 1.3-mile loop passes through uplands and crosses wetlands around a lake at the Bone Creek Recreation Area.

Camp Paquette Loop Trail – This is a 1-mile trail that travels around the lake a portion of which travels over the water dam.

Jackson Trail – This is a 21.6-mile trail which begins at North Karick Lake and ends at Red Rock Road. Andrew Jackson traveled parts of this route during the First Seminole War in the early 1800s. It is part of the Florida National Scenic Side Trail.

Juniper Creek Trail – This 6.6-mile trail follows the east side of Juniper Creek for most of its length. Its northern trailhead is on Red Rock Road where the Jackson Trail ends. It is part of the Florida National Scenic Trail. Approximately one mile south of Red Rock Road is a hiking shelter along the trail. The trail ends at the boundary with Blackwater River State Park, and the start of the Blackwater River Trail.

Karick Lake Loop Trail – This 3.6-mile trail begins at North Karick Lake campground. A portion of its length, 1.4 miles, is shared by the Jackson Trail. This trail travels around the lake and is part of the FFS's Trailwalker Program and the Great Florida Birding and Wildlife Trail.

Sweetwater Trail – This trail begins at Krul Recreational Area and is 1.3 miles in length. Along the trail is a gristmill and a suspension bridge over Sweetwater Creek. Over half a mile of the trail's length is on a boardwalk, with the remainder traveling through the woods to Bear Lake. This trail is part of the FFS's Trailwalker Program.

Wiregrass Trail – The trail is 12.9 miles in length and is part of the Florida National Scenic Side Trail. Its northern terminus joins the Conecuh National Forest in Alabama, and its southern terminus connects with the Jackson Trail. It makes its way through beautiful stands of longleaf pine and wiregrass.

Yellow River Ravines Trail – Constructed in 2010, the newest section of the Florida National Scenic Side Trail in BRSF is 3.9 miles in length and connects the Blackwater River Trail with the 11.3-mile section of the Florida National Scenic Trail that runs through the state forest to Eglin Air Force Base.

3. Equestrian Trails

The Coldwater Recreation Area is the starting point for the forest’s horse trail system. Fifty-nine (59) miles of horse trails are available for riding. Two of these trails are on the FFS’s statewide Trailrotter Program. The trails are all interconnected. The 56 campsites near Coldwater Creek on the north end of the campground make this area extremely popular for horseback riding. Most of the horse trails are located within the Blackwater Field Trial Area which is managed for quail habitat.

4. Mountain Biking Trails

BRSF has 14.6 miles of mountain bike trails. The Bear Lake Mountain Bike Trail travels 5.9 miles around Bear Lake and crosses Bear Creek. The 8.7 mile Red-Rock Mountain Bike Trail system was built in 2007-2008 by the Pensacola Off-Road Cyclists, a local volunteer organization that is a part of the Southern Off-Road Bicycle Association (SORBA). Through resources sharing, SORBA and its chapters carry out the mission to promote trail development and maintenance. The Red Rock Mountain Bike Trail is located in the Juniper Tract south of Red Rock Road and west of Juniper Creek.

5. Field Trial Events

The Field Trial Area is a part of the forest set aside for bird-dog field trial events. It was originally 6,217 acres in size and was established in 1974 as a cooperative agreement between FFS and FWC. The Field Trial Area increased in size in 2023 to 9,682 acres. This has allowed for greater opportunities for field trial events and added additional archery hunting days. FWC employs a biologist and two technicians who help manage this area for quail habitat. The aggressive burning program by FFS has significantly reduced hardwood competition. Since its inception, the Field Trial Area has grown into a popular location for equestrian events and for individual families to come to the forest to camp and ride horses. The open stands of longleaf pine are very conducive to horseback riding. Along with horseback riding, bird dog and fox dog trials occur each year at the Coldwater Recreation Area. There are 124 dog kennels for bird dogs and fox hounds. For the past 15 years, fox hound trials have been the dominant field trial type in the forest. Limited hunting is also available in the Field Trial Area. In recent years, the number of dog trials has averaged five (5) per year, and there are approximately six (6) organized trail rides annually.

6. Fishing

There are three (3) creek fed fishing lakes located on BRSF. Hurricane Lake is 318 acres in size, Bear Lake is 107 acres, and Karick Lake is 65 acres. Largemouth bass, bluegill, red-ear sunfish, and channel catfish are located in all of these lakes, which are managed by FWC.

7. Environmental Education / Ecotourism

Environmental education is provided through tours of BRSF as well as school programs that teach fire prevention and forest management principles and techniques. FFS also hosts the Munson Community Heritage Festival at Krul Lake Recreation Area. The festival is organized by the not-for-profit Munson Community Heritage Festival Committee and showcases local music, historical and cultural exhibits, demonstrations, arts, crafts, and foods. FFS and FWC have exhibits that explain forestry and wildlife components. The Munson gristmill is in operation to demonstrate how the pioneers in the area made grits and cornmeal as well as the Riley sawmill where boards are cut from tree logs. This event is part of Santa Rosa County's Beaches to Woodlands Tour sponsored by the Tourist Development Council. The Tourist Development Council presently advertises the forest through various magazines and websites.

B. Planned Recreational Opportunities

The FFS will continue to assess plans for additional recreational opportunities based on demand, suitability, carrying capacity, demographics, and impact to the resources on the forest. All planned improvements may be completed as staff and funding permits. Both terrestrial and aquatic resources, as well as related activities will be evaluated. Any plans will be incorporated into the Five-Year Outdoor Recreational Plan on file at BRSF.

The outdoor recreation plan for BRSF for the next ten years will continue to emphasize dispersed outdoor recreational opportunities that require a minimal facility development. Trail maintenance will continue to be a recreation priority. On lands that are newly acquired, the recreation plan will call for minimal facilities such as unpaved parking lots, trailheads, hiking trails, mountain biking trails, equestrian trails, birding areas, and primitive camping. Where there are existing developed recreation areas, facilities will continue to be upgraded. New bathrooms or improvements to existing ones will be a priority for campgrounds. Site density will continue to be reviewed to balance customer satisfaction and revenue.

1. Public Access and Parking

Parking and public access will be evaluated for established state forest property as well as newly acquired acquisitions. BRSF staff will continue to provide adequate access for the public to utilize the forest through a maintained road system. In heavily used parking areas, asphalt or concrete surfacing may be needed. In these areas, striping will be added as usage dictates. Striping is presently used at the Bear Lake Recreation Area parking lot, the kitchen/pavilion parking lot, and the Krul Recreation Area parking lot. At Bone Creek, a large parking lot is available, but current usage does not warrant striping. If there are significant changes to usage patterns at this facility, the parking lot will be assessed and striped as conditions change.

Parking is available at all fee areas and various primitive recreation sites. When parking is generally not adequate due to higher usage, parking areas will be enlarged if the area can

sustain increased usage. If the area cannot sustain more usage due to ecological reasons, guardrails or other obstacles to deter additional parking may need to be added.

Parking reservations can also be incorporated in some instances. A good example of an effective parking reservation system can be found at the Krul Recreation Area. The demand for use of the Krul swimming area in the swimming season can easily exceed the carrying capacity of the parking lot on weekends. A gatehouse attendant was assigned to control the flow of vehicles into the parking lot and there were often many vehicles waiting to enter along the highway. A parking reservation system was incorporated in 2022, which ensures parking for visitors who have a reservation and allows the customers to see if there is availability online before driving the long distance from population centers. This is a model we will look to potentially incorporate at other high-use recreation facilities on BRSF.

2. Trail / Walkway Improvements

There are several planned recreational trail projects. BRSF recently refurbished 448 feet of boardwalk on the Bone Creek Loop Trail. A similar project will occur on the Bear Lake Loop Trail during the 2025-26 fiscal year. Stringers will be replaced, new curbing added, and composite boards will replace deteriorated wooden decking boards. Wooden walkways at the Coldwater Recreation Area will be replaced with concrete walkways between the kitchen and bathhouses. Boardwalk replacement and removal will also occur along the Karick Lake Loop Trail. The Karick Lake Loop Trail will be rerouted to reduce wooden boardwalks across wetlands. Dirt will continue to be added to Off-Highway Vehicle trails as needed through the length of the ten-year management plan.

Kiosks will be replaced at various campgrounds based on structural integrity within the next ten-year cycle. Staff will review kiosk structures and renovate or replace as needed. A new kiosk was built by Blackwater staff at the Krul Recreation Area in the 2024-25 fiscal year to replace a kiosk damaged from tornadoes in May of 2024. The same plans and design will be incorporated into new kiosks. Benches and signage along trails will be reviewed periodically and replaced when needed.

3. Pier Improvements

Pier renovations will occur at Camp Paquette within the next five (5) years. The Bone Creek pier will also be refurbished with new decking boards. The smaller boat launching piers next to the boat ramps at Bear Lake, Hurricane Lake, and Karick Lake will continue to be maintained by the FFWCC.

4. Recreational Area Resurfacing

Concrete surfacing additions have occurred at some of the Bear Lake campsites in prior years. These concrete additions next to the asphalt pads increased the width of the pads for a portion of their length. This extra pad width is a welcome addition for visitors with recreation vehicles. These concrete pad additions are planned to continue at Bear Lake and other campgrounds with similar needs. Maintenance of camping pads and campground roads will be evaluated each year at all of the recreation areas and improvements will continue as needed. During the review of resurfacing maintenance, campsites should be monitored for campsite leveling and approach angles for parking large rigs.

5. Campground Construction

BRSF is focusing on improving the present infrastructure in the existing recreation areas. Quality bathrooms are one of the main attributes that the forest visitor expects to have in improved recreation areas. The remaining recreation areas that need new or refurbished bathrooms include Camp Paquette, Krul Day Use, Bone Creek, and Karick South. Additional projects that are planned include: constructing a bathroom for the Coldwater office; replacing the first Coldwater barn stall with covered paddocks; replacing wooden fencing and wooden horse stalls/paddocks at Coldwater; repairing and replacing field fence at Clear Creek, renovating Bear Lake kitchen and dining room; adding fine crushed lime rock or topsoil and sod around erodible campsites; replacing leaning 40+ year-old concrete retaining wall at Bone Creek with wider wall; building new Coldwater dog kennels across Gordon Land Road; monitoring electric pedestals for replacement; upgrading breaker panels at campgrounds as needed; level camping pads that are not conducive for camping rigs; and replacing the gatehouse at Krul with a building containing additional office space and bathroom accommodations.

C. Hunter Access

Hunting season dates, limits, and methods are established annually by FWC, in consultation with FFS. Access, season dates, limits, and methods are outlined in the regulations summary and area map brochures for the Blackwater Wildlife Management Area (WMA), Hutton Unit, Carr Unit, and the Yellow River WMA. The Hutton Unit is gated to restrict illegal hunting activities. Parts of the Yellow River WMA are gated to limit road damage and allow for ecological restoration.

D. Education

The FFS may create partnerships with local K-12 schools and / or universities for the development and implementation of educational opportunities on BRSF. The Five-Year Outdoor Recreation Plan will guide management activities as they pertain to future educational opportunities BRSF may provide to the public.

VI. Forest Management Practices

A. Prescribed Fire

Forest management practices on BRSF are important in the restoration and maintenance of forest ecosystems and provide a variety of socio-economic benefits to Floridians. Management practices on BRSF include a prescribed fire program which is an effective tool in controlling the encroachment of shrubs and off-site hardwoods, stimulating the recovery of native herbaceous groundcover, and promoting the regeneration of native pines.

FFS utilizes a fire management program on state forests that includes wildfire prevention, detection and suppression, and prescribed burning. This program is the responsibility of FFS's Blackwater Forestry Center and is detailed in the Five-Year Prescribed Burning Management Plan. Emphasis will be placed on prescribed burning, wildfire prevention, and education to help reduce wildfire occurrence on the forest.

A fire history graph detailing the recent history of prescribed burns and wildfires at BRSF is available in Exhibit O.

The FFS has access to 16 tractor-plow units, eight (8) Type-6 engines, two (2) heavy dozers, and two (2) large engines that are available to BRSF, as well as the remainder of the three-county district. Additional support is available from neighboring Chipola District if the need arises. Personnel and equipment stationed at BRSF will be used for pre-suppression practices, establishment of firebreaks, rehabilitation of existing firelines, construction of new firelines, maintenance of perimeter firebreaks, and prescribed burning.

The annual forest prescribed burning program produces multiple benefits. The purposes of prescribed burning on BRSF are to facilitate forest management operations; enhance wildlife and listed species habitat; decrease fuel loading; enhance public safety; and restore, maintain, and protect all native ecosystems, ecotones, and their ecological processes. FFS personnel are responsible for planning and implementing the annual prescribed burn program for BRSF, which will consist of dormant and growing season burns. An update to the Five-Year Prescribed Burning Management Plan is developed each year by FFS staff. All burns conducted on BRSF are executed by Florida Certified Prescribed Burn Managers in accordance with 590.125, F.S. and Chapter 5I-2, F.A.C.

According to forest stand data, historic fire-dependent natural communities on BRSF are estimated to have occupied approximately 181,000 acres. The majority of these communities would have exhibited fire-return intervals ranging from 2 to 4 years. Current fire-dependent communities encompass 173,019 acres. Based on current conditions and management objectives, BRSF will plan for 45,000 to 90,000 acres to be prescribed burned annually. Meeting prescribed fire goals will be largely dependent on weather conditions, available personnel, and statewide emergency situations such as wildfires, hurricanes, and other natural disaster response and relief. Currently it is estimated that approximately 139,000 acres of BRSF are within the desired fire-return interval.

1. Fire Management

The fire management plan will serve as a working tool and an informational document for BRSF. The plan will provide guidelines regarding wildfire suppression and prescribed fire management. It will specify burn units, burn unit prescriptions, appropriate fire-return intervals, and fire suppression planning. The plan may be reviewed and amended as necessary.

The use of prescribed fire in the management of timber, wildlife, and ecological resources on BRSF is necessary if the FFS is to fulfill the goals and objectives stated in this plan including: enhancing and restoring native plant communities, managing protected species, managing timber, recreation, historical, and other resource values. The fire management plan and its objectives shall reflect and incorporate these multiple-resource objectives.

- a. Prescribed Fire:** Prescribed fire is the most important land management tool, both ecologically and economically, for managing vegetation and natural communities, and perpetuating existing wildlife populations in Florida. Forest operation records and staff experience should be combined with the FNAI inventory and assessment (2022) to identify areas that may require mechanical or chemical treatments in conjunction with prescribed fire to restore a more natural vegetative structure.

- b. Burn Unit Plans:** Each prescribed fire will be conducted in accordance with FFS regulations and state law (Chapter 5I-2, F.A.C., Chapter 590, F.S.) and have a burn unit plan (or prescription). Each prescription will contain, at a minimum, the information, as required by Section 590.125(3), F.S., needed to complete the FFS Prescribed Burn Plan Form FDACS 11461.

Aerial ignition may be considered for large burn units where this tactic can be cost effective for larger acreages. Aerial ignition has historically been done with a helicopter, however there are plans to utilize drones to provide aerial ignition which will be more cost effective and safer than utilizing a helicopter. Consideration should be given to rotating burn units between dormant and growing season burns over time. Fire-return intervals for a burn unit are recommended to fall within the natural, historic range for the dominant natural community or communities within a given burn unit.

Based upon available species survey data, burn units within a prescription that have listed wildlife species shall explicitly state their presence and any restrictions or requirements relative to prescribed burning in proximity to these species or habitats. These may include time of year, pre-burn preparation, fire-return intervals, and other burn parameters.

B. Wildfires, Prevention, Fire / Prescribed Fire Strategies

The FFS utilizes a comprehensive wildfire management approach on state forests that includes an ongoing program of wildfire prevention, detection and suppression, and prescribed burning. Implementation of this program is the responsibility of FFS's Blackwater Forestry Center. Emphasis will be placed on consistent accomplishment of prescribed burning goals and community outreach to increase public understanding of wildfire prevention and the benefits of prescribed fire.

FFS has three (3) paramount considerations regarding wildfires and are established in priority order:

- 1) Protection of human lives
- 2) Protection of improvements
- 3) Protection of natural resources

All procedures regarding wildfire will follow the State Forest Handbook and the BRSF Fire Management Plan.

1. Suppression Strategies

If a wildfire occurs on BRSF, there are two (2) alternative suppression strategies as defined below:

- a. Contain and Control** is defined as a suppression strategy where a fire is restricted to a certain area by using existing natural or constructed barriers that stop the fire's spread under the prevailing and forecasted weather until it is out. This strategy allows the use of environmentally sensitive tactics based on fuels, fire behavior, and weather conditions that keep a wildfire from burning a large area or for a long duration.

- b. **Direct Suppression** is defined as a suppression strategy where aggressive suppression tactics are used to establish firelines around a fire to halt its spread and to extinguish all hotspots. This alternative is used whenever there is a threat to human life, property, private lands, and / or critical natural or cultural resources. This strategy should also be used when the total district fire load dictates that crews not be involved with individual fires for any longer than absolutely necessary.

Appropriate suppression action will be that which provides for the most reasonable probability of minimizing fire suppression cost and critical resource damage, consistent with probable fire behavior, total fire load, potential resource and environmental impacts, safety, and smoke management considerations. The Incident Command System (ICS) will be used for all suppression actions.

2. **Smoke Management**

Caution will be exercised to prevent a public safety or health hazard from the smoke of any prescribed burn or wildfire. Prescribed burns must pass the smoke screening procedure and be conducted by a certified burner. If smoke threatens to cause a safety hazard, then direct immediate suppression action will be taken.

3. **Firebreaks and Firelines**

A system of permanent fire breaks has been developed and maintained around and within the boundaries of BRSF to guard against fires escaping from and entering the forest. Such fire breaks will consist of natural barriers, roads, trails, permanent grass strips and where appropriate, well maintained harrowed lines. All pre-suppression fire breaks will meet the established Silvicultural BMP criteria.

During wildfire suppression, the use of water and foam, permanent fire breaks, natural barriers, and existing roads and trails for firelines can be used when human life, safety, property, and resource considerations allow. Plowed and / or bladed lines will be used for initial installation of firelines in heavy fuels and in cases where it's considered necessary to protect life, property, or resources and / or to minimize threats to firefighters. Plowed and bladed lines will be rehabilitated, and BMPs implemented as soon as practical after the fire is suppressed.

4. **Sensitive Areas**

The BRSF has on file in the state forest headquarters an Environmentally Sensitive Area Map that identifies protected sites such as critical wetlands and archaeological and historical sites known to occur on the state forest. FFS personnel are aware of these areas in the event of a wildfire. Special precautions will be followed when prescribed burning in sensitive areas on BRSF. When possible, fire staff will avoid line construction in wetland ecotones and other areas throughout the forest.

5. **Firewise Communities**

FFS has implemented a Firewise community approach for wildfire prevention statewide. Specifically, in the area adjacent to or nearby BRSF, efforts in this regard will continue to identify communities at risk and facilitate communication with their representatives.

6. Adjacent Neighbor Contacts

The staff at BRSF maintains a list of neighbors that have requested they be notified in advance of prescribed burns. These families are contacted by telephone or email with potential sites and dates of anticipated prescribed burns.

7. Post-Burn Evaluations

A post-burn evaluation is required for each prescribed burn on the state forest to assess impacts on timber and habitat. Based on the evaluations, decisions will be made on the effectiveness of the prescribed burn and improvements that can be made in the future. A historical fire record for all significant fires and prescribed burns will be maintained. This will be accomplished using completed burn plans and through the maintenance of GIS data. These records are intended to provide data for future management decisions.

C. Sustainable Forestry and Silviculture

Timber is a valuable economic and ecological resource, and timber harvesting for the purposes of generating revenue, improving stand viability, forest health, wildlife, and ecological restoration and maintenance is critical to the silvicultural objectives on the state forest.

1. Strategies

The following strategies will apply to silvicultural practices on BRSF:

- a. To restore and maintain forest health and vigor through timber harvesting, prescribed burning, and reforestation, both naturally and artificially, with species native to the site.
- b. To create, through natural or artificial regeneration, uneven-aged, and even-aged management, a forest with both young and old growth components that yields sustainable economic, ecological, and social benefits.

2. Silvicultural Operations

Silvicultural operations on BRSF will be directed toward improving forest health, wildlife habitat, ecological and economical sustainability, and recovery from past management practices that are not in accordance with the objectives of this plan. Stands of off-site species with merchantable volume will be scheduled for harvest, followed by reforestation with the appropriate tree species. Herbicide applications may be necessary to control woody competition and to re-establish desired natural species of both overstory and groundcover. Site preparation methods may include prescribed fire, mechanical vegetation control, and/or herbicide applications. Herbicides used will be registered for forestry use by the U.S. Environmental Protection Agency (EPA) and will not adversely affect water resources.

Prescribed fire is the most desirable method of vegetation control in fire-dependent ecosystems. However, due to the existence of areas where fuel loads have reached dangerous levels or urban interface dictates prescribed fire is not suitable, mechanical, or chemical vegetation control may be used. Mechanical and/or chemical vegetation control will be utilized where appropriate as determined by FFS staff for wildlife enhancement, fuel mitigation, and reforestation.

Maintenance and restoration of timber stands and natural communities through timber harvesting will include thinning for maintenance, regeneration harvests applicable to the

species present and clear-cutting to remove off-site species.

All silvicultural activities, including timber harvesting and reforestation, will meet or exceed the standards in FFS's Silviculture BMP and the State Forest Handbook, and will follow the Five-Year Silviculture Action Plan.

3. Forest Inventory

The purpose of a forest inventory is to provide FFS resource managers with information and tools for short and long-range resource management and planning. Ten percent of BRSF forest will be re-inventoried annually to provide an accurate estimation of the standing timber and to ensure that stands will be managed sustainably.

Commercial forest resources available on the property include pine species such as slash pine, longleaf pine, and sand pine. Cypress, cedar, and most hardwood species are generally not harvested from BRSF since most are in wetland or Special Management Zone (SMZ) areas.

4. Timber Sales

Timber sales are generally advertised for competitive bids and sold on a per unit or lump sum basis. All timber sales are conducted according to guidelines specified in the State Forest Handbook and in accordance with FFS Policies and Procedures.

5. Cattle Grazing

Cattle grazing activities assist in maintaining pastures and controlling invasive plants, support the maintenance of fences and gates, and provide a source of income to the forest.

There are currently no cattle leases on BRSF.

6. Sustainable Forestry Initiative (SFI)

The SFI 2022 Forest Management Standard promotes sustainable forestry practices based on 13 Principles and 17 Objectives, 41 Performance Measures, and 141 Indicators. These requirements include measures to protect water quality, biodiversity, wildlife habitat, species at risk, and forests with exceptional conservation value. The SFI Forest Management Standard applies to any organization in the United States or Canada that owns or manages forestlands.

The SFI Program is committed to continuously improving responsible forest management. SFI Program Participants must meet or exceed applicable water quality laws and regulations, with measures to manage and protect wetlands and riparian zones on certified lands. Participants must continuously evaluate habitat, and biodiversity impacts from forest activities which leads to improved habitat quality and protection of imperiled or critically imperiled species.

D. Invasive Species Control

FFS employees continually monitor the forest for invasive species while conducting management activities. FFS will locate, identify, and apply control measures with the intent to

control invasive species. Table 6 lists the general treatment, acres impacted, and population stability trend for invasive plant species occurring on BRSF. Also see Exhibit P.

On-going maintenance and monitoring strategies are outlined in the Five-Year Ecological Management Plan which is developed to locate, identify, and control invasive plant species. Occurrences of invasive species are recorded in the BRSF GIS database and are monitored and treated annually as funding permits. The GIS database is updated as new infestations are discovered.

Adjacent landowners who are known to have these species on their property will be approached in an effort to cooperate on control measures. FFS works to control the spread of invasive species by decontaminating agency equipment and equipment used by private contractors according to the State Forest Handbook.

FFS will enlist support from FWC in efforts to control invasive animals. Feral hogs (*Sus scrofa*) are present on BRSF but are not believed to occur in substantial numbers at this time. FWC has issued a feral hog control permit to FFS for all state forests and FFS will allow for feral hog removal on BRSF through trapping and hunting as necessary.

Training in the identification and control of invasive species will be scheduled for personnel as time and resources permit. Training concerning invasive plants will be coordinated with the Forest Management Bureau's Forest Health Section. Control of invasive species will be target-specific and use a variety of methods including appropriately labeled and efficacious herbicides.

Table 6. Invasive Plant Species Occurring on BRSF

Common Name	Scientific Name	Treatment Strategy	Acres Impacted	Increasing /Decreasing
Air potato	<i>Dioscorea bulbifera</i>	Foliar	0.1	Stable
Autumn olive	<i>Elaeagnus umbellata</i>	Basal and Foliar	17.7	Decreasing
Callery pear	<i>Pyrus callereyana</i>	Basal and Cut Stem	1,220.0	Increasing
Camphortree	<i>Cinnamomum camphora</i>	Basal and Cut Stem	1.2	Increasing
Chinaberry	<i>Melia azedarach</i>	Basal and Cut Stem	8.9	Stable
Chinese tallow	<i>Triadica sebifera</i>	Basal and Cut Stem	2,448.5	Increasing
Chinese privet	<i>Ligustrum sinense</i>	Basal and Foliar	163.0	Stable
Chinese wisteria	<i>Wisteria sinensis</i>	Foliar/Cut Stem	19.3	Stable
Cogongrass	<i>Imperata cylindrica</i>	Foliar	1,019.7	Decreasing
Earleaf acacia	<i>Acacia auriculiformis</i>	None Found	0	n/a
Golden bamboo	<i>Phyllostachys aurea</i>	Foliar and Mechanical	12.7 stable	Stable
Japanese climbing fern	<i>Lygodium japonicum</i>	Foliar	1,767.0	Increasing
Japanese honeysuckle	<i>Lonicera japonica</i>	Foliar	6.6	Stable

Common Name	Scientific Name	Treatment Strategy	Acres Impacted	Increasing /Decreasing
Kudzu	<i>Pueraria montana</i>	Foliar	32.1	Decreasing
Mimosa	<i>Albizia julibrissin</i>	Basal and Cut Stem	95.3	Stable
Multiflora rose	<i>Rosa multiflora</i>	Foliar	0.1	Stable
Nandina	<i>Nandina domestica</i>	None Found	0	n/a
Showy croton	<i>Crotalaria spectabilis</i>	Foliar	72.0	Stable
Silverthorn	<i>Elaeagnus pungens</i>	None Found	0	n/a
Skunk vine	<i>Paederia foetida</i>	Foliar	14.7	Increasing
Sword fern	<i>Polystichum munitum</i>	None Found	0	n/a
Torpedograss	<i>Panicum repens</i>	Foliar	92.4	Decreasing
Trifoliolate orange	<i>Citrus trifoliata</i>	None Found	.2	Stable
Tropical soda apple	<i>Solanum viarum</i>	Foliar and Hand-Pulling	107.0	Decreasing
Tung oil tree	<i>Vernicia fordii</i>	Basal and Cut Stem	27.2	Decreasing

E. Insects, Disease and Forest Health

Currently there are no insect or disease problems on BRSF. State forest staff monitor for incidental outbreaks of pine bark beetles (*Ips* spp.) throughout the forest. These outbreaks typically affect no more than a couple of acres. Aerial surveys are conducted every summer, typically between June and August, for southern pine beetle (*Dendroctonus frontalis*) outbreaks. In the event of an outbreak of any disease or insects, consultation with the Forest Management Bureau’s Forest Health Section will be sought to formulate an appropriate and effective response.

In compliance with Section 388.4111, F.S. and in Section 5E-13.042, F.A.C., all lands have been evaluated and subsequently designated as environmentally sensitive and biologically highly productive. Such designation is appropriate and consistent with the previously documented natural resources and ecosystem values and affords the appropriate protection for these resources from arthropod control practices that would impose a potential hazard to fish, wildlife, and other natural resources existing on this property. The local arthropod control agencies in Okaloosa and Santa Rosa Counties will be notified of the approval of this plan, documenting this designation.

As a result, prior to conducting any arthropod control activities on BRSF, the local agency must prepare a public lands control plan that addresses all concerns that FFS may have for protecting the natural resources and ecosystem values on the state forest. In this regard, FFS will provide the local agency details on the management objectives for BRSF. This public lands control plan must be in compliance with FDACS guidelines and utilize the appropriate FDACS form. The plan must then be approved and mutually adopted by the county, FFS, and FDACS, prior to initiation of any arthropod control activities. Should the local mosquito control district not propose any arthropod control operations on the property, no arthropod control plan is required. See Exhibit X.

F. Use of Private Land Contractors

The Forest Manager makes ongoing evaluations of the use of private contractors and consultants to facilitate the total resource management activities of BRSF. This may require the use of contractors to achieve the needed marking goals. The opportunities for outsourcing land management work may include, but is not limited to:

1. Herbicide applications
2. Ecosystem restoration
3. Site Preparation
4. Reforestation
5. Timber harvesting
6. Biological assessments and mapping
7. Fixed capital and infrastructure improvements

6. Proposed Management Activities for Natural Communities

In 2023, FNAI completed an inventory and natural community mapping project on BRSF. Current and historic natural community cover types can be found in Exhibits Q and R, and Table 7. This inventory included managed and altered community types which are habitats that have been impacted by humans and do not fit into FNAI’s Natural Community Classification. See Tables 8 and 9.

Table 7. Natural Community Types

Community Type	Historic Acres*	Current Acres*
Baygall	1,487	1,426
Blackwater stream	753	808
Bottomland forest	29,127	28,562
Depression marsh	79	72
Dome swamp	158	157
Floodplain swamp	536	532
Mesic flatwoods**	1,848	1,741
River floodplain lake	1	1
Sandhill**	29,972	24,321
Seepage slope	7,064	5,092
Shrub bog	55	55
Upland hardwood	709	562
Upland mixed woodland	629	426
Upland pine**	141,531	121,590
Wet flatwoods**	1,005	609
Wet prairie**	38	32
Managed and Altered landcover types***	0	29,005
TOTAL	214,992	214,991

* Acreage discrepancies may occur based on FNAI polygons

** Includes restoration community acreage

*** See Tables 8 and 9

Table 8. Managed Landcover Types

Community Type	Current Acres*
Improved Pasture	26
Pine plantation	17,643

* Acreage discrepancies may occur based on FNAI polygons

Table 9. Altered Landcover Types

Landcover Type*	Current Acres**
Agriculture	982
Artificial pond	2
Borrow area	136
Canal / ditch	3
Clearing	796
Developed	243
Food Plot	411
Impoundment	685
Road	1,371
Successional hardwood forest	4,023
Successional hydric shrubland / forest	1,874
Utility Corridor	810
TOTAL	10,115

* Protocol as described in Appendix 2 of FNAI's "Guide to the Natural Communities of Florida", 2010 Edition

** Acreage discrepancies may occur based on FNAI polygons

For the purposes of this management plan, restoration is defined as the process of returning ecosystems to the appropriate structure and species composition, based on soil type, representative species present, and hydrology. Management during this ten-year period will begin with a forest-wide assessment of the fuel loading, timber densities, reforestation needs, and groundcover in order to develop a five-year comprehensive operational plan for prescribed burning and other management activities across the forest. Strategies may include thinning pine plantations, mowing or chopping in areas of heavy fuel buildup, application of both dormant and growing season fires, and / or the use of herbicides to control hardwoods and / or hardwood regeneration. Site preparation and reforestation may be required to increase pine stocking in stands with very poor stocking or in restoration efforts. Fire-return intervals are included as a guide and may vary depending upon specific conditions and are intended to attain desired forest and resource management goals. See Table 10.

Table 10. Prescribed Fire Interval Guide on BRSF

Habitat Type	Historic Fire-Return Interval**	BRSF Fire Frequency Goal (Local)	Comments
Baygall	Rare	N/A	Baygall burns infrequently, perhaps only a few times each century in the deepest baygalls.
Blackwater Stream	N/A	N/A	Fire can occasionally reach the edge of the stream, particularly where pine dominated stands go to the edge of the stream.

Habitat Type	Historic Fire-Return Interval**	BRSF Fire Frequency Goal (Local)	Comments
Bottomland Forest	N/A	N/A	When surrounding uplands are burned, the fire is allowed to go into the bottomland forest. Amount of bottomland burned is dependent on the season and soil/duff moisture.
Depression marsh	Varies	2 – 10 years	Frequency of fire in depression marshes is dependent on the fire-return interval of the surrounding community.
Dome swamp	Varies	2 – 10 years	Dome swamps are generally small, and it is likely that natural fires during the spring and early summer creep through the entire swamp.
Floodplain swamp	N/A	N/A	Floodplain swamps are usually too wet to support fires. However, fires in surrounding uplands that creep into the swamp edges are important to reduce pine and bay species invasion.
Mesic flatwoods*	2 – 4 years	2 – 3 years	Mesic flatwoods depend on frequent, low-intensity fires to maintain diverse herbs and short-statured shrubs.
River Floodplain Lake	N/A	N/A	These lakes are found deep within bottomland forests or floodplain swamps. Fire getting to these lakes would be extremely rare.
Sandhill*	1 – 5 years	2 – 3 years	Sandhills are burned with the same frequency as other upland pine ecosystems. Burning can take place year-round with spring-summer burning providing the greatest effect. Many areas in the Yellow River Ravines tract have difficulty burning due to lack of fine fuels.
Seepage Slope	2-3 years	2 – 3 years	Seepage slopes are most often found along the edges of upland pine areas and as such, they receive fire when adjacent uplands burn and typically carry fire very well.
Shrub Bog	10-20 years	N/A	Shrub bogs will receive fire when surrounding uplands are burned. Burns usually do not carry across a bog unless it is during a drought period.
Upland Hardwood Forest	Varies	2 – 3 years	Stands will be on a 3-year burn rotation alongside surrounding upland mixed woodland and upland pine stands. Fires are not expected to burn as thoroughly or as intensively as upland pine stands.
Upland Mixed Woodland	2-10 years	2 – 3 years	These stands are burned with the same frequency as upland pine stands. These stands typically have a mixture of pine with pyrogenic oaks such as southern red oak. Fires will readily move across the stand, but with less intensity than upland pine.
Upland Pine*	1-3 years	2 – 3 years	The most prevalent community type on BRSF. Stands are typically burned every 2-3 years with spring and summer burns providing the greatest control of broadleaf species. These areas are often flanked by seepage slopes and bottomland forests.
Wet flatwoods*	3 – 10 years	3 – 10 years	Wet flatwoods require frequent, low intensity fires to maintain an herbaceous dominated understory.
Wet prairie*	2 – 3 years	2 – 3 years	Frequent fires prevent the invasion of weedy shrubs and trees that shade out the herbaceous species.

* Includes restoration community acreage

** As determined by FNAI

The following community descriptions, existing condition descriptions, and management recommendations are taken from a 2023 FNAI mapping project report and the Guide to the Natural Communities of Florida (FNAI 2010), as well as from the knowledge and experience gained by FFS during forest inventory efforts and routine field work on BRSF.

To achieve the objectives outlined in this plan, the following management activities will be performed in the natural and managed communities at BRSF during the next ten-year planning period. Goals, desired conditions, standards, and guidelines provide management area direction. These goals and desired conditions may take many planning cycles to attain.

A. **Baygall**

Description:

Baygalls at BRSF are found at the edges of floodplains, along seepage streams and drainages from surrounding upland pine and sandhill communities, and in large, forested wetland mosaics near the Yellow River. They are generally shrubby or forested seepage areas dominated by sweetbay (*Magnolia virginiana*), swamp bay (*Persea palustris*), black titi (*Cliftonia monophylla*), titi (*Cyrilla racemiflora*), and large gallberry (*Ilex coriacea*). Seepage from surrounding uplands maintains a saturated substrate with peat moss (*Sphagnum* spp.) often forming mats. The baygalls at BRSF are most commonly interlaced with bottomland forests, and many intermediate areas can be found throughout the broader floodplains. Baygalls may also occur included in broad grassy wet flatwoods communities, at the bases of seepage slopes, and forming narrow baygall “stringers” along seepage streams.

A study of natural communities on Eglin Air Force Base by FNAI (Kindell et al., 1997) noted a variety of baygall associations occurring there, including the Atlantic white cedar-sweetbay-buckwheat tree (black titi) association, the Florida anise association, and the buckwheat tree (black titi) association. The Atlantic white cedar-sweetbay-buckwheat tree (black titi) association is most similar to bottomland forest on BRSF and is usually found along seepage streams. The canopy consists of Atlantic white cedar (*Chamaecyparis thyooides*) and/or slash pine (*Pinus elliotii*), with tuliptree (*Liriodendron tulipifera*) occasional and a shrubby understory of sweetbay, black titi, and swamp bay. The Florida anise association is distinguished from other baygalls by its abundance of Florida anise (*Illicium floridanum*) along with other typical baygall species. This association was noted at Eglin to occur at the base of steephead ravines, although at BRSF, it seems to be common on steeper slopes. Lastly, the buckwheat tree (black titi) association, characterized as a dense shrubby thicket of mainly black titi that may reach into the canopy along with slash pine and sweetbay, occurs mainly in broad low areas of floodplains or encroaching into seepage slopes due to fire suppression. These communities may intergrade with shrub bogs completely dominated by titi, and the mosaic of baygall/shrub bog may shift over time depending on the time since fire.

Where baygalls can be distinguished on historic aerial photography, they show a uniform, almost black signature. The historic photographs indicate that most of the baygalls had well-defined edges bordering higher elevation areas, probably as a result of growing season fires that reduced the intrusion of shrubby species into upland communities.

Current Conditions:

Bay and titi dominated communities are currently forming a much larger component of the total area than in the past. This seems mainly attributable to the conversion of historically open, herbaceous wet flatwoods and seepage slopes to shrubby titi thickets and young bay forests. Many lower slope areas are currently either completely converted to woody communities or in the process of woody encroachment with only remnant herbaceous cover. These are usually labeled as successional hydric shrubland/forest in the current map.

The baygall canopy at Blackwater is typically dominated by a dense cover of sweetbay (*Magnolia virginiana*), slash pine (*Pinus elliottii*), swamp tupelo (*Nyssa biflora*), red maple (*Acer rubrum*), and Atlantic white cedar (*Chamaecyparis thyoides*). The subcanopy is dominated by black titi (*Cliftonia monophylla*), sweetbay, red maple, and titi (*Cyrilla racemiflora*). The dense shrubby midstory is dominated by hydrophilic shrubs such as large gallberry, titi, black titi, sweetbay, yaupon (*Ilex vomitoria*), Florida anise (*Illicium floridanum*), and swamp bay (*Persea palustris*). The herbaceous understory is sparse containing mostly netted chain fern (*Woodwardia areolata*), Virginia chain fern (*Woodwardia virginica*), spadeleaf (*Centella asiatica*), cinnamon fern (*Osmunda cinnamomea*), royal fern (*Osmunda regalis* var. *spectabilis*), sphagnum moss (*Sphagnum* sp.), and pinewoods bluestem (*Andropogon arctatus*).

In former seepage slopes encroached with baygall vegetation, various remnant carnivorous plants such as Tracy's sundew (*Drosera tracyi*), yellow pitcherplant (*Sarracenia flava*), whitetop pitcherplant (*Sarracenia leucophylla*), parrot pitcherplant (*Sarracenia psittacina*), Gulf purple pitcherplant (*Sarracenia rosea*), and redflower pitcherplant (*Sarracenia rubra*) may persist. Vines such as laurel greenbrier (*Smilax laurifolia*) and muscadine (*Vitis rotundifolia*) are occasional. Open baygall edges and narrow seepage stream baygall "stringers" are important habitat for several rare plant species occurring at BRSF, i.e., dwarf witchalder (*Fothergilla gardenii*), flameflower (*Macranthera flammea*), and spoonleaf sundew (*Drosera intermedia*).

Rare species observed in the baygalls of BRSF include pinewoods bluestem (*Andropogon arctatus*), primrose-flowered butterwort (*Pinguicula prumuliflora*) and naked-stemmed panic grass (*Dichanthelium nudicaule*).

Disturbances from roads and clearings have encouraged the growth of the invasive plants Chinese privet (*Ligustrum sinense*), Japanese honeysuckle (*Lonicera japonica*), Japanese climbing fern (*Lygodium japonicum*), and Chinese tallow tree (*Triadica sebifera*). Many areas near roads have ditches running from the uplands that may be altering the hydrology in the baygalls.

Fire Regimes:

Although baygalls rarely dry out enough to burn, usually igniting only every 50-100 years or more, the drier edges of these communities must be maintained by growing season fires that are allowed to burn into the baygall. Narrow stringers of baygall often found in BRSF likely burned more regularly with the surrounding upland pine or sandhill vegetation. Generally, a lack of these hot fires has contributed to the gradual expansion of the baygall community into wet flatwoods and seepage slopes.

Management Needs:

Management activities should focus on restricting baygalls roughly to historic boundaries and maintaining open edges between baygall and upland communities. Hydrologic alterations in baygalls, such as ditches, should be restored to return natural hydrology where practical, and the current effort to limit road access throughout the forest should be continued. Since non-native plant invasion is most severe along roads in baygalls and bottomland forest communities, removal efforts should be focused on these disturbances.

B. Blackwater Stream**Description:**

Coldwater Creek, Blackwater River, Juniper Creek, Sweetwater Creek, Panther Creek, and Penny Creek are all mapped as blackwater streams. These are perennial or intermittent seasonal watercourses with sandy bottoms originating deep in sandy lowlands. The tea-colored waters are laden with tannins and are generally acidic. Emergent and floating aquatic vegetation growth is often reduced because of typically steep banks and considerable seasonal fluctuations in water level. Plant communities along these streams are usually either bottomland forest dominated by Atlantic white cedar (*Chamaecyparis thyoides*), or floodplain swamp dominated by pond cypress (*Taxodium ascendens*).

The larger blackwater streams are clear on the historic photos due to the bright white sands deposited at bends in the streams. It is important to note that the streams have apparently undergone minor changes in their courses and so do not always align with the current photographs.

Current Conditions:

Existing conditions are similar to desired future condition. Numerous seepage streams drain into the blackwater streams all along their courses.

Fire Regimes:

Blackwater streams are not fire adapted natural communities.

Management Needs:

Blackwater streams in the forest are major recreation areas, so management concerns should focus on reducing impacts from those activities. Another primary management issue lies with preventing sediment from entering the streams. BRSF staff have worked hard to reduce sediment by restricting vehicular access to streamside areas, placing rock on low-water crossings, and closing roads that are eroding sediment into the river. These efforts will continue into the future due to the public's desire to access these streamside areas.

C. Bottomland Forest**Description:**

Bottomland forests are diverse communities occurring on floodplain terraces or shallow depressions and may be flooded for a portion of the dormant season. Most blackwater streams and larger seepage streams in BRSF have bottomland forests forming borders along the high sandy banks. There is a gradual transition to baygall as elevation increases. In broad floodplain areas, narrow swamps may develop along trough-like areas with swamp tupelo (*Nyssa sylvatica* var. *biflora*) becoming more common in the canopy.

In BRSF, these forests have a tall canopy of mainly Atlantic white cedar (*Chamaecyparis thyoides*) with slash pine (*Pinus elliottii*) and/or loblolly pine (*Pinus taeda*) common. There is a well-developed sub-canopy/tall shrub layer of various combinations of red maple (*Acer rubrum*), sweetbay (*Magnolia virginiana*), tuliptree (*Liriodendron tulipifera*), black titi (*Cliftonia monophylla*), dahoon (*Ilex cassine*), American holly (*Ilex opaca*), swamp laurel oak (*Quercus laurifolia*), water oak (*Quercus nigra*), sourwood (*Oxydendrum arboreum*), and swamp bay (*Persea palustris*). Short shrubs may be abundant with mostly coastal sweetpepperbush (*Clethra alnifolia*), blue huckleberry (*Gaylussacia frondosa* var. *tomentosa*), St. Andrew's cross (*Hypericum hypericoides*), mountain laurel (*Kalmia latifolia*), coastal doghobble (*Leucothoe axillaris*), and possumhaw (*Viburnum nudum*). Herbs are sparse except in occasional sunny areas.

In the far northeastern section of BRSF, bottomland forests become dominated by water oak, loblolly pine, and swamp laurel oak. However, the understory remains similar.

Bottomland forests are virtually indistinguishable on aerial photographs from baygalls with similar structure, and these communities are mapped together in most instances. The rough texture seen on the historic photographs due to the tall Atlantic white cedars may sometimes help to differentiate this community from surrounding baygall.

Current Conditions:

In addition to the dominant species noted above, other trees and shrubs noted included hazel alder (*Alnus serrulata*), American beautyberry (*Callicarpa americana*), titi (*Cyrilla racemiflora*), large gallberry (*Ilex coriacea*), gallberry (*Ilex glabra*), Florida anise (*Illicium floridanum*), Virginia willow (*Itea virginica*), sweetgum (*Liquidambar styraciflua*), fetterbush (*Lyonia lucida*), evergreen bayberry (*Morella caroliniensis*), wax myrtle (*Morella cerifera*), red chokeberry (*Aronia arbutifolia*), spruce pine (*Pinus glabra*), mountain azalea (*Rhododendron canescens*), American snowbell (*Styrax americanus*), and sawtooth blackberry (*Rubus pensilvanicus*). Common herbs included clustered sedge (*Carex glaucescens*), spadeleaf (*Centella asiatica*), longleaf woodoats (*Chasmanthium laxum* var. *sessiliflorum*), partridgeberry (*Mitchella repens*), cinnamon fern (*Osmunda cinnamomea*), royal fern (*Osmunda regalis* var. *spectabilis*), primroseleaf violet (*Viola primulifolia*), netted chain fern (*Woodwardia areolata*), Virginia chain fern (*Woodwardia virginica*), and yelloweyed grasses (*Xyris* spp.). Vines are common, with crossvine (*Bignonia capreolata*), muscadine (*Vitis rotundifolia*), laurel greenbrier (*Smilax laurifolia*), sarsaparilla vine (*Smilax pumila*), coral greenbrier (*Smilax walteri*), eastern poison ivy (*Toxicodendron radicans*), climbing hydrangea (*Decumaria barbara*), and swamp jessamine (*Gelsemium rankinii*).

Rare species observed in the bottomland forests include mountain laurel (*Kalmia latifolia*), palegreen orchid (*Platanthera flava*), Coville's rush (*Juncus gymnocarpus*), primrose-flowered butterwort (*Pinguicula primuliflora*), and hairy-peduncled beaksedge (*Rhynchospora crinipes*).

Recent hurricanes have had a large impact on bottomland forest canopies, mainly due to the toppling of countless large Atlantic white cedars. This has also had the effect of increasing light penetration to the understory, and herbaceous vegetation may increase in the future. More severe alteration of baygall/bottomland forest communities has taken place with the damming of some drainages to form recreation lakes and hunting areas. Hurricane Lake, Karick Lake, and Bear

Lake are all converted seepage streams and bottomland forests. There are also several smaller areas usually dammed by old roads that are being maintained for waterfowl. These areas often have standing dead cedars in several feet of water with aquatic herbs such as watershield (*Brasenia schreberi*), stream bogmoss (*Mayaca fluviatilis*), and yellow pondlily (*Nuphar advena* subsp. *ulvacea*). Beavers have also altered hydrology and species composition in many areas of bottomland forest. However, this is generally only a management concern in areas where beaver dams cause flooding, erosion, or other degradation to forest roads and trails.

Fire Regimes:

Bottomland forest is not a fire-maintained natural community, although fires in adjacent uplands will enter the area.

Management Needs:

Management should focus on removing invasive plant species, especially at disturbed road crossings, and controlling feral hog populations, whose foraging is highly damaging to groundcover. Where possible, smaller dams should be removed to allow a natural hydrology. Unauthorized vehicular access also leads to erosion problems thereby negatively affecting the hydrology. Beaver dam issues will be mitigated where dam construction causes flooding or other issues to forest roads.

D. Depression Marsh

Description:

Depression marshes are small, usually circular basins primarily located in sandhill communities on BRSF. These may have been formed as a result of wind scouring which created hollows in the substrate that could then fill with water, although they may be almost dry during drought conditions. These depressions are open and dominated by herbaceous vegetation (mostly graminoids) with shrubs and trees being only infrequent elements around the edges. These occasional shrubs and trees mark the generally swift transition to either upland pine or sandhill. In some marshes, an acidic peat layer of sphagnum moss (*Sphagnum sp.*) may also develop.

Depression marshes are smooth, very dark circles on the historic aerial photographs. They are uncommon on BRSF.

Current Conditions:

Most marshes at BRSF are intact, although several have been impacted by forestry operations in surrounding communities, as well as by fire suppression activities. Depression marshes are dominated by a dense herbaceous layer made up of mostly graminoids such as maidencane (*Panicum hemitomon*), longleaf threeawn (*Aristida palustris*), southern beaksedge (*Rhynchospora microcarpa*), Tracy's beaksedge (*Rhynchospora tracyi*), clustered sedge (*Carex glaucescens*), spikerushes (*Eleocharis sp.*), and witchgrasses (*Dichanthelium sp.*), along with other herbs such as flattened pipewort (*Eriocaulon compressum*), Carolina redroot (*Lachnanthes caroliniana*), combleaf mermaidweed (*Proserpinaca pectinata*), Virginia chain fern (*Woodwardia virginica*), and yelloweyed grasses (*Xyris sp.*). Shrubs and trees are sparse, typically along the shallow margins of the community and may include red maple (*Acer rubrum*), peelbark St. John's wort (*Hypericum fasciculatum*), myrtle dahoon (*Ilex cassine* var. *myrtifolia*), gallberry (*Ilex glabra*), swamp tupelo (*Nyssa sylvatica* var. *biflora*), and slash pine (*Pinus elliottii*).

In a few areas, marshes have formed from seepage streams that have been dammed. These artificial areas are generally very weedy depending on water depth and are mapped as impoundments on the current natural community map.

Fire Regimes:

Because of their small size and shallow depth, depression marshes often burn through along with the surrounding upland community. Occasional spring and early summer burns are needed to ensure that shrubby vegetation does not become established and reduce the diversity of the herb layer.

Management Needs:

Fires should be allowed to burn completely across depression marshes. Off-highway vehicle traffic and other recreational uses should be restricted to limit impact. In cases where it is feasible to remove dams from seepage streams, artificial marshes should be returned to historic conditions (usually seepage slope or baygall).

E. Dome Swamp

Description:

Dome swamps are small, forested depressions occurring at BRSF within areas of upland pine and sandhill. Dome swamps contain up to three concentric zones: a central area with a dense canopy of hydrophytic trees, a shallow intermediate zone with decreasing canopy allowing for a ring of shrubs and young trees, and an outermost, narrow edge dominated by herbs that forms an ecotone between the surrounding upland community and the canopied swamp.

The center of the dome swamp has a closed canopy of swamp tupelo (*Nyssa biflora*) and/or Ogeechee tupelo (*Nyssa ogeche*), although some swamps in the southernmost part of the forest are dominated by pond cypress (*Taxodium ascendens*). Tall shrubs and small trees, such as myrtle dahoon (*Ilex cassine* var. *myrtifolia*), swamp bay (*Persea palustris*), sweetbay (*Magnolia virginiana*), fetterbush (*Lyonia lucida*), and large gallberry (*Ilex coriacea*) are common on the edge of the mature dome. Herbs are mostly sparse in the middle of the swamp but resemble dense wet prairies on the ecotonal edge with the surrounding upland.

For the most part, dome swamps are easy to distinguish on the historic aerial photographs. They are mostly circular and darker than the surrounding area. They are similar in size and shape to depression marshes and some shrubby baygalls but can be separated by their slightly lighter color and evident canopy.

Current Conditions:

Existing conditions for dome swamps in BRSF are similar to desired future conditions. In addition to the species listed above, other common trees and shrubs include red maple (*Acer rubrum*), slash pine (*Pinus elliottii*), titi (*Cyrilla racemiflora*), and possumhaw (*Viburnum nudum*). Vines are occasional and include laurel greenbrier (*Smilax laurifolia*) and coral greenbrier (*Smilax walteri*).

There is an intact wet prairie edge around many of the dome swamps surveyed, and this area of small shrubs and herbs included broomsedge bluestem (*Andropogon virginicus*), lined sedge (*Carex striatula*), spadeleaf (*Centella asiatica*), threeway sedge (*Dulichium arundinaceum*),

Baldwin's spikerush (*Eleocharis baldwinii*), flattened pipewort (*Eriocaulon compressum*), tenangle pipewort (*Eriocaulon decangulare*), peelbark St. John's wort (*Hypericum fasciculatum*), myrtleleaf St. John's wort (*Hypericum myrtifolium*), Carolina redroot (*Lachnanthes caroliana*), foxtail club-moss (*Lycopodiella alopecuroides*), combleaf mermaidweed (*Proserpinaca pectinata*), bunched beaksedge (*Rhynchospora cephalantha*), narrowfruit horned beaksedge (*Rhynchospora inundata*), grassy arrowhead (*Sagittaria graminea*), sphagnum moss (*Sphagnum* sp.), humped bladderwort (*Utricularia gibba*), Virginia chain fern (*Woodwardia virginica*), and yelloweyed grasses (*Xyris* spp.) The rare plant small-flowered meadowbeauty (*Rhexia parviflora*) may be found in these grassy edges.

Swamps that have been surrounded by development from agricultural and silvicultural activities generally lack the wet prairie ecotone edge and can be invaded with invasive plants, especially Chinese privet (*Ligustrum sinense*), Chinese tallow, (*Triadica sebifera*) and Japanese honeysuckle (*Lonicera japonica*).

Fire Regimes:

Fire is essential for the maintenance of dome swamps. The fire frequency is greatest at the periphery of the dome swamp where a normal fire cycle might be as short as 3 to 5 years, compared to the 100-year fire cycle for the interior portions where moisture is greater. Fires from surrounding upland communities should be allowed to burn into dome swamp edges to maintain the herbaceous ecotone and prevent shrubby and invasive plant encroachment.

Management Needs:

Good quality dome swamp edges should be maintained with growing season fires that are allowed to burn into the edges of these communities. Disturbed swamps with severe invasive plant infestations around the edges may require treatment or removal, especially if fire is not a possible treatment.

F. Floodplain Swamp

Description:

Floodplain swamps are located along streams mostly in the southern portion of BRSF. These occur on the lowest parts of the floodplain and have a well-developed canopy of buttressed trees dominated by either pond cypress (*Taxodium ascendens*) in the south or mostly swamp tupelo (*Nyssa sylvatica* var. *biflora*) in the north. Small areas of swamp occur within the bottomland forests, however, in the southern portion of the forest, cypress dominated swamps become gradually more frequent and larger. In addition to the dominant trees, red maple (*Acer rubrum*), Atlantic white cedar (*Chamaecyparis thyoides*), sweetbay (*Magnolia virginiana*), and slash pine (*Pinus elliottii*) may also occur as occasional canopy species. Some shrubs such as coastal sweetpepperbush (*Clethra alnifolia*), titi (*Cyrilla racemiflora*), wax myrtle (*Morella cerifera*), and fetterbush (*Lyonia lucida*), and hydrophytic herbs such as goldenclub (*Orontium aquaticum*) and common arrowhead (*Sagittaria latifolia*) may be sporadic.

Although there is a slight difference in signature on the historic aerial photographs between floodplain swamps and forests, all swamps were delimited using recent aerial photography. The swamps have a gray color and a smoother texture than the bottomland forests.

Current Conditions:

In addition to the above species, floodplain swamps also include myrtle-leaved holly (*Ilex cassine* var. *myrtifolia*), common buttonbush (*Cephalanthus occidentalis*) and black titi (*Cliftonia monophylla*) in the shrub layer. Additional herbs include southern longseed (*Carex lonchocarpa*), spoonleaf sundew (*Drosera intermedia*), stream bogmoss (*Mayaca fluviatilis*), and cinnamon fern (*Osmunda cinnamomea*). Vines include sarsaparilla vine (*Smilax pumila*) and coral greenbrier (*Smilax walteri*). The floodplain swamps at Blackwater River SF appear to be in good condition with few disturbances.

Fire Regimes:

Floodplain swamps are not fire maintained communities.

Management Needs:

Maintain natural hydrology to keep floodplain swamps in good condition. Recreational activities (e.g., camping, canoeing, etc.) along the river should be monitored to reduce impact to the community.

G. Mesic Flatwoods (Including Restoration Areas)**Description:**

Mesic flatwoods are forests of variable density, southern pine species, most notably longleaf pine (*Pinus palustris*) and/or slash pine (*Pinus elliottii*), with little or no mid-story and a fairly dense low shrub and herb layer. Most occur on relatively flat terrain with moderate to poor drainage. At BRSF, mesic flatwoods occur adjacent to floodplains and are similar to nearby upland pine and sandhills but are distinguished by an abundance of runner oak (*Quercus elliottii*), dwarf live oak (*Quercus minima*), hairy laurel (*Kalmia hirsuta*), and false rosemary (*Conradina canescens*) in the short shrub and herb layers. Also, saw palmetto (*Serenoa repens*), which is absent in almost every other part of the forest, can be occasional too common in mesic flatwoods. These areas are well-drained compared to mesic flatwoods in other parts of the state.

Mesic flatwoods generally appear identical to upland pine and sandhills on the historic aerial photographs, although they may be darker with a denser canopy. Mapping was mostly based on ground-truthing and position in relation to the Blackwater River and Yellow River floodplains. Almost all mesic flatwoods were found adjacent to this bottomland forest with a very gradual transition to upland pine or sandhill. However, a few more well-defined mesic flatwoods were found in the same areas on higher plateaus surrounded completely by bottomland forest/baygall communities.

Current Conditions:

Although the canopy of mesic flatwoods at BRSF is usually dominated by longleaf pine, other pines such as slash pine (*Pinus elliottii*) and loblolly pine (*Pinus taeda*) may also be common, and fire suppression and proximity to the floodplain may encourage the growth of other more hydrophytic trees. In addition to the species listed above, other trees include red maple (*Acer rubrum*), chinquapin (*Castanea pumila*), swamp bay (*Persea palustris*), southern red oak (*Quercus falcata*), laurel oak (*Quercus hemisphaerica*), water oak (*Quercus nigra*), and live oak (*Quercus virginiana*). Shrubs include American beautyberry (*Callicarpa americana*), dwarf huckleberry (*Gaylussacia dumosa*), blue huckleberry (*Gaylussacia frondosa* var. *tomentosa*), St. Andrew's cross (*Hypericum hypericoides*), large gallberry (*Ilex coriacea*), gallberry (*Ilex*

glabra), wax myrtle (*Morella cerifera*), sand live oak (*Quercus geminata*), winged sumac (*Rhus copallinum*), horse sugar (*Symplocos tinctoria*), highbush blueberry (*Vaccinium corymbosum*), Elliot's blueberry (*Vaccinium elliotii*), and shiny blueberry (*Vaccinium myrsinites*). Herbs include broomsedge bluestem (*Andropogon virginicus*), wiregrass (*Aristida stricta*), switchcane (*Arundinaria gigantea*), soft greeneyes (*Berlandiera pumila*), vanillaleaf (*Carphephorus odoratissimus*), tall elephantsfoot (*Elephantopus elatus*), yankeeweed (*Eupatorium compositifolium*), comfortroot (*Hibiscus aculeatus*), narrowleaf silkgrass (*Pityopsis graminifolia*), orange milkwort (*Polygala lutea*), candyroot (*Polygala nana*), bracken fern (*Pteridium aquilinum*), savannah meadowbeauty (*Rhexia alifanus*), little bluestem (*Schizachyrium scoparium*), whitetop aster (*Sericocarpus tortifolius*), Virginia chain fern (*Woodwardia virginica*), and yelloweyed grasses (*Xyris* spp.). Common vines are yellow jessamine (*Gelsemium sempervirens*), earleaf greenbrier (*Smilax auriculata*), cat greenbrier (*Smilax glauca*), sarsaparilla vine (*Smilax pumila*), and muscadine (*Vitis rotundifolia*).

As noted above, many of these mesic flatwoods have gradual transitions to upland pine and sandhill communities. Those flatwoods closest to the floodplain, especially those surrounded by bottomland forest, often show the most disturbance from fire suppression, in some cases becoming densely overgrown with tall shrubs.

In areas south of the Blackwater River, particularly in the Yellow River Ravines tract, slash pine plantations were planted in historic mesic flatwoods. Where recent management activities have begun the process of thinning these stands and re-introducing fire into the landscape, these areas are designated as "restoration." The years of fire exclusion and soil disturbance from forestry activities have drastically reduced species richness in these stands. The groundcover is generally a shrub-dominated layer of saw palmetto, gallberry, yaupon (*Ilex vomitoria*), horse sugar, and/or Elliot's blueberry. Herbs are usually weedy and include bluestems, witchgrasses, fireweed (*Erechtites hieracifolius*), dogfennel (*Eupatorium capillifolium*), yankeeweed (*Eupatorium compositifolium*), and rustweed (*Polypremum procumbens*), but a few clumps of remnant wiregrass and bracken fern persist. Weedy vines, particularly yellow jessamine and muscadine, scramble over the ground, and taller trees and shrubs of sweetbay (*Magnolia virginiana*), laurel oak, water oak, and sand live oak (*Quercus geminata*) may be scattered or moderately dense. These areas intergrade with former wet flatwoods. Disturbances make the distinction between former wet and mesic flatwoods very difficult and stands near the Yellow River may have always had small pockets of baygall vegetation inclusions.

Fire Regimes:

The fire return for mesic flatwoods is every 2 to 4 years, primarily in summer when thunderstorms generate numerous lightning strikes, and as fuel loading and weather conditions permit. Restoration areas should be burned closer to the 2-year interval to reduce shrubs and promote an open, grassy understory. These fires are essential for maintaining the structure of the flatwoods, preventing encroachment from bordering baygall, and reducing weedy competition.

Management Needs:

Because of the proximity of mesic flatwoods to floodplains in BRSF, more effort should be made to ensure that these areas are allowed to burn frequently. Flatwoods that have been converted to pine plantations should be gradually thinned and burned to encourage good quality ground cover.

H. River Floodplain Lake

Description:

River floodplain lakes are generally characterized as shallow open water zones, with or without floating and submerged aquatic plants, that are surrounded by basin swamp or floodplain swamp. They are generally permanent water bodies, although water levels often fluctuate substantially, and they may become completely dry during extreme droughts.

Except for the fringe of hydrophytic trees, shrubs, and scattered emergent species, plants may be absent altogether, or they may almost completely cover the water surface.

Current Conditions:

Two river floodplain lakes are mapped on BRSF. One lake is mapped along Blackwater River, within floodplain swamp. The other lake is mapped along Juniper Creek, within bottomland forest.

Fire Regimes:

River floodplain lake is not a fire-maintained natural community.

Management Needs:

River floodplain lakes are important breeding areas for many terrestrial and semi-aquatic amphibians, as well as feeding areas for many wading birds, ducks, and reptiles. These lakes are extremely vulnerable to hydrological manipulations which lower the water levels and hasten successional processes. Land clearing and timber harvest operations should be avoided/minimized within the surrounding swamps and adjacent uplands.

I. Sandhill (Including Restoration Areas)

Description:

Sandhills are forests of southern pine tree species with a sparse understory of deciduous oaks and a fairly dense ground cover of grasses and herbs on rolling hills of well-drained sands. The most typical associations are dominated by longleaf pine (*Pinus palustris*), turkey oak (*Quercus laevis*), and wiregrass (*Aristida stricta*). Other typical plants include bluejack oak (*Quercus incana*), sparkleberry (*Vaccinium arboreum*), common persimmon (*Diospyros virginiana*), and gopher apple (*Geobalanus oblongifolius*). At BRSF, sandhills are the most abundant community in the southernmost region south of the Blackwater River. They also occur further north and grade into upland pine with many areas appearing intermediate between the two communities. In landscapes dominated by upland pine, hills may be “capped” with deeper, more well-drained sands that support sandhill communities, although sandhills were occasionally noted on hillsides of upland pine as well.

Sandhill and upland pine both appear as large, light-colored areas in which widely spaced large trees can normally be seen on historic aerial photographs. In a few areas, a slightly different, lower, closed canopy is evident and probably represents an abundance of oaks in those areas.

Current Conditions:

Most sandhills at BRSF are in good condition, although dense pines and insufficient fire in some stands may limit groundcover diversity. In addition to the species noted above, other trees and shrubs noted in sandhill communities of BRSF were flowering dogwood (*Cornus florida*),

common persimmon (*Diospyros virginiana*), dwarf huckleberry (*Gaylussacia dumosa*), gallberry (*Ilex glabra*), blackgum (*Nyssa sylvatica*), shortleaf pine (*Pinus echinata*), southern red oak (*Quercus falcata*), sand live oak (*Quercus geminata*), sand post oak (*Quercus margarettae*), blackjack oak (*Quercus marilandica*), water oak (*Quercus nigra*), post oak (*Quercus stellata*), sand blackberry (*Rubus cuneifolius*), sassafras (*Sassafras albidum*), horse sugar (*Symplocos tinctoria*), eastern poison oak (*Toxicodendron pubescens*), highbush blueberry (*Vaccinium corymbosum*), Darrow's blueberry (*Vaccinium darrowii*), Elliot's blueberry (*Vaccinium elliotii*), and deerberry (*Vaccinium stamineum*).

Common herbs in addition to wiregrass include pinewoods milkweed (*Asclepias humistrata*), gopherweed (*Baptisia lanceolata*), soft greeneyes (*Berlandiera pumila*), scarlet calaminth (*Calamintha coccinea*), tread softly (*Cnidioscolus stimulosus*), silver croton (*Croton argyranthemus*), downy danthonia (*Danthonia sericea*), tall elephantsfoot (*Elephantopus elatus*), dogtongue wild buckwheat (*Eriogonum tomentosum*), greater Florida spurge (*Euphorbia floridana*), stiff sunflower (*Helianthus radula*), comfortroot (*Hibiscus aculeatus*), hairy puccoon (*Lithospermum caroliniense*), sensitive briar (*Mimosa quadrivalvis*), narrowleaf silkgrass (*Pityopsis graminifolia*), orange milkwort (*Polygala lutea*), candyroot (*Polygala nana*), bracken fern (*Pteridium aquilinum*), savannah meadowbeauty (*Rhexia alifanus*), royal snoutbean (*Rhynchosia cytisoides*), kidneyleaf rosinweed (*Silphium compositum*), lopsided indiagrass (*Sorghastrum secundum*), queensdelight (*Stillingia sylvatica*), scurf hoarypea (*Tephrosia chrysophylla*), and tall ironweed (*Vernonia angustifolia*). Vines are infrequent and include earleaf greenbrier (*Smilax auriculata*), cat greenbrier (*Smilax glauca*), sarsaparilla vine (*Smilax pumila*), and muscadine (*Vitis rotundifolia*).

Past disturbances in sandhill include clearings and silvicultural activities that have disturbed the pine canopy, and in some cases partially converted the sandhill to oak-dominated successional hardwood forests. Also, much of the historic sandhill extent on the Yellow River Ravines tract was planted with sand pine (*Pinus clausa*) before acquisition by the state and will require long term management to restore a more natural structure. Longleaf pine regeneration is good throughout the sandhills, however, in some areas volunteer longleaf pine seedlings are unnaturally dense. Past hurricanes have caused significant disturbances, and remains of salvage operations are evident throughout the forest.

In planted sand pine stands, management activities have included clearcutting, prescribed burning, and planting of longleaf pine. These areas are designated as "restoration sandhill." Currently, prescribed burning under sand pine plantations has been stopped due to high mortality. There is also an aggressive plan to clearcut sand pine and restore longleaf and fire to these restoration sandhills. Although remnant sandhill vegetation such as turkey oak, sand post oak, and wiregrass persist in some of these stands, the usual state is similar to the planted sand pine stands with a high cover of yaupon (*Ilex vomitoria*), laurel oak (*Quercus hemisphaerica*), and water oak (*Quercus nigra*), an herbaceous cover of mostly weedy witchgrasses (*Dichantheium* spp.) and bluestems (*Andropogon* spp.), and a frequent occurrence of vines, particularly yellow jessamine (*Gelsemium sempervirens*) and earleaf greenbrier.

Fire Regimes:

Sandhills are a fire climax community, being dependent on frequent ground fires every 1-3 years to reduce hardwood competition and to perpetuate pines and grasses. Without frequent fires,

sandhills may eventually succeed to xeric hammock, and dense pine seedlings may become more problematic in creating unnaturally shaded, mesic situations.

Management Needs:

Prescribed burning is the primary management tool for sandhills, and regular burns are conducted in BRSF. More growing season burns may need to be applied to areas of dense pine and oak regeneration to ensure that a closed canopy does not form. Current efforts to close or limit traffic on many of the small roads should also continue to decrease disturbance and erosion. Sandhills that have been converted to pine plantations should be gradually thinned and burned to return normal sandhill conditions.

J. Seepage Slope

Description:

Seepage slopes are grass and sedge dominated communities occurring on slopes with constant seepage from a perched water table where the ground is usually saturated but rarely inundated. These communities have very few trees and only occasional shrubs. At Blackwater River SF, the broad areas mapped as seepage slopes are historically open slopes dominated by a dense groundcover of wiregrass (*Aristida stricta*) and toothachegrass (*Ctenium aromaticum*). In many of these slopes, smaller clay pockets may support pockets of carnivorous bog plants, especially pitcher plants (*Sarracenia* spp.) and sundews (*Drosera* sp.). These slopes are adjacent to bottomland forest/baygall communities, and historic photographs indicate that there were very few shrubs and a sharp border separating the open lower slope from the adjoining baygall.

Seepage slopes are light colored, smooth areas on the historic aerial photographs. Based on photo interpretation, it is difficult to predict which of these slopes support pockets of bog plants, so any such slopes that were ground-truthed in this or previous studies by FNAI or FFS were noted in the comments field of the natural community shapefile as having “pitcher plant area(s) included.”

Current Conditions:

Currently, most seepage slopes that were open and herbaceous in the historic photographs have been invaded by woody species from adjacent baygalls, especially black titi (*Cliftonia monophylla*), titi (*Cyrilla racemiflora*), myrtle dahoon (*Ilex cassine* var. *myrtifolia*), large gallberry (*Ilex coriacea*), fetterbush (*Lyonia lucida*), sweetbay (*Magnolia virginiana*), swamp tupelo (*Nyssa sylvatica* var. *biflora*), swamp bay (*Persea palustris*), red chokeberry (*Aronia arbutifolia*), and red maple (*Acer rubrum*). A few slopes have a dense cover of switchcane (*Arundinaria gigantea*). On recently added parcels with a history of silvicultural use, old seepage slopes may be heavily altered. On one such parcel, a likely historic seepage slope was densely planted with slash pine (*Pinus elliottii*). The heavily shaded understory contains few remnants, but openings do have some herbaceous species.

Despite encroachment of successional hydric shrubland/forest into most seepage slopes, many slopes are well-maintained with a very sparse canopy of longleaf pine (*Pinus palustris*) or slash pine (*Pinus elliottii*) and a diverse ground cover including longleaf threeawn (*Aristida palustris*), oneflower honeycombhead (*Balduina uniflora*), pineland daisy (*Chaptalia tomentosa*), coastal woolly witchgrass (*Dichanthelium scabriusculum*), pink sundew (*Drosera capillaris*), Tracy's sundew (*Drosera tracyi*), early whitetop fleabane (*Erigeron vernus*), flattened pipewort

(*Eriocaulon compressum*), tenangle pipewort (*Eriocaulon decangulare*), southeastern sneezeweed (*Helenium pinnatifidum*), Carolina redroot (*Lachnanthes caroliana*), golden crest (*Lophiola aurea*), southern club-moss (*Lycopodiella appressa*), yellow-flowered butterwort (*Pinguicula lutea*), southern butterwort (*Pinguicula primuliflora*), grassleaf goldenaster (*Pityopsis oligantha*), procession flower (*Polygala incarnata*), orange milkwort (*Polygala lutea*), starrush whitetop (*Rhynchospora colorata*), giant whitetop (*Rhynchospora latifolia*), yellow pitcherplant (*Sarracenia flava*), whitetop pitcherplant (*Sarracenia leucophylla*), parrot pitcherplant (*Sarracenia psittacina*), Gulf purple pitcherplant (*Sarracenia rosea*), redflower pitcherplant (*Sarracenia rubra*), narrowleaf blue-eyed grass (*Sisyrinchium angustifolium*), sphagnum moss (*Sphagnum* sp.), crowpoison (*Stenanthium densum*), coastal false asphodel (*Tofieldia racemosa*), zigzag bladderwort (*Utricularia subulata*), netted chain fern (*Woodwardia areolata*), yelloweyed grasses (*Xyris* spp.), and sandbog deathcamas (*Zigadenus glaberrimus*). Shrubs are low and sparse, including woolly huckleberry (*Gaylussacia mosieri*), coastalplain St. John's wort (*Hypericum brachyphyllum*), roundpod St. John's wort (*Hypericum cistifolium*), peelbark St. John's wort (*Hypericum fasciculatum*), bayberry (*Myrica caroliniensis*), and odorless bayberry (*Myrica inodora*).

Higher quality examples of this natural community often have rush featherling (*Pleea tenuifolia*), hairawn muhly (*Muhlenbergia capillaris*), wiregrass (*Aristida stricta*), pinewoods bluestem (*Andropogon arctatus*), toothachegrass (*Ctenium aromaticum*), coastal false asphodel (*Tofieldia racemosa*), and Tracy's sundew. Where these communities have a noticeable slope from the uplands, small, mucky seepages emerge and gently flow downslope. It is often the case you find southern butterwort along these braided seepages and where sphagnum moss (*Sphagnum* sp.) is abundant, the state listed as threatened naked-stemmed panic grass (*Dichanthelium nudicaule*). In these excellent examples, a "miniature landscape" exists underneath the grass-dominated strata with small species such as the state listed as threatened pineland bogbutton (*Lachnocaulon digynum*) only visible after moving aside the dense grass blades.

Fire Regimes:

Seepage slopes are maintained by frequent fires, and these communities should be allowed to burn along with the surrounding upland pine or sandhill every 1-3 years. Growing season burns are critical for maintaining a dominant herb layer by reducing woody encroachment from adjacent baygalls where fuel and weather conditions allow. Those areas with significant bay species intrusion may require fires to be set within the community to achieve a significant burn. However, annual winter fires may be deleterious to pitcher plant reproduction, killing plants before they can set fruit.

Management Needs:

Prescribed fire should be the primary management tool for seepage slopes, as described in the previous section. Also, soil disturbance from vehicles or feral hog activity should be reduced as much as possible.

K. Shrub Bog

Description:

Shrub bogs are dense stands of broadleaved evergreen shrubs, vines, and short trees, one to five meters tall depending on time since fire, with or without an overstory of scattered pine, growing in mucky soil where water is usually less than a foot deep. Characteristic shrubs include titi

(*Cyrilla racemiflora*), black titi (*Cliftonia monophylla*), fetterbush (*Lyonia lucida*), large gallberry (*Ilex coriacea*), gallberry (*I. glabra*), wax myrtle (*Morella cerifera*), and sweet pepperbush (*Clethra alnifolia*), often laced together with laurel greenbrier (*Smilax laurifolia*). Taller pines, either pond (*Pinus serotina*), slash (*P. elliotii*), or loblolly (*P. taeda*), may be present. Dense clumps of slash pine may be present in long unburned stands. Other occasional trees that may extend above the shrub layer are loblolly bay (*Gordonia lasianthus*), sweetbay (*Magnolia virginiana*), swamp bay (*Persea palustris*), pond cypress (*Taxodium ascendens*), and stunted red maple (*Acer rubrum*). Herbs are sparse and patchy, confined to sunny openings, and often include tenangle pipewort (*Eriocaulon decangulare*), Virginia chain fern (*Woodwardia virginica*), and pitcher plants (*Sarracenia* spp.). Soils of shrub bogs frequently have an organic muck layer of varying depth at the surface underlain by sand or loamy sands. Sphagnum moss (*Sphagnum* spp.) is common on the ground surface.

On BRSF, bottomland flats and stringers appear to be a mosaic of shrub bog (titi shrubs lacking a hardwood canopy), baygall (bay tree dominated), and bottomland forest (mixed hardwoods, bays, and white cedar). The distinction between these communities is difficult, and the pattern has likely shifted over the last century due to changing hydrology and fire patterns. Basin wetlands with a smooth gray signature were assumed to be historic shrub bogs. These are currently only mapped on the Yellow River Ravines tract. However, many baygalls on the forest may have included areas of shrub bog.

Current Conditions:

The pattern of shrub bogs and baygalls on BRSF have likely shifted somewhat in response to fire. On the Yellow River Ravines tract, some of the historic shrub bog extent has been planted with slash pine. These areas were mapped as current shrub bog since the understory is relatively unchanged and only minimal active management is required to restore them.

The remaining shrub bogs are dense thickets of black titi (*Cliftonia monophylla*) and/or titi (*Cyrilla racemiflora*), sweet pepperbush (*Clethra alnifolia*), fetterbush (*Lyonia lucida*), sometimes reaching 20 feet tall or more. Other shrubs include red chokeberry (*Aronia arbutifolia*) and swamp doghobble (*Eubotrys racemosus*). Scattered trees of sweetbay (*Magnolia virginiana*), swamp tupelo (*Nyssa sylvatica* var. *biflora*), slash pine (*Pinus elliotii*), and/or pond cypress (*Taxodium ascendens*) are often present. Vines, particularly laurel greenbriers (*Smilax laurifolia*), are common and often dense and interlaced with shrubs. Herbs are uncommon, usually only found in openings where a road or other disturbance intersects the bog.

Fire Regimes:

Fires starting in the surrounding pinelands burn to the edges of shrub bogs, but burn through them only during drought periods, probably on the order of every 10-20 years. The shrubs and bay trees respond to fire by re-sprouting, either from root crowns or rhizomes. During droughts, the peat may become dry enough to burn completely.

Management Needs:

Management should focus on hydrology restoration. Remaining planted pines in shrub bogs could be clearcut but will likely not be detrimental to the bog over time. If possible, fires should be allowed to burn into shrub bog edges to limit titi encroachment into surrounding communities.

L. Upland Hardwood Forest

Description:

Upland hardwood forests are well-developed, closed-canopy forests of upland hardwoods on rolling hills. At BRSF, these forests are mostly sporadic on rich hillsides. In the northeast corner of the forest, hardwood forests were probably more common. The canopy is a mixture of deciduous species, mostly oaks (*Quercus* sp.) and occasionally American beech (*Fagus grandifolia*) and southern magnolia (*Magnolia grandiflora*). Subcanopy and shrub layers are also well-developed with a diversity of temperate species. These communities grade gradually into upland pine on upper slopes and bottomland forest/baygalls/floodplain swamps on lower slopes. Varying fire frequency on these slopes can have a dramatic effect on community structure, and well-developed hardwood forests may take many years to develop.

Because there is no clear signature on historic aerial photography, upland hardwood forests were mostly mapped in locations that were ground-truthed and also showed a possible closed oak canopy in the historic photographs. However, upland hardwood forests were likely more abundant along the many slopes at BRSF than has been mapped in this project. Upland mixed woodlands have a similar aerial signature, and the two communities are difficult to distinguish from one another where fire exclusion has increased hardwood cover.

Current Conditions:

Most upland hardwood forests at BRSF have a past history of clearing, and some have been replaced by planted pine stands. Furthermore, hardwoods have invaded historically pine dominated communities in many places. These are mapped as successional hardwood forests for recently acquired parcels, but the distinction between naturally occurring hardwood forests and hardwood-invaded areas can be difficult to draw, usually relying on some indication of a canopy on 1949 aerials and the current presence of a diversity of hardwoods rather than just weedy laurel oaks.

Well-developed historic upland hardwood forests generally have American beech, sourwood (*Oxydendrum arboreum*), southern magnolia, and a diversity of temperate shrubs and small trees. In addition to the canopy trees listed above, other common tree species include red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), tuliptree (*Liriodendron tulipifera*), blackgum (*Nyssa sylvatica*), longleaf pine (*Pinus palustris*), loblolly pine (*Pinus taeda*), slash pine (*Pinus elliotii*), southern red oak (*Quercus falcata*), swamp laurel oak (*Quercus laurifolia*), water oak (*Quercus nigra*), live oak (*Quercus virginiana*), and white oak (*Quercus alba*). Subcanopy trees and shrubs are diverse and included red buckeye (*Aesculus pavia*), common serviceberry (*Amelanchier arborea*), American beautyberry (*Callicarpa americana*), wild olive (*Cartrema americanum*), chinquapin (*Castanea pumila*), coastal sweetpepperbush (*Clethra alnifolia*), black titi (*Cliftonia monophylla*), flowering dogwood (*Cornus florida*), American witchhazel (*Hamamelis virginiana*), St. Andrew's cross (*Hypericum hypericoides*), American holly (*Ilex opaca*), yaupon (*Ilex vomitoria*), Florida anise (*Illicium floridanum*), sweetbay (*Magnolia virginiana*), wax myrtle (*Morella cerifera*), black cherry (*Prunus serotina*), flatwoods plum (*Prunus umbellata*), winged sumac (*Rhus copallinum*), sassafras (*Sassafras albidum*), horse sugar (*Symplocos tinctoria*), sparkleberry (*Vaccinium arboreum*), highbush blueberry (*Vaccinium corymbosum*), and Elliot's blueberry (*Vaccinium elliotii*). Herbs are sparse, and include broomsedge bluestem (*Andropogon virginicus*), wiregrass (*Aristida stricta*), longleaf woodoats (*Chasmanthium laxum* var. *sessiliflorum*), witchgrasses (*Dichantheium* spp.), and

bracken fern (*Pteridium aquilinum*). A variety of vines may also occur, including earleaf greenbrier (*Smilax auriculata*), cat greenbrier (*Smilax glauca*), sarsaparilla vine (*Smilax pumila*), lanceleaf greenbrier (*Smilax smallii*), Virginia creeper (*Parthenocissus quinquefolia*), eastern poison ivy (*Toxicodendron radicans*), and muscadine (*Vitis rotundifolia*).

In disturbances caused by roads and nearby clearings, invasive plants such as mimosa (*Albizia julibrissin*), Chinese privet (*Ligustrum sinense*), Japanese honeysuckle (*Lonicera japonica*), and Japanese climbing fern (*Lygodium japonicum*) may infest upland hardwood forests.

Fire Regimes:

Mature hardwood forests create naturally fire-resistant conditions through shading, reduction of herbaceous ground cover, and buildup of oak leaf litter, so fires should naturally extinguish at the edges of these forests.

Management Needs:

Invasive plant removal and limits to road travel through these communities should be of highest priority. If prescribed burns are applied to the adjacent upland pine community, those fires should be allowed to burn to the edge of the upland hardwood forest and extinguish naturally.

M. Upland Mixed Woodland

Description:

Upland mixed woodlands are somewhat closed to moderately open woodlands with a mixture of evergreen and deciduous fire-tolerant tree species. Within BRSF, these natural communities typically occur on higher ridges, where clay is likely a more substantial part of the soil profile. The upland mixed woodland communities appear to occur sporadically, but greater evidence of this community is found in the northern portion of the property towards the Alabama line, where clay-based uplands with greater topographic relief become more common. The canopy of upland mixed woodland at BRSF is composed of longleaf pine (*Pinus palustris*), southern red oak (*Quercus falcata*), sand post oak (*Quercus margarettae*), mockernut hickory (*Carya tomentosa*), post oak (*Quercus stellata*), and shortleaf pine (*Pinus echinata*). These communities grade gradually into upland pine on upper slopes and bottomland forest/baygalls on lower slopes. Varying fire frequency on these slopes can have a dramatic effect on community structure.

Upland mixed woodlands have a similar signature to upland hardwood forest on the 1940s aerial photographs, and the two communities are difficult to distinguish from one another where fire exclusion has increased hardwood cover.

Current Conditions:

Many upland mixed woodlands at BRSF have a past history of clearing and fire exclusion leading to hardwood invasion. These are mapped as successional hardwood forests and are dominated by weedy laurel oaks (*Quercus hemisphaerica*).

Well-developed historic upland mixed woodland communities include longleaf pine (*Pinus palustris*) and southern red oak (*Quercus falcata*), similar to upland pine, but also have occasional sand post oak (*Q. margarettae*), mockernut hickory (*Carya tomentosa*), post oak (*Quercus stellata*) and shortleaf pine (*Pinus echinata*), although these are very rarely encountered as full-grown trees. Within the subcanopy, the abundance of flowering dogwood

(*Cornus florida*) is a strong indicator of this natural community. Shrub species may include yaupon (*Ilex vomitoria*), gallberry (*I. glabra*), sparkleberry (*Vaccinium arboreum*), Elliott's blueberry (*V. elliotii*), horse sugar (*Symplocos tinctoria*), and common persimmon (*Diospyros virginiana*). Herbaceous species include creeping little bluestem (*Schizachyrium stoloniferum*), tailed bracken (*Pteridium aquilinum* var. *pseudocaudatum*), slender bluestem (*Schizachyrium tenerum*), downy danthonia (*Danthonia sericea*), fringed nutrush (*Scleria ciliata*), eastern poison oak (*Toxicodendron pubescens*), pineland silkgrass (*Pityopsis aspera*), clasping milkweed (*Asclepias amplexicaulis*), eggleaf witchgrass (*Dichantherium ovale*), and dogtongue wild buckwheat (*Eriogonum tomentosum*).

Fire Regimes:

Upland mixed woodlands are well adapted to less frequent fire than upland pine or sandhill natural communities and maintain their ecological integrity with fire return intervals ranging from 2-20 years. The Florida Forest Service will burn these areas with adjacent upland stands.

Management Needs:

Invasive removal and limits to road travel through these communities should be of highest priority. Off-highway vehicles and poor road construction may lead to significant erosion and gullies being formed within these communities. A lack of prescribed fire or longer fire return intervals may negatively affect high quality groundcover persistence.

N. Upland Pine (Including Restoration Areas)

Description:

Upland pine occurs on high, rolling clay hills and has variable spacing of southern pine tree species, with few shrubs and a dense cover of herbs. This is the most common community type at BRSF, particularly on the more clayey soils that predominate north of the Blackwater River, and often intergrades with sandhill, with many areas appearing intermediate between the two types. On lower slopes, upland pine may become oak dominated and resemble or grade into upland hardwood forest.

The dominant canopy tree is longleaf pine (*Pinus palustris*), with oaks scattered in the subcanopy dominated by southern red oak (*Quercus falcata*) or blackjack oak (*Quercus marilandica*), although bluejack oak (*Quercus incana*) or turkey oak (*Quercus laevis*) may be common, especially in areas overlapping with sandhill communities. Flowering dogwood (*Cornus florida*) may also be a dominant small tree, although this species can also indicate an upland mixed woodland community. The more mesic clay soils of upland pine support a sparse, open, low cover of shorter shrubs such as dwarf huckleberry (*Gaylussacia dumosa*), gallberry (*Ilex glabra*), winged sumac (*Rhus copallinum*), Darrow's blueberry (*Vaccinium darrowii*), sparkleberry (*Vaccinium arboreum*), highbush blueberry (*Vaccinium corymbosum*), and Elliot's blueberry (*Vaccinium elliotii*). Herbs are dense and dominated by wiregrass (*Aristida stricta*), with a diversity of forbs.

Upland pine and sandhills both have a light signature on the historic aerial photographs with scattered trees and a slightly rough texture to the ground cover. Some areas seem to have a more closed canopy, although whether this is due to a predominance of understory oaks, a dense cluster of pines, or a conversion to upland hardwood forest is difficult to determine.

Current Conditions:

Upland pine communities are generally in excellent condition with many large longleaf pine trees and well-developed southern red oak sub-canopies. In addition to the trees listed above, other species commonly encountered are mockernut hickory (*Carya tomentosa*), common persimmon (*Diospyros virginiana*), American holly (*Ilex opaca*), sweetgum (*Liquidambar styraciflua*), southern magnolia (*Magnolia grandiflora*), blackgum (*Nyssa sylvatica*), sourwood (*Oxydendrum arboreum*), shortleaf pine (*Pinus echinata*), slash pine (*Pinus elliottii*), loblolly pine (*Pinus taeda*), sand live oak (*Quercus geminata*), laurel oak (*Quercus hemisphaerica*), water oak (*Quercus nigra*), and post oak (*Quercus stellata*).

A few other shrubs are common such as red buckeye (*Aesculus pavia*), chinquapin (*Castanea pumila*), littleleaf buckbrush (*Ceanothus microphyllus*), yaupon (*Ilex vomitoria*), sand blackberry (*Rubus cuneifolius*), sassafras (*Sassafras albidum*), horse sugar (*Symplocos tinctoria*), eastern poison oak (*Toxicodendron pubescens*), and Adam's needle (*Yucca filamentosa*).

Most upland pine at BRSF has a dense groundcover of wiregrass along with these other common herbs: broomsedge bluestem (*Andropogon virginicus*), gopherweed (*Baptisia lanceolata*), soft greeneyes (*Berlandiera pumila*), coastalplain chaffhead (*Carphephorus corymbosus*), vanillaleaf (*Carphephorus odoratissimus*), sensitive pea (*Chamaecrista nictitans*), tread softly (*Cnidioscolus stimulosus*), greater tickseed (*Coreopsis major*), toothache grass (*Ctenium aromaticum*), downy danthonia (*Danthonia sericea*), dwarf sundew (*Drosera brevifolia*), tall elephantsfoot (*Elephantopus elatus*), dogtongue wild buckwheat (*Eriogonum tomentosum*), button rattlesnakemaster (*Eryngium yuccifolium*), roundleaf thoroughwort (*Eupatorium rotundifolium*), greater Florida spurge (*Euphorbia floridana*), stiff sunflower (*Helianthus radula*), comfortroot (*Hibiscus aculeatus*), Leggett's pinweed (*Lechea pulchella*), Eustis Lake beardtongue (*Penstemon australis*), downy phlox (*Phlox pilosa*), blackseed needlegrass (*Piptochaetium avenaceum*), narrowleaf silkgrass (*Pityopsis graminifolia*), candyrout (*Polygala nana*), bracken fern (*Pteridium aquilinum*), savannah meadowbeauty (*Rhexia alifanus*), royal snoutbean (*Rhynchosia cytisoides*), dollarleaf (*Rhynchosia reniformis*), creeping little bluestem (*Schizachyrium stoloniferum*), kidneyleaf rosinweed (*Silphium compositum*), sweet goldenrod (*Solidago odora*), lopsided indiagrass (*Sorghastrum secundum*), pineywoods dropseed (*Sporobolus junceus*), crowpoison (*Stenanthium densum*), queensdelight (*Stillingia sylvatica*), scaleleaf aster (*Symphotrichum adnatum*), squarehead (*Tetragonotheca helianthoides*), and Small's noseburn (*Tragia smallii*).

Isolated patches of disturbed upland pine may develop thickets of sassafras and shortleaf pine. In the area south of SR 4 and west of CR 191, previous efforts to remove oaks were quite effective, and large southern red oaks are rare. Longleaf pine seedlings are weedy in some areas, forming dense patches of tall, narrow, young trees.

Some historic upland pine communities have been converted to pine plantation, and areas disturbed by past silviculture activities are often similar to xeric hammock, with reduced ground cover and large oaks becoming dominant. On several recently acquired parcels, management activities have included clearcutting or thinning of planted pines and the re-introduction of longleaf pine, as well as the application of prescribed fire. These stands are mapped as "restoration upland pine." The years of fire exclusion and soil disturbance from forestry

activities have drastically reduced species richness in these stands. The groundcover is generally a shrub-dominated layer of mostly yaupon (*Ilex vomitoria*), laurel oak (*Quercus hemisphaerica*), sand blackberry (*Rubus cuneifolius*), and sparkleberry (*Vaccinium arboreum*). Herbs are usually weedy bluestems and witchgrasses, but a few clumps of remnant wiregrass and scattered herbs such as button rattlesnakemaster (*Eryngium yuccifolium*), roundleaf thoroughwort (*Eupatorium rotundifolium*), bracken fern (*Pteridium aquilinum*) and savannah meadowbeauty (*Rhexia alifanus*) persist. Weedy vines, particularly yellow jessamine, scramble over the ground.

Fire Regimes:

Fires should be frequent in upland pine, usually every 1-3 years, utilizing a combination of growing season and dormant season burns. Areas of dense pine seedling recruitment may especially need growing season fires to thin these stands.

Management Needs:

In addition to the above recommendations for prescribed burning, management concerns should focus on reducing impact to this community through the continued closure of many of the small roads crisscrossing the landscape in order to reduce erosion and invasive plant establishment. Timber thinning and timber stand improvement are utilized in order to improve habitat, groundcover and the growth of longleaf and other native pines.

O. Wet Flatwoods (Including Restoration Areas)

Description:

Wet flatwoods are forests of southern pine species with a thick shrubby understory and very sparse ground cover, or a fire maintained, sparse understory and dense ground cover of hydrophytic herbs. This community often occurs in the ecotones between mesic flatwoods and wetlands. Wet flatwoods also occur in broad, low flatlands, often in a mosaic with these communities. At BRSF, historic wet flatwoods is mapped in the flatlands associated with the Yellow River and Big Coldwater Creek. These flatwoods were generally surrounded by baygall and bottomland forest communities and intergraded with these wetlands as well as with mesic flatwoods and wet prairie.

Wet flatwoods occur on relatively flat, poorly drained land with soils that are generally 1 to 3 feet of acidic sands overlying an organic hardpan or clay layer. The hardpan substantially reduces the percolation of water below and above its surface and therefore the wet flatwoods can be inundated for 1 or more months per year.

The pine canopy typically consists of one or a combination of longleaf pine (*Pinus palustris*), slash pine (*P. elliottii*), and pond pine (*P. serotina*). The subcanopy contains scattered sweetbay (*Magnolia virginiana*), swamp bay (*Persea palustris*), loblolly bay (*Gordonia lasianthus*), cabbage palm (*Sabal palmetto*), pond cypress (*Taxodium ascendens*), dahoon (*Ilex cassine*), and/or wax myrtle (*Morella cerifera*). In addition to subcanopy species, the moderate shrub layer includes large gallberry (*Ilex coriacea*), gallberry (*Ilex glabra*), fetterbush (*Lyonia lucida*), and occasional saw palmetto (*Serenoa repens*). Some typical herbs include wiregrass (*Aristida stricta*), blue maidencane (*Amphicarpum muhlenbergianum*), and/or hydrophytic species such as coastalplain yellow-eyed grass (*Xyris ambigua*), Carolina redroot (*Lachnanthes caroliana*) and beaksedges (*Rhynchospora chapmanii*, *R. latifolia*, *R. compressa*).

Wet flatwoods appear on the 1949 aerial photographs as smooth, light gray areas dotted with scattered black dots (trees). These are in contrast to the nearby shrub bogs that have a textured appearance due to the dense woody vegetation. The wet flatwoods are nearly impossible to distinguish from mesic flatwoods, and more open areas may have actually been treeless wet prairies.

Current Conditions:

Wet flatwoods on the Yellow River Ravines and newer acquisitions in the West Boundary tracts of BRSF have mostly been converted to stands of planted slash pine and loblolly pine. There are existing wet flatwoods that do not appear to have been planted, at least recently. These are generally found in close association with baygall and bottomland communities or as low drainage areas in sand pine plantations.

The extant wet flatwoods at BRSF are generally in poor to fair condition. These areas are a mix of natural pines – longleaf pine and slash pine – and occasionally invasive pines – sand pine (*Pinus clausa*) – from adjacent planted areas. The groundcover generally consists of tall, dense shrubs and small trees of red maple (*Acer rubrum*), switchcane (*Arundinaria gigantea*), sweet pepperbush (*Clethra alnifolia*), black titi (*Cliftonia monophylla*), titi (*Cyrilla racemiflora*), large gallberry, woolly huckleberry (*Gaylussacia mosieri*), sweetbay, saw palmetto, American snowbell (*Styrax americanus*), and possumhaw (*Viburnum nudum*). Remnant herbaceous groundcover persists in a few areas, mostly in old ecotones and in possible historic wet prairie inclusions. These are areas of wiregrass, ovateleaf Indian-plantain (*Arnoglossum ovatum*), flattened pipewort (*Eriocaulon compressum*), rough boneset (*Eupatorium pilosum*), foxtail club-moss (*Lycopodiella alopecuroides*), cinnamon fern (*Osmunda cinnamomea*), royal fern (*Osmunda regalis* var. *spectabilis*), handsome harry (*Rhexia virginica*), and Virginia bunchflower (*Veratrum virginicum*).

In planted stands of slash or loblolly pines, recent management has thinned pines and reintroduced fire into the landscape. These areas are designated as “restoration wet flatwoods,” but remain highly altered with major soil disturbances from forestry operations. Shrubs and weedy vines are often dense, and diversity is low in any given area. Shrubs include red chokeberry (*Aronia arbutifolia*), black titi, woolly huckleberry (*Gaylussacia mosieri*), coastalplain St. John's wort (*Hypericum brachyphyllum*), large gallberry, gallberry, yaupon (*Ilex vomitoria*), sweetgum (*Liquidambar styraciflua*), sweetbay, swamp bay (*Persea palustris*), laurel oak (*Quercus hemisphaerica*), sawtooth blackberry (*Rubus pensilvanicus*), saw palmetto, horse sugar (*Symplocos tinctoria*), and highbush blueberry (*Vaccinium corymbosum*). Scrambling vines of yellow jessamine (*Gelsemium sempervirens*), and cat greenbrier (*Smilax glauca*) are common to abundant. Herbs include bluestems (*Andropogon* spp.), woolly witchgrass (*Dichantherium scabriusculum*), Carolina redroot (*Lachnanthes carolina*), roundleaf thoroughwort (*Eupatorium rotundifolium*), foxtail club-moss (*Lycopodiella alopecuroides*), handsome harry (*Rhexia virginica*), flattened pipewort (*Eriocaulon compressum*), orange milkwort (*Polygala lutea*), savannah meadowbeauty (*Rhexia alifanus*), fringed meadowbeauty (*Rhexia petiolata*) and coastalplain yellow-eyed grass (*Xyris ambigua*). In ecotonal areas, in particular, some good quality herbaceous cover persists, including sparse wiregrass and foxtail club-moss. Disturbances make the distinction between former wet and mesic flatwoods very difficult and stands near the Yellow River may have always had small pockets of baygall vegetation inclusions.

Fire Regimes:

Historically, the fire return interval in wet flatwoods is 3 to 10 years. For management purposes, prescribed fires may be more advisable on a 2 to 5-year cycle. This reduces woody encroachment, sustains herbaceous species, and aids in preventing heavy fuel loads that can lead to catastrophic wildfires.

Management Needs:

Prescribed burns of the surrounding mesic flatwoods should be allowed to burn across these areas every 2 to 5 years, primarily in April through June. Use of heavy equipment should be avoided as this can eliminate herbaceous groundcover and alter hydrology. Some wet flatwoods need to be converted from loblolly to slash or longleaf pine.

P. Wet Prairie (Including Restoration Areas)**Description:**

Wet prairie is an herbaceous community found on continuously wet, but not inundated, soils on somewhat flat or gentle slopes between lower lying depression marshes, shrub bogs, or dome swamps and slightly higher wet or mesic flatwoods. Trees and shrubs are absent or very sparse. It is typically dominated by dense wiregrass (*Aristida stricta*) in the drier portions, along with foxtail club-moss (*Lycopodiella alopecuroides*), cutover muhly (*Muhlenbergia expansa*), yellow butterwort (*Pinguicula lutea*), and savannah meadowbeauty (*Rhexia alifanus*). In the wetter portions, wiregrass may occur with, or be replaced by, species in the sedge family, such as plumed beaksedge (*Rhynchospora plumosa*), featherbristle beaksedge (*R. oligantha*), Baldwin's nutrush (*Scleria baldwinii*), or slenderfruit nutrush (*S. georgiana*), plus longleaf threeawn (*Aristida palustris*). Also common in wetter areas are carnivorous species, such as pitcher plants (*Sarracenia* spp.), sundews (*Drosera* spp.), butterworts (*Pinguicula* spp.), and bladderworts (*Utricularia* spp.). Other characteristic species in this community include toothache grass (*Ctenium aromaticum*), pineland rayless goldenrod (*Bigelovia nudata*), flattened pipewort (*Eriocaulon compressum*), water cowbane (*Tiedemannia filiformis* ssp. *filiformis*), and coastalplain yellow-eyed grass (*Xyris ambigua*).

BRSF has a few areas on the Yellow River Ravines tract that appear to have historically been wet prairie with few trees and currently has some remnant vegetation that supports this conclusion, including a few scattered pitcherplants and clumps of wiregrass. Some of these could possibly be considered seepage slopes, but they mostly occur in relatively flat landscapes, usually in a matrix with flatwoods type communities. Other wet prairies may have been associated with the baygalls and bottomlands in these areas, but these are difficult to distinguish from historic wet flatwoods and may have been smaller inclusions within these flatwoods.

Current Conditions:

The historic wet prairie on the Yellow River Ravines tract was planted with slash pine, and bedding is still evident. This area is now designated as "restoration wet prairie," since recent activities have removed much of this pine, returned fire to the landscape, and planted some longleaf pine (*Pinus palustris*). Seedlings of longleaf pine have suffered a high mortality rate and appear to be struggling in the saturated soil as compared to the surrounding mesic flatwoods. Dense stands of shrubs remain, and some portions of the area may have been shrub bogs in the past. These thickets are formed from black titi (*Cliftonia monophylla*), sweetbay (*Magnolia virginiana*), and other hydrophytic shrubs. Remnant areas of herbaceous cover consist of

wiregrass, flattened pipewort, tenangle pipewort (*Eriocaulon decangulare*), smallflower thoroughwort (*Eupatorium semiserratum*), pale meadowbeauty (*Rhexia mariana*), white-top pitcherplant (*Sarracenia leucophylla*), and parrot pitcherplant (*Sarracenia psittacina*). The restoration area is in fair condition with respect to its historic condition. The components of the community are present, but restoration will take many years. There is also a small inclusion of wet prairie in restoration mesic flatwoods on the east side of the Yellow River Ravines tract. This area is open and grassy and was recently burned.

Historic wet prairies on the Wolfe Creek acquisitions appear to be overgrown successional hydric shrubland/forests. There is one small area surrounding a dome swamp as well as an area flanked by mesic flatwoods and baygall that may retain some natural characteristics of wet prairie.

Fire Regimes:

Historically, the fire return interval in wet prairie is 2 to 3 years.

Management Needs:

Management of the restoration wet prairie at the Yellow River Ravines tract should focus on returning a more natural fire regime to historic wet prairie and restoring hydrology. Prescribed burning should be applied to historic wet prairie on a 2-to-3-year cycle, with frequent growing season burns as fuel and weather conditions allow. This will reduce woody encroachment, sustain herbaceous species, and aid in prevention of catastrophic wildfires.

Q. Managed Landcover Types

Pine plantations and pastures represent vegetative communities that the FFS manages as integral components of the agency's multi-use management approach. These managed communities provide both ecological benefits, such as wildlife habitat for gopher tortoises and ground and surface water filtration, as well as opportunities for generating revenue that can be used to help offset management costs. Management of plantations and pastures within BRSF is conducted to further ensure compatibility with other management goals and objectives.

1. Pine Plantation

Description:

Pine plantations mapped at BRSF are mostly converted sandhill, upland pine, and pine flatwoods, and have desired future conditions (DFC) matching those communities. A few smaller areas of planted pines occupy what are believed to be former upland hardwood and bottomland forests.

Many planted pine stands and clearcuts are classified as either successional hardwood forests or restoration natural communities, depending on the current status of the stand.

Current Conditions:

On BRSF, pine plantations on historic sandhill sites are mostly planted in sand pine (*Pinus clausa*). These stands have a variable understory of turkey oak (*Quercus laevis*), laurel oak (*Quercus hemisphaerica*), sand live oak (*Quercus geminata*), yaupon, (*Ilex vomitoria*), and American holly (*Ilex opaca*). Other sandhill remnants such as gopher apple (*Geobalanus oblongifolius*) and wiregrass (*Aristida stricta*) are found in more open stands. Some densely planted longleaf pine stands may also be included in the mapped pine plantations.

On historic upland pine sites mostly located on the Wolfe Creek and Clear Creek acquisitions and on smaller parcels on the northern side of BRSF, planted stands are typically loblolly pine (*Pinus taeda*). These usually have a dense understory of yaupon, gallberry, laurel, and water oaks, but occasionally have some remnant southern red oak (*Quercus falcata*).

On the Yellow River Ravines tract, former pine flatwoods, prairies, and occasionally bottomlands are usually planted in slash pine (*Pinus elliotii*) or loblolly pine. Although most of these areas are in a phase of restoration, some remaining areas still have dense stands, again with a dense shrubby understory that usually includes yaupon and black titi (*Cliftonia monophylla*) or may have only recently been clearcut. The Yellow River area also has thinned planted pine stands on what is believed to be former upland hardwood forest. These stands are mapped as pine plantation.

Fire Regimes:

Refer to the historic community. If the goal is restoration of the historic pyrogenic community, more frequent fire may be required than is typical for the historic community in order to reduce woody cover.

Management Needs:

Thinning of pines in historically pyrogenic sites would promote restoration to desired future conditions but planting of native species such as longleaf pine and wiregrass, as well as frequent prescribed burns, would provide the greatest benefit. In loblolly and slash plantations, prescribed fire is typically introduced after the first thinning to reduce pine mortality while reducing woody competition well before it is time to clearcut and replant. In areas with good quality ground cover, especially where wiregrass is present, ensure proper herbicides and rates are utilized to reduce shrub and grass competition when planting longleaf pines. Priority should be given to burning areas of higher quality groundcover, using frequent growing-season fires to encourage herbaceous species, especially wiregrass, to reproduce naturally.

Thinning or removal of pines in historically upland hardwood forest sites could promote the restoration to upland hardwood forest.

2. Improved Pasture

Description:

Dominated by planted non-native or domesticated native forage species and evidence of current or recent pasture activity and/or cultural treatments (mowing, grazing, burning, fertilizing; Agro-Ecology Grazing Issues Working Group 2009). Improved pastures have been cleared of their native vegetation. Most improved pastures in Florida are planted with bahiagrass (*Paspalum notatum*) and to a lesser extent with Bermudagrass (*Cynodon dactylon*) or pangolagrass (*Digitaria eriantha*). Weedy native species are often common in improved pastures in Florida and include dogfennel (*Eupatorium capillifolium*), many species of flatsedge (*Cyperus* spp.), carpetgrasses (*Axonopus* spp.), crabgrasses (*Digitaria* spp.), and rustweed (*Polypremum procumbens*) among many others.

Current Conditions:

Improved pasture on Blackwater River State Forest occupies areas that have been stripped of most or all native vegetation and replanted in pasture grasses. This community has heavy disturbance from cattle, hydrology alterations, ditching, clearing and non-native invasive plant establishment. Most such areas appear to be GIS boundary overlaps with private lands. Refer to the community description heading for each of these communities individually.

Fire Regimes:

Refer to the fire regimes for the appropriate historic natural community in which the improved pasture is located.

Management Needs:

Improved pastures have undergone enormous alteration from the natural state. Intensive groundcover restoration would be needed if the goal is to return these to sandhill or upland mixed woodland. Currently, the improved pastures are not leased and are maintained by mowing and invasive plant control.

R. Altered Landcover Types**Description:**

Altered landcover types are areas where the natural community has been overwhelmingly altered as a result of human activity. The ruderal areas described in this section are often not appropriate areas for restoration. If restoration is desired, the target future condition of the ruderal habitat is dependent on the historic community. Please refer to the appropriate community type for a more specific explanation of the desired future condition.

Current Conditions:

At BRSF, ruderal areas include agriculture, artificial pond, borrow areas, canal / ditch, clearings, developed areas, impoundments, roads, successional hardwood forests, successional hydric forests / shrubland, utility corridors, and wildlife food plots.

Agriculture (982 acres) – Row crops, citrus groves, and sod fields that are generally being maintained to grow products for human or domesticated animal use. On BRSF, areas of tree farms, fish hatcheries, and GIS boundary overlaps with private agriculture fields are included in this category.

Artificial pond (2 acres) – Water retention ponds, cattle ponds, etc. A single pond is mapped on the forest, but this may be an impoundment or borrow area.

Borrow area (136 acres) – Several abandoned sand pits occur on the property with the largest found on the Clear Creek acquisition. Some smaller depressions that appear to be artificial in origin are mapped as inclusions within larger areas of former sandhill and wet flatwoods. These could be described as successional hydric shrubland/forest with some open water and young red maple (*Acer rubrum*), black titi (*Cliftonia monophylla*), and sweetbay (*Magnolia virginiana*).

Canal/ditch (3 acres) – Artificial linear drainage ways. Blackwater River State Forest has several large erosion gullies. These are mostly mapped as inclusions with larger areas, but one particularly large gully is apparent on aerial photographs and mapped separately.

Clearing (796 acres) – The forestry activities necessary to thin or remove off-site pines on former pine plantations require staging areas throughout these portions. Such clearings were mapped where evident on current aerial photography but are known to be more numerous based on field surveys. Other clearings of unknown origin were delineated as well, some of which may be wildlife food plots.

Developed (243 acres) – Multiple areas with existing structures and associated cleared land were mapped as developed areas.

Impoundment (685 acres) – Small seepage streams that are blocked by roads or dammed by beaver activity may form shallow ponds. There are also several recreational lakes created by artificial dams.

Road (1,371 acres) – All forest roads and some service roads (> 5m wide) are mapped. Additional vehicle trails are located throughout the forest.

Successional Hardwood Forest (4,023 acres) – Successional hardwood forests are defined as closed-canopied forests dominated by fast growing hardwoods such as laurel oak (*Quercus hemisphaerica*), water oak (*Quercus nigra*), and/or sweetgum (*Liquidambar styraciflua*), often with remnant pines. These forests are either invaded natural habitat (i.e., mesic flatwoods, sandhill, upland pine, upland mixed woodland) due to lengthy fire-suppression or old fields that have succeeded to forest.

Successional Hydric Forest / Shrubland (1,847 acres) – Successional hydric shrubland/forest is a dense stand of shrubs or a closed-canopy forest dominated by fast growing hydrophilic hardwoods such as titi (*Cyrilla racemiflora*), black titi (*Cliftonia monophylla*), sweet gallberry (*Ilex coriacea*), sweet gum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), water oak (*Quercus nigra*), swamp laurel oak (*Quercus laurifolia*), wax myrtle (*Morella cerifera*), blackberry (*Rubus pensilvanicus*), and groundsel tree (*Baccharis halimifolia*). These shrubland/forests may invade herbaceous habitats (i.e., wet prairie, wet flatwoods, seepage slope, marsh) due to lengthy fire-suppression and/or hydrological alterations or forested wetlands (dome swamp, basin swamp, strand swamp) that have been cleared and are not succeeding to swamp but to highly disturbed shrubland or forest dominated by hydrophilic hardwoods.

Utility corridor (810 acres) – Gas transmission corridors and powerline right of ways. Vegetation in these areas is kept mowed and is a mix of usually weedy native species.

Wildlife food plot (411 acres) – Planted or unplanted areas to benefit wildlife or game species; includes dove fields; if not maintained these areas are often dominated by weedy native and non-native species.

Fire Regimes:

Refer to the historic community. Implementing a 2-to-4-year fire rotation with the surrounding communities would be beneficial where fuels are appropriate.

Management Needs:

It may not be practical or desirable to restore some of the altered landcover types (e.g., developed land, roads, etc.) to the historic natural community. However, long term hydrology restoration

that includes the removal of certain roadbeds and ditches would be highly beneficial to the natural communities on the site.

VIII. References

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IX. Glossary of Abbreviations

ARC.....	Acquisition and Restoration Council
ARM.....	Archeological Resource Management
BMAP.....	Basic Management Action Plan
BMP.....	Best Management Practice
BOT.....	Board of Trustees
BRSF.....	Blackwater River State Forest
DFC.....	Desired Future Condition
DHR.....	Division of Historical Resources
DOT.....	Department of Transportation
DSL.....	Division of State Lands
DSO.....	Direct Support Organization
EEA.....	Environmental Enhancement Area
EPA.....	Environmental Protection Agency

F.A.C.	Florida Administrative Code
FDACS	Florida Department of Agriculture and Consumer Services
FDEP	Florida Department of Environmental Protection
FFS	Florida Forest Service
FFSF	Friends of the Florida Forest Service
FNAI	Florida Natural Areas Inventory
F.S.	Florida Statutes
FWRI	FWC Fish and Wildlife Research Institute
FWC	Florida Fish and Wildlife Conservation Commission
ICS	Incident Command System
NAS	Naval Air Station, Whiting Field
NRCS	Natural Resources Conservation Service
NWFWMD	Northwest Florida Water Management District
OALE	DACS Office of Agricultural Law Enforcement
OFW	Outstanding Florida Waters
OHM	Off-Highway Motorcycle
OHV	Off-Highway Vehicle
OOF	Operation Outdoor Freedom
SCS	Soil Conservation Service
SFI	Sustainable Forestry Initiative
SHCA	Strategic Habitat Conservation Area
SMZ	Special Management Zone
TIITF	Board of Trustees of the Internal Improvement Trust Fund
TMDL	Total Maximum Daily Load
UERP	The Uplands Ecosystem Restoration Program
USFS	U.S. Forest Service
WMA	Wildlife Management Area

**BLACKWATER RIVER STATE FOREST
2025 LAND MANAGEMENT PLAN**

EXHIBITS

Exhibit A

Twelve-Year Management Accomplishment Summary

**Blackwater River State Forest
12-Year Accomplishments Summary**

Site Preparation	Number	Acres
Chop Single Pass	230	N/A
Chop Double Pass	51	N/A
Burning	N/A	3,604
Mowing	N/A	200
Herbicide	N/A	2,049
Other	N/A	115
Planting	Number	Acres
Longleaf Bareroot	649,044	231
Slash Bareroot	1,452	2
Longleaf Containerized	3,625,156	4,092
Seedling Survival Checks	Number	Acres
Planting Checks	N/A	7,975
Timber Stand Improvement	Number	Acres
Herbicide Treatment	N/A	4,416
Mechanical Treatment	N/A	294
Mowing	N/A	564
Timber Sales	Tons	Acres
Marking	N/A	9,887
Cruising	N/A	22,574
Harvest	617,904	36,947
Timber Inventory	Number	Acres
Inventory Update	N/A	180,300
Plots	N/A	10,550
Invasive Control	Number	Acres
Air Potato	N/A	0.1
Autumn Olive	N/A	20.4
Bamboo	N/A	7.8
Callery Pear	N/A	3,707.70
Camphortree	N/A	5.3
Chinaberry	N/A	61.7
Chinese Tallowtree	N/A	371.2
Cogongrass	N/A	1,912
Earleaf Acacia	N/A	0.5
Japanese Climbing Fern	N/A	6,795.90
Japanese Honeysuckle	N/A	18.8
Kudzu	N/A	150.90

Mimosa	N/A	256.1
Multiflora Rose	N/A	0.20
Nandina Domestica	N/A	0.3
Chinese Privet	N/A	1,665.15
Showy Crotalaria	N/A	273.5
Silverthorn	N/A	1.00
Skunk Vine	N/A	16.3
Sword Fern	N/A	273.50
Torpedograss	N/A	161.9
Trifoliolate Orange	N/A	0.50
Tropical Soda Apple	N/A	59.6
Tung Oil Tree	N/A	71.30
Chinese Wisteria	N/A	293.6
Fire	Number	Acres
Wildfire	171	9,492.10
Prescribed Burning	N/A	769,585
Recreation	Number	Acres
Day Use Estimated Forest Visitors	27,095,402	N/A
Overnight Camping (Full Facility)	723,604	N/A
Overnight Camping (Primitive)	70,804	N/A
Annual Entrance Pass	586	N/A
Annual OHV / Motorcycle Permits	1,642	N/A
Day / 3 Day OHV / Motorcycle Permits	5,936	N/A
Commercial Vendor Permits	3,185	N/A
Roadwork	Number	Miles
Roads Constructed	N/A	26.6
Roads Graded	N/A	7,776
Roads Rebuilt	N/A	901.8
Bridge Built	13	N/A
Bridge Repaired	89	N/A
Culverts Installed	141	N/A
Low Water Crossing	25	N/A
Trail Maintenance	N/A	209
Other	5	N/A
Boundary Maintenance	Number	Miles
Maintenance / Marking	N/A	364
I&E Activities	Number	Acres
Programs / Tours	547	N/A
OOF Hunts	6	N/A
Radio / TV Articles	145	N/A

Other Activities	Number	Acres
Midstory Hardwood Control (NFWF)	N/A	150
Native Grass Planting (NFWF)	N/A	80
Pine Seed Planting	167	N/A
Archaeological Sites Monitored	245	N/A
Old Boundary Removal	2	N/A

Exhibit B

Boundary and Roads Map



Florida Forest Service

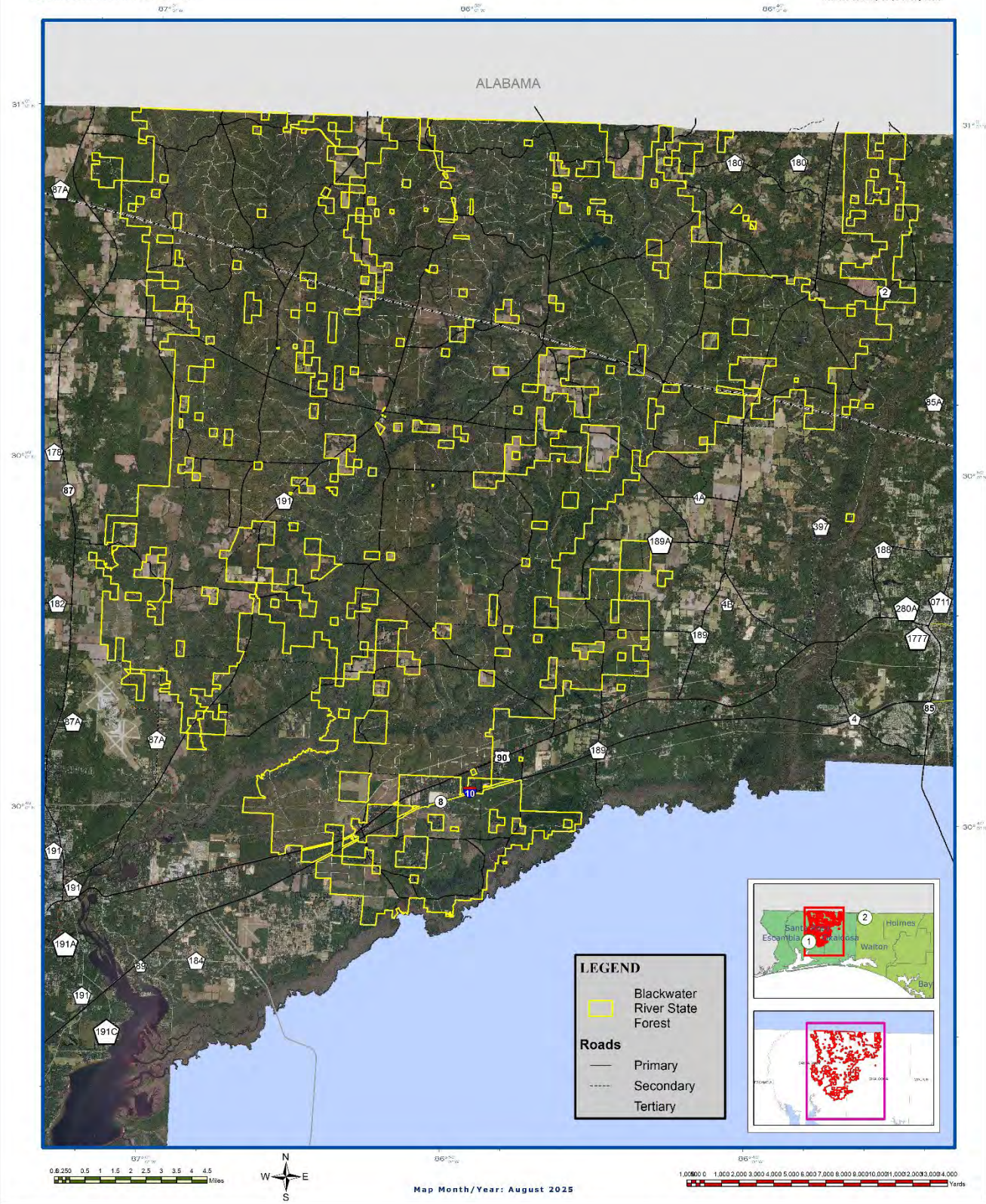
Blackwater River State Forest

Boundary and Roads Map

Coordinate System: Florida Alabama
High Accuracy Reference Network (HARN) Datum

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Blackwater River State Forest is located in the southeastern part of the Florida Panhandle in the counties of Escambia, Santa Rosa, and Walton. The Blackwater River flows through the forest from the north to the south.



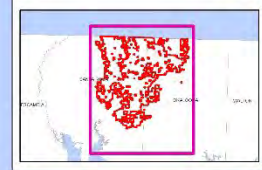
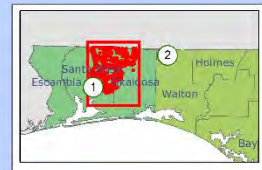
ALABAMA

LEGEND

Blackwater River State Forest

Roads

- Primary
- Secondary
- Tertiary



Map Month/Year: August 2025

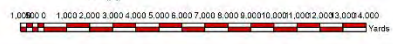


Exhibit C

Optimal Management Boundary Map



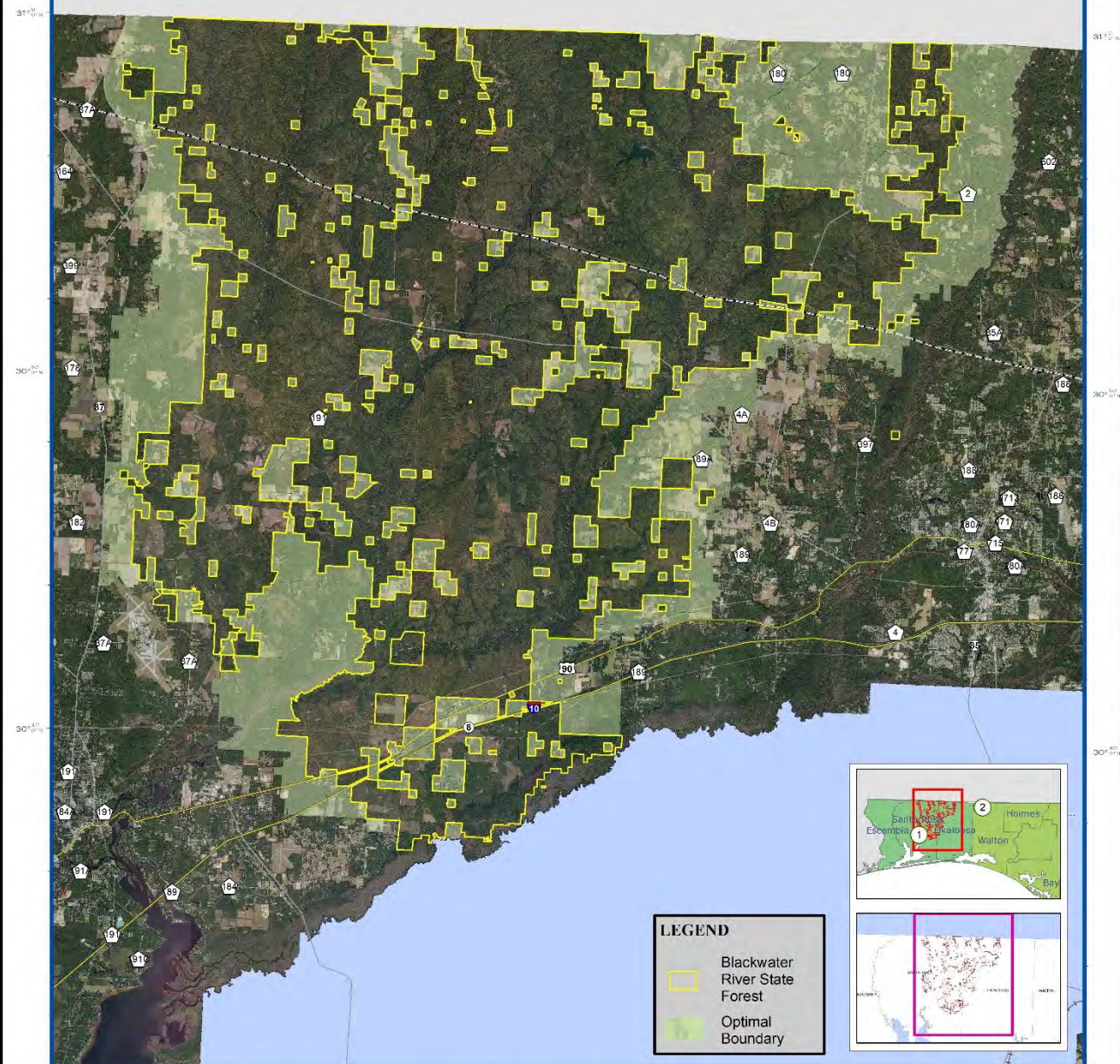
Florida Forest Service

Blackwater River State Forest Optimal Management Boundary Map

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Managed Area Boundaries: courtesy of the Florida Forest Service, developed primarily using Digital State (FDS) data from the US Army Corps of Engineers.

Coordinate System: Florida-Alabama
High Accuracy Reference Network (HARN) Datum

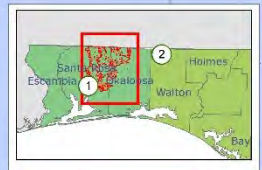
87° 00' 00" W 86° 00' 00" W 85° 00' 00" W



ALABAMA

LEGEND

- Blackwater River State Forest
- Optimal Boundary



Map Month/Year: August 2025



Exhibit D

Facilities, Recreation, and Improvements Map



Florida Forest Service

Blackwater River State Forest

Facilities, Recreation, and Improvements Map

Coordinate System: Florida Alabama
High Accuracy Reference Network (HARN) Datum

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Map Area Boundaries: courtesy of the Florida State of Data Services. Formerly USGS Data File (FDS) from the US Army Corps of Engineers.

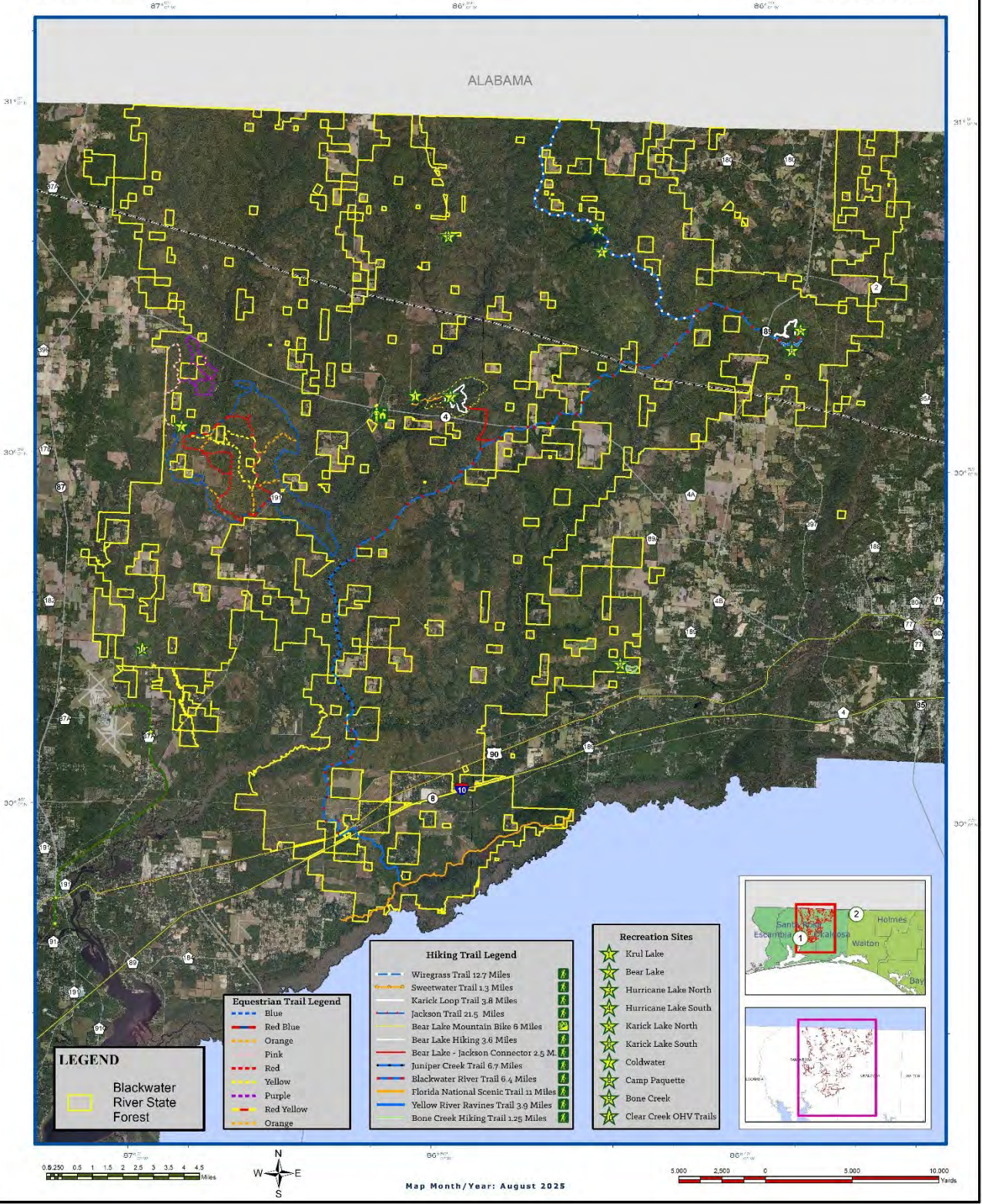


Exhibit E

Tract and Acreage Map

Legend

	Blackwater River State Forest
	Wolfe Creek Forest, Ellis Creek Tract, 2024 Legacy Closing, 1,544 Acres
	Wolfe Creek Forest, Peaden Tract, 2024 Legacy Closing, 40.7 Acres
	Wolfe Creek Forest, Pridgen Tract, 2024 Legacy Closing, 102 Acres
	Wolf Creek Forest, Kingfisher Timber Tract, 2019 Legacy Closing, 1,272 Acres
	Wolfe Creek Forest, Tupelo Timberlands Tract, 2021 Legacy Closing, 1,699.57 Acres
	Wolfe Creek Forest, Kingfisher 2022, 2022 Legacy Closing, 3,680 Acres
	Wolfe Creek Forest, Paddle Trail Tract, 2023 Legacy Closing, 1,486 acres
	Wolfe Creek Forest Springhill Tract, 2018 Legacy Closing, 799 Acres
	Gulf Coastal Longleaf Initiative Redesign, 2021 Legacy Closing, 2,115 Acres
	Coldwater Tract
	Yellow River Tract
	Horse Creek Tract
	Juniper Tract
	Rock Creek Tract
	Sweetwater Tract
	West Boundary Tract
	Floridale Tract
	Bone Creek Tract

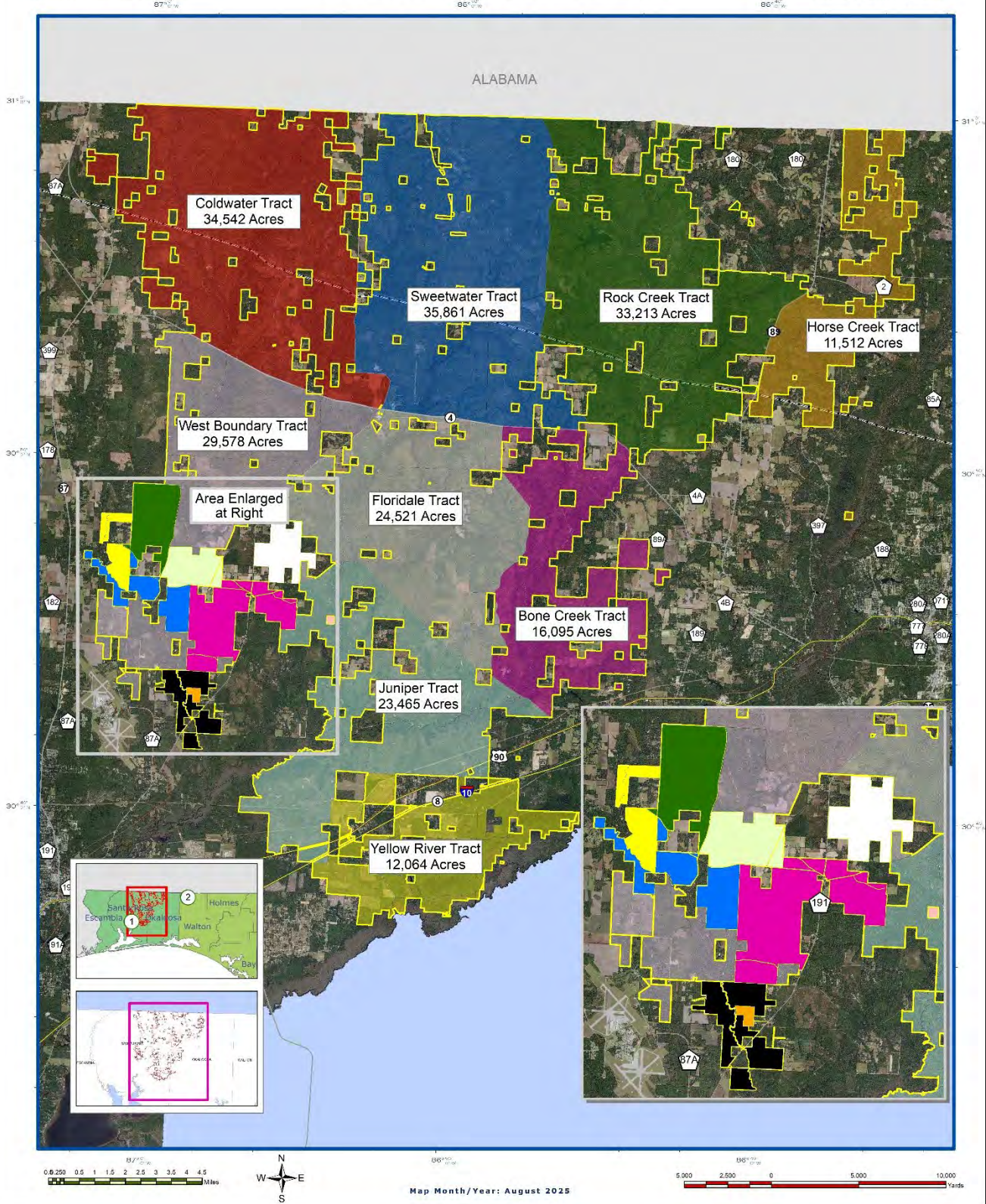


Florida Forest Service

Blackwater River State Forest Tract and Acreage Map Total Acres: 226,509.21 Acres

DISCLAIMER:
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Coordinate System: Florida Albers
High Accuracy Reference Network (HARN) Datum



Map Month/Year: August 2025

Exhibit F

Proximity
to
Significant Managed Lands Map



Florida Forest Service

Blackwater River State Forest

Proximity to Significant Managed Lands Map

Coordinate System: Florida Albers
High Accuracy Reference Network (HARN) Datum

DISCLAIMER:
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Map Scale: 1:50,000
Produced by the Florida Forest Service
Florida Department of Natural Resources
Tallahassee, Florida 32304

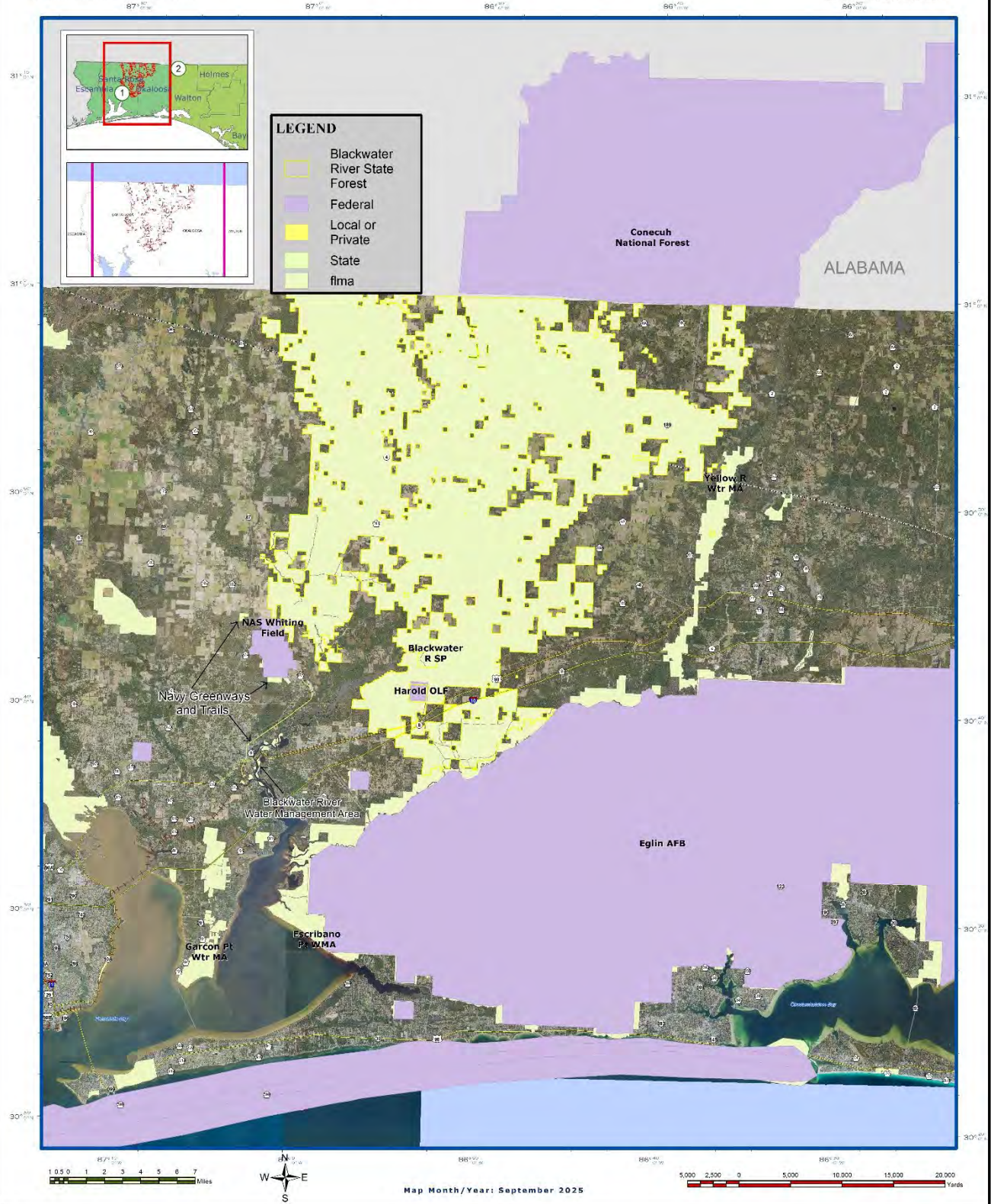


Exhibit G

Florida Forever Projects

Exhibit G

Clear Creek / Whiting Field Phase I

Santa Rosa County

Clear Creek/Whiting Field

Partnerships and Regional Incentives
Santa Rosa County

<i>Year Added to Priority List</i>	2004
<i>Project Acres</i>	5,045
<i>Acquired Acres</i>	2,178
<i>Cost of Acquired Acres</i>	\$6,258,258
<i>Remaining Project Acres</i>	2,867
<i>2021 Assessed Value of Remaining Acres</i>	\$14,125,867

Purpose for State Acquisition

The Clear Creek/Whiting Field project will support conservation and regional protection through the creation of a significant wildlife corridor between conservation lands. The project will provide open space in an urbanizing area and protect habitat for native and imperiled species. The project will also stabilize the land uses around the Whiting Field Naval Air Station to forestall encroachment that could be incompatible with the continued function of this military installation.

General Description

The project is three miles north of the Blackwater River Wildlife Management Area, 12 miles east of the Lower Escambia River Wildlife Management Area and 8 miles north of the Yellow River Wildlife Management Area. The project is close to the city of Milton. It adjoins Whiting Field, the Naval Air Station used to train Navy pilots on T-34 aircraft and helicopters. Most of the project is upland pine forests, sandhills, mature and young pine plantations, recent clear-cuts and agricultural lands. The upland pine forests and sandhills are in various stages of selective harvest. Narrow bands of upland hardwood forest occur on the slopes of the two creeks. Approximately 5 percent of the site is in a Strategic Habitat Conservation Area.



FNAI Element Occurrence Summary

<u>FNAI Elements</u>	<u>Score</u>
Florida black bear	G5T4/S4
<i>hairy-peduncled beaksedge</i>	G3/S3
<i>Panhandle lily</i>	G3/S3
<i>trailing arbutus</i>	G5/S2

Public Use

Potential recreational uses include canoeing, camping, hiking, biking, wildlife observation, environmental education, nature photography and scientific research. Hunting may also be done in some areas. The site is particularly appropriate for extending the Blackwater River Heritage State Trail to expand the growing recreational trail network in this region.

Acquisition Planning

2004

On June 4, 2004, the Acquisition and Restoration Council added the Clear Creek/Whiting Field project to Group B of the 2004 Florida Forever Interim Priority List. This fee-simple acquisition, sponsored by The Nature Conservancy, consisted of approximately 5,026 acres, 45 landowners and a taxable value of \$1,648,733.

2005

On December 9, 2005, the Acquisition and Restoration Council approved a project design change to allow acquisition phasing. Phase I was added to Group A, consisting of seven landowners, approximately 2,029 acres and a taxable value of \$665,593. The ownership acreage is as follows: International Paper Company (1,154 acres); Phillips (121 acres); Leonard (160 acres); Florimor Inc. (320 acres); Blue Sky (120 acres); Lowery (74 acres); and Jernigan (80 acres).

Phase II remained in Group B, consisting of 38 landowners and about 2,996 acres with a taxable value of \$982,808.

2006

On June 9, 2006, the Acquisition and Restoration Council moved the Group B portion of this project to Group A.

2008

On December 12, 2008, the Acquisition and Restoration Council voted to amend the boundary by adding Coldwater Creek Addition, consisting of two parcels totaling 265 acres owned by The Nature Conservancy, with a tax-assessed value of \$28,167. The acquisition is proposed fee-simple, and the parcels were approved as essential.

2009

On March 10, 2009, 210.48 acres were purchased from The Nature Conservancy for \$1,158,258 (with the help of the U.S. Navy).





On September 30, 2009, 1,401 acres were purchased from The Nature Conservancy by Florida Forever (\$2,625,000), Florida Forest Service/Incidental Trust Fund (\$1,200,000), a.k.a. off-highway vehicle funds, and the U.S. Navy and U.S. Department of Justice (\$1,275,000).

2011

On June 30, 2011, the Division of State Lands purchased 172.59 acres to be managed by the Florida Forest Service.

On December 9, 2011, the Acquisition and Restoration Council placed this project in the Partnerships and Regional Incentives category.

2012

On August 17, 2012, the Acquisition and Restoration Council removed 163 acres from the project because staff analysis found these lands were either developed or not contiguous to the project.

Coordination

Acquisition partners are the U.S. Navy, Santa Rosa County, DEP's Office of Greenways and Trails and Florida Forest Service. Developing the management plan will be conducted with the project partners (Whiting Field, Florida Forest Service and Santa Rosa County).

Management Policy Statement

The Division of Recreation and Parks proposes to manage the project with the Florida Forest Service, Whiting Field and Santa Rosa County to: protect habitat for native and imperiled species; protect water quality in wetlands and surface waters, notably Clear Creek and Coldwater Creek; provide interpretive and recreation activities consistent with resource protection, including development of a multi-use loop trail surrounding Whiting Field and connecting to the northern terminus of the existing Blackwater Heritage State Trail; and protect archaeological and historical sites. In general, the project area will be managed to protect its environmental and natural resource values, drawing upon its natural characteristics to provide appropriate recreation opportunities, and enhancing other adjacent managed lands, such as Whiting Field and the Blackwater River State Forest. The project will be managed consistent with the appropriate goals and objectives of Florida Forever, as well as consistent with other projects that are part of the statewide system of greenways and trails.

Manager(s)

The Division of Recreation and Parks will accept management responsibility for the Clear Creek project.

Management Prospectus

Qualifications for State Designation

The project will protect a conservation landscape adjacent to a vital military training facility, Whiting Field. More than half of the project area lies within an identified Priority Ecological Greenway and a portion lies within a High Priority Segment of the Florida Recreational Trails Network Opportunities (the Blackwater Multi-Use Trail). This project will help enhance the resource and recreation value of the adjacent Blackwater River State Forest, Blackwater Heritage State Trail and State Designated Coldwater Creek





Canoe Trail. Coldwater Creek and Clear Creek are also tributaries to the Blackwater River which ultimately flows into Blackwater Bay, an Outstanding Florida Water.

Conditions Affecting Intensity of Management

In general, the property does not appear to require intense management beyond that typically associated with a managed greenway or trail project. But the intensity of long-term management will depend on the ability to acquire as intact an area surrounding Whiting Field as possible. Areas with adjacent residential properties will require more management.

The intensity of management will increase as recreation facilities and trails are developed and public usage increases. Other issues that will determine intensity of management include exotic plant removal, with particular attention to areas where imperiled species exist; water quality protection and enhancement, particularly related to Clear Creek; and protecting archaeological sites and historical structures.

Management Implementation, Public Access, Site Security and Protection of Infrastructure

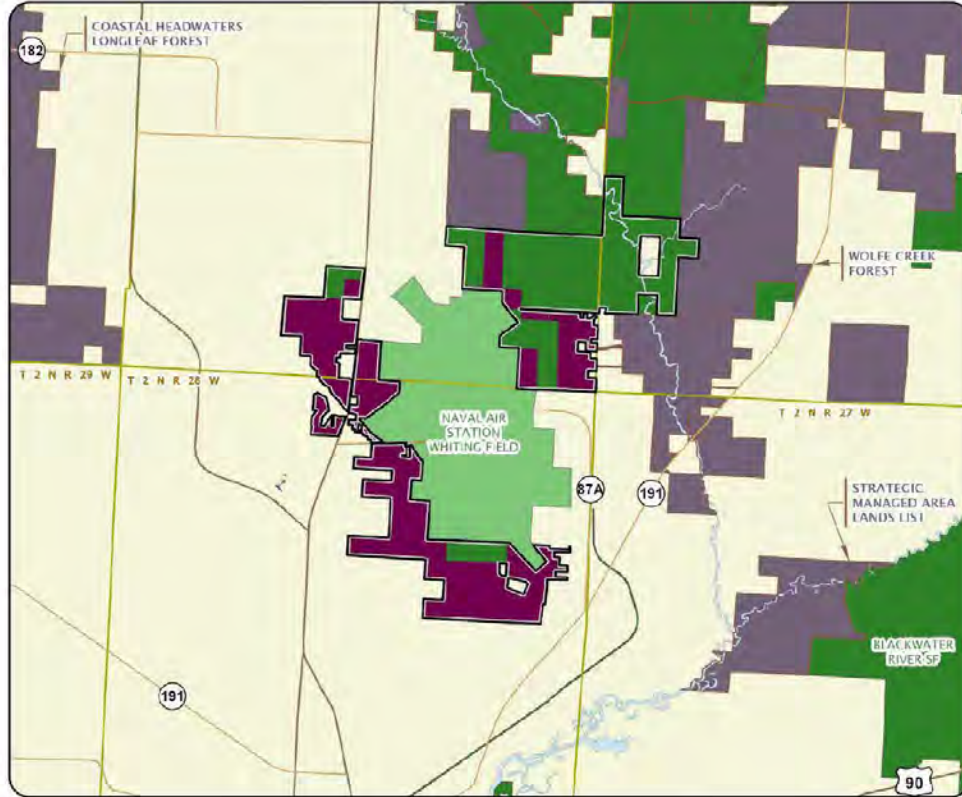
Following acquisition, issues to be addressed in the first year would include site security, posting boundaries and fencing, and conducting assessments/inventories to better determine resource management needs. Those needs include invasive plant removal, water quality enhancement and protection, protection of archaeological sites and historic structures, and prescribed burn needs.

Intermediate and long-term management will address the broader issue of managing the area for resource protection and recreation opportunities as described in the "General Scope of Management" above. Development of the management plan will be conducted in coordination with the project partners (Whiting Field, Florida Forest Service and Santa Rosa County).

Revenue-generating Potential

No significant revenue is expected to be generated initially. However, as public use is increased, modest revenue may be generated for camping and use of other recreational facilities. Some areas may be managed by the Florida Forest Service for timber production.





CLEAR CREEK/WHITING FIELD

SANTA ROSA COUNTY

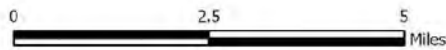


Exhibit G

Clear Creek / Whiting Field Phase II

Santa Rosa County

Clear Creek/Whiting Field

Partnerships and Regional Incentives
Santa Rosa County

<i>Year Added to Priority List</i>	2004
<i>Project Acres</i>	5,045
<i>Acquired Acres</i>	2,178
<i>Cost of Acquired Acres</i>	\$6,258,258
<i>Remaining Project Acres</i>	2,867
<i>2021 Assessed Value of Remaining Acres</i>	\$14,125,867

Purpose for State Acquisition

The Clear Creek/Whiting Field project will support conservation and regional protection through the creation of a significant wildlife corridor between conservation lands. The project will provide open space in an urbanizing area and protect habitat for native and imperiled species. The project will also stabilize the land uses around the Whiting Field Naval Air Station to forestall encroachment that could be incompatible with the continued function of this military installation.

General Description

The project is three miles north of the Blackwater River Wildlife Management Area, 12 miles east of the Lower Escambia River Wildlife Management Area and 8 miles north of the Yellow River Wildlife Management Area. The project is close to the city of Milton. It adjoins Whiting Field, the Naval Air Station used to train Navy pilots on T-34 aircraft and helicopters. Most of the project is upland pine forests, sandhills, mature and young pine plantations, recent clear-cuts and agricultural lands. The upland pine forests and sandhills are in various stages of selective harvest. Narrow bands of upland hardwood forest occur on the slopes of the two creeks. Approximately 5 percent of the site is in a Strategic Habitat Conservation Area.



FNAI Element Occurrence Summary

<u>FNAI Elements</u>	<u>Score</u>
Florida black bear	G5T4/S4
<i>hairy-peduncled beaksedge</i>	G3/S3
<i>Panhandle lily</i>	G3/S3
<i>trailing arbutus</i>	G5/S2

Public Use

Potential recreational uses include canoeing, camping, hiking, biking, wildlife observation, environmental education, nature photography and scientific research. Hunting may also be done in some areas. The site is particularly appropriate for extending the Blackwater River Heritage State Trail to expand the growing recreational trail network in this region.

Acquisition Planning

2004

On June 4, 2004, the Acquisition and Restoration Council added the Clear Creek/Whiting Field project to Group B of the 2004 Florida Forever Interim Priority List. This fee-simple acquisition, sponsored by The Nature Conservancy, consisted of approximately 5,026 acres, 45 landowners and a taxable value of \$1,648,733.

2005

On December 9, 2005, the Acquisition and Restoration Council approved a project design change to allow acquisition phasing. Phase I was added to Group A, consisting of seven landowners, approximately 2,029 acres and a taxable value of \$665,593. The ownership acreage is as follows: International Paper Company (1,154 acres); Phillips (121 acres); Leonard (160 acres); Florimor Inc. (320 acres); Blue Sky (120 acres); Lowery (74 acres); and Jernigan (80 acres).

Phase II remained in Group B, consisting of 38 landowners and about 2,996 acres with a taxable value of \$982,808.

2006

On June 9, 2006, the Acquisition and Restoration Council moved the Group B portion of this project to Group A.

2008

On December 12, 2008, the Acquisition and Restoration Council voted to amend the boundary by adding Coldwater Creek Addition, consisting of two parcels totaling 265 acres owned by The Nature Conservancy, with a tax-assessed value of \$28,167. The acquisition is proposed fee-simple, and the parcels were approved as essential.

2009

On March 10, 2009, 210.48 acres were purchased from The Nature Conservancy for \$1,158,258 (with the help of the U.S. Navy).





On September 30, 2009, 1,401 acres were purchased from The Nature Conservancy by Florida Forever (\$2,625,000), Florida Forest Service/Incidental Trust Fund (\$1,200,000), a.k.a. off-highway vehicle funds, and the U.S. Navy and U.S. Department of Justice (\$1,275,000).

2011

On June 30, 2011, the Division of State Lands purchased 172.59 acres to be managed by the Florida Forest Service.

On December 9, 2011, the Acquisition and Restoration Council placed this project in the Partnerships and Regional Incentives category.

2012

On August 17, 2012, the Acquisition and Restoration Council removed 163 acres from the project because staff analysis found these lands were either developed or not contiguous to the project.

Coordination

Acquisition partners are the U.S. Navy, Santa Rosa County, DEP's Office of Greenways and Trails and Florida Forest Service. Developing the management plan will be conducted with the project partners (Whiting Field, Florida Forest Service and Santa Rosa County).

Management Policy Statement

The Division of Recreation and Parks proposes to manage the project with the Florida Forest Service, Whiting Field and Santa Rosa County to: protect habitat for native and imperiled species; protect water quality in wetlands and surface waters, notably Clear Creek and Coldwater Creek; provide interpretive and recreation activities consistent with resource protection, including development of a multi-use loop trail surrounding Whiting Field and connecting to the northern terminus of the existing Blackwater Heritage State Trail; and protect archaeological and historical sites. In general, the project area will be managed to protect its environmental and natural resource values, drawing upon its natural characteristics to provide appropriate recreation opportunities, and enhancing other adjacent managed lands, such as Whiting Field and the Blackwater River State Forest. The project will be managed consistent with the appropriate goals and objectives of Florida Forever, as well as consistent with other projects that are part of the statewide system of greenways and trails.

Manager(s)

The Division of Recreation and Parks will accept management responsibility for the Clear Creek project.

Management Prospectus

Qualifications for State Designation

The project will protect a conservation landscape adjacent to a vital military training facility, Whiting Field. More than half of the project area lies within an identified Priority Ecological Greenway and a portion lies within a High Priority Segment of the Florida Recreational Trails Network Opportunities (the Blackwater Multi-Use Trail). This project will help enhance the resource and recreation value of the adjacent Blackwater River State Forest, Blackwater Heritage State Trail and State Designated Coldwater Creek





Canoe Trail. Coldwater Creek and Clear Creek are also tributaries to the Blackwater River which ultimately flows into Blackwater Bay, an Outstanding Florida Water.

Conditions Affecting Intensity of Management

In general, the property does not appear to require intense management beyond that typically associated with a managed greenway or trail project. But the intensity of long-term management will depend on the ability to acquire as intact an area surrounding Whiting Field as possible. Areas with adjacent residential properties will require more management.

The intensity of management will increase as recreation facilities and trails are developed and public usage increases. Other issues that will determine intensity of management include exotic plant removal, with particular attention to areas where imperiled species exist; water quality protection and enhancement, particularly related to Clear Creek; and protecting archaeological sites and historical structures.

Management Implementation, Public Access, Site Security and Protection of Infrastructure

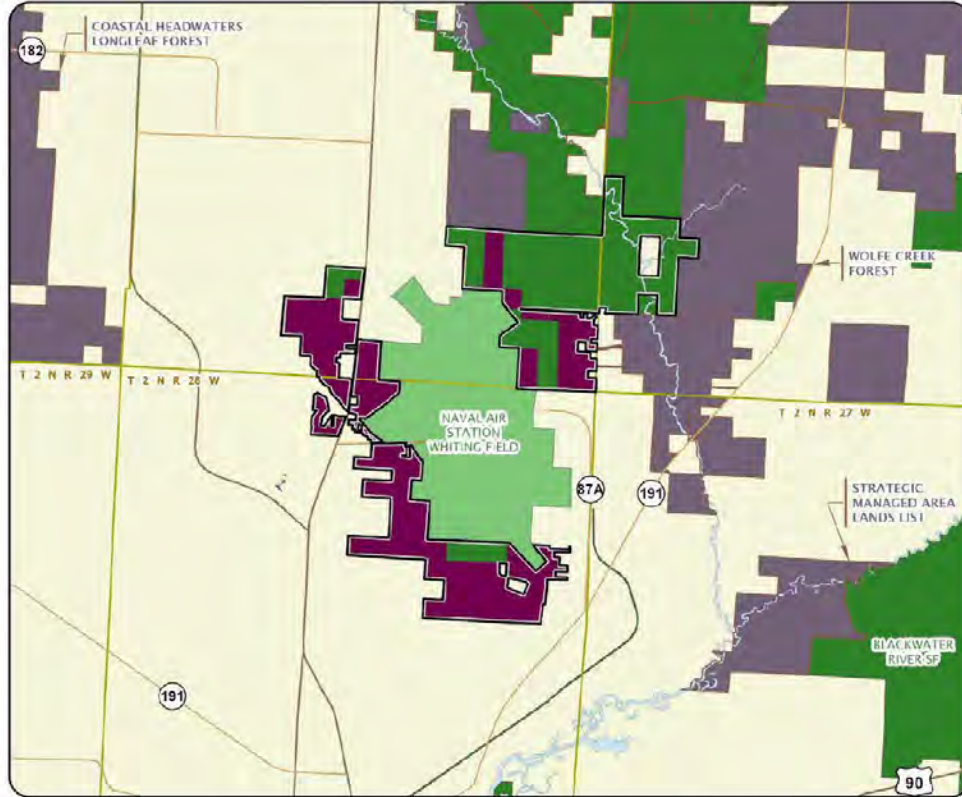
Following acquisition, issues to be addressed in the first year would include site security, posting boundaries and fencing, and conducting assessments/inventories to better determine resource management needs. Those needs include invasive plant removal, water quality enhancement and protection, protection of archaeological sites and historic structures, and prescribed burn needs.

Intermediate and long-term management will address the broader issue of managing the area for resource protection and recreation opportunities as described in the "General Scope of Management" above. Development of the management plan will be conducted in coordination with the project partners (Whiting Field, Florida Forest Service and Santa Rosa County).

Revenue-generating Potential

No significant revenue is expected to be generated initially. However, as public use is increased, modest revenue may be generated for camping and use of other recreational facilities. Some areas may be managed by the Florida Forest Service for timber production.





CLEAR CREEK/WHITING FIELD

SANTA ROSA COUNTY

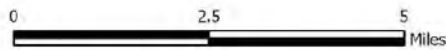


Exhibit G

Coastal Headwaters Longleaf Forest

Santa Rosa County

Coastal Headwaters Longleaf Forest

Less-Than-Fee

Escambia and Santa Rosa Counties

<i>Year Added to Priority List</i>	2014
<i>Project Acres</i>	99,544
<i>Acquired Acres</i>	2,109
<i>Cost of Acquired Acres</i>	\$6,387,200
<i>Remaining Project Acres</i>	97,435
<i>2021 Assessed Value of Remaining Acres</i>	\$148,591,176

Purpose for State Acquisition

The Coastal Headwaters Longleaf Forest project would preserve working forest lands and provide resource protection for the Escambia River watershed. The project will enhance coordination and completion of adjacent conservation land acquisitions and increase the amount of forest land available for sustainable resource management. The project will support state water quality and quantity by maintaining the quality and natural functions of the land, water and wetland systems.

General Description

The Coastal Headwaters Longleaf Forest Florida Forever project is in Escambia and Santa Rosa counties. The Lower Escambia River Water Management Area bisects the two main tracts of the proposal. The Perdido River Water Management Area is about six miles south of the proposal in Escambia County. Two of the easternmost tracts of the proposal are adjacent to the western boundary of Blackwater River State Forest. These two tracts are adjacent to the Wolfe Creek Forest Florida Forever Project, which, in conjunction with the Clear Creek/Whiting Field Florida Forever Project, would form a continuous corridor between Blackwater River State Forest and Naval Air Station Whiting Field. State Road 89 passes through the proposal area.

The property has been managed for commercial timber production and, to a much lesser extent, private hunting, fishing, camping and other outdoor recreation. Prescribed fire is used to prepare the land for planting, particularly of longleaf pine stands. If a conservation easement is established on the property, the application outlines a plan to plant longleaf pine stands for the purposes of ecological restoration and sustainable forestry with a 5-year rotation of prescribed fire. The proposed project is located on the Escambia Terraced Lands and on the western side of the Blackwater Hills (uplands that are underlain by sand, gravel, silt and clay).

A small, fragmented proportion of the upland areas (totaling less than 450 acres) remains as upland pine in somewhat natural condition. Before it was converted to pine plantations, upland pine was the dominant natural community within the proposed project. Bottomland forest is the most extensive natural



community within the project boundary, occurring as a closed-canopy forest on terraces and levees in floodplains of larger streams and rivers. Loblolly pine had been planted on the upper slopes of the community, creating moderately dense pine stands.

Agricultural land and pastures comprise only a small part of the proposal and include food plots for wildlife. Other ruderal areas include cemeteries, utility rights-of-way, sand pits, clearings and successional hardwood forests that often develop between planted pine stands and adjacent agricultural land.

Rare plants such as the Florida flame azalea and White-top pitcher plant are found in the forest. Rare animals that have been documented on-site include gopher tortoise, alligator snapping turtle, little blue heron, swallow-tailed kite and Bachmann’s sparrow.

FNAI Element Occurrence Summary

<u>FNAI Elements</u>	<u>Score</u>
Gopher tortoise	G3/S3
Florida black bear	G5T4/S4
<i>Panhandle lily</i>	G2/S2
<i>Turk's cap lily</i>	G5/S1
Gulf crayfish	G4/S1
Harlequin Darter	G5/S1
<i>Florida flame azalea</i>	G3/S3
<i>Hairy-peduncled Beaksedge</i>	G3/S3
Alligator snapping turtle	G3/S3
Alligator Gar	G3G4/S3
bluenose Shiner	G3G4/S3S4
Spiny Softshell	G5/S3

Public Use

Coastal Headwaters Longleaf Forest is proposed for less-than-fee acquisition and does not provide for public access. However, the owner has indicated an interest in making the site available for some limited research or educational efforts.

Acquisition Planning

The Coastal Headwaters Longleaf Forest was submitted as a conservation easement by The Conservation Fund and Resource Management Services, LLC; Resource Management Services, LLC is a timber investment and management organization that conducts silvicultural operations on multiple continents.

2014

On August 15, 2014, the Acquisition and Restoration Council voted to approve the evaluation of this proposal.

On December 12, 2014, the Acquisition and Restoration Council voted to add this project to the Less-than-Fee category.





2021

DEP acquired 2,115 acres fee simple from Evergreen Timberco FL, LLC to be managed by the Florida Forest Service as an addition to Blackwater River State Forest.

Coordination

There were no confirmed acquisition partners when this project was added. However, the landowner is in contact with the U.S. Department of Agriculture's Natural Resources Conservation Service to match some federal funding with Florida Forever funding. The applicants may explore other less-than-fee acquisition opportunities as well. The landowner is interested in phased acquisition.

Management Policy Statement

As a less-than-fee acquisition, the Coastal Headwaters Longleaf Forest would be managed by the landowner as outlined in the conservation easement.

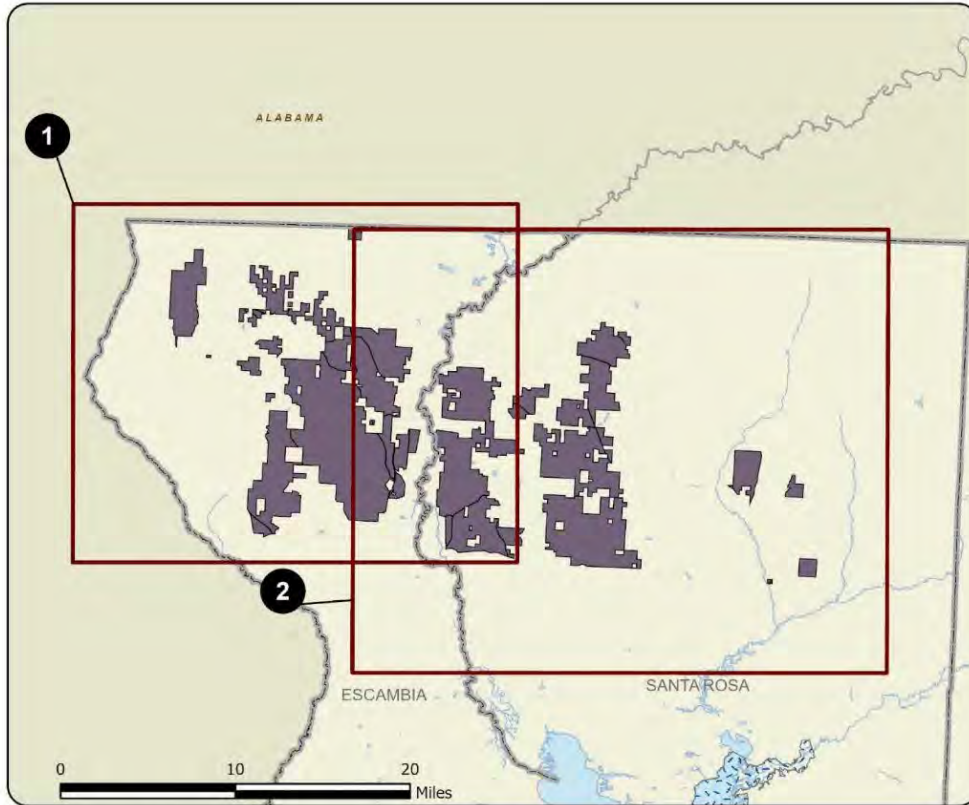
Manager(s)

If acquired less-than-fee, management responsibility of the Coastal Headwaters Longleaf Forest would remain with the landowner. Periodic monitoring of the site's management to confirm continued compliance with the conditions of the conservation easement would be coordinated by the Division of State Lands.

Management Prospectus

The Division of State Lands will periodically monitor the conservation easement, while the management will be conducted by the property owner.

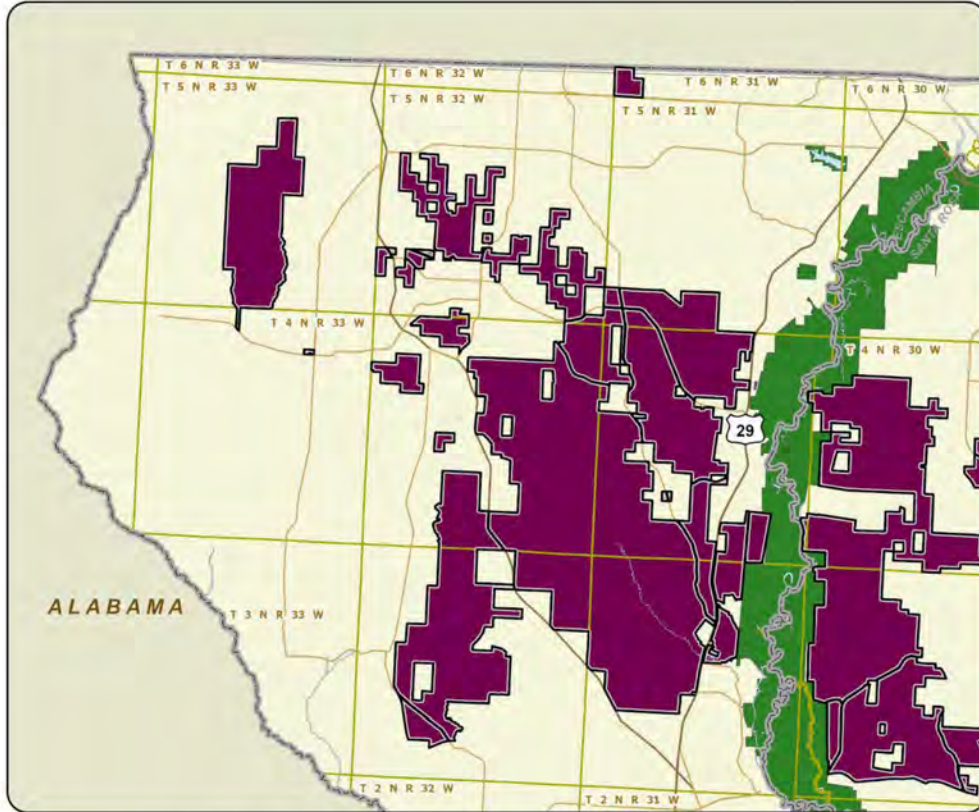




COASTAL HEADWATERS LONGLEAF FOREST: OVERVIEW

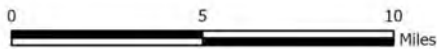
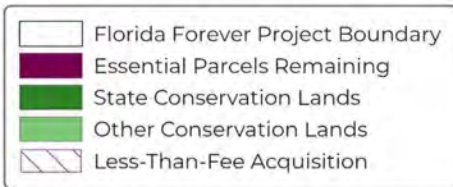
ESCAMBIA AND SANTA ROSA COUNTIES

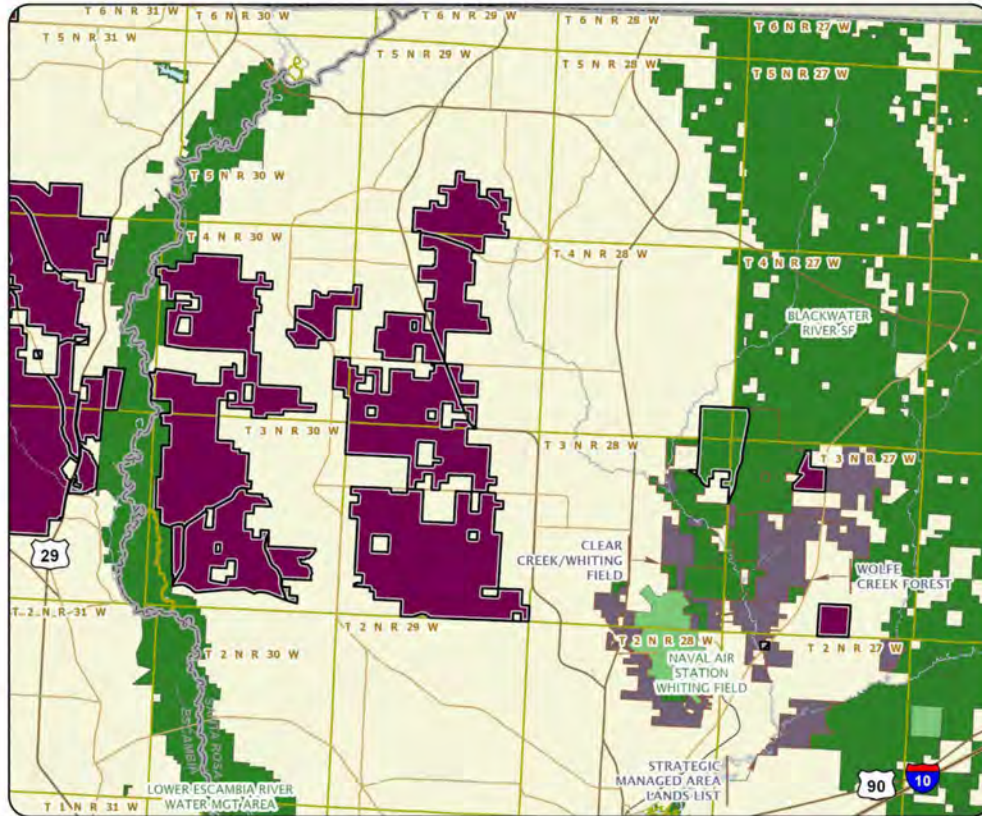




COASTAL HEADWATERS LONGLEAF FOREST: MAP 1

ESCAMBIA COUNTY





ESCAMBIA AND SANTA ROSA COUNTIES

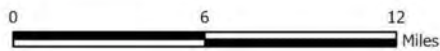


Exhibit G

Welannee Watershed Forest

Okaloosa County

Welannee Watershed Forest

Partnerships and Regional Incentives

Okaloosa County

<i>Year Added to Priority List</i>	2020
<i>Project Acres</i>	8,378
<i>Acquired Acres</i>	0
<i>Cost of Acquired Acres</i>	\$0
<i>Remaining Project Acres</i>	8,378
<i>2021 Assessed Value of Remaining Acres</i>	\$9,797,192

Purpose for State Acquisition

The Welannee Watershed Forest project will protect upper stretches of the Yellow River and provide connectivity to adjacent conservation lands such as the Yellow River Water Management Area, Blackwater River State Forest, Conecuh National Forest and Eglin Air Force Base. The project will also preserve habitat critical to native species such as the Gulf sturgeon, gopher tortoise, Florida black bear and alligator snapping turtle.

General Description

The Welannee Watershed Forest project consists of floodplain and adjacent upland habitat along the Yellow River, from the Florida-Alabama state line extending downstream for approximately 11.5 straight-line miles (estimated 15-16 river miles). The project contains two large timber tracts: the first is owned by H.T.L. Family Limited Partnership that stretches along both sides of the Yellow River from the north boundary of the Yellow River Water Management Area to the Alabama state line; the second tract is owned by U.I.L. Family Limited Partnership and is located on the east side of the Yellow River (which it borders for 3.6 miles). There is a small discontinuity within the northern tract at State Road 2. Blackwater River State Forest lies generally 0.5 to 2 miles west of the northern tract, which encompasses both banks of the Yellow River, although the forest and project share a small common border. The Yellow River Water Management Area lies immediately downstream of the northern tract (sharing a short common border) and directly across the Yellow River from the southern tract, which itself is restricted to the eastern side of the river.

The project is comprised of approximately 30 percent floodplain forest and wetlands and 70 percent uplands, most of which is planted pine plantation that has been historically planted with loblolly pine. The project contains more than 500 acres of longleaf pine and, as loblolly pine is harvested, the owners are transitioning suitable uplands to longleaf pine. The project is managed under a very active prescribed fire regime, with the longleaf burned on a two-year rotation and other upland areas burned on a three-year rotation. The facilities and equipment for the management of the project's forest resources are located



on-site. The project is managed not only for its timber resources, but also with the purpose of restoring longleaf pine habitat (particularly groundcover for wildlife). The property is managed to promote healthy populations of game wildlife such as whitetail deer and turkey.

Welannee Watershed Forest includes the same properties as the original Upper Yellow River Florida Forever project, which was removed from the priority list in 2011 when the land was no longer available for acquisition.

FNAI Element Occurrence Summary

<u>FNAI Elements</u>	<u>Score</u>
Gulf sturgeon	G3T2T3/S2?
Gopher tortoise	G3/S3
Florida black bear	G5T4/S4
Narrow pigtoe	G1G2/S1
Choctaw bean	G2G3/S1S2
Escambia map turtle	G2/S2
Alligator snapping turtle	G3/S3
Pine barrens treefrog	G4/S3
<i>little brown jug</i>	G5/S3
Eastern chipmunk	G5/S3

Public Use

As the project is proposed for less-than-fee acquisition, public access is not available. However, upon coordination with the landowner, the Florida Forest Service could provide Operation Outdoor Freedom events and/or the Florida Fish and Wildlife Conservation Commission could organize youth hunting opportunities.

Acquisition Planning

2020

On October 9, 2020, the Acquisition and Restoration Council added the Welannee Watershed Forest project to the Partnerships and Regional Incentives category of the 2021 Florida Forever Priority List. This less-than-fee project was proposed by Conservation Florida and consists of 11 parcels among two ownerships.

Coordination

Additional funding to assist with acquisition has been secured through federal grants from the Forest Legacy Program and the Regional Conservation Partnership Program. The program requires a non-federal match of 25 percent which could be met with Florida Forever funds.

Management Policy Statement

As a less-than-fee acquisition, the Welannee Watershed Forest project would be managed by the landowner as outlined in the conservation easement.





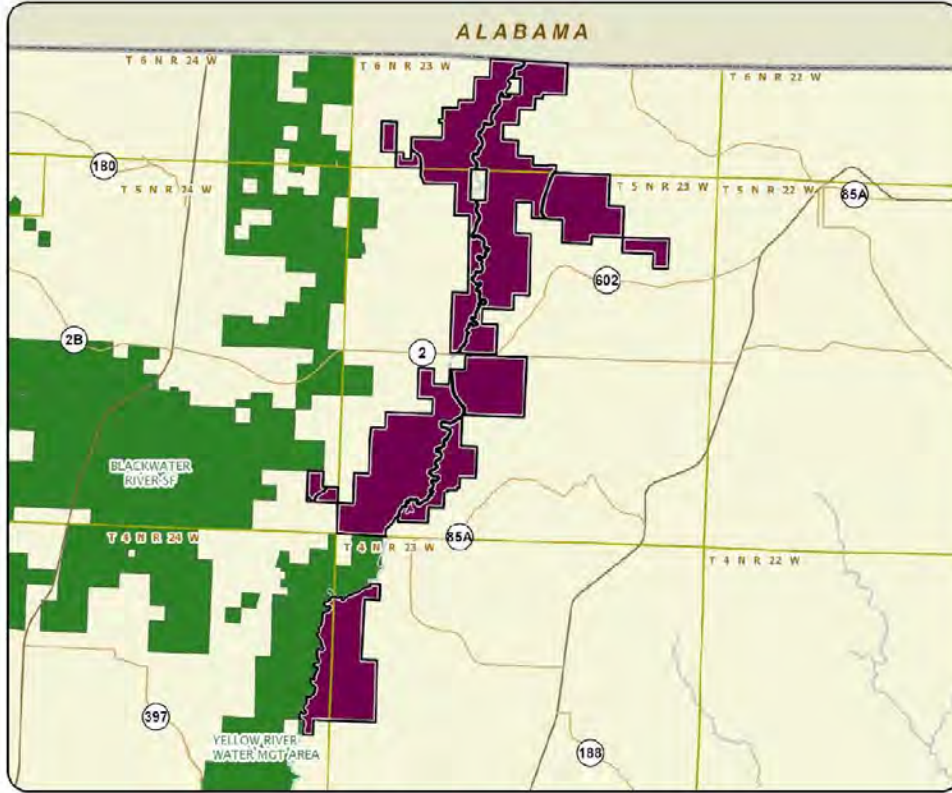
Manager(s)

If acquired as less-than-fee, management responsibility of Wetland Watershed Forest would remain with the landowner. Periodic monitoring of the site's management to confirm continued conservation easement compliance would be coordinated with the Division of State Lands.

Management Prospectus

The Division of State Lands will periodically monitor the conservation easement, while the primary management will be conducted by the property owner.





WELANNEE WATERSHED FOREST

OKALOOSA COUNTY



Exhibit G

Wolfe Creek Forest

Santa Rosa County

Wolfe Creek Forest

Critical Natural Lands

Santa Rosa County

<i>Year Added to Priority List</i>	2010
<i>Project Acres</i>	14,072
<i>Acquired Acres</i>	10,576
<i>Cost of Acquired Acres</i>	\$16,706,478
<i>Remaining Project Acres</i>	3,496
<i>2021 Assessed Value of Remaining Acres</i>	\$4,914,853

Purpose for State Acquisition

The Wolfe Creek Forest project will protect numerous seepages and blackwater stream systems that are contiguous with the Blackwater River State Forest and other conservation lands. The project will conserve habitat for wildlife species such as the Florida black bear, little blue heron and southeastern weasel. The stream systems within this project support numerous rare aquatic species and are considered a focal habitat for the Florida Fish and Wildlife Conservation Commission's Comprehensive Wildlife Conservation Strategy. The project will provide the public with resource-based recreational opportunities and support the continuation of sustainably managed silviculture practices. Twelve archaeological sites, two of which are historic and 10 of which are prehistoric, are within the project.

General Description

Wolfe Creek Forest is a fee simple project in central Santa Rosa County, between Blackwater River State Forest to the east and Whiting Field Naval Air Station to the southwest. This project shares 5.7 miles of its southern boundary with two disjunct tracts of the state forest, forming a connection between all three tracts. Within it runs 35 miles of streams that feed into Big Coldwater Creek and Big Juniper Creek, two major tributaries of the Blackwater River.

Most of the site (82 percent) is intensively managed pine plantation within areas that historically supported upland pine forest and sandhills. The remainder of the site can be readily classified as natural communities. The most prominent and in the best condition are wetlands that include seepage and blackwater streams, associated bottomland forest, floodplain swamp and baygall. A few dome swamps occur with the plantations. Upland natural communities include a few small areas of mesic flatwoods and mesic hammock. The highest elevations (220 feet above mean sea level) occur in the northernmost and easternmost portions of the project. The lowest elevations (around 30 feet above sea level) are in the Coldwater Creek floodplain in the western part of the proposal. From County Road 191, the terrain generally slopes downward toward Big Juniper Creek. West of the road, the terrain slopes downward in a southwesterly direction toward Coldwater Creek.



The project is within a large gap in conservation lands between Whiting Field, outparcels of Blackwater River State Forest and the main tract of the state forest. According to the Florida Master Site File, the Wolfe Creek Forest tract holds 12 archaeological sites (two are historic and 10 are prehistoric); one of those sites is Wolfe Creek Mill.

FNAI Element Occurrence Summary

FNAI Elements	Score
Florida black bear	G5T4/S4
Westfall's clubtail	G2/S2
<i>small-flowered meadowbeauty</i>	G2G3/S2
<i>West Florida cowlily</i>	G5T2T3/S2
<i>hairy-peduncled beaksedge</i>	G3/S3
<i>Panhandle lily</i>	G3/S3
Alligator snapping turtle	G3/S3
Southeastern weasel	G5T4/S3?
Spiny softshell	G5/S3
Little blue heron	G5/S4

Public Use

The project has potential for a variety of forest-related recreational activities including canoeing, bird watching, hunting, hiking, horseback riding, biking, environmental education and photography. Once the project area is acquired and assigned to the Florida Forest Service, public access will be immediately provided for low-intensity recreation activities such as hiking, hunting and fishing.

Acquisition Planning

2010

On June 11, 2010, the Acquisition and Restoration Council added the Wolfe Creek Forest project to the Critical Natural Lands category. After a boundary change in 2010, the project had a combined estimated tax value of \$14,080,729.

2016

On November 3, 2016, DEP purchased a 626-acre restrictive easement to protect flight operations at nearby Whiting Field. The Florida Forest Service will manage the easement to restore and maintain native ecosystems.

2021

In 2021, DEP purchased 1,789.77 acres fee simple from The Trust for Public Land to be managed by the Florida Forest Service as an addition to Blackwater River State Forest.

In 2021, DEP also acquired 1,699.57 acres fee simple via donation.

On December 10, 2021, the Acquisition and Restoration Council approved an addition of 757 acres in Santa Rosa County to the project boundary.





2022

On October 14, 2022, the Acquisition and Restoration Council approved a boundary amendment proposed by The Trust for Public Land which added 3,173 acres to the project.

DEP completed two fee acquisitions totaling 4,352.68 acres that will be managed as part of Blackwater River State Forest.

Coordination

The Florida Forest Service is partnering with The Trust for Public Land and the U.S. Forest Service to acquire portions of this project through the U.S. Forest Legacy Program. The U.S. Department of Defense has been interested in partnering with the state for nearby lands.

Management Policy Statement

The primary land management goals are restoration, maintenance and protection in perpetuity of all native ecosystems; integration of compatible human uses; and insurance of long-term viability of populations and species considered rare or imperiled.

Manager(s)

The Florida Forest Service is recommended as manager of the project.

Management Prospectus

Qualifications for State Designation

The tract is dominated by silviculture, but many of the plantations have retained some of the understory including wiregrass, bluestem grass, and gallberry and yaupon holly. With thinning, prescribed fire and sustainable forestry management practices, the project could be quickly transformed from an area managed for silviculture to an area managed for its ecological and recreational benefits. With the removal of off-site pine species, replanting of longleaf pines, introduction of prescribed fire and sustainable forestry management practices, this project could be restored to a more natural state. The project's size and diversity make it desirable for use and management as a state forest.

Conditions Affecting Intensity of Management

Much of the project's upland pine and sandhill areas have been altered by silvicultural operations and will require restoration efforts. Areas where timber species are off-site species will necessitate removal as well as the restoration of native ground covers and canopy. Biotic surveys would be important to accomplish during the early part of plan development and implementation due to rare or imperiled species expected to occur in the project. Development of facilities would be kept to a level necessary to assure a high-quality experience and would be confined to areas of previous disturbance. Restoration efforts will focus on introduction of prescribed fire, removal of off-site pine species, exotic species treatment, restoration of native groundcovers and possibly wetland restoration. The level of management intensity and related management costs is expected to be moderate to high initially as the necessary information and resources to restore and manage this system as a state forest are obtained. Once this





information is obtained and resources are available, long-term management costs are expected to be moderate to maintain the project as a state forest.

Management Implementation, Public Access, Site Security and Protection of Infrastructure

Once the project area is acquired and assigned to the Florida Forest Service, public access will be immediately provided for low intensity outdoor resource-based recreation activities such as hiking, hunting and fishing. The Florida Forest Service proposes to manage the site as a state forest and will carry out management activities and coordinate public access and use. Initial and intermediate management efforts will concentrate on resource inventory, restoration of harvested areas, providing site security and assessing public and fire management access. Inventories of the site's natural resources and listed species will be conducted to provide a basis for the formulation of a management plan.

The roads throughout the property necessitate the development of a road plan to identify those roads that are to be utilized for access by the public and for administrative use; roads that are determined to be unnecessary for management or access should be closed. Steps will be taken to ensure that the public is provided appropriate access while simultaneously affording protection of sensitive resources.

Prior to collection of resource information, management proposals for this project are conceptual in nature. Long-range plans for this property will be directed toward the restoration of disturbed areas, maintenance of natural communities, and responsible public access. Disturbed sites will be restored to conditions that would be expected to occur in naturally functioning ecosystems. Off-site species will eventually be replaced with species that would be expected to occur naturally on those sites.

Very little of this project area has been burned by prescribed fire in recent years. Burning goals for this project will be to eventually establish an all-season prescribed burning program on all the fire dependent community types. Whenever possible, existing roads, black lines, foam lines and natural breaks will be utilized to contain and control fires.

Timber management activities will primarily consist of re-introducing longleaf pines, restoration harvests and improvement cuts aimed at restoring and perpetuating native ground covers. Stands will not have a targeted rotation age but will be managed to maintain a broad diversity of age classes. This will provide habitat for various native species and will enhance and maintain biodiversity.

The resource inventory will be used to identify areas that need special attention, protection or management and areas that are appropriate for recreational or administrative facilities. Development will be primarily located in disturbed areas and will be at a minimum required for management and public access and use. The Florida Forest Service will promote recreation and environmental education in the natural environment. It is anticipated that interpretive and user services recreation facilities will be developed and the use of low impact, rustic facilities will be stressed. High impact organized recreation areas are not planned due to possible adverse effects on the natural environment. Unnecessary roads, fire lines and hydrological disturbances will be abandoned and/or restored to the greatest extent practical.





Capital project expenditures are needed on this tract for prescribed fire, vegetative and hydrologic restoration, improved public access/use and facilities, both public and administrative. It is anticipated that some of the existing roads and trails may be used as multi-use trails for hiking, horseback riding and biking. This Management Prospectus is not intended to be an application for capital project funding; however, as more information is gathered, and an analysis of the site is completed, the Florida Forest Service intends to apply for capital project funds.

Revenue-generating Potential

Timber sales will be conducted as needed to improve or maintain desirable ecosystem conditions. These sales will primarily take place in planted pine stands and will provide a variable source of revenue dependent upon a variety of factors. Due to the existing condition and volume of the timber resources on the property, revenue generating potential of this project is expected to be moderately high.

Cooperators in Management Activities

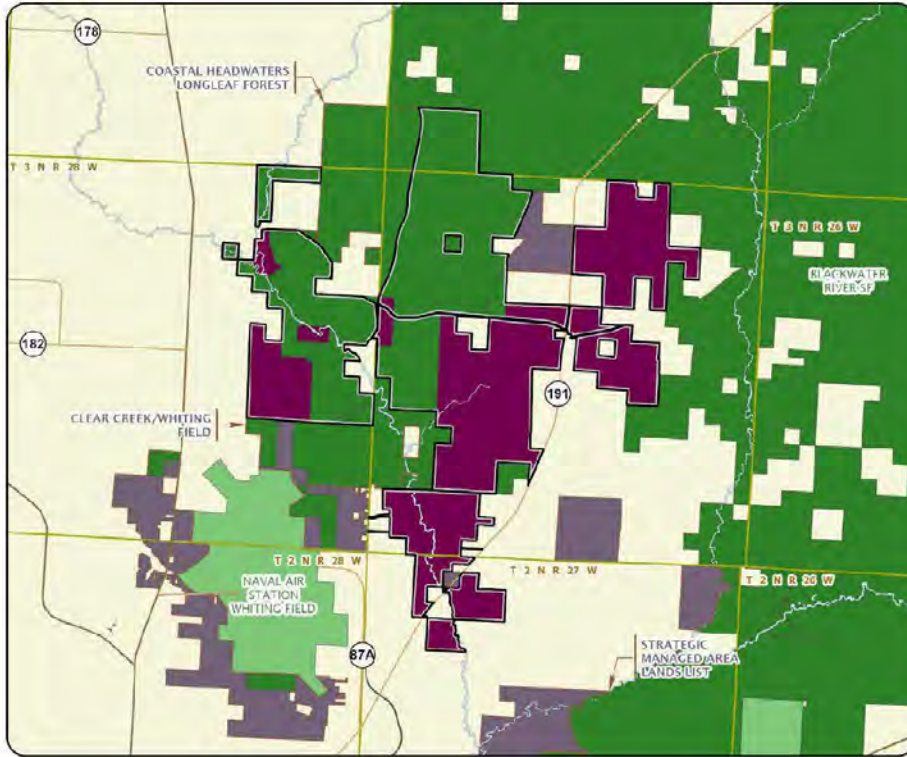
The Florida Forest Service will cooperate with and seek the assistance of other state agencies, local government entities and interested parties as appropriate.

Management Cost Summary

FFS	Startup	Recurring
Source of Funds	CARL	not provided
Salary (4 FTE)	\$132,141	not provided
Expense	\$315,000	not provided
OCO	\$188,600	not provided
TOTAL	\$635,741	not provided

Source: Management Prospectus as originally submitted





WOLFE CREEK FOREST

SANTA ROSA COUNTY

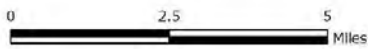


Exhibit H

Division
of
Historical Resources

Report on Archeological Sites and Historical Sites



This record search is for informational purposes only and does NOT constitute a project review. This search only identifies resources recorded at the Florida Master Site File and does NOT provide project approval from the Division of Historical Resources. Contact the Compliance and Review Section of the Division of Historical Resources at CompliancePermits@dos.MyFlorida.com for project review information.

September 22, 2023

Emily Marsh

State Lands Management Planner
Florida Forest Service
Florida Department of Agriculture and Consumer Services

In response to your request on September 22, 2003, the Florida Master Site File lists 236 archeological sites, three standing structures, two historic bridges, two cemeteries and two resource groups recorded for Blackwater River State Forest's area located in within Santa Rosa and Okaloosa Counties.

This search area may contain *unrecorded* archaeological sites, historical structures or other resources even if previously surveyed for cultural resources.

- **Because vandalism and looting are common at Florida sites, we ask that you limit the distribution of location information on archaeological sites.**
- **While many of our records document historically significant resources, the documentation of a resource at the Florida Master Site File does not necessarily mean the resource is historically significant.**

#

- **Federal, state and local laws require formal environmental review for most projects. This search **DOES NOT** constitute such a review. If your project falls under these laws, you should contact the Compliance and Review Section of the Division of Historical Resources at CompliancePermits@dos.MyFlorida.com**

Please do not hesitate to contact us if you have any questions regarding the results of this search.

Sincerely,

Eman M. Vovsi, Ph.D.
Florida Master Site File
Eman.Vovsi@DOS.MyFlorida.com

Cultural Resource Roster

SiteID	Type	Site Name	Address	Additional Info	SHPO Eval	NR Status
OK00110	AR	KENNEDY BRIDGE				
OK00113	AR	BURNHILL PLANTATION MILL				
OK00118	AR	WEST HORSE CREEK				
OK00119	AR	EAST HORSE CREEK				
OK00120	AR	NORTH PANTHER CREEK				
OK00121	AR	MIDDLE PANTHER CREEK				
OK00122	AR	MARE CREEK				
OK00123	AR	LOWER PANTHER CREEK				
OK00127	AR	E H & A OKALOOSA 25	BEAVER CREEK		Not Eligible	
OK00128	AR	E H & A OKALOOSA 5	BLACKMAN		Not Eligible	
OK00479	AR	BOUNDARY LINE	WUNSON			
OK00507	AR	NN	Baker			
OK00508	AR	NN				
OK00509	AR	NN				
OK00510	AR	NN	Blackwater		Not Eligible	
OK00511	AR	NN				
OK00512	AR	NN				
OK00513	AR	NN				
OK00514	AR	NN				
OK00515	AR	NN				
OK00526	AR	LM90-58				
OK00527	AR	LM90-59				
OK00528	AR	LM90-60				
OK00529	AR	LM90-61				
OK00530	AR	LM90-62				
OK00531	AR	LM90-68		NONE < 4 MILES		
OK00532	AR	LM90-69				
OK00541	AR	LM 92-4		NONE <4 MI		
OK00542	AR	LM 92-516		NONE <4 MI		
OK00543	AR	LM 92-7		NONE <4 MI		
OK00544	AR	LM 92-8		NONE <4 MI		
OK00545	AR	LM 92-9/11		NONE <4 MI		
OK00546	AR	LM 92-10/12		NONE <4 MI		
OK00547	AR	LM 92-13		NONE <4 MI		
OK00548	AR	LM 92-14		NONE <4 MI		
OK00550	AR	LM 92-17		NONE <4 MI		
OK00551	AR	LM 92-18		NONE <4 MI		
OK00552	AR	LM 92-19		NONE <4 MI		
OK00553	AR	LM 92-20		NONE <4 MI		
OK00554	AR	LM 92-21		NONE <4 MI		
OK00559	AR	LM 92-26		NONE <4 MI		
OK00566	AR	LM 92-33		NONE <4 MI		
OK00567	AR	LM 92-34		NONE <4 MI		
OK00569	AR	LM 92-36		NONE <4 MI		

SiteID	Type	Site Name	Address	Additional Info	SHPO Eval	NR Status
OK00570	AR	LM 92-37	NONE <4 MI			
OK00571	AR	LM 92-38	NONE <4 MI			
OK00572	AR	LM 92-39	NONE <4 MI			
OK00573	AR	LM 92-40	NONE <4 MI			
OK00574	AR	LM 92-41	NONE <4 MI			
OK00575	AR	LM 92-42	NONE <4 MI			
OK00576	AR	LM 92-43	NONE <4 MI			
OK00577	AR	LM 92-44	NONE <4 MI			
OK00610	AR	LM 92-46	NONE <4 MI			
OK00611	AR	LM 92-47	NONE <4 MI			
OK00613	AR	LEFT FIELD HAMMOCK	NONE <4 MI			
OK00614	AR	LM 92-50	NONE <4 MI			
OK00615	AR	LM 92-51	NONE <4 MI			
OK00616	AR	LM 92-52	NONE <4 MI			
OK00617	AR	LM 92-53	NONE <4 MI			
OK00618	AR	LM 92-54/55	NONE <4 MI			
OK00619	AR	LM 92-56	NONE <4 MI			
OK00620	AR	LM 92-58	NONE <4 MI			
OK00621	AR	LM 92-59	NONE <4 MI			
OK00622	AR	LM 92-60	NONE <4 MI			
OK00624	AR	LM 92-61	NONE <4 MI			
OK00625	AR	LM 92-62	NONE <4 MI			
OK00626	AR	LM 92-63	NONE <4 MI			
OK00627	AR	LM 92-64	NONE <4 MI			
OK00628	AR	LM 92-65	NONE <4 MI			
OK00629	AR	LM 92-66	NONE <4 MI			
OK00630	AR	LM 92-67	NONE <4 MI			
OK00633	AR	LM 92-70	NONE <4 MI			
OK00634	AR	92-71	NONE <4 MI			
OK00684	AR	KARICK LAKE	NONE < 4 MILES			
OK00901	AR	P19-1	CANNON TOWN		Not Eligible	
OK00902	AR	P19-2	CANNON TOWN		Not Eligible	
OK00908	AR	SITCO #23	UNSP			
OK00909	AR	SITCO #24	UNSP			
OK00910	AR	SITCO #25	UNSP			
OK00911	AR	SITCO #26	UNSP			
OK00924	AR	SITCO #33	UNSP			
OK00925	AR	SITCO #34	UNSP			
OK00926	AR	SITCO #35	UNSP			
OK01659	AR	GUEST LAKE LANDING	HOLT			
OK01660	AR	FLORIDALE # 2	HOLT			
OK01661	AR	FLORIDALE # 3	HOLT			
OK02248	AR	Deer Toe Site	Munson		Not Eligible	
OK02695	AR	80K2695			Not Eligible	
OK02913	BR	Bone Creek Road / Bone Creek #3	Bone Creek Road / Bone Creek #3	1930 - FDOT #574009		
OK02915	BR	Peacock Road / Bailey Branch	Peacock Road / Bailey Branch	1935 - FDOT #574088		
OK02942	AR	Blackwater River Pillings	Baker		Insufficient Info	
OK02957	AR	Logging Railroad R17	Munson			
SR00078	AR	EH & A SANTA ROSA 25	MUNSON		Not Eligible	
SR00079	AR	CORAL SNAKE	BELANDVILLE		Not Eligible	

Site ID	Type	Site Name	Address	Additional Info	SHPO Eval	NR Status
SR00242	AR	NN				
SR00246	AR	NN	ROCK CREEK GV			
SR00247	AR	NN	ROCK CREEK			
SR00248	AR	NN	MCLELLAN		Not Eligible	
SR00249	AR	CAMP LOWERY	Unknown		Not Eligible	
SR00250	AR	NN				
SR00761	AR	SWEETWATER CREEK 1	MILTON			
SR00762	AR	SWEETWATER CREEK 2	MUNSON			
SR00789	AR	NN				
SR00797	AR	NN	MCLELLAN			
SR00801	AR	NN	MUNSON			
SR00803	AR	NN				
SR00808	AR	NN				
SR00809	AR	NN				
SR00810	AR	NN				
SR00811	AR	NN				
SR00812	AR	NN				
SR00813	AR	NN				
SR00814	AR	NN				
SR00815	AR	NN	unspecified		Not Eligible	
SR00816	AR	NN				
SR00817	AR	NN				
SR00818	AR	NN				
SR00822	AR	NN				
SR00823	AR	NN				
SR00824	AR	NN				
SR00825	AR	NN				
SR00826	AR	NN				
SR00828	AR	SITCO SURVEY 2	UNSP			
SR00829	AR	NN				
SR00832	AR	NN				
SR00833	AR	NN				
SR00834	AR	NN				
SR00835	AR	NN				
SR00836	AR	NN				
SR00837	AR	NN				
SR00838	AR	NN				
SR00839	AR	SWEETWATER CREEK MILL				
SR00849	AR	LONG BRANCH GV				
SR00865	AR	LM90-12				
SR00866	AR	LM90-13				
SR00868	AR	LM90-15				
SR00869	AR	LM90-16				
SR00870	AR	LM90-17				
SR00871	AR	LM90-18				
SR00872	AR	LM90-19				
SR00876	AR	LM90-23				
SR00877	AR	LM90-24				
SR00878	AR	LM90-25				
SR00879	AR	LM90-26	Munson			

SiteID	Type	Site Name	Address	Additional Info	SHPO Eval	NR Status
SR00880	AR	LM90-27				
SR00881	AR	LM90-28				
SR00882	AR	LM90-29	NONE < 4 MILES			
SR00883	AR	LM90-30				
SR00884	AR	LM90-31				
SR00885	AR	LM90-32				
SR00886	AR	LM90-33				
SR00887	AR	LM90-34				
SR00888	AR	LM90-35				
SR00889	AR	LM90-36				
SR00890	AR	LM90-37				
SR00891	CM	CONCORD/SIMMONS CEMETERY	unspecified	Established 188	Insufficient Info	
SR00892	AR	LM90-39				
SR00893	AR	LM90-40				
SR00894	AR	LM90-41				
SR00895	AR	LM90-42				
SR00896	AR	LM90-43				
SR00897	AR	LM90-44				
SR00903	AR	LM90-50				
SR00904	AR	LM90-51	nn		Not Eligible	
SR00905	AR	LM90-52	Unknown		Not Eligible	
SR00906	AR	LM90-53				
SR00907	AR	LM90-54	nn	Human Remains May Be Present	Not Eligible	
SR00910	AR	LM90-57				
SR00911	AR	LM90-63				
SR00912	AR	LM90-64				
SR00913	AR	LM90-65				
SR00915	AR	LM90-67				
SR00916	AR	LM90-70				
SR00918	AR	LM90-72				
SR00919	AR	LM90-73				
SR00922	AR	LM90-76				
SR00923	AR	LM90-77				
SR00927	AR	BW3-D				
SR01018	AR	SPRINGHILL TRANSECT 3	NONE <4 MI			
SR01019	AR	SPRINGHILL TRANSECT	NONE <4 MI			
SR01021	AR	MCELLELLAN TRANSECT 3	NONE <4 MI			
SR01028	SS	MUNSON POST OFFICE				
SR01031	SS	SPEARS HOUSE				
SR01172	SS	FOREST SERVICE BUILDING	11650 Munson Hwy, Munson or Milton			
SR01175	AR	FLORIDALE TRANSECT 1	NONE <4 MI		Insufficient Info	
SR01176	AR	FLORIDALE TRANSECT 2A	NONE <4 MI			
SR01177	AR	FLORIDALE TRANSECT 2B	NONE <4 MI			
SR01178	AR	MCELLELLAN TRANSECT 2	NONE <4 MI			
SR01194	AR	LM91-1	nn		Not Eligible	
SR01196	AR	LM91-3	NONE <4 MI			
SR01197	AR	LM92-2	NONE <4 MI			
SR01198	AR	LM92-3	NONE <4 MI			
SR01199	AR	GUM LANDING HAMMOCK 1	NONE <4 MI			
SR01200	AR	GUM LANDING HAMMOCK 2	NONE <4 MI			

SiteID	Type	Site Name	Address	Additional Info	SHPO Eval	NR Status
SR01201	AR	GUM LANDING HAMMOCK 3	NONE < 4 MI			
SR01215	AR	NN	NONE < 4 MILES			
SR01216	CM	SELLERSVILLE CEMETERY	UNSPECIFIED			
SR01217	AR	NN	NONE < 4 MILES			
SR01218	AR	NN	NONE < 4 MILES			
SR01221	AR	NN	NONE < 4 MILES			
SR01222	AR	NN	NONE < 4 MILES			
SR01226	AR	BIG JUNIPER MILL	NONE < 4 MILES			
SR01227	AR	REEDY CREEK DAM	NONE < 4 MILES			
SR01231	AR	COTTON'S CHOP MILL	NONE < 4 MILES			
SR01233	AR	ATES CREEK MILL	NONE < 4 MILES			
SR01237	AR	COON CAMP MILL	NONE < 4 MILES			
SR01240	AR	DIXON WASTEWAY	NONE < 4 MILES			
SR01243	AR	COLDWATER CREEK DAM	NONE < 4 MILES			
SR01264	AR	P11-1	BERRYDALE		Not Eligible	
SR01265	AR	P11-2	MCLELLAN		Not Eligible	
SR01266	AR	P11-3	nn		Not Eligible	
SR01267	AR	P16-1	nn		Not Eligible	
SR01269	AR	SITCO #1	ROCK CREEK			
SR01270	AR	SITCO #2	ALLENTOWN			
SR01271	AR	SITCO #3	ALLENTOWN			
SR01272	AR	SITCO #4	ALLENTOWN			
SR01273	AR	SITCO #5	ALLENTOWN			
SR01281	AR	S3-15-1	MCLELLAN			
SR01285	AR	S3-21-1	SELLERSVILLE		Not Eligible	
SR01288	AR	SITCO #8	ALLENTOWN		Not Eligible	
SR01290	AR	SITCO #10	ALLENTOWN			
SR01298	AR	SITCO #11	UNSP.			
SR01299	AR	J5SR001	UNSP.			
SR01300	AR	J5SR002	UNSP.			
SR01301	AR	SITCO #12	UNSP.			
SR01305	AR	SITCO #16	UNSP.			
SR01306	AR	SITCO #17	UNSP.			
SR01307	AR	SITCO #18	UNSP.			
SR01308	AR	SITCO #19	UNSP.			
SR01338	AR	WOLFTRAP BRANCH	NONE			
SR01339	AR	DARRYL	NONE			
SR01368	AR	NN	MILTON			
SR01382	AR	DIXON CREEK LOG DITCH	PACE			
SR01399	AR	JULIAN MILL	MILTON			
SR01501	AR	MILLER BLUFF WEST	PARKERVILLE			
SR01502	AR	HAROLD SE #2&3	PARKERVILLE			
SR01503	AR	WEST PITTS RIVER BOAT RAMP	PARKERVILLE			
SR01915	AR	SHOP	Harold			
SR01916	AR	Fish Hatchery Bridge	Holt		Not Eligible	
SR02125	RG	Louisville & Nashville (L&N) Railroad	Milton	Linear Resource - 1 Contrib Resources	Eligible	
SR02126	RG	Bagdad Lumber Co. Railroad	Milton	Linear Resource - 1 Contrib Resources	Not Eligible	
SR02143	AR	Herby Cup Cluster			Not Eligible	
SR02144	AR	Metal Cup Cluster			Not Eligible	
SR02600	AR	J22	Holt, FL			

Florida Master Site File

SiteID	Type	Site Name
SR02722	AR	Lighter (Not Dam)

Address

Additional Info

SHPO Eval

Created: 9/22/2023
NR Status

Manuscript Roster

MS#	Title	Publication Information	Year
28095	Archaeological Trip Report for USDA-NRCS Environmental Quality Incentives Program; Okaloosa County, Florida; Deborah Vaughan	Report prepared for Florida State Historic Preservation Office. Manuscript on file at USDA Natural Resources Conservation Service, Gainesville, FL.	2022
28632	Cultural Resource Assessment Survey, Canoe Creek Solar, Okaloosa County, Florida 2022		2022
27069	Historic Architecture Survey for the Eglin AFB Facilities Inventory Task Order CR-16-00019 (Support Facilities): Okaloosa and Walton Counties, Florida.	Report 5 of 6. Report prepared by New South Associates, Stone Mountain, Georgia, under contract with Potomac-Hudson Engineering to support Air Force Civil Engineer Center cultural resources work with Eglin Air Force Base in Florida.	2020
27076	Historic Architecture Survey, Eglin Air Force Base, Okaloosa, Santa Rosa, and Walton Counties, Florida, Task Order CR-16-00020: Bridges	Report 6 of 6. Report prepared by New South Associates, Stone Mountain, Georgia, under contract with Potomac-Hudson Engineering to support Air Force Civil Engineer Center cultural resources work with Eglin Air Force Base in Florida.	2020
27084	Historic Architecture Survey for the Eglin AFB Facilities Inventory Task Order CR-16-00018 (Range Support): Bay, Gulf, Okaloosa, Santa Rosa, and Walton Counties, Florida	Report 4 of 6. Report prepared by New South Associates, Stone Mountain, Georgia, under contract with Potomac-Hudson Engineering to support Air Force Civil Engineer Center cultural Resources work with Eglin Air Force Base in Florida.	2020
27104	Historic Architecture Survey for the Eglin AFB Facilities Inventory Task Order 3 (Sheds & Shops): Bay, Gulf, Okaloosa, Santa Rosa, and Walton Counties, Florida.	Report 3 of 6. Report prepared by New South Associates, Stone Mountain, Georgia, under contract with Potomac-Hudson Engineering to support Air Force Civil Engineer Center Cultural Resources work with Eglin Air Force Base in Florida.	2020
27320	Historic Architecture Survey for the Eglin AFB Facilities Inventory Task Order 2 (Runways): Bay, Gulf, Okaloosa, Santa Rosa, and Walton Counties, Florida	Report 2 of 6. Report prepared by New South Associates, Stone Mountain, Georgia, under contract with Potomac-Hudson Engineering to support Air Force Civil Engineer Center cultural resources work with Eglin Air Force Base in Florida.	2020
27472	Cultural Resource Assessment Survey for the SR 8 (I-10) Project Development and Environment Study from SR 281 (Avalon Boulevard) to CR 189 (Log Lake Road), Santa Rosa and Okaloosa Counties, Florida	On file at SEARCH, Newberry. SEARCH Project No. T19172. FDOT FM Nos. 413062-4 and 413062-5.	2020
27820	A Phase I Cultural Resource Assessment of the 365.72-Acre FPL Blackwater River Solar Energy Center, Santa Rosa County, Florida	Prepared by VHB - Orlando, Florida	2020
27148	Eglin Air Force Base National Register of Historic Places Cold War Properties Evaluation, Four Volumes, Okaloosa and Walton Counties, Florida	Van Citters Historic Preservation, LLC, prepared for Eglin AFB]	2019
27154	Eglin Air Force Base National Register of Historic Places Cold War Properties Evaluation, Four Volumes; Okaloosa and Walton Counties, Florida	Van Citters Historic Preservation, LLC, prepared for Eglin AFB	2019
27311	Eglin Air Force Base National Register of Historic Places Cold War Properties Evaluation, Four Volumes, Okaloosa, Santa Rosa, and Walton Counties, Florida		2019
25001	Historic Architecture Survey for the Eglin AFB Facilities Inventory Task Order 1 (Utilities): Bay, Gulf, Okaloosa, Santa Rosa, and Walton Counties, Florida	Report 1 of 6. Report prepared by New South Associates, Stone Mountain, Georgia, under contract with Potomac-Hudson Engineering to support Air Force Civil Engineer Center cultural resources work with Eglin Air Force Base in Florida.	2018
23095	Treatment of Cultural Resources During the Sklar Exploration Company 3D Seismic Survey in Santa Rosa County, Florida, Including Portions of Blackwater River State Forest	Manuscript submitted to Florida Master Site File during Compliance and Review process, and submitted to Bureau of Archaeological Research under terms of 1A-32 permit.	2016
22584	Cultural Resource Assessment Survey in Support of the Proposed Replacement of the SR 4 Bridge (FDOT Bridge No. 570033) over the Blackwater River, Okaloosa County, Florida	on file at SEARCH, Newberry. SEARCH Project No. 3510 FDOT FM No.432828-1	2015

MS#	Title	Publication Information	Year
22656	250-Acre Phase I Archaeological Survey at NAS Whiting Field's NOLF Harold, Santa Rosa County, Florida	On File, Southeastern Archaeological Research, Jacksonville, FL, prepared for NAVFAC Southeast	2015
25029	Historic Resources Survey (Built Environment) Naval Air Station Whiting Field Santa Rosa County and Outlying Fields in Baldwin County, Alabama and Escambia County, Florida	Contract N69450-12-D-0073 Delivery Order 41	2015
20341	NAS Whiting Field Archaeological Survey, Santa Rosa County, Florida	Southeastern Archaeological Research, Inc. (SEARCH), Jacksonville, Florida, prepared for NAVFAC Southeast	2013
19441	Cultural Resource Survey for the Retrieval and Removal of Pre-Cut Submerged Timber in the Blackwater River, Santa Rosa and Okaloosa Counties. Application Number: 46-0311545-001-E1	Cockrell, Wilburn A, prepared for Gary and Kimberly Brielmayer	2012
18742	Treatment of Cultural Resources during a 3D Seismic Survey, by Fairways Exploration and Production, within Blackwater River State Forest, Florida	Manuscript Report submitted to Florida Division of Historical Resources, on file, Florida Master Site File, Tallahassee	2011
16938	Florida Gas Transmission Phase VIII Second Addendum Report Related to Report Nos. 2008-07035 and 2008-07036 (Goodwin & Coughlin et al. 2010)	R. Christopher Goodwin & Associates, Inc., New Orleans, LA. Prepared for Florida Gas Transmission Company, Houston, TX	2010
18035	Cultural Resource Assessment Survey Off-Highway Vehicle Trail Facilities Blackwater State Forest Santa Rosa County, Florida	Archaeological Consultants, Inc., 8110 Blaikie Court, Suite A, Sarasota, Florida 34240, November 2010, DBAR Permit No.: 1011.034	2010
16730	Archaeological Monitoring Results/Letter of Transmission Blackwater River State Forest Munson Borrow Pit	Blackwater River State Park, Holt	2009
15970	Blackwater River State Park, Campground Renovation, Santa Rosa County	Blackwater River State Park, Holt	2009
16532	Florida Gas Transmission Phase VIII First Addendum Report Related to Report Nos. 2008-07035 and 2008-07036	R. Christopher Goodwin & Associates, Inc., New Orleans, LA. Prepared for Florida Gas Transmission Company, Houston, TX	2009
17291	Phase I Cultural Resources Survey and Archaeological Inventory of Loops 2, 3, 4, 5, 6, and Greenfield 1 of the Florida Gas Transmission Company, LLC Phase VIII Expansion Project, Escambia, Santa Rosa, Okaloosa, Walton, Washington, Bay, Calhoun, Jackson, Training Center Rd./N. end re-alignment, Blackwater River State Forest, Santa Rosa County	R. Christopher Goodwin and Associates, Inc., New Orleans, LA. Submitted for Florida Gas Transmission Company, Houston, TX	2008
14097	Blackwater River State Forest, Brooks Pit Expansion, Okaloosa County	Blackwater River State Forest, Milton. Ms. on file, Florida Master Site File, Bureau of Historic Preservation, Division of Historical Resources, Department of State, Tallahassee	2007
14034	She rman Kennedy Road Improvements at Panther Creek, Blackwater River State Forest	Blackwater River State Forest, Milton. Ms. on file, Florida Master Site File, Bureau of Historic Preservation, Division of Historical Resources, Department of State, Tallahassee	2007
14576	New Blackwater Forestry Center septic field line installation, Blackwater River State Forest, Santa Rosa County	Blackwater River State Forest, Milton. Ms. on file, Florida Master Site File, Bureau of Historic Preservation, Division of Historical Resources, Department of State, Tallahassee	2007
13073	Blackwater River State Forest, Brooks Pit Expansion, Okaloosa County	Blackwater River State Forest, Okaloosa County. Ms. on file, Department of State, Division of Historical Resources, Bureau of Historic Preservation, Florida Master Site File, Tallahassee	2006
11216	Phase I Cultural Resources Survey of the Proposed 319 Waiver Requests, Blackwater River State Forest, Okaloosa County, Florida	Archaeology Institute, University of West Florida, Pensacola. Report of Investigations 130, Submitted to Blackwater River State Forest, Milton	2005
11482	An Archaeological and Historical Survey of the Wilderness Landing Project Area in Okaloosa County, Florida	Sponsoring agent: Panamerican Consultants, Inc. Submitted to: Okaloosa County Board of County Commissioners	2005
12940	Phase I Cultural Resources Survey of the Equestrian Trailhead in the Blackwater River State Forest, Santa Rosa County, Florida	Report of Investigations Number 138. Archaeology Institute, The University of West Florida, Pensacola	2005
12943	Phase I Cultural Resources Survey of the Proposed Lawrence Cooley Road Paving Project in the Blackwater River State Forest Santa Rosa County, Florida	The University of West Florida Archaeology Institute, Pensacola. Report of Investigations Number 137. Performed for Blackwater Forestry Center, Milton	2005
13527	Phase I Cultural Resources Survey of the Proposed 2006 DEP 319 Grant Project in the Blackwater River State Forest Santa Rosa County, Florida	The University of West Florida Archaeology Institute, Pensacola. Report of Investigations Number 139. Ms. on file, Department of State, Division of Historical Resources, Bureau of Historic Preservation, Florida Master Site File, Tallahassee	2005

MS#	Title	Publication Information	Year
10552	Cultural Resource Assessment Survey of the Blackwater River State Forest Road Improvement Project	R.O.I. 118, University of West Florida, Pensacola. Submitted to Florida Department of Agriculture and Consumer Affairs, Milton	2004
9010	Cultural Resources Survey of the Northwest Florida Water Management District Sand and Gravel Aquifer Test Site In Blackwater River State Forest, Okaloosa County, Florida	Panamerican Consultants, Inc., Tampa. Submitted to Northwest Florida Water Management District	2003
13372	Survey of X-684 Cultural Resources Support Eglin Air Force Base, Okaloosa, Santa Rosa and Walton Counties, Florida	PRENTICE THOMAS AND ASSOCIATES REPORT OF INVESTIGATIONS NO. 783. SUBMITTED TO EGLIN AIR FORCE BASE, FLORIDA.	2003
7322	Addendum Cultural Resource Assessment Survey/ Section 106 Review; Replacement Cellular Tower: Santa 17096-003-024; 11650 Munson Highway, Santa Rosa County, Florida	ARCHAEOLOGICAL CONSULTANTS INC., SARASOTA. Submitted TO URS CORPORATION, NICEVILLE	2002
7759	An Archaeological and Historical Survey of the Proposed PO-81 Spring Hill Tower Location in Santa Rosa County, Florida	PANAMERICAN CONSULTANTS, INC., TAMPA. Submitted TO ATC ASSOCIATES, INC., MARIETTA, GA	2001
5930	A Cultural Resources Survey of the Lower Yellow River, Northwest Florida Water Management District Land in Okaloosa and Santa Rosa Counties, Florida	PANAMERICAN CONSULTANTS, INC., TAMPA. Submitted TO NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT, HAVANA	2000
18552	Cultural Resource Assessment of a Portion of State Road 4, From the Santa Rosa County Line to State Road 189 in Baker.	Penton, Daniel T. 1995 Cultural Resource Assessment of a Portion of State Road 4, From the Santa Rosa County Line to State Road 189 in Baker. PBS & J, Inc. Prepared for Florida DOT, District III, Chipley.	1995
4295	Phase I Cultural Resources Investigation of Proposed Access Roads Within the Florida Portion of the Proposed Florida Gas Transmission Company Phase III Expansion Project Pipeline Corridor [Draft Report]	R. Christopher Goodwin & Associates, Inc., New Orleans, LA. Submitted to Florida Gas Transmission Company, Houston, TX	1994
5402	An Architectural Inventory, Naval Air Station Whiting Field, Milton, Florida	US Army Corps of Engineers, Mobile District, Submitted to Naval Air Station, Whiting Field	1994
18545	Cultural Resource Assessment of a Segment of State Road 189, From State Road 4, in Baker, North Alabama State Line.	Penton, Daniel T. 1994 Cultural Resource Assessment of a Segment of State Road 189, From State Road 4, in Baker, North Alabama State Line. PBS & J, Inc. Prepared for Florida DOT, District III, Chipley.	1994
4017	Eglin Air Force Base, Historic Preservation Plan, Technical Synthesis of Cultural Resources Investigations at Eglin Santa Rosa, Okaloosa, and Walton Counties, Florida, Vol. 1: Text; Vol. 2, Technical Synthesis and Appendices; Vol. 3; Folios.	Report of Investigations No. 192. New World Associates, Inc., Fort Walton Beach. Submitted to Eglin Air Force Base	1993
4382	Phase I C.R.I. of the 453.18 KM (281.60 MI) Florida Portion on the Proposed F.G.T. Company Phase III Expansion Project Vol. I-II; App. I Site Maps, III's; Photo's; A.II, Vol.I Materials by FMSF No.; A.III, VOL.II Mt. by Rec.no.; App.III Site Forms	R. Christopher Goodwin & Associates, Inc., New Orleans, LA. Submitted to Florida Gas Transmission Company, Houston, TX	1993
19836	Phase I Archaeological Survey of the Proposed Florida Gas Transmission Compressor Station 12 Upgrade		1993
3167	Historic Building Survey of Okaloosa County	Historic Property Associates, Inc., St. Augustine. Submitted to Okaloosa County Planning & Inspection, Crestview.	1992
3184	Archaeology and the Geographic Resource Analysis Support System: An Evaluation of a Soil Conservation Service Model of Archaeological Site Locations in Santa Rosa County, Florida	Report of Investigations #47, Archaeology Institute, University of West Florida, Pensacola. Submitted to Florida Division of Historical Resources, Bureau of Archaeological Research, Tallahassee.	1992
2974	Phase III Archaeological Survey of the Blackwater River Drainage	University of West Florida, Archaeology Institution Report of Investigations No. 42, Pensacola.	1991
2527	An archaeological survey of the proposed Tommy Steele Road Project, Okaloosa County, Florida	Manuscript prepared for Southeastern Engineers, Inc. by New World Research, Inc., Fort Walton Beach.	1990
2583	An archaeological survey of a proposed drill site in Blackwater State Forest, Santa Rosa County, Florida	New World Research, Inc., Fort Walton Beach.	1990
1531	Cultural resources survey of a proposed road and well pad, Santa Rosa County, Florida	New World Research, Ft. Walton Beach.	1988

MS#	Title	Publication Information	Year
1703	A Cultural Resources Investigation for the Yellow River Seismic Study: GIS Lines 1, 2 and 3A, Santa Rosa County, Florida [Confidential per F. S. 377.2409; in BHP/CR]	New World Research, Inc., Ft. Walton Beach.	1988
1704	An Archaeological Survey of the Teledyne Exploration Company Seismic Testing Lines DNR No. G-100-88, Blackwater State Forest, Santa Rosa and Okaloosa Counties. [Confidential per F. S. 377.2409; in BHP/CR]	New World Research, Ft. Walton Beach.	1988
2291	Cultural resources investigations at Eglin Air Force Base, Santa Rosa, Okaloosa and Walton Counties, Florida	New World Research, Inc., Ft. Walton Beach.	1984
825	Cultural resources reconnaissance Tenneco Oil Co. proposed drilling operations, Blackwater River State Forest, Okaloosa County, Florida	Ms. on file, FDHR/BAR.	1983
2287	Management summary, Phase I cultural resources survey, Eglin Air Force Base, Florida	New World Research, Inc., Ft. Walton Beach.	1983
298	Cultural Resources Survey of Alabama Electric Cooperative Inc., Munson Substation, Blackwater River State Forest	Ms. on file, FDHR/BAR.	1981
586	Cultural Resource Reconnaissance of the Baker-Beda Transmission Line, Okaloosa County, Florida and Covington County, Alabama	Ms. on file, FDHR/BAR.	1981
291	A Cultural Resources Survey of the Zachary-Fort Lauderdale Pipeline Construction and Conversion Project: Alternate II/Florida	Espey-Houston, Inc., TX.	1980
103	Archaeological Site Assessment Survey of the Cedar Creek RC&D Pproject	Letter Report Submitted to Pete Heard, Soil Conservation Service, Gainesville, from George W. Percy [FDHR/BAR], July 28, 1978.	1978
90	Blackwater River State Forest Well Survey	Report submitted to Houston Oil and Minerals Corporation. Florida State University, Tallahassee.	1977
502	Archaeological and Historical Survey of Two Proposed Borrow Pits	Letter to M. L. Chamberlain, April 15, 1977.	1977

Exhibit I

Management Procedures for Archaeological and Historical Sites and Properties on State Owned or Controlled Lands

Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties
(revised June 2021)

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

A. Historic Property Definition

Historic properties include archaeological sites and historic structures as well as other types of resources. Chapter 267, Florida Statutes states: “ *‘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 Chapter 267, F.S. and state policy related to historic properties, state agencies of the executive branch must provide the Division of Historical Resources (Division) the opportunity to comment on any undertakings with the potential to affect historic properties that are listed, or eligible for listing, in the National Register of Historic Places, 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 undertaking. (267.061(2)(a))

State agencies must consult with the Division when, as a result of state action or assistance, a historic property will be demolished or substantially altered in a way that will adversely affect the property. State agencies must take timely steps to consider feasible and prudent alternatives to the adverse effect. If no feasible or prudent alternatives exist, the state agency must take timely steps to avoid or mitigate the adverse effect. (267.061(2)(b))

State agencies must consult with Division to establish a program to locate, inventory and evaluate all historic properties under ownership or controlled by the agency. (267.061(2)(c))

State agencies are responsible for preserving historic properties under their control. State agencies are directed to use historic properties available to the agency when that use is consistent with the historic property and the agency’s mission. State agencies are also directed to pursue preservation of historic properties to support their continued use. (267.061(2)(d))

C. Statutory Authority

The full text of Chapter 267, F.S. and additional information related to the treatment of historic properties is available at:

<https://dos.myflorida.com/historical/preservation/compliance-and-review/regulations-guidelines/>

D. Management Implementation

Although the Division sits on the Acquisition and Restoration Council and approves land management plans, these plans are conceptual and do not include detailed project information. Specific information for individual projects must be submitted to the Division for review and comment.

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. The Division's recommendations may include, but are not limited to: approval of the project as submitted, recommendation for a cultural resource assessment survey by a qualified professional archaeologist, and modifications to the proposed project to avoid or mitigate potential adverse effects.

Projects such as additions or alterations to historic structures as well as new construction must also be submitted to the Division for review. Projects involving structures fifty years of age or older must be submitted to the Division for a significance determination. In rare cases, structures under fifty years of age may be deemed historically significant.

Adverse effects to historic properties must be avoided when possible, and if avoidance is not possible, additional consultation with the Division is necessary to develop a mitigation plan. Furthermore, managers of state property should make preparations for locating and evaluating historic properties, both archaeological sites and historic structures.

E. Archaeological Resource Management (ARM) Training

The ARM Training Course introduces state land managers to the nature of archaeological resources, Florida archaeology, and the role of the Division in managing state-owned archaeological resources. Participants gain a better understanding of the requirements of state and federal laws with regard to protecting and managing archaeological sites on state managed lands. Participants also receive a certificate recognizing their ability to conduct limited monitoring activities in accordance with the Division's Review Procedure, thereby reducing the time and money spent to comply with state regulations. Additional information regarding the ARM Training Course is available at:

<https://dos.myflorida.com/historical/archaeology/education/arm-training-courses/>

F. Matrix for Ground Disturbance on State Lands

The matrix is a tool designed to help streamline the Division's Review Procedure. The matrix allows state land managers to make decisions about balancing ground disturbance and stewardship of historic resources. The matrix establishes types of undertakings that are either minor or major disturbances and then guides the land manager to consult the Division, conduct ARM-trained project monitoring, or proceed with the project. Additional information regarding the matrix is available at:

<https://dos.myflorida.com/historical/archaeology/education/dhr-matrix-for-ground-disturbance-on-state-lands/>

G. Human Remains Treatment

Chapter 872, *Florida Statutes* makes it illegal to willfully and knowingly disturb human remains. In the event human remains are discovered, cease all activity in the area that may disturb the remains. Leave the bones and nearby items in place. Immediately notify law enforcement or the local district medical examiner of the discovery and follow the provisions of Chapter 872, FS. Additional information regarding the treatment of human remains and cemeteries is available at:

<https://dos.myflorida.com/historical/archaeology/human-remains/>

<https://dos.myflorida.com/historical/archaeology/human-remains/abandoned-cemeteries/what-are-the-applicable-laws-and-regulations/>

II. Division of Historical Resources Review Procedure

Projects on state owned or controlled properties may submit projects to the Division for review using the streamlined State Lands Consultation Form. The form provides instructions to submit projects for review and outlines the necessary information for the Division to complete the review process. The State Lands Consultation Form and additional information about the Division's review process is available at:

<https://dos.myflorida.com/historical/preservation/compliance-and-review/state-lands-review/>

* * *

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

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

StateLandsCompliance@dos.myflorida.com

Phone: (850) 245-6333
Toll Free: (800) 847-7278
Fax: (850) 245-6435

Exhibit J

Soil Types Maps and Descriptions



Florida Forest Service

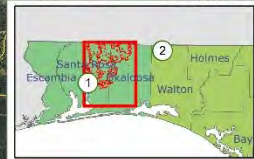
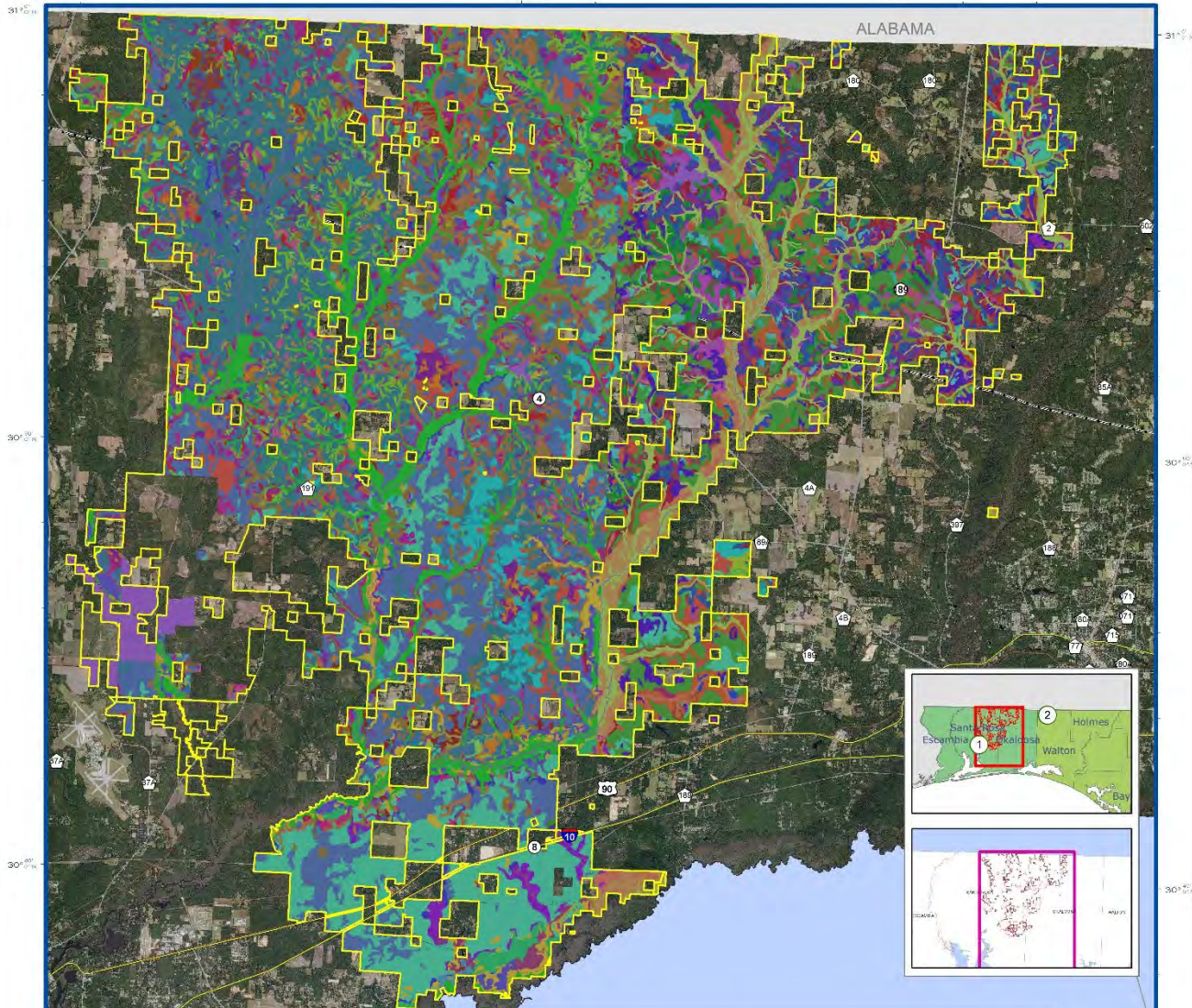
Blackwater River State Forest

Soils Map

Coordinate System: Florida, Alabama
High Accuracy Reference Network (HARN) Datum

DISCLAIMER:
This map was created by the Florida Forest Service for the purpose of providing information to the public. It is not intended to be used for any other purpose. The Florida Forest Service is not responsible for any errors or omissions on this map. The Florida Forest Service is not responsible for any damages or losses resulting from the use of this map. The Florida Forest Service is not responsible for any claims or lawsuits resulting from the use of this map.

Map and Data Sources:
The Florida Forest Service is the primary data source for this map. The Florida Forest Service is the primary data source for this map. The Florida Forest Service is the primary data source for this map.



LEGEND			
	Blackwater River State Forest		
Soil Type			
	ALBANY LOAMY SAND; 0 TO 5 PERCENT SLOPES		ESTO LOAM; 5 TO 8 PERCENT SLOPES
	ANGIE SANDY LOAM; 2 TO 5 PERCENT SLOPES		FOXWORTH SAND; 0 TO 5 PERCENT SLOPES
	ANGIE VARIANT LOAM		FUQUAY LOAMY FINE SAND; 0 TO 5 PERCENT SLOPES
	BIBB-KINSTON ASSOCIATION		FUQUAY LOAMY FINE SAND; 5 TO 8 PERCENT SLOPES
	BOHICKET AND HANDSBORO SOILS		FUQUAY LOAMY SAND; 0 TO 5 PERCENT SLOPES
	BONIFAY LOAMY SAND; 0 TO 5 PERCENT SLOPES		FUQUAY LOAMY SAND; 5 TO 8 PERCENT SLOPES
	BONIFAY SAND; 0 TO 5 PERCENT SLOPES		GARCON LOAMY FINE SAND
	BONIFAY-DOTHAN-ANGIE SOILS; 5 TO 12 PERCENT SLOPES		GULLIED LAND
	CHEWACLA-WAHEE-RIVERVIEW ASSOCIATION		KALMIA LOAMY FINE SAND; 2 TO 5 PERCENT SLOPES
	CHIPLEY AND HURRICANE SANDS; 0 TO 5 PERCENT SLOPES		KINSTON, JOHNSTON, AND BIBB SOILS; FREQUENTLY FLOODED
	DOROVAN MUCK; FREQUENTLY FLOODED		LAKELAND SAND; 0 TO 5 PERCENT SLOPES
	DOROVAN-PAMLICO ASSOCIATION		LAKELAND SAND; 12 TO 30 PERCENT SLOPES
	DOTHAN FINE SANDY LOAM; 0 TO 2 PERCENT SLOPES		LAKELAND SAND; 5 TO 12 PERCENT SLOPES
	DOTHAN FINE SANDY LOAM; 2 TO 5 PERCENT SLOPES		LEEFIELD-STILSON LOAMY SANDS; 0 TO 5 PERCENT SLOPES
	DOTHAN FINE SANDY LOAM; 5 TO 8 PERCENT SLOPES		LEON SAND; 0 TO 2 PERCENT SLOPES
	DOTHAN LOAMY SAND; 0 TO 2 PERCENT SLOPES		LUCY LOAMY SAND; 0 TO 5 PERCENT SLOPES
	DOTHAN LOAMY SAND; 2 TO 5 PERCENT SLOPES		LUCY LOAMY SAND; 5 TO 8 PERCENT SLOPES
	DOTHAN LOAMY SAND; 5 TO 8 PERCENT SLOPES		LYNCHBURG FINE SANDY LOAM
	ESCAMBIA FINE SANDY LOAM; 0 TO 2 PERCENT SLOPES		MAXTON LOAMY FINE SAND; 2 TO 5 PERCENT SLOPES
	ESCAMBIA FINE SANDY LOAM; 0 TO 3 PERCENT SLOPES		NOTCHER GRAVELLY SANDY LOAM; 0 TO 2 PERCENT SLOPES
	ESTO LOAM; 2 TO 5 PERCENT SLOPES		NOTCHER GRAVELLY SANDY LOAM; 2 TO 5 PERCENT SLOPES
			ORANGEBURG SANDY LOAM; 0 TO 2 PERCENT SLOPES
			ORANGEBURG SANDY LOAM; 0 TO 2 PERCENT SLOPES
			ORANGEBURG SANDY LOAM; 2 TO 5 PERCENT SLOPES
			ORANGEBURG SANDY LOAM; 5 TO 8 PERCENT SLOPES
			ORTEGA SAND; 0 TO 5 PERCENT SLOPES
			FACTOLUS LOAMY SAND; 0 TO 5 PERCENT SLOPES
			PANSEY SANDY LOAM; 1 TO 3 PERCENT SLOPES
			PANSEY SANDY LOAM; DEPRESSIONAL
			PITS
			RAINS FINE SANDY LOAM
			RUTLEGE FINE SAND; DEPRESSIONAL
			RUTLEGE LOAMY SAND
			TIFTON SANDY LOAM; 0 TO 2 PERCENT SLOPES
			TIFTON SANDY LOAM; 2 TO 5 PERCENT SLOPES
			TIFTON SANDY LOAM; 5 TO 8 PERCENT SLOPES
			TROUP
			TROUP LOAMY SAND; 0 TO 5 PERCENT SLOPES
			TROUP LOAMY SAND; 5 TO 8 PERCENT SLOPES
			TROUP LOAMY SAND; 8 TO 12 PERCENT SLOPES
			TROUP SAND; 12 TO 25 PERCENT SLOPES
			TROUP SAND; 5 TO 8 PERCENT SLOPES
			TROUP SAND; 8 TO 12 PERCENT SLOPES
			TROUP-ORANGEBURG-COWARTS COMPLEX; 5 TO 12 PERCENT SLOPES
			TROUP-ORANGEBURG-COWARTS SOILS; 5 TO 12 PERCENT SLOPES
			UDORHENTS; NEARLY LEVEL
			YEMASSEE, GARCON AND BIGBEE SOILS; OCCASIONALLY FLOODED



Map Month/Year: August 2025



Component Legend

This report presents general information about the map units and map unit components in the selected area. It shows map unit symbols and names and the components in each map unit. It also shows the percent of the components in the map units, the kind of component, and the slope range of each component.

Report—Component Legend

Component Legend—Okaloosa County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
2—Arents, 2 to 8 percent slopes	410						
		100	Arents	Taxon above family	2.0	5.0	8.0
3—Beaches	390						
		100	Beaches	Miscellaneous area	1.0	2.0	3.0
4—Chipley and Hurricane soils, 0 to 5 percent slopes	10,090						
		45	Chipley	Series	0.0	3.0	5.0
		40	Hurricane	Series	0.0	3.0	5.0
6—Dorovan muck, frequently flooded	35,330						
		92	Dorovan	Series	0.0	1.0	1.0
7—Duckston sand, frequently flooded	490						
		85	Duckston	Series	0.0	0.5	1.0
8—Foxworth sand, 0 to 5 percent slopes	6,240						
		95	Foxworth	Series	0.0	3.0	5.0
10—Kureb sand, 0 to 8 percent slopes	3,610						
		80	Kureb	Series	0.0	4.0	8.0
12—Lakeland sand, 0 to 5 percent slopes	213,830						
		80	Lakeland	Series	0.0	3.0	5.0
13—Lakeland sand, 5 to 12 percent slopes	21,670						
		90	Lakeland	Series	5.0	9.0	12.0
14—Lakeland sand, 12 to 30 percent slopes	6,090						
		94	Lakeland	Series	12.0	21.0	30.0

Component Legend--Okaloosa County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
15—Leon sand, 0 to 2 percent slopes	2,840						
		80	Leon	Series	0.0	1.0	2.0
16—Lucy loamy sand, 0 to 5 percent slopes	8,020						
		85	Lucy	Series	0.0	3.0	5.0
17—Mandarin sand, 0 to 3 percent slopes	1,110						
		94	Mandarin	Series	0.0	1.0	2.0
18—Newhan-Corolla complex, 2 to 30 percent slopes	4,320						
		60	Newhan	Series	2.0	16.0	30.0
		30	Corolla	Series	2.0	16.0	30.0
20—Udorthents, nearly level	3,770						
		100	Udorthents	Taxon above family	0.0	1.0	2.0
21—Resota sand, 0 to 5 percent slopes	1,410						
		95	Resota	Series	0.0	3.0	5.0
22—Rutlege fine sand, depressional	4,450						
		93	Rutlege, depressional	Series	0.0	1.0	1.0
23—Troup sand, 0 to 5 percent slopes	34,090						
		80	Troup	Series	0.0	3.0	5.0
24—Troup sand, 5 to 8 percent slopes	12,020						
		88	Troup	Series	5.0	7.0	8.0
25—Troup sand, 8 to 12 percent slopes	14,870						
		85	Troup	Series	8.0	10.0	12.0
26—Troup sand, 12 to 25 percent slopes	3,780						
		87	Troup	Series	12.0	19.0	25.0
27—Urban land	7,190						
		75	Urban land	Miscellaneous area	0.0	3.0	5.0
34—Albany loamy sand, 0 to 5 percent slopes	2,170						
		87	Albany	Series	0.0	2.5	5.0

Component Legend--Okaloosa County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
35--Angle sandy loam, 2 to 5 percent slopes	1,360						
		87	Angle	Series	2.0	4.0	5.0
36--Bonifay sand, 0 to 5 percent slopes	17,620						
		88	Bonifay	Series	0.0	3.0	5.0
37--Bonifay sand, 5 to 8 percent slopes	7,520						
		85	Bonifay	Series	5.0	7.0	8.0
38--Dothan loamy sand, 0 to 2 percent slopes	3,600						
		80	Dothan	Series	0.0	1.0	2.0
39--Dothan loamy sand, 2 to 5 percent slopes	23,380						
		80	Dothan	Series	2.0	3.0	5.0
40--Dothan loamy sand, 5 to 8 percent slopes	10,500						
		90	Dothan	Series	5.0	7.0	8.0
41--Fuquay loamy fine sand, 0 to 5 percent slopes	10,610						
		90	Fuquay	Series	0.0	3.0	5.0
42--Fuquay loamy fine sand, 5 to 8 percent slopes	6,950						
		90	Fuquay	Series	5.0	7.0	8.0
43--Kinston, Johnston, and Bibb soils, frequently flooded	44,700						
		31	Kinston	Series	0.0	1.0	2.0
		30	Johnston	Series	0.0	1.0	2.0
		29	Bibb	Series	0.0	1.0	2.0
44--Leefield-Stilson complex, 0 to 5 percent slopes	4,370						
		70	Leefield	Series	0.0	3.0	5.0
		20	Stilson	Series	0.0	3.0	5.0
45--Orangeburg sandy loam, 0 to 2 percent slopes	5,720						
		90	Orangeburg	Series	0.0	1.0	2.0
46--Orangeburg sandy loam, 2 to 5 percent slopes	5,520						
		90	Orangeburg	Series	2.0	3.0	5.0
47--Orangeburg sandy loam, 5 to 8 percent slopes	1,020						
		90	Orangeburg	Series	5.0	7.0	8.0

Component Legend--Okaloosa County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
48—Pickney loamy sand, depressional	1,880						
		86	Pickney	Series	0.0	1.0	2.0
49—Bonifay-Dothan-Angie complex, 5 to 12 percent slopes	11,920						
		36	Bonifay	Series	5.0	9.0	12.0
		34	Dothan	Series	5.0	9.0	12.0
		21	Angie	Series	5.0	9.0	12.0
50—Yemassee, Garcon, and Bigbee soils, occasionally flooded	17,680						
		40	Yemassee	Series	0.0	1.0	2.0
		30	Garcon	Series	0.0	1.0	2.0
		22	Bigbee	Series	0.0	1.0	2.0
51—Troup-Orangeburg-Cowarts complex, 5 to 12 percent slopes	5,200						
		47	Troup	Series	5.0	9.0	12.0
		18	Orangeburg	Series	5.0	9.0	12.0
		15	Cowarts	Series	5.0	9.0	12.0
52—Escambia fine sandy loam, 0 to 3 percent slopes	13,200						
		94	Escambia	Series	0.0	2.0	3.0
53—Notcher gravelly sandy loam, 0 to 2 percent slopes	910						
		96	Notcher	Series	0.0	1.0	2.0
54—Notcher gravelly sandy loam, 2 to 5 percent slopes	410						
		89	Notcher	Series	2.0	4.0	5.0
55—Pansey sandy loam, depressional	560						
		95	Pansey	Series	1.0	1.0	2.0
56—Pansey sandy loam, 1 to 3 percent slopes	2,170						
		88	Pansey	Series	1.0	2.0	3.0
99—Water	8,450						
		100	Water	Miscellaneous area			

Component Legend--Okaloosa County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
100--Waters of the Gulf of Mexico	33,560						
		100	Water of the gulf of mexico	Miscellaneous area			

Data Source Information

Soil Survey Area: Okaloosa County, Florida
 Survey Area Data: Version 22, Aug 24, 2023

Map Unit Description (Brief, Generated)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, provide information on the composition of map units and properties of their components.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description (Brief, Generated)

Okaloosa County, Florida

Map Unit: 2—Arents, 2 to 8 percent slopes

Component: Arents (100%)

The Arents component makes up 100 percent of the map unit. Slopes are 2 to 8 percent. This component is on fills, rises on marine terraces on coastal plains. The parent material consists of altered marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map Unit: 3—Beaches**Component:** Beaches (100%)

Generated brief soil descriptions are created for major soil components. The Beaches is a miscellaneous area.

Map Unit: 4—Chipley and Hurricane soils, 0 to 5 percent slopes**Component:** Chipley (45%)

The Chipley component makes up 45 percent of the map unit. Slopes are 0 to 5 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 30 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 4 percent. This component is in the F152AY320FL East Central Sandy Flat ecological site. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Hurricane (40%)

The Hurricane component makes up 40 percent of the map unit. Slopes are 0 to 5 percent. This component is on flats on marine terraces on coastal plains, rises on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 33 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 1 percent. This component is in the F152AY320FL East Central Sandy Flat ecological site. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Leon (10%)

Generated brief soil descriptions are created for major soil components. The Leon soil is a minor component.

Component: Rutlege (5%)

Generated brief soil descriptions are created for major soil components. The Rutlege soil is a minor component.

Map Unit: 6—Dorovan muck, frequently flooded

Component: Dorovan (92%)

The Dorovan component makes up 92 percent of the map unit. Slopes are 0 to 1 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of organic material. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is frequently flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 50 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Leon (2%)

Generated brief soil descriptions are created for major soil components. The Leon soil is a minor component.

Component: Kinston (2%)

Generated brief soil descriptions are created for major soil components. The Kinston soil is a minor component.

Component: Bibb (2%)

Generated brief soil descriptions are created for major soil components. The Bibb soil is a minor component.

Component: Rutlege (2%)

Generated brief soil descriptions are created for major soil components. The Rutlege soil is a minor component.

Map Unit: 7—Duckston sand, frequently flooded

Component: Duckston (85%)

The Duckston component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 2 percent. This component is in the F152AY215FL Central Coastal Adjacent Flooded Interdunal Flats ecological site. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. The soil has a moderately saline horizon within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 14 within 30 inches of the soil surface.

Component: Rutlege (10%)

Generated brief soil descriptions are created for major soil components. The Rutlege soil is a minor component.

Component: Leon (5%)

Generated brief soil descriptions are created for major soil components. The Leon soil is a minor component.

Map Unit: 8—Foxworth sand, 0 to 5 percent slopes

Component: Foxworth (95%)

The Foxworth component makes up 95 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges, coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 57 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 1 percent. This component is in the F152AY305FL East Central Sandy Ridges, Rises, and Knolls ecological site. Nonirrigated land capability classification is 3s. Irrigated land capability classification is 4s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Lakeland (4%)

Generated brief soil descriptions are created for major soil components. The Lakeland soil is a minor component.

Component: Chipley (1%)

Generated brief soil descriptions are created for major soil components. The Chipley soil is a minor component.

Map Unit: 10—Kureb sand, 0 to 8 percent slopes

Component: Kureb (80%)

The Kureb component makes up 80 percent of the map unit. Slopes are 0 to 8 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of eolian deposits or sandy fluvial or marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. This component is in the F152AY205FL Central Coastal Adjacent Dune ecological site. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Resota (10%)

Generated brief soil descriptions are created for major soil components. The Resota soil is a minor component.

Component: Mandarin (5%)

Generated brief soil descriptions are created for major soil components. The Mandarrn soil is a minor component.

Component: Corolla (3%)

Generated brief soil descriptions are created for major soil components. The Corolla soil is a minor component.

Component: Newhan (2%)

Generated brief soil descriptions are created for major soil components. The Newhan soil is a minor component.

Map Unit: 12—Lakeland sand, 0 to 5 percent slopes

Component: Lakeland (80%)

The Lakeland component makes up 80 percent of the map unit. Slopes are 0 to 5 percent. This component is on hills, coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3s. Irrigated land capability classification is 4s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Troup (6%)

Generated brief soil descriptions are created for major soil components. The Troup soil is a minor component.

Component: Foxworth (5%)

Generated brief soil descriptions are created for major soil components. The Foxworth soil is a minor component.

Component: Bonifay (5%)

Generated brief soil descriptions are created for major soil components. The Bonifay soil is a minor component.

Component: Albany (2%)

Generated brief soil descriptions are created for major soil components. The Albany soil is a minor component.

Component: Chipley (2%)

Generated brief soil descriptions are created for major soil components. The Chipley soil is a minor component.

Map Unit: 13—Lakeland sand, 5 to 12 percent slopes

Component: Lakeland (90%)

The Lakeland component makes up 90 percent of the map unit. Slopes are 5 to 12 percent. This component is on hills, coastal plains. The parent material consists of eolian or sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Troup (5%)

Generated brief soil descriptions are created for major soil components. The Troup soil is a minor component.

Component: Fuquay (3%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Component: Foxworth (2%)

Generated brief soil descriptions are created for major soil components. The Foxworth soil is a minor component.

Map Unit: 14—Lakeland sand, 12 to 30 percent slopes**Component:** Lakeland (94%)

The Lakeland component makes up 94 percent of the map unit. Slopes are 12 to 30 percent. This component is on hills on marine terraces on coastal plains. The parent material consists of eolian or sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Foxworth (3%)

Generated brief soil descriptions are created for major soil components. The Foxworth soil is a minor component.

Component: Bonifay (3%)

Generated brief soil descriptions are created for major soil components. The Bonifay soil is a minor component.

Map Unit: 15—Leon sand, 0 to 2 percent slopes**Component:** Leon (80%)

The Leon component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods, marine terraces, coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 2 percent. This component is in the F152AY320FL East Central Sandy Flat ecological site. Nonirrigated land capability classification is 4w. Irrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Leon, hydric (5%)

Generated brief soil descriptions are created for major soil components. The Leon, hydric soil is a minor component.

Component: Pottsburg (4%)

Generated brief soil descriptions are created for major soil components. The Pottsburg soil is a minor component.

Component: Hurricane (4%)

Generated brief soil descriptions are created for major soil components. The Hurricane soil is a minor component.

Component: Mandarin (3%)

Generated brief soil descriptions are created for major soil components. The Mandarin soil is a minor component.

Component: Pickney (2%)

Generated brief soil descriptions are created for major soil components. The Pickney soil is a minor component.

Component: Rutlege (2%)

Generated brief soil descriptions are created for major soil components. The Rutlege soil is a minor component.

Map Unit: 16—Lucy loamy sand, 0 to 5 percent slopes

Component: Lucy (85%)

The Lucy component makes up 85 percent of the map unit. Slopes are 0 to 5 percent. This component is on interfluves, coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2s. Irrigated land capability classification is 2s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Orangeburg (4%)

Generated brief soil descriptions are created for major soil components. The Orangeburg soil is a minor component.

Component: Troup (4%)

Generated brief soil descriptions are created for major soil components. The Troup soil is a minor component.

Component: Bonneau (3%)

Generated brief soil descriptions are created for major soil components. The Bonneau soil is a minor component.

Component: Fuquay (2%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Component: Rattlesnake Forks (2%)

Generated brief soil descriptions are created for major soil components. The Rattlesnake Forks soil is a minor component.

Map Unit: 17—Mandarin sand, 0 to 3 percent slopes

Component: Mandarin (94%)

The Mandarin component makes up 94 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 30 inches during June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 1 percent. This component is in the F152AY320FL East Central Sandy Flat ecological site. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Leon (2%)

Generated brief soil descriptions are created for major soil components. The Leon soil is a minor component.

Component: Rutlege (2%)

Generated brief soil descriptions are created for major soil components. The Rutlege soil is a minor component.

Component: Resota (2%)

Generated brief soil descriptions are created for major soil components. The Resota soil is a minor component.

Map Unit: 18—Newhan-Corolla complex, 2 to 30 percent slopes

Component: Newhan (60%)

The Newhan component makes up 60 percent of the map unit. Slopes are 2 to 30 percent. This component is on dunes on marine terraces on coastal plains. The parent material consists of sandy eolian deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 0 percent. This component is in the F152AY205FL Central Coastal Adjacent Dune ecological site. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria. The soil has a slightly saline horizon within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 14 within 30 inches of the soil surface.

Component: Corolla (30%)

The Corolla component makes up 30 percent of the map unit. Slopes are 2 to 30 percent. This component is on marine terraces on coastal plains, rises. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is rarely flooded. It is not ponded. A seasonal zone of water saturation is at 23 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 0 percent. This component is in the F152AY200FL Central Coastal Adjacent Ridges and Rises ecological site. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria. The soil has a moderately saline horizon within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 13 within 30 inches of the soil surface.

Component: Duckston (10%)

Generated brief soil descriptions are created for major soil components. The Duckston soil is a minor component.

Map Unit: 20—Udorthents, nearly level

Component: Udorthents (100%)

The Udorthents component makes up 100 percent of the map unit. Slopes are 0 to 2 percent. This component is on fills on marine terraces on coastal plains. The parent material consists of altered marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 54 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 8. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map Unit: 21—Resota sand, 0 to 5 percent slopes

Component: Resota (95%)

The Resota component makes up 95 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 51 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 1 percent. This component is in the F152AY200FL Central Coastal Adjacent Ridges and Rises ecological site. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Mandarin (5%)

Generated brief soil descriptions are created for major soil components. The Mandarin soil is a minor component.

Map Unit: 22—Rutlege fine sand, depressional

Component: Rutlege, depressional (93%)

The Rutlege, depressional component makes up 93 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy marine deposits and/or fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 6 percent. This component is in the F152AY350FL East Central Sandy Lowland ecological site. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Dorovan (4%)

Generated brief soil descriptions are created for major soil components. The Dorovan soil is a minor component.

Component: Leon (3%)

Generated brief soil descriptions are created for major soil components. The Leon soil is a minor component.

Map Unit: 23—Troup sand, 0 to 5 percent slopes

Component: Troup (80%)

The Troup component makes up 80 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Blanton (10%)

Generated brief soil descriptions are created for major soil components. The Blanton soil is a minor component.

Component: Foxworth (5%)

Generated brief soil descriptions are created for major soil components. The Foxworth soil is a minor component.

Component: Lakeland (5%)

Generated brief soil descriptions are created for major soil components. The Lakeland soil is a minor component.

Map Unit: 24—Troup sand, 5 to 8 percent slopes**Component: Troup (88%)**

The Troup component makes up 88 percent of the map unit. Slopes are 5 to 8 percent. This component is on ridges, coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Lakeland (4%)

Generated brief soil descriptions are created for major soil components. The Lakeland soil is a minor component.

Component: Bonifay (4%)

Generated brief soil descriptions are created for major soil components. The Bonifay soil is a minor component.

Component: Lucy (4%)

Generated brief soil descriptions are created for major soil components. The Lucy soil is a minor component.

Map Unit: 25—Troup sand, 8 to 12 percent slopes**Component: Troup (85%)**

The Troup component makes up 85 percent of the map unit. Slopes are 8 to 12 percent. This component is on marine terraces, ridges, coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Bonifay (5%)

Generated brief soil descriptions are created for major soil components. The Bonifay soil is a minor component.

Component: Fuquay (4%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Component: Lucy (3%)

Generated brief soil descriptions are created for major soil components. The Lucy soil is a minor component.

Component: Lakeland (3%)

Generated brief soil descriptions are created for major soil components. The Lakeland soil is a minor component.

Map Unit: 26—Troup sand, 12 to 25 percent slopes**Component: Troup (87%)**

The Troup component makes up 87 percent of the map unit. Slopes are 12 to 25 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 7e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Cowarts (10%)

Generated brief soil descriptions are created for major soil components. The Cowarts soil is a minor component.

Component: Dolhan (3%)

Generated brief soil descriptions are created for major soil components. The Dolhan soil is a minor component.

Map Unit: 27—Urban land

Component: Urban land (75%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

Component: Troup (5%)

Generated brief soil descriptions are created for major soil components. The Troup soil is a minor component.

Component: Foxworth (5%)

Generated brief soil descriptions are created for major soil components. The Foxworth soil is a minor component.

Component: Kureb (5%)

Generated brief soil descriptions are created for major soil components. The Kureb soil is a minor component.

Component: Lakeland (5%)

Generated brief soil descriptions are created for major soil components. The Lakeland soil is a minor component.

Component: Bonifay (5%)

Generated brief soil descriptions are created for major soil components. The Bonifay soil is a minor component.

Map Unit: 34—Albany loamy sand, 0 to 5 percent slopes

Component: Albany (87%)

The Albany component makes up 87 percent of the map unit. Slopes are 0 to 5 percent. This component is on — Error in Exists On —. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is rarely flooded. It is not ponded. A seasonal zone of water saturation is at 21 inches during January, February, March, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Fuquay (5%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Component: Troup (5%)

Generated brief soil descriptions are created for major soil components. The Troup soil is a minor component.

Component: Plummer (3%)

Generated brief soil descriptions are created for major soil components. The Plummer soil is a minor component.

Map Unit: 35—Angie sandy loam, 2 to 5 percent slopes

Component: Angie (87%)

The Angie component makes up 87 percent of the map unit. Slopes are 2 to 5 percent. This component is on knolls on marine terraces on coastal plains. The parent material consists of loamy and clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 48 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Norfolk (5%)

Generated brief soil descriptions are created for major soil components. The Norfolk soil is a minor component.

Component: Dothan (5%)

Generated brief soil descriptions are created for major soil components. The Dothan soil is a minor component.

Component: Orangeburg (3%)

Generated brief soil descriptions are created for major soil components. The Orangeburg soil is a minor component.

Map Unit: 36—Bonifay sand, 0 to 5 percent slopes

Component: Bonifay (88%)

The Bonifay component makes up 88 percent of the map unit. Slopes are 0 to 5 percent. This component is on — Error in Exists On —. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 57 inches during January, February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Troup (5%)

Generated brief soil descriptions are created for major soil components. The Troup soil is a minor component.

Component: Foxworth (4%)

Generated brief soil descriptions are created for major soil components. The Foxworth soil is a minor component.

Component: Lakeland (3%)

Generated brief soil descriptions are created for major soil components. The Lakeland soil is a minor component.

Map Unit: 37—Bonifay sand, 5 to 8 percent slopes**Component:** Bonifay (85%)

The Bonifay component makes up 85 percent of the map unit. Slopes are 5 to 8 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 54 inches during January, February. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Troup (5%)

Generated brief soil descriptions are created for major soil components. The Troup soil is a minor component.

Component: Foxworth (5%)

Generated brief soil descriptions are created for major soil components. The Foxworth soil is a minor component.

Component: Lakeland (5%)

Generated brief soil descriptions are created for major soil components. The Lakeland soil is a minor component.

Map Unit: 38—Dothan loamy sand, 0 to 2 percent slopes**Component:** Dothan (80%)

The Dothan component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on interflaves on coastal plains. The parent material consists of marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 41 inches during January, February, March. Organic matter content in the surface horizon is about 0 percent. Nonirrigated land capability classification is 2e. Irrigated land capability classification is 3s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Clarendon (5%)

Generated brief soil descriptions are created for major soil components. The Clarendon soil is a minor component.

Component: Orangeburg (5%)

Generated brief soil descriptions are created for major soil components. The Orangeburg soil is a minor component.

Component: Cowarts (5%)

Generated brief soil descriptions are created for major soil components. The Cowarts soil is a minor component.

Component: Fuquay (5%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Map Unit: 39—Dothan loamy sand, 2 to 5 percent slopes

Component: Dothan (80%)

The Dothan component makes up 80 percent of the map unit. Slopes are 2 to 5 percent. This component is on interflaves on coastal plains. The parent material consists of marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 41 inches during January, February, March. Organic matter content in the surface horizon is about 0 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Fuquay (8%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Component: Cowarts (5%)

Generated brief soil descriptions are created for major soil components. The Cowarts soil is a minor component.

Component: Nankin (5%)

Generated brief soil descriptions are created for major soil components. The Nankin soil is a minor component.

Component: Clarendon (2%)

Generated brief soil descriptions are created for major soil components. The Clarendon soil is a minor component.

Map Unit: 40—Dothan loamy sand, 5 to 8 percent slopes

Component: Dothan (90%)

The Dothan component makes up 90 percent of the map unit. Slopes are 5 to 8 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of loamy and clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 48 inches during January, February, March, April. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Orangeburg (4%)

Generated brief soil descriptions are created for major soil components. The Orangeburg soil is a minor component.

Component: Fuquay (4%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Component: Faceville (2%)

Generated brief soil descriptions are created for major soil components. The Faceville soil is a minor component.

Map Unit: 41—Fuquay loamy fine sand, 0 to 5 percent slopes

Component: Fuquay (90%)

The Fuquay component makes up 90 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges, coastal plains. The parent material consists of fine-loamy fluviomarine deposits derived from sedimentary rock. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 48 inches during January, February, March, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2s. Irrigated land capability classification is 2s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Bonifay (7%)

Generated brief soil descriptions are created for major soil components. The Bonifay soil is a minor component.

Component: Dothan (3%)

Generated brief soil descriptions are created for major soil components. The Dothan soil is a minor component.

Map Unit: 42—Fuquay loamy fine sand, 5 to 8 percent slopes**Component: Fuquay (90%)**

The Fuquay component makes up 90 percent of the map unit. Slopes are 5 to 8 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 60 inches during January, February, March, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Troup (8%)

Generated brief soil descriptions are created for major soil components. The Troup soil is a minor component.

Component: Leefield (2%)

Generated brief soil descriptions are created for major soil components. The Leefield soil is a minor component.

Map Unit: 43—Kinston, Johnston, and Bibb soils, frequently flooded**Component: Kinston (31%)**

The Kinston component makes up 31 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of loamy alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, June, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Johnston (30%)

The Johnston component makes up 30 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of loamy and sandy alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is frequently flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Bibb (29%)

The Bibb component makes up 29 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of loamy and sandy alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Rutlege (10%)

Generated brief soil descriptions are created for major soil components. The Rutlege soil is a minor component.

Map Unit: 44—Leefield-Stilson complex, 0 to 5 percent slopes**Component: Leefield (70%)**

The Leefield component makes up 70 percent of the map unit. Slopes are 0 to 5 percent. This component is on rises on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 23 inches during January, February, March, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Stilson (20%)

The Stilson component makes up 20 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 33 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Dothan (4%)

Generated brief soil descriptions are created for major soil components. The Dothan soil is a minor component.

Component: Bonifay (3%)

Generated brief soil descriptions are created for major soil components. The Bonifay soil is a minor component.

Component: Fuquay (3%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Map Unit: 45—Orangeburg sandy loam, 0 to 2 percent slopes

Component: Orangeburg (90%)

The Orangeburg component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on rises on marine terraces on coastal plains. The parent material consists of loamy and clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 1. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Lucy (4%)

Generated brief soil descriptions are created for major soil components. The Lucy soil is a minor component.

Component: Red Bay (3%)

Generated brief soil descriptions are created for major soil components. The Red Bay soil is a minor component.

Component: Dothan (3%)

Generated brief soil descriptions are created for major soil components. The Dothan soil is a minor component.

Map Unit: 46—Orangeburg sandy loam, 2 to 5 percent slopes**Component:** Orangeburg (90%)

The Orangeburg component makes up 90 percent of the map unit. Slopes are 2 to 5 percent. This component is on ridges, coastal plains. The parent material consists of loamy and clayey fine-loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2e. Irrigated land capability classification is 2e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Dothan (5%)

Generated brief soil descriptions are created for major soil components. The Dothan soil is a minor component.

Component: Faceville (3%)

Generated brief soil descriptions are created for major soil components. The Faceville soil is a minor component.

Component: Lucy (2%)

Generated brief soil descriptions are created for major soil components. The Lucy soil is a minor component.

Map Unit: 47—Orangeburg sandy loam, 5 to 8 percent slopes**Component:** Orangeburg (90%)

The Orangeburg component makes up 90 percent of the map unit. Slopes are 5 to 8 percent. This component is on ridges, coastal plains. The parent material consists of loamy and clayey marine deposits derived from sedimentary rock. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Dothan (6%)

Generated brief soil descriptions are created for major soil components. The Dothan soil is a minor component.

Component: Lucy (4%)

Generated brief soil descriptions are created for major soil components. The Lucy soil is a minor component.

Map Unit: 48—Pickney loamy sand, depressional**Component:** Pickney (86%)

The Pickney component makes up 86 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of sandy marine deposits and/or fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 7 percent. This component is in the F152AY350FL East Central Sandy Lowland ecological site. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Dorovan (9%)

Generated brief soil descriptions are created for major soil components. The Dorovan soil is a minor component.

Component: Leon (5%)

Generated brief soil descriptions are created for major soil components. The Leon soil is a minor component.

Map Unit: 49—Bonifay-Dothan-Angle complex, 5 to 12 percent slopes

Component: Bonifay (36%)

The Bonifay component makes up 36 percent of the map unit. Slopes are 5 to 12 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 51 inches during January, February, March, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Dothan (34%)

The Dothan component makes up 34 percent of the map unit. Slopes are 5 to 12 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of loamy and clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 48 inches during January, February, March, April. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Angie (21%)

The Angie component makes up 21 percent of the map unit. Slopes are 5 to 12 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of loamy and clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is high. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 48 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Troup (3%)

Generated brief soil descriptions are created for major soil components. The Troup soil is a minor component.

Component: Lakeland (3%)

Generated brief soil descriptions are created for major soil components. The Lakeland soil is a minor component.

Component: Orangeburg (3%)

Generated brief soil descriptions are created for major soil components. The Orangeburg soil is a minor component.

Map Unit: 50—Yemassee, Garcon, and Bigbee soils, occasionally flooded

Component: Yemassee (40%)

The Yemassee component makes up 40 percent of the map unit. Slopes are 0 to 2 percent. This component is on stream terraces on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is occasionally flooded. It is not ponded. A seasonal zone of water saturation is at 15 inches during January, February, March, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Garcon (30%)

The Garcon component makes up 30 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is occasionally flooded. It is not ponded. A seasonal zone of water saturation is at 23 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Bigbee (22%)

The Bigbee component makes up 22 percent of the map unit. Slopes are 0 to 2 percent. This component is on stream terraces on marine terraces on coastal plains. The parent material consists of sandy fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is occasionally flooded. It is not ponded. A seasonal zone of water saturation is at 57 inches during January, February, March. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Kinston (2%)

Generated brief soil descriptions are created for major soil components. The Kinston soil is a minor component.

Component: Bibb (2%)

Generated brief soil descriptions are created for major soil components. The Bibb soil is a minor component.

Component: Rutlege (2%)

Generated brief soil descriptions are created for major soil components. The Rutlege soil is a minor component.

Component: Johnston (2%)

Generated brief soil descriptions are created for major soil components. The Johnston soil is a minor component.

Map Unit: 51—Troup-Orangeburg-Cowarts complex, 5 to 12 percent slopes

Component: Troup (47%)

The Troup component makes up 47 percent of the map unit. Slopes are 5 to 12 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Orangeburg (18%)

The Orangeburg component makes up 18 percent of the map unit. Slopes are 5 to 12 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of loamy and clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Cowarts (15%)

The Cowarts component makes up 15 percent of the map unit. Slopes are 5 to 12 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Dothan (10%)

Generated brief soil descriptions are created for major soil components. The Dothan soil is a minor component.

Component: Bonifay (7%)

Generated brief soil descriptions are created for major soil components. The Bonifay soil is a minor component.

Component: Chipley (3%)

Generated brief soil descriptions are created for major soil components. The Chipley soil is a minor component.

Map Unit: 52—Escambia fine sandy loam, 0 to 3 percent slopes

Component: Escambia (94%)

The Escambia component makes up 94 percent of the map unit. Slopes are 0 to 3 percent. This component is on rises on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Stilson (2%)

Generated brief soil descriptions are created for major soil components. The Stilson soil is a minor component.

Component: Fuquay (2%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Component: Dothan (2%)

Generated brief soil descriptions are created for major soil components. The Dothan soil is a minor component.

Map Unit: 53—Notcher gravelly sandy loam, 0 to 2 percent slopes**Component:** Notcher (96%)

The Notcher component makes up 96 percent of the map unit. Slopes are 0 to 2 percent. This component is on rises on marine terraces on coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 42 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 1. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Angie (2%)

Generated brief soil descriptions are created for major soil components. The Angie soil is a minor component.

Component: Escambia (2%)

Generated brief soil descriptions are created for major soil components. The Escambia soil is a minor component.

Map Unit: 54—Notcher gravelly sandy loam, 2 to 5 percent slopes**Component:** Notcher (89%)

The Notcher component makes up 89 percent of the map unit. Slopes are 2 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 42 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Angie (8%)

Generated brief soil descriptions are created for major soil components. The Angie soil is a minor component.

Component: Escambia (3%)

Generated brief soil descriptions are created for major soil components. The Escambia soil is a minor component.

Map Unit: 55—Pansey sandy loam, depressional

Component: Pansey (95%)

The Pansey component makes up 95 percent of the map unit. Slopes are 1 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of loamy fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Paleaquults, clayey substratum (5%)

Generated brief soil descriptions are created for major soil components. The Paleaquults, clayey substratum soil is a minor component.

Map Unit: 56—Pansey sandy loam, 1 to 3 percent slopes

Component: Pansey (88%)

The Pansey component makes up 88 percent of the map unit. Slopes are 1 to 3 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of loamy fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Escambia (10%)

Generated brief soil descriptions are created for major soil components. The Escambia soil is a minor component.

Component: Dothan (2%)

Generated brief soil descriptions are created for major soil components. The Dothan soil is a minor component.

Map Unit: 99—Water

Component: Water (100%)

Generated brief soil descriptions are created for major soil components. The Water is a miscellaneous area.

Map Unit: 100—Waters of the Gulf of Mexico

Component: Water of the Gulf of Mexico (100%)

Generated brief soil descriptions are created for major soil components. The Water of the Gulf of Mexico is a miscellaneous area.

Data Source Information

Soil Survey Area: Okaloosa County, Florida
Survey Area Data: Version 22, Aug 24, 2023

Component Legend

This report presents general information about the map units and map unit components in the selected area. It shows map unit symbols and names and the components in each map unit. It also shows the percent of the components in the map units, the kind of component, and the slope range of each component.

Report—Component Legend

Component Legend—Santa Rosa County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
1—Albany loamy sand, 0 to 5 percent slopes	5,460						
		87	Albany	Series	0.0	2.5	5.0
2—Angle variant loam	1,700						
		85	Angle variant	Variant	0.0	1.0	2.0
3—Bibb-Kinston association	51,450						
		50	Bibb	Series	0.0	1.0	2.0
		25	Kinston	Series	0.0	0.8	2.0
4—Bohicket and Handsboro soils	7,340						
		80	Bohicket	Series	0.0	0.2	0.5
		20	Handsboro	Series	0.0	0.2	0.5
5—Bonifay loamy sand, 0 to 5 percent slopes	27,610						
		80	Bonifay	Series	0.0	3.0	5.0
6—Chewacla-Wahee-Riverview association	20,440						
		36	Chewacla	Series	0.0	1.0	2.0
		34	Wahee, non-hydric	Series	0.0	1.0	2.0
		20	Riverview	Series	0.0	1.0	2.0
7—Dorovan-Pamlico association	17,120						
		50	Dorovan	Series	0.0	0.5	1.0
		30	Pamlico	Series	0.0	0.5	1.0
8—Dothan fine sandy loam, 0 to 2 percent slopes	13,790						
		85	Dothan	Series	0.0	1.0	2.0
9—Dothan fine sandy loam, 2 to 5 percent slopes	48,870						
		83	Dothan	Series	2.0	4.0	5.0

Component Legend--Santa Rosa County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
10--Dothan fine sandy loam, 5 to 8 percent slopes	9,800						
		88	Dothan	Series	5.0	7.0	8.0
11--Escambia fine sandy loam, 0 to 2 percent slopes	2,680						
		80	Escambia	Series	0.0	1.0	2.0
12--Esto loam, 2 to 5 percent slopes	1,820						
		82	Esto	Series	2.0	4.0	5.0
13--Esto loam, 5 to 8 percent slopes	800						
		82	Esto	Series	5.0	7.0	8.0
14--Fuquay loamy sand, 0 to 5 percent slopes	20,190						
		80	Fuquay	Series	0.0	3.0	5.0
15--Fuquay loamy sand, 5 to 8 percent slopes	4,070						
		80	Fuquay	Series	5.0	7.0	8.0
16--Garcon loamy fine sand	750						
		85	Garcon	Series	0.0	0.8	2.0
17--Gullied land	850						
		100	Gullied land	Miscellaneous area	5.0	10.0	15.0
18--Johns fine sandy loam	6,240						
		85	Johns	Series	0.0	1.0	2.0
19--Kalmia loamy fine sand, 2 to 5 percent slopes	1,430						
		83	Kalmia	Series	2.0	4.0	5.0
20--Kureb sand, 0 to 8 percent slopes	3,280						
		80	Kureb	Series	0.0	4.0	8.0
21--Lakeland sand, 0 to 5 percent slopes	95,390						
		80	Lakeland	Series	0.0	3.0	5.0
22--Lakeland sand, 5 to 12 percent slopes	7,930						
		90	Lakeland	Series	5.0	9.0	12.0
23--Lakeland sand, 12 to 30 percent slopes	1,370						
		83	Lakeland	Series	12.0	21.0	30.0

Component Legend--Santa Rosa County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
24—Leon sand 0 to 2 percent slopes	5,560						
		80	Leon	Series	0.0	1.0	2.0
25—Lucy loamy sand, 0 to 5 percent slopes	23,300						
		85	Lucy	Series	0.0	3.0	5.0
26—Lucy loamy sand, 5 to 8 percent slopes	600						
		85	Lucy	Series	5.0	7.0	8.0
27—Lynchburg fine sandy loam	4,300						
		83	Lynchburg	Series	0.0	1.0	2.0
28—Maxton loamy fine sand, 2 to 5 percent slopes	490						
		85	Maxton	Series	2.0	4.0	5.0
29—Mulat loamy fine sand	4,890						
		85	Mulat	Series	0.0	0.2	1.0
30—Orangeburg sandy loam, 0 to 2 percent slopes	12,900						
		90	Orangeburg	Series	0.0	1.0	2.0
31—Orangeburg sandy loam, 2 to 5 percent slopes	9,250						
		90	Orangeburg	Series	2.0	3.0	5.0
32—Orangeburg sandy loam, 5 to 8 percent slopes	1,280						
		90	Orangeburg	Series	5.0	7.0	8.0
33—Ortega sand, 0 to 5 percent slopes	5,460						
		85	Ortega	Series	0.0	3.0	5.0
34—Pactolus loamy sand, 0 to 5 percent slopes	21,290						
		85	Pactolus	Series	0.0	3.0	5.0
35—Pickney loamy sand	3,780						
		80	Pickney	Series	0.0	0.8	2.0
36—Pits	790						
		100	Pits	Miscellaneous area	0.0	2.0	4.0
37—Rains fine sandy loam	3,470						
		85	Rains	Series	0.0	1.0	2.0
38—Red Bay sandy loam, 0 to 2 percent slopes	18,200						
		85	Red bay	Series	0.0	1.0	2.0

Component Legend—Santa Rosa County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
39—Red Bay sandy loam, 2 to 5 percent slopes	600						
		80	Red bay	Series	2.0	4.0	5.0
40—Rutlege loamy sand	12,950						
		82	Rutlege	Series	0.0	0.9	2.0
41—Tifton sandy loam, 0 to 2 percent slopes	790						
		85	Tifton	Series	0.0	1.0	2.0
42—Tifton sandy loam, 2 to 5 percent slopes	3,440						
		85	Tifton	Series	2.0	4.0	5.0
43—Tifton sandy loam, 5 to 8 percent slopes	300						
		85	Tifton	Series	5.0	7.0	8.0
44—Troup loamy sand, 0 to 5 percent slopes	112,530						
		85	Troup	Series	0.0	3.0	5.0
45—Troup loamy sand, 5 to 8 percent slopes	10,870						
		85	Troup	Series	5.0	7.0	8.0
46—Troup loamy sand, 8 to 12 percent slopes	5,750						
		85	Troup	Series	8.0	10.0	12.0
47—Troup-Orangeburg-Cowarts complex, 5 to 12 percent slopes	25,570						
		39	Troup	Series	5.0	9.0	12.0
		20	Orangeburg	Series	5.0	9.0	12.0
		15	Cowarts	Series	5.0	9.0	12.0
48—Urban land	1,000						
		80	Urban land	Miscellaneous area	0.0	3.0	5.0
49—Newhan-Corolla complex, 2 to 30 percent slopes	570						
		60	Newhan	Series	2.0	16.0	30.0
		30	Corolla	Series	2.0	16.0	30.0
50—Beaches	180						
		90	Beaches	Miscellaneous area	1.0	3.0	5.0
51—Meadowbrook fine sand, 0 to 2 percent slopes	3,510						
		80	Meadowbrook	Series	0.0	1.0	2.0

Component Legend--Santa Rosa County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
52—Goldhead fine sand	3,230						
		85	Goldhead	Series	0.0	0.5	1.0
53—Arents, moderately wet	200						
		100	Arents	Taxon above family	0.0	3.0	5.0
54—Foxworth sand, 0 to 5 percent slopes	2,170						
		95	Foxworth	Series	0.0	3.0	5.0
55—Corolla-Duckston sands, gently undulating, flooded	780						
		50	Corolla	Series	1.0	3.0	5.0
		35	Duckston	Series	0.0	0.5	1.0
99—Water	6,550						
		100	Water	Miscellaneous area			
100—Waters of the Gulf of Mexico	75,070						
		100	Waters of the gulf of mexico	Miscellaneous area			

Data Source Information

Soil Survey Area: Santa Rosa County, Florida
 Survey Area Data: Version 20, Aug 24, 2023

Map Unit Description (Brief, Generated)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, provide information on the composition of map units and properties of their components.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description (Brief, Generated)

Santa Rosa County, Florida

Map Unit: 1—Albany loamy sand, 0 to 5 percent slopes

Component: Albany (87%)

The Albany component makes up 87 percent of the map unit. Slopes are 0 to 5 percent. This component is on — Error in Exists On —. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is rarely flooded. It is not ponded. A seasonal zone of water saturation is at 21 inches during January, February, March, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Fuquay (5%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Component: Troup (5%)

Generated brief soil descriptions are created for major soil components. The Troup soil is a minor component.

Component: Plummer (3%)

Generated brief soil descriptions are created for major soil components. The Plummer soil is a minor component.

Map Unit: 2—Angle variant loam**Component:** Angle variant (85%)

The Angle variant component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on rises on marine terraces on coastal plains. The parent material consists of loamy and clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is high. This soil is rarely flooded. It is not ponded. A seasonal zone of water saturation is at 39 inches during January, February, March, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Lynchburg (5%)

Generated brief soil descriptions are created for major soil components. The Lynchburg soil is a minor component.

Component: Johns (5%)

Generated brief soil descriptions are created for major soil components. The Johns soil is a minor component.

Component: Escambia (5%)

Generated brief soil descriptions are created for major soil components. The Escambia soil is a minor component.

Map Unit: 3—Bibb-Kinston association

Component: Bibb (50%)

The Bibb component makes up 50 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of loamy and sandy alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Kinston (25%)

The Kinston component makes up 25 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of loamy alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Rutlege (10%)

Generated brief soil descriptions are created for major soil components. The Rutlege soil is a minor component.

Component: Pamlico (5%)

Generated brief soil descriptions are created for major soil components. The Pamlico soil is a minor component.

Component: Johns (4%)

Generated brief soil descriptions are created for major soil components. The Johns soil is a minor component.

Component: Escambia (3%)

Generated brief soil descriptions are created for major soil components. The Escambia soil is a minor component.

Component: Pactolus (3%)

Generated brief soil descriptions are created for major soil components. The Pactolus soil is a minor component.

Map Unit: 4—Bohicket and Handsboro soils

Component: Bohicket (80%)

The Bohicket component makes up 80 percent of the map unit. Slopes are 0 to 1 percent. This component is on tidal marshes on marine terraces on coastal plains. The parent material consists of loamy and clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is moderate. This soil is frequently flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 25 percent. This component is in the F152AY220FL Central Coastal Adjacent Tidal Zones ecological site. Nonirrigated land capability classification is 8. This soil meets hydric criteria. The soil has a strongly saline horizon within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 30 within 30 inches of the soil surface.

Component: Handsboro (20%)

The Handsboro component makes up 20 percent of the map unit. Slopes are 0 to 1 percent. This component is on tidal marshes on marine terraces on coastal plains. The parent material consists of herbaceous organic material over clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is frequently flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 36 percent. This component is in the F152AY220FL Central Coastal Adjacent Tidal Zones ecological site. Nonirrigated land capability classification is 8. This soil meets hydric criteria. The soil has a strongly saline horizon within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 30 within 30 inches of the soil surface.

Map Unit: 5—Bonifay loamy sand, 0 to 5 percent slopes

Component: Bonifay (80%)

The Bonifay component makes up 80 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges, coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 51 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Albany (4%)

Generated brief soil descriptions are created for major soil components. The Albany soil is a minor component.

Component: Blanton (4%)

Generated brief soil descriptions are created for major soil components. The Blanton soil is a minor component.

Component: Fuquay (4%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Component: Troup (4%)

Generated brief soil descriptions are created for major soil components. The Troup soil is a minor component.

Component: Lakeland (4%)

Generated brief soil descriptions are created for major soil components. The Lakeland soil is a minor component.

Map Unit: 6—Chewacla-Wahee-Riverview association

Component: Chewacla (36%)

The Chewacla component makes up 36 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of loamy alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Wahee, non-hydric (34%)

The Wahee, non-hydric component makes up 34 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Riverview (20%)

The Riverview component makes up 20 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of loamy alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is occasionally flooded. It is not ponded. A seasonal zone of water saturation is at 48 inches during January, February, March, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Bibb (5%)

Generated brief soil descriptions are created for major soil components. The Bibb soil is a minor component.

Component: Wahee, hydric (5%)

Generated brief soil descriptions are created for major soil components. The Wahee, hydric soil is a minor component.

Map Unit: 7—Dorovan-Pamlico association

Component: Dorovan (50%)

The Dorovan component makes up 50 percent of the map unit. Slopes are 0 to 1 percent. This component is on swamps on marine terraces on coastal plains. The parent material consists of organic material over sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is frequently flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 50 percent. This component is in the F152AY345FL East Central Sandy Flooded Lowland ecological site. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pamlico (30%)

The Pamlico component makes up 30 percent of the map unit. Slopes are 0 to 1 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of herbaceous organic material over sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is frequently flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, November, December. Organic matter content in the surface horizon is about 40 percent. This component is in the F152AY345FL East Central Sandy Flooded Lowland ecological site. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Bibb (5%)

Generated brief soil descriptions are created for major soil components. The Bibb soil is a minor component.

Component: Rutlege (5%)

Generated brief soil descriptions are created for major soil components. The Rutlege soil is a minor component.

Component: Pickney (5%)

Generated brief soil descriptions are created for major soil components. The Pickney soil is a minor component.

Component: Leon (3%)

Generated brief soil descriptions are created for major soil components. The Leon soil is a minor component.

Component: Pactolus (2%)

Generated brief soil descriptions are created for major soil components. The Pactolus soil is a minor component.

Map Unit: 8—Dothan fine sandy loam, 0 to 2 percent slopes

Component: Dothan (85%)

The Dothan component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of loamy and clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 48 inches during January, February, March, April. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 1. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Orangeburg (8%)

Generated brief soil descriptions are created for major soil components. The Orangeburg soil is a minor component.

Component: Fuquay (7%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Map Unit: 9—Dothan fine sandy loam, 2 to 5 percent slopes

Component: Dothan (83%)

The Dothan component makes up 83 percent of the map unit. Slopes are 2 to 5 percent. This component is on ridges, coastal plains. The parent material consists of loamy and clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 48 inches during January, February, March, April. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Orangeburg (7%)

Generated brief soil descriptions are created for major soil components. The Orangeburg soil is a minor component.

Component: Fuquay (5%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Component: Esto (5%)

Generated brief soil descriptions are created for major soil components. The Esto soil is a minor component.

Map Unit: 10—Dothan fine sandy loam, 5 to 8 percent slopes

Component: Dothan (88%)

The Dothan component makes up 88 percent of the map unit. Slopes are 5 to 8 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of loamy and clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 48 inches during January, February, March, April. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Orangeburg (7%)

Generated brief soil descriptions are created for major soil components. The Orangeburg soil is a minor component.

Component: Fuquay (5%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Map Unit: 11—Escambia fine sandy loam, 0 to 2 percent slopes

Component: Escambia (80%)

The Escambia component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on rises on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Rains (10%)

Generated brief soil descriptions are created for major soil components. The Rains soil is a minor component.

Component: Lynchburg (5%)

Generated brief soil descriptions are created for major soil components. The Lynchburg soil is a minor component.

Component: Dothan (3%)

Generated brief soil descriptions are created for major soil components. The Dothan soil is a minor component.

Component: Albany (2%)

Generated brief soil descriptions are created for major soil components. The Albany soil is a minor component.

Map Unit: 12—Esto loam, 2 to 5 percent slopes

Component: Esto (82%)

The Esto component makes up 82 percent of the map unit. Slopes are 2 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Tifton (5%)

Generated brief soil descriptions are created for major soil components. The Tifton soil is a minor component.

Component: Orangeburg (5%)

Generated brief soil descriptions are created for major soil components. The Orangeburg soil is a minor component.

Component: Dothan (5%)

Generated brief soil descriptions are created for major soil components. The Dothan soil is a minor component.

Component: Fuquay (3%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Map Unit: 13—Esto loam, 5 to 8 percent slopes

Component: Esto (82%)

The Esto component makes up 82 percent of the map unit. Slopes are 5 to 8 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Dothan (5%)

Generated brief soil descriptions are created for major soil components. The Dothan soil is a minor component.

Component: Orangeburg (4%)

Generated brief soil descriptions are created for major soil components. The Orangeburg soil is a minor component.

Component: Tifton (3%)

Generated brief soil descriptions are created for major soil components. The Tifton soil is a minor component.

Component: Lucy (3%)

Generated brief soil descriptions are created for major soil components. The Lucy soil is a minor component.

Component: Fuquay (3%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Map Unit: 14—Fuquay loamy sand, 0 to 5 percent slopes

Component: Fuquay (80%)

The Fuquay component makes up 80 percent of the map unit. Slopes are 0 to 5 percent. This component is on interfluves, coastal plains. The parent material consists of sandy marine deposits over loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 43 inches during January, February, March. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Nankin (4%)

Generated brief soil descriptions are created for major soil components. The Nankin soil is a minor component.

Component: Cowarts (4%)

Generated brief soil descriptions are created for major soil components. The Cowarts soil is a minor component.

Component: Ailey (3%)

Generated brief soil descriptions are created for major soil components. The Ailey soil is a minor component.

Component: Bonneau (3%)

Generated brief soil descriptions are created for major soil components. The Bonneau soil is a minor component.

Component: Blanton (2%)

Generated brief soil descriptions are created for major soil components. The Blanton soil is a minor component.

Component: Dothan (2%)

Generated brief soil descriptions are created for major soil components. The Dothan soil is a minor component.

Component: Bonifay (1%)

Generated brief soil descriptions are created for major soil components. The Bonifay soil is a minor component.

Component: Troup (1%)

Generated brief soil descriptions are created for major soil components. The Troup soil is a minor component.

Map Unit: 15—Fuquay loamy sand, 5 to 8 percent slopes

Component: Fuquay (80%)

The Fuquay component makes up 80 percent of the map unit. Slopes are 5 to 8 percent. This component is on hillslopes on coastal plains. The parent material consists of sandy marine deposits over loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 43 inches during January, February, March. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Nankin (4%)

Generated brief soil descriptions are created for major soil components. The Nankin soil is a minor component.

Component: Cowarts (4%)

Generated brief soil descriptions are created for major soil components. The Cowarts soil is a minor component.

Component: Alley (3%)

Generated brief soil descriptions are created for major soil components. The Alley soil is a minor component.

Component: Bonneau (3%)

Generated brief soil descriptions are created for major soil components. The Bonneau soil is a minor component.

Component: Dothan (2%)

Generated brief soil descriptions are created for major soil components. The Dothan soil is a minor component.

Component: Troup (2%)

Generated brief soil descriptions are created for major soil components. The Troup soil is a minor component.

Component: Blanton (2%)

Generated brief soil descriptions are created for major soil components. The Blanton soil is a minor component.

Map Unit: 16—Garcon loamy fine sand

Component: Garcon (85%)

The Garcon component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 23 inches during January, February, March, April. Organic matter content in the surface horizon is about 2 percent. This component is in the F152AY320FL East Central Sandy Flat ecological site. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Albany (5%)

Generated brief soil descriptions are created for major soil components. The Albany soil is a minor component.

Component: Mulat (5%)

Generated brief soil descriptions are created for major soil components. The Mulat soil is a minor component.

Component: Pactolus (5%)

Generated brief soil descriptions are created for major soil components. The Pactolus soil is a minor component.

Map Unit: 17—Gullied land**Component: Gullied land (100%)**

Generated brief soil descriptions are created for major soil components. The Gullied land is a miscellaneous area.

Map Unit: 18—Johns fine sandy loam**Component: Johns (85%)**

The Johns component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on stream terraces on marine terraces on coastal plains. The parent material consists of loamy and sandy fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is rarely flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Escambia (3%)

Generated brief soil descriptions are created for major soil components. The Escambia soil is a minor component.

Component: Albany (3%)

Generated brief soil descriptions are created for major soil components. The Albany soil is a minor component.

Component: Pactolus (3%)

Generated brief soil descriptions are created for major soil components. The Pactolus soil is a minor component.

Component: Lynchburg (3%)

Generated brief soil descriptions are created for major soil components. The Lynchburg soil is a minor component.

Component: Kalmia (3%)

Generated brief soil descriptions are created for major soil components. The Kalmia soil is a minor component.

Map Unit: 19—Kalmia loamy fine sand, 2 to 5 percent slopes**Component:** Kalmia (83%)

The Kalmia component makes up 83 percent of the map unit. Slopes are 2 to 5 percent. This component is on stream terraces on marine terraces on coastal plains. The parent material consists of loamy and sandy marine or fluvial deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is rarely flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Maxton (6%)

Generated brief soil descriptions are created for major soil components. The Maxton soil is a minor component.

Component: Johns (6%)

Generated brief soil descriptions are created for major soil components. The Johns soil is a minor component.

Component: Angie variant (5%)

Generated brief soil descriptions are created for major soil components. The Angie variant soil is a minor component.

Map Unit: 20—Kureb sand, 0 to 8 percent slopes**Component:** Kureb (80%)

The Kureb component makes up 80 percent of the map unit. Slopes are 0 to 8 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of eolian deposits or sandy fluvial or marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. This component is in the F152AY205FL Central Coastal Adjacent Dune ecological site. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Resota (10%)

Generated brief soil descriptions are created for major soil components. The Resota soil is a minor component.

Component: Mandarin (5%)

Generated brief soil descriptions are created for major soil components. The Mandarin soil is a minor component.

Component: Corolla (3%)

Generated brief soil descriptions are created for major soil components. The Corolla soil is a minor component.

Component: Newhan (2%)

Generated brief soil descriptions are created for major soil components. The Newhan soil is a minor component.

Map Unit: 21—Lakeland sand, 0 to 5 percent slopes

Component: Lakeland (80%)

The Lakeland component makes up 80 percent of the map unit. Slopes are 0 to 5 percent. This component is on hills, coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3s. Irrigated land capability classification is 4s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Troup (6%)

Generated brief soil descriptions are created for major soil components. The Troup soil is a minor component.

Component: Bonifay (5%)

Generated brief soil descriptions are created for major soil components. The Bonifay soil is a minor component.

Component: Foxworth (5%)

Generated brief soil descriptions are created for major soil components. The Foxworth soil is a minor component.

Component: Albany (2%)

Generated brief soil descriptions are created for major soil components. The Albany soil is a minor component.

Component: Chipley (2%)

Generated brief soil descriptions are created for major soil components. The Chipley soil is a minor component.

Map Unit: 22—Lakeland sand, 5 to 12 percent slopes

Component: Lakeland (90%)

The Lakeland component makes up 90 percent of the map unit. Slopes are 5 to 12 percent. This component is on hills, coastal plains. The parent material consists of eolian or sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Troup (5%)

Generated brief soil descriptions are created for major soil components. The Troup soil is a minor component.

Component: Fuquay (3%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Component: Foxworth (2%)

Generated brief soil descriptions are created for major soil components. The Foxworth soil is a minor component.

Map Unit: 23—Lakeland sand, 12 to 30 percent slopes

Component: Lakeland (83%)

The Lakeland component makes up 83 percent of the map unit. Slopes are 12 to 30 percent. This component is on hills on marine terraces on coastal plains. The parent material consists of eolian or sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Troup (5%)

Generated brief soil descriptions are created for major soil components. The Troup soil is a minor component.

Component: Lucy (3%)

Generated brief soil descriptions are created for major soil components. The Lucy soil is a minor component.

Component: Fuquay (3%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Component: Bonifay (2%)

Generated brief soil descriptions are created for major soil components. The Bonifay soil is a minor component.

Component: Albany (2%)

Generated brief soil descriptions are created for major soil components. The Albany soil is a minor component.

Component: Pactolus (2%)

Generated brief soil descriptions are created for major soil components. The Pactolus soil is a minor component.

Map Unit: 24—Leon sand, 0 to 2 percent slopes

Component: Leon (80%)

The Leon component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods, marine terraces, coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 2 percent. This component is in the F152AY320FL East Central Sandy Flat ecological site. Nonirrigated land capability classification is 4w. Irrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Leon, hydric (5%)

Generated brief soil descriptions are created for major soil components. The Leon, hydric soil is a minor component.

Component: Hurricane (4%)

Generated brief soil descriptions are created for major soil components. The Hurricane soil is a minor component.

Component: Pottsburg (4%)

Generated brief soil descriptions are created for major soil components. The Pottsburg soil is a minor component.

Component: Mandarin (3%)

Generated brief soil descriptions are created for major soil components. The Mandarin soil is a minor component.

Component: Pickney (2%)

Generated brief soil descriptions are created for major soil components. The Pickney soil is a minor component.

Component: Rutlege (2%)

Generated brief soil descriptions are created for major soil components. The Rutlege soil is a minor component.

Map Unit: 25—Lucy loamy sand, 0 to 5 percent slopes**Component: Lucy (85%)**

The Lucy component makes up 85 percent of the map unit. Slopes are 0 to 5 percent. This component is on interfluves, coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2s. Irrigated land capability classification is 2s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Troup (4%)

Generated brief soil descriptions are created for major soil components. The Troup soil is a minor component.

Component: Orangeburg (4%)

Generated brief soil descriptions are created for major soil components. The Orangeburg soil is a minor component.

Component: Bonneau (3%)

Generated brief soil descriptions are created for major soil components. The Bonneau soil is a minor component.

Component: Fuquay (2%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Component: Rattlesnake Forks (2%)

Generated brief soil descriptions are created for major soil components. The Rattlesnake Forks soil is a minor component.

Map Unit: 26—Lucy loamy sand, 5 to 8 percent slopes

Component: Lucy (85%)

The Lucy component makes up 85 percent of the map unit. Slopes are 5 to 8 percent. This component is on coastal plains on broad interstream divides. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3s. Irrigated land capability classification is 2s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Troup (4%)

Generated brief soil descriptions are created for major soil components. The Troup soil is a minor component.

Component: Orangeburg (4%)

Generated brief soil descriptions are created for major soil components. The Orangeburg soil is a minor component.

Component: Bonneau (3%)

Generated brief soil descriptions are created for major soil components. The Bonneau soil is a minor component.

Component: Benevolence (2%)

Generated brief soil descriptions are created for major soil components. The Benevolence soil is a minor component.

Component: Fuquay (2%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Map Unit: 27—Lynchburg fine sandy loam

Component: Lynchburg (83%)

The Lynchburg component makes up 83 percent of the map unit. Slopes are 0 to 2 percent. This component is on rises on marine terraces on coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Rains (5%)

Generated brief soil descriptions are created for major soil components. The Rains soil is a minor component.

Component: Albany (3%)

Generated brief soil descriptions are created for major soil components. The Albany soil is a minor component.

Component: Escambia (3%)

Generated brief soil descriptions are created for major soil components. The Escambia soil is a minor component.

Component: Angie variant (2%)

Generated brief soil descriptions are created for major soil components. The Angie variant soil is a minor component.

Component: Dothan (2%)

Generated brief soil descriptions are created for major soil components. The Dothan soil is a minor component.

Component: Kalmia (2%)

Generated brief soil descriptions are created for major soil components. The Kalmia soil is a minor component.

Map Unit: 28—Maxton loamy fine sand, 2 to 5 percent slopes

Component: Maxton (85%)

The Maxton component makes up 85 percent of the map unit. Slopes are 2 to 5 percent. This component is on stream terraces on marine terraces on coastal plains. The parent material consists of loamy and sandy marine or fluvial deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is rarely flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Kalmia (10%)

Generated brief soil descriptions are created for major soil components. The Kalmia soil is a minor component.

Component: Angie variant (5%)

Generated brief soil descriptions are created for major soil components. The Angie variant soil is a minor component.

Map Unit: 29—Mulat loamy fine sand

Component: Mulat (85%)

The Mulat component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is rarely flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 3 percent. This component is in the F152AY320FL East Central Sandy Flat ecological site. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Rutlege (5%)

Generated brief soil descriptions are created for major soil components. The Rutlege soil is a minor component.

Component: Lynchburg (3%)

Generated brief soil descriptions are created for major soil components. The Lynchburg soil is a minor component.

Component: Rains (3%)

Generated brief soil descriptions are created for major soil components. The Rains soil is a minor component.

Component: Garcon (2%)

Generated brief soil descriptions are created for major soil components. The Garcon soil is a minor component.

Component: Pactolus (2%)

Generated brief soil descriptions are created for major soil components. The Pactolus soil is a minor component.

Map Unit: 30—Orangeburg sandy loam, 0 to 2 percent slopes**Component:** Orangeburg (90%)

The Orangeburg component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on rises on marine terraces on coastal plains. The parent material consists of loamy and clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 1. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Lucy (4%)

Generated brief soil descriptions are created for major soil components. The Lucy soil is a minor component.

Component: Red Bay (3%)

Generated brief soil descriptions are created for major soil components. The Red Bay soil is a minor component.

Component: Dothan (3%)

Generated brief soil descriptions are created for major soil components. The Dothan soil is a minor component.

Map Unit: 31—Orangeburg sandy loam, 2 to 5 percent slopes**Component:** Orangeburg (90%)

The Orangeburg component makes up 90 percent of the map unit. Slopes are 2 to 5 percent. This component is on ridges, coastal plains. The parent material consists of loamy and clayey fine-loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2e. Irrigated land capability classification is 2e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Dothan (5%)

Generated brief soil descriptions are created for major soil components. The Dothan soil is a minor component.

Component: Faceville (3%)

Generated brief soil descriptions are created for major soil components. The Faceville soil is a minor component.

Component: Lucy (2%)

Generated brief soil descriptions are created for major soil components. The Lucy soil is a minor component.

Map Unit: 32—Orangeburg sandy loam, 5 to 8 percent slopes

Component: Orangeburg (90%)

The Orangeburg component makes up 90 percent of the map unit. Slopes are 5 to 8 percent. This component is on ridges, coastal plains. The parent material consists of loamy and clayey marine deposits derived from sedimentary rock. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Dothan (6%)

Generated brief soil descriptions are created for major soil components. The Dothan soil is a minor component.

Component: Lucy (4%)

Generated brief soil descriptions are created for major soil components. The Lucy soil is a minor component.

Map Unit: 33—Ortega sand, 0 to 5 percent slopes

Component: Ortega (85%)

The Ortega component makes up 85 percent of the map unit. Slopes are 0 to 5 percent. This component is on — Error in Exists On —. The parent material consists of eolian or sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 51 inches during January, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 2 percent. This component is in the F152AY305FL East Central Sandy Ridges, Rises, and Knolls ecological site. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Lakeland (10%)

Generated brief soil descriptions are created for major soil components. The Lakeland soil is a minor component.

Component: Leon (5%)

Generated brief soil descriptions are created for major soil components. The Leon soil is a minor component.

Map Unit: 34—Pactolus loamy sand, 0 to 5 percent slopes

Component: Pactolus (85%)

The Pactolus component makes up 85 percent of the map unit. Slopes are 0 to 5 percent. This component is on rises on marine terraces on coastal plains. The parent material consists of sandy marine and fluvial deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 23 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 4 percent. This component is in the F152AY305FL East Central Sandy Ridges, Rises, and Knolls ecological site. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Albany (5%)

Generated brief soil descriptions are created for major soil components. The Albany soil is a minor component.

Component: Leon (3%)

Generated brief soil descriptions are created for major soil components. The Leon soil is a minor component.

Component: Bonifay (2%)

Generated brief soil descriptions are created for major soil components. The Bonifay soil is a minor component.

Component: Lakeland (2%)

Generated brief soil descriptions are created for major soil components. The Lakeland soil is a minor component.

Component: Rutlege (2%)

Generated brief soil descriptions are created for major soil components. The Rutlege soil is a minor component.

Component: Troup (1%)

Generated brief soil descriptions are created for major soil components. The Troup soil is a minor component.

Map Unit: 35—Pickney loamy sand**Component:** Pickney (80%)

The Pickney component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy marine deposits and/or fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 7 percent. This component is in the F152AY350FL East Central Sandy Lowland ecological site. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pamlico (5%)

Generated brief soil descriptions are created for major soil components. The Pamlico soil is a minor component.

Component: Rutlege (5%)

Generated brief soil descriptions are created for major soil components. The Rutlege soil is a minor component.

Component: Dorovan (5%)

Generated brief soil descriptions are created for major soil components. The Dorovan soil is a minor component.

Component: Leon (3%)

Generated brief soil descriptions are created for major soil components. The Leon soil is a minor component.

Component: Pactolus (2%)

Generated brief soil descriptions are created for major soil components. The Pactolus soil is a minor component.

Map Unit: 36—Pits

Component: Pits (100%)

Generated brief soil descriptions are created for major soil components. The Pits is a miscellaneous area.

Map Unit: 37—Rains fine sandy loam

Component: Rains (85%)

The Rains component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is occasionally flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 5 percent. This component is in the F152AY335FL East Central Sandy Flooded Flat ecological site. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Angie variant (5%)

Generated brief soil descriptions are created for major soil components. The Angie variant soil is a minor component.

Component: Escambia (5%)

Generated brief soil descriptions are created for major soil components. The Escambia soil is a minor component.

Component: Lynchburg (5%)

Generated brief soil descriptions are created for major soil components. The Lynchburg soil is a minor component.

Map Unit: 38—Red Bay sandy loam, 0 to 2 percent slopes

Component: Red Bay (85%)

The Red Bay component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on rises, coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 1. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Orangeburg (9%)

Generated brief soil descriptions are created for major soil components. The Orangeburg soil is a minor component.

Component: Dothan (6%)

Generated brief soil descriptions are created for major soil components. The Dothan soil is a minor component.

Map Unit: 39—Red Bay sandy loam, 2 to 5 percent slopes

Component: Red Bay (80%)

The Red Bay component makes up 80 percent of the map unit. Slopes are 2 to 5 percent. This component is on ridges on uplands. The parent material consists of fine-loamy marine deposits derived from sedimentary rock. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2e. Irrigated land capability classification is 2e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Greenville (5%)

Generated brief soil descriptions are created for major soil components. The Greenville soil is a minor component.

Component: Dothan (5%)

Generated brief soil descriptions are created for major soil components. The Dothan soil is a minor component.

Component: Lucy (5%)

Generated brief soil descriptions are created for major soil components. The Lucy soil is a minor component.

Component: Orangeburg (5%)

Generated brief soil descriptions are created for major soil components. The Orangeburg soil is a minor component.

Map Unit: 40—Rutlege loamy sand

Component: Rutlege (82%)

The Rutlege component makes up 82 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy marine deposits and/or fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is frequently flooded. It is frequently ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 3 percent. This component is in the F152AY345FL East Central Sandy Flooded Lowland ecological site. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pickney (5%)

Generated brief soil descriptions are created for major soil components. The Pickney soil is a minor component.

Component: Pamlico (4%)

Generated brief soil descriptions are created for major soil components. The Pamlico soil is a minor component.

Component: Dorovan (4%)

Generated brief soil descriptions are created for major soil components. The Dorovan soil is a minor component.

Component: Leon (3%)

Generated brief soil descriptions are created for major soil components. The Leon soil is a minor component.

Component: Pactolus (2%)

Generated brief soil descriptions are created for major soil components. The Pactolus soil is a minor component.

Map Unit: 41—Tifton sandy loam, 0 to 2 percent slopes**Component: Tifton (85%)**

The Tifton component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 57 inches during January, February, March. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 1. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Dothan (7%)

Generated brief soil descriptions are created for major soil components. The Dothan soil is a minor component.

Component: Fuquay (5%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Component: Orangeburg (3%)

Generated brief soil descriptions are created for major soil components. The Orangeburg soil is a minor component.

Map Unit: 42—Tifton sandy loam, 2 to 5 percent slopes**Component:** Tifton (85%)

The Tifton component makes up 85 percent of the map unit. Slopes are 2 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 57 inches during January, February, March. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Dothan (5%)

Generated brief soil descriptions are created for major soil components. The Dothan soil is a minor component.

Component: Orangeburg (5%)

Generated brief soil descriptions are created for major soil components. The Orangeburg soil is a minor component.

Component: Estio (3%)

Generated brief soil descriptions are created for major soil components. The Estio soil is a minor component.

Component: Fuquay (2%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Map Unit: 43—Tifton sandy loam, 5 to 8 percent slopes**Component:** Tifton (85%)

The Tifton component makes up 85 percent of the map unit. Slopes are 5 to 8 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 57 inches during January, February, March. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Dothan (5%)

Generated brief soil descriptions are created for major soil components. The Dothan soil is a minor component.

Component: Orangeburg (5%)

Generated brief soil descriptions are created for major soil components. The Orangeburg soil is a minor component.

Component: Esto (3%)

Generated brief soil descriptions are created for major soil components. The Esto soil is a minor component.

Component: Fuquay (2%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Map Unit: 44—Troup loamy sand, 0 to 5 percent slopes

Component: Troup (85%)

The Troup component makes up 85 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges, coastal plains. The parent material consists of unconsolidated sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3s. Irrigated land capability classification is 3s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Bonifay (4%)

Generated brief soil descriptions are created for major soil components. The Bonifay soil is a minor component.

Component: Lakeland (3%)

Generated brief soil descriptions are created for major soil components. The Lakeland soil is a minor component.

Component: Lucy (3%)

Generated brief soil descriptions are created for major soil components. The Lucy soil is a minor component.

Component: Fuquay (3%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Component: Orangeburg (2%)

Generated brief soil descriptions are created for major soil components. The Orangeburg soil is a minor component.

Map Unit: 45—Troup loamy sand, 5 to 8 percent slopes

Component: Troup (85%)

The Troup component makes up 85 percent of the map unit. Slopes are 5 to 8 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Lucy (5%)

Generated brief soil descriptions are created for major soil components. The Lucy soil is a minor component.

Component: Orangeburg (3%)

Generated brief soil descriptions are created for major soil components. The Orangeburg soil is a minor component.

Component: Lakeland (3%)

Generated brief soil descriptions are created for major soil components. The Lakeland soil is a minor component.

Component: Fuquay (2%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Component: Bonifay (2%)

Generated brief soil descriptions are created for major soil components. The Bonifay soil is a minor component.

Map Unit: 46—Troup loamy sand, 8 to 12 percent slopes

Component: Troup (85%)

The Troup component makes up 85 percent of the map unit. Slopes are 8 to 12 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Lucy (5%)

Generated brief soil descriptions are created for major soil components. The Lucy soil is a minor component.

Component: Lakeland (3%)

Generated brief soil descriptions are created for major soil components. The Lakeland soil is a minor component.

Component: Orangeburg (3%)

Generated brief soil descriptions are created for major soil components. The Orangeburg soil is a minor component.

Component: Fuquay (2%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Component: Bonifay (2%)

Generated brief soil descriptions are created for major soil components. The Bonifay soil is a minor component.

Map Unit: 47—Troup-Orangeburg-Cowarts complex, 5 to 12 percent slopes

Component: Troup (39%)

The Troup component makes up 39 percent of the map unit. Slopes are 5 to 12 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Orangeburg (20%)

The Orangeburg component makes up 20 percent of the map unit. Slopes are 5 to 12 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of loamy and clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Cowarts (15%)

The Cowarts component makes up 15 percent of the map unit. Slopes are 5 to 12 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Dothan (10%)

Generated brief soil descriptions are created for major soil components. The Dothan soil is a minor component.

Component: Troup (5%)

Generated brief soil descriptions are created for major soil components. The Troup soil is a minor component.

Component: Lakeland (3%)

Generated brief soil descriptions are created for major soil components. The Lakeland soil is a minor component.

Component: Fuquay (3%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Component: Lucy (3%)

Generated brief soil descriptions are created for major soil components. The Lucy soil is a minor component.

Component: Albany (2%)

Generated brief soil descriptions are created for major soil components. The Albany soil is a minor component.

Map Unit: 48—Urban land

Component: Urban land (80%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

Component: Lucy (5%)

Generated brief soil descriptions are created for major soil components. The Lucy soil is a minor component.

Component: Fuquay (5%)

Generated brief soil descriptions are created for major soil components. The Fuquay soil is a minor component.

Component: Lakeland (5%)

Generated brief soil descriptions are created for major soil components. The Lakeland soil is a minor component.

Component: Troup (5%)

Generated brief soil descriptions are created for major soil components. The Troup soil is a minor component.

Map Unit: 49—Newhan-Corolla complex, 2 to 30 percent slopes

Component: Newhan (60%)

The Newhan component makes up 60 percent of the map unit. Slopes are 2 to 30 percent. This component is on dunes on marine terraces on coastal plains. The parent material consists of sandy eolian deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 0 percent. This component is in the F152AY205FL Central Coastal Adjacent Dune ecological site. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria. The soil has a slightly saline horizon within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 14 within 30 inches of the soil surface.

Component: Corolla (30%)

The Corolla component makes up 30 percent of the map unit. Slopes are 2 to 30 percent. This component is on marine terraces on coastal plains, rises. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is rarely flooded. It is not ponded. A seasonal zone of water saturation is at 23 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 0 percent. This component is in the F152AY200FL Central Coastal Adjacent Ridges and Rises ecological site. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria. The soil has a moderately saline horizon within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 13 within 30 inches of the soil surface.

Component: Duckston (10%)

Generated brief soil descriptions are created for major soil components. The Duckston soil is a minor component.

Map Unit: 50—Beaches

Component: Beaches (90%)

Generated brief soil descriptions are created for major soil components. The Beaches is a miscellaneous area.

Component: Corolla (5%)

Generated brief soil descriptions are created for major soil components. The Corolla soil is a minor component.

Component: Newhan (3%)

Generated brief soil descriptions are created for major soil components. The Newhan soil is a minor component.

Component: Duckston (2%)

Generated brief soil descriptions are created for major soil components. The Duckston soil is a minor component.

Map Unit: 51—Meadowbrook fine sand, 0 to 2 percent slopes**Component:** Meadowbrook (80%)

The Meadowbrook component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, August, September, October, November, December. Organic matter content in the surface horizon is about 2 percent. This component is in the F152AY500FL Eastern Karst Flat ecological site. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Clara, depressional (5%)

Generated brief soil descriptions are created for major soil components. The Clara, depressional soil is a minor component.

Component: Meadowbrook, depressional (5%)

Generated brief soil descriptions are created for major soil components. The Meadowbrook, depressional soil is a minor component.

Component: Oldtown, depressional (5%)

Generated brief soil descriptions are created for major soil components. The Oldtown, depressional soil is a minor component.

Component: Chaires, depressional (5%)

Generated brief soil descriptions are created for major soil components. The Chaires, depressional soil is a minor component.

Map Unit: 52—Goldhead fine sand

Component: Goldhead (85%)

The Goldhead component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April. Organic matter content in the surface horizon is about 3 percent. This component is in the F152AY320FL East Central Sandy Flat ecological site. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pactolus (5%)

Generated brief soil descriptions are created for major soil components. The Pactolus soil is a minor component.

Component: Meadowbrook (5%)

Generated brief soil descriptions are created for major soil components. The Meadowbrook soil is a minor component.

Component: Garcon (3%)

Generated brief soil descriptions are created for major soil components. The Garcon soil is a minor component.

Component: Rutlege (2%)

Generated brief soil descriptions are created for major soil components. The Rutlege soil is a minor component.

Map Unit: 53—Arents, moderately wet

Component: Arents (100%)

The Arents component makes up 100 percent of the map unit. Slopes are 0 to 5 percent. This component is on fills, rises on marine terraces on coastal plains. The parent material consists of altered marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 0 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map Unit: 54—Foxworth sand, 0 to 5 percent slopes

Component: Foxworth (95%)

The Foxworth component makes up 95 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges, coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 57 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 1 percent. This component is in the F152AY305FL East Central Sandy Ridges, Rises, and Knolls ecological site. Nonirrigated land capability classification is 3s. Irrigated land capability classification is 4s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Lakeland (4%)

Generated brief soil descriptions are created for major soil components. The Lakeland soil is a minor component.

Component: Chipley (1%)

Generated brief soil descriptions are created for major soil components. The Chipley soil is a minor component.

Map Unit: 55—Corolla-Duckston sands, gently undulating, flooded

Component: Corolla (50%)

The Corolla component makes up 50 percent of the map unit. Slopes are 1 to 5 percent. This component is on dunes on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is rarely flooded. It is not ponded. A seasonal zone of water saturation is at 23 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 0 percent. This component is in the F152AY200FL Central Coastal Adjacent Ridges and Rises ecological site. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria. The soil has a moderately saline horizon within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 13 within 30 inches of the soil surface.

Component: Duckston (35%)

The Duckston component makes up 35 percent of the map unit. Slopes are 0 to 1 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is occasionally flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 2 percent. This component is in the F152AY215FL Central Coastal Adjacent Flooded Interdunal Flats ecological site. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. The soil has a moderately saline horizon within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 14 within 30 inches of the soil surface.

Component: Newhan (10%)

Generated brief soil descriptions are created for major soil components. The Newhan soil is a minor component.

Component: Dirego (5%)

Generated brief soil descriptions are created for major soil components. The Dirego soil is a minor component.

Map Unit: 99—Water

Component: Water (100%)

Generated brief soil descriptions are created for major soil components. The Water is a miscellaneous area.

Map Unit: 100—Waters of the Gulf of Mexico

Component: Waters of the Gulf of Mexico (100%)

Generated brief soil descriptions are created for major soil components. The Waters of the Gulf of Mexico is a miscellaneous area.

Data Source Information

Soil Survey Area: Santa Rosa County, Florida

Survey Area Data: Version 20, Aug 24, 2023

Exhibit K

Department
of
Environmental Protection
Outstanding Florida Waters



FLORIDA DEPARTMENT OF Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Shawn Hamilton
Secretary

Via Email

October 3, 2023

Ms. Emily Marsh
Land Management Planner, Florida Forest Service
Florida Department of Agriculture and Consumer Services
3125 Conner Boulevard, Suite I-258, Mail Stop C-25
Tallahassee, FL 32399-1650

RE: Blackwater River State Forest

Dear Ms. Marsh:

Thank you for your inquiry regarding the surface water quality classifications and Outstanding Florida Waters (OFW) for Blackwater River State Forest in Santa Rosa and Okaloosa counties. All of the surface waters within and adjacent to the state forest are classified as Class III waters according to Rule 62-302.400, Florida Administrative Code (F.A.C.).

According to our Outstanding Florida Waters layer and rule, the Blackwater River State Forest itself is not currently designated as an OFW. However, parts of the state forest are covered by the Blackwater River State Park OFW, per subparagraph 62-302.700(9)(c)9., F.A.C., and the Blackwater River Special Water OFW, per subparagraph 62-302.700(9)(i)3., F.A.C. There are other OFWs downstream of Blackwater River State Forest, however, they are over 5 miles away from the nearest boundary of the state forest.

Other important managed areas that are within or adjacent to Blackwater River State Forest include the Blackwater River Wildlife Management Area.

Please see the map below for the boundaries of the Blackwater River State Forest and OFWs.

If you have any questions or need additional information about this response, please feel free to contact me via e-mail at Talia.E.Smith-Sickler@FloridaDEP.gov or by phone at 850-245-8068.

Sincerely,

Talia Elisa Smith-Sickler
Standards Development Section
Water Quality Standards Program
Florida Department of Environmental Protection

Map: Blackwater River State Forest and OFWs



Exhibit L

Water Resources Map



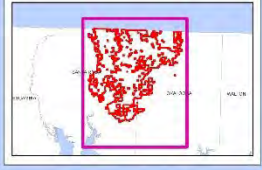
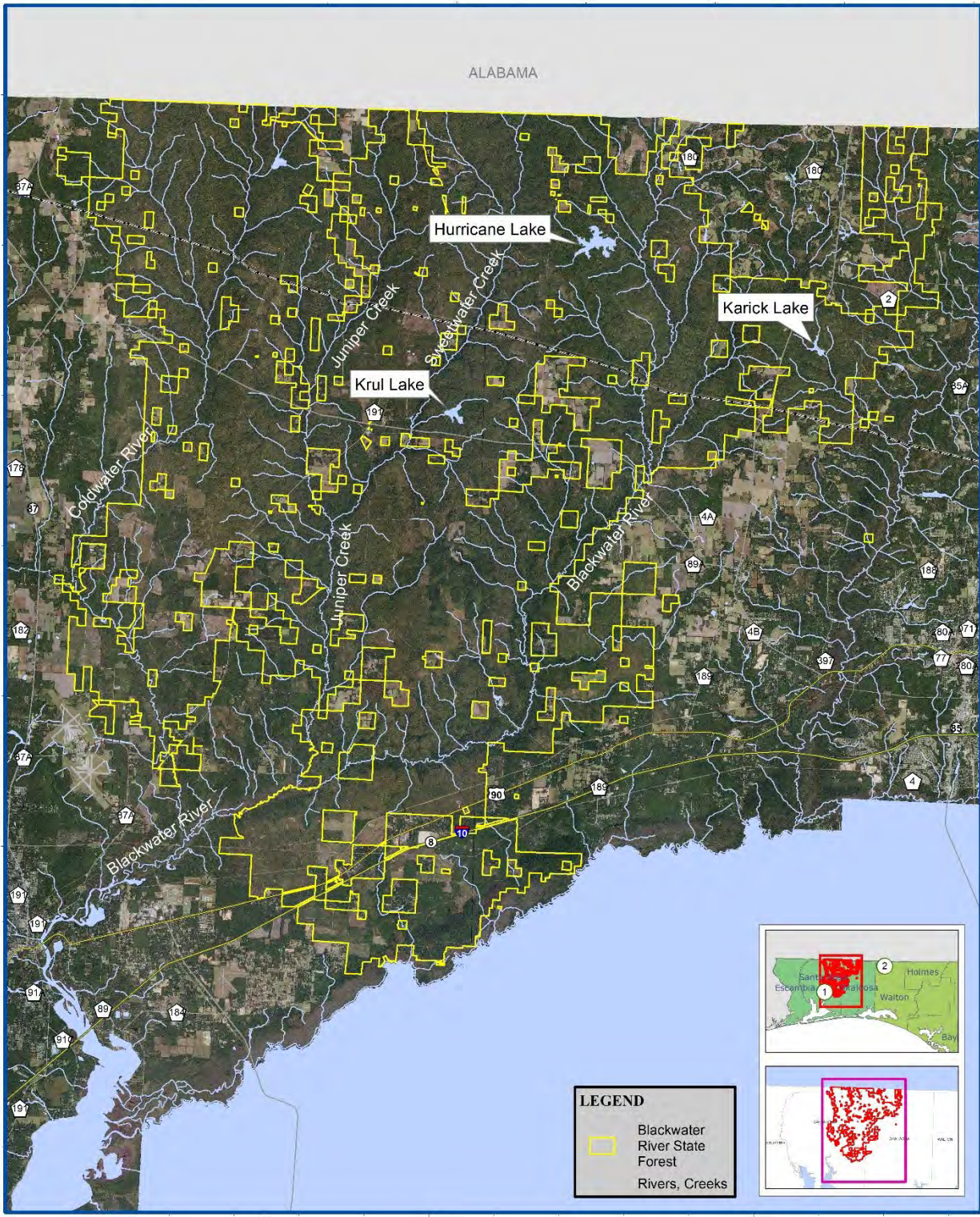
Florida Forest Service

Blackwater River State Forest

Water Resources Map

Coordinate System: Florida Albers
High Accuracy Reference Network (HARN) Datum

DISCLAIMER:
This map was prepared by the Florida Forest Service using data provided by the Florida Department of Transportation (FDOT) and the Florida Department of Environmental Protection (FDEP). The Florida Forest Service is not responsible for any errors or omissions in this map. The Florida Forest Service is not responsible for any damage or injury resulting from the use of this map. The Florida Forest Service is not responsible for any loss of data or information resulting from the use of this map. The Florida Forest Service is not responsible for any loss of data or information resulting from the use of this map.



LEGEND

- Blackwater River State Forest
- Rivers, Creeks



Map Month/Year: August 2025



Exhibit M

Florida Natural Areas Inventory

Managed Area Tracking Record



Florida Natural Areas Inventory

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
850-224-8207
fax 850-681-9364
www.fnai.org

October 6, 2023

Emily Marsh
Florida Forest Service
FL Dept of Agriculture & Consumer Services
3125 Conner Boulevard
Tallahassee, FL 32399-1650

Dear Ms. Marsh,

Thank you for requesting information from the Florida Natural Areas Inventory (FNAI). At your request we have produced the following report for your project area.

The purpose of this Standard Data Report is to provide objective scientific information on natural resources located in the vicinity of a site of interest, in order to inform those involved in project planning and evaluation. This Report makes no determination of the suitability of a proposed project for this location, or the potential impacts of the project on natural resources in the area.

Project: Blackwater River State Forest 10 Year LMP
Date Received: 9/22/2023
Location: Santa Rosa & Okaloosa Counties

Based on the information available, this site appears to be located in a significant region of natural areas and habitat for several rare species.

Element Occurrences

A search of our maps and database indicates that we currently have many element occurrences mapped in the vicinity of the study area (see enclosed map and element occurrence table). Please be advised that a lack of element occurrences in the FNAI database is not a sufficient indication of the absence of rare or endangered species on a site.

Federally Listed Species

Our data indicate federally listed species are present on or very near this site, specifically Reticulated Flatwoods Salamander (*Ambystoma bishopi*), chaffseed (*Schwalbea americana*), Red-cockaded Woodpecker (*Dryobates borealis*), and Narrow Pigtoe (*Fusconaia escambia*) (see enclosed map and tables for details). This statement should not be interpreted as a legal determination of presence or absence of federally listed species on a property.

The element occurrences data layer includes occurrences of rare species and natural communities. The map legend indicates that some element occurrences occur in the general vicinity of the label point. This may be due to lack of precision of the source data, or an element that occurs over an extended area (such as a wide ranging species or large natural community). For animals and plants, element occurrences generally refer to more than a casual sighting; they usually indicate a viable population of the species. Note that some element occurrences represent historically documented observations which may no longer be extant. Extirpated element occurrences will be marked with an 'X' following the occurrence label on the enclosed map.



Florida Resources
and Environmental
Analysis Center

Institute of Science
and Public Affairs

The Florida State University

Tracking Florida's Biodiversity

*Several of the species and natural communities tracked by the Inventory are considered **data sensitive**. Occurrence records for these elements contain information that we consider sensitive due to collection pressures, extreme rarity, or at the request of the source of the information. The Element Occurrence Record has been labeled "Data Sensitive." We request that you not publish or release specific locational data about these species or communities without consent from the Inventory. If you have any questions concerning this please do not hesitate to call.*

Likely and Potential Rare Species

In addition to documented occurrences, other rare species and natural communities may be identified on or near the site based on habitat models and species range models (see enclosed Biodiversity Matrix Report). These species should be taken into consideration in field surveys, land management, and impact avoidance and mitigation.

FNAI habitat models indicate areas, which based on land cover type, offer suitable habitat for one or more rare species that is known to occur in the vicinity. Habitat models have been developed for approximately 300 of the rarest species tracked by the Inventory, including all federally listed species.

FNAI species range models indicate areas that are within the known or predicted range of a species, based on climate variables, soils, vegetation, and/or slope. Species range models have been developed for approximately 340 species, including all federally listed species.

The FNAI Biodiversity Matrix Geodatabase compiles Documented, Likely, and Potential species and natural communities for each square mile Matrix Unit statewide.

CLIP

The enclosed map shows natural resource conservation priorities based on the Critical Lands and Waters Identification Project. CLIP is based on many of the same natural resource data developed for the Florida Forever Conservation Needs Assessment, but provides an overall picture of conservation priorities across different resource categories, including biodiversity, landscapes, surface waters, and aggregated CLIP priorities (that combine the individual resource categories). CLIP is also based primarily on remote sensed data and is not intended to be the definitive authority on natural resources on a site.

For more information on CLIP, visit <https://www.fnai.org/services/clip>.

Managed Areas

Portions of the site appear to be located within the Blackwater River State Forest, managed by the FL Dept. of Agriculture and Consumer Services, Florida Forest Service.

The Managed Areas data layer shows public and privately managed conservation lands throughout the state. Federal, state, local, and privately managed conservation lands are included.

Land Acquisition Projects

This site appears to be located within/adjacent to these Florida Forever BOT Projects, which is part of the State of Florida's Conservation and Recreation Lands land acquisition program.

- Clear Creek/Whiting Field Florida Forever BOT Project- Phase II
- Clear Creek/Whiting Field Florida Forever BOT Project- Phase I
- Wolfe Creek Forest Florida Forever BOT Project
- Coastal Headwaters Longleaf Forest Florida Forever BOT Project
- Strategic Managed Area Lands List Florida Forever BOT Project - FFS-3
- Welannee Watershed Forest Florida Forever BOT Project
- Strategic Managed Area Lands List Florida Forever BOT Project - FFS-12

For more information on this Florida Forever Project, contact the Florida Department of Environmental Protection, Division of State Lands or visit <https://floridadep.gov/lands/environmental-services/content/florida-forever>.

Florida Forever Board of Trustees (BOT) projects are proposed and acquired through the Florida Department of Environmental Protection, Division of State Lands. The state has no specific land management authority over these lands until they are purchased.

The Inventory always recommends that professionals familiar with Florida's flora and fauna conduct a site-specific survey to determine the current presence or absence of rare, threatened, or endangered species.

Please visit www.fnai.org/species-communities/tracking-main for county or statewide element occurrence distributions and links to more element information.

The database maintained by the Florida Natural Areas Inventory is the single most comprehensive source of information available on the locations of rare species and other significant ecological resources. However, the data are not always based on comprehensive or site-specific field surveys. Therefore this information should not be regarded as a final statement on the biological resources of the site being considered, nor should it be substituted for on-site surveys. Inventory data are designed for the purposes of conservation planning and scientific research, and are not intended for use as the primary criteria for regulatory decisions.

Information provided by this database may not be published without prior written notification to the Florida Natural Areas Inventory, and the Inventory must be credited as an information source in these publications. **The maps contain sensitive environmental information, please do not distribute or publish without prior consent from FNAI.** FNAI data may not be resold for profit.

Thank you for your use of FNAI services. If I can be of further assistance, please contact me at (850) 224-8207 or at kbrinegar@fnai.fsu.edu.

Sincerely,

Kerri Brinegar

Kerri Brinegar
GIS / Data Services

Encl

Blackwater River State Forest 10 Year LMP

Site boundaries are approximate. Santa Rosa & Okaloosa Counties

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
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CLIP v4.0 Resource Priorities

Biodiversity Resource Category

- Priority 1 - highest
- Priority 2
- Priority 3
- Priority 4
- Priority 5

Landscape Resource Category

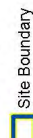
- Priority 1 - highest
- Priority 2
- Priority 3
- Priority 4
- Priority 5

Surface Water Resource Category

- Priority 1 - highest
- Priority 2
- Priority 3
- Priority 4
- Priority 5

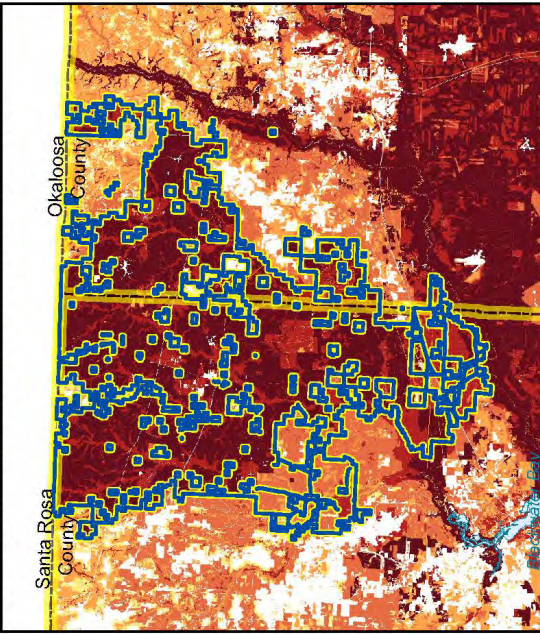
Aggregated CLIP Priorities

- Priority 1 - highest
- Priority 2
- Priority 3
- Priority 4
- Priority 5

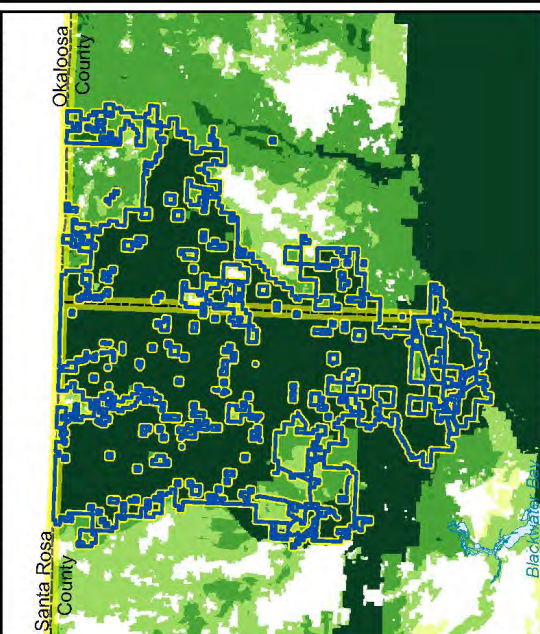


Map should not be interpreted without accompanying documents.

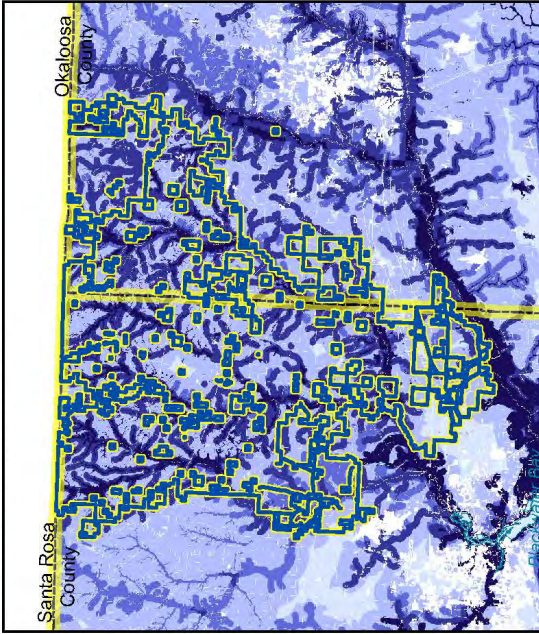
Critical Lands and Waters Identification Project (CLIP) is a cooperative effort between the FSU Florida Natural Areas Inventory, UF Center for Environmental and Estuarine Science (FEEC), Florida Fish & Wildlife Conservation Commission, with additional funding from FL Dept of Environmental Protection and US Fish & Wildlife Service.



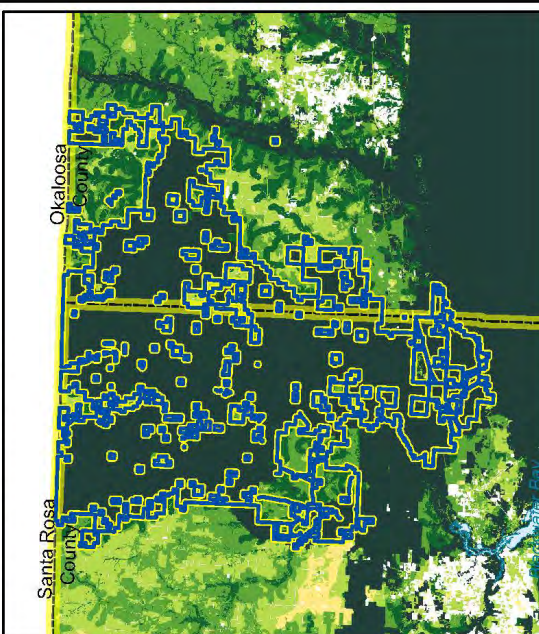
CLIP Biodiversity Resource Priorities



CLIP Landscape Resource Priorities



CLIP Surface Water Resource Priorities



CLIP Aggregated Resource Priorities



Map produced by KAB 10/2/2023



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Florida
Natural Areas
Inventory

**FNAI ELEMENT OCCURRENCE REPORT on or near
Blackwater River State Forest 10 Year LMP**



Map Label	Scientific Name	Common Name	Rank	Status	Listing	Date	Description	EO Comments	
ACIPDES0*13	<i>Acipenser oxyrinchus desotoi</i>	Gulf Sturgeon	G3T2T3	S2?	T	FT	2001	Confirmed spawning sites along the Yellow River with substrates of hard clay, cobble, sand and rock. Sites have either a small hard clay bank or limestone bluff. All on east side of the river.	2001: 3 confirmed spawning sites
ACROEVOL*2	<i>Acroeneuria evoluta</i>	A Stonelly	G5	S1	N	N	1974-05-03	Blackwater river	1974-05-03: One specimen was collected using light (U07RAS01FLUS). 1972-05-08: One specimen was collected (U07RAS01FLUS).
AGALGEOR*1	<i>Agalinis georgiana</i>	pine barren false foxglove	G1	S1	N	E	2011-09-26	Longleaf pine/ wiregrass upland pine forest with <i>Quercus falcata</i> , <i>Diospyros virginiana</i> , <i>Ilex glabra</i> and <i>Ctenium aromaticum</i> .	5 plants seen in 1998; 1 in 2001 at same site (mileage and TRS directions given by Hays to site are contradictory) and 157 found in 2011 in the vicinity of first site. All plants noted in September.
AGALGEOR*10	<i>Agalinis georgiana</i>	pine barren false foxglove	G1	S1	N	E	2011-09-26	Mature longleaf/red oak savanna.	26 plants seen in 2011.
AGALGEOR*16	<i>Agalinis georgiana</i>	pine barren false foxglove	G1	S1	N	E	1998-09-21	Dry longleaf pine savanna	About 100 plants (U22SER08FLUS).
AGALGEOR*20	<i>Agalinis georgiana</i>	pine barren false foxglove	G1	S1	N	E	2021-09-12	Longleaf pine sandhill (U22GBI05FLUS).	Specimen collected from longleaf pine sandhills. Genetic sample collected (U22GBI05FLUS).
AGALGEOR*3	<i>Agalinis georgiana</i>	pine barren false foxglove	G1	S1	N	E	2011-09-26	longleaf pine/wiregrass savanna.	Over 15 plants in fruit seen in 2001 by Hays; 1 flowering plant seen in quick survey in 2011.
AGALGEOR*5	<i>Agalinis georgiana</i>	pine barren false foxglove	G1	S1	N	E	2001-09-26	remnant longleaf pine savanna/mesic bog/ seepage slope with wiregrass understorey burned in summer 2011.	15+ plants seen in late fruit with a few flowers still present in 2001; no plants seen in 2011 (F11JEN01FLUS).
AGALGEOR*6	<i>Agalinis georgiana</i>	pine barren false foxglove	G1	S1	N	E	2001-09-27	meisc to dry longleaf pine savanna dominated by wiregrass	30+ plants in fruit, 1 in flower
AGALGEOR*8	<i>Agalinis georgiana</i>	pine barren false foxglove	G1	S1	N	E	2006-09-16	Sandhill recently burned in 2006; not burned since 2008-09 in 2011.	72 flowering plants observed in 2006; none found in 2011 (F11JEN01FLUS).
AGALGEOR*9	<i>Agalinis georgiana</i>	pine barren false foxglove	G1	S1	N	E	2011-09-26	Young stand of longleaf pine in upland pine community that was recently burned in 2011.	30+ plants seen in 2001; 286 plants seen in 2011; most in flower.



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FNAI ELEMENT OCCURRENCE REPORT on or near Blackwater River State Forest 10 Year LMP



Map Label	Scientific Name	Common Name	Rank	Status	Listing	Date	Description	EO Comments
AGARUBA*23	<i>Agarodes libalis</i>	Spring-loving Psiloneuran Caddisfly	G3	S3	N	N	1976-04-25 (U06RAS01FLUS).	1976-04-25: An unknown number of specimens were collected on 1976-04-25 (U06RAS01FLUS).
AGARUBA*56	<i>Agarodes libalis</i>	Spring-loving Psiloneuran Caddisfly	G3	S3	N	N	2007-05-19: No description given other than that the locality was near a creek (U09RAS01FLUS).	2007-05-19: Thirty-four specimens were collected using a 15-watt black light over an alcohol-filled white pan (U09RAS01FLUS, U06RAS01FLUS).
AGARZIC*25	<i>Agarodes ziczac</i>	Zizag Blackwater River Caddisfly	G2	S2	N	N	1970-04-24: No description given (U06RAS01FLUS).	1970-04-24: An unknown number of specimens were collected on 1970-04-24 (U06RAS01FLUS).
AGRICONT*27	<i>Agkistrodon contortrix</i>	Eastern Copperhead	G5	S2	N	N	2014-08-03 Mostly forested lands contiguous with Blackwater River State Forest; some cleared agricultural lands; includes home sites, mixed hardwoods, upland pine, and seepage stream, perhaps river floodplain (U13FRI01FLUS, U14SMI03FLUS, PNDFRI02FLUS).	Based on multiple records extending from 2005-2014, it is likely that a large population inhabits this area.
AGRICONT*28	<i>Agkistrodon contortrix</i>	Eastern Copperhead	G5	S2	N	N	2015-07-02 Blackwater River State Forest is a large managed area with pine-dominated sandy (and clay) uplands dissected by seepage streams and associated wetland habitats; contains some private, rural parcels with varied levels of disturbance.	This occurrence is documented by multiple records extending from 2014-2015.
AGRICONT*9	<i>Agkistrodon contortrix</i>	Eastern Copperhead	G5	S2	N	N	1985 2004 DOQQ: rural area with mixed fields and forests; less than 1 km from Blackwater River State Forest.	1985: J. Godwin (PNDGOD03FLUS) observed but did not save badly mutilated roadkill specimen (U90MOL03FLUS).
AMBLATE*12	<i>Amblyscirtes alternata</i>	Dusky Roadside-Skipper	G3G4	S2	N	N	2009-04-12: The site was a dry cliff area above the river. The trail on which the butterfly was seen is part of the Florida National Scenic Trail (F09FRI01FLUS).	2009-04-12: One adult observed and photographed (F09FRI01FLUS).
AMBYSH*2	<i>Ambystoma bishopi</i>	Reticulated Flatwoods Salamander	G2	S1	E	FE	1993-02-26 Ephemeral pond with Ilex myrtifolia, Nyssa biflora, Taxodium ascendens within mature Pinus palustris/Pinus elliottii flatwoods (PNDPAL02FLUS).	Moler et. al. collected several specimens from 1983-1986 (PNDMOL01FLUS). Palls captured larvae in 1990 and 1993 (U93PAL02FLUS).



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FNAI ELEMENT OCCURRENCE REPORT on or near Blackwater River State Forest 10 Year LMP



Map Label	Scientific Name	Common Name	Rank	Status	Listing	Date	Description	EO Comments	
APALSPIN*2	<i>Apalone spinifera</i>	Spiny Softshell	G5	S3	N	N	2012-03-28	Blackwater River is a blackwater river system with blackwater and seepage tributaries, high white sand bars at some bends probably provide nesting habitat. Much of system runs through conservation lands, so there is little streamside development except at lower end.	The abundance of observations, from at least 1947-2012, confirms a viable, apparently healthy population in this river.
APALSPIN*6	<i>Apalone spinifera</i>	Spiny Softshell	G5	S3	N	N	2013-06-21	The Yellow-Shoal River system is a medium-sized river system with alluvial and blackwater characteristics. Much of the adjacent landscape is on Eglin Air Force Base, which limits future development.	Known from multiple records (from 1993-2013) and sites spanning much of Yellow River system.
APHONEGR*41	<i>Aphodius aegrotus</i>	Small Pocket Gopher Aphodius Beetle	G3G4	S37	N	N	1998-12-05 -- 1998-12-20	1998-12-20: No information given (U06SKE01FLUS).	1998-12-20: One specimen was collected from 1998-12-05 to 1998-12-20, most likely at light or in a malt and dung-baited pitfall trap in a pocket gopher burrow (U06SKE01FLUS, A01SKE02FLUS).
APHONEGR*42	<i>Aphodius aegrotus</i>	Small Pocket Gopher Aphodius Beetle	G3G4	S37	N	N	1998-12-06 -- 1998-12-20	1998-12-20: No information given (U06SKE01FLUS).	1998-12-20: Two specimens were collected from 1998-12-06 to 1998-12-20, most likely at light or in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS).
APHONEGR*49	<i>Aphodius aegrotus</i>	Small Pocket Gopher Aphodius Beetle	G3G4	S37	N	N	1999-01-03 -- 1999-01-18	1999-01-18: No information given (U06SKE01FLUS).	1999-01-18: One specimen was collected from 1999-01-03 to 1999-01-18, most likely at light or in a malt and dung-baited pitfall trap in a pocket gopher burrow (U06SKE01FLUS, A01SKE02FLUS).
APHONEGR*50	<i>Aphodius aegrotus</i>	Small Pocket Gopher Aphodius Beetle	G3G4	S37	N	N	1998-11-21 -- 1998-12-06	1998-12-06: No information given (U06SKE01FLUS).	1998-12-06: Six specimens were collected from 1998-11-21 to 1998-12-06, most likely at light or in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS).
APHONEGR*51	<i>Aphodius aegrotus</i>	Small Pocket Gopher Aphodius Beetle	G3G4	S37	N	N	1999-01-03 -- 1999-01-19	1999-01-19: No information given (U06SKE01FLUS).	1999-01-19: One specimen was collected from 1999-01-03 to 1999-01-19, most likely at light or in a malt and dung-baited pitfall trap in a pocket gopher burrow (U06SKE01FLUS, A01SKE02FLUS).

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APHOAEGR*2	<i>Aphodius aegrotus</i>	Small Pocket Gopher Aphodius Beetle	G3G4	S3?	N	1998-11-22 -- 1998-12-06	1998-12-06: One specimen was collected from 1998-11-22 to 1998-12-06, most likely at light or in a malt and dung-baited pitfall trap in a pocket gopher burrow (U06SKE01FLUS, A01SKE02FLUS).
APHOBAKE*10	<i>Aphodius bakeri</i>	Baker's Pocket Gopher Aphodius Beetle	G2G3	S2	N	1998-12-20	1998-12-20: Two specimens were collected on 1998-12-20, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS).
APHOBAKE*11	<i>Aphodius bakeri</i>	Baker's Pocket Gopher Aphodius Beetle	G2G3	S2	N	1998-12-20	1998-12-20: One specimen was collected on 1998-12-20, most likely in a malt and dung-baited pitfall trap in a pocket gopher burrow (U06SKE01FLUS, A01SKE02FLUS).
APHOBAKE*2	<i>Aphodius bakeri</i>	Baker's Pocket Gopher Aphodius Beetle	G2G3	S2	N	1998-12-02 -- 1998-12-20	1998-12-20: Six specimens were collected from 1997-12-28 to 1998-12-20, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS).
APHOBAKE*3	<i>Aphodius bakeri</i>	Baker's Pocket Gopher Aphodius Beetle	G2G3	S2	N	1999-03-01 -- 1999-04-10	1999-04-10: Two specimens were collected from 1998-12-06 to 1999-04-10, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS).
APHOBAKE*4	<i>Aphodius bakeri</i>	Baker's Pocket Gopher Aphodius Beetle	G2G3	S2	N	1999-01-02 -- 1999-01-02	1999-01-02: One specimen was collected from 1998-12-20 to 1999-01-02, most likely in a malt and dung-baited pitfall trap in a pocket gopher burrow (U06SKE01FLUS, A01SKE02FLUS).
APHOBAKE*7	<i>Aphodius bakeri</i>	Baker's Pocket Gopher Aphodius Beetle	G2G3	S2	N	1999-01-02 -- 1999-01-02	1999-01-02: One specimen was collected from 1998-12-20 to 1999-01-02, most likely in a malt and dung-baited pitfall trap in a pocket gopher burrow (U06SKE01FLUS, A01SKE02FLUS).
APHOBAKE*8	<i>Aphodius bakeri</i>	Baker's Pocket Gopher Aphodius Beetle	G2G3	S2	N	1999-01-02 -- 1999-01-02	1999-01-02: One specimen was collected from 1998-12-20 to 1999-01-02, most likely in a malt and dung-baited pitfall trap in a pocket gopher burrow (U06SKE01FLUS, A01SKE02FLUS).



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APHDBAKE*9	<i>Aphodius bakeri</i>	Baker's Pocket Gopher Aphodius Beetle	G2G3	S2	N	1998-12-19 -- 1999-01-03	1999-01-03: No information given (U06SKE01FLUS).	1999-01-03: Two specimens were collected from 1998-12-19 to 1999-01-03, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS).
APHDDYSP*26	<i>Aphodius dyspistus</i>	Surprising Pocket Gopher Aphodius Beetle	G3G4	S3?	N	1998-12-19 -- 1999-01-03	1999-01-03: No information given (U06SKE01FLUS).	1999-01-03: A total of 69 specimens were collected from 1997-12-28 to 1999-01-03, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).
APHDDYSP*27	<i>Aphodius dyspistus</i>	Surprising Pocket Gopher Aphodius Beetle	G3G4	S3?	N	1998-03-01 -- 1999-04-10	1999-04-10: No information given (U06SKE01FLUS).	1999-04-10: Four specimens were collected from 1998-12-08 to 1999-04-10, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).
APHDDYSP*28	<i>Aphodius dyspistus</i>	Surprising Pocket Gopher Aphodius Beetle	G3G4	S3?	N	1998-12-20 -- 1999-01-02	1999-01-02: No information given (U06SKE01FLUS).	1999-01-02: Two specimens were collected from 1998-12-20 to 1999-01-02, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).
APHDDYSP*31	<i>Aphodius dyspistus</i>	Surprising Pocket Gopher Aphodius Beetle	G3G4	S3?	N	1998-12-20 -- 1999-01-02	1999-01-02: No information given (U06SKE01FLUS).	1999-01-02: Fourteen specimens were collected from 1998-12-20 to 1999-01-02, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).
APHDDYSP*33	<i>Aphodius dyspistus</i>	Surprising Pocket Gopher Aphodius Beetle	G3G4	S3?	N	1998-12-20 -- 1999-01-02	1999-01-02: No information given (U06SKE01FLUS).	1999-01-02: One specimen was collected from 1998-12-20 to 1999-01-02, most likely in a malt and dung-baited pitfall trap in a pocket gopher burrow (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).
APHDDYSP*34	<i>Aphodius dyspistus</i>	Surprising Pocket Gopher Aphodius Beetle	G3G4	S3?	N	1999-01-03 -- 1999-01-18	1999-01-18: No information given (U06SKE01FLUS).	1999-01-18: A total of 28 specimens were collected from 1998-12-19 to 1999-01-18, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).



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APHODYSF35	<i>Aphodius dyspistus</i>	Surprising Pocket Gopher Aphodius Beetle	G3G4	S3?	N	N	1999-01-03 -- 1999-01-18	1999-01-18: No information given (U06SKE01FLUS)	1999-01-18: Eleven specimens were collected from 1998-12-19 to 1999-01-18, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).
APHODYSF37	<i>Aphodius dyspistus</i>	Surprising Pocket Gopher Aphodius Beetle	G3G4	S3?	N	N	1998-12-20	1998-12-20: No information given (U06SKE01FLUS)	1998-12-20: Four specimens were collected on 1998-12-20, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).
APHOGAMB2	<i>Aphodius gambirinus</i>	Amber Pocket Gopher Aphodius Beetle	G2	S1S2	N	N	1998-01-19 -- 1998-04-05	1998-04-05: No information given (U06SKE01FLUS)	1998-04-05: One specimen was collected from 1998-01-19 to 1998-04-05, most likely in a malt and dung-baited pitfall trap in a pocket gopher burrow (U06SKE01FLUS, A01SKE02FLUS).
APHOGAMB3	<i>Aphodius gambirinus</i>	Amber Pocket Gopher Aphodius Beetle	G2	S1S2	N	N	1998-12-19 -- 1999-01-03	1999-01-03: No information given (U06SKE01FLUS)	1999-01-03: Three specimens were collected from 1998-12-06 to 1999-01-03, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS).
APHOGAMB6	<i>Aphodius gambirinus</i>	Amber Pocket Gopher Aphodius Beetle	G2	S1S2	N	N	1999-01-03 -- 1999-01-18	1999-01-18: No information given (U06SKE01FLUS)	1999-01-18: Eight specimens were collected from 1998-12-17 to 1999-01-18, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS).
APHOGAMB7	<i>Aphodius gambirinus</i>	Amber Pocket Gopher Aphodius Beetle	G2	S1S2	N	N	1998-11-21 -- 1998-12-06	1998-12-06: No information given (U06SKE01FLUS)	1998-12-06: One specimen was collected from 1998-11-21 to 1998-12-06, most likely in a malt and dung-baited pitfall trap in a pocket gopher burrow (U06SKE01FLUS, A01SKE02FLUS).
APHOGAMB9	<i>Aphodius gambirinus</i>	Amber Pocket Gopher Aphodius Beetle	G2	S1S2	N	N	1998-12-06 -- 1998-12-20	1998-12-20: No information given (U06SKE01FLUS)	1998-12-20: One specimen was collected from 1998-12-06 to 1998-12-20, most likely in a malt and dung-baited pitfall trap in a pocket gopher burrow (U06SKE01FLUS, A01SKE02FLUS).
APHOHUBB23	<i>Aphodius hubbelli</i>	Hubbell's Pocket Gopher Aphodius Beetle	GNR	S3?	N	N	1998-12-19 -- 1999-01-03	1999-01-03: No information given (U06SKE01FLUS)	1999-01-03: Eight specimens were collected from 1997-12-28 to 1999-01-03, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).



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APHO-HUBB*26	<i>Aphodius hubbelli</i>	Hubbell's Pocket Gopher Aphodius Beetle	GNR	S3?	N	N	1998-12-20 -- 1999-01-02	1999-01-02: No information given (U06SKE01FLUS).	1999-01-02: Three specimens were collected from 1998-12-20 to 1999-01-02, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).
APHO-HUBB*29	<i>Aphodius hubbelli</i>	Hubbell's Pocket Gopher Aphodius Beetle	GNR	S3?	N	N	1998-12-19 -- 1999-01-02	1999-01-02: No information given (U06SKE01FLUS).	1999-01-02: Three specimens were collected from 1998-12-19 to 1999-01-02, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).
APHO-HUBB*32	<i>Aphodius hubbelli</i>	Hubbell's Pocket Gopher Aphodius Beetle	GNR	S3?	N	N	1998-11-21 -- 1998-12-06	1998-12-06: No information given (U06SKE01FLUS).	1998-12-06: One specimen was collected from 1998-11-21 to 1998-12-06, most likely in a malt and dung-baited pitfall trap in a pocket gopher burrow (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).
APHO-AEV*58	<i>Aphodius laevigatus</i>	Large Pocket Gopher Aphodius Beetle	G3G4	S3?	N	N	1998-01-19 -- 1998-04-05	1998-04-05: No information given (U06SKE01FLUS).	1998-04-05: Six specimens were collected from 1997-12-28 to 1998-04-05, most likely at light or in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS).
APHO-AEV*60	<i>Aphodius laevigatus</i>	Large Pocket Gopher Aphodius Beetle	G3G4	S3?	N	N	1998-12-20 -- 1999-01-02	1999-01-02: No information given (U06SKE01FLUS).	1999-01-02: One specimen was collected from 1998-12-20 to 1999-01-02, most likely at light or in a malt and dung-baited pitfall trap in a pocket gopher burrow (U06SKE01FLUS, A01SKE02FLUS).
APHO-AEV*63	<i>Aphodius laevigatus</i>	Large Pocket Gopher Aphodius Beetle	G3G4	S3?	N	N	1998-11-21 -- 1998-12-06	1998-12-06: No information given (U06SKE01FLUS).	1998-12-06: Four specimens were collected from 1998-11-21 to 1998-12-06, most likely at light or in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS, A01SKE02FLUS).
APHO-AEV*64	<i>Aphodius laevigatus</i>	Large Pocket Gopher Aphodius Beetle	G3G4	S3?	N	N	1998-12-20 -- 1999-01-02	1999-01-02: No information given (U06SKE01FLUS).	1999-01-02: Nine specimens were collected from 1998-11-22 to 1999-01-02, most likely at light or in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS).



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APHOPHOL*1	<i>Aphodius pholetus</i>	Rare Pocket Gopher Aphodius Beetle	G1G2	S1	N	1997-12-28 -- 1998-01-19	1998-01-19: No information given (U06SKE01FLUS).	1998-01-19: One specimen was collected from 1997-12-28 to 1998-01-19, most likely in a malt and dung-baited pitfall trap in a pocket gopher burrow (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).
APHOPLAT*13	<i>Aphodius platypleurus</i>	Broad-Sided Pocket Gopher Aphodius Beetle	G2G3	S2	N	1998-12-28 -- 1999-01-18	1999-01-18: No information given (U06SKE01FLUS).	1999-01-18: Nineteen specimens were collected from 1997-12-28 to 1999-01-18, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).
APHOPLAT*14	<i>Aphodius platypleurus</i>	Broad-Sided Pocket Gopher Aphodius Beetle	G2G3	S2	N	1998-12-19 -- 1999-01-02	1999-01-02: No information given (U06SKE01FLUS).	1999-01-02: Four specimens were collected from 1998-12-19 to 1999-01-02, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).
APHOPLAT*15	<i>Aphodius platypleurus</i>	Broad-Sided Pocket Gopher Aphodius Beetle	G2G3	S2	N	1998-12-20	1998-12-20: No information given (U06SKE01FLUS).	1998-12-20: One specimen was collected on 1998-12-20, most likely in a malt and dung-baited pitfall trap in a pocket gopher burrow (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).
APHOPLAT*17	<i>Aphodius platypleurus</i>	Broad-Sided Pocket Gopher Aphodius Beetle	G2G3	S2	N	1998-12-20 -- 1999-01-02	1999-01-02: No information given (U06SKE01FLUS).	1999-01-02: Fourteen specimens were collected from 1998-12-20 to 1999-01-02, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).
APHOPLAT*20	<i>Aphodius platypleurus</i>	Broad-Sided Pocket Gopher Aphodius Beetle	G2G3	S2	N	1998-12-19 -- 1999-01-02	1999-01-02: No information given (U06SKE01FLUS).	1999-01-02: Nine specimens were collected from 1998-12-19 to 1999-01-02, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).
APHOPLAT*21	<i>Aphodius platypleurus</i>	Broad-Sided Pocket Gopher Aphodius Beetle	G2G3	S2	N	1998-11-21 -- 1998-12-06	1998-12-06: No information given (U06SKE01FLUS).	1998-12-06: One specimen was collected from 1998-11-21 to 1998-12-06, most likely in a malt and dung-baited pitfall trap in a pocket gopher burrow (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).



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APHOTANY*12	<i>Aphodius tanytarsus</i>	Long-Clawed Pocket Gopher/Aphodius Beetle	G2G3	S2S3	1998-12-19 -- 1999-01-03: No information given 1999-01-03 (U06SKE01FLUS)	1999-01-03: A total of 41 specimens were collected from 1997-12-28 to 1999-01-03, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).
APHOTANY*13	<i>Aphodius tanytarsus</i>	Long-Clawed Pocket Gopher/Aphodius Beetle	G2G3	S2S3	1998-12-06 -- 1998-12-20: No information given 1998-12-20 (U06SKE01FLUS)	1998-12-20: Two specimens were collected from 1998-12-06 to 1998-12-20, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).
APHOTANY*14	<i>Aphodius tanytarsus</i>	Long-Clawed Pocket Gopher/Aphodius Beetle	G2G3	S2S3	1998-12-20 -- 1999-01-02: No information given 1999-01-02 (U06SKE01FLUS)	1999-01-02: One specimen was collected from 1998-12-20 to 1999-01-02, most likely in a malt and dung-baited pitfall trap in a pocket gopher burrow (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).
APHOTANY*17	<i>Aphodius tanytarsus</i>	Long-Clawed Pocket Gopher/Aphodius Beetle	G2G3	S2S3	1998-12-20 -- 1999-01-02: No information given 1999-01-02 (U06SKE01FLUS)	1999-01-02: Four specimens were collected from 1998-12-20 to 1999-01-02, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).
APHOTANY*18	<i>Aphodius tanytarsus</i>	Long-Clawed Pocket Gopher/Aphodius Beetle	G2G3	S2S3	1999-01-03 -- 1999-01-18: No information given 1999-01-18 (U06SKE01FLUS)	1999-01-18: Three specimens were collected from 1998-12-19 to 1999-01-18, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).
APHOTANY*19	<i>Aphodius tanytarsus</i>	Long-Clawed Pocket Gopher/Aphodius Beetle	G2G3	S2S3	1999-01-03 -- 1999-01-18: No information given 1999-01-18 (U06SKE01FLUS)	1999-01-18: Two specimens were collected from 1998-12-19 to 1999-01-18, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).
APHOTANY*20	<i>Aphodius tanytarsus</i>	Long-Clawed Pocket Gopher/Aphodius Beetle	G2G3	S2S3	1998-12-20: No information given (U06SKE01FLUS)	1998-12-20: One specimen was collected on 1998-12-20, most likely in a malt and dung-baited pitfall trap in a pocket gopher burrow (U06SKE01FLUS, A91SKE02FLUS, A91SKE01FLUS).



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APHOTANY*21	<i>Aphodius tanytarsus</i>	Long-Clawed Pocket Gopher Aphodius Beetle	G2G3	S2S3	N	N	1999-03-01 -- 1999-04-10: No information given 1999-04-10 (U06SKE01FLUS).	1999-04-10: A total of 21 specimens were collected from 1998-12-19 to 1999-04-10, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).
APHOTANY*22	<i>Aphodius tanytarsus</i>	Long-Clawed Pocket Gopher Aphodius Beetle	G2G3	S2S3	N	N	1999-01-03 -- 1999-01-18: No information given 1999-01-18 (U06SKE01FLUS).	1999-01-18: Five specimens were collected from 1999-01-03 to 1999-01-18, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS, A91SKE01FLUS).
APHOTROG*22	<i>Aphodius troglodytes</i>	Gopher Tortoise Aphodius Beetle	G2G3	S2	N	N	2016-05-27 upland pine	Specimens were collected at 3 locations during 2 one week survey periods using gopher tortoise burrow facade traps in upland pine habitat.
APHOTROG*23	<i>Aphodius troglodytes</i>	Gopher Tortoise Aphodius Beetle	G2G3	S2	N	N	2016-04-29 sandhill habitat	Specimens were collected in two localities in sandhill habitat in gopher tortoise burrow facade traps that were set on 2016-04-25.
ASIODOLA*2	<i>Asioplax dolani</i>	A Mayfly	G4	S1S2	N	N	2007-08-29	2007-08-29: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).
BAETBECK*15	<i>Baetisca becki</i>	A Mayfly	G2G3	S2	N	N	1998-12-09	1998-12-09: This species was documented by Florida Department of Environmental Protection agency staff at two localities (U09DEP01FLUS).
BAETBECK*16	<i>Baetisca becki</i>	A Mayfly	G2G3	S2	N	N	1979-02-28	1979-02-28: Staff from the Florida Department of Environmental Protection collected this species on this date and on 1978-03-14 (U09DEP01FLUS).
BAETBECK*18	<i>Baetisca becki</i>	A Mayfly	G2G3	S2	N	N	2007-03-26	2007-03-26: This species was documented by Florida Department of Environmental Protection agency staff at two localities on nine dates going back to 1960-03-09 (U09DEP01FLUS).
BAETBECK*20	<i>Baetisca becki</i>	A Mayfly	G2G3	S2	N	N	1962-05-01	1962-05-01: Staff from the Florida Department of Environmental Protection collected this species on this date and on 1960-03-09 (U09DEP01FLUS).



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BAETBECK*23	<i>Baetisca becki</i>	A Mayfly	G2G3	S2	N	2006-02-20	2006-02-20: No description given (U09DEP01FLUS).	2006-02-20: Staff from the Florida Department of Environmental Protection collected this species on this date and on 1995-01-30 (U09DEP01FLUS).
BAETBECK*27	<i>Baetisca becki</i>	A Mayfly	G2G3	S2	N	1998-02-26	1998-02-26: No description given (U09DEP01FLUS).	1998-02-26: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).
BAETESCA*2	<i>Baetisca escambiensis</i>	Escambia Mayfly	G2G3	S1S2	N	2011-05-27	Blackwater River, a medium-sized blackwater river.	Specimens collected in Blackwater River State Park in 2007 and 2011. 1967 specimen from river noted in A81PES01FLUS.
BAETESCA*4	<i>Baetisca escambiensis</i>	Escambia Mayfly	G2G3	S1S2	N	1999-06-10	1999-06-10: No description given (U09DEP01FLUS).	1999-06-10: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).
BAETGIBB*11	<i>Baetisca gibbera</i>	Humpback Mayfly	G5	S1S2	N	1968-11-28	Blackwater River.	Nymphs collected on 2 dates in November, on both sides of river (N04PES01FLUS).
BAETROGE*45	<i>Baetisca rogersi</i>	A Mayfly	G4	S3	N	2001-11-27	2001-11-27: No description given (U09DEP01FLUS).	2001-11-27: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).
BAETROGE*51	<i>Baetisca rogersi</i>	A Mayfly	G4	S3	N	1998-12-09	1998-12-09: No description given (U09DEP01FLUS).	1998-12-09: This species was documented by Florida Department of Environmental Protection agency staff at two localities (U09DEP01FLUS).
BAETROGE*55	<i>Baetisca rogersi</i>	A Mayfly	G4	S3	N	1979-02-28	1979-02-28: No description given (U09DEP01FLUS).	1979-02-28: Staff from the Florida Department of Environmental Protection collected this species on this date and on the following dates: 1978-03-14, 1976-11-23 (U09DEP01FLUS).
BAETROGE*56	<i>Baetisca rogersi</i>	A Mayfly	G4	S3	N	1998-02-20	1998-02-20: No description given (U09DEP01FLUS).	1998-02-20: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).
BAETROGE*58	<i>Baetisca rogersi</i>	A Mayfly	G4	S3	N	1998-02-25	1998-02-25: No description given (U09DEP01FLUS).	1998-02-25: This species was documented by Florida Department of Environmental Protection agency staff at three localities on fifteen dates going back to 1965-03-16 (U09DEP01FLUS).



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BAETROGE60	<i>Baetisca rogersi</i>	A Mayfly	G4	S3	N	1977-05-04	1977-05-04: No description given (U09DEP01FLUS).	1977-05-04: Staff from the Florida Department of Environmental Protection collected this species on this date and on the following dates: 1969-02-19, 1962-10-15, 1962-05-01, 1960-03-09 (U09DEP01FLUS).
BAETROGE62	<i>Baetisca rogersi</i>	A Mayfly	G4	S3	N	2007-03-20	2007-03-20: No description given (U09DEP01FLUS).	2007-03-20: This species was documented by Florida Department of Environmental Protection agency staff at two localities on three dates going back to 1977-05-04 (U09DEP01FLUS).
BAETROGE64	<i>Baetisca rogersi</i>	A Mayfly	G4	S3	N	1977-05-04	1977-05-04: No description given (U09DEP01FLUS).	1977-05-04: Staff from the Florida Department of Environmental Protection collected this species on this date and on the following dates: 1962-10-15, 1962-02-09 (U09DEP01FLUS).
BAETROGE65	<i>Baetisca rogersi</i>	A Mayfly	G4	S3	N	2005-05-25	2005-05-25: No description given (U09DEP01FLUS).	2005-05-25: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).
BAETROGE66	<i>Baetisca rogersi</i>	A Mayfly	G4	S3	N	1988-02-18	1988-02-18: No description given (U09DEP01FLUS).	1988-02-18: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).
BAETROGE68	<i>Baetisca rogersi</i>	A Mayfly	G4	S3	N	2006-02-20	2006-02-20: No description given (U09DEP01FLUS).	2006-02-20: Staff from the Florida Department of Environmental Protection collected this species on this date and on 2001-02-08 (U09DEP01FLUS).
BAETROGE71	<i>Baetisca rogersi</i>	A Mayfly	G4	S3	N	2005-05-26	2005-05-26: No description given (U09DEP01FLUS).	2005-05-26: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).



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BAPTILL*1	<i>Baptisia calycosa</i> var. <i>villosahairy</i> wild indigo		G3T3	S3	N	T	1992-06-17	OVERGROWN PINUS PALUSTRIS SANDHILL (CLOSED SUBCANOPY COMPOSED OF QUERCUS HEMISPHAERICA, Q. INCANA, Q. LAEVIS, DIOSPYRUS VIRGINIANA, AND ILEX VOMITORIA) EXCEPT BENEATH POWER LINE WHERE BAPTISIA OCCURS. VEGETATION OF OPEN AREA UNDER POWER LINE INCLUDES: ARISTIDA STRICTA, LICANIA MICHAXII, ASCLEPIAS HUMISTRATA, PTERIDIUM AQUILINUM, CLADONIA, YUCCA FLACCIDA, SMILAX, BERLANDIERA PUMILA, CROTON, RUBUS CUNEIFOLIUS, OPUNTIA, AND SILPHIUM COMPOSITUM.	FIRST OBSERVED IN 1964 (S. MCDANIEL SPECIMEN: FSU-34351) 21 PLANTS OBSERVED BY PALIS ON 17 JUNE 1992 (2 IN FLOWER, REST IN FRUIT).
BAPTILL*2	<i>Baptisia calycosa</i> var. <i>villosahairy</i> wild indigo		G3T3	S3	N	T	1992-06-19	DEGRADED SANDHILL. PINUS ELLIOTTI PLANTATION (TREES CA. 40 FT. TALL) ON E SIDE OF ROAD. VAST CLEARCUT ON W SIDE OF ROAD VEGETATED WITH QUERCUS LAEVIS, Q. MARGARETTA, Q. INCANA, DIOSPYRUS VIRGINIANA, ILEX OPACA, RUBUS CUNEIFOLIUS, ANDROPOGON, PTERIDIUM AQUILINUM, ARISTIDA STRICTA, LICANIA MICHAXII, RHUS COPALLINA, YUCCA FLACCIDA, BERLANDIERA PUMILA, CROTON, EUPHORBIA INUNDATA, CLADONIA, SMILAX, POLYGALA INCARNATA, ASCLEPIAS, HUMISTRATA, STYLODON CARNEUS, AND INDIGOFERA.	50 PLANTS OBSERVED ON W SIDE OF ROAD; 14 OBSERVED ON E SIDE. MANY PLANTS ON ROAD BERM.



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BAPTVILL*63	<i>Baptisia calycosa</i> var. <i>villosahairy</i>	wild indigo	G3T3	S3	N	T	1992-06-19	DEGRADED SANDHILL ON LAKELAND SAND DOMINATED BY QUERCUS LAEVIS, Q. INCANA, Q. GEMINATA, AND DIOSPYRUS VIRGINIANA. REMNANT GROUND COVER VEGETATION INCLUDES ARISTIDA STRICTA, ANDROPOGON, PTERIDIUM AQUILINUM, LICANIA MICHAUXII, SERENOA REPENS, CROTON, RHEXIA MARIANA, SMILAX, RUBUS, AND YUCCA FLACCIDA.	2 PLANTS OBSERVED (NOT IN BLOOM)
BAPTVILL*66	<i>Baptisia calycosa</i> var. <i>villosahairy</i>	wild indigo	G3T3	S3	N	T	2010-11-18	Sandhill	Between 11-50 plants observed in 1992. A few scattered plants observed in 1994. One plant observed in 2010 in quick survey of area.
BAPTVILL*80	<i>Baptisia calycosa</i> var. <i>villosahairy</i>	wild indigo	G3T3	S3	N	T	2010-06-21	Sandhill	In 1990, a survey found a total of 37 individuals at 27 locations; mostly single individuals were encountered, but at a few sites up to four plants of <i>B. hirsuta</i> were observed. In 1996, 100 plants were observed throughout this sandhill. Several points of a few plants each have been observed in 2006 and 2010.
BAYGALL*77	Baygall		G4	S4	N	N	1996-08-12	Baygall (bayhead) surrounded by sandhill of good quality on OLF Harold, but surrounded by planted sand pine downslope off OLF Harold. Other baygall of apparent good quality are present to the north on Blackwater River State Forest.	1996-08-12: Canopy of <i>Cyrilla racemiflora</i> and <i>Magnolia virginiana</i> (80% coverage). There is a moderately dense midstory of <i>Illicium floridanum</i> and <i>Cyrilla racemiflora</i> (50% coverage). Tall shrubs are dominated by <i>Ilex coriacea</i> , <i>Illicium floridanum</i> and <i>Cyrilla racemiflora</i> also are abundant (total tall shrub coverage is 30-40%). Short shrub coverage is 20%. represented primarily by <i>Gaylussacia</i> sp., <i>Clethra alnifolia</i> , <i>Ilex glabra</i> , <i>Lyonia lucida</i> and <i>Myrica heterophylla</i> , no herbs were observed; patches of <i>Sphagnum</i> frequent (<i>PNDHIP01FLUS</i> , <i>PNDPRI03FLUS</i>).



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BLACSTIR*3	Blackwater stream		G4	S3	N	2004	Sparse aquatic flora includes <i>S. graminea</i> , <i>N. luteum</i> , <i>P. cordata</i> , <i>P. batrachospermum</i> . Aquatic fauna is extremely diverse, although aquatic mammals are rare.	2004: Update to last obs date was based on interpretation of aerial photography (previous value was empty) (U05FNA02FLUS). 2004: Water depth from 1-5 m with swift current and bottom of clean white sand with large bars of clean shifting sand. Bottom occasionally has small amounts of buried surface detritus. 1970's: see A73PET01FLUS.
BOTTFOR*10	Bottomland forest		G4	S3	N	2004	DENSE BOTTOMLAND FOREST BORDERING PINUS PALUSTRIS/QUERCUS LAEVIS SANDHILL COMMUNITY ON BOTH SIDES. DOMINANT SPECIES INCLUDE: PERSEA PALUSTRIS; MAGNOLIA GRANDIFLORA; NYSSA SYLVATICA; SABAL PALMETTO, LIQUIDAMBAR STYRACIFLUA, LIRIODENDRON TULIPIFERA, QUERCUS NIGRA, AND Q. AFF. LAURIFOLIA, CLIFTONIA MONOPHYLLA, AND RHODODENDRON SERRULATUM.	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1991-07-29) (U05FNA02FLUS). EXTENSIVE BOTTOMLAND FOREST THAT PROBABLY BORDERS THE LENGTH OF NARROWS CREEK BETWEEN PYRON SPRINGS BRANCH AND PANTHER CREEK.



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BOTTFORE20	Bottomland forest		G4	S3	N	N	2004	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1995-06-23) (J05FNA02FLUS). 1995-06-28: The bottomland forest essentially occurs on narrow elevated terraces bounding the north and south sides of Grimes Lake, as well as the adjacent Yellow River; this community is discontinuous and from a cursory inspection via canoe during 1994, the bottomland forest appeared as pine-hardwood islands amidst an expanse of floodplain swamps and other wetlands; vegetatively, spruce pine (<i>Pinus glabra</i>), southern magnolia (<i>Magnolia grandiflora</i>), live oak (<i>Quercus virginiana</i>) and water oak characterize the community's canopy and subcanopy layers, whereas sweet pinxter azalea (<i>Rhododendron canescens</i>) and blueberries (<i>Vaccinium corymbosum</i> and <i>v. ellipticifolium</i>) typify the shrub layer, herbs are of low diversity being best represented by spikegrass (<i>Chasmanthium laxum</i>), partridgeberry (<i>Mitchella repens</i>) and lobelia (<i>Lobelia flaccidifolia</i>) (PNDSCH05FLUS).



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BOTTFORE24	Bottomland forest		G4	S3	N	N	2004	<p>This bottomland forest occurs on higher ground within the Yellow River basin, adjacent to the river, and between the river and floodplain swamp to the west. It occurs on a thin strip of land that somewhat parallels the river, almost resembling a levee.</p> <p>2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1996-04-17) (U05FNA02FLUS). 1996-04-19: Tall, semi-closed canopy of spruce pine (<i>Pinus clausa</i>), diamond leaf oak (<i>Quercus laurifolia</i>) and water oak (<i>Q. nigra</i>) as dominant; the subcanopy is dominated by those same species, along with a very diverse mix of others including musciewood (<i>Carpinus caroliniana</i>), American holly (<i>Ilex opaca</i>), red maple (<i>Acer rubrum</i>), Atlantic white cedar (<i>Chamaecyparis thyoides</i>); many other tree species are scattered throughout in the canopy and sub-canopy, shrubs are diverse and multi-layered and include white ti-ti (<i>Cyrtia racemiflora</i>), swamp azalea (<i>Rhododendron canescens</i>), high bush blueberry (<i>Vaccinium corymbosum</i>), Elliott's blueberry (<i>V. stamineum</i>) and Sebastian bush (<i>Sebastiania fruticosa</i>); herbs are abundant and include spikegrass (<i>Chasmanthium laxum</i>), panic grass (<i>Panicum sp.</i>), many different sedge (<i>Carex sp.</i>), and sarsaparilla vine (<i>Smilax pumila</i>); several vines occur here, wild grape (<i>Vitis rotundifolia</i>), trumpet creeper (<i>Campsis radicans</i>) and wild sarsaparilla (<i>Smilax glauca</i>) are most common (PNDKIND2FLUS).</p>
BOTTFORE3	Bottomland forest		G4	S3	N	N	2004	<p>2010: Prior to the 2010 natural community reclassification effort this EO had been known as Floodplain forest EO number 3 (see U10FNA01FLUS for updated community descriptions). 2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1984) (U05FNA02FLUS). ATLANTIC WHITE CEDAR, SLASH AND LOBLOLLY PINE, HICKORY, MAGNOLIA, MAPLE, AND SWEETGUM (U80FRA01).</p>



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BOITTF0RE*37	Bottomland forest		G4	S3	N	N	2004	<p>2010: Prior to the 2010 natural community reclassification effort this EO had been known as Baygall EO number 15 (see U10FNAD01FLUS for updated community descriptions). 2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1991-07-30) (U05FNA02FLUS). FAIRLY EXTENSIVE FOREST COMMUNITY E AND W OF DEADFALL CREEK AND ON BOTH N & S SIDES OF HWY.</p> <p>BOTTOMLAND FOREST WITH LIRIODENDRON TULIPIFERA, PERSEA PALUSTRIS, ACER SP. (PROBABLY A. RUBRUM), Q. NIGRA, Q. LAURIFOLIA, NYSSA SYLVATICA, MAGNOLIA GRANDIFLORA, M. VIRGINIANA, ILEX CORIACEA, RHODODENDRON SERRULATUM, LILIUM IRIDOLLAE, SABAL PALMETTO, PINUS ELLIOTTII, AND CLIFTONIA MONOPHYLLA.</p>
BOITTF0RE*39	Bottomland forest		G4	S3	N	N	2004	<p>2010: Prior to the 2010 natural community reclassification effort this EO had been known as Baygall EO number 20 (see U10FNAD01FLUS for updated community descriptions). 2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1992-06-14) (U05FNA02FLUS). NARROW LINEAR BAYGALL ADJACENT TO JULIAN MILL CREEK. GRADES UPSLOPE INTO EX-SANDHILL (PINE PLANTATION).</p> <p>DENSE OVERSTORY COMPOSED OF CHAMAECYPARIS THYOIDES, MAGNOLIA VIRGINIANA, NYSSA SYLVATICA VAR. BIFLORA, PINUS ELLIOTTII, ACER RUBRUM, LIRIODENDRON TULIPIFERA AND CLIFTONIA MONOPHYLLA. DENSE UNDERSTORY COMPOSED OF CYRILLA RACEMIFLORA, LYONIA LUCIDA, MYRICA HETEROPHYLLA, RHODODENDRON SERRULATUM, ILEX CORIACEA, SMILAX LAURIFOLIA, ARUNDINARIA GIGANTEA, WOODWARDIA AREOLATA, ORONTIUM AQUATICUM, ARNOGLOSSUM SULCATUM, SARRACENIA RUBRA, AND SPHAGNUM.</p>



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BOITTORE*40	Bottomland forest		G4	S3	N	N	2004	DENSE OVERSTORY COMPOSED OF CHAMAECYPARIS THYOIDES, MAGNOLIA VIRGINIANA, NYSSA SYLVATICA VAR. BIFLORA, PINUS ELLIOTTII, ACER RUBRUM, LIRIODENDRON TULIPIFERA AND CLIFTONIA MONOPHYLLA. DENSE UNDERSTORY COMPOSED OF CYRILLA RACEMIFLORA, LYONIA LUCIDA, MYRICA HETEROPHYLLA, RHODODENDRON SERRULATUM, ILEX CORIACEA, SMILAX LAURIFOLIA, ARUNDINARIA GIGANTEA, WOODWARDIA AREOLATA, ORONTIUM AQUATICUM, ARNOGLOSSUM SULCATUM, SARRACENIA RUBRA, AND SPHAGNUM.	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Baygall EO number 21 (see U10FNA01FLUS for updated community descriptions). 2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1992-06-14) (U05FNA02FLUS). EXTENSIVE LINEAR BAYGALL ADJACENT TO GARNIER CREEK. GRADES UPSLOPES INTO EX-SANDHILL (PINE PLANTATION).



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BOTTFOR*41	Bottomland forest		G4	S3	N	2004	DENSE OVERSTORY COMPOSED OF CHAMAECYPARIS THYROIDES, MAGNOLIA VIRGINIANA, NYSSA SYLVATICA VAR. BIFLORA, PINUS ELLIOTTII, ACER RUBRUM, LIRIODENDRON TULIPIFERA AND CLIFTONIA MONOPHYLLA. DENSE UNDERSTORY COMPOSED OF CYRILLA RACEMIFLORA, LYONIA LUCIDA, MYRICA HETEROPHYLLA, RHODODENDRON SERRULATUM, ILEX CORIACEA, SMILAX LAURIFOLIA, ARUNDINARIA GIGANTEA, WOODWARDIA AREOLATA, ORONTIUM AQUATICUM, ARNOGLOSSUM SULCATUM, SARRACENIA RUBRA, AND SPHAGNUM. AT OLD FISHER MILL ROAD THE OVERSTORY IS COMPOSED PRINCIPALLY OF LARGE MAGNOLIA VIRGINIANA AND PINUS ELLIOTTII (DIAMETERS UP TO 28 INCHES), TALL SUBCANOPY DOMINATED BY CLIFTONIA MONOPHYLLA.	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Baygall EO number 23 (see U10FN01FLUS for updated community descriptions). 2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1992-06-17) (U05FNA02FLUS). EXTENSIVE LINEAR BAYGALL ADJACENT TO BURNT GROCERY CREEK. GRADES UPSLOPE PRINCIPALLY INTO EX-SANDHILL BUT ALSO INTO EX-FLATWOODS. PORTIONS LOST TO I-10 R.O.W. AND IMPOUNDMENT OF CREEK.
BOTTFOR*55	Bottomland forest		G4	S3	N	2004	SLASH PINE/GUM SWAMP ALONG STREAM.	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Floodplain swamp EO number 15 (see U10FN01FLUS for updated community descriptions). 2004: Update to last obs date was based on interpretation of aerial photography (previous value was) (U05FNA02FLUS). SLASH PINE 22-24' DBH, "GUMS".
CALLHES*13	Calliophrys hessell	Hessell's Hairstreak	G3	S2	N	2010-03-30	None provided.	2010-03-30: Four or more adults seen (F10FR101FLUS).



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CALYFLOR*16	<i>Calycanthus floridus</i>	sweet-shrub	G5	S2	N	E	2006-05-02 2006-05-02 2016-05-26	2006-05-02: 1 plant in flower/bud, being smothered by <i>Lonicera japonica</i> (F06FNA12FLUS). disturbance from <i>Lonicera japonica</i> (F06FNA12FLUS). sandhill
CHELXERO*12	<i>Chelyoxenus xerobatis</i>	Gopher Tortoise Hister Beetle	G2G3	S2	N	N	2016-05-26	One specimen was collected in the mouth of a gopher tortoise burrow in sandhill habitat.
CHEUPETE*18	<i>Cheumatopsyche petersi</i>	Peters' Cheumatopsyche Caddisfly	G3	S2	N	N	2007-05-19	2007-05-19: Specimens have been collected at 3 sites on a total of at least 4 dates ranging back to 1968-04-07.
CHEUPETE*29	<i>Cheumatopsyche petersi</i>	Peters' Cheumatopsyche Caddisfly	G3	S2	N	N	2007-06-13	2007-06-13: Nine specimens were collected using a 15 watt black light over an alcohol-filled white pan (U09RAS01FLUS, U06RAS01FLUS).
CHEUPETE*30	<i>Cheumatopsyche petersi</i>	Peters' Cheumatopsyche Caddisfly	G3	S2	N	N	2007-06-13	2007-06-13: Forty-six specimens were collected using a 15 watt black light over an alcohol-filled white pan (U09RAS01FLUS, U06RAS01FLUS).
CHIMFLOR*41	<i>Chimarra florida</i>	Floridian Finger-net Caddisfly	G4	S3S4	N	N	2007-05-19	2007-05-19: Thirty specimens were collected using a 15 watt black light over an alcohol-filled white pan at the "Okaloosa Co. Mare Creek, Blackwater R SF 75m from bridge" site (U09RAS01FLUS, U06RAS01FLUS). 1967-04-26: One specimen was collected at the "Okaloosa Co., Blackwater R, 4.5 mi NW of Cannon Town" site (U06RAS01FLUS).
CHIMFLOR*60	<i>Chimarra florida</i>	Floridian Finger-net Caddisfly	G4	S3S4	N	N	2007-06-13	2007-06-13: Forty-five specimens were collected using a 15 watt black light over an alcohol-filled white pan (U09RAS01FLUS, U06RAS01FLUS).
CHIMFLOR*68	<i>Chimarra florida</i>	Floridian Finger-net Caddisfly	G4	S3S4	N	N	2007-06-13	2007-06-13: Sixty-five specimens were collected using a 15 watt black light over an alcohol-filled white pan (U09RAS01FLUS, U06RAS01FLUS).
CICIWAPL*1	<i>Cicindela wapteri</i>	White-sand Tiger Beetle	G3G4	S2	N	N	2010-07-11	1 adult photographed on sand bar.
CICIWAPL*2	<i>Cicindela wapteri</i>	White-sand Tiger Beetle	G3G4	S2	N	N	2007-07-01	1 adult photographed on sand bar.



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COELTUBE13	<i>Coelorrachis tuberculosa</i>	Piedmont jointgrass	G3	S3	N	T	1994-10-11 Depression Marsh dominated by <i>Eriocaulon decangulare</i> and <i>compressum</i> - many other grasses, forbs, and sedges. <i>Ilex myrifolia</i> circles pond. Pond is shallow and ephemeral. Similar looking <i>Rhexia mariana</i> also common here as is <i>Rhexia virginiana</i> .	8-10 plants observed; fruiting.
COELTUBE35	<i>Coelorrachis tuberculosa</i>	Piedmont jointgrass	G3	S3	N	T	1995-12-16 Depression marsh is surrounded by young longleaf (maybe slash - didn't notice) pine forest with abundant wiregrass and <i>Rubus</i> .	1995-12-16: Old, fruiting plants abundant in inundated depression marsh - especially on NW end; pond is open canopied, but edged with <i>Ilex myrifolia</i> and <i>Nyssa biflora</i> ; pond dominated by <i>Eleocharis elongata</i> (PNDJEN02FLUS).
CORDSAV1Z	<i>Cordulegaster sayi</i>	Say's Spiketail	G3	S3	N	N	2021-03-22 1987-04-12: Seepage bog bayhead; pitcher plants at head of spring from seepage along hillside. Pine trees nearby tree cover, bog area open and exposed to direct sunlight eventually forms small trickle stream with tili, wax myrtle (U87DAI01FLUS).	Species observed yearly from 1981-1987. Not found in 1989. One male collected in 2021.
CROTADAM*123	<i>Crotalus adamanteus</i>	Eastern Diamondback Rattlesnake	G3	S3	UR	N	1994-08-14 Upland pine forest.	1994-08-14: 4.5 foot individual observed crossing road (U94SCH06).
CROTADAM*202	<i>Crotalus adamanteus</i>	Eastern Diamondback Rattlesnake	G3	S3	UR	N	1995 pre No general description given	1995-Pre: snake observed by Paul Moier on site (M95MAR01FLUS).
CROTADAM*258	<i>Crotalus adamanteus</i>	Eastern Diamondback Rattlesnake	G3	S3	UR	N	1996-04-17 Surrounding habitat primarily ruderal with patches of sandhill.	Yearling snake D.O.R.
CROTADAM*284	<i>Crotalus adamanteus</i>	Eastern Diamondback Rattlesnake	G3	S3	UR	N	1999-08-04 99-08-04: ruderal/pine plantation	99-08-04: one snake, approximately 28 inches total length, observed dead on roadway (PNDPRI03).
CROTADAM*92	<i>Crotalus adamanteus</i>	Eastern Diamondback Rattlesnake	G3	S3	UR	N	1978 No general description given	1978: DOR adult (U94MOL01FLUS).



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DEPRMARS*55	Depression marsh		G4	S4	N	N	2004	No general description given	
DESMPOF1*3	<i>Desmagnathus</i> sp. 1	Eglin Ravine Dusky Salamander	G2G3Q	S2	N	N	1999	Blackwater River State Forest, an ecosystem dominated by upland pine forest. 1999 observation was in shrub portion of seepage bog that drains into Reedy Creek, a tributary of the Yellow River (A02ENG02FLUS).	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1994-07-08) (U05FNA02FLUS). Depression Marsh dominated by <i>Eriocaulon decangulare</i> and <i>compressum</i> - many other grasses, forbs, and sedges, <i>Ilex myrtifolia</i> circles pond. Pond is shallow and ephemeral. Similar looking <i>Rhexia mariana</i> also common here as is <i>Rhexia virginiana</i> . Based on 1 capture at drift fence in 1999 (A02ENG02FLUS), though potentially a large population.
DICHNUDI*83	<i>Dichanthelium nudicaule</i>	naked-stemmed panic grass	G3Q	S3	N	T	2006-08-10	shrubs: <i>Ilex coriacea</i> , <i>Myriophyllum heterophyllum</i> , <i>Nyssa sylvatica</i> var. <i>biflora</i> , <i>Clethra alnifolia</i> , <i>Magvir.</i> Herbs: <i>Sarflia</i> , <i>Sarracenia psittacina</i> , <i>Eriocaulon decangulare</i> , <i>Juncus trigonocarpus</i> , <i>Bidens mitis</i> , <i>Carex glaucescens</i> , <i>Oxyptolis filiformis</i> .	Observed 101-1000 plants, likely greater than 700 stems.
DICHNUDI*84	<i>Dichanthelium nudicaule</i>	naked-stemmed panic grass	G3Q	S3	N	T	2006-08-15	<i>Sarracenia leucophylla</i> , <i>Aristida stricta</i> var. <i>beyrichiana</i> /Cyrilla <i>racemiflora</i> . FNAI NC recorded as seepage slope.	Observed 1-10 plants in leaf
DOLAAMER*10	<i>Dolania americana</i>	American Sand-burrowing Mayfly	G4	S2	N	N	2001-11-27	2001-11-27: No description given (U09DEP01FLUS).	2001-11-27: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).
DOLAAMER*11	<i>Dolania americana</i>	American Sand-burrowing Mayfly	G4	S2	N	N	1976-11-23	1976-11-23: No description given (U09DEP01FLUS).	1976-11-23: Staff from the Florida Department of Environmental Protection collected this species on this date and on 1975-09-16 (U09DEP01FLUS).
DOLAAMER*13	<i>Dolania americana</i>	American Sand-burrowing Mayfly	G4	S2	N	N	1998-02-24	1998-02-24: No description given (U09DEP01FLUS).	1998-02-24: This species was documented by Florida Department of Environmental Protection agency staff at two localities on ten dates going back to 1976-01-15 (U09DEP01FLUS).

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DOLAAMER*14	<i>Dolania americana</i>	American Sand-burrowing Mayfly	G4	S2	N	N	1977-05-04: No description given (U09DEP01FLUS).	1977-05-04: Staff from the Florida Department of Environmental Protection collected this species on this date and on 1960-03-09 (U09DEP01FLUS).
DOLAAMER*15	<i>Dolania americana</i>	American Sand-burrowing Mayfly	G4	S2	N	N	1995-07-17: No description given (U09DEP01FLUS).	1995-07-17: Staff from the Florida Department of Environmental Protection collected this species on this date and on 1993-06-22 (U09DEP01FLUS).
DOLAAMER*9	<i>Dolania americana</i>	American Sand-burrowing Mayfly	G4	S2	N	N	1993-06-22: No description given (U09DEP01FLUS).	1993-06-22: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).
DOMESWAMP*15	Dome swamp		G4	S4	N	N	2004	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1992-06) (U05FNA02FLUS). DOME SWAMP BISSected BY DIRT ROAD ADJACENT TO EX-FLATWOODS (YOUNG SLASH PINE PLANTATION).
DOMESWAMP*16	Dome swamp		G4	S4	N	N	2004	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1992-06-14) (U05FNA02FLUS). ONE DOME SWAMP WITHIN AN EX-FLATWOODS DOMINATED BY WEEDY VEGETATION AND PLANTED TO SLASH PINE.



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DOMESWAMP17	Dome swamp	G4 S4 N N	2004 RELATIVELY OPEN OVERSTORY DOMINATED BY ILEX MYRTIFOLIA AND A FEW NYSSA SYLVATICA VAR. BIFLORA. GRAMINACEOUS GROUNDCOVER. CLAY-BASED DOME.
DOMESWAMP20	Dome swamp	G4 S4 N N	2004 RELATIVELY CLOSED OVERSTORY COMPOSED OF NYSSA BIFLORA, ACER RUBRUM, PERSEA PALUSTRIS, AND PINUS ELLIOTTII. SPARSE UNDERSTORY COMPOSED OF MYRICA CERIFERA, ARUNDINARIA GIGANTEA, OSMUNDA REGALIS, SARRACENIA LEUCOPHYLLA, AND SPHAGNUM. EDGE OF DOME DISTURBED BY HARVEST AND MECHANICAL SITE PREP OF SURROUNDING PINE PLANTATION.
DOMESWAMP70	Dome swamp	G4 S4 N N	2004 Community lies within a basin of the Yellow River and is part of a mosaic of prairie, flatwoods, and domes. Site is known as Whitmier Island. It is not an island.
			EO Comments 2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1992-06-14) (U05FNA02FLUS). ONE DOME SWAMP ADJACENT TO SMALL UNBURNED WET PRAIRIE AND DENSE SLASH PINE PLANTATION. 2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1992-06-15) (U05FNA02FLUS). RELATIVELY SMALL (<ONE ACRE) DOME AT THE HEAD OF A BAYGALL SEEP IN AN EX-FLATWOODS. 2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1994-07-20) (U05FNA02FLUS). Dome swamp dominated by slash pine and pond cypress overstory, myrtle leaf holly and fetterbush midstory, and a heterogeneous groundcover. The interior of the dome is shaded and very little herbaceous vegetation occurs - mainly just litter and duff. Outwardly along the periphery a variety of forbs and graminoids occur including dominants of wiregrass, beakrushes, maidencane, pipewort, panic grass, plume grass, milkwort, and Virginia chain fern. The dome is ephemeral, drying up during most summers -> late fall. A variety of amphibians use this dome for breeding habitat.



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DR0MARMMA*28	<i>Dromogomphus armatus</i>	Southeastern Spinyleg	G4	S3	N	N	2004-07-29	2004-07-29: No description given (U09DEP01FLUS).	2004-07-29: This species was documented by Florida Department of Environmental Protection agency staff at three localities on three dates going back to 1998-08-05 (U09DEP01FLUS).
DR0MARMMA*32	<i>Dromogomphus armatus</i>	Southeastern Spinyleg	G4	S3	N	N	2001-11-27	2001-11-27: No description given (U09DEP01FLUS).	2001-11-27: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).
DR0MARMMA*34	<i>Dromogomphus armatus</i>	Southeastern Spinyleg	G4	S3	N	N	2007-10-24	2007-10-24: No description given (U09DEP01FLUS).	2007-10-24: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).
DRYMCOUJ*106	<i>Drymarchon couperi</i>	Eastern Indigo Snake	G3	S2?	T	FT	1978 pre	No general description given	CA. 1974-1976: ERNIE DAVIS (FL GFC) OBSERVED INDIGO SNAKE HERE (P. MOLER INTERVIEW OF 25 MAY 1982: U82MOL01FLUS).
DRYMCOUJ*108	<i>Drymarchon couperi</i>	Eastern Indigo Snake	G3	S2?	T	FT	1977	No general description given	CA. 1977: ERNIE DAVIS (FL GFC) OBSERVED INDIGO SNAKE HERE (P. MOLER INTERVIEW OF 25 MAY 1982: U82MOL01FLUS).
DRYBORE* (X)75	<i>Dryobates borealis</i>	Red-cockaded Woodpecker	G3	S2	E, PT	FE	1978	PINE.	Baker found active colony around 1978 (UNDBAK02FLUS). No longer present in 1994; aeriels show major clearing in area (Google Earth 1994).
DRYBORE* (X)78	<i>Dryobates borealis</i>	Red-cockaded Woodpecker	G3	S2	E, PT	FE	1978	PINE.	Baker found an active colony around 1978 active colony (UNDBAK02FLUS). Most likely extirpated before 2006 but by at least 2006 aeriels show major clearing in area (Google Earth 2006). A nice stand of pine flatwoods remained until 2006 (PNDNES03FLUS).
DRYBORE*107	<i>Dryobates borealis</i>	Red-cockaded Woodpecker	G3	S2	E, PT	FE	2020	Mostly sandhill with longleaf pines and short oaks.	Second largest population in Florida; steadily increasing numbers of active clusters and potential breeding groups since more detailed cluster data have been gathered. 2020: 545 active clusters (vs. 544 in 2015), ca. 500 potential breeding groups (446 in 2015). 80% of active clusters are in western part of AFB (U20NES02FLUS, U19NES01FLUS).



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			G3	S2	E, PT						
DRYBORE-79	<i>Dryobates borealis</i>	Red-cockaded Woodpecker							large expanse of sandhill and longleaf-dominated upland pine forest		
DS*15815	Data Sensitive Element	Data Sensitive	G5	S3	N	N	N	1989-02-20	Data Sensitive	Steadily increasing numbers of active clusters and potential breeding groups since 1998 (19 active clusters, 13 potential breeding groups [PBGs]). 2008: 72 active clusters, 2019: as many as 128 active clusters, 127 PBGs.	
DS*17284	Data Sensitive Element	Data Sensitive	G5	S1	N	E		1993-06-27	Data Sensitive	Data Sensitive	
DS*17489	Data Sensitive Element	Data Sensitive	G5	S3	N	N	N	1992-02-25	Data Sensitive	Data Sensitive	
DS*21278	Data Sensitive Element	Data Sensitive	G5	S3	N	N	N	1992-02-25	Data Sensitive	Data Sensitive	
DS*21983	Data Sensitive Element	Data Sensitive	G5	S3	N	N	N	1982	Data Sensitive	Data Sensitive	
DS*33111	Data Sensitive Element	Data Sensitive	32G3T1Tz	S2	N	N	N	2007-08-18	Data Sensitive	Data Sensitive	
DS*33446	Data Sensitive Element	Data Sensitive	G3G4	S2	N	N	N	2013-09-01	Data Sensitive	Data Sensitive	
DS*33679	Data Sensitive Element	Data Sensitive	G5	S2	N	N	N	2005-03-28	Data Sensitive	Data Sensitive	
DS*34107	Data Sensitive Element	Data Sensitive	G5	S2	N	N	N	2010-03-19	Data Sensitive	Data Sensitive	
DS*34110	Data Sensitive Element	Data Sensitive	G4G5	S2?	N	N	N	2010-02-14	Data Sensitive	Data Sensitive	
DS*34111	Data Sensitive Element	Data Sensitive	G3G4	S1	N	N	N	2017-08-11	Data Sensitive	Data Sensitive	
DS*34116	Data Sensitive Element	Data Sensitive	G3	S2	N	N	N	2008-03-26	Data Sensitive	Data Sensitive	
DS*34126	Data Sensitive Element	Data Sensitive	G3G4	S2	N	N	N	2009-06-20	Data Sensitive	Data Sensitive	
DS*34129	Data Sensitive Element	Data Sensitive	G3	S2	N	N	N	2008-06-18	Data Sensitive	Data Sensitive	
DS*34131	Data Sensitive Element	Data Sensitive	G3G4T3	S2S3	N	N	N	2008-06-18	Data Sensitive	Data Sensitive	
DS*34137	Data Sensitive Element	Data Sensitive	G3G4T3	S3	N	N	N	2010-04-23	Data Sensitive	Data Sensitive	
DS*34138	Data Sensitive Element	Data Sensitive	G5	S2S3	N	N	N	2008-08-10	Data Sensitive	Data Sensitive	
DS*34146	Data Sensitive Element	Data Sensitive	G3G4	S3S4	N	N	N	2009-09-18	Data Sensitive	Data Sensitive	
DS*34284	Data Sensitive Element	Data Sensitive	G5	S2	N	N	N	2009-02-12	Data Sensitive	Data Sensitive	
DS*34267	Data Sensitive Element	Data Sensitive	G3	S2	N	N	N	2019-03-30	Data Sensitive	Data Sensitive	
DS*34294	Data Sensitive Element	Data Sensitive	G5	S2	N	N	N	2010-03-26	Data Sensitive	Data Sensitive	



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DS*34556	Data Sensitive Element	Data Sensitive	G4	S2	N	E	2007-04-10	Data Sensitive	Data Sensitive
DS*34932	Data Sensitive Element	Data Sensitive	G2G3	S2	UR	N	2017	Data Sensitive	Data Sensitive
DS*34933	Data Sensitive Element	Data Sensitive	G3G4T3	S2S3	N	N	2009-05-27	Data Sensitive	Data Sensitive
DS*34937	Data Sensitive Element	Data Sensitive	G3G4	S2	N	N	2009-06-23	Data Sensitive	Data Sensitive
DS*34938	Data Sensitive Element	Data Sensitive	G3G4	S3S4	N	N	2009-06-23	Data Sensitive	Data Sensitive
DS*34946	Data Sensitive Element	Data Sensitive	G5	S2S3	N	N	2009-09-20	Data Sensitive	Data Sensitive
DS*34947	Data Sensitive Element	Data Sensitive	G5	S2S3	N	N	2009-09-19	Data Sensitive	Data Sensitive
DS*34948	Data Sensitive Element	Data Sensitive	G4	S2S3	N	N	2009-09-18	Data Sensitive	Data Sensitive
DS*34950	Data Sensitive Element	Data Sensitive	G5	S2	N	N	2009-09-30	Data Sensitive	Data Sensitive
DS*35859	Data Sensitive Element	Data Sensitive	G5	S2	N	N	2010-03-30	Data Sensitive	Data Sensitive
ELLIMCM16	<i>Elliptio mcMichaeli</i>	Fluted Elephant-ear	G2G3	S1S2	N	N	2014 pre	Yellow River	Williams et al. (2014) depict 2 sites from which this occurrence has been documented.
EPIGREPE*17	<i>Epigaea repens</i>	Trailing arbutus	G5	S2	N	E	2012-05-12	2010-06-09: Relatively undisturbed steep slope of upland pine with old growth <i>Pinus palustris</i> . Other associated species: <i>Magnolia grandiflora</i> , chinquapin, <i>Quercus hemisphaerica</i> , <i>Quercus nigra</i> (U10FNA02FLUS).	In 2010, 11-20 plants in leaf covering less than 10 sq meters and in 2012, hundreds (well more than 300) of clumps widely scattered and concentrated in 3 areas.
EUPHISC*3	<i>Euphoria discacollis</i>	Pocket Gopher Flower Beetle	G2	S1S2	N	N	1998-01-19 -- 1998-04-05 (U06SKE01FLUS).		1998-04-05: A total of 22 specimens were collected from 1998-01-19 to 1998-04-05, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS).
EUPHISC*5	<i>Euphoria discacollis</i>	Pocket Gopher Flower Beetle	G2	S1S2	N	N	1999-03-01 -- 1999-04-10 (U06SKE01FLUS).		1999-04-10: Two specimens were collected from 1999-03-01 to 1999-04-10, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS).



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EURPHDIS*8	<i>Euphoria discocollis</i>	Pocket Gopher Flower Beetle	G2	S1S2	N	N	1999-03-01 -- 1999-04-10	1999-04-10: Two specimens were collected from 1999-03-01 to 1999-04-10, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01SKE02FLUS).
EURYSPHA*1	<i>Eurycea sphagnicola</i>	Bog Dwarf Salamander	G1G2	S1S2	N	N	2016-09-27	Known from 23 specimens (at least from 2016) at 4 proximate sites (A17WRA01FLUS, U18MEA01FLUS).
EURYSPHA*2	<i>Eurycea sphagnicola</i>	Bog Dwarf Salamander	G1G2	S1S2	N	N	2017-08-03	Known from only 1 specimen (U18MEA01FLUS).
EURYSPHA*6	<i>Eurycea sphagnicola</i>	Bog Dwarf Salamander	G1G2	S1S2	N	N	1999	Based on 43 captures at 2 drift fences in 1999 (A02ZENG02FLUS), apparently a very large population.
EURYSPHA*7	<i>Eurycea sphagnicola</i>	Bog Dwarf Salamander	G1G2	S1S2	N	N	1999	Based on 21 captures at 2 drift fences in 1999 (A02ZENG02FLUS), apparently a large population.
EURGOPH*8	<i>Eurichota gopheri</i>	Gopher Tortoise Burrow Fly	G2	S2S3	N	N	2016-05-27	Specimens were collected at 7 locations during 2 one week survey periods using gopher tortoise burrow facade traps and examining burrow mouths in upland pine habitat.
EURGOPH*9	<i>Eurichota gopheri</i>	Gopher Tortoise Burrow Fly	G2	S2S3	N	N	2016-05-26	Specimens were collected at 3 locations during 2 one week survey periods using gopher tortoise burrow facade traps and examining burrow mouths in sandhill habitat.



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FLOOSWAM*18	Floodplain swamp		G4	S4	N	N	2004	ALONG RIVER.
FLOOSWAM*57	Floodplain swamp		G4	S4	N	N	2004	<p>Extensive swamp system bounding much of the southern side of the Yellow River. Area is intermixed with bottomland forest, floodplain swamp, swamp lake and wet flatwoods. Owing to remoteness and, for the most part, lack of roads, the area lends a primeval atmosphere.</p> <p>2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1984) (U05FNA02FLUS), CYPRESS BLACK GUM, MAPLE, BAY, AND POPLAR (U80FRA01).</p> <p>2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1995-06-23) (U05FNA02FLUS). The floodplain swamp in the vicinity of Grimes Lake portrays an eerie atmosphere: one of tea-colored waters, an array of snakes and dense canopied forest. The forest canopy is primarily composed of bald cypress (Taxodium distichum), diamond-leaved oak (Quercus laurifolia), black gum (Nyssa biflora), red maple (Acer rubrum), and of lesser abundance, water tupelo (Nyssa aquatica) and sweetgum (Liquidambar styraciflua). The shrub layer is generally quite sparse, being composed of the foregoing species, as well as dahoon holly (Ilex cassine), serviceberry holly (Ilex amelanchar), stiff dogwood (Cornus foemina) and Carolina ash (Fraxinus caroliniana). Herbs are normally few and of low diversity. Most typical are water-willow (Justicia ovata) and spider lily (Hymenocallis sp.). Numerous water-logged logs litter the forest floor, some of large size, which is to suggest that the forest structure may have attained a greater age years ago.</p>



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FNAI ELEMENT OCCURRENCE REPORT on or near Blackwater River State Forest 10 Year LMP



Global State Federal State Observation

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FLOOSWAM*92	Floodplain swamp		G4	S4	N	N	2004	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1996-04-17) (J05FNA02FLUS). 1996-04-17: This floodplain swamp is dominated by bald cypress (<i>Taxodium distichum</i>) and water tupelo (<i>Nyssa aquatica</i>); the cypress is less abundant than the tupelo and mainly consists of large trees; the water tupelo is present in many age/size classes with many younger trees in addition to large ones; sweetgum (<i>Liquidambar styraciflua</i>), red maple (<i>Acer rubrum</i>), sweetbay (<i>Magnolia virginiana</i>), and water tupelo are present in the subcanopy; Carolina ash (<i>Fraxinus caroliniana</i>) is a dominant tall shrub, up to 10 m tall; the herbaceous ground cover is sparse but swamp lily (<i>Critium americana</i>), a sedge (<i>Carex foliolulata</i>), and savannah panicum (<i>Panicum gymnocarpon</i>) are found throughout; the community has at least 30 cm (1 foot) of water on the ground, water is flowing through the swamp; there is a lack of bald cypress in young age classes (FNDNOR03FLUS).
FLOOSWAM*75	Floodplain swamp		G4	S4	N	N	1997-05-01	No general description given
FOTHGARD*1	<i>Fothergilla gardenii</i>	dwarf witch-elder	G3G4	S1	N	E	1998-09-08	seepage slope (burned in 1998; reported as fire-suppressed in 2009).
FOTHGARD*6	<i>Fothergilla gardenii</i>	dwarf witch-elder	G3G4	S1	N	E	2012-08-06	seepage areas or streams
FOTHGARD*8	<i>Fothergilla gardenii</i>	dwarf witch-elder	G3G4	S1	N	E	2006-04-11	FNAI NC recorded as baygall. Observed one 5 foot plant seen on slope leading to baygall.



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FUSCESDA*5	<i>Fusconia escambia</i>	Narrow Pigtoe	G1G2	S1	T	FT	1988-06-02	Yellow River at SR-2: 30 m wide, up to 1.3 m deep, visibility 1.0+ m, slightly turbid, slow current, shifting sand in channel, stable silty sand margins, with some logs and detritus along banks; thickly vegetated riparian zone (UNDBUT01FLUS).	Decades of observations, so population is persistent, though it does not seem to be large, and the species is uncommon at most sites.
GEOLFEAT*64	Geological feature		GNR	SNR	N	N	1990-04-07	LARGE MOUND WITH LIMONITE ROCK ON FLAT TOP.	No EO data given
GOPHPOLY*1011	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST	1996-10-29	Sandhill: Grasses in and around apron; Andropogon gyrans, Aristida purpurescens; longleaf pine/turkey oak association; large patch of gopher apples (<i>Licania michauxii</i>) ca. 20 feet from burrow exit.	1996-10-29: One active burrow found; 8 inches long, oval shape, with 3.5 foot apron--yellow sand (PNDHER03FLUS).
GOPHPOLY*1032	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST	2006	Young pine plantation and mowed airfield clear zone, number of acres of potential habitat in immediate area estimated at 160 acres; 10% of this habitat is occupied by this species--tortoises observed using young pine plantations and clear zones only (PNDPRI03FLUS).	2006: Davis and Russo observed 1 active and 3 inactive tortoise burrows southeast of the golf course (F07FNA20FLUS). 1997-01-31: 7 burrows observed with burrow camera; 3 occupied, 1 vacant, 2 abandoned and 1 inconclusive; population estimated at 6-10 tortoises; no evidence of reproduction at site (PNDPRI03FLUS).
GOPHPOLY*1038	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST	2019-01-22	Sandhill: Approximately half of site is high quality sandhill and half of site is mowed grass helicopter landing field; estimated 600 acres of potential habitat in immediate area; 2% of this habitat is apparently occupied by species. Tortoises using north landing pad area and northwest-southeast trail edge (PNDPRI03FLUS).	Very small number of burrows seen in 3 visits spanning 1997-2019.



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GOPHPOLY*1040	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST	1997-01-13	Rolling sandhill with some mesic flatwood-like areas. Canopy is primarily longleaf pine. Turkey oak is abundant in the subcanopy of drier portions. Shrub layer variable (20-40%) dominated by saw palmetto and deerberry. Herb coverage is 30-50% dominated by wiregrass.	Twelve active/inactive burrows were observed in 38.95 ha of transects. 5 tortoises were observed with a burrow camera. Observed tortoise density was 0.128 tortoises/ha.
GOPHPOLY*1041	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST	1997-01-14	Cutover sandhill - some portions severely encroached by water oak, laurel oak and sand live oak. Moderate ground disturbance, but wiregrass still the dominant ground cover throughout most of the site. Habitat north of road is less disturbed.	Eight active/inactive burrows were observed in 49.16 ha of transects. Three tortoises were observed with a burrow camera. Observed tortoise density was 0.06/ha.
GOPHPOLY*1042	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST	1997-01-14	Rolling good quality sandhill with an open canopy of longleaf pine. Patches of turkey oak occur in the well drained portions of the site (10-20% of the area). Some less well drained areas with galberry. Ground cover throughout is dominated by wiregrass and dwarf live oak.	Fifteen active/inactive burrows were observed in 19.62 ha of transects. Eight tortoises were observed with a burrow camera. Observed tortoise density was .41/ha.
GOPHPOLY*1044	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST	1997-01-15	Recently burned old age planted pine on upland pine forest/upland mixed forest site (D. Hipes guess at historic community). A few large southern red oak are scattered within a moderately dense pine canopy. Shrub and herb cover is sparse. A few dense patches of wiregrass are present.	Five active/inactive burrows were observed in 17.08 ha of transect. No tortoises were observed with the burrow camera.
GOPHPOLY*1045	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST	1997-01-15	Area not homogeneous, some planted pine, some semi-natural sandhill. Transects were through the planted slash pine. Open canopy, sparse ground cover of wiregrass and weedy herbs.	1997-01-15: Five active/inactive burrows were observed in 4.75 ha of transect. One tortoise was observed with a burrow camera. Observed tortoise density was .21 tortoises per hectare (PNDHIP01FLUS).



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GOPHPOLY*1048	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST	1987-01-15	Flat to rolling sandhill with some mesic areas. Canopy of longleaf pine in some portions, planted loblolly in other portions. Shrub coverage is sparse with exception of patches of Ilex and Vaccinium myrsinites. Herb cover is dominated by wiregrass. Natural portion is in good condition.	Five active/inactive burrows were observed in 26.77 hectares of transect. Three tortoises were observed with a burrow camera. Observed tortoise density was .11/ha.
GOPHPOLY*1465	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST	2006-04-11	A utility corridor flanked by sandhill.	1 individual documented in 2006.
GOPHPOLY*1466	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST	2006-05-04	Upland pine with streams (F13FNA03FLUS, PND5UR01FLUS).	1 individual documented in 2006 survey.
GOPHPOLY*1467	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST	2006-05-04	Sandhill with woody encroachment from fire suppression.	1 individual incidentally documented.
GOPHPOLY*1531	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST	2016-12-14	Fire-suppressed sandhill/upland pine. Overstory consisted of Pinus palustris and Quercus laevis. Midstory was often absent, but at times contained thick stands of shrubs and small trees such as Vaccinium arboreum. Understory mostly consisted of wiregrass with open ground and Turkey Oak leaf litter.	1 inactive, occupied burrow, 26 cm width
GOPHPOLY*1532	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST	2016-12-13	Fire-suppressed sandhill	2 active, occupied burrows.
GOPHPOLY*1533	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST	2016-12-13	Fire-suppressed sandhill	1 inactive, occupied burrow
GOPHPOLY*1534	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST	2016-12-14	Sandhill	2 inactive, occupied burrows
GOPHPOLY*251	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST	1984-10	No general description given	1984-10: GORDON SPENCE'S HOUSE; BURROWS 10-84 (U86DIE01FLUS)
GOPHPOLY*268	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST	1987 pre	No general description given	1987-pre: Species occurrence noted here in Diemer's unpublished map set (U86DIE01FLUS).
GOPHPOLY*297	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST	1987 pre	No general description given	1987-pre: Species occurrence noted here in Diemer's unpublished map set (U86DIE01FLUS).



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GOPHPOLY*289	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST	2019-01-21	Sandhill	In 2019, 2 occupied burrows noted (F19FNA03FLUS). Pre-1987, species noted in Diemer's unpublished map set (U86DIE01FLUS).
GOPHPOLY*300	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST	1987 pre	No general description given	1987-pre: JUVENILE (U86DIE01FLUS).
GOPHPOLY*301	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST	2006-04-11	Sandhill	1987-pre: Species occurrence noted here in Diemer's unpublished map set (U86DIE01FLUS) 2006-4-11: 1 individual documented
GOPHPOLY*807	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST	1987 pre	No general description given	1987-pre: Species occurrence noted here in Diemer's unpublished map set (U86DIE01FLUS).
GOPHPOLY*808	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST	1987 pre	No general description given	1987-pre: Species occurrence noted here in Diemer's unpublished map set (U86DIE01FLUS).
GOPHPOLY*87	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST	1983	IN HIGH PINELANDS N & S OF RIVER.	APPROXIMATELY 15-20 ACTIVE BURROWS-SEPARATED BY RIVER FROM A SIMILARLY-SIZED "COLONY" TO THE N.
HALLILEUC*1365	<i>Haliaeetus leucocephalus</i>	Bald Eagle	G5	S3	N	N	2003	2005-07-12: Source does not provide a description.	Nest status: Active, 2003, 2001, 2000, 1999; Not active, 2002;(U03FWC01FLUS)
HELOSELY*2	<i>Helocordulia selysii</i>	Selys' Sunfly	G4	S4	N	N	2021-03-22	Clear sand-bottom seepage stream.	One adult observed patrolling over Ates Creek.
HELOSUBV*16	<i>Helopicus subvarians</i>	A Stonelfly	G5	S3	N	N	1980-02-27	No description given (U09DEP01FLUS).	1980-02-27: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).
HELOSUBV*23	<i>Helopicus subvarians</i>	A Stonelfly	G5	S3	N	N	1980-02-20	No description given (U09DEP01FLUS).	1980-02-20: Staff from the Florida Department of Environmental Protection collected this species on this date and on 1979-02-28 (U09DEP01FLUS).
HELOSUBV*25	<i>Helopicus subvarians</i>	A Stonelfly	G5	S3	N	N	1998-02-20	No description given (U09DEP01FLUS).	1998-02-20: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).
HELOSUBV*27	<i>Helopicus subvarians</i>	A Stonelfly	G5	S3	N	N	1998-02-24	No description given (U09DEP01FLUS).	1998-02-24: This species was documented by Florida Department of Environmental Protection agency staff at two localities on four dates going back to 1979-02-01 (U09DEP01FLUS).



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HETAAMER*14	<i>Heterina americana</i>	American Rubyspot	G5	S2	N	N	1974-07-31	1974-07-31: No description given (U09DEP01FLUS).
HETESIMU*34	<i>Heterodon simus</i>	Southern Hognose Snake	G2	S2S3	N	N	2012-10-16	No general description given
HETESIMU*43	<i>Heterodon simus</i>	Southern Hognose Snake	G2	S2S3	N	N	1994-05-24	State forest: open pineland visible in aerial photograph (2020).
HEXABILI*47	<i>Hexagenia bilineata</i>	A Mayfly	G5	S2	N	N	1998-07-15	1998-07-15: No description given (U09DEP01FLUS).
HOMODOLA*1	<i>Homoconeuria dolani</i>	Blue Sand-river Mayfly	G3G4	S1S2	N	N	1967-08	Relatively shallow, sand-bottomed blackwater river. 1967 series of nymphs collected from shallow burrows in shifting sand, mostly in deeper parts of river (A89PES01FLUS).
HYDRPHOR*10	<i>Hydroparia phormidia</i>	A Stonefly	G3	S2	N	N	1999-03-10	1999-03-10: No description given (U07RAS01FLUS).
HYDRPHOR*12	<i>Hydroparia phormidia</i>	A Stonefly	G3	S2	N	N	1980-02-27	1980-02-27: No description given (U09DEP01FLUS).
HYDRPHOR*3	<i>Hydroparia phormidia</i>	A Stonefly	G3	S2	N	N	1978-04-12	1978-04-12: No description given (U07RAS01FLUS).
HYDRPHOR*4	<i>Hydroparia phormidia</i>	A Stonefly	G3	S2	N	N	1977-04-25	1977-04-25: No description given (U07RAS01FLUS).
HYLAANDE*108	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1999	1980-06-28: occurrence was on seepage slope with seepage shrub bog (P82MOL01FLUS); 1980-06-28: Moler heard males calling at this site (#106) (P82MOL01FLUS, PNDMOL01FLUS).
HYLAANDE*109	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1980-06-28	1980-06-28: occurrence was on seepage slope with seepage shrub bog (P82MOL01FLUS).



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HYLAANDE*110	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1980-06-28: occurrence was on seepage slope with seepage shrub bog (P82MOL01FLUS).	1980-06-28: Moler heard males calling at this site (#108) (P82MOL01FLUS, PNDMOL01FLUS).
HYLAANDE*111	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1980-05-22: occurrence was on seepage slope with seepage shrub bog (P82MOL01FLUS).	1980-05-22: Moler heard males calling at this site (P82MOL01FLUS).
HYLAANDE*114	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1980-06-28: occurrence was on seepage slope with seepage shrub bog (P82MOL01FLUS).	1980-06-28: Moler heard males calling at this site (P82MOL01FLUS).
HYLAANDE*115	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1982-05-24: occurrence was on seepage slope with seepage shrub bog (P82MOL01FLUS).	1982-05-24: Moler heard males calling at this site (P82MOL01FLUS).
HYLAANDE*116	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1981-06-23: occurrence was on seepage slope with seepage shrub bog (P82MOL01FLUS).	1981-06-23: Moler heard males calling at this site (P82MOL01FLUS).
HYLAANDE*117	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1980-05-22: occurrence was on seepage slope with seepage shrub bog (P82MOL01FLUS).	1980-05-22: Moler heard males calling at this site (P82MOL01FLUS).
HYLAANDE*118	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1980-05-22: occurrence was on seepage slope with seepage shrub bog (P82MOL01FLUS).	1980-05-22: Moler heard males calling at this site (P82MOL01FLUS).
HYLAANDE*119	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1980-06-24: occurrence was on seepage slope with seepage shrub bog (P82MOL01FLUS).	1980-06-24: Moler heard males calling at this site (P82MOL01FLUS).
HYLAANDE*120	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1980-06-24: occurrence was on seepage slope with seepage shrub bog (P82MOL01FLUS).	1980-06-24: Moler heard males calling at this site (#104) (P82MOL01FLUS, PNDMOL01FLUS).
HYLAANDE*121	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1980-06-24: seepage slope with seepage shrub bog (PNDMOL01FLUS).	1980-06-24: Moler heard males calling at this site (#105) (P82MOL01FLUS, PNDMOL01FLUS).
HYLAANDE*122	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1982-05-22: seepage slope with seepage shrub bog (PNDMOL01FLUS).	1982-05-22, 1980: Moler heard males calling at this site (#83) (P82MOL01FLUS, PNDMOL01FLUS).
HYLAANDE*123	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1980-05-20: seepage slope with seepage shrub bog, site surrounded by agricultural field (PNDMOL01FLUS).	1980-05-20: Moler heard males calling at this site (#84) (P82MOL01FLUS, PNDMOL01FLUS).



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HYLAANDE*124	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1992-06-11 No general description given	1992-06-11. Moler heard ca. half dozen males calling at this site (P82MOL01FLUS, PNDMOL01FLUS).
HYLAANDE*126	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1994-07-16: disturbed Seepage Slope (PNDPR103FLUS).	1994-07-16: D. Printliss heard at least 3 males calling at this site from dusk to ca. 2230 h; other choruses heard both to north and south (PNDPR103FLUS).
HYLAANDE*57	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1979-06-06: occurrence was on seepage slope with seepage shrub bog (PNDMOL01FLUS).	1979-06-06: Moler heard males calling at this site (his H. andersonii site 37) (P82MOL01FLUS, PNDMOL01FLUS).
HYLAANDE*58	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1979-06-06: occurrence was on seepage slope with seepage shrub bog (PNDMOL01FLUS).	1979-06-06: Moler heard males calling at this site (his H. andersonii site 35) (P82MOL01FLUS, PNDMOL01FLUS).
HYLAANDE*59	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1999 Blackwater River State Forest, an ecosystem dominated by upland pine forest. 1999 observations were in herbaceous and shrub portions of seepage bog that drains into Bull Pen Branch, a tributary of the Blackwater River (A02ENG02FLUS). 1979 seepage slope with seepage shrub bog (PNDMOL01FLUS).	1999: Engle trapped 9 in herb and shrub bogs (A02ENG02FLUS). 1979-06-06: Moler heard males calling at this site (his H. andersonii site 36) (P82MOL01FLUS, PNDMOL01FLUS).
HYLAANDE*60	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1979-06-06: occurrence was on seepage slope with seepage shrub bog (PNDMOL01FLUS).	1979-06-06: Moler heard males calling at this site (his H. andersonii site 38) (P82MOL01FLUS, PNDMOL01FLUS).
HYLAANDE*61	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1979-07-19: occurrence was on seepage slope with seepage shrub bog (PNDMOL01FLUS).	1979-07-19: Moler heard males calling at this site (his H. andersonii site 64) (P82MOL01FLUS, PNDMOL01FLUS); site partly destroyed, occurrence status unknown.
HYLAANDE*62	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1979-07-19: occurrence was on seepage slope with seepage shrub bog (PNDMOL01FLUS).	1979-07-19: Moler heard males calling at this site (his H. andersonii site 65) (P82MOL01FLUS, PNDMOL01FLUS).
HYLAANDE*63	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1979-07-19: occurrence was on seepage slope with seepage shrub bog (PNDMOL01FLUS).	1979-07-19: Moler heard males calling at this site (his H. andersonii site 57) (P82MOL01FLUS, PNDMOL01FLUS).
HYLAANDE*64	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1979-07-19: occurrence was on seepage slope with seepage shrub bog (PNDMOL01FLUS).	1979-07-19: Moler heard males calling at this site (his H. andersonii site 63) (P82MOL01FLUS, PNDMOL01FLUS).



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HYLAANDE74	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1979-07-19: occurrence was on seepage slope with seepage shrub bog (PNDMOL01FLUS).	1979-07-19: Moler heard males calling at this site (his H. andersonii site 59) (PNDMOL01FLUS).
HYLAANDE75	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1979-07-19: occurrence was on seepage slope with seepage shrub bog (PNDMOL01FLUS).	1979-07-19: Moler heard males calling at this site (his H. andersonii site 62) (PNDMOL01FLUS).
HYLAANDE76	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1979-07-18: occurrence was on seepage slope with seepage shrub bog (PNDMOL01FLUS).	1979-07-18: Moler heard males calling at this site (his H. andersonii site 55) (PNDMOL01FLUS).
HYLAANDE77	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1979-07-18: occurrence was on seepage slope with seepage shrub bog (PNDMOL01FLUS).	1979-07-18: Moler heard males calling at this site (his H. andersonii site 54) (PNDMOL01FLUS).
HYLAANDE78	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1979-07-18: occurrence was on seepage slope with seepage shrub bog (PNDMOL01FLUS).	1979-07-18: Moler heard males calling at this site (his H. andersonii site 53) (PNDMOL01FLUS).
HYLAANDE79	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1979-07-18: occurrence was on seepage slope with seepage shrub bog (PNDMOL01FLUS).	1979-07-18: Moler heard males calling at this site (his H. andersonii site 56) (P82MOL01FLUS, PNDMOL01FLUS).
HYLAANDE82	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1979-07-19: occurrence was on seepage slope with seepage shrub bog (P82MOL01FLUS).	1979-07-19: Moler heard males calling at this site (#72 on map) (P82MOL01FLUS, PNDMOL01FLUS).
HYLAANDE83	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1979-07-19: occurrence was on seepage slope with seepage shrub bog (P82MOL01FLUS).	1979-07-19: Moler heard males calling at this site (#71 on map) (P82MOL01FLUS, PNDMOL01FLUS).
HYLAANDE84	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1979: occurrence was on seepage slope with seepage shrub bog (PNDMOL01FLUS).	1979-07-19: Moler heard males calling at this site (his H. andersonii site 58) (PNDMOL01FLUS).
HYLAANDE85	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1979-05-22: occurrence was on seepage slope with seepage shrub bog (PNDMOL01FLUS).	1979-05-22: Moler heard males calling at this site (his H. andersonii site 33) (PNDMOL01FLUS).
HYLAANDE86	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1962-06-11: occurrence was on seepage slope with seepage shrub bog (PNDMOL01FLUS).	1962-06-11: Moler heard chorus of at least 2 dozen males calling at this site (his H. andersonii site 32) (PNDMOL01FLUS). 1979-07-19: Moler photographed frogs at this site (PNDMOL01FLUS).
HYLAANDE87	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1978: occurrence was on seepage slope with seepage shrub bog (PNDMOL01FLUS).	1978-07-20: Moler heard males calling at this site (his H. andersonii site 23) (PNDMOL01FLUS). Mapped boundaries are only approximate.



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HYLAANDE*88	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1979-09-02 1979- occurrence was on seepage slope with seepage shrub bog (PNDMOL01FLUS).	1979-09-02: Moler heard males calling at this site (his H. andersonii site 22) (PNDMOL01FLUS).
HYLAANDE*88	<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N	1979-07-19: occurrence was on seepage slope with seepage shrub bog (PNDMOL01FLUS).	1979-07-19: Moler heard males calling at this site (his H. andersonii site 60) (PNDMOL01FLUS).
HYLOGEMI*3	<i>Hylogomphus geminatus</i>	Twin-striped Clubtail	G3G4	S3	N	N	2004-07-28: No description given (U09DEP01FLUS).	2004-07-28: Staff from the Florida Department of Environmental Protection collected this species on this date and on 2002-03-05 (U09DEP01FLUS).
HYLOGEMI*38	<i>Hylogomphus geminatus</i>	Twin-striped Clubtail	G3G4	S3	N	N	2001-02-08: No description given (U09DEP01FLUS).	2001-02-08: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).
HYLOGEMI*4	<i>Hylogomphus geminatus</i>	Twin-striped Clubtail	G3G4	S3	N	N	2005-06-07: No description given (U09DEP01FLUS).	2005-06-07: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).
HYLOGEMI*5	<i>Hylogomphus geminatus</i>	Twin-striped Clubtail	G3G4	S3	N	N	2007-10-24: No description given (U09DEP01FLUS).	2007-10-24: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).
ILEXAMEL*11	<i>Ilex amelanchier</i>	serviceberry holly	G4	S2	N	T	1994-08-01 Ilex amelanchier inhabits the extensive floodplain swamp that bounds the south side of the Yellow River. The shrubs grow under a canopy of Taxodium distichum, Nyssa aquatica, Quercus laurifolia and Acer rubrum. Understory associates include Cornus foemina, Fraxinus caroliniana, Glehnia aquatica and Ilex verticillata.	Shrubs frequent and in some places abundant, over an extensive area (several acres) along the south side of the Yellow River. Fruit abundant suggesting an excellent potential for reproduction.
ILEXAMEL*2	<i>Ilex amelanchier</i>	serviceberry holly	G4	S2	N	T	1949-04-09 EDGE OF LOW SWAMP	FLOWERING S.C. HOOD SPECIMEN #1847, COLLECTED 9 APRIL 1949, FLAS #52039.
ISONBERN*1	<i>Isonychia berner</i>	A Mayfly	G2G3	S1S2	N	N	2011-05-27 Blackwater River.	Specimen collected (S111XXX02FLUS).
ISONBERN*3	<i>Isonychia berner</i>	A Mayfly	G2G3	S1S2	N	N	1976-07-15 Blackwater River.	4 male specimens collected (S78PET01FLUS).
ISONVIC*12	<i>Isonychia sicca</i>	A Mayfly	G5	S2S3	N	N	1993-02-16: No description given (U09DEP01FLUS).	1993-02-16: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).



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JUNCOGYM17	<i>Juncus gymnocarpus</i>	Coville's rush	G4	S2	N	E	2006-08-11	Woodwardia areolata, Lyonia lucida. FNAI NC recorded as floodplain forest.	Observed greater than 1000 plants in fruit dominant species in ground layer, also large population W of road.
KALMLAT180	<i>Kalmia latifolia</i>	mountain laurel	G5	S3	N	T	2006-04-13	With Illicium floridanum, Oxydendrum arboreum, Quecus nigra. FNAI NC recorded as baygall.	Observed 11-50 plants in flower/bud up to 16 feet tall.
KALMLAT181	<i>Kalmia latifolia</i>	mountain laurel	G5	S3	N	T	2006-04-12	FNAI NC recorded as floodplain forest.	Observed 11-50 plants in flower/fruit 12 feet tall.
KALMLAT183	<i>Kalmia latifolia</i>	mountain laurel	G5	S3	N	T	2006-05-04	FNAI NC recorded as floodplain forest.	Observed 1-10 plants in flower/fruit not sure of number, probably more farther from bridge.
KALMLAT184	<i>Kalmia latifolia</i>	mountain laurel	G5	S3	N	T	2006-04-04	FNAI NC recorded as baygall.	Observed 1-10 plants in flower/bud in levee forest.
KALMLAT186	<i>Kalmia latifolia</i>	mountain laurel	G5	S3	N	T	2006-05-03	Floodplain forest	At least 12 plants observed
LACHDIGY3	<i>Lachnocaulon digynum</i>	pineland bogbutton	G3G4	S3	N	T	1989-08-23	HILLSIDE SEEPAGE BOG. HERBACEOUS SPECIES DOMINATE EXCEPT NEAR SEEPAGE STREAM WHERE SHRUBS DOMINATE.	1989-09-21: ORZELL & BRIDGES OBSERVED.
LACHDIGY5	<i>Lachnocaulon digynum</i>	pineland bogbutton	G3G4	S3	N	T	1989-09-20	MID-SLOPE QUAKING SAPRIC MUCK SEEPAGE HERB-BOG ALONG TRIBUTARY TO MIDDLE CREEK. IN FREQUENTLY BURNED, FIRE-MAINTAINED SAVANNA WITH INTACT GROUND COVER TO FACILITATE FIRE ACROSS THE LANDSCAPE.	PLANTS IN FLOWER ON 9-20-89. ASSOCIATES INCLUDE RHYNCHOSPORA STENOPHYLLA, R. MACRA, XYRIS SCABRIFOLIA, UTRICULARIA JUNCEA, AND SARRACENIA LEUCOPHYLLA. PLANTS LOCALLY ABUNDANT IN AREAS OF COPIOUS TELLURIC SEEPAGE.
LACHDIGY54	<i>Lachnocaulon digynum</i>	pineland bogbutton	G3G4	S3	N	T	1994-10-11	Seepage slope.	100+ plants observed; flowering and in leaf.



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LACHDIGY72	<i>Lachnocaulon digynum</i>	pineland bogbutton	G3G4	S3	N	T	2006-08-10 2006-08-10 Upper edge of seepage slope; open area with a scattering of shrubs but no pitcher plants. Seepage slope associated with drainage of Reedy Creek. Associated rare species include <i>Panicum nudicaule</i> and <i>Platanthera integrifolia</i> . Other associates: <i>Ilex coriacea</i> , <i>Nyssa sylvatica</i> var. <i>biflora</i> , <i>Clethra alnifolia</i> , <i>Magnolia virginiana</i> . Herbs: <i>Myriophyllum heterophyllum</i> , <i>Sarracenia flava</i> , <i>Sarracenia psittacina</i> , <i>Eriocaulon decangulare</i> , <i>Juncus trigonocarpus</i> , <i>Bidens mitis</i> , <i>Carex glaucescens</i> , <i>Oxypolis filiformis</i> (PNDSCH01ALUS).	2006-08-10: Observed about 55-60 clumps. At same location as <i>Panicum nudicaule</i> and <i>Platanthera integrifolia</i> . Inhabits sapric muck where competition is minimal (PNDSCH01ALUS).
LAMPRH0W2	<i>Lampropeltis rhombomaculata</i>	Northern Mole Kingsnake	G5	S2	N	N	1997-03-24 State forest; open pineland visible in aerial photograph (2020).	Based on 1 snake found in 1997 (A98BOU01FLUS). Detailed data are in Additional Topics.
LAMPRH0W5	<i>Lampropeltis rhombomaculata</i>	Northern Mole Kingsnake	G5	S2	N	N	1999-07-01 Blackwater River State Forest, an ecosystem dominated by upland pine forest. 1999 observation was in upslope herpaceous portion of seepage bog (A02ENG02FLUS).	Based on capture of 1 snake in 1999 (A02ENG02FLUS, U20ENG02FLUS), but potentially a substantial population.
LESTINAE*3	<i>Lestes inaequalis</i>	Elegant Spreadingwing	G5	S2	N	N	2001-11-27 No description given (U09DEP01FLUS).	2001-11-27. Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).
LEUCCOTT*11	<i>Leuctra coltaquilla</i>	A Stonefly	G2	S2	N	N	2006-01-31 No description given (U09DEP01FLUS).	2006-01-31: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).
LEUCCOTT*2	<i>Leuctra coltaquilla</i>	A Stonefly	G2	S2	N	N	2000-12-06 No description given (U07RAS01FLUS).	2000-12-06: Eighteen specimens were collected using a beating sheet (U07RAS01FLUS). 1996-11-21: Three specimens were collected (U07RAS01FLUS).
LEUCCOTT*3	<i>Leuctra coltaquilla</i>	A Stonefly	G2	S2	N	N	2000-12-06 No description given (U07RAS01FLUS).	2000-12-06: Five specimens were collected using a beating sheet (U07RAS01FLUS).



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LEJCC011*4	<i>Leuctra cothaquila</i>	A Stonefly	G2	S2	N	1978-11-12	1978-11-12: No description given (U07RAS01FLUS), 1974-01-24: No description given (U07RAS01FLUS).	1978-11-12: Two specimens were collected (U07RAS01FLUS), 1974-01-24: One specimen was collected (U07RAS01FLUS).
LEJOFERR*8	<i>Leuctra ferruginea</i>	A Stonefly	G5	S2	N	1978-08-15	1978-08-15: No description given (U09DEP01FLUS).	1978-08-15: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).
LLIIRID*101	<i>Lilium indollae</i>	Panhandle lily	G3	S3	UR	2006-08-16	2006-08-16: Floodplain swamp with <i>Arundinaria gigantea</i> / <i>Chamaecyparis thyoides</i> , <i>Cyrilla racemiflora</i> , <i>Liriodendron tulipifera</i> , <i>Albizia julibrissin</i> . Exotics along road (U06JOH01FLUS).	2006-08-16: along the west side of the road there were 12 plants with 2 in flower and 10 in bud; 3 plants with immature fruits were observed along the east side of the road (U06JOH01FLUS, PNDSCH05FLUS).
LLIIRID*110	<i>Lilium indollae</i>	Panhandle lily	G3	S3	UR	2008-08-05	2008-08-05: Along gas line right of way (U08WAR01FLUS).	2008-08-05: 16 plants observed (U08WAR01FLUS).
LLIIRID*111	<i>Lilium indollae</i>	Panhandle lily	G3	S3	UR	2006-04-12	in graminoid dominated area of bottomland forest	1-10 plants in leaf.
LLIIRID*118	<i>Lilium indollae</i>	Panhandle lily	G3	S3	UR	2018-08-01	In Sweetwater Creek floodplain	At least 75 plants in total here, some flowering, most just past flowering.
LLIIRID*121	<i>Lilium indollae</i>	Panhandle lily	G3	S3	UR	2018-08-20	None given	species observed in 2018
LLIIRID*122	<i>Lilium indollae</i>	Panhandle lily	G3	S3	UR	2018-10-08	none given	species observed
LLIIRID*124	<i>Lilium indollae</i>	Panhandle lily	G3	S3	UR	2019-07-30	None given	Flowering plant photographed (U20INA02FLUS).
LLIIRID*130	<i>Lilium indollae</i>	Panhandle lily	G3	S3	UR	1992-07-30	With <i>Sarracenia rubra</i> in wet peaty soil of semi-shade of mixed woodland. (S92AND03FLUS).	Considered frequent. Flowering specimen (FSU #184986) collected.
LLIIRID*132	<i>Lilium indollae</i>	Panhandle lily	G3	S3	UR	1999-08-04	Ecotone of seepage slope and shrub-lined seepage stream.	As many as 52 plants observed.
LLIIRID*133	<i>Lilium indollae</i>	Panhandle lily	G3	S3	UR	2006-08-16	Streamside baygall	3 plants with 1 in flower and 2 vegetative
LLIIRID*135	<i>Lilium indollae</i>	Panhandle lily	G3	S3	UR	2021-05-11	Flooded drains to creeks feeding Big Coldwater Creek.	Total of about 200 vegetative plants seen, many of them juveniles.



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LILIRID15	<i>Lilium indidillae</i>	Panhandle lily	G3	S3	UIR	E	1999-08-06	99-08-06: FLOODPLAIN FOREST; CANOPY AND SUBCANOPY APPROXIMATELY 60% CLOSURE, CANOPY COMPOSED OF SCATTERED MATURE SLASH PINE. SUBCANOPY INCLUDES NYSSA SP., LIRIODENDRON TULIPIFERA, MAGNOLIA VIRGINIANA, AND ACER RUBRUM. SHRUBS VARY IN COVERAGE INCLUDE TITI, MYRICA HETEROPHYLLA, ILEX SP., LYONIA SP., SMALL A. RUBRUM AND SMALL CHAMAECYPARIS THYOIDES. GROUND COVER 40-50% BARE MUD OR LEAF LITTER WITH LARGE PATCHES OF SPHAGNUM SP. AND FERNS COMMON, ALSO LACHINOCALON SP., VITIS SP., SMILAX SP., DROSERA INTERMEDIA, GRASSES RELATIVELY MINOR COMPONENT. SOIL MOIST, CONSISTS OF LOAMY ROOTS AND SPHAGNUM (PNDPRI03). 1990: FIELDS CLEAR CUT AND BURNED. STILL SMOLDERING (PNDLUN02). 88-08-09: RECENTLY CUTOVER FLOODPLAIN FOREST, A FEW SMALL ATL. WHITE CEDAR, RED MAPLES AND BAYS REMAIN ALONG JUNIPER CREEK; GROUND COVER DENSE AND WEEDY (P88GAT01).	99-08-06: 2 REPRODUCTIVE PLANTS OBSERVED (PNDPRI03). 1990: NOT OBSERVED, BUT DIFFICULTY IN LOCATING SITE (PNDLUN02). 88-08-09: SCATTERED CLUMPS, LESS THAN 30 PLANTS, IN FLOWER (P88GAT01).



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LILIRID*16	<i>Lilium indolae</i>	Panhandle lily	G3	S3	UR	E	1999-08-06	99-08-06: CANOPY 30% COVER INCLUDING PINUS ELLIOTTII, CHAMAECYPARIS THYOIDES, MAGNOLIA VIRGINIANA, AND NYSSA SP. SUBCANOPY 60% COVER INCLUDING TITI, ILEX SP., AND OTHERS. GRONDCOVER VEGETATION SPARSE WITHIN THE HARDWOODS TO LUSH AT EDGES (SPHAGNUM SP., FERN SPP., SARRACENIA SPP., ETC.) SOUTH PLANT FOUND WITHIN THE HARDWOODS, NORTH PLANTS FOUND ON THE EDGE OF SEEPAGE STREAM HARDWOODS WITH OPEN CANOPY TO THE EAST (PNDPRI03). 1987: SHRUB THICKET ALONG GARNIER CREEK. THIS SITE SEVERELY IMPACTED BY SEDIMENTATION FROM DIRT ROAD AND CLEARING OF LAND (POSSIBLY FOR TREES) THEREBY COVERING THE NATIVE MUCK SOIL WITH SANDY ORANGE SEDIMENTS (F87MOL01).	2012-02-16: failed to find. 99-08-06: ONE REPRODUCTIVE PLANT OBSERVED AT 1987 LOCATION (SOUTH SIDE OF ROAD, EAST SIDE OF CREEK). 14 REPRODUCTIVE AND 2 VEGETATIVE PLANTS OBSERVED IN TWO CLUMPS ON NORTH SIDE OF ROAD AND EAST SIDE OF CREEK (PNDPRI03). 1990: NOT OBSERVED (PNDLUN02). 1987: ONE PLANT IN BUD (F87MOL01).



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LILJRID*18	<i>Lilium indolae</i>	Panhandle lily	G3	S3	UR	E	2008-10-13: Seepage slope needing more fire with woody encroachment, revisited for gas line right of way project (U08JEN04FLUS). 2006-08-15: Seepage slope with fire suppression and woody encroachment. Associates include <i>Sarracenia leucophylla</i> , <i>Eriocaulon decangulare</i> , <i>Scleria muhlenbergii</i> , <i>Arnoglossum sulcatum</i> , <i>Xyris ambigua</i> , <i>Juncus trigonocarpus</i> , <i>Oxypolis filiformis</i> , <i>Cyrilla racemiflora</i> , <i>Cliftonia monophylla</i> , <i>Magnolia virginiana</i> , <i>Smilax laurifolia</i> . Clay is washing downslope from road and filling in site (U06JOH01FLUS). 1999-08-04: plants growing in open grassy (<i>Fuirena squarrosa</i>) area with scattered shrubs or poison sumac (<i>Rhus verticillata</i>) and <i>Myrica heterophylla</i> on slope parallel to dike draining eastward into Panther Creek. Other species present include <i>Sarracenia leucophylla</i> , <i>Oxypolis rigidior</i> , <i>O. filiformis</i> , <i>Arnoglossum sp.</i> , <i>Lophiola americana</i> , <i>Coreopsis floridana</i> , <i>Zigadenus glaberrimus</i> , <i>Marshallia sp.</i> , <i>Toxicaria racemosa</i> , <i>Asclepias connivens</i> , <i>Eleocharis tuberculosa</i> (PNDJOH01FLUS). 1992: extensive hillside seepage and sapric muck bogs. Herbaceous species dominant except near seepage stream where shrubs dominate (Orzell and Bridges).	This species has been observed in this area from 1989-2011 at approximately 3 localities, with many hundreds observed in 2011. 2013-8-29: none seen near SF 49572.



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LILIID*19	<i>Lilium indolllae</i>	Panhandle lily	G3	S3	UR	E	1999-08-05	Very small seepage stream incised into ground level approximately 6 inches. Canopy 20% coverage of mature Pinus elliotii; no subcanopy; shrub layer thick, mostly 3-6 feet Arundinaria gigantea with much llex sp, titi, and Myrica heterophylla as well. Groundcover nearly covered by Sphagnum sp., several fern species also present (PNDPR103FLUS); Seepage slope rim with 74 plant species, including Fothergilla gardenii, Macranthera flammaea, Xyris scabrifolia, and watch list species Zigadenus leimanthoides (complete list attached to EOR in GMF). Burned in 1998 (PNDSOR01FLUS).	41 reproductive and 6 vegetative plants observed.
LILIID*20	<i>Lilium indolllae</i>	Panhandle lily	G3	S3	UR	E	2016-09-15	2008-08-08: Well burned seepage area, but not in lowest parts (U08JEN04FLUS). 1999-08-05: plant in open sunny draw (where drainage curves N) growing w/ Arundinaria gigantea, llex coriacea, and Hypericum fasciculatum; plant along edge of titi draw growing with denser set of shrubs incl. Rhus vernix, llex glabra, Arundinaria, and llex coriacea (PNDJ0H01FLUS); 1984:seepage slope (bog) and nearby drainages. (U90MOL05FLUS).	This species has been documented in this general area at a total of approximately 4 localities on several dates from 1983-2012. On the most recent survey, more than 40 plants were documented. 2013-8-29: no plants seen at SF 49572 probably due to recent prescribed fire. 2016 the species was confirmed to persist.
LILIID*22	<i>Lilium indolllae</i>	Panhandle lily	G3	S3	UR	E	1984	None given	12-15 plants.



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LILIRID23	<i>Lilium lindollae</i>	Panhandle lily	G3	S3	UR	E	1999-08-05	1999-08-05: Seepage area with little slope; due to lack of slope, the ecotone between graminoid/forb seepage species and streamside woody species is large. Canopy mostly open, approximately 20% closure by 15 feet tall <i>Pinus elliotii</i> and 8-9 feet tall. Groundcover dense, mostly forbs some graminoids with <i>Andropogon</i> sp., <i>Sarracenia flava</i> , <i>Rhexia</i> sp., <i>Eriocaulon</i> sp., <i>Lachnocaulon</i> sp., <i>Marshallia</i> sp., club moss, <i>Xyris</i> sp., <i>Sphagnum</i> sp. Soil saturated and laden with silt from upstream clay erosion-immediate portion of stream drainage orange bottomed. No sign of recent fire (PNDPRI03FLUS); 1990-07-24: Site has degraded considerably in last 12 yrs (first seen in 1978) and is badly in need of fire (J90MOL05FLUS)	None found in 2020. Two flowering plants observed in 1990 and another 3 in 1999.
LILIRID29	<i>Lilium lindollae</i>	Panhandle lily	G3	S3	UR	E	1990-08-24	90-08-24: HILLSIDE SEEPAGE BOG AND SLASH PINE ON ADJACENT UPLANDS; ASSOCIATES ILEX GLABRA, MYRICA HETEROPHYLLA, SARRACENIA FLAVA. SEE DATA SHEET (PNDORZ01). 1999-08-24: MAPPED LOCATION IS MESIC FLATWOODS WITH MINIMAL AMOUNT OF RELIEF AND LITTLE SEEPAGE (PNDPRI03).	90-08-24: 5 FLOWERING PLANTS, 1 FRUITING (PNDORZ01).



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LLIIRID*3	<i>Lilium iridollae</i>	Panhandle lily	G3	S3	UR	E	2020-08-12: exceptional bayhead Nyssa biflora, Magnolia virginiana, Acer rubra, Liriodendron tulipifera, Ilex opaca, 99-08-04: dense canopy of mostly Nyssa sp. and Persea palustris with Pinus elliotii, and Taxodium distichum; understory mostly open except for scattered young of above; clumps of Lyonia sp. and Ili scattered; groundcover mostly leaf litter with sphagnum mats common, small areas of standing water, and patches of ferns and smilax sp. Soil moist and composed mostly of organic matter (roots and sphagnum) (PNDPR103). Pre-1999: on moist sandy loam of bottomland forest (with Chamaecyparis thyoides & Cyrilla racemiflora)	First documented in 1956 but not seen on visits in 1979, 1985, 1986, and 1990 until 15 plants were observed in 1999. Not seen again during 2020 survey.
LLIIRID*32	<i>Lilium iridollae</i>	Panhandle lily	G3	S3	UR	E	Seepage slope.	2020: none found. 1991: Only 1 individual seen.
LLIIRID*34	<i>Lilium iridollae</i>	Panhandle lily	G3	S3	UR	E	Young baygall community developing along small drainage area. Characterized by a loose stand of Persea palustris, Cliffonia monophylla, Rhus vernix, Liriodendron tulipifera, Viburnum nudum (?), Quercus laurifolia, Nyssa sylvatica, and dense stands of Clethra alnifolia along the ecotone between sandhill and baygall.	Only 5 individuals of <i>L. iridollae</i> seen: 2 vegetative only, 1 in bud, 1 in full flower, 1 in young fruit.



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LLIIRIDY36	<i>Lilium indolae</i>	Panhandle lily	G3	S3	UR	E	1999-08-05: FIRE (PRESCRIBED?) HAS BURNED INTO THE NORTH SIDE OF BAYGALL AND TITI IS RE-SPROUTING DENSELY WITHIN BAYGALL SOIL IS SANDY (RATHER THAN MUCKY) UNDER DENSELY SHADY CANOPY OF MAGNOLIA VIRGINIANA WITH OPEN UNDERSTORY. SLOPE DOWN TO BAYGALL APPEARS TOO DRY (SANDHILL) TO SUPPORT LILIUM. GRASSY SEEPAGE SLOPE MENTIONED IN 1991 NOT SEEN (PNDJ0H01FLUS); 1991-07-30:DENSE BAYGALL DOMINATED BY CLIFTONIA MONOPHYLLA, PERSEA PALUSTRIS, CYRILLA RACEMIFLORA, YOUNG LIRIODENDRON TULIPIFERA, WITH AN OCCASIONAL CHAMAECYPORIS THYROIDES, AND PINUS ELLIOTTII (?) AND NYSSA SYLVATICA (UNDHIL02FLUS).	1999-08-05: NO PLANTS FOUND IN 1 HOUR SEARCH TO EAST OF ROAD ON NORTH SIDE OF BAYGALL (PNDJ0H01FLUS); 1991-07-30: 40 INDIVIDUALS SEEN, MOST AT EDGE OF BAYGALL IN FULL SUN, BUT SOME SEEN WITHIN DENSE CLIFTONIA/PERSEA FOREST (UNDHIL02FLUS).



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LLIIRID*37	<i>Lilium indolae</i>	Panhandle lily	G3	S3	UR	E	1999-08-06	2008-10-13: Very fire suppressed seepage with <i>Cyrilla</i> , <i>Cliffonia</i> , <i>Magnolia virginiana</i> , <i>Lyonia lucida</i> , and <i>Smitex</i> (J08JEN04FLUS). 1999-08-06: ONE PLANT FOUND NEAR CREEK ON WEST SIDE ABOUT 10 FT FROM ROAD, THE SECOND FOUND CA 200 FT FURTHER WEST ON EDGE OF FOREST (PNDJ0H01FLUS). FOREST OF SWEET BAY AND LAUREL OAK WITH UNDERSTORY OF OSMUNDA REGALIS - WHOLE SITE GENERALLY DRIER THAN MOST LILIUM SITES SEEN (PNDJ0H01FLUS). 1991-07-30: BOTTOMLAND FOREST WITH LIRIODENDRUM TULIPIFERA, PERSEA PALUSTRIS, ACER SP. (PROBABLY RUBRUM), QUERCUS NIGRA, Q. LAURIFOLIA, NYSSA SYLVATICA, MAGNOLIA GRANDIFLORA, M. VIRGINIANA, ILEX CORIACEA, RHODODENDRON SERRULATUM, SABAL PALMETTO, AND PINUS ELLIOTTII (UNDHIL02FLUS).	2008-10-13: No plants found (J08JEN04FLUS). 1999-08-06: 2 PLANTS SEEN BOTH IN FLOWER (PNDJ0H01FLUS); 1991-07-30: ONLY 6 LILIUM IRIDOLAE NOTED ALONG MARGIN OF BOTTOMLAND FOREST COMMUNITY. MOST PLANTS SEEN IN SMALL (PERHAPS DISTURBED SITES) CLEARINGS WITHIN FOREST EDGE BUT IMMEDIATELY ADJACENT TO MOWED ROAD SHOULDER (UNDHIL02FLUS).
LLIIRID*38	<i>Lilium indolae</i>	Panhandle lily	G3	S3	UR	E	1999-08-03	1999-08-03: NARROW WOODED FLOODPLAIN OF SMALL CREEK THROUGH SANDHILL, SWEETBAY, SLASH PINE, BLACKTITI IN CANOPY, MYRICA HETEROPHYLLA AND CAREX SP. IN UNDERSTORY (PNDJ0H01FLUS).	1999-08-03: 8 PLANTS SEEN, 6 IN FLOWER OR BUD AND 2 VEGETATIVE (PNDJ0H01FLUS AND PNDBAR07FLUS).



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LILIRID*50	<i>Lilium incollae</i>	Panhandle lily	G3	S3	UR	E	1999-08-04: Floodplain forest with canopy of <i>Pinus elliotii</i> and <i>Magnolia virginiana</i> , open understory with <i>Ilex coriacea</i> , <i>Myrica heterophylla</i> , <i>Arundinaria tecta</i> and <i>Ludwigia alternifolia</i> , ground layer on sandy soil has <i>Mayaca fluviatilis</i> in flower, <i>Platanthera cristata</i> in flower, <i>Pinguicula primuiflora</i> common along creek banks, <i>Drosera intermedia</i> , <i>Arnoglossum</i> sp., <i>Asclepias rubra</i> , and <i>Sphagnum</i> moss (PNDJ0H01FLUS); 1993-05-16: CREEK BOTTOM (U93AND01FLUS)	1999-08-04: NO PLANTS SEEN IN 40 MIN SEARCH FOR 0.2 MI SOUTH OF BRIDGE ALONG CREEK (PNDJ0H01FLUS); 1993-05-16: 1 CLUMP OBSERVED (U93AND01FLUS).
LILIRID*51	<i>Lilium incollae</i>	Panhandle lily	G3	S3	UR	E	2020-08-12 80% CANOPY CLOSURE TO THE SOUTH, MOSTLY CHAMAECYPARIS THYOIDES, PINUS ELLIOTTII, AND TITI; MIDSTORY AND SHRUB LAYER MOSTLY OPEN; GROUND COVER WEEDY, MOSTLY PANICUM SP.; A FEW HYPERICUM SP.; CANOPY TO THE NORTH COMPLETELY OPEN; SOIL SANDY AND DRY, PRESUMABLY A RESULT OF EROSION FROM RIGHT OF WAY (PNDPRI09).	None found in 2020 after thorough survey at each location by 2 people. Twenty clumps were observed in 1993 at the three points and 10+ at one point in 1998, but only one plant was found at one point in 1999 despite a "thorough survey".
LILIRID*70	<i>Lilium incollae</i>	Panhandle lily	G3	S3	UR	E	1999-08-05: weedy roadside ditch; dense, 1 meter high coverage of mostly <i>Panicum</i> sp. with other weedy and non weedy species (PNDPRI03).	99-08-05: 17 reproductive and 4 vegetative plants observed (south side of road), 5 reproductive plants observed (north side of road) (PNDPRI03), 91-08-28: Approximately 35 plants observed (U91KNI03).
LILIRID*71	<i>Lilium incollae</i>	Panhandle lily	G3	S3	UR	E	2018-08-01 within mesic flatwoods community (PNDPRI03).	This species has been observed here from 1991-2018; more than 50 plants observed in 2012, 18 in 2018.



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LILIRID73	<i>Lilium indollae</i>	Panhandle lily	G3	S3	UR	E	1999-08-05	99-08-05: growing amongst very dense stand of <i>Arundinaria gigantea</i> , very little else growing. Canopy towards stream approximately 65% closed by mostly <i>Nyssa</i> sp., canopy upslope open. Understory dominated by cane up to 12 feet in height (6-8 feet immediately around <i>Lilium</i>). Soil is composed mostly of roots with sandy loam. No evidence of fire in last several years (PNDPRI03).	Not found at one of the points in 2010, but the correct location may not have been surveyed. 1999-08-05: 5 reproductive plants observed (PNDPRI03). 1991-08-28: Approximately 10 plants seen (U91KNI03).
LILIRID75	<i>Lilium indollae</i>	Panhandle lily	G3	S3	UR	E	1991-08-28	No general description given	1991-08-28: Approximately 22 plants seen (U91KNI03FLUS).
LILIRID80	<i>Lilium indollae</i>	Panhandle lily	G3	S3	UR	E	1999-08-06	99-08-06: small, isolated seepage area that does not develop into stream. Canopy 20% coverage including <i>Pinus elliotii</i> , <i>P. palustris</i> , and <i>Nyssa</i> sp. No subcanopy. Shrubs dense including <i>Myrica heterophylla</i> , <i>Ilex</i> sp., <i>Hypericum</i> sp. and others. <i>Arundinaria gigantea</i> abundant. Groundcover nearly completely covered by <i>Sphagnum</i> sp. with several fern sp., <i>Andropogon</i> sp., <i>Smilax</i> sp., and <i>Carex glaucescens</i> . Soil moist and consists of loamy roots and sphagnum. Fire scars on hardwoods indicate site burned within last 3-5 years (PNDPRI03). 95-12-16: Seepage head surrounded by upland pine forest. Plants growing in a very small seepage creek; <i>Arundinaria gigantea</i> abundant (PNDJEN02).	99-08-06: 20 reproductive and 5 vegetative plants observed (PNDPRI03). 1995-12-16: approximately 10 plants evidenced by their dead, lignified stems with whorled leaf scars and the distinctive lily fruiting pod (PNDJEN02FLUS).
LILIRID84	<i>Lilium indollae</i>	Panhandle lily	G3	S3	UR	E	1996-10-03	A seepage stream, broadens out to about 30' width near the ERR 211 crossing. The baygall canopy, dominated by <i>Cliftonia</i> , thins out allowing more shrubs and herbaceous vegetation than found upstream.	1996-10-03: One plant with immature fruit is growing in the water at the edge of the creek; no other <i>Lilium</i> were observed but more are probably in the area (PNDSCH03FLUS).



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LLIIRID*92	<i>Lilium iridollae</i>	Panhandle lily	G3	S3	UR	E	2006-08-11 2006-08-11: In semi-wet (wet-mesic) floodplain forest area adjacent to swamp forest under light shade of Pinus elliotii, Liriodendron tulipifera, and Magnolia virginiana. Site is shrubby (needs fire) being primarily comprised of Ilex glabra, Magnolia virginiana, Clethra alnifolia, and Acer rubrum. Herbs include Arundinaria gigantea, Carya glabra, Chasmanthium ornithyrychum, Piptanthera cristata, and Dichanthelium scaberrhisculum (U06J0H01FLUS).	2006-08-11: Only one plant, with immature fruit, was observed (U06J0H01FLUS).
LLIIRID*93	<i>Lilium iridollae</i>	Panhandle lily	G3	S3	UR	E	2006-08-11 2006-08-09: Baygall with Pinus elliotii/Ilex coriacea, Clethra alnifolia, Rhus vernix. Unburned although nearby area recently burned-flowering heads extending above surrounding evergreen shrubs; wiregrass bog upslope (U06J0H01FLUS).	1-5 plants observed at four locations in 2006
LLIIRID*95	<i>Lilium iridollae</i>	Panhandle lily	G3	S3	UR	E	2006-08-09 2006-08-09: Floodplain forest with thick Arundinaria gigantea. Many trees down from hurricanes (U06J0H01FLUS).	2006-08-09: ca. 24 plants in flower and fruit (U06J0H01FLUS).
LITHCAP*1	<i>Lithobates capito</i>	Gopher Frog	G2G3	S3	UR	N	1990-02-22 1992-02-25: two shallow intermittent ponds (frogs use both ponds (PNDMOL01FLUS)).	1992-02-25: no evidence of reproduction observed (PNDPAL02FLUS). 1990-02-22: breeding site; Godwin heard species calling in March or April 1982 and collected 1 specimen (Auburn University Museum). 1990: Moler heard one calling (P90MOL01FLUS). 1985-03-04: collected 2 (photo'd one). 1984: heard calling by Moler and Mansell (P85MOL01FLUS).



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LITHCAP1*26	<i>Lithobates capito</i>	Gopher Frog	G2G3	S3	UR	N	N	1996-08-12	Sandhill (high quality) with older mature longleaf pine canopy, midstory of turkey oak and southern red oak, abundant shrubs and herbs and thick, lush wiregrass; estimated 320 acres of potential habitat in immediate area (PNDRP103FLUS).	1996-08-12: 2 frogs observed at the mouths of two tortoise burrows (PNDRP103FLUS).	
LITHCAP1*58	<i>Lithobates capito</i>	Gopher Frog	G2G3	S3	UR	N	N	1978-08-16	No general description given	ONE DOR JUVENILE COLLECTED BY PAUL MOLER (DEPOSITED IN FMNH) ON 16 AUG. 1978.	
LITHOKAL*11	<i>Lithobates okaloosae</i>	Florida Bog Frog	G2	S2	N	ST	ST	1983	SEEPAGE STREAM, TRIBUTARY OF YELLOW RIVER; FROGS OCCUR WHERE CREEK DROPS ONTO FLOODPLAIN (P83MOL01).	1998-08-24: SPECIES NOT CALLING; 98-08-03: SPECIES NOT CALLING; 98-05-18: SPECIES NOT CALLING (PNDRP103). 1983: SPECIES HEARD CALLING AND AT LEAST ONE SPECIMEN COLLECTED FOR FSM (P83MOL01).	
LITHOKAL*12	<i>Lithobates okaloosae</i>	Florida Bog Frog	G2	S2	N	ST	ST	1983 -- 1989	Seepage stream, tributary of Yellow River. Surrounding uplands in silviculture.	2004 back to 1983: Moler confirmed species' continued presence several times. 1983: P. Moler first discovered species here, collected at least one specimen for museum voucher (UF-FLMNH) (U04JAC02FLUS, PNDMOL01FLUS).	
LITHOKAL*13	<i>Lithobates okaloosae</i>	Florida Bog Frog	G2	S2	N	ST	ST	1998	Seepage stream, tributary on north side of Yellow River. 1969-1989 and 1983: Enge and Moler, respectively, caught and/or heard species within Atlantic white cedar-dominated forest just north of power line, abundant sphagnum. Frogs not caught in power line easement itself (PNDENG02FLUS, PNDMOL01FLUS, U04JAC02FLUS).	1999: Enge trapped species here in funnel traps set beside drift fences (PNDENG02FLUS). 1983: Moler first discovered species here, heard calling and collected at least one specimen for UF-FLMNH (PNDMOL01FLUS).	



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LITHOKAL*14	<i>Lithobates okaloosae</i>	Florida Bog Frog	G2	S2	N	ST	2004	Seepage stream, tributary of Yellow River, 1983 discovery where within power line easement, was crossed by stream (U04MOL02FLUS, PNDMOL01FLUS, U04JAC02FLUS).	2004: Moler noted species' presence (PNDMOL01FLUS). 1983: Moler first discovered species here north of I-10, heard calling and collected at least one specimen for UF-FLMNH; did not revisit the site until 2004. In later years, he confirmed species south of I-10 (U04MOL02FLUS, PNDMOL01FLUS, U04JAC02FLUS).
LITHOKAL*4	<i>Lithobates okaloosae</i>	Florida Bog Frog	G2	S2	N	ST	2003	SEEPAGE STREAM THAT FLOWS N TO YELLOW RIVER.	1998-08-24: SPECIES NOT CALLING; 98-08-03: SPECIES NOT CALLING; 98-06-23: SPECIES NOT CALLING; 98-05-18 AND 19: NO R. OKALOOSAE CALLING (PNDPRI03), 1992: (PROBABLY JUNE) CA. 6 FROGS CALLING (U92JAC01). MOLER & MANSELL COLLECTED 4 SPECIMENS 1983-04-26; MOLER HEARD SPECIES CALLING 1982-07, BUT NO CALLING 82-08-27, 28.
LITHOKAL*5	<i>Lithobates okaloosae</i>	Florida Bog Frog	G2	S2	N	ST	1998-05-18	1998-05-18: seepage stream that flows north to Yellow River; sphagnum and bushes; some siltation from road; seepage slope (P83MOL01FLUS).	1998-05-18: 10:50 pm; at least 3 frogs heard calling (PNDPRI03FLUS). 1983-06: Moler collected adults. 1982-08-27, 28: not calling, but metamorphing larvae (species indetermined). 1982-07: Moler first heard frog calling.
LITHOKAL*6	<i>Lithobates okaloosae</i>	Florida Bog Frog	G2	S2	N	ST	1998-05-18	SEEPAGE STREAM THAT FLOWS N TO YELLOW RIVER; SEEPAGE SLOPE.	1998-05-18 AND 19: SPECIES CALLING ABUNDANTLY (PNDPRI03). MOLER HEARD FROG HERE 82-07; SPECIES NOT CALLING 82-08-27, 28; MOLER COLLECTED SPECIMEN(S) 1983-06.
LOBEBOYK*5	<i>Lobelia boykinii</i>	Boykin's lobelia	G2G3	SH	UR	E	1957-07-20	Rare on wet peat or in shallow water of cypress pond	2021: none found (PNDECK01FLUS). 1957: Rare in wet peat of cypress pond (S58KRA02FLUS).
LYTHATRA*1	<i>Lythurus atripiticulus</i>	Blacktip Shiner	G4	S2	N	N	1988-05-25	1988-05-25: clear, blackwater stream, 10-15ft wide up to 3 ft deep, moderate current, sand bottom. Stream flows through cypress, magnolia, pine and oak forest (U90FSM01FLUS).	1988-05-25: 14 specimens collected (UF-079453) (U90FSM01FLUS). 1969-06-03: unknown number of specimens collected (UA-3654); specimen TCWC 8910.01 in Texas Coop. Wildl. collection (Texas A& M) (S69WALUAFUS).
MACDBRUI*4	<i>Macdunnosa brunnea</i>	A Mayfly	G3G4	S2S3	N	N	1975-05-04	Blackwater River.	1 male imago collected (A82FLO01FLUS).



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MACHPOLY*1	<i>Machimus polyphemus</i>	Gopher Tortoise Robber Fly	G2	S1S2	N	N	1984-05-05	No description given.	Once specimen collected from gopher tortoise burrow.
MACRFLAW*1	<i>Macranthera flammea</i>	hummingbird flower	G3	S2	N	E	1990-08-23	HILLSIDE SEEPAGE BOG. HERBACEOUS SPECIES DOMINATE EXCEPT NEAR SEEPAGE STREAM WHERE SHRUBS DOMINATE.	1989-09-21: ORZELL & BRIDGES OBSERVED.
MACRFLAW*15	<i>Macranthera flammea</i>	hummingbird flower	G3	S2	N	E	2006-03-29	baygall seepage area	plant present in seepage area in 1998, 1999, and 2006.
MACRFLAW*2	<i>Macranthera flammea</i>	hummingbird flower	G3	S2	N	E	1990-08-25	ECOTONE BETWEEN OPEN SEEPAGE SLOPE AND SHRUB-LINED SEEPAGE STREAM.	FOUR PLANTS OBSERVED IN FLOWER
MACRFLAW*20	<i>Macranthera flammea</i>	hummingbird flower	G3	S2	N	E	2006-08-16	2006-08-16: edge of baygall and road with <i>Cynilla racemiflora</i> , <i>Ilex glabra</i> , <i>Smilax glauca</i> ; borders impounded creek along McDaniels Rd (PNDHER01FLUS, U06JOH01FLUS - shapefile "other_rare_plnts_waypoints_06").	2006-08-16: Two plants: both in flower and bud along roadside, 6-7 ft tall (PNDHER01FLUS, U06JOH01FLUS - shapefile "other_rare_plnts")
MACRFLAW*21	<i>Macranthera flammea</i>	hummingbird flower	G3	S2	N	E	2006-08-16	2006-08-16: streamside baygall with associated species: <i>Toxicodendron vernix</i> , <i>Pinus elliotii</i> , <i>Magnolia virginiana</i> , <i>Acer rubrum</i> / <i>Arundinaria gigantea</i> , <i>Carex gigantea</i> (PNDSCH05FLUS, U06JOH01FLUS - shapefile "other_rare_plnts_waypoints_06").	2006-08-16: 3 plants with 1 in flower and 2 vegetative (PNDSCH05FLUS, U06JOH01FLUS - shapefile "other_rare_plnts_waypoints_06").
MACRFLAW*22	<i>Macranthera flammea</i>	hummingbird flower	G3	S2	N	E	2019-09-26	seepage stream and seepage bog	2019: 53-110 plants observed; 2016: plants frequent; 2006-09-14: plants present at different site than 2016 (PNDLAN03FLUS).
MACRFLAW*24	<i>Macranthera flammea</i>	hummingbird flower	G3	S2	N	E	2016-09-13	ruderal (powerline R-O-W)	In 2016, many hundreds in early to mid flowering peak. Some flowers starting to set fruit. This population was 0.2 acres and along 100 meters of roadside. First observed at this site in 2007 and described as "nice colony".



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MACRFLAM*3	<i>Macranthera flammaea</i>	hummingbird flower	G3	S2	N	E	1989-09-20 MID-SLOPE, QUAKING SAPRIC MUCK SEEPAGE HERB-BOG ALONG TRIBUTARY TO MIDDLE CREEK, IN FREQUENTLY BURNED, FIRE-MAINTAINED SAVANNA WITH INTACT GROUND COVER TO FACILITATE FIRE ACROSS THE LANDSCAPE.	LOCALLY ABUNDANT ALONG OPEN ECOTONE OF SEEPAGE BOG AND BAYGALL VEGETATION IN STREAM VALLEY TRIBUTARY TO MIDDLE CREEK.
MACRFLAM*33	<i>Macranthera flammaea</i>	hummingbird flower	G3	S2	N	E	2008-08-05 2008-08-05: Gas pipeline right of way (U08WAR01FLUS).	2008-08-05: One plant observed (U08WAR01FLUS).
MACRFLAM*38	<i>Macranthera flammaea</i>	hummingbird flower	G3	S2	N	E	2019-08-24 Along creek.	Species present. At least 3 individuals.
MACRFLAM*39	<i>Macranthera flammaea</i>	hummingbird flower	G3	S2	N	E	2019-08-24 Along creek.	Species present. At least 11 individuals.
MACRFLAM*40	<i>Macranthera flammaea</i>	hummingbird flower	G3	S2	N	E	2019-08-24 Along creek.	Species present. At least 13 individuals.
MACRFLAM*44	<i>Macranthera flammaea</i>	hummingbird flower	G3	S2	N	E	2019-08-16 Baygall	11-50 plants
MACRFLAM*7	<i>Macranthera flammaea</i>	hummingbird flower	G3	S2	N	E	1994-10-11 Seepage slope.	Three plants observed, flowering and in leaf.
MACRTEM*17	<i>Macrochelys temminckii</i>	Alligator Snapping Turtle	G3	S3	PT	N	2018 Yellow River, 1993-post; medium-large Gulf coastal plain river (PNDMOL01FLUS)	This occurrence is documented by multiple records extending from 1975-2018 from many sites.
MACRTEM*44	<i>Macrochelys temminckii</i>	Alligator Snapping Turtle	G3	S3	PT	N	2018 Blackwater stream system with seepage input.	River system clearly supports a substantial population, though perhaps not as large as that in some other (more nutrient-rich) rivers.



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MESIFLAT*223	Mesic flatwoods		G4	S4	N	N	2004	The flatwoods are flanked by floodplain forest/swamp associated with the Yellow River to the north and wet prairie to the south. Whitmier Island is located in the northwest portion of Eglin AFB.	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1995-12-07) (U05FNA02FLUS). 1995-11-30: Mesic flatwoods woodland dominated by a canopy of both older mature longleaf (Pinus palustris) and slash (Pinus elliotii) pine; the shrub layer is diverse and patchy in domination and includes runner oak (Quercus pumila), huckleberry (Gaylussacia dumosa), galiberry (Ilex glabra), dwarf wax myrtle (Myrica cerifera var. pumila), and horse sugar (Symplocos tinctoria); the herbaceous layer is extremely diverse and dominated by wiregrass (Aristida stricta) and panic grass (Dichanthium sp.); other common herbs include vanilla plant (Carphephorus odoratissimus), rayless sunflower (Helianthus radula), golden aster (Pityopsis graminifolia), and bracken fern (Pteridium aquilinum); there are many inclusion communities of wet flatwoods and baygal within giving the mesic flatwoods a patchy character; the soil has been heavily disturbed by military activity and/or past logging but the vegetative coverage remains intact throughout and composed of mostly non-weedy species - this may be a result of the frequent mission-caused fires that occur here; there exists lots of military trash (i.e. clips, bullets, rolled wire, etc.) throughout (PNDJEN02FLUS).



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			G4	S4	N	N						
MESIFLAT*65	Mesic flatwoods		G4	S4	N	N			2004	RELATIVELY OPEN, UNBURNED, NATURALLY-REGENERATED FLATWOODS THAT, DUE TO FIRE SUPPRESSION, IS INVADDED BY ILEX MYRTIFOLIA, ILEX VOMITORIA, NYSSA BIFLORA, MYRICA CERIFERA, PERSEA PALUSTRIS, ILEX CORIACEA, ACER RUBRUM, CLIFTONIA MONOPHYLLA, AND SYMPLOCOS TINCTORIA. PRINCIPALLY OF ILEX GLABRA, ARISTIDA STRICTA, VACCINIUM ELLIOTTII, HIBISCUS ACULEATUS, SMILAX LAURIFOLIA, POLYGALA LUTEA, RHEXIA LUTEA, R. ALIFANUS, LOBELIA, CARPHEPHORUS, XYRIS, AND SARRACENIA LEUCOPHYLLA (IN WETTER SWALES).	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1992-06-15) (U05FNA02FLUS). REMINANT, RELATIVELY UNDISTURBED, UNBURNED, LIGHTLY-STOCKED PINUS PALUSTRIS-PINUS ELLIOTTII/MESIC FLATWOODS.	
MUSTOLIV*41	<i>Mustela frenata olivacea</i>	Southeastern Weasel	G5T4	S3?	N	N			1987	1987: Upland Mixed Forest: Blackwater River (U97GFC02FLUS).	1987: D. Pridgen, GFC, observation. Running along bank of river (U97GFC02FLUS).	
MUSTOLIV*49	<i>Mustela frenata olivacea</i>	Southeastern Weasel	G5T4	S3?	N	N			1980 -- 1989	pine plantation	1987: S.P. Christman, DEP, observation. Species present (U18DEP01FLUS)	
NAJAFIL*42	<i>Najas filifolia</i>	Narrowleaf Naiad	G3	S2	UR	T			2011	Lacustrine	Species recorded as present in 1986 & 1988 (U18DEP01FLUS).	
NAJAFIL*43	<i>Najas filifolia</i>	Narrowleaf Naiad	G3	S2	UR	T			1988	Lacustrine	Species present (U18DEP01FLUS)	
NAJAFIL*47	<i>Najas filifolia</i>	Narrowleaf Naiad	G3	S2	UR	T			2013	Lacustrine	Species present (U18DEP01FLUS)	
NEURMOLE*12	<i>Neurocordulia molesta</i>	Smoky Shadowfly	G4	S2S3	N	N			1994-02-15	1994-02-15: No description given (U09DEP01FLUS).	1994-02-15: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).	
NEURMOLE*14	<i>Neurocordulia molesta</i>	Smoky Shadowfly	G4	S2S3	N	N			2007-09-27	2007-09-27: No description given (U09DEP01FLUS).	2007-09-27: This species was documented by Florida Department of Environmental Protection agency staff at four localities on four dates going back to 1993-06-22 (U09DEP01FLUS).	
NEURMOLE*31	<i>Neurocordulia molesta</i>	Smoky Shadowfly	G4	S2S3	N	N			2012-03-25	None given	1 adult male specimen collected	



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NUPHLLVA*18	<i>Nuphar advena</i> ssp. <i>ulvacea</i>	West Florida cowlily	G5T2T3	S2	N	2003-11-20	Blackwater Stream	Population consists of three discrete areas described along a 1200 m stretch of river. Population seen in 1994 and 2003.
NUPHLLVA*24	<i>Nuphar advena</i> ssp. <i>ulvacea</i>	West Florida cowlily	G5T2T3	S2	N	1995-08-20	On west side of blackwater stream; rooted on submerged vertical bank in a small ox bow.	1995-08-20: One small clump of ca. 15 plants observed; ca. 8 in flower (PNDRP/03FLUS).
NUPHLLVA*29	<i>Nuphar advena</i> ssp. <i>ulvacea</i>	West Florida cowlily	G5T2T3	S2	N	2015-08-03	Blackwater stream.	Multiple patches of this plant throughout the Blackwater River system
NUPHLLVA*51	<i>Nuphar advena</i> ssp. <i>ulvacea</i>	West Florida cowlily	G5T2T3	S2	N	2020-01-07	none given	Species observed
NUPHLLVA*54	<i>Nuphar advena</i> ssp. <i>ulvacea</i>	West Florida cowlily	G5T2T3	S2	N	2018-05-29	Crisped underwater foliage present in the individual and patch from which this specimen was collected. -br/>Next to patch of <i>Panicum hemitomon</i> , beneath canopy of <i>Acer rubrum</i> .	At this time, the species is present (if not abundant) in nearly all bends and pockets of slow-moving water
ONTHSPAR*2	<i>Onthophagus polyphemus</i> <i>sparsisetosus</i>	Smooth Gopher Tortoise Onthophagus Beetle	G2G3T2	S1S2	N	2016-05-27	upland pine	Specimens were collected at 6 locations during 2 one week survey periods using gopher tortoise burrow facade traps and examining burrow mouths in upland pine habitat.
ONTHSPAR*3	<i>Onthophagus polyphemus</i> <i>sparsisetosus</i>	Smooth Gopher Tortoise Onthophagus Beetle	G2G3T2	S1S2	N	2016-05-27	sandhill	Specimens were collected at 4 locations during 2 one week survey periods using gopher tortoise burrow facade traps and examining burrow mouths in sandhill habitat.
OPHIMI*1	<i>Ophisaurus mimicus</i>	Mimic Glass Lizard	G3	S2S3	N	2006-06-05	upland pine forest within state forest	2006: 1 individual in drift fence in upland pine forest (U23GBI01FLUS).
OXYEELER*15	<i>Oxyethira elerobi</i>	Elerob's Microcaddisfly	G3G4	S2S3	N	2007-06-13	No description given other than that the locality was near a river (U09RAS01FLUS).	2007-06-13: Twenty-three specimens were collected using a 15 watt black light over an alcohol-filled white pan (U09RAS01FLUS, U08RAS01FLUS).
OXYEELER*18	<i>Oxyethira elerobi</i>	Elerob's Microcaddisfly	G3G4	S2S3	N	2007-05-19	No description given other than that the locality was near a creek (U09RAS01FLUS).	2007-05-19: Forty-five specimens were collected using a 15 watt black light over an alcohol-filled white pan (U09RAS01FLUS, U08RAS01FLUS).
OXYEELER*19	<i>Oxyethira elerobi</i>	Elerob's Microcaddisfly	G3G4	S2S3	N	2007-06-13	No description given other than that the locality was near a creek (U09RAS01FLUS).	2007-06-13: Ninety-one specimens were collected using a 15 watt black light over an alcohol-filled white pan (U09RAS01FLUS, U08RAS01FLUS).



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OXYENOVA*24	<i>Oxyethira novasota</i>	Novasota Oxyethiran Microcaddisfly	G4G5	S2	N	2007-05-19	2007-05-19: No description given other than that the locality was near a creek (U09RAS01FLUS).	2007-05-19: One specimen was collected using a 15 watt black light over an alcohol-filled white pan (U09RAS01FLUS, U08RAS01FLUS).
OXYEFESC*25	<i>Oxyethira pescadori</i>	Pescador's Bottle-Cased Caddisfly	G3G4	S3	N	2007-06-13	2007-06-13: No description given other than that the locality was near a river (U09RAS01FLUS).	2007-06-13: Four specimens were collected using a 15 watt black light over an alcohol-filled white pan (U09RAS01FLUS, U08RAS01FLUS).
OXYEFESC*30	<i>Oxyethira pescadori</i>	Pescador's Bottle-Cased Caddisfly	G3G4	S3	N	2007-05-19	2007-05-19: No description given other than that the locality was near a creek (U09RAS01FLUS).	2007-05-19: One specimen was collected using a 15 watt black light over an alcohol-filled white pan (U09RAS01FLUS, U08RAS01FLUS).
OXYEFESC*32	<i>Oxyethira pescadori</i>	Pescador's Bottle-Cased Caddisfly	G3G4	S3	N	2007-06-13	2007-06-13: No description given other than that the locality was near a creek (U09RAS01FLUS).	2007-06-13: Three specimens were collected using a 15 watt black light over an alcohol-filled white pan (U09RAS01FLUS, U08RAS01FLUS).
PERLZWIC*1	<i>Perfinella zwicki</i>	A Stonefly	G4	S2	N	1970-05-01	1970-05-01: No description given (U07RAS01FLUS).	1970-05-01: Two specimens were collected (U07RAS01FLUS).



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PERLZWIC*2	<i>Perifinella zwicki</i>	A Stonelly	G4	S2	N	N	1988 pre	1988-Pre: No description given (U07RAS01FLUS).		1988-Pre: One specimen was collected at the Bryant Bridge location (U07RAS01FLUS). 1980-06-13: One specimen was collected using a light trap at the FAMU Biological Station location (U07RAS01FLUS). 1980-05-13: One specimen was collected using light at the FAMU Biological Station location (U07RAS01FLUS). 1978-04-30: Two specimens were collected using light at the FAMU Biological Station location (U07RAS01FLUS). 1977-06-03: One specimen was collected using light at the FAMU Biological Station location (U07RAS01FLUS). 1977-05-06: Two specimens were collected using light at the FAMU Biological Station location (U07RAS01FLUS). 1977-05-06: One specimen was collected using light at the FAMU Biological Station location (U07RAS01FLUS). 1977-04-21: One specimen was collected using light at the FAMU Biological Station location (U07RAS01FLUS). 1976-05-08: Eight specimens were collected using light at the FAMU Biological Station location (U07RAS01FLUS). 1974-05-02: Five specimens were collected using light at the FAMU Biological Station location (U07RAS01FLUS). 1971-06-05: One specimen was collected using light at the FAMU Biological Station location (U07RAS01FLUS). 1971-04-04: One specimen was collected using light at the FAMU Biological Station location (U07RAS01FLUS). 1970-05-09: Two specimens were collected at the Bryant Bridge location (U07RAS01FLUS). 1970-04-23: One specimen was collected at the Bryant Bridge location (U07RAS01FLUS).



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PERLZWIC*8	<i>Perithella zwicki</i>	A Stonelfly	G4	S2	N	N	1996-05-09	Sweetwater Creek, a tributary of Big Juniper Creek, which flows into Blackwater River.	1 specimen (INHS #Plecoptera 18501) collected (S96DEW01FLUS).
PEUCAEST*86	<i>Peucaea aestivalis</i>	Bachman's Sparrow	G3	S3	N	N	2006-05-03	2006-05-03: primarily upland pine forest of longleaf pine (<i>Pinus palustris</i>), southern red oak (<i>Quercus falcata</i>), wiregrass (<i>Aristida stricta</i>), but birds also heard in/around wet flatwoods in an ecotone of a seepage stream (F06FNA12FLUS, PNDJEN04FLUS).	2006-05-03: high density of singing males. Singing males noted by six gps points (F06FNA12FLUS, PNDJEN04FLUS).
PEUCAEST*87	<i>Peucaea aestivalis</i>	Bachman's Sparrow	G3	S3	N	N	2006-03-30	2006-03-30: upland pine forest dominated by longleaf pine (<i>Pinus palustris</i>), red oak (<i>Quercus falcata</i>) and wiregrass (<i>Aristida stricta</i>) (F06FNA12FLUS, PNDJEN04FLUS).	2006-03-30: 3 singing males noted at one gps points and "singing males" noted at a second gps point, the points approximately 0.5 miles apart (F06FNA12FLUS, PNDJEN04FLUS).
PEUCAEST*88	<i>Peucaea aestivalis</i>	Bachman's Sparrow	G3	S3	N	N	2006-05-04	2006-05-04: upland pine forest of longleaf pine (<i>Pinus palustris</i>), southern red oak (<i>Quercus falcata</i>), wiregrass (<i>Aristida stricta</i>), although in this area there are sandhill indicators on highest ground, where sand post oak (<i>Q. margareta</i>) and bluejack oak (<i>Q. incana</i>) occur with longleaf pine (F06FNA12FLUS, PNDJEN04FLUS).	2006-05-04: singing male(s) heard (F06FNA12FLUS, PNDJEN04FLUS).
PHANWEST*1	<i>Phanogomphus westfalli</i>	Westfall's Clubtail	G2	S2	UR	N	2021-03-22	Sandhill uplands divided by seepage streams draining into the Blackwater River (U07DAI03FLUS).	Type locality. Robust population that has persisted in the same place for decades. Up to dozens of individuals at a time.
PHANWEST*11	<i>Phanogomphus westfalli</i>	Westfall's Clubtail	G2	S2	UR	N	2006-04	Pine and turkey oak uplands bordering Blackwater River. Inhabits seepages and beaver ponds in open areas (U07DAI03FLUS).	Multiple specimens collected from 1974-2006. Jerrell Datigle commented "countless individuals seen" in 2006 (U07DAI03FLUS, W13ABB01FLUS).
PHANWEST*12	<i>Phanogomphus westfalli</i>	Westfall's Clubtail	G2	S2	UR	N	2017-02-26	None given	1 adult female photographed (U20INA01FLUS).
PHANWEST*13	<i>Phanogomphus westfalli</i>	Westfall's Clubtail	G2	S2	UR	N	2018-03-16	None given	4 adults photographed (U20INA01FLUS).



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PHK\WEST*8	<i>Phanogomphus westralii</i>	Westfall's Clubtail	G2	S2	UR	N	1974-04-03 None provided (W13ABB01FLUS).	S. W. Dunkle collected two specimens (W13ABB01FLUS).
PHY\LOVAL*1	<i>Phyllophaga ovalis</i>	Oval June Beetle	G1G2	S1S2	N	N	1989-04-14: No description given (B89W0001FLUS).	1989-04-14: Two specimens were collected by R.E. Woodruff, B.M. Beck and P. E. Skelley on a <i>Quercus laevis</i> plant (B89W0001FLUS).
PHY\LOVAL*2	<i>Phyllophaga ovalis</i>	Oval June Beetle	G1G2	S1S2	N	N	1987-04-12: No description given (B89W0001FLUS).	1987-04-12: One specimen was collected by E. G. Riley (B89W0001FLUS). 1982-04-08: Five specimens were collected by E. G. Riley (B89W0001FLUS).
PING\PRIM*17	<i>Pinguicula pitnulfiflora</i>	primrose-flowered butterwort	G3G4	S3	N	E	2010-04-07: shallow seepage stream with very narrow band of forest on either side. Atlantic white cedar, sweetbay magnolia, black lili, spagnum. Sand road crosses stream, erosion occurring on both sides of stream along road (PNDKIN02FLUS).	2010-04-07: 10 plants in bloom within 20 meter stream segment, both sides of stream (PNDKIN02FLUS).
PING\PRIM*19	<i>Pinguicula pitnulfiflora</i>	primrose-flowered butterwort	G3G4	S3	N	E	2009-04-09: Fire suppressed seepage slope and stream (U10JEN01FLUS).	2009-04-09: 70 plus plants along creek in full flower (U10JEN01FLUS).
PING\PRIM*20	<i>Pinguicula pitnulfiflora</i>	primrose-flowered butterwort	G3G4	S3	N	E	2009-04-09: Seepage slope and stream (U10JEN01FLUS).	2009-04-09: 40 plus plants in full flower (U10JEN01FLUS).
PING\PRIM*21	<i>Pinguicula pitnulfiflora</i>	primrose-flowered butterwort	G3G4	S3	N	E	2009-04-09: Very wet, well burned seepage slope and stream (U10JEN01FLUS).	2009-04-09: 40 plus plants in full flower (20100817_rareplts.shp in U10JEN01FLUS).
PING\PRIM*23	<i>Pinguicula pitnulfiflora</i>	primrose-flowered butterwort	G3G4	S3	N	E	2013-8-29: Recently burned and open, high quality Seepage Slope/Upland Pine ecotone.	Five plants here, not in flower.
PING\PRIM*31	<i>Pinguicula pitnulfiflora</i>	primrose-flowered butterwort	G3G4	S3	N	E	FNAI NC recorded as seepage stream.	Observed 1-10 plants in flower/fruit.
PING\PRIM*32	<i>Pinguicula pitnulfiflora</i>	primrose-flowered butterwort	G3G4	S3	N	E	FNAI NC recorded as wet prairie.	Observed 11-50 plants in leaf grassy opening, boggy.
PING\PRIM*33	<i>Pinguicula pitnulfiflora</i>	primrose-flowered butterwort	G3G4	S3	N	E	FNAI NC recorded as baygall.	~10 plants total in three clumps in flower/fruit
PING\PRIM*34	<i>Pinguicula pitnulfiflora</i>	primrose-flowered butterwort	G3G4	S3	N	E	FNAI NC recorded as seepage slope.	Observed 1-10 plants in flower/bud.

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PINGRIM*38	<i>Pinguicula primuliflora</i>	primrose-flowered butterwort	G3G4	S3	N	E	2018-08-01	Seepage slope and edge of seepage stream.	100 plants in 3 distinct areas, observed in small patches
PINGRIM*41	<i>Pinguicula primuliflora</i>	primrose-flowered butterwort	G3G4	S3	N	E	2021-03-23	Butterworts occurring on small mounds of organic debris and root balls in otherwise mucky baygall. Associated groundcover plants include small sedges, Sphagnum sp., and Crontium aquaticum.	Several hundred plants spread along Ates Creek and in nearby mucky baygall.
PITUMELA*123	<i>Pituophis melanoleucus</i>	Pine Snake	G4	S3	UR	ST	1999-09-01	Blackwater River State Forest, an ecosystem dominated by upland pine forest. 1999 observations were in herbaceous and shrub portions of seepage bog that drains into Reedy Creek, a tributary of the Yellow River (A02ENG02FLUS).	Based on 2 captures at 2 drift fences in 1999 (A02ENG02FLUS), possibly a substantial population.
PITUMELA*19	<i>Pituophis melanoleucus</i>	Pine Snake	G4	S3	UR	ST	1978	No general description given	1978: DOR seen by Paul Moier (PNDMOL01FLUS).
PITUMELA*40	<i>Pituophis melanoleucus</i>	Pine Snake	G4	S3	UR	ST	1990-02-27	DEGRADED SANDHILL. VAST RECENT CLEARCUT ON THE W SIDE OF ROAD; OPEN, MATURE, SPARSE SLASH PINE TO THE EAST.	1 JUVENILE (SVL 510 MM, TAIL 70 MM) OBSERVED BASKING ON RED-SAND ROAD IN FULL SUN AT 1525: ROAD TEMP 30 DEG. C.
PITUMELA*75	<i>Pituophis melanoleucus</i>	Pine Snake	G4	S3	UR	ST	2006-03-29	Pasture, scrubby flatwoods, upland pine	4 snakes observed
PLATCLAV*7	<i>Platanthera clavellata</i>	little club-spur orchid	G5	S1	N	E	1993-06-27	loamy, shaded soil with Malaxis unifolia and Liliium iridollae under Cyrilla racemifolia	1993-06-27: infrequent (S93ANDFSFLUS).
PLATCLAV*9	<i>Platanthera clavellata</i>	little club-spur orchid	G5	S1	N	E	2006-08-11	Chamaecyparis thyoides, and Ilex sp. bordering Long Branch (S93ANDFSFLUS). 2006-08-11: Floodplain swamp. Associated rare species: Juncus gymnocarpus, Platanthera ciliaris areolata, Lyonia lucida, Nyssa sylvatica var. biflora, Pinus elliotii, Magnolia virginiana, Acer rubrum (PNDSCHO1ALUS).	2006-08-11: Observed two fruiting plants in area measuring less than one square meter (PNDSCHO1ALUS).



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PLATINTE*15	<i>Platanthera integra</i>	yellow fringed orchid	G3G4	S2	N	E	1990-08-25	LOWEST, WETTEST PART OF AN OPEN SEEPAGE SLOPE. RESTRICTED TO A SATURATED, DEEP SPHAGNUM SUBSTRATE.	17 INDIVIDUALS OBSERVED IN FLOWER.
PLATINTE*16	<i>Platanthera integra</i>	yellow fringed orchid	G3G4	S2	N	E	1991-07-30	SEEPAGE SLOPE.	4 PLANTS.
PLATINTE*17	<i>Platanthera integra</i>	yellow fringed orchid	G3G4	S2	N	E	2020-08-29	PINUS PALUSTRIS/PINUS ELLIOTTII MIXED FLATWOODS AND PINUS PALUSTRIS/ARISTIDA STRICTA SANDHILL COMMUNITIES GRADING DOWN SLOPE INTO LARGE SEEPAGE SLOPE COMMUNITY THAT FURTHER GRADES ABRUPTLY INTO BAYGALL COMMUNITY. WITH PINUS PALUSTRIS, ARISTIDA STRICTA, SERENOA REPENS, POLYGALA CRUCIATA, RHEXIA ALIFANUS, AND SCUTELLARIA INCANA.	2013-08-29: 3 plants, 1 in flower and 2 just past flowering, observed at 2 points. 1997: None observed at site northeast of creek where 8 individuals were seen in 1991. At site just south of creek, 88 plants were seen in 1991 and none in 2008. 2020-08-29: 2 flowering plants observed
PLATINTE*18	<i>Platanthera integra</i>	yellow fringed orchid	G3G4	S2	N	E	1991-07-30	EXTENSIVE AND PARTICULARLY WELL DEVELOPED SEEPAGE SLOPE COMMUNITY THAT IS ADJACENT TO SELECT-CUT SANDHILL WITH PINUS PALUSTRIS/ARISTIDA STRICTA AND BAYGALL RUNNING WESTWARD AT BOTTOM SLOPE OF SANDHILL. THIS COMMUNITY IS RATHER DIVERSE BUT IS IN NEED OF A BURN TO KEEP INVADING SHRUBS DOWN.	AT LEAST 100 FLOWERING INDIVIDUALS NOTED ALONG MID-SLOPE BETWEEN SANDHILL AND SEEPAGE SLOPE COMMUNITIES.



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PLATINTE*19	<i>Platanthera integra</i>	yellow fringed orchid	G3G4	S2	N	E	2008-08-07 (U08WAR01FLUS). 2008-08-05: Burned but needs more fire (U06JEN04FLUS). 1991-07-29: ecotone between Pinus palustris/Arisida stricta/Quercus laevis sandhill community and highly disturbed seepage slope community. Seepage slope damaged by fire break being cut (?bulldozed?) through its center. Heavy growth of Cliftonia monophylla and Ilex glabra (seepage slope side and sandhill side of ecotone, respectively) as well as Clethra alnifolia invading disturbed seepage slope (UNDHIL02FLUS).	See individual sources for individual point data. 2008-08-07: 2 plants (U08WAR01FLUS). 2008-08-05: No plants found (U06JEN04FLUS). 1991-07-29: 28 healthy individuals seen in ecotone between sandhill community and highly disturbed seepage slope community (UNDHIL02FLUS).
PLATINTE*21	<i>Platanthera integra</i>	yellow fringed orchid	G3G4	S2	N	E	1991-07-30 SMALL SEEPAGE SLOPE ADJACENT TO WELL-DEVELOPED PINUS PALUSTRIS/QUERCUS LAEVIS/DIOSPYRUS VIRGINIANA SANDHILL COMMUNITY. AREA BEING HEAVILY INVADDED BY ILEX GLABRA AND CLETHRA ALNIFOLIA FROM SANDHILL BORDER AND CLIFTONIA MONOPHYLLA FROM BAYGALL BORDER.	ONLY 5 PLANTS SEEN, MOSTLY IN ECOTONE BETWEEN SANDHILL AND SEEPAGE SLOPE.
PLATINTE*22	<i>Platanthera integra</i>	yellow fringed orchid	G3G4	S2	N	E	1991-07-30 DENSE BAYGALL DOMINATED BY CLIFTONIA MONOPHYLLA, PERSEA PALUSTRIS, CYRILLA RACEMIFLORA, YOUNG LIRIODENDRON TULIPIFERA, WITH AN OCCASIONAL CHAMAECYPORIS THYOIDES, AND PINUS ELLIOTTII (?) AND NYSSA SYLVATICA.	ONLY 4 INDIVIDUALS SEEN ON LOWER (BAYGALL SIDE) SLOPE OF SANDHILL
PLATINTE*44	<i>Platanthera integra</i>	yellow fringed orchid	G3G4	S2	N	E	2008-08-06: in gasoline right of way seepage area, needing more fire with woody encroachment (U06JEN04FLUS).	2008-08-06: At least 1 plant here in full bloom (U06JEN04FLUS).



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PLATINTE45	<i>Platanthera integra</i>	yellow fringeless orchid	G3G4	S2	N	E	2006-08-10	2006-08-10: Upper edge of seepage slope; open area with a scattering of shrubs but no pitcher plants. Seepage slope associated with drainage of Reedy Creek. Associated rare species include Lachnocaulon digynum and Panicum nudicaule. Other associates: Ilex coriacea, Ilex glabra, Hypericum brachyphyllum, Aristida stricta, Zigadenus glaberrimus, Arundinaria gigantea, Myriophyllum heterophyllum, Rhynchospora macro, Rhynchospora plumosa, Rhynchospora latifolia, Polygala cruciata, Drosera tracyi (PNDSCH01ALLUS).	2006-08-10: Observed two plants in full bloom (PNDSCH01ALLUS).
PLESANTH*18	<i>Plestiodon anthracinus</i>	Coal Skink	G5	S3	N	N	1999	Blackwater River State Forest, an ecosystem dominated by upland pine forest. 1999 observations were in herbaceous portion of seepage bog that drains into Bull Pen Branch, a tributary of the Blackwater River (A02ENG02FLUS).	Based on 8 captures at drift fence in 1999 (A02ENG02FLUS), presumably a large population.
PLESANTH*19	<i>Plestiodon anthracinus</i>	Coal Skink	G5	S3	N	N	1999	Blackwater River State Forest, an ecosystem dominated by upland pine forest. 1999 observations were in herbaceous and shrub portions of seepage bog that drains into Reedy Creek, a tributary of the Yellow River (A02ENG02FLUS).	Based on 8 captures at 2 drift fences in 1999 (A02ENG02FLUS), presumably a large population.
POLYGRAC*2	<i>Polyphylla gracilis</i>	Slender Polyphyllan Scarab Beetle	G2G3	S2	N	N	2016-04-27	Near sandhill habitat	One specimen collected at 15W blacklight and photographed (U18FNA02FLUS).
PROGALAC*23	<i>Progomphus alachuensis</i>	Tawny Sanddragon	G3	S3	N	N	1952-10-21	1952-10-21: No description given (U09DEP01FLUS).	1952-10-21: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).
PROGBELL*4	<i>Progomphus belli</i>	Belle's Sanddragon	G3	S3	N	N	2007-05-08	2007-05-08: No description given (U09DEP01FLUS).	2007-05-08: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).



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PSEUCENT*2	<i>Pseudion centralis</i>	White Sand-river Mayfly	G5	S2S3	N	N	2005-02-15	2005-02-15: No description given (U09DEP01FLUS).	2005-02-15: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).
PTERWEL*4	<i>Pteronotropis iwelaka</i>	Bluenose Shiner	G3G4	S3S4	N	ST	1992-05-30	Seepage stream flowing south to Yellow River, upper end impounded below subdivision.	92-05-30: 123 individuals collected (U99FLE01FLUS). 100 SPECIMENS COLLECTED BY YERGER ET AL. (FSU 7123) RANGING IN STANDARD LENGTH FROM 23-45 MM ON 22 JUN 1961. 3 SPECIMENS COLLECTED (WF 1629) ON 24 APR 1976.
PTOMGEOM*10	<i>Ptomaphagus geomys</i>	Elongate Pocket Gopher Ptomaphagus Beetle	G2G3	S2	N	N	1998-12-20	1998-12-20: No information given (U06SKE01FLUS).	1998-12-20: One specimen was collected on 1998-12-20, most likely in a malt and dung-baited pitfall trap in a pocket gopher burrow (U06SKE01FLUS, A01PEC01FLUS).
PTOMGEOM*14	<i>Ptomaphagus geomys</i>	Elongate Pocket Gopher Ptomaphagus Beetle	G2G3	S2	N	N	1999-03-01 -- 1999-04-10	1999-04-10: No information given (U06SKE01FLUS).	1999-04-10: Nineteen specimens were collected from 1998-12-19 to 1999-04-10, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01PEC01FLUS).
PTOMGEOM*18	<i>Ptomaphagus geomys</i>	Elongate Pocket Gopher Ptomaphagus Beetle	G2G3	S2	N	N	1998-12-20 -- 1999-01-02	1999-01-02: No information given (U06SKE01FLUS).	1999-01-02: One specimen was collected from 1998-12-20 to 1999-01-02, most likely in a malt and dung-baited pitfall trap in a pocket gopher burrow (U06SKE01FLUS, A01PEC01FLUS).
PTOMGEOM*6	<i>Ptomaphagus geomys</i>	Elongate Pocket Gopher Ptomaphagus Beetle	G2G3	S2	N	N	1998-12-05 -- 1998-12-20	1998-12-20: No information given (U06SKE01FLUS).	1998-12-20: Three specimens were collected from 1998-12-05 to 1998-12-20, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01PEC01FLUS).
PTOMGEOM*7	<i>Ptomaphagus geomys</i>	Elongate Pocket Gopher Ptomaphagus Beetle	G2G3	S2	N	N	1999-03-01 -- 1999-04-10	1999-04-10: No information given (U06SKE01FLUS).	1999-04-10: Six specimens were collected from 1998-12-06 to 1999-04-10, most likely in malt and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01PEC01FLUS).
PTOMGEOM*9	<i>Ptomaphagus geomys</i>	Elongate Pocket Gopher Ptomaphagus Beetle	G2G3	S2	N	N	1998-12-20 -- 1999-01-02	1999-01-02: No information given (U06SKE01FLUS).	1999-01-02: One specimen was collected from 1998-12-20 to 1999-01-02, most likely in a malt and dung-baited pitfall trap in a pocket gopher burrow (U06SKE01FLUS, A01PEC01FLUS).



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PTOMSCHW*37	<i>Ptomaphagus schwarzi</i>	Schwarz' Pocket Gopher Ptomaphagus Beelle	G3	S3	N	N	1998-12-19 -- 1999-01-03	1999-01-03: No information given (U06SKE01FLUS)	1999-01-03: Ten specimens were collected from 1997-12-28 to 1999-01-03, most likely in mall and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01PECO1FLUS).
PTOMSCHW*38	<i>Ptomaphagus schwarzi</i>	Schwarz' Pocket Gopher Ptomaphagus Beelle	G3	S3	N	N	1999-03-01 -- 1999-04-10	1999-04-10: No information given (U06SKE01FLUS)	1999-04-10: Five specimens were collected from 1998-12-06 to 1999-04-10, most likely in mall and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01PECO1FLUS).
PTOMSCHW*41	<i>Ptomaphagus schwarzi</i>	Schwarz' Pocket Gopher Ptomaphagus Beelle	G3	S3	N	N	1998-12-20 -- 1999-01-02	1999-01-02: No information given (U06SKE01FLUS)	1999-01-02: Three specimens were collected from 1998-12-06 to 1999-01-02, most likely in mall and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01PECO1FLUS).
PTOMSCHW*46	<i>Ptomaphagus schwarzi</i>	Schwarz' Pocket Gopher Ptomaphagus Beelle	G3	S3	N	N	1998-12-19 -- 1999-01-03	1999-01-03: No information given (U06SKE01FLUS)	1999-01-03: Five specimens were collected from 1998-12-19 to 1999-01-03, most likely in mall and dung-baited pitfall traps set in pocket gopher burrows (U06SKE01FLUS, A01PECO1FLUS).
QUERARKA*168	<i>Quercus arkansana</i>	Arkansas oak	G3	S3	N	T	2008-04-10	FNAI NC recorded as xeric hammock.	Observed 1-10 plants in leaf.
RHEXPARY*23	<i>Rhexia parviflora</i>	small-flowered meadowbeauty	G2G3	S2	UR	E	1994-07-09	Depression Marsh dominated by <i>Eriocaulon decangulare</i> and <i>compressum</i> - many other grasses, forbs, and sedges. <i>Ilex myrtifolia</i> circles pond. Pond is shallow and ephemeral. Similar looking <i>Rhexia mariana</i> also common here as is <i>Rhexia virginiana</i> .	Thousands of plants, flowering and in leaf, mostly along outside periphery of depression.
RHEXPARY*36	<i>Rhexia parviflora</i>	small-flowered meadowbeauty	G2G3	S2	UR	E	2003-07-16	2003-07-16: ecotone of small ephemeral pond and longleaf pine woodland (S02SCHFSFLUS)	2003-07-16: occurrence on site (S02SCHFSFLUS)
RHEXPARY*4	<i>Rhexia parviflora</i>	small-flowered meadowbeauty	G2G3	S2	UR	E	1956-07-20	Wet peat at margin of cypress pond.	Frequent. Flowering specimen (FSU #25214) collected.
RHEXPARY*46	<i>Rhexia parviflora</i>	small-flowered meadowbeauty	G2G3	S2	UR	E	2006-05-03	FNAI NC recorded as dome swamp.	Observed 51-100 plants in flower/bud scattered in wet prairie edge of small gum swamp, some plants extending into wooded dome.



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RHEXP/ARV*47	<i>Rhexia parviflora</i>	small-flowered meadowbeauty	G2G3	S2	UR	E	2018-08-01	2018: On ecotone of recently restored Wet Prairie and Wet Flatwoods. Wet Prairie was recently burned and has had numerous efforts to remove hardwoods.	2018: 51-100 plants
RHEXP/ARV*50	<i>Rhexia parviflora</i>	small-flowered meadowbeauty	G2G3	S2	UR	E	2018-07-28	None provided.	species observed
RHEXP/ARV*52	<i>Rhexia parviflora</i>	small-flowered meadowbeauty	G2G3	S2	UR	E	2018-06-08	None given	Flowering plant photographed on iNaturalist (U20INAI02FLUS)
RHODA/UST*47	<i>Rhododendron austrinum</i>	Florida flame azalea	G3	S3	N	E	1994-03-14	Bluff overlooking Nyssa swamp with <i>Rhododendron viscosum</i> , <i>Magnolia virginiana</i> , <i>Ilex coriacea</i> , <i>I. opaca</i> , <i>Vaccinium corymbosum</i> , <i>V. ellipticum</i> , <i>Symplocos tinctoria</i> .	Few small plants.
RHODA/UST*5	<i>Rhododendron austrinum</i>	Florida flame azalea	G3	S3	N	E	ZZ	ALONG NATURE TRAIL ON S (N-FACING) SLOPE OF RIVER.	NO POPULATION ESTIMATE--"SCATTERED" (PNDFRA02).
RHODA/UST*73	<i>Rhododendron austrinum</i>	Florida flame azalea	G3	S3	N	E	2008-04-30	2008-04-30: floodplain forest community with light ORV trail disturbance (F09IAC01FLUS).	2008-04-30: 2-10 plants in flower/bud (F09IAC01FLUS).
RHODA/UST*74	<i>Rhododendron austrinum</i>	Florida flame azalea	G3	S3	N	E	2008-04-30	2008-04-30: floodplain forest with light ORV trail disturbance (F09IAC01FLUS).	2008-04-30: 2-10 plants in flower/bud (F09IAC01FLUS).
RHODA/UST*77	<i>Rhododendron austrinum</i>	Florida flame azalea	G3	S3	N	E	2006-04-05	2006-04-05: Edge of baygall along small stream (F06FNA12FLUS).	2006-04-05: Observed two plants in flower/bud within 1 to 10-square-meter area (F06FNA12FLUS).
RHYNCR/IM*1	<i>Rhynchospora crispipes</i>	hairy-peduncled beaksedge	G3	S3	N	E	2014-08-08	SHELVING BANKS ALONG STREAM. ASSOCIATED SPP. ARE CHAMAECYPARIS THYOIDES, KALMIA LATIFOLIA, RHYNCHOSPORA INEXPANSA, SCIRPUS ETUBERCOLATUS	Scattered population along river in 1987: 300-325 culms counted in 2014.
RHYNCR/IM*10	<i>Rhynchospora crispipes</i>	hairy-peduncled beaksedge	G3	S3	N	E	2015-08-03	R. crispipes essentially occurs along the margins of Melts Creek, a seepage stream generally bounded by a luxuriant growth of Cliftonia monophylla. Nyssa biflora, Chamaecyparis thymoides, Magnolia virginiana and a thick tangle of shrubs.	Up to 100 culms observed in 2015 and in 1994, plants were observed quite frequently (no estimation of numbers made) along margin of Melts Creek. A few clumps were observed near the middle of the stream.



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RHYNCRIN*23	<i>Rhynchospora crinitipes</i>	hairy-peduncled beaksedge	G3	S3	N	E	1989-08-05	sandy banks of Sweetwater Creek.	Observed.
RHYNCRIN*26	<i>Rhynchospora crinitipes</i>	hairy-peduncled beaksedge	G3	S3	N	E	1993-09-19	Sandy-gravelly seep banks along stream.	No abundance given
RHYNCRIN*27	<i>Rhynchospora crinitipes</i>	hairy-peduncled beaksedge	G3	S3	N	E	1990-06-29	along wet marshy border of spring-fed Big Coldwater Creek with <i>Sagittaria latifolia</i>	Frequent
RHYNCRIN*28	<i>Rhynchospora crinitipes</i>	hairy-peduncled beaksedge	G3	S3	N	E	1990-07-23	Blackwater River	Along Blackwater River.
RHYNCRIN*3	<i>Rhynchospora crinitipes</i>	hairy-peduncled beaksedge	G3	S3	N	E	1987-07-11	BLACKWATER STREAM.	species frequent and observed in fruit; collected on canoe trip
RHYNCRIN*4	<i>Rhynchospora crinitipes</i>	hairy-peduncled beaksedge	G3	S3	N	E	2014-07-10	2014: west side of creek on nonsandy, more steep, clayey bank on outside bend of creek, underneath Atlantic White Cedar and Titl. 1987: along left (east) bank of East Fork of Big Coldwater Creek	Frequent in 1987; 3 plants observed in 2014.
RHYNCRIN*8	<i>Rhynchospora crinitipes</i>	hairy-peduncled beaksedge	G3	S3	N	E	2015-08-04	Streamside <i>Chamaecyparis thyoides</i> /Titl thicket along Seepage Stream.	In 2015, 50-60 culms counted. In 1993, several clumps observed in fruit.

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RIVELAKE50	River floodplain lake		G4	S2	N	N	2004 Grimes Lake is a placid body of water bounded by a vast complex of bottomland forest and floodplain swamp	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1995-06-23) (U05FNA02FLUS). Grimes Lake is a long narrow body of water well hidden amidst an extensive complex of floodplain swamp and bottomland forest. Floodplain swamp appears to bound the majority of the lake. Characteristic species of this community are diamond-leaved oak (<i>Quercus laurifolia</i>), bald cypress (<i>Taxodium distichum</i>), black gum (<i>Nyssa biflora</i>), water tupelo (<i>Nyssa aquatica</i>) and red maple (<i>Acer rubrum</i>), stiff dogwood (<i>Cornus foemina</i>), dahoon holly (<i>Ilex cassine</i>) and serviceberry holly (<i>Ilex amelanchier</i>). Covering a significantly smaller portion of the lake's border is bottomland forest which is primarily composed of spruce pine (<i>Pinus glabra</i>), southern magnolia (<i>Magnolia grandiflora</i>), live oak (<i>Quercus virginiana</i>), water oak (<i>Quercus nigra</i>) and in the shrub layer, sweet pinker azalea (<i>Rhododendron canescens</i>) and blueberries (<i>Vaccinium corymbosum</i> and <i>V. elliotii</i>).



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SANDHILL-178	Sandhill		G3	S2	N	N	2004	Sandhill which slopes down to the north into mesic flatwoods, baygall and ultimately the floodplain of the Yellow River; the southern portion of this sandhill community is interrupted by ERR 211 and Range B-6. The eastern and western neighbors are sandhill that has heavy oak encroachment, baygall, and then linear bands of good quality sandhill.	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1996-10-29) (J05FNA02FLUS). 1996-10-29: Sandhill with older mature longleaf pine (Pinus palustris) in canopy and subcanopy; tall shrub layer has longleaf pine and turkey oak (Quercus laevis); the turkey oak is not too dense in the tall shrub strata, but thicker in the short shrub layer; additional short shrubs that occur are sand live oak (Quercus geminata), sand holly (Ilex ambigua), huckleberry (Gaylussacia dumosa), and gopher apple (Licania michauxii); large patches of gopher apple and short shrubs of sand live oak (Quercus geminata) occur as solid strands in some areas; the herbaceous layer is predominantly grass dominated and includes the native grasses - little bluestem (Schizachyrium scoparium), lopsided Indiangrass (Sorghastrum secundum), arrowfeather (Aristida purpurascens), and pineywoods dropseed (Sporobolus junceus); the forb diversity was much lower than the grasses and include: wireweed (Polygonella gracilis), buckwheat (Eriogonum tomentosum), and summer farewell (Dalea pinnata) (PNDHER03FLUS, PNDRC001FLUS).



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SANDHILL*178	Sandhill		G3	S2	N	N	1988-10-24	DRY LONGLEAF-OAK-GRASS UPLAND FLAT	UPLAND FLAT WITH CANOPY OF LONGLEAF PINE (PINUS PALUSTRIS), UNDERSTORY OF SCATTERED DECIDUOUS OAKS (QUERCUS FALCATA, Q. MARGARETTA, Q. LAEVIS, Q. INCANA) AND DIVERSE HERBACEOUS GROUND LAYER INCLUDING OVER 20 SPECIES OF GRASSES (SPOBOBOLUS JUNCEUS, SORGHASTRUM NUTANS, SCHIZACHYRIUM SCOPARIUM, S. TENERUM), OTHER SHRUBS INCLUDE: MYRICA CERIFERA AND VACCINIUM STAMINEUM; HERBS INCLUDE: RHYNCHOSIA CYSTIOIDES, HELIANTHUS RADULA, PLUS THE BRACKEN FERN, PTERIDIUM AQUILINUM. TOTAL OF 90 SPECIES FOUND IN THE PLOT.
SANDHILL*19	Sandhill		G3	S2	N	N	2004	1983: poor soil with little reddish (high iron) rocks and sand (P83FAU01FLUS). 2004: Update to last obs date was based on interpretation of aerial photography (previous value was) (U05FNA02FLUS). 1983: small longleaf pines, wiregrass (P83FAU01FLUS).	



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SANDHILL*194	Sandhill		G3	S2	N	N	1995-07-11: This element occurrence is surrounded by xeric sandhill uplands with some slash pine and longleaf pine plantations; the area mapped contains a lot of old growth longleaf pine; area is bounded by Wolf Creek and Bear Creek both which originate in nearby steepheads (PNDNOR03FLUS).	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1997-01-07) (U05FNA02FLUS). 1997-01-07: North side of ERR 604W in the vicinity of Wolf Creek. Dense and diverse ground cover-includes many composite and legume species as well as wiregrass; contains relatively high basal area of mature Pinus palustris (possibly some old growth); recent removal of hardwood midstory (PNDRO02FLUS). 1995-07-11: Sandhill dominated by old growth longleaf pine (Pinus palustris) with many RCW cavity trees and little apparent mechanical disturbance from past logging. Sub-canopy and tall shrub layer is dominated by turkey oak (Quercus laevis) which in places is thick but is generally semi-open and patchy; Dwarf huckleberry (Gaylussacia dumosa), gopher apples (Licania michauxii) and glaucous blueberry (Vaccinium darwinii) are the most abundant short shrub; All three are somewhat patchy with many areas dominated by one or two of the three; Bracken fern (Pteridium aquilinum) is the most abundant ground cover herbaceous plant; in some areas just burned it is especially thick, having resprouted; silver bluestem (Andropogon ternarius), little lopsided Indian grass (Sorghastrum secundatum) are common grasses though not abundant due to lack of fire (presumably). 10 other species of grasses were found; Pine barren pea (Rhynchosia cylistoides) is a fairly common forb (PNDNOR03FLUS).



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SANDHILL*227	Sandhill		G3	S2	N	N	1996-08-12	Two larger and one small sandhill parcels separated by cleared area planted in Paspalum notatum (Bahia grass). Sandhills are surrounded by sand pine plantation to the east, south and west. Blackwater River State Forest land is to the north (sandhill).	1996-08-12: Canopy of Pinus palustris (10%). Midstory of Quercus laevis (20%) Tall shrub layer dominated by Quercus laevis; Quercus margareta and Quercus incana are occasional. Short shrub coverage also dominated by Quercus laevis (20%). Licania michauxii also is abundant (10%). Herb coverage is 50% dominated by Aristida and Pteridium. No weed problems other than Quercus laevis and Pteridium (PNDHIPO1FLUS, PNDPRIO3FLUS).
SANDHILL*229	Sandhill		G3	S2	N	N	2004	Sandhill which is bound to the west by Range B-6, to the north by the Yellow River, to the east by Metts Creek and to the south by more sandhill.	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1996-10-22) (U05FNA02FLUS). 1996-10-22: A sandhill community of multi-age longleaf pine (Pinus palustris) with mostly older mature pines represented in the canopy, turkey oak (Quercus laevis) is present from the subcanopy to the short shrub strata; the tall and short shrub strata has in addition to the above mentioned trees: sand-post oak (Quercus margareta), bluejack oak (Quercus incana), persimmon (Diospyros virginiana), sand live oak (Quercus geminata), and gopher apple (Licania michauxii); all of the woody strata had a coverage of 25% or less which permitted the herbaceous layer to be present. Grasses represented most of the ground cover and include little bluestem (Schizachyrium scoparium), pineywoods dropseed (Sporobolus junceus), lopsided Indian grass (Sorghastrum secundum), and broomseeds (Andropogon virginicus); due to deep pine needles, the most common forbs were: wireweed (Polygonella gracilis), pine barren pea (Rhynchosia cytisoides) and blazing star (Liatris elegans); braken fern (Pteridium aquilinum) was pretty common (PNDHERO3FLUS).



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SANDHILL*230	Sandhill		G3	S2	N	2004	1998-10-29: Sandhill is bordered to the north by baygall and a large expanse of the Yellow River floodplain. East and west of the sandhill, oak-encroached areas of sandhill interrupt other linear strips of sandhill. ERR 211 also breaks up a larger expanse of sandhill on the south boundary (PNDHER03FLUS).	2004: Update to last obs date was based on interpretation of aerial photography (U05FNA02FLUS). 1996-10-29: Sandhill on a rolling plain that slopes to the west into the wetlands of Crane Branch and further west - the Yellow River, older mature longleaf pine (<i>Pinus palustris</i>) are present mostly in the canopy, but old growth are scattered throughout. Longleaf pine occur in all of the different strata, turkey oak and sand live oak (<i>Quercus laevis</i> and <i>Quercus geminata</i>) occur from thinly to thickly in the tall and short shrub layers, the short shrub layer has also: huckleberry (<i>Gaylussacia dumosa</i>), saw palmetto (<i>Serenoa repens</i>), and gopher apple (<i>Lucania michauxii</i>); the ground floor is thick with arrowfeather (<i>Aristida purpurescens</i>), little bluestem (<i>Schizachyrium scoparium</i>), pineywoods dropseed (<i>Sporobolus junceus</i>), lopsided Indiangrass (<i>Sorghastrum secundatum</i>), and broomsedge (<i>Andropogon virginicus</i>); forbs are also relatively abundant and include wireweed (<i>Polygonella gracilis</i>), buckwheat (<i>Eriogonum tomentosum</i>) and pine barren pea (<i>Rhynchosia cytisoides</i>) (PNDHER03FLUS, PNDCR001FLUS).



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SANDHILL*231	Sandhill <i>Sarracenia rubra</i> ssp. <i>guifensis</i>	Gulf Coast redflower pitcherplant	G3	S2	N	2004	The Yellow River and its extensive system of floodplain and baygall communities border the northernmost portion of this sandhill community. Crane Branch forms a western border and Milligan Creek meets the eastern edge. Pine plantations occur southwest of site.	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1996-11-06) (U05FNA02FLUS). 1996-11-06: Sandhill of mostly older mature longleaf pine (<i>Pinus palustris</i>), with old growth scattered throughout site; understory is composed of a sparse occurrence of turkey oak (<i>Quercus laevis</i>), and sand live oak (<i>Quercus geminata</i>); the short shrub layer is slightly thicker with turkey oak, sand live oak, huckleberry (<i>Gaylussacia dumosa</i>) and weeping haw (<i>Crataegus lacrimatae</i>); the herb strata is mostly dominated by native grasses and include: little bluestem (<i>Schizachyrium scoparium</i>), slender bluestem (<i>Schizachyrium tenerum</i>), pineywoods dropseed (<i>Sporobolus junceus</i>), arrowfeather (<i>Aristida purpurens</i>), and lopsided Indiangrass (<i>Sorghastrum secundum</i>), other native, but weedy grass species seen were broomsedge (<i>Andropogon virginicus</i>); forbs are also abundant and include: wireweed (<i>Polygonella gracilis</i>), lupine (<i>Lupinus diffusus</i>), honeycomb heads (<i>Balduna angustifolia</i>) and sweet goldenrod (<i>Scoldago odora</i>) (PNDHER03FLUS).
SARRGULF*109	<i>Sarracenia rubra</i> ssp. <i>guifensis</i>	Gulf Coast redflower pitcherplant	33G4T2T2	S2S3	UR	2008-08-06	2008-08-06: In gasoline right of way seepage area, needing more fire with woody encroachment (U08JEN04FLUS). 1993-06-24: CA, 150 CLUMPS PRIMARILY ON THE EXISTING ROW AND ADJACENT TO THE EXISTING ROW ON THE N SIDE.	2008-08-06: At least 230 plants, some blooming. See Sources for more detailed point information (U08JEN04FLUS). 1993-06-24: CA, 150 CLUMPS PRIMARILY ON THE EXISTING ROW AND ADJACENT TO THE EXISTING ROW ON THE N SIDE.



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SARRGULF136	<i>Sarracenia rubra ssp. gulfensis</i>	Gulf Coast redflower pitcherplant	33G4T2T	S2S3	UR	T	1996-10-03 1996-10-03: Seepage stream is ca. 30 ft. wide near ERR 211 bridge; the thin baygall canopy (dominated by Cliftonia monophylla) allows diverse shrub and herbaceous strata (PNDSCH03FLUS), 1993-08-20 and 1994-03-13: [Shaded streamside Charaephyaris thyooides Titi thicket (Cliftonia, Cyrilla, Nyssa, Myrica) along Seepage Stream (PNDCR001FLUS).]	1996-10-03: More than 100 plants growing along edges of seepage stream beneath thin baygall canopy; typically growing in clumps at the base of trees in shallow water; the population extends for 0.25 mi. north and south of ERR 211 (PNDSCH03FLUS), 1994-08-20: [Several clumps observed by R. Eilers (PNDCR001FLUS).] 1994-03-13: Small population; <i>S. rubra</i> on this stream not as extensive as on neighboring streams (PNDA001FLUS).
SARRGULF145	<i>Sarracenia rubra ssp. gulfensis</i>	Gulf Coast redflower pitcherplant	33G4T2T	S2S3	UR	T	2008-10-13 Seepage slope, wet prairie, powerline R.O.W.	2008-10-13: More than 255 plants (U08JEND04FLUS), 2006: 23-110 plants observed in leaf, or flower/fruit 1999-08-06: present 1994-08-29: present
SARRGULF147	<i>Sarracenia rubra ssp. gulfensis</i>	Gulf Coast redflower pitcherplant	33G4T2T	S2S3	UR	T	1994-03-13 Titi thicket (Cliftonia/Cyrilla) with much <i>Viburnum nudum</i> , lesser numbers <i>Myrica carifera</i> , <i>M. heterophylla</i> , <i>M. inodora</i> , <i>Magnolia virginiana</i> , <i>Nyssa</i> , <i>Lyonia</i> with considerable <i>Orontium</i> and <i>Sphagnum</i> [upstream from road is beaver pond-weedy-little interest].	Plants widely scattered - in good condition.
SARRGULF15	<i>Sarracenia rubra ssp. gulfensis</i>	Gulf Coast redflower pitcherplant	33G4T2T	S2S3	UR	T	1997-05-01 Seepage slope	Plants first observed at two sites in 1997. A 2008 visit to one site did not find this species.
SARRGULF154	<i>Sarracenia rubra ssp. gulfensis</i>	Gulf Coast redflower pitcherplant	33G4T2T	S2S3	UR	T	2006-08-11 Seepage slope, baygall and mesic flatwoods.	2006: observed twice: 50-110 plants in leaf or flower/fruit in one location, 1-10 plants in flower/fruit in other location 1997: 100+ plants in seepage slope 1994: species observed
SARRGULF156	<i>Sarracenia rubra ssp. gulfensis</i>	Gulf Coast redflower pitcherplant	33G4T2T	S2S3	UR	T	2020-06-04 Baygall along Melts Creek, a seepage stream.	Dozens reported in the 1990s, at least 185 plants observed in 2010, and 317 plants observed in 2020.
SARRGULF157	<i>Sarracenia rubra ssp. gulfensis</i>	Gulf Coast redflower pitcherplant	33G4T2T	S2S3	UR	T	1997-04-30 Small seepage area; pitcher plants patchy in wettest areas, intergrading with slightly drier matrix of wiregrass and mulhly.	1997-04-30: 100+ plants in small (50 X 5 m) seepage area. In flower (PNDBLA06FLUS).



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SARRGULF*17	<i>Sarracenia rubra</i> ssp. <i>gulfensis</i>	Gulf Coast redflower pitcherplant	33G4T2T	S2S3	UR	T	2019-05-23	none given	Species observed in 3 location in 2019. Observed 9 times from 1992 to 2019.
SARRGULF*28	<i>Sarracenia rubra</i> ssp. <i>gulfensis</i>	Gulf Coast redflower pitcherplant	33G4T2T	S2S3	UR	T	2006-04-11	FNAI NC recorded as seepage slope.	Observed 1-10 plants in leaf.
SARRGULF*29	<i>Sarracenia rubra</i> ssp. <i>gulfensis</i>	Gulf Coast redflower pitcherplant	33G4T2T	S2S3	UR	T	2006-04-11	FNAI NC recorded as wet prairie.	Observed 1-10 plants in flower/bud.
SARRGULF*23	<i>Sarracenia rubra</i> ssp. <i>gulfensis</i>	Gulf Coast redflower pitcherplant	33G4T2T	S2S3	UR	T	2019-08-11	none given	species observed
SARRGULF*230	<i>Sarracenia rubra</i> ssp. <i>gulfensis</i>	Gulf Coast redflower pitcherplant	33G4T2T	S2S3	UR	T	2006-04-13	FNAI NC recorded as seepage slope. <i>Ilex glabra</i> , <i>Arundinaria gigantea</i> , <i>Sarracenia flava</i> , <i>Eriogon vernius</i> , <i>Osmunda regalis</i> , <i>Pityopsis oligantha</i> , <i>Cheptalia tomentosa</i>	Observed 1-10 plants in flower/bud.
SARRGULF*26	<i>Sarracenia rubra</i> ssp. <i>gulfensis</i>	Gulf Coast redflower pitcherplant	33G4T2T	S2S3	UR	T	2006-05-04	Seepage slope (F13FNA03FLUS)	101-1000 plants in flower/fruit in 2006.
SARRGULF*28	<i>Sarracenia rubra</i> ssp. <i>gulfensis</i>	Gulf Coast redflower pitcherplant	33G4T2T	S2S3	UR	T	1992-07-30	With <i>Lilium iridolae</i> in wet peaty soil of semi-shade of mixed woodland bordering Yellow River. S92AND08FLUS	species observed in 1992 S92AND08FLUS
SARRGULF*3	<i>Sarracenia rubra</i> ssp. <i>gulfensis</i>	Gulf Coast redflower pitcherplant	33G4T2T	S2S3	UR	T	1984-05-17	1984-05-17: IN SEEPAGE AREAS ON N (S-FACING) SLOPE OF RIVER. (SEE MAP ATTACHED).	1999-2000: In extensive searches Erik Johnson, Harold Mitchell and Don Younker failed to relocate <i>S. rubra</i> (PNDJOH04FLUS, U04MCP01FLUS). 1989-04-24: JOHN PALIS LOOKED AT AREA INDICATED ON MAP AND COULD NOT FIND ANY SARRACENIAS NOR ANY LIKELY HABITAT FOR IT IN AREA. 1984-05-17: NO POPULATION ESTIMATE, BUT "GOOD POPULATION" (PNDFRA02).
SARRGULF*5	<i>Sarracenia rubra</i> ssp. <i>gulfensis</i>	Gulf Coast redflower pitcherplant	33G4T2T	S2S3	UR	T	1989-02-25	BANK OF SAND-BOTTOMED SPRING-RUN STREAM FLOWING THROUGH YOUGH SAND AND SLASH PINE PLANTATION (TREES AVERAGE 10 FEET TALL).	1 PLANT OBSERVED GROWING ON THE W. BANK OF GARNIER CREEK WITH PINGUICULA PUMILA. SARRACENIA NOT IN FLOWER. ID BASED UPON LEAVES (CONFIRMED BY DEBORAH WHITE).



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SARRGULF*85	<i>Sarracenia rubra</i> ssp. <i>guifensis</i>	Gulf Coast reedflower pitcherplant	33G4T2T	S2S3	UR	T	2009-04-09	2009-04-09: Large, well-burned seepage slope (U10JEN01FLUS). 1997-05-01: Seepage slope (see CPR0000000.073) (PNDBLA06FLUS).	2009-04-09: 50 plants, some flowering. Some individuals hybridized with <i>S. leucophylla</i> (U10JEN01FLUS). 1997-05-01: <i>Sarracenia rubra</i> occasional in ca 5 acres of seepage slopes included within a 20-acre open grassy bowl-shaped site (PNDBLA06FLUS).
SARRGULF*74	<i>Sarracenia rubra</i> ssp. <i>guifensis</i>	Gulf Coast reedflower pitcherplant	33G4T2T	S2S3	UR	T	1992-06-14	BAYGALL VEGETATED WITH CHAMAECYPARIS THYOIDES, MAGNOLIA VIRGINIANA, LIRIODENDRON TULIPIFERA, NYSSA SYLVATICA VAR. BIFLORA, PINUS ELLIOTTII, CLIFTONIA MONOPHYLLA, LYONIA LUCIDA, RHODODENDRON SERRULATUM, ILEX CORIACEA, MYRICA HETEROPHYLLA AND ALNUS SERRULATA.	SEVERAL PLANTS OBSERVED.
SARRGULF*75	<i>Sarracenia rubra</i> ssp. <i>guifensis</i>	Gulf Coast reedflower pitcherplant	33G4T2T	S2S3	UR	T	2018-08-01	Baygall and seepage slope	Plants observed in discrete several areas here from 1992 to 2018. In 2018, 72 clumps in one area and over 10 clumps in another.
SARRGULF*78	<i>Sarracenia rubra</i> ssp. <i>guifensis</i>	Gulf Coast reedflower pitcherplant	33G4T2T	S2S3	UR	T	1992-08-20	TITL-GUM THICKET ALONG STREAM. SATURATED PEAT. ASSOCIATED SPECIES: ERIOCAULON, ORONTIUM, LUDWIGIA PILOSA IN ACER, CLIFTONIA, CYRILLA, ILEX CORIACEA, NYSSA SYLVATICA, VIBURNUM NUDUM.	BETWEEN 11 AND 50 PLANTS FOUND. MARGINAL VIGOR. 80% IN LEAF, 10% WITH IMMATURE FRUIT, 10% WITH MATURE FRUIT. MUCH GOOD HABITAT DOWNSTREAM-NOT EXPLORED.



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SCHWAMER*4	<i>Schwalbea americana</i>	chaffseed	G2	S1	E	E	2013-06-04	In upland pine near the bottom of a slope about 60 feet from the pitcherplant bog at the base of the slope. Associates include <i>Pinus palustris</i> , <i>Gaylussacia dumosa</i> , <i>Aristida stricta</i> , <i>Ptyopsis graminifolia</i> , <i>Coreopsis major</i> , <i>Aster adnatus</i> , <i>Helianthus radula</i> , <i>Rhexia alifanum</i> , <i>Mimosa quadrivalvis</i> , <i>Eupatorium rotundifolium</i> , <i>Ionactis linearifolia</i> , <i>Silphium compositifolium</i> , <i>Aster tortifolius</i> , <i>Buchnera americana</i> , and <i>Magnolia virginiana</i> . No threats noted, area recently burned.	Observed a total of 24 plants, 7 of those were flowering or just post flowering. All within a very small area. Some herbivory seen on a few of the plants.
SCHWAMER*5	<i>Schwalbea americana</i>	chaffseed	G2	S1	E	E	2020-09-03	Longleaf pine flatwoods/steep area burned frequently, low woody shrub density, high species diversity in herbaceous layer. Longleaf 20% cover, shrubs (<i>Ilex glabra</i>) 5% cover/2' tall. Herb cover 90% of ground. (Danny Young).	In May 2018, Approximately 364 total plants, mostly vegetative with some in flower and one beginning to fruit. In September 2020, seeds collected from 84 individuals throughout population (except extreme eastern point), population had been recently burned.
SCJUNIGF*191	<i>Sciurus niger niger</i>	Southeastern Fox Squirrel	G5T5	S3	N	N	2010-06-21	<i>Pinus palustris</i> dominated sandhill.	One nest documented. Adult had been seen in the vicinity with all black head, neck, front legs / blond nose and ears
SCJUNIGF*227	<i>Sciurus niger niger</i>	Southeastern Fox Squirrel	G5T5	S3	N	N	2008-04-10	2008-04-10: Upland Pine (F08FNA10FLUS).	2008-04-10: Two squirrels observed in separate locations in upland pine (F08FNA10FLUS).
SCJUNIGF*228	<i>Sciurus niger niger</i>	Southeastern Fox Squirrel	G5T5	S3	N	N	2008-04-10	2008-04-10: Upland Pine (F08FNA10FLUS).	2008-04-10: One individual observed (F08FNA10FLUS).
SCJUNIGF*249	<i>Sciurus niger niger</i>	Southeastern Fox Squirrel	G5T5	S3	N	N	2008-04-10	No general description recorded.	species observed
SCJUNIGF*262	<i>Sciurus niger niger</i>	Southeastern Fox Squirrel	G5T5	S3	N	N	2008-04-10	None recorded	One individual seen



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SORUFAT*186	Scrubby flatwoods		G2	S2?	N	N	1991-07-30	DEGRADED SEEPAGE SLOPE (INVADED BY ILEX CORIACEA, I. GLABRA, AND CLETHRA ALNIFOLIA) ADJACENT TO AND BORDERING BAYGALL. DOWNSLOPE FROM SANDHILL COMMUNITY. STILL CONTAINS A HIGH DIVERSITY OF SEEPAGE SLOPE SPECIES INCLUDING SARRACENIA SPP., DROSERA SPP., RHYNCHOSPORA SPP., XYRIS SPP., ETC.	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Seepage slope EO number 164 (see U10FNA01FLUS for updated community descriptions).
SEEPSLOP*105	Seepage slope		G2	S2	N	N	2006-05-03	1997-04-30: Seepage slope located between upland pine forest and baygall approximately 3 acres in size (PNDC:HA05FLUS).	2006-05-03: Shrub invaded seepage slope with pitcher plants common. Species include Cliftonia monophylla, Ilex coriacea, Rhychospora sp., Eriocaulon decangulare, Lachnanthes caroliniana, Sarracenia leucophylla, Sarracenia flava, Sphagnum sp., Hypericum brachyphyllum, Ilex glabra, Lophiola sp., and Aristida stricta var. beyrichiana (F06FNA12FLUS). 1997-04-30: Steep slope begins abruptly where ground appears to "slump." Ground is saturated with water pooling in deepest areas. Sarracenia leucophylla is abundant with Drosera capillaris and tracyi showing in more open patches. Herb layer is dominated by Pilea tenuifolia with wiregrass also common. Grasses are in dense hummocks. Shrubs are tall and consist mainly of Myrica inodora and Ilex glabra. Gaylussacia mosieri is also abundant (PNDC:HA05FLUS).



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SEEPSLOP*145	Seepage slope		G2	S2	N	N	1997-04-29	seepage slope in concavity in hillside covered by upland pine forest. - bay/head along stream.	1994; SLOPE AND SURROUNDING SANDHILL APPEAR HEALTHY (PNDPRI03). 1997 (PNDJOH01): Hundreds of pitcher plants about equally divided between <i>Sarracenia leucophylla</i> and <i>s. flava</i> . Primarily herbaceous bog with few clumps of dwarfed longleaf pines and shrubs. Shrubs show burnt stems to 2.5 ft tall. <i>Myrica heterophylla</i> has 2-ft sprouts from old burnt stems 4 ft tall. Dominant species is wiregrass (<i>Aristida stricta</i>) with <i>Eriocaulon compressum</i> and <i>Drosera tracyi</i> scattered throughout. <i>Sarracenia psittacina</i> more common in soggy portions where wiregrass less dense. <i>Sphagnum</i> is common in lower portion near stream. Other species include: <i>Polygala lutea</i> , <i>Rhexia alifanum</i> , <i>Aristida cf. palustris</i> , <i>Ctenium aromaticum</i> , <i>Muhlenbergia sp.</i> , <i>Drosera brevifolia</i> , <i>Xyris baldwiniana</i> , <i>Eleocharis tuberculosa</i> , <i>Eriocaulon texense</i> , <i>Helentium brevifolium</i> .
SEEPSLOP*155	Seepage slope		G2	S2	N	N	1991-07-30	SEEPAGE SLOPE, TITI, WIREGRASS.	SLOPE HAS SARRACENIA LEUCOPHYLLA, PINGUICULA LUTEA, DROSERA CAPILLARIS, D. TRACYI, POLYGALA LUTEA, DICHROMINA.
SEEPSLOP*156	Seepage slope		G2	S2	N	N	1989-04-16	A SMALL SLOPING SARRACENIA LEUCOPHYLLA BOG; PRIMARILY HERBACEOUS VEGETATION NEAR THE ROAD (FEW SCATTERED PINUS PALUSTRIS AND P. ELLIOTTI) GRADING INTO A THICKET OF WOODY VEGETATION (PRIMARILY PERSEA), DROSERA TRACYI AND HELENIUM BREVIFOLIUM AMID THE SARRACENIA.	No EO data given



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SEEPSLOP ^m 157	Seepage slope		G2	S2	N	2004	HILLSIDE SEEPAGE BOG; SLASH PINE ON ADJACENT UPLANDS; ASSOCIATES-ILEX GLABRA, MYRCEA HETEROPHYLLA, SARRACENIA FLAVA, LILIUM CATESBAEI, PMLIL1A080, SEE DATA SHEET.	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1990-08-24) (U05FNA02FLUS).
SEEPSLOP ^m 158	Seepage slope		G2	S2	N	1997-04-30	1997-04-30: seepage slope, surrounded by upland pine forest and baygall (PNDCHA05FLUS).	1997-04-30: severely shrub encroached seepage slope with scattered wet patches with seepage slope species, e.g. Sarracenia leucophylla. Primarily, too densely packed with grasses (Aristida stricta and Andropogon sp) and Ilex glabra to allow for typical seepage slope diversity (PNDCHA05FLUS). 1991-07-31: seepage slope with Sarracenia flava (very large size), S. leucophylla, S. purpurea, Polygala lutea, Platantnera lutea, P. integrata, Drosera tracyi, D. capillaris (PNDTAY01FLUS, PNDOST01FLUS). 1983-pre: no data given (PNDFAU01FLUS; PNDLAW01FLUS).
SEEPSLOP ^m 16	Seepage slope		G2	S2	N	1997-04-18	No general description given	Narrow linear concave area in west-facing slope above intermittent stream - Aristida stricta and Sarracenia psittacina common, 20-30 plants of Sarracenia flava blooming, Eriocaulon compressum, Drosera tracyi, Lycopodium appressum, Ctenium aromaticum, Zigadenus cf. glaberrimus also prominent. Longleaf pines found both up- and downslope of the seep. Soil squooshy underfoot.



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SEEPSLOP*161	Seepage slope		G2	S2	N	N	2004	1997: Community grades gradually upslope to upland pine forest and abruptly downslope to baygall. 1991: Diverse seepage slope with at least two species of Sarracenia (S. flava, S. psitticina), numerous spp. of Rhynchospora and Xyris. Drosera capillaris, Lilium indolulae, Rhexia alifanum, Scleria hirtella, Polygala ramosa and P. cruciata, Drosera filiformis, Ludwigia sp., Eriocaulon decangulare, and more.	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1997-04-30) (U05FNA02FLUS). 1997: Very large (1/2 mi X 250 ft) pristine seepage slope - only wettest area along creek has a narrow band of pitcher plants (Sarracenia flava), but remaining area is also a seepage slope with saturated soil and gentle slope. Area has not been burned in a while judging from the dense thatch of grass litter that is shading other forbs. Because of this not much was flowering at time of survey - but a good diversity of plants here. Abundant grasses include Aristida beyrichiana, Ctenium aromaticum, and Andropogon sp intermixed with shrubs: Ilex glabra, Myrica heterophylla, Gaylussacia mosieri. Other species present: Dichromena latifolia, Arundinaria gigantea, Sphagnum sp., Dicanthelium sp., Helianthus heterophylla, Eupatorium rotundifolium, Lobelia brevifolia. 1991: Beautiful, rich (i.e. diverse) seepage slope community between sandhill and mixed flatwoods to the west, north, and east, and bordering dense baygall community (UNDHIL02FLUS).



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SEEPSLOP*162	Seepage slope		G2	S2	N	2006-05-04	2006-05-04: Slope grades uphill to upland pine forest and downhill to seepage stream with bordering baygall (F06FNA12FLUS). 1991-07-30: EXTENSIVE AND PARTICULARLY WELL DEVELOPED SEEPAGE SLOPE COMMUNITY THAT IS ADJACENT TO SELECT-CUT SANDHILL WITH PINUS PALUSTRIS/ARISTIDA STRICTA AND BAYGALL RUNNING WESTWARD AT BOTTOM SLOPE OF SANDHILL. THIS COMMUNITY IS RATHER DIVERSE BUT IS IN NEED OF A BURN TO KEEP INVADING SHRUBS DOWN (UNDHIL02FLUS).	2006-05-04: Seepage slope with pitcher plants; species include Pinus elliotii/Pinus glabra/Sarracenia flava, Sarracenia psittacina, Eriocaulon compressum, Lophiola aurea, and Hypericum brachyphyllum (F06FNA12FLUS). 1991-07-30: EXTENSIVE AREA OF SEEPAGE SLOPE COMMUNITY ADJACENT TO CUTOVER (ALBEIT SELECTIVE CUTTING) SANDHILL COMMUNITY (UNDHIL02FLUS).
SEEPSLOP*163	Seepage slope		G2	S2	N	2004	1997: Grades to upland pine forest and baygall (PNDBLA06FLUS). 1991: A massive seepage slope adjacent to a park-like stand of mixed Pinus palustris/Pinus elliotii that had been selectively harvested in past 20 years. Numerous seepage slope species, very rich and very diverse flora. (UNDHIL02FLUS).	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1997-05-01) (U05FNA02FLUS). 1997: This site has potential to be one of the largest and finest seepage slopes in the BRSE. It is a 500 X 1000 ft swale dominated by grasses, sedges and shrubs with Sarracenia flava, and leucophylla scattered throughout. Shrub patches made up of Myrica heterophylla, Hbentcum sp., and Magnolia virginiana. The seep has saturated soil with standing water in central portion and lies in a broad flat area with gently sloping upland pine forest on three sides (PNDBLA06FLUS).



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SEEPSLOP*178	Seepage slope		G2	S2	N	N	2004	RELATIVELY OPEN SEEPAGE SLOPE INVADED BY PINUS ELLIOTTII, MAGNOLIA VIRGINIANA, CLIFTONIA MONOPHYLLA AND ILEX CORIACEA DUE TO FIRE SUPPRESSION. COMMON HERBACEOUS VEGETATION INCLUDES: ARISTIDA STRICTA; ARUNDINARIA GIGANTEA, RHYNCHOSPORA, XYRIS, DROSER, TRACYII, SARRACENIA FLAVA, S. LEUCOPHYLLA, LACHNOCAULON ANCEPS, ERIOCAULON, RHEXIA LUTEA, R. ALIFANUS, POLYGALA LUTEA, LYCOPODIUM, DICHROMENA LATIFOLIA, ASCLEPIAS CONVIVENS, OXYPOLIS, AND LOPHIOLA AMERICANA.	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1992-06-15) (U05FNA02FLUS). UNBURNED SEEPAGE SLOPE BETWEEN BEDDED, YOUNG PINUS ELLIOTTII PLANTATION AND BAYGALL.
SEEPSLOP*179	Seepage slope		G2	S2	N	N	1992-06-15	UNBURNED SEEPAGE SLOPE IS BEING INVADED BY CLIFTONIA MONOPHYLLA, PINUS ELLIOTTII, AND MAGNOLIA VIRGINIANA. OTHER COMMON SPECIES INCLUDE: ARISTIDA STRICTA, SMILAX LAURIFOLIA, RHYNCHOSPORA, LACHNOCAULON ANCEPS, ERIOCAULON, XYRIS, RHEXIA LUTEA, ASCLEPIAS CONVIVENS AND SARRACENIA LEUCOPHYLLA.	UNBURNED SEEPAGE SLOPE BETWEEN BEDDED, YOUNG PINUS ELLIOTTII PLANTATION AND BAYGALL/BASIN SWAMP.
SEEPSLOP*189	Seepage slope		G2	S2	N	N	1994-04-17	Open slope cleared through longleaf pine flatwoods for gas pipeline.	Grassy seepage area sloping to Turkey Creek. Principal species include: Aristida stricta, Ctenium aromaticum, Zigadenus densus, Sarracenia flava, S. purpurea, S. psittacina and hybrids between them.
SEEPSLOP*192	Seepage slope		G2	S2	N	N	1994-07-16	No general description given	Roadside seepage slope surrounded by disturbed sandhill. S. leucophylla, S. flava, S. purpurea, bogbuttons, A. stricta, etc.



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SEEPSLOP*193	Seepage slope		G2	S2	N	1994-07-16	Seepage Slope disturbed by silviculture and Hydrology disturbance (Forest Roads).	Slope covered mostly with Ilex spp.
SEEPSLOP*196	Seepage slope		G2	S2	N	2006-04-10	2006-04-10: slope grades uphill to upland pine forest and downhill to floodplain forest (F06FNA12FLUS).	2006-04-10: Seepage slope with pitcher plants being invaded with baygali; species include Pinus palustris, Ilex coriacea, Ilex glabra, Sarracenia leucophylla, Sarracenia psittacina, and Rhynchospora sp. (F06FNA12FLUS). 1994-10-11: Seepage slope dominated by wiregrass and a multitude of grasses and forbs (see attached field report form) (PNDJEN02FLUS).
SEEPSLOP*28	Seepage slope		G2	S2	N	1997-04-30	Seepage slope.	Steepish west-facing slope with hundreds of Sarracenia flava in southern portion and some S. leucophylla in northern part - extensive patches of hybrids between the two present. Area is ca 300 to 400 square meters in size. Ground squooshy underfoot and crowded chimneys present. Dominant species is wiregrass with scattered patches of low gallberry shrubs. Associated species include: Eriocaulon cf. texense, Smilax laurifolia, Zigadenus cf. glaberrimus, Gaylussacia mosieri. No sign of burning in past year.
SEEPSLOP*30	Seepage slope		G2	S2	N	1997-04-30	Seepage slope in distinct concavity in slope of hillside - fire in surrounding upland pine forest missed portions of the seepage slope.	Steep southeast and gentler west-facing slopes with herbaceous bog portions of which were burned within the previous month (flowers of Sarracenia flava were burned). Dominant herbaceous cover may be either wiregrass or a species of Rhynchospora - only burned tufts present. Other common species include Eriocaulon compressum, Sarracenia psittacina, Drosera tracyi, Sarracenia leucophylla, Chaptalia tomentosa, Helenium vernalis, Sparganium sp., Lycopodium appressum, Aristida cf. palustris, plus scattered dwarfed specimens of the shrubs, Myrica heterophylla and Ilex glabra. Ground wet and squooshy to walk on - water ankle deep.



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SEEPSLOP*31	Seepage slope		G2	S2	N	N	1997-04-30	Half-moon-shaped bog on west-facing slope. Hundreds of pitcher plants in bloom - both <i>Sarracenia flava</i> and <i>S. leucophylla</i> within a matrix of <i>Aristida stricta</i> with <i>Sarracenia psittacina</i> common between the grass clumps. Other species include <i>Sphagnum</i> sp., <i>Eriocaulon</i> cf. <i>texense</i> , <i>Rhexia allifanum</i> (vegetative), <i>Panicum</i> sp., <i>Eriocaulon compressum</i> , <i>Drosera tracyi</i> , with <i>Gaylussacia mosieri</i> scattered throughout.
SEEPSLOP*32	Seepage slope		G2	S2	N	N	1997-04-30	Seepage slope on flat to very gentle slope adjacent to intermittent creek. Wiregrass with few pitchers of <i>Sarracenia flava</i> and <i>S. leucophylla</i> . Other species present include: <i>Drosera tracyi</i> , <i>D. capillaris</i> , <i>Eriocaulon compressum</i> , <i>Helianthus heterophyllus</i> (vegetative), <i>Zizadenus</i> cf. <i>glaberrimus</i> . Burned this season.
SEEPSLOP*33	Seepage slope		G2	S2	N	N	1997-04-30	Small west-facing hillside seep on slope above a beaver pond. Surrounding hillside appears to have burned previous year judging from the 2-ft-tall resprouts of <i>Ilex glabra</i> . Small (<50m ²) seep on west-facing slope of hill with hundreds of <i>Sarracenia leucophylla</i> and a few <i>S. flava</i> pitchers. Ground squooshy underfoot. Many small pitchers indicate good reproduction in both species. Wiregrass dominates seep with wiregrass mixed with low shrubs (<i>Ilex glabra</i>) surrounding it. Other species in seep include <i>Eriocaulon compressum</i> , <i>E. cf. texense</i> , <i>Drosera tracyi</i> , <i>Helianthus</i> cf. <i>vernale</i> , <i>Sphagnum</i> sp., <i>Gaylussacia mosieri</i> , <i>Drosera capillaris</i> , <i>Muhlenbergia</i> sp., <i>Sarracenia psittacina</i> and <i>Sabatia</i> cf. <i>macrophylla</i> (vegetative).
SEEPSLOP*300	Seepage slope		G2	S2	N	N	2006-04-11	2006-04-11: Slope grades upward to upland pine forest and down to seepage stream with baygall vegetation that has invaded into seepage slope (F06FNA12FLUS). 2006-04-11: Degraded seepage slope invaded by baygall, but still supporting pitcher plants; species include <i>Ilex glabra</i> , <i>Ilex cassine</i> , <i>Acer rubrum</i> , <i>Arundinaria gigantea</i> , <i>Centella asiatica</i> , <i>Sarracenia rubra</i> , <i>Sarracenia flava</i> , and <i>Balduna</i> sp. (F06FNA12FLUS).
SEEPSLOP*391	Seepage slope		G2	S2	N	N	2006-04-10	2006-04-10: Slopes uphill to upland pine forest and downhill to seepage stream bordered by baygall (F06FNA12FLUS). 2006-04-10: seepage slope with pitcher plants; species include <i>Ilex glabra</i> , <i>Myrica carolinensis</i> , <i>Cyrtilla racemiflora</i> , <i>Aristida stricta</i> , <i>Sarracenia flava</i> , and <i>Rhynchospora</i> sp. (F06FNA12FLUS).

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SEEPSLOP392	Seepage slope		G2	S2	N	2006-04-13	2006-04-13: Slope grades upward to upland pine forest and down to seepage stream bordered by baygall (F06FNA12FLUS).	2006-04-13: Seepage slope with pitcher plants; species include <i>Pinus palustris</i> , thick <i>Ilex glabra</i> , <i>Eriocaulon decangulare</i> , <i>Sarracenia flava</i> , <i>Carex</i> sp., and <i>Sphagnum</i> sp. (F06FNA12FLUS).
SEEPSLOP393	Seepage slope		G2	S2	N	2006-04-13	2006-04-13: Slope grades upward to upland pine forest and down to seepage stream bordered with baygall (F06FNA12FLUS).	2006-04-13: Seepage slope with pitcher plants; slope with <i>Ilex glabra</i> , <i>Magnolia virginiana</i> , <i>Smilax laurifolia</i> , <i>Aristida stricta</i> , and <i>Sarracenia flava</i> (F06FNA12FLUS).
SEEPSLOP394	Seepage slope		G2	S2	N	2006-04-12	2006-04-12: Slope grades upward to upland pine forest and down to seepage stream with baygall community (F06FNA12FLUS).	2006-04-12: seepage slope with pitcher plants; species include <i>Helenium pinnatifidum</i> , <i>Sarracenia flava</i> , <i>Aristida stricta</i> , <i>Erigeron vernus</i> , and <i>Arundinaria gigantea</i> (F06FNA12FLUS).
SEEPSLOP396	Seepage slope		G2	S2	N	2006-04-13	2006-04-13: Pitcher plants in small area within dry open slope; slope grades uphill to upland pine forest and downhill to seepage stream bordered by baygall (F06FNA12FLUS).	2006-04-13: Small area of pitcher plants in a large open expanse of dense wiregrass with little canopy cover; species include <i>Aristida stricta</i> var. <i>beyrichiana</i> , <i>Zizadenus glaberrimus</i> , <i>Sarracenia flava</i> , <i>Gaylussacia mosieri</i> , <i>Arundinaria gigantea</i> , <i>Helenium pinnatifidum</i> , <i>Dichanthelium</i> sp., <i>Osmunda cinnamomea</i> , <i>Lachnocaulon</i> sp., and <i>Sphagnum</i> sp. (F06FNA12FLUS).
SEEPSLOP397	Seepage slope		G2	S2	N	2006-04-12	2006-04-12: Slope grades uphill to upland pine forest and downhill to seepage stream bordered with baygall (F06FNA12FLUS).	2006-04-12: Seepage slope with pitcher plants; species include <i>Ilex glabra</i> , <i>Aristida stricta</i> var. <i>beyrichiana</i> , <i>Sarracenia flava</i> , <i>Smilax laurifolia</i> , <i>Myrica carolinensis</i> , <i>Hypericum brachyphyllum</i> , <i>Gaylussacia mosieri</i> , <i>Ilex coriacea</i> , <i>Lachnocaulon</i> sp., <i>Helenium pinnatifidum</i> , <i>Sarracenia leucophylla</i> (F06FNA12FLUS).
SEEPSLOP398	Seepage slope		G2	S2	N	2006-04-13	2006-04-13: Slope grades uphill to upland pine forest and downhill to seepage stream bordered by baygall (F06FNA12FLUS).	2006-04-13: Seepage slope with pitcher plants; overgrown with shrubs; species include <i>Ilex glabra</i> , <i>Smilax laurifolia</i> , <i>Aristida stricta</i> var. <i>beyrichiana</i> , <i>Rhynchospora</i> sp., <i>Arundinaria gigantea</i> , <i>Myrica carolinensis</i> , <i>Eriocaulon decangulare</i> , <i>Gaylussacia mosieri</i> , <i>Sarracenia flava</i> , <i>Pinus palustris</i> , <i>Pinguicula pumila</i> , and <i>Ctenium aromaticum</i> (F06FNA12FLUS).



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SEEPSLOP*386	Seepage slope		G2	S2	N	N	2006-04-12	2006-04-12; Slope grades uphill to upland pine forest and downhill to seepage stream bordered by baygall (F06FNA12FLUS).	2006-04-12: Very open seepage slope with pitcher plants; soil moist but not boggy; needs burn to suppress woody encroachment; species include Pinus palustris (very few), Ilex glabra, Aristida stricta var. beyrichiana, Ctenium aromaticum, Sarracenia rosea, Hypericum fasciculatum, Myrica carolinensis, and Cliftonia monophylla (F06FNA12FLUS).
SEEPSLOP*400	Seepage slope		G2	S2	N	N	2006-04-10	2006-04-10; Slope grades uphill to upland pine forest and downhill to seepage stream bordered by baygall (F06FNA12FLUS).	2006-04-10: Titi-invaded, saturated, large slope; near baygall becomes more like wet flatwoods (not as inundated); species include Pinus palustris, Ilex coriacea, Myrica carolinensis, Cliftonia monophylla, Ilex glabra, Magnolia virginiana, Aristida stricta var. beyrichiana, Rhynchospora sp., Drosera tracyi, Sarracenia leucophylla, Helenium pinnatifidum, Chaptalia tomentosa, Arundinaria gigantea, Balduina uniflora, Gaylussacia mosieri, and Calopogon tuberosus (F06FNA12FLUS).
SEEPSLOP*401	Seepage slope		G2	S2	N	N	2006-05-04	2006-05-04; Slope grades uphill to upland pine forest and downhill to seepage stream (F06FNA12FLUS).	2006-05-04: Seepage slope with pitcher plants on both sides of seepage stream; species include Liriodendron tulipifera, Pinus Elliottii, Magnolia virginiana, Sarracenia flava, Sarracenia leucophylla, Sarracenia psittacina, Stenanthium densum, Calopogon tuberosus, Calopogon pallidus, Drosera brevifolia, Erocaulon compressum, Lophiola aurea, and Rhynchospora sp. (F06FNA12FLUS).
SEEPSLOP*402	Seepage slope		G2	S2	N	N	2006-05-04	2006-05-04; Slope grades uphill to upland pine forest and downhill to seepage stream bordered with baygall (F06FNA12FLUS).	2006-05-04: One smaller and one large seepage slope, both with pitcher plants; species include Pinus Elliottii, Nyssa sylvatica var. biflora, Magnolia virginiana, Liriodendron tulipifera, Sarracenia flava, Sarracenia rosea, Sarracenia psittacina, Calopogon tuberosus, Rhynchospora latifolia, Oxypolis sp., Rhexia alifanum, Osmunda regalis, Sarracenia leucophylla, Rhexia lutea, Aristida stricta var. beyrichiana, Pingicula sp., Drosera brevifolia, Calopogon pallidus, Lophiola aurea, and Hypericum sp. (F06FNA12FLUS).



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SEEPSLOP*403	Seepage slope		G2	S2	N	N	2006-05-04	2006-05-04: Slope grades uphill to upland pine forest and downhill to seepage stream bordered by baygall (F06FNA12FLUS).	2006-05-04: Ca. 4 acre seepage slope with pitcher plants; recently burned; species include Pinus elliotii, Sarracenia flava, Asclepias michauxii, Pityopsis oligantha, Stenanthium densum, Drosera tracyi, Calopogon tuberosus, Rhexia lutea, and Aristida stricta var. beyrichiana (F06FNA12FLUS).
SEEPSLOP*404	Seepage slope		G2	S2	N	N	2006-05-01	2006-05-01: Slope grades uphill to upland pine forest and downhill to seepage stream bordered by baygall (F06FNA12FLUS).	2006-05-01: Seepage slope with pitcher plants; species include Pinus palustris, Pinus elliotii, Magnolia virginiana, Ilex glabra, Sarracenia leucophylla, Sarracenia capillaris, Drosera tracyi, Lophiola aurea, Rhynchospora latifolia, Rhexia alifanum, Eriocaulon compressum, and Sphagnum sp. (F06FNA12FLUS).
SEEPSLOP*405	Seepage slope		G2	S2	N	N	2006-05-02	2006-05-02: Slope grades uphill to upland pine forest and downhill to seepage stream bordered with baygall (F06FNA12FLUS).	2006-05-02: Seepage slope with pitcher plants; species include Pinus palustris, Sarracenia flava, Sarracenia leucophylla, Calopogon pallidus, Aristida stricta var. beyrichiana, Arundinaria gigantea, Stenanthium densum, Rhynchospora latifolia, Drosera tracyi, and Rhexia alifanum (F06FNA12FLUS).
SEEPSLOP*406	Seepage slope		G2	S2	N	N	2006-05-02	2006-05-02: Slope grades uphill to upland pine forest and downhill to lake (F06FNA12FLUS).	2006-05-02: Seepage slope with pitcher plants; two GPS points within the same historical seepage slope area, recent burn; species include Pinus elliotii, Pinus palustris, Ilex glabra, Sarracenia flava, Sarracenia psittacina, Lophiola aurea, Sarracenia leucophylla, Drosera tracyi, Ctenium aromaticum, Sarracenia flava + Sarracenia leucophylla hybrids present; 3-5 acres of Sarracenia mostly at the base of the hill (F06FNA12FLUS).
SEEPSLOP*407	Seepage slope		G2	S2	N	N	2006-05-02	2006-05-02: Slope grades uphill to upland pine forest and sandhill, and downhill to seepage stream bordered by baygall (F06FNA12FLUS).	2006-05-02: Seepage slope with pitcher plants; species include Pinus palustris, Pinus elliotii, Sarracenia leucophylla, Pogonia ophioglossoides, Lophiola aurea, Arundinaria gigantea, Drosera tracyi, Calopogon tuberosus, and Osmunda cinnamomea (F06FNA12FLUS).



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Blackwater River State Forest 10 Year LMP

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Map Label	Scientific Name	Common Name	Rank	Rank	Status	Listing	Date	Description	EO Comments
SEEPSLOP*408	Seepage slope		G2	S2	N	N	2004	MID-SLOPE, QUAKING SAPRIC MUCK, SEEPAGE HERB-BOG ALONG TRIBUTARY TO MIDDLE CREEK, IN FREQUENTLY BURNED, FIRE-MAINTAINED SAVANNA WITH INTACT GROUND COVER TO FACILITATE FIRE ACROSS THE LANDSCAPE.	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Bog EO number 4 (see U10FNA01FLUS for updated community descriptions). 2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1989-09-20) (U05FNA02FLUS). THIS IS ONE OF THE MOST UNSTABLE QUAKING SEEPAGE BOG KNOWN TO ORZELL IN FLORIDA. SOFT UNSABLE, SPRING, SPONGY, PEATY SUBSTRATE OF QUAKING VEGETATION MATS AND SEEP SPRINGS RUNS WITHIN THE BOG. OLIGOTROPHIC TELLURIC SEEPAGE 31 PLANT TAXA RECORDED FROM SITE ON 9-20-89 INCLUDING 3 SPECIES OF SARRACENIA (LEUCOPHYLLA, PSITTACINA, FLAVA), AND 5 FNAI LISTED PLANTS. DOMINANT SPECIES OF THIS HABITAT OFTEN INCLUDE THE EARLY SUMMER FLOWERING RHYNCHOSPORA STENOPHYLLA AND THE FALL FLOWERING R. MACRA.
SEEPSLOP*68	Seepage slope		G2	S2	N	N	1997-04-30	Seepage slope with soil saturated at surface. Patchy galberry - no evidence of fire suppression.	1997-04-30: About a 50-acre seepage area on a very steep slope, with yellow pitcher plants from top to bottom on north side and white-topped pitcher plants on south side. Wiregrass is dominant with high diversity of other forbs. Soil saturated at surface. Other abundant species present include: Arundinaria gigantea, Dicanthelium sp. Xyris sp., Sarracenia psittacina, Ctenium aromaticum, Eriocaulon decangulare, and Hypericum brachyphyllum. Occasional species include: Drosera tracyi, Dichromena latifolia. Shrubs present were Ilex glabra and Cyrilla racemiflora (PNDBLA08FLUS).



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SEEPSLOP69	Seepage slope		G2	S2	N	N	2004	2004: Update to last obs date was based on interpretation of aerial photography on previous value was 1997-05-01 (U05FNA02FLUS). 1997: The seepage area is very patchy with numerous small seeps, grassy meadows, and ravines with baygall vegetation. Difficult to tell limits of EO from dark aerial (FDOT aerial #4035-02-38 OKAL). Upper slopes are mostly grass-dominated; lower slopes are 60% shrubs: Ilex glabra and Gaylussacia mosieri. Species in seep include: Sarracenia leucophylla, S. flava, S. rubra, S. psittacina, Myrica heterophylla, Arundinaria gigantea, Drosera tracyi, Polygala lutea, Andropogon glomeratus, Pinguicula primuliflora, Rhexia alphanus (PNDBLA06FLUS).
SEEPSLOP63	Seepage slope		G2	S2	N	N	1999-08-06	1999-08-06: LOOKED GOOD ON AERIAL BUT GROUND CHECK SHOWED DOMINATED BY RHYNCHOSPORA CHAPMANII INSTEAD OF WIREGRASS. STEEP SLOPE FROM SANDHILL DOWN TO BAYHEAD. SARRACENIA RUBRA PATCHES ON SLOPE ON WEST END OF SEEPAGE AREA NEAREST FR65. OTHER SPECIES INCLUDE: ZIGADENUS GLABERRIMUS, LOPHIOLA AMERICANA, SARRACENIA FLAVA, PANICUM NUDICAULE (?), AND ARUNDINARIA GIGANTEA. SHRUBBY PATCHES DOMINATED BY ILEX GLABA, ILEX CORIACEA AND HYPERICUM BRACHYPHYLLUM. SEEMS TO BE RECENTLY BURNED FROM SIZE OF LAST YEAR? (PNDJOH01FLUS).
							1999-08-06: NARROW FRINGE OF GRASSY SEEPAGE AREA AT BASE OF SLOPE BEFORE BAYGALL - FORMS 'Y' AT POWERLINE (PNDJOH01FLUS).	



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SEEPSLOP65	Seepage slope		G2	S2	N	N	1997-04-30	Seepage slope in concavity of hillside covered by upland pine forest.	Small (<50m ²) bog in sharp concavity in west-facing hillside. Squooshy underfoot. Mostly white-topped pitcher plant present. Well intermixed with 2.5 ft tall shrubs of <i>Myrica heterophylla</i> and <i>Ilex glabra</i> . Some <i>Arundinaria tecta</i> but mostly wiregrass as matrix. Where wiregrass least dense <i>S. psittacina</i> is common along with <i>Zizadenus cf. glaberrimus</i> (vegetative), <i>Drosera tracyi</i> , <i>Sphagnum</i> sp., <i>Drosera brevifolia</i> , <i>Lycopodium</i> sp., <i>Pinguicula caerulea</i> , <i>Smilax laurifolia</i> .
SEEPSLOP66	Seepage slope		G2	S2	N	N	1997-04-18	Seepage slope in concavity in hillside covered by upland pine forest.	Small seep on east-facing slope just burned this year (still smoking in places). Very open herbaceous stand with much bare soil showing. Soil squooshy underfoot. <i>Sarracenia flava</i> burned when in flower. Other species identifiable include: <i>Sarracenia psittacina</i> , <i>Lycopodium</i> sp., <i>Eriocaulon compressum</i> , <i>Sabatia cf. macrophylla</i> , <i>Helonium</i> sp.
SEEPSLOP67	Seepage slope		G2	S2	N	N	1997-04-18	Small seep in concavity in hillside covered by upland pine forest (longleaf pine, wiregrass, <i>Muhlenbergia</i> sp).	Small seep on north-facing slope. Open herbaceous stand with fairly dense grassy clumps of either <i>Rhynchospora</i> sp. or <i>Aristida beyrichiana</i> (can't tell which). Soil squooshy underfoot. Few pitchers of <i>Sarracenia leucophylla</i> - more dead pitchers from last year. Other common species are <i>Caylussacia mosieri</i> , <i>Eriocaulon cf. compressum</i> , <i>Drosera capillaris</i> , <i>Sphagnum</i> sp., <i>Eriocaulon cf. texense</i> , <i>Helonium brevifolium</i> , <i>Zizadenus cf. glaberrimus</i> (vegetative), <i>Pinguicula planifolia</i> - rare. Few shrubby clumps of <i>Magnolia virginiana</i> with <i>Smilax laurifolia</i> but otherwise mostly herbaceous. <i>Myrica heterophylla</i> becomes denser around edges. No sign of fire.



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SEEPSLOP68	Seepage slope		G2	S2	N	1997-04-18	Small seep in concavity in hillside covered by upland pine forest (longleaf pine, wiregrass, Muhlenbergia sp).	Open herbaceous squooshy bog in concavity in hillside with Aristida beyrichiana, and several clumps of Sarracenia flava and S. leucophylla. Other species include: Drosera tracyi, Gaylussacia mosieri, Eriocaulon compressum, Heilenium brevifolium, Hypericum of brachyphyllum, Aristida cf. palustris and Myrtica heterophylla on edges.
SEEPSLOP69	Seepage slope		G2	S2	N	1997-04-18	Broad grassy relatively dry area on hillside with much gallberry admixed. Only a few wetter spots have pitcher plants.	Most of area that appears light-colored on aerial is dense wiregrass with about 30% cover of gallberry (Ilex glabra). One area is covered by a dense stand of cane (Arundinaria gigantea). Only a few spots are squooshy underfoot and these have Sarracenia flava plus other associates, including Drosera tracyi, Gaylussacia mosieri, few clumps of Sarracenia leucophylla, plus Ilex glabra and crowded chimneys.
SEEPSLOP70	Seepage slope		G2	S2	N	1997-04-30	Small grassy seepage areas separated by with clumps of shrubs.	Area not squooshy underfoot, only moist at surface. Slope very gentle. Small bog ca 125 m2 in area with wiregrass as dominant, scattered plants of Gaylussacia mosieri, Zigadenus cf. glaberrimus, Myrica heterophylla, Eriocaulon cf. compressum, Heilanthus heterophylla, Drosera tracyi, Sarracenia psittacina, and Polygala lutea.
SEEPSLOP71	Seepage slope		G2	S2	N	1997-04-30	Seepage slope on gentle slope - recently burned	Burned this season before pitcher plant flowered. All pitcher plants dead (hard to tell if S. leucophylla or S. flava - scattered clumps totalling ca 50 plants). Wiregrass beginning to regenerate. Soil squooshy underfoot. Other species present include Zigadenus cf. glaberrimus, Heilanthus heterophyllus, Eriocaulon cf. compressum, scattered small clumps of Ilex glabra, Sarracenia psittacina and Drosera tracyi not visible in bare soil areas where they would be expected.



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SEEPSLOP*72	Seepage slope		G2	S2	N	N	1997-04-30	No general description given
SEEPSLOP*73	Seepage slope		G2	S2	N	N	1998-10-26	Wiregrass becomes abruptly denser outside of seepage areas which have saturated soil at surface. Probably burned 6-7 months earlier (based on lack of litter and stocking of young longleaf pine seedlings in surrounding upland pine forest). Higher portions of the open wiregrass areas are occupied by bracken fern, Gaylussacia mosieri, Osmunda cinnamomea, Cornus foemina, Quercus falcata, and Pinus palustris. Similar seeps are found for about a mile along the east side of SFR57 extending south to its junction with SFR 50.

EO Comments

Very recently burned and not much vegetation yet regenerated. Steep slope near top of hill abruptly changes to a gentler slope where seep is. Soil moist but not squooshy underfoot. Sarracenia leucophylla concentrated near top of slope and S. flava lower down. Some hybrids seen in unburned patch. Wiregrass and broad-bladed grass (Ctenium aromaticum?) re-sprouting. Other species in unburned patch: Ctenium aromaticum, Aristida beyrichiana, Drosera tracyi, Gaylussacia mosieri, Sarracenia psittacina, Polygala lutea, Lycopodium appressum, plus a single patch of Myrica inodora with Ilex glabra.

1998-06-13 and 10-26: Bowl Bog supports at least 110 species making it one of the top 20 bogs in the East Gulf Coastal Plain for diversity (J98SOR03FLUS).

1997-05-01: Bowl-shaped, undulating seepage area with no distinct aspect. Covers about 20 acres with 5 of those occupied by pitcher plants. Upper slope completely herbaceous; lower slope with 80% shrub cover. Sarracenia leucophylla and S. flava are abundant. S. rubra is occasional and S. psittacina frequent. Other species include: Drosera capillaris, Drosera tracyi, Zigadenus sp., Dichromena latifolia, Myrica heterophylla, Calopogon tuberosus, Lophola aurea, Rhexia alifanum (PNDBLA06FLUS).



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SEEPSLOP76	Seepage slope		G2	S2	N	N	1997-04-29	SEEPAGE SLOPE SURROUNDED BY UPLAND PINE FOREST AND BAYGALL.	1997-04-29: THE WETTEST PORTION OF THE SEEPAGE SLOPE IS HALF-MOON SHAPED AND DEFINED BY AN INCREASE IN PTERIDIUM AQUILINUM AND ILEX GLABRA. TOPOGRAPHY IS SLIGHTLY HIGHER. LONGLEAF PINE ARE SCATTERED, <20% OF CANOPY COVER. THE WETTEST AREA IS CENTRAL DRAW, WITH SPHAGNUM AND VISIBLE SEEPAGE NEAR BASE OF SLOPE. GROUND COVER IS DOMINATED BY ARISTIDA STRICTA AND ANDROPOGON SP. IN THICK HUMMOCKS. SARRACENIA LEUCOPHYLLA WAS COMMON, ~ 100 CLUMPS AND MANY WERE FLOWERING (PNDCHA05FLUS).
SEEPSLOP78	Seepage slope		G2	S2	N	N	2006-04-12	1997-05-01: SEEPAGE SLOPE SURROUNDED BY DISTURBED UPLAND PINE FOREST AND GRADING DOWNSLOPE INTO BAYGALL (PNDCHA05FLUS).	2006-04-12: Species include Pinus palustris, Ilex coriacea, Cliftonia monophylla, Ilex glabra, Sarracenia leucophylla, Sarracenia flava, Aristida stricta var. beyrichiana (F06FNAT2FLUS). 1997-05-01: GOOD QUALITY SEEPAGE SLOPE THAT CONTAINS HUNDREDS OF WHITE-TOP PITCHER PLANT CLUMPS AND IS DOMINATED BY THE HERBS ARISTIDA STRICTA AND ANDROPOGON SP. ILEX GLABRA IS THE DOMINANT SHRUB, WITH HYPERICUM GALIOIDES ALSO COMMON. SLOPE HAS SEEN A GREAT DEAL OF DISTURBANCE AND BEEN A VICTIM OF FIRE SUPPRESSION (PNDCHA05FLUS).
SEEPSLOP80	Seepage slope		G2	S2	N	N	1997-04-30	Small patches of seepage slope vegetation along N side of creek - smaller one 20 X 5 m; larger 100 X 15 m. Recent fire burned through smaller area but not larger which is overtopped by lili (Cyrilla racemiflora) to ca 1 to 1.5 m tall. Upslope is beautiful wiregrass meadow which is wet but not "squishy" underfoot.	Seep is narrow band at base of grassy slope - soil wet but not squishy. 100+ Sarracenia rubra plants were flowering. Shrubs made up 70% cover including Ilex coriacea, Magnolia virginiana, Myrica cerifera, and M. heterophylla. Forbs in seep include: Rhexia allianus, Lycopodium sp., Eriocaulon compressum, Drosera capillaris, Sarracenia psittacina, Helenium vemale, Erigeron vernus, Drosera tracyi, Eriocaulon texense, Muhlenbergia expansa, and Dichromena latifolia.



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SEEPSLOP*81	Seepage slope		G2	S2	N	N	1997-04-30 Small seepage area; pitcher plants patchy in wettest areas, intergrading with slightly drier matrix of wiregrass and muhly	1997-04-30: Very small patches of pitcher plants, plus their wet-soil associates, intergrading with wiregrass and muhly grass seepage. Pitcher plant area forms narrow band approximately 50 m long and 5+m wide. Appears to be frequently burned judging from diverse herb layer and fire scars on trees. Twenty per cent shrub cover including <i>Myrica heterophylla</i> , <i>Cliffortia monophylla</i> , <i>Clethra alnifolia</i> , <i>Ilex glabra</i> and <i>Gaylussacia mosieri</i> . Dominant herbs include: <i>Aristida beyrichiana</i> , <i>Muhlenbergia expansa</i> , <i>Eriocaulon compressum</i> , <i>Helianthus heterophylla</i> , and <i>Dicanthellium</i> sp. Other herbs were <i>Sarracenia flava</i> , <i>Sarracenia rubra</i> , (100+ plants), <i>Drosera tracyi</i> , <i>Erigeron vernus</i> , <i>Liatis</i> sp., <i>Polygala lutea</i> (PNDBLA06FLUS).
SEEPSLOP*82	Seepage slope		G2	S2	N	N	1997-04-30 long narrow seepage slope in two bands parallel to creek. Bordered by baygall on downslope side and upland pine forest on upslope side.	1997-04-30: Long narrow seep along a creek slope with the lower 2/3 of seep band fire-suppressed judging from the 3m tall shrubs of <i>Cliffortia</i> that are invading it. <i>Sphagnum</i> sp. is abundant and there was standing water at time of survey. Herbaceous dominants include <i>Aristida beyrichiana</i> , <i>Clenium aromaticum</i> , <i>Eriocaulon compressum</i> , and <i>Dicanthellium</i> sp. Other herbaceous species: <i>Sarracenia leucophylla</i> , <i>S. purpurea</i> , <i>Muhlenbergia expansa</i> , <i>Lycopodium</i> sp., <i>Liatis</i> sp., <i>Erigeron vernus</i> . Shrubs are in two height classes: >3m tall on lower slope and ~0.5 m tall on upper - presumably due to fire moving downslope and going out. Shrub species include <i>Ilex coriacea</i> , <i>Gaylussacia mosieri</i> , and <i>Cliffortia monophylla</i> . Area highly disturbed by vehicle ruts - both parallel and perpendicular to slope (PNDBLA06FLUS).



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SEEPSLOP*83	Seepage slope		G2	S2	N	N	1997-05-01	Seepage slope that grades into upland pine forest, dominated by <i>Pinus palustris</i> and <i>Ilex glabra</i> (PNDCHA05FLUS).	1997-05-01: Broad, gently sloping, seepage slope. Slope is dominated by <i>Ilex glabra</i> , <i>Myrica heterophylla</i> , <i>Aristida stricta</i> , <i>Andropogon</i> sp., and <i>Sarracenia flava</i> . Wiregrass and other grass species are dense and hummocky. Herbaceous diversity is lower than other sites seen in this area. Scattered longleaf pine occurs in canopy. Old east-west skid trail bisects site, and some stumps are present (PNDCHA05FLUS).
SEEPSLOP*86	Seepage slope		G2	S2	N	N	2006-04-13	2006-04-13: Seepage slope bordered to north by upland pine forest and to south by seepage stream enlarged by beaver dam (F06FNA12FLUS).	2006-04-13: Seepage slope with pitcher plants on north side of creek with beaver dam; species include <i>Ilex glabra</i> , <i>Aristida stricta</i> , and <i>Sarracenia flava</i> (F06FNA12FLUS).
SEEPSLOP*89	Seepage slope		G2	S2	N	N	1997-04-30	1997-04-30: SEEPAGE SLOPE SURROUNDED BY UPLAND PINE FOREST AND BAYGALL (PNDCHA05FLUS).	1997-04-30: LARGE WET SLOPE BUT SO HEAVILY SHRUB ENCRUSTED THAT SEEPAGE SLOPE SPECIES ARE EVIDENT ONLY IN THE WETTEST AREAS; SARRACENIA LEUCOPHYLLA IS SCATTERED THROUGHOUT BUT FEW ARE FLOWERING; WIREGRASS IS IN DENSE HUMMOCKS. SOME SLASH PINES 3-4 METERS TALL. 70% OF SLOPE IS DOMINATED BY SHRUBS, MAINLY ILEX GLABRA AND MYRICA INODORA (PNDCHA05FLUS).



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SEEPSLOP94	Seepage slope		G2	S2	N	N	2004	Extensive pristine seepage area with large populations of pitcher plants.	2004: Update to last obs date was based on interpretation of aerial photography (previous value was empty) (U05FNA02FLUS). About 100-acre seepage area with soil saturated at the surface on gentle south-facing slope of small creek drainage. Dominated by wiregrass (<i>Aristida beyrichiana</i>) with <i>Ctenium aromaticum</i> , <i>Dicanthelium</i> sp. and <i>Rhynchospora</i> sp. also important. <i>Ilex glabra</i> and <i>Gaylussacia mosieri</i> are common low shrubs. Contains large populations of yellow (<i>Sarracenia flava</i>) and white-topped (<i>S. leucophylla</i>) pitcher plants. Other species include: <i>Dosera tracyi</i> , <i>Pilea tenuifolia</i> , <i>Lobelia brevifolia</i> , <i>Sarracenia psittacina</i> , <i>Lycopodium appressum</i> .
SEEPSLOP95	Seepage slope		G2	S2	N	N	1997-04-30	Open grassy west-facing seep on gentle slope with soil saturated at surface.	1997-04-30: Wet meadow dominated by wiregrass on west-facing slope. Yellow (<i>Sarracenia flava</i>) and white-topped (<i>S. leucophylla</i>) pitchers occur in patches. Less than 25% cover of low shrubs (<i>Gaylussacia mosieri</i> , <i>Ilex glabra</i> , and <i>Hypericum</i> cf. <i>brachyphyllum</i>) and widely scattered longleaf pines. Other grasses include <i>Ctenium aromaticum</i> and <i>Arundinaria gigantea</i> . Other forbs present include <i>Scleria baidwini</i> , <i>Lycopodium compressum</i> , <i>Eriocaulon compressum</i> , <i>Helianthus heterophyllus</i> , and <i>Helinium vemale</i> (PNDBLA06FLUS).
SEEPSLOP96	Seepage slope		G2	S2	N	N	2004	Open grassy east-facing seep on gentle slope with soil saturated at surface. Grades to baygall at lower end and upland pine forest at higher. Thick wiregrass indicates some fire suppression.	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1997-04-30) (U05FNA02FLUS). 1997-04-30: Open grassy seep dominated by wiregrass and toothache grass (<i>Ctenium aromaticum</i>). Shrubs are common but low in stature and include <i>Ilex glabra</i> , <i>Gaylussacia mosieri</i> , and <i>Myrica heterophylla</i> . Longleaf and slash pines are invading around edge (PNDBLA06FLUS).



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SEEPSLOP*97	Seepage slope		G2	S2	N	N	1997-05-01	1997-05-01: Seepage slope grading upslope into upland pine forest dominated by Pinus palustris, and downslope into baygall (PNDCCHA05FLUS).	1997-05-01: Broad gently sloping seepage slope dominated by Ilex glabra, Myrica heterophylla, Aristida stricta and Andropogon sp. Several clumps of Sarracenia flava were also noted. Wiregrass and other grass species were dense and hummocky. Herbaceous diversity is lower than other sites in this area. Scattered longleaf pine occurs in canopy. Stumps were present (PNDCCHA05FLUS).
SEEPSTRE*17	Seepage stream		G3	S2	N	N	2004	PARTIAL CANOPY OF CHAMAECYPARIS THYOIDES, ACER RUBRUM, LIQUIDAMBER STYRACIFLUA, MAGNOLIA GRANDIFLORA, QUERCUS LAURIFOLIA, TAXODIUM ASC.; ILEX MYRTIFOLIA IN UNDERSTORY	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1983-11-13) (U05FNA02FLUS). LIGHTLY TANNIN-STAINED WATER TO CA 3 M DEEP (LOW WATER SEASON); SWIFT FLOW; FED BY NUMEROUS SEEPAGE STREAM TRIBUTARIES; WIDTH CA 5 M; SUBSTRATE COARSE WITH SOME GRAVEL; FILAMENTOUS GREEN ALGAE SCATTERED ALONG BOTTOM.
SEEPSTRE*20	Seepage stream		G3	S2	N	N	2004	INTERMITTENT STREAM AT THE BASE OF AN OPEN SEEPAGE SLOPE IN AN UPLAND PINE FOREST.	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1990-08-25) (U05FNA02FLUS). SMALL, INTERMITTENT STREAM WITH SHRUB-LINED BANKS (PREDOMINANTLY CLIFTONIA MONOPHYLLA).
SEEPSTRE*32	Seepage stream		G3	S2	N	N	1996-08-12	Seepage stream within baygall within sandhill.	1996-08-12: Small, clear running seepage stream originating on site in baygall (PNDRP03FLUS).



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SEEPSTRE37	Seepage stream		G3	S2	N	N	2004	Stream originates in, and flows through, deep sandy soils of xeric sandhills within Eglin AFB. It flows northwest to join the Yellow River. The water is clear and flows with a steady current.	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1996-10-03) (UC05FNA02FLUS). 1996-10-03: Small seepage stream about 2.5 miles long from its headwaters to its end at the Yellow River floodplain; Wolf Creek is a small, shallow, northward flowing seepage stream approximately 3 miles long from its headwaters to its end in the Yellow River floodplain; this narrow stream is characterized by a steady flow of clear water over a white sand bottom, for most of its length, Wolf Creek cuts through sandhill uplands that are regularly burned right up to the edges of the stream; a band of baygall (no wider than the stream) completely covers the creek corridor and is dominated by buckwheat (<i>Cilifonia monophylla</i>) and the less common Atlantic white cedar (<i>Chamaecyparis thuyoides</i>), sweetbay (<i>Magnolia virginiana</i>), and black gum (<i>Nyssa biflora</i>); the shrub and herbaceous strata are generally sparse; this typifies the area at ERR 604W, where the channel is about 10-20' (rarely 30') wide, 1-2' deep, and lacks herbaceous vegetation; for its last half mile, the canopy thins out as the floodplain broadens to about 30', near the ERR 211 bridge, the diverse herbaceous strata includes the rare plants spoonleaf sundew (<i>Drosera intermedia</i>), parhandle lily (<i>Lilium indolliae</i>), spointlower (<i>Peltandra sagittifolia</i>), and sweet pitcher plant (<i>Sarracenia rubra</i>); other dominant herbs are glaucous sedge (<i>Carex glaucescens</i>), three-sided sedge (<i>Dulichium arundinaceum</i>), and halpins (<i>Eriocaulon decangulare</i>); the numerous shrubs commonly include shiny fetterbush (<i>Lyonia lucida</i>), odorless wax myrtle (<i>Myrica nodora</i>), and possum haw (<i>Viburnum nudum</i>); a small amount of sedimentation is occurring at the ERR 211 crossing due to erosion from the clay road (PNDSCH03FLUS).

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SELOSNT*2	<i>Selonodon santarosae</i>	Santa Rosa Cebionid Beetle	G1	S1	N	N	1974-06-14	1974-06-14; No description given (B99GAL01FLUS).	1974-06-14: One specimen was collected (B99GAL01FLUS).
SELOSNT*3	<i>Selonodon santarosae</i>	Santa Rosa Cebionid Beetle	G1	S1	N	N	1972-06-09	1972-06-09: No description given (B99GAL01FLUS).	1972-06-09: Seven specimens were collected using a blacklight. There is another record from 1974-06-15 for "4.5 mi. NW Holt" that may or may not be this locality (B99GAL01FLUS).
SHRUBOG*108	Shrub bog		G4	S3	N	N	2004	No general description given	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Seepage slope EO number 61 (see U10FNA01FLUS for updated community descriptions). 2004: seepage stream impounded -habitat destroyed although may continue upland downstream from here (PNDJOH01FLUS).
SHRUBOG*109	Shrub bog		G4	S3	N	N	1980-06-28	No general description given	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Seepage slope EO number 108 (see U10FNA01FLUS for updated community descriptions). PINES CLEARCUT SINCE MOLER'S VISIT
SHRUBOG*110	Shrub bog		G4	S3	N	N	1980-06-28	No general description given	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Seepage slope EO number 109 (see U10FNA01FLUS for updated community descriptions).
SHRUBOG*111	Shrub bog		G4	S3	N	N	1980-05-22	No general description given	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Seepage slope EO number 110 (see U10FNA01FLUS for updated community descriptions).
SHRUBOG*116	Shrub bog		G4	S3	N	N	1981-06-23	No general description given	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Seepage slope EO number 116 (see U10FNA01FLUS for updated community descriptions).



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Map Label	Scientific Name	Common Name	Rank	Status	Listing	Date	Description	EO Comments	
SHRUBOC*117	Shrub bog		G4	S3	N	N	1980-05-22	No general description given	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Seepage slope EO number 117 (see U10FNAD1FLUS for updated community descriptions).
SHRUBOC*118	Shrub bog		G4	S3	N	N	1980-05-22	No general description given	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Seepage slope EO number 118 (see U10FNAD1FLUS for updated community descriptions).
SHRUBOC*119	Shrub bog		G4	S3	N	N	1980-06-24	No general description given	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Seepage slope EO number 119 (see U10FNAD1FLUS for updated community descriptions).
SHRUBOC*120	Shrub bog		G4	S3	N	N	1980-06-24	No general description given	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Seepage slope EO number 120 (see U10FNAD1FLUS for updated community descriptions).
SHRUBOC*121	Shrub bog		G4	S3	N	N	1980-06-24	No general description given	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Seepage slope EO number 121 (see U10FNAD1FLUS for updated community descriptions).
SHRUBOC*122	Shrub bog		G4	S3	N	N	1980-05-22	No general description given	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Seepage slope EO number 122 (see U10FNAD1FLUS for updated community descriptions).
SHRUBOC*123	Shrub bog		G4	S3	N	N	1980-05-20	No general description given	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Seepage slope EO number 123 (see U10FNAD1FLUS for updated community descriptions).



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			Rank	Rank	Status				Listing
SHRUBOG*13	Shrub bog		G4	S3	N	N	2004	RATHER OPEN BAYGALL COMMUNITY SURROUNDING HEADWATERS OF A SMALL DRAINAGE, DOMINATED BY PERSEA PALUSTRIS, CLIFTONIA MONOPHYLLA, CYRILLA RACEMIFOLIA, QUERCUS NIGRA, Q. LAURIFOLIA, MAGNOLIA VIRGINIANA, BORDERED BY DENSE GROWTH OF ILEX GLABRA, I. CORIACEA AND CLETHRA ALNIFOLIA AT EDGE OF SANDHILL.	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Baygall EO number 13 (see U10FNA01FLUS for updated community descriptions), 2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1991-07-30) (U05FNA02FLUS).
SHRUBOG*14	Shrub bog		G4	S3	N	N	2004	DENSE BAYGALL DOMINATED BY CLIFTONIA MONOPHYLLA, PERSEA PALUSTRIS, CYRILLA RACEMIFLORA, YOUNG LIRIODENDRON TULIPIFERA, WITH AN OCCASIONAL CHAMAECYPARIS THYOIDES, AND PINUS ELLIOTTII (?) AND NYSSA SYLVATICA.	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Baygall EO number 14 (see U10FNA01FLUS for updated community descriptions), 2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1991-07-30) (U05FNA02FLUS).
SHRUBOG*22	Shrub bog		G4	S3	N	N	2004	BAYGALL VEGETATED WITH DENSELY CROWDED CLIFTONIA MONOPHYLLA, LYONIA LUCIDA, PERSEA PALUSTRIS AND SOME SYMPLOCOS TINCTORIA.	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Baygall EO number 22 (see U10FNA01FLUS for updated community descriptions), 2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1992-06-14) (U05FNA02FLUS). BASIN-TYPE BAYGALL WITHIN EX-FLATWOODS AND EX-SANDHILL (NOW PLANTED TO SLASH PINE AND SAND PINE, RESPECTIVELY).
SHRUBOG*57	Shrub bog		G4	S3	N	N	1979-06-06	No general description given	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Seepage slope EO number 57 (see U10FNA01FLUS for updated community descriptions), MOLER HEARD FROGS CALLING ON THIS SITE 1979-06-06



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SHRUB0360	Shrub bog		G4	S3	N	N	1989-09-21	EXTENSIVE HILLSIDE SEEPAGE AND SAPRIC MUCK BOGS (F89BR101FL).	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Seepage slope EO number 60 (see U10FNA01FLUS for updated community descriptions). HIGH QUALITY (F89BR101FL).
SHRUB0362	Shrub bog		G4	S3	N	N	2004	No general description given	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Seepage slope EO number 62 (see U10FNA01FLUS for updated community descriptions). 2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1979-07-19) (U05FNA02FLUS).
SHRUB0364	Shrub bog		G4	S3	N	N	2004	No general description given	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Seepage slope EO number 64 (see U10FNA01FLUS for updated community descriptions). 2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1979-07-19) (U05FNA02FLUS).
SHRUB0374	Shrub bog		G4	S3	N	N	1979-07-19	No general description given	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Seepage slope EO number 74 (see U10FNA01FLUS for updated community descriptions).
SHRUB0376	Shrub bog		G4	S3	N	N	1979-07-18	No general description given	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Seepage slope EO number 76 (see U10FNA01FLUS for updated community descriptions).
SHRUB0377	Shrub bog		G4	S3	N	N	1979-07-18	No general description given	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Seepage slope EO number 77 (see U10FNA01FLUS for updated community descriptions).
SHRUB0384	Shrub bog		G4	S3	N	N	1979-07-19	No general description given	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Seepage slope EO number 84 (see U10FNA01FLUS for updated community descriptions).



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SHRUBOG*85	Shrub bog		G4	S3	N	N	1990-08-25	No general description given	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Seepage slope EO number 85 (see U10FNA01FLUS for updated community descriptions).
SHRUBOG*87	Shrub bog		G4	S3	N	N	1978-07-20	No general description given	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Seepage slope EO number 87 (see U10FNA01FLUS for updated community descriptions).
SHRUBOG*88	Shrub bog		G4	S3	N	N	1979-09-02	No general description given	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Seepage slope EO number 88 (see U10FNA01FLUS for updated community descriptions).
SIDETHOR*3	<i>Sideroxylon thomei</i>	Thorne's buckthorn	G3	S1	N	E	1994-08-01	High quality floodplain swamp; large trees, thin understory, murky waters; plants occur beneath a canopy of <i>Taxodium</i> distichum with <i>Fraxinus caroliniana</i> and <i>Ilex verticillata</i> . A spectacular display of <i>Clematis crispa</i> observed climbing over nearby vegetation (PNDSCH05FLUS).	1994-08-01: Few shrubs observed in standing water (abnormally high due to heavy rain associated with Tropical Storm Alberto) at eastern end of Grimes Lake; flowers and immature fruit abundant on shrubs. Reproductive potential appears good (PNDSCH05FLUS).
SIPHBRUN*1	<i>Siphloplecton brunneum</i>	A Mayfly	G1G2	S1S2	N	N	2001-11-27	No description given (U09DEP01FLUS).	2001-11-27: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).
SOMACAL*3	<i>Somatochlora calverti</i>	Calvert's Emerald	G3	S2S3	UR	N	1977-08-07	None given	1 male specimen collected (U20DON01FLUS)
SPARMIC*2	<i>Sparbarius miccosukee</i>	Miccosukee Mayfly	G1G2	S1S2	N	N	1977 pre	Stream, probably a seepage stream.	Type locality for <i>S. miccosukee</i> . Documented by 1 collection from before 1977, but no reason to doubt that it is still extant.
STENFLOR*133	<i>Stenacron floridense</i>	A Mayfly	G3G4	S3S4	N	N	1977-05-04	1977-05-04: No description given (U09DEP01FLUS).	1977-05-04: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).



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STENFLOR*134	<i>Stenacron floridense</i>	A Mayfly	G3G4	S3S4	N	N	1993-02-16: No description given (U09DEP01FLUS).
STENFLOR*146	<i>Stenacron floridense</i>	A Mayfly	G3G4	S3S4	N	N	1998-07-15: No description given (U09DEP01FLUS).
STYLTOWIN*1	<i>Stylurus townesi</i>	Bronze Clubtail	G3	S2	N	N	2020-08-08 There are an estimated 25 miles of suitable habitat in and along the banks of Juniper Creek and Blackwater River for this species (U07DAI03FLUS).
SYMPDEVE*9	<i>Symphotrichum concolor</i> var. <i>devestitum</i>	Gulf Coast Silvery Aster	G5T2	S2	N	N	1978-10-24 none given
TALLCORW*6	<i>Tallaperia comelia</i>	Southeastern Roachfly	G4	S1	N	N	1993-06-23: No description given (U09DEP01FLUS).
TAMISTR*12	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	1989 pre MIXED PINE-HARDWOOD FOREST(?).
TAMISTR*16	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	1995-09 Edge of cotton field; inholding within Blackwater River State Forest.
TAMISTR*17	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	1987-11-06 Upland Mixed Forest.
TAMISTR*27	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	2013-01-01 None given.
TAMISTR*3	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	1987-11-06 MIXED PINE-HARDWOOD FOREST. MATURE, DECIDUOUS FOREST WITH UNDERSTORY OF YAUPON; DOM TREE-QUESCUS HEMISPHERICA (NOW LAUREL OAK); SOME PINE/YAUPON, SOME QUERCUS/OTHER UNDERSTORY; ALONG YELLOW RIVER. POSSIBLY INCLUDES RAVINES AND EDGES OF FRESHWATER MARSHES ALONG YELLOW RIVER.



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TAMISTR1*30	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	2013-01-01	None given.	At least one observed (U22WIND1FLUS).
TAMISTR1*31	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	2013-01-01	None given.	At least two observed (U22WIND1FLUS).
TAMISTR1*32	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	2013-01-01	None given.	At least one observed (U22WIND1FLUS).
TAMISTR1*33	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	2013-01-01	None given.	At least one observed (U22WIND1FLUS).
TAMISTR1*34	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	2013-01-01	None given.	At least one observed (U22WIND1FLUS).
TAMISTR1*35	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	2013-01-01	None given.	At least one observed (U22WIND1FLUS).
TAMISTR1*36	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	2013-01-01	None given.	At least one observed (U22WIND1FLUS).
TAMISTR1*37	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	2013-01-01	None given.	At least one observed (U22WIND1FLUS).
TAMISTR1*40	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	2013-01-01	None given.	At least one observed (U22WIND1FLUS).
TAMISTR1*41	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	2013-01-01	None given.	At least one observed (U22WIND1FLUS).
TAMISTR1*42	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	2013-01-01	None given.	At least one observed (U22WIND1FLUS).
TAMISTR1*43	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	2013-01-01	None given.	At least one observed (U22WIND1FLUS).
TAMISTR1*44	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	2013-01-01	None given.	At least one observed (U22WIND1FLUS).
TAMISTR1*45	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	2013-01-01	None given.	At least two observed (U22WIND1FLUS).
TAMISTR1*46	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	2013-01-01	None given.	At least one observed (U22WIND1FLUS).
TAMISTR1*47	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	2013-01-01	None given.	At least three observed (U22WIND1FLUS).
TAMISTR1*48	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	2013-01-01	None given.	At least three observed (U22WIND1FLUS).
TAMISTR1*49	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	2013-01-01	None given.	At least one observed (U22WIND1FLUS).
TAMISTR1*50	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	2013-01-01	None given.	At least one observed (U22WIND1FLUS).
TAMISTR1*55	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	2013-01-01	None given.	At least one observed (U22WIND1FLUS).
TAMISTR1*57	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	2013-01-01	None given.	At least one observed (U22WIND1FLUS).
TAMISTR1*58	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	2013-01-01	None given.	At least one observed (U22WIND1FLUS).
TAMISTR1*59	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	2013-01-01	None given.	At least one observed (U22WIND1FLUS).
TAMISTR1*60	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	2013-01-01	None given.	At least one observed (U22WIND1FLUS).

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TAMISTR1*64		<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	N	2013-01-01	None given.	At least one observed (U22WIN01FLUS).
TAMISTR1*65		<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	N	2013-01-01	None given.	At least one observed (U22WIN01FLUS).
TAMISTR1*7		<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	N	1989-02	MIXED PINE-HARDWOOD FOREST (?).	1 CHIPMUNK OBSERVED BY R. CARR (GFC) T5N, R24W, SEC 28 (NO DATE); AND 1 CHIPMUNK OBSERVED BY F. MORELLO (GFC) T5N, R24W, SEC 33 IN FEB 1989.
TAMISTR1*8		<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	N	1988-11-10	MIXED PINE-HARDWOOD FOREST.	1 CHIPMUNK OBSERVED BY R. CARR (GFC) SEVERAL YEARS AGO; AND 1 OBSERVED BY GORE 10 NOV 1988.
TAMISTR1*92		<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N	N	2013-01-01	None given	At least one observed.
TAHTCORO*12		<i>Tanilla coronata</i>	Southeastern Crowned Snake	G5	S2S3	N	N	N	2019-02-23	None given. Aerial photograph shows 2019 site on residential lot but adjacent to forested land that extends along West Fork to Blackwater River State Forest downstream.	Based on 1 observation in 2019 (U21INA06FLUS). Potentially part of a large population in the greater area.
TAMTCORO*3		<i>Tanilla coronata</i>	Southeastern Crowned Snake	G5	S2S3	N	N	N	2009-05-10	Blackwater River State Forest. 2021 aerial photograph shows pine uplands with spacious canopy.	Based on 2 specimens, but likely a very large population. Specific data in source features and Additional Topics.
TAMTCORO*4		<i>Tanilla coronata</i>	Southeastern Crowned Snake	G5	S2S3	N	N	N	2008-07-05	Blackwater River State Forest, an ecosystem dominated by upland pine forest. 1999 observation was in shrub portion of seepage bog that drains into Reedy Creek, a tributary of the Yellow River (A02ENG02FLUS).	Based on 2 captures (A02ENG02FLUS, U21ENG06FLUS), though potentially a very large population.
TAMTCORO*9		<i>Tanilla coronata</i>	Southeastern Crowned Snake	G5	S2S3	N	N	N	1998-08-28	None given. Aerial photograph shows as forested land in state park, surrounded by state forest.	Based on 1 observation in 1999 (U21INA06FLUS). Potentially a large population in area.
TOXOPOFI*2		<i>Toxolasma sp. 1</i>	Gulf Liliput	G2	S2	N	N	N	2014 pre	Yellow River	Williams et al. (2014) depict at least 4 sites from which this occurrence has been documented in Florida.



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Map Label	Scientific Name	Common Name	Rank	Status	Listing	Date	Description	EO Comments
UPLAFOR*145	Upland hardwood forest		G5	S3	N	N	2004	<p>SLOPE FOREST SURROUNDING DRAINAGE OF SMALL CREEK FED BY CLEAR, WHITE SAND BOTTOMED SPRING. FOREST IS CONFINED TO RAVINE AND CREEK SYSTEM. DOMINANT SPECIES INCLUDE: MAGNOLIA GRANDIFLORA, FAGUS GRANDIFLORA, ILEX OPACA, ILEX DECIDUA, ILLICIUM FLORIDANUM, OSTRYA VIRGINIANA, LIRIODENDRON TULIPIFERA, AND QUERCUS NIGRA, RHODODENDRON SERRULATUM AND R. SP.</p> <p>2010: Prior to the 2010 natural community reclassification effort this EO had been known as Slope forest EO number 70 (see U10FNA01FLUS for updated community descriptions), 2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1991-07-29) (U05FNA02FLUS). RAVINE TO APPROXIMATELY 20 FT. DEEP IMMEDIATELY DOWNSLOPE FROM SANDHILL COMMUNITY. THE RAVINE CONTAINS A WHITE SAND BOTTOM SPRING THAT CREATES A SMALL STREAM RUNNING NORTHWESTWARD. THE SLOPE FOREST IS CONFINED TO THIS RAVINE AND CREEK DRAINAGE.</p>
UPLAFOR*156	Upland hardwood forest		G5	S3	N	N	2004	<p>Nice Slope Forest. Longleaf pine/oak/magnolia.</p> <p>2010: Prior to the 2010 natural community reclassification effort this EO had been known as Slope forest EO number 80 (see U10FNA01FLUS for updated community descriptions), 2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1994-04-01) (U05FNA02FLUS). Nice Slope Forest. Longleaf Pine, Oak, Magnolia.</p>
UPLAPINE*1	Upland pine		G3	S2	N	N	2004	<p>ON UPLANDS N AND S OF RIVER.</p> <p>2010: Prior to the 2010 natural community reclassification effort this EO had been known as Upland pine forest EO number 1 (see U10FNA01FLUS for updated community descriptions), 2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1984) (U05FNA02FLUS). CALLED "HIGH PINELAND" BY DNR. CONSISTS OF LONGLEAF PINE, WIRE GRASS AND TURKEY OAK (U80FRA01).</p>



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**FNAI ELEMENT OCCURRENCE REPORT on or near
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Map Label	Scientific Name	Common Name	Global State Federal State Observation			Description	EO Comments	
			Rank	Rank	Status Listing			Date
UPLAPINE'S	Upland pine		G3	S2	N	N	2004	<p>POOR SOIL W/ LITTLE REDDISH (HIGH IRON) ROCKS & SAND. (SEE GEOLOGICAL FEATURE .064)</p> <p>2010: Prior to the 2010 natural community reclassification effort this EO had been known as Sandhill EO number 18 (see U10FNA01FLUS for updated community descriptions). 2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1990-04-07) (U05FNA02FLUS). 50-60 YR SMALL LONGLEAF PINES > WIREGRASS.</p>
URSUFLOP'S2	<i>Ursus americanus floridanus</i> Florida Black Bear		G5T4	S4	N	N	2022-07-06	<p>Part of range consists of a military installation (Eglin AFB) where segments have been cleared of vegetation for military use. Large areas of sandhill and scattered swamps and linear seepage drainages (U05SJM01FLUS)
 Nokuse Plantation includes mosaic of habitats, including former sandhill heavily impacted by past timbering, now at least partly undergoing restoration. In addition to stream corridors, flatwoods, and potentially river floodplain (PNDARE01FLUS).</p>
WET FLAT'S2	Wet flatwoods		G4	S4	N	N	2004	<p>Community lies within a basin of the Yellow River and is part of a mosaic of prairie, flatwoods, and domes. Site is known as Whitmier Island. It is not an island.</p> <p>2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1994-07-20) (U05FNA02FLUS). 1994-07-20: Wet flatwoods dominated by multi-aged stand of slash pine above and wiregrass and galberry below, community burned last year and has responded great; many different forbs and grasses in flower; slash pine canopy fairly open; soil is very wet and many puddles are scattered throughout - this is probably the case through majority of the year; this is the least shrub encroached flatwoods I've seen on base - undoubtedly due to good fire regime; latest fire not prescribed (PNDJEN02FLUS).</p>



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Global State Federal State Observation

Map Label	Scientific Name	Common Name	Rank	Status	Listing	Date	Description	EO Comments
WET PRAI*180	Wet prairie		G2	S2	N	N	1992-06-15	<p>NARROW, UNBURNED, SEEPAGE SLOPE INVADED BY CLIFTONIA MONOPHYLLA, CYRILLA RACEMIFLORA, AND HYPERICUM, OTHER VEGETATION INCLUDES: LOPHIOLA AMERICA, XYRIS, ARISTIDA STRICTA, LACHNANTHES CAROLINIANA, LACHNOCAULON ANGEPS, ERIOCAULON, DROSEREA, BREVIFOLIA, D. INTERMEDIA, AND SARRACENIA LEUCOPHYLLA.</p> <p>2010: Prior to the 2010 natural community reclassification effort this EO had been known as Seepage slope EO number 180 (see U10FNAO1FLUS for updated community descriptions). NARROW, UNBURNED SEEPAGE SLOPE IMMEDIATELY ADJACENT TO A BAYGALL AND A SMALL REMNANT MESIC FLATWOODS.</p>
WET PRAI*23	Wet prairie		G2	S2	N	N	2004	<p>ARISTIDA STRICTA-DOMINATED PRAIRIE ON RAIN SOIL. OTHER VEGETATION INCLUDES RHEXIA ALIFANUS, R. LUTEA, DICHROMENA LATIFOLIA, POLYGALA LUTEA, CHAPTALIA TOMENTOSA, LOPHIOLA AMERICANA, AND SARRACENIA PSITTACINA. DUE TO FIRE SUPPRESSION THE PRAIRIE SUPPORTS SCATTERED YOUNG PINUS ELLIOTTII, P. PALUSTRIS, ILEX MYRTIFOLIA, MAGNOLIA VIRGINIANA AND ACER RUBRUM.</p> <p>2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1992-06-14) (U05FNAO2FLUS). ONE UNBURNED PRAIRIE THAT GRADES INTO A DOME SWAMP TO THE NORTH, MESIC FLATWOODS TO THE SOUTH, AND SLASH PINE PLANTATION TO THE WEST AND EAST.</p>
WET PRAI*71	Wet prairie		G2	S2	N	N	2004	<p>No general description given</p> <p>2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1994-07-20) (U05FNAO2FLUS). Very expansive, nearly treeless, wet prairie dominated by grasses and forbs. Pipewort, wiregrass, and yellow-eyed grass dominate. Many attractive flowering herbs such as Barbara's buttons, marsh pinks, and pitcher plants abound. There are a few scattered slash pines and pond cypress as well as gallberry and wax myrtle. A late season burn swept through this community last year.</p>



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Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	Observation Date	Description	EO Comments	
XYRISCAP*48	<i>Xyris scabrifolia</i>	Harper's yellow-eyed grass	G3	S3	N	T	1989-09-21	HILLSIDE SEEPAGE BOG AND SAPRIC MUD BOGS. HERBACEOUS SPECIES DOMINATE EXCEPT NEAR SEEPAGE STREAM WHERE SHRUBS DOMINATE.	1989: PRESENT ON SITE.
XYRISCAP*6	<i>Xyris scabrifolia</i>	Harper's yellow-eyed grass	G3	S3	N	T	1989-09-20	MID-SLOPE, QUAKING SAPRIC MUCK SEEPAGE HERB-BOG ALONG TRIBUTARY TO MIDDLE CREEK, IN FREQUENTLY BURNED, FIRE-MAINTAINED SAVANNA WITH INTACT GROUND COVER TO FACILITATE FIRE ACROSS THE LANDSCAPE.	MOST FREQUENT ON MUCKY PEATY SUBSTRATE WHICH IS CONSTANTLY SATURATED WITH COPIOUS TELLURIC GROUNDWATER. ASSOCIATES INCLUDE LACHNOCAULON DIGYNUM, RHYNCHOSPORA STENOPHYLLA, R. MACRA, AND SARRACENIA LEUCOPHYLLA.
XYRISCAP*81	<i>Xyris scabrifolia</i>	Harper's yellow-eyed grass	G3	S3	N	T	1989-09-08	SEEPAGE SLOPE RIM WITH 74 PLANT SPECIES, INCLUDING RARE SPECIES LILIUM IRIDOLLAE, MACRANTHERA FLAMMEA, FOTHERGILLA GARDENII, AND WATCH LIST SPECIES ZIGADENUS LEIMANTHOIDES. (COMPLETE LIST ATTACHED TO EOR IN GMF). BURNED IN 1998.	NONE GIVEN



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SCIENTIFIC NAME	COMMON NAME	Global rank	State rank	Federal status	State status
PLANTS					
<i>Agalinis georgiana</i>	pine barren false foxglove	G1	S1	N	E
<i>Calycanthus floridus</i>	sweet-shrub	G5	S2	N	E
<i>Dichanthelium nudicaule</i>	naked-stemmed panic grass	G3Q	S3	N	T
<i>Epigaea repens</i>	trailing arbutus	G5	S2	N	E
<i>Kalmia latifolia</i>	mountain laurel	G5	S3	N	T
<i>Lachnocaulon digynum</i>	pineland bogbutton	G3G4	S3	N	T
<i>Lilium iridollae</i>	Panhandle lily	G3	S3	UR	E
<i>Lobelia boykinii</i>	Boykin's lobelia	G2G3	SH	UR	E
<i>Macranthera flammea</i>	hummingbird flower	G3	S2	N	E
<i>Najas filifolia</i>	Narrowleaf Naiad	G3	S2	UR	T
<i>Pinguicula primuliflora</i>	primrose-flowered butterwort	G3G4	S3	N	E
<i>Platanthera clavellata</i>	little club-spur orchid	G5	S1	N	E
<i>Platanthera integra</i>	yellow fringed orchid	G3G4	S2	N	E
<i>Quercus arkansana</i>	Arkansas oak	G3	S3	N	T
<i>Rhexia parviflora</i>	small-flowered meadowbeauty	G2G3	S2	UR	E
<i>Rhododendron austrinum</i>	Florida flame azalea	G3	S3	N	E
<i>Rhynchospora crinipes</i>	hairy-peduncled beaksedge	G3	S3	N	E
<i>Sarracenia rubra</i> ssp. <i>gulfensis</i>	Gulf Coast redflower pitcherplant	G3G4T2T	S2S3	UR	T
<i>Schwalbea americana</i>	chaffseed	G2	S1	E	E
<i>Symphotrichum concolor</i> var. <i>devestitum</i>	Gulf Coast Silvery Aster	G5T2	S2	N	N
<i>Xyris scabrifolia</i>	Harper's yellow-eyed grass	G3	S3	N	T
FISH					
<i>Lythrurus atrapiculus</i>	Blacktip Shiner	G4	S2	N	N
AMPHIBIANS					
<i>Ambystoma bishopi</i>	Reticulated Flatwoods Salamander	G2	S1	E	FE
<i>Ambystoma tigrinum</i>	Eastern Tiger Salamander	G5	S3	N	N
<i>Desmognathus</i> sp. 1	Eglin Ravine Dusky Salamander	G2G3Q	S2	N	N
<i>Eurycea sphagnicola</i>	Bog Dwarf Salamander	G1G2	S1S2	N	N
<i>Hyla andersonii</i>	Pine Barrens Treefrog	G4	S3	DL	N
<i>Lithobates capito</i>	Gopher Frog	G2G3	S3	UR	N
<i>Lithobates okaloosae</i>	Florida Bog Frog	G2	S2	N	ST
REPTILES					
<i>Agkistrodon contortrix</i>	Eastern Copperhead	G5	S2	N	N
<i>Apalone spinifera</i>	Spiny Softshell	G5	S3	N	N
<i>Crotalus adamanteus</i>	Eastern Diamondback Rattlesnake	G3	S3	UR	N
<i>Drymarchon couperi</i>	Eastern Indigo Snake	G3	S2?	T	FT
<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST
<i>Heterodon simus</i>	Southern Hognose Snake	G2	S2S3	N	N
<i>Lampropeltis rhombomaculata</i>	Northern Mole Kingsnake	G5	S2	N	N
<i>Macrochelys temminckii</i>	Alligator Snapping Turtle	G3	S3	PT	N
<i>Ophisaurus mimicus</i>	Mimic Glass Lizard	G2	S1S2	N	N
<i>Pituophis melanoleucus</i>	Pine Snake	G4	S3	UR	ST
<i>Plestiodon anthracinus</i>	Coal Skink	G5	S3	N	N
<i>Pseudemys concinna concinna</i>	Eastern River Cooter	G5T5	S3	N	N

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REPTILES (cont.)					
<i>Tantilla coronata</i>	Southeastern Crowned Snake	G5	S2S3	N	N
BIRDS					
<i>Dryobates borealis</i>	Red-cockaded Woodpecker	G3	S2	E, PT	FE
<i>Dryobates villosus</i>	Hairy Woodpecker	G5	S3	N	N
<i>Elanoides forficatus</i>	Swallow-tailed Kite	G5	S2	N	N
<i>Haliaeetus leucocephalus</i>	Bald Eagle	G5	S3	N	N
<i>Peucaea aestivalis</i>	Bachman's Sparrow	G3	S3	N	N
<i>Setophaga discolor paludicola</i>	Florida Prairie Warbler	G5T3	S3	N	N
MAMMALS					
<i>Sciurus niger niger</i>	Southeastern Fox Squirrel	G5T5	S3	N	N
<i>Tamias striatus</i>	Eastern Chipmunk	G5	S3	N	N
<i>Ursus americanus floridanus</i>	Florida Black Bear	G5T4	S4	N	N
INVERTEBRATES					
<i>Acroneuria evoluta</i>	A Stonefly	G5	S1	N	N
<i>Agarodes libalis</i>	Spring-loving Psiloneuran Caddisfly	G3	S3	N	N
<i>Agarodes ziczac</i>	Zigzag Blackwater River Caddisfly	G2	S2	N	N
<i>Amblyscirtes aesculapius</i>	Lace-winged Roadside Skipper	G3G4	S3S4	N	N
<i>Amblyscirtes alternata</i>	Dusky Roadside-Skipper	G3G4	S2	N	N
<i>Amblyscirtes reversa</i>	Reversed Roadside-Skipper	G3G4	S1	N	N
<i>Aphodius aegrotus</i>	Small Pocket Gopher Aphodius Beetle	G3G4	S3?	N	N
<i>Aphodius bakeri</i>	Baker's Pocket Gopher Aphodius Beetle	G2G3	S2	N	N
<i>Aphodius dyspistus</i>	Surprising Pocket Gopher Aphodius Beetle	G3G4	S3?	N	N
<i>Aphodius gambrinus</i>	Amber Pocket Gopher Aphodius Beetle	G2	S1S2	N	N
<i>Aphodius hubbelli</i>	Hubbell's Pocket Gopher Aphodius Beetle	GNR	S3?	N	N
<i>Aphodius laevigatus</i>	Large Pocket Gopher Aphodius Beetle	G3G4	S3?	N	N
<i>Aphodius pholetus</i>	Rare Pocket Gopher Aphodius Beetle	G1G2	S1	N	N
<i>Aphodius platypleurus</i>	Broad-Sided Pocket Gopher Aphodius Beetle	G2G3	S2	N	N
<i>Aphodius tanytarsus</i>	Long-Clawed Pocket Gopher Aphodius Beetle	G2G3	S2S3	N	N
<i>Aphodius troglodytes</i>	Gopher Tortoise Aphodius Beetle	G2G3	S2	N	N
<i>Atrytone arogos arogos</i>	Arogos Skipper	G2G3T1T2	S2	N	N
<i>Baetisca becki</i>	A Mayfly	G2G3	S2	N	N
<i>Baetisca gibbera</i>	Humpback Mayfly	G5	S1S2	N	N
<i>Baetisca rogersi</i>	A Mayfly	G4	S3	N	N
<i>Callophrys augustinus</i>	Brown Elfin	G5	S2	N	N
<i>Callophrys hesseli</i>	Hessel's Hairstreak	G3	S2	N	N
<i>Callophrys irus</i>	Frosted Elfin	G2G3	S2	UR	N
<i>Celastrina ladon</i>	Spring Azure	G4G5	S2?	N	N

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INVERTEBRATES (cont.)					
<i>Chelyoxenus xerobatis</i>	Gopher Tortoise Hister Beetle	G2G3	S2	N	N
<i>Cheumatopsyche petersi</i>	Peters' Cheumatopsyche Caddisfly	G3	S2	N	N
<i>Chimarra florida</i>	Floridian Finger-net Caddisfly	G4	S3S4	N	N
<i>Cicindela waplery</i>	White-sand Tiger Beetle	G3G4	S2	N	N
<i>Cupido comyntas</i>	Eastern Tailed Blue	G5	S2	N	N
<i>Dolania americana</i>	American Sand-burrowing Mayfly	G4	S2	N	N
<i>Dromogomphus armatus</i>	Southeastern Spinyleg	G4	S3	N	N
<i>Erynnis martialis</i>	Mottled Duskywing	G3	SH	N	N
<i>Euphoria discicollis</i>	Pocket Gopher Flower Beetle	G2	S1S2	N	N
<i>Eutrichota gopheri</i>	Gopher Tortoise Burrow Fly	G2	S2S3	N	N
<i>Helocordulia selysii</i>	Selys' Sunfly	G4	S4	N	N
<i>Helopicus subvarians</i>	A Stonefly	G5	S3	N	N
<i>Hesperia attalus slossonae</i>	Seminole Skipper	G3G4T3	S3	N	N
<i>Hesperia meskei straton</i>	Eastern Meske's Skipper	G3G4T3	S2S3	N	N
<i>Hexagenia bilineata</i>	A Mayfly	G5	S2	N	N
<i>Hydroperla phormidia</i>	A Stonefly	G3	S2	N	N
<i>Hylogomphus geminatus</i>	Twin-striped Clubtail	G3G4	S3	N	N
<i>Isonychia bernerii</i>	A Mayfly	G2G3	S1S2	N	N
<i>Leuctra cottaquilla</i>	A Stonefly	G2	S2	N	N
<i>Macdunnoa brunnea</i>	A Mayfly	G3G4	S2S3	N	N
<i>Machimus polyphemii</i>	Gopher Tortoise Robber Fly	G2	S1S2	N	N
<i>Nannothemis bella</i>	Elfin Skimmer	G4G5	S2	N	N
<i>Neurocordulia molesta</i>	Smoky Shadowfly	G4	S2S3	N	N
<i>Nymphalis antiopa</i>	Mourning Cloak	G5	S2	N	N
<i>Onthophagus polyphemii sparsisetosus</i>	Smooth Gopher Tortoise Onthophagus Beetle	G2G3T2	S1	N	N
<i>Oxyethira elerobi</i>	Elerob's Microcaddisfly	G3G4	S2S3	N	N
<i>Oxyethira novasota</i>	Novasota Oxyethiran Microcaddisfly	G4G5	S2	N	N
<i>Oxyethira pescadori</i>	Pescador's Bottle-Cased Caddisfly	G3G4	S3	N	N
<i>Perlinella zwicki</i>	A Stonefly	G4	S2	N	N
<i>Phanogomphus hodgesi</i>	Hodges' Clubtail	G3	S3	N	N
<i>Phanogomphus westfalli</i>	Westfall's Clubtail	G2	S2	UR	N
<i>Phyllophaga ovalis</i>	Oval June Beetle	G1G2	S1S2	N	N
<i>Polyphylla gracilis</i>	Slender Polyphyllan Scarab Beetle	G2G3	S2	N	N
<i>Progomphus bellei</i>	Belle's Sanddragon	G3	S3	N	N
<i>Ptomaphagus geomysi</i>	Elongate Pocket Gopher Ptomaphagus Beetle	G2G3	S2	N	N
<i>Ptomaphagus schwarzi</i>	Schwarz' Pocket Gopher Ptomaphagus Beetle	G3	S3	N	N
<i>Satyrium kingi</i>	King's Hairstreak	G3G4	S2	N	N
<i>Selonodon santarosae</i>	Santa Rosa Cebrionid Beetle	G1	S1	N	N
<i>Sparbarus miccosukee</i>	Miccosukee Mayfly	G1G2	S1S2	N	N
<i>Stenacron floridense</i>	A Mayfly	G3G4	S3S4	N	N
<i>Stylurus potulentus</i>	Yellow-sided Clubtail	G2	S2	UR	N
<i>Stylurus townesi</i>	Bronze Clubtail	G3	S2	N	N
<i>Tallaperia cornelia</i>	Southeastern Roachfly	G4	S1	N	N

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SCIENTIFIC NAME

COMMON NAME

Global rank State rank Federal status State status

Using a ranking system developed by NatureServe and the Natural Heritage Program Network, the Florida Natural Areas Inventory assigns two ranks for 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 (EOs), estimated abundance (number of individuals for species; area for natural communities), geographic range, estimated number of adequately protected EOs, relative threat of destruction, and ecological fragility.

FNAI GLOBAL ELEMENT RANK

- G1 = Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
- G2 = Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
- G3 = Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from 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 = Unrankable; due to a lack of information no rank or range can be assigned (e.g., GUT2).
- GNA = Ranking is not applicable because the element is not a suitable target for conservation (e.g. a hybrid species).
- GNR = Element not yet ranked (temporary).
- GNRTNR = Neither the element nor the taxonomic subgroup has yet been ranked.

FNAI STATE ELEMENT RANK

- S1 = Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
- S2 = Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
- S3 = Either very rare and local in Florida (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.
- S4 = Apparently secure in Florida (may be rare in parts of range).
- S5 = Demonstrably secure in Florida.
- SH = Of historical occurrence in Florida, possibly extirpated, but may be rediscovered (e.g., ivory-billed woodpecker).
- SX = Believed to be extirpated throughout Florida.
- SU = Unrankable; due to a lack of information no rank or range can be assigned.
- SNA = State ranking is not applicable because the element is not a suitable target for conservation (e.g. a hybrid species).
- SNR = Element not yet ranked (temporary).

FEDERAL LEGAL STATUS

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Tallahassee, FL 32303
(850) 224-8207
www.fnai.org

Florida Natural Areas Inventory

Managed Area Element Summary

Blackwater River State Forest



Legal status information provided by FNAI for information only. For official definitions and lists of protected species, consult the relevant federal agency.

Definitions derived from U.S. Endangered Species Act of 1973, Sec. 3. Note that the federal status given by FNAI refers only to Florida populations and that federal status may differ elsewhere.

- C = Candidate species for which federal listing agencies have sufficient information on biological vulnerability and threats to support proposing to list the species as Endangered or Threatened.
- LE = Endangered: species in danger of extinction throughout all or a significant portion of its range.
- LE, LT = Species currently listed endangered in a portion of its range but only listed as threatened in other areas
- LE, PDL = Species currently listed endangered but has been proposed for delisting.
- LE, PT = Species currently listed endangered but has been proposed for listing as threatened.
- LE, XN = Species currently listed endangered but tracked population is a non-essential experimental population.
- LT = Threatened: species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range.
- SAT = Treated as threatened due to similarity of appearance to a species which is federally listed such that enforcement personnel have difficulty in attempting to differentiate between the listed and unlisted species.
- SC = Not currently listed, but considered a "species of concern" to USFWS.

STATE LEGAL STATUS

Provided by FNAI for information only. For official definitions and lists of protected species, consult the relevant state agency.

Animals: Definitions derived from "Florida's Endangered Species and Species of Special Concern, Official Lists" published by Florida Fish and Wildlife Conservation Commission, 1 August 1997, and subsequent updates.

- FE = Listed as Endangered Species at the Federal level by the U. S. Fish and Wildlife Service
- FT = Listed as Threatened Species at the Federal level by the U. S. Fish and Wildlife Service
- F(XN) = Federal listed as an experimental population in Florida
- FT(S/A) = Federal Threatened due to similarity of appearance
- ST = State population listed as Threatened by the FFWCC. Defined as a species, subspecies, or isolated population which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat is decreasing in area at a rapid rate and as a consequence is destined or very likely to become an endangered species within the foreseeable future. (ST* for *Ursus americanus floridanus* (Florida black bear) indicates that this status does not apply in Baker and Columbia counties and in the Apalachicola National Forest. ST* for *Neovison vison pop.1* (Southern mink, South Florida population) indicates that this status applies to the Everglades population only.)
- SSC = Listed as Species of Special Concern by the FFWCC. Defined as a population which warrants special protection, recognition, or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance, or substantial human exploitation which, in the foreseeable future, may result in its becoming a threatened species. (SSC* indicates that a species has SSC status only in selected portions of its range in Florida. SSC* for *Pandion haliaetus* (Osprey) indicates that this status applies in Monroe county only.)
- N = Not currently listed, nor currently being considered for listing.

Plants: Definitions derived from Sections 581.011 and 581.185(2), Florida Statutes, and the Preservation of Native Flora of Florida Act, 5B-40.001. FNAI does not track all state-regulated plant species; for a complete list of state-regulated plant species, call Florida Division of Plant Industry, 352-372-3505 or see: <http://www.doacs.state.fl.us/pi/>.

LE = Endangered: species of plants native to Florida 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; includes all species determined to be endangered or threatened pursuant



Florida
Natural Areas
Inventory

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Florida Natural Areas Inventory

Managed Area Element Summary Blackwater River State Forest



to the U.S. Endangered Species Act.

LT = Threatened: 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 number as to cause them to be Endangered.

N = Not currently listed, nor currently being considered for listing.

Exhibit N

Florida Fish
and
Wildlife Conservation Commission

Listed Species
Occurrence Records



**Florida Fish
and Wildlife
Conservation
Commission**

Commissioners
Rodney Barreto
Chairman
Coral Gables

Steven Hudson
Vice Chairman
Fort Lauderdale

Preston Farrior
Tampa

Gary Lester
Oxford

Albert Maury
Coral Gables

Gary Nicklaus
Jupiter

Sonya Rood
St. Augustine

Office of the
Executive Director
Roger Young
Executive Director

Dr. Thomas H. Eason
Assistant Executive Director

Jessica Crawford
Chief of Staff

850-487-3796
850-921-5786 FAX

*Managing fish and wildlife
resources for their long-term
well-being and the benefit
of people.*

620 South Meridian Street
Tallahassee, Florida
32399-1600
Voice: 850-488-4676

Hearing/speech-impaired:
800-955-8771 (T)
800-955-8770 (V)

MyFWC.com

October 16, 2023

Emily Marsh
Florida Forest Service
3125 Conner Boulevard
Tallahassee, Florida 32399-1650
emily.marsh@fdacs.gov

Dear Ms. Marsh:

This letter is in response to your request for listed species occurrence records and critical habitats for the Blackwater River State Forest, located in Santa Rosa County. FWC staff conducted a geographic information system (GIS) analysis of the project area utilizing a variety of internal datasets. The analysis found that the project area contains:

Documented occurrences of and potential habitat for the following listed and managed species:

- Eastern indigo snake (*Drymarchon couperi*, Federally Threatened)
- Gopher tortoise (*Gopherus polyphemus*, State Threatened [ST])
- Red-cockaded woodpecker (*Picooides borealis*, Federally Endangered [FE])
- Reticulated flatwoods salamander (*Ambystoma bishopi*, FE)
- Florida pine snake (*Pituophis melanoleucus mugitus*, ST)
- Florida black bear (*Ursus americanus floridanus*)

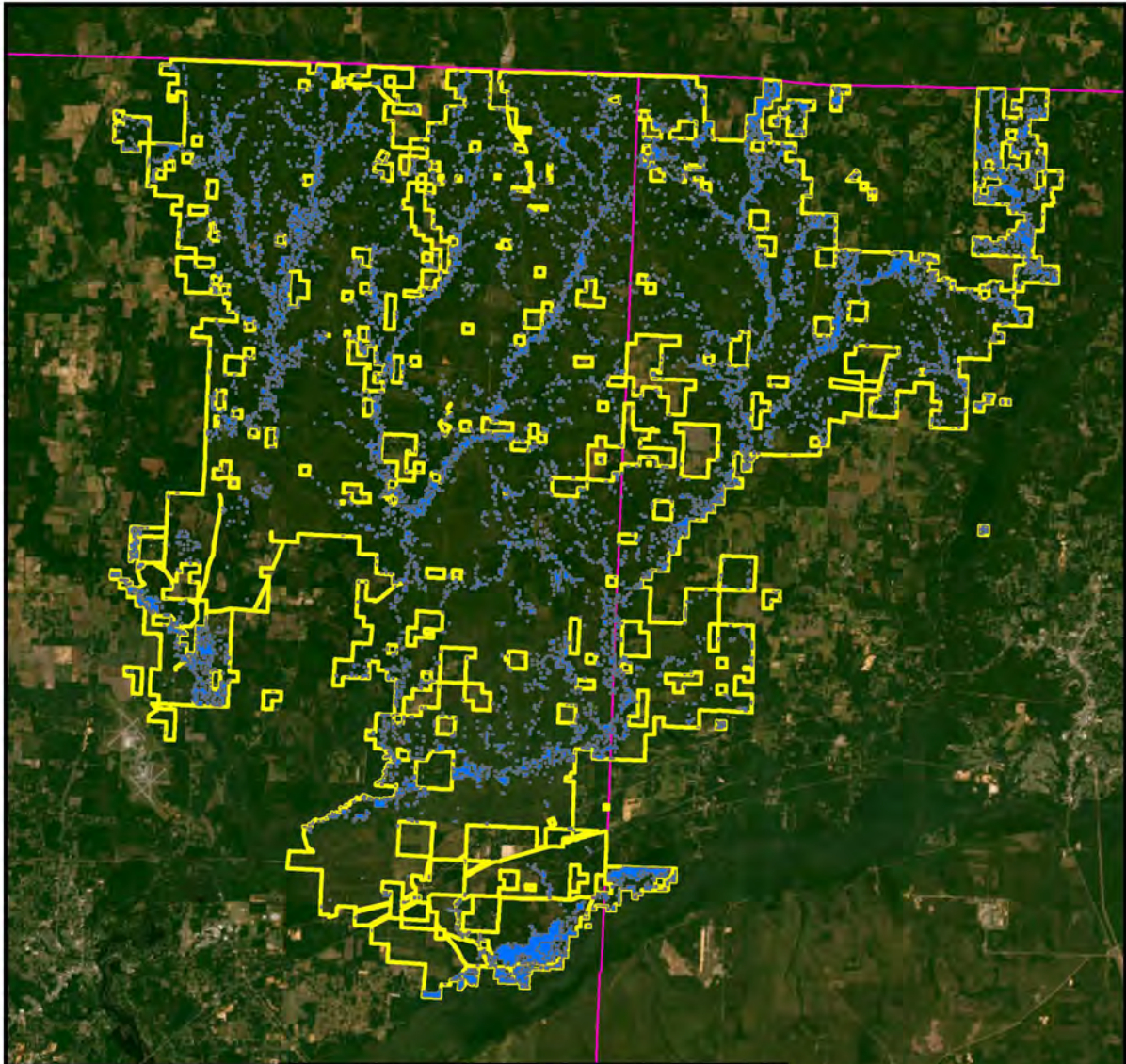
The wildlife occurrence data represents only species recorded by FWC staff and other affiliated researchers and the available databases do not necessarily contain records of all listed species that may occur in a given area. Therefore, the absence of a species in this list does not mean that species does not occur in the area. On-site surveys using appropriate methodologies are always the most reliable method to determine the potential presence of listed species and their habitat.

The enclosed maps are based on aggregated species models and include listed species Strategic Habitat Conservation Areas (SHCAs), species richness, and priority wetlands for listed species. These data highlight areas with enhanced value for multiple listed and managed species of wildlife.

For specific technical questions regarding the content of this letter, please contact Alex Flores at 850-488-8783 or by email at Alex.Flores@MyFWC.com. All other inquiries may be sent to ConservationPlanningServices@MyFWC.com.

Sincerely,

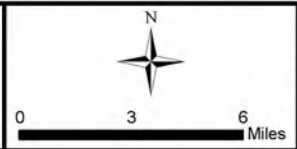
Laura DiGruttolo, Land Use Planning Supervisor
Office of Conservation Planning Services
Florida Fish and Wildlife Conservation Commission



	Priority Wetlands	
		1-3 species, wetland habitat
		4-6 species, wetland habitat
		Blackwater River State Forest

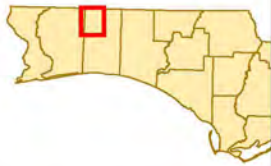
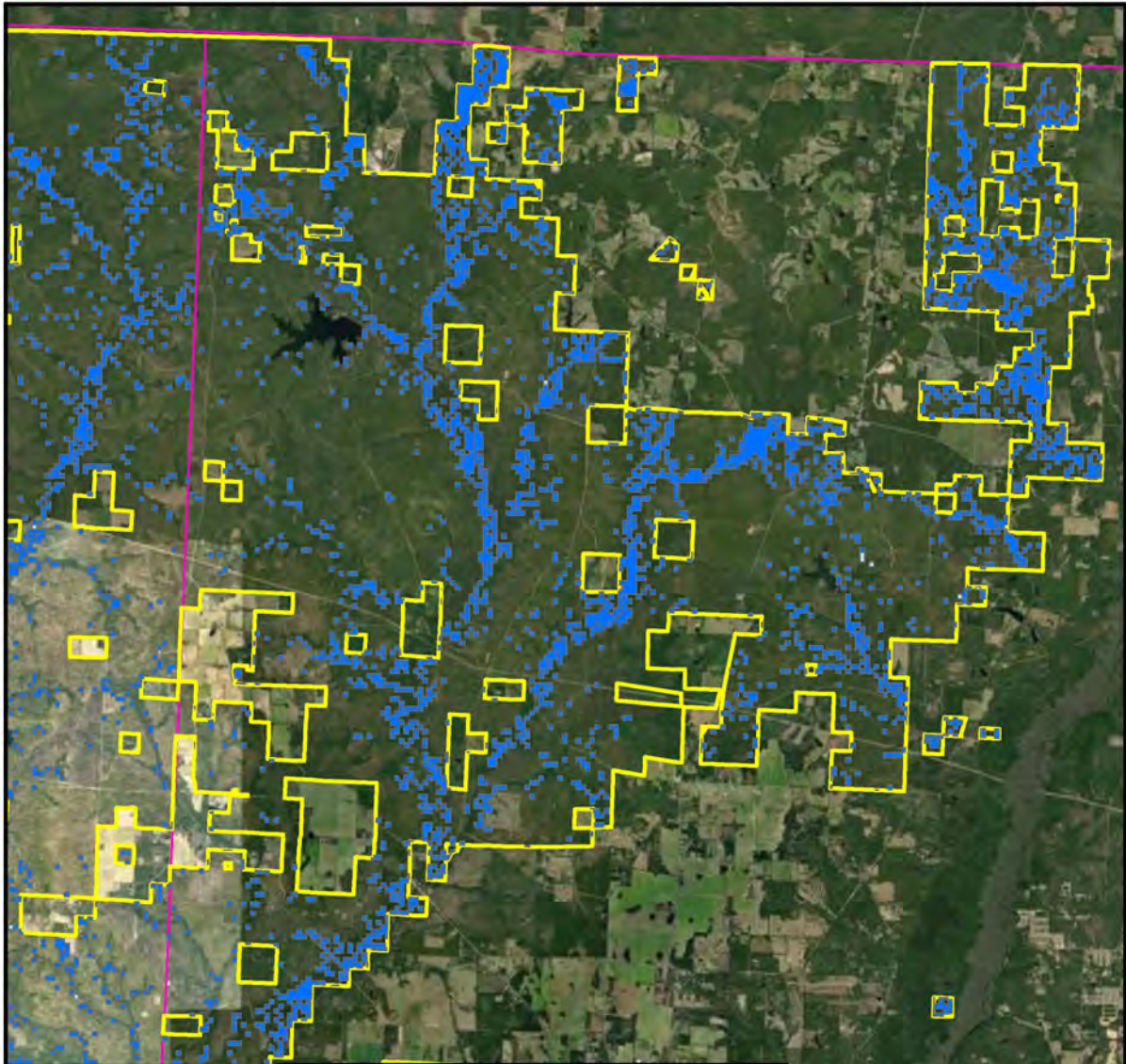
ster Geographics, and the GIS User Community

Blackwater River State Forest



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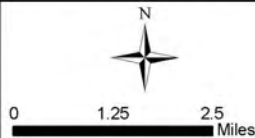


Priority Wetlands

- 1-3 species, wetland habitat
- 4-6 species, wetland habitat
- Blackwater River State Forest

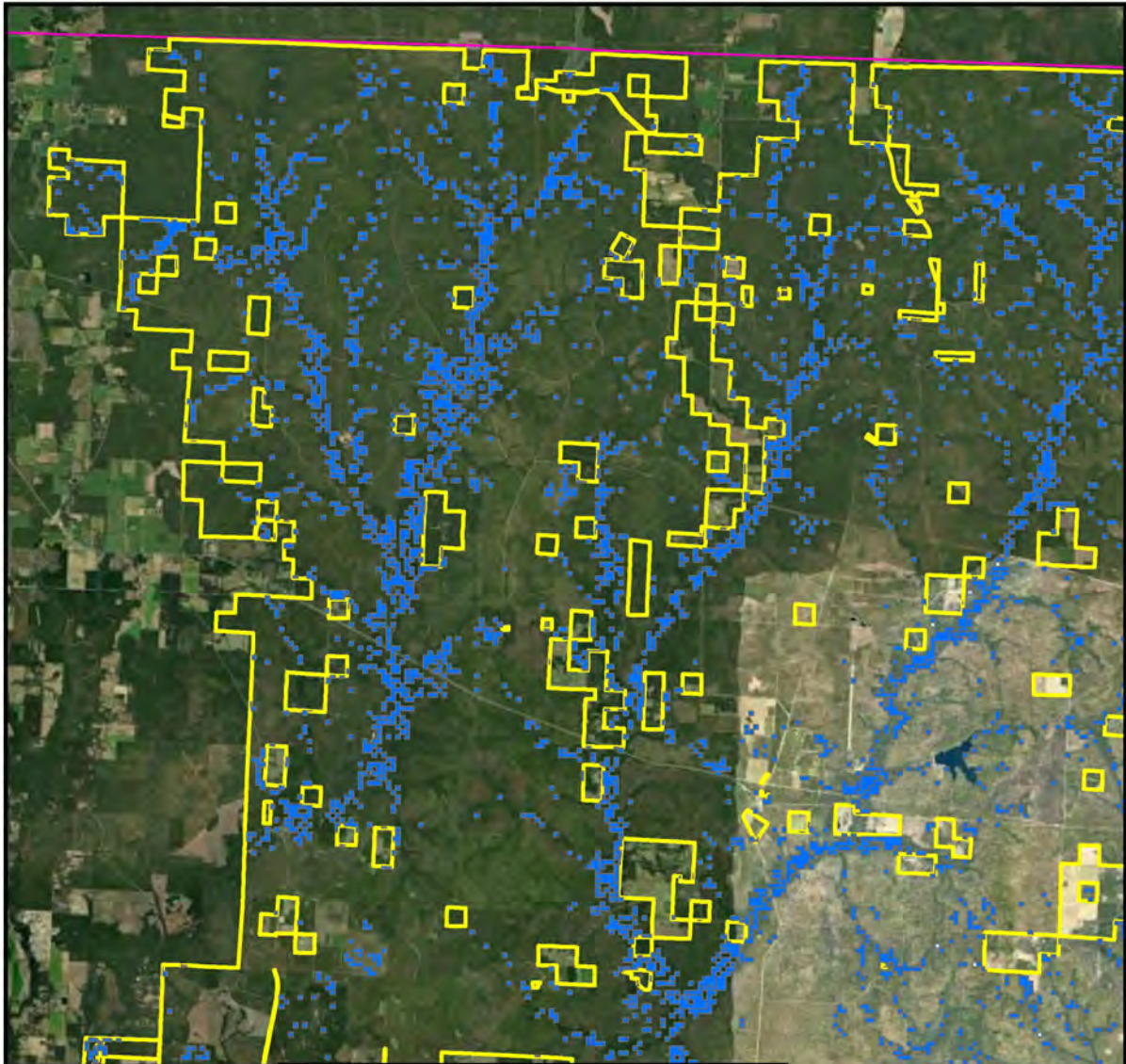
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Blackwater River State Forest



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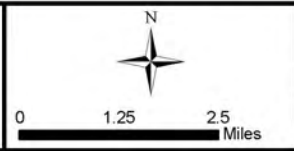
Priority Wetlands

- 1-3 species, wetland habitat
- 4-6 species, wetland habitat
- Blackwater River State Forest



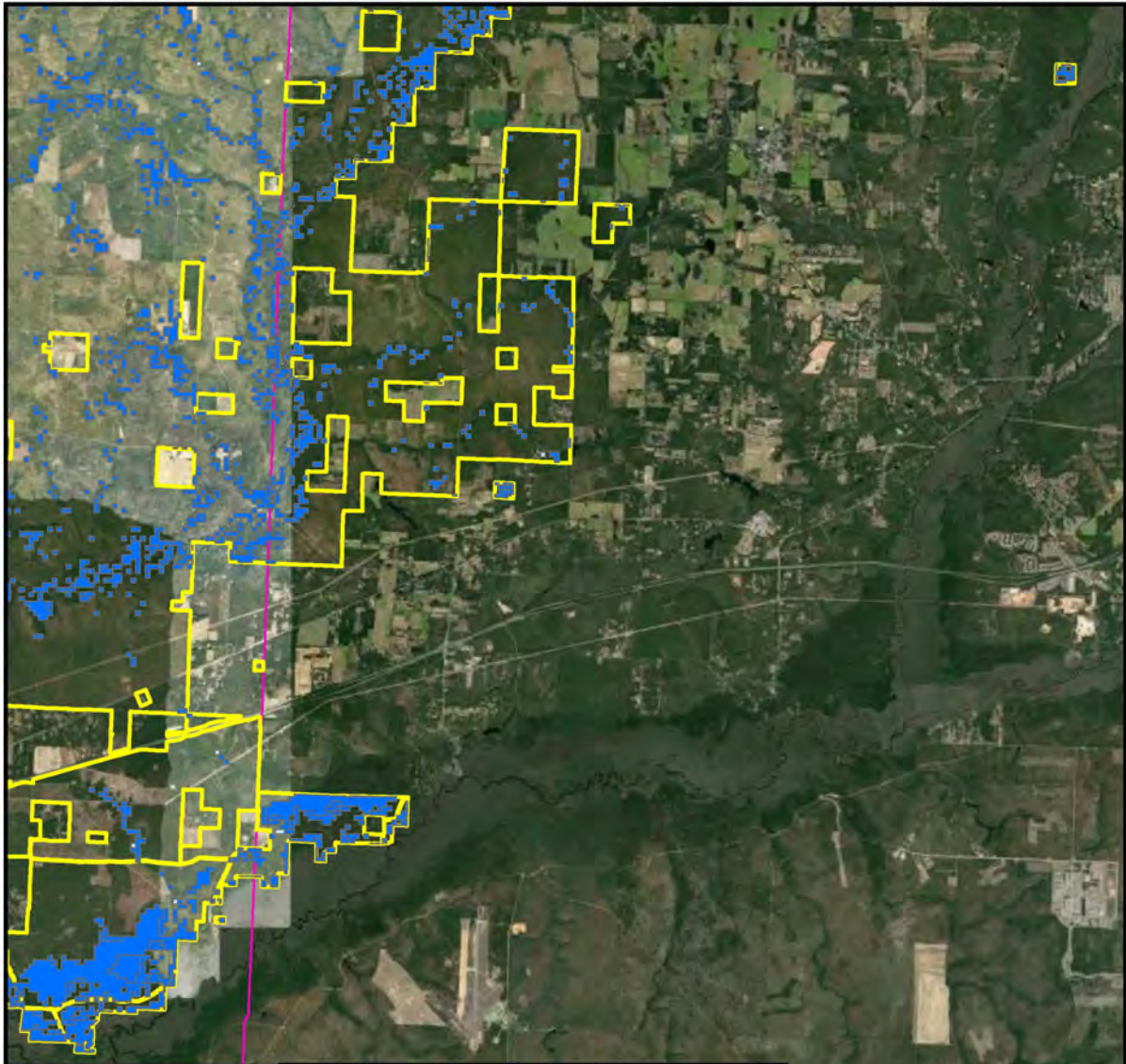
star Geographics, and the GIS User Community

Blackwater River State Forest



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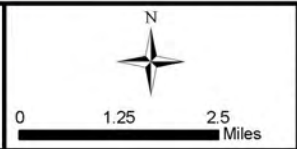


Priority Wetlands

- 1-3 species, wetland habitat
- 4-6 species, wetland habitat
- Blackwater River State Forest

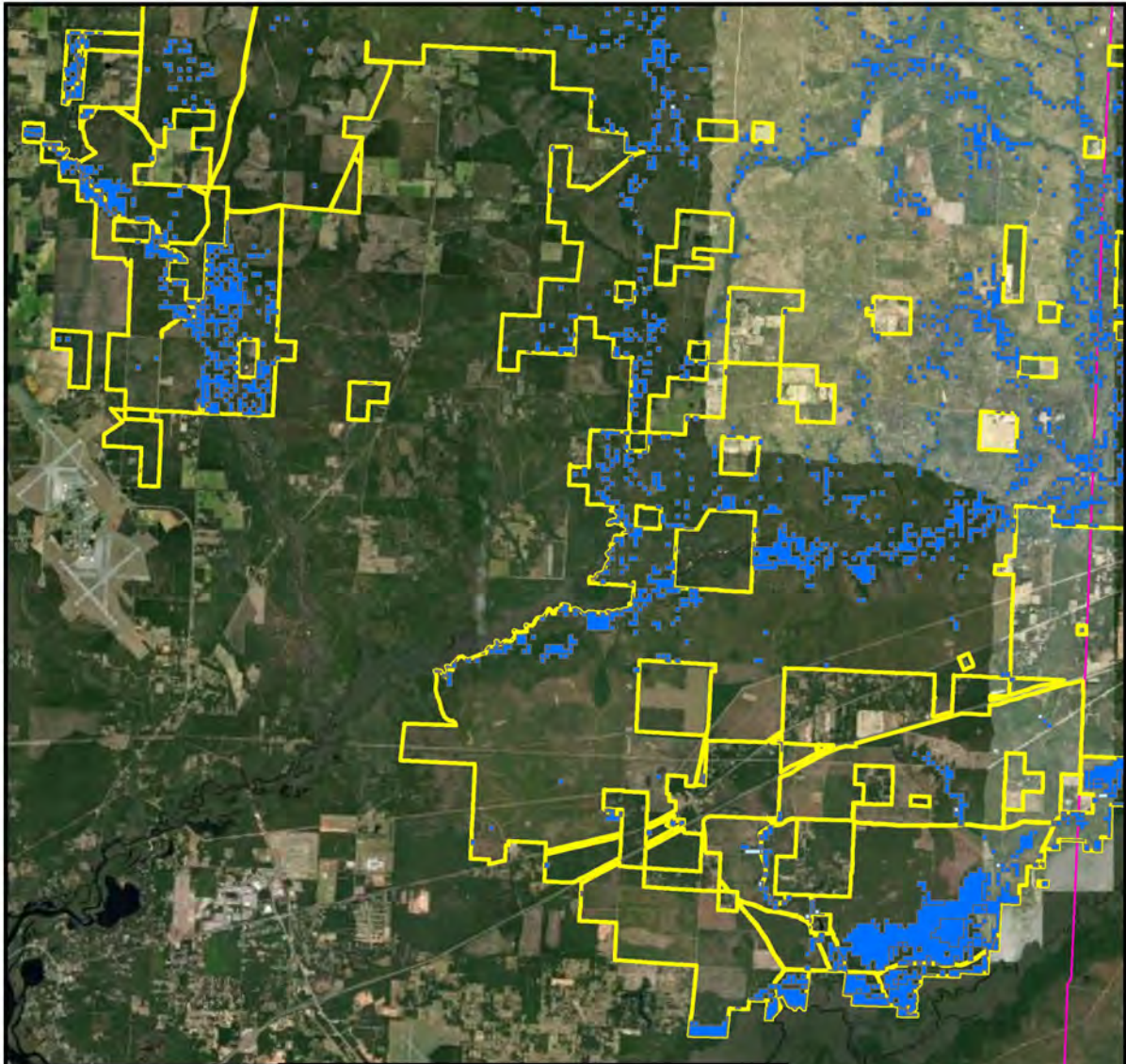
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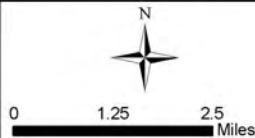


Priority Wetlands

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- Blackwater River State Forest

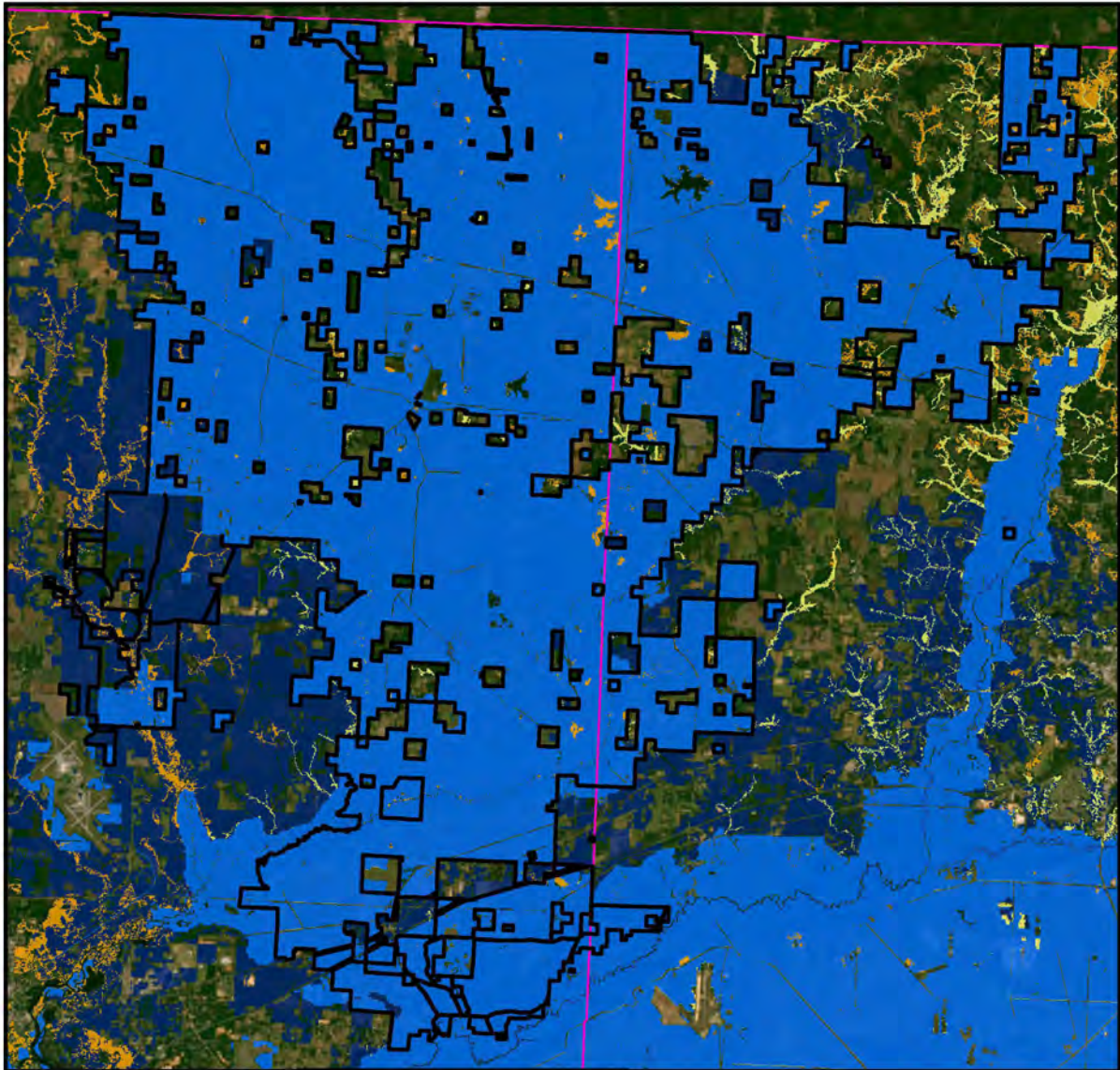
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Blackwater River State Forest









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Prioritized SHCA's

-  Blackwater River State Forest
-  Priority 1
-  Priority 2
-  Priority 3
-  Priority 4
-  Priority 5

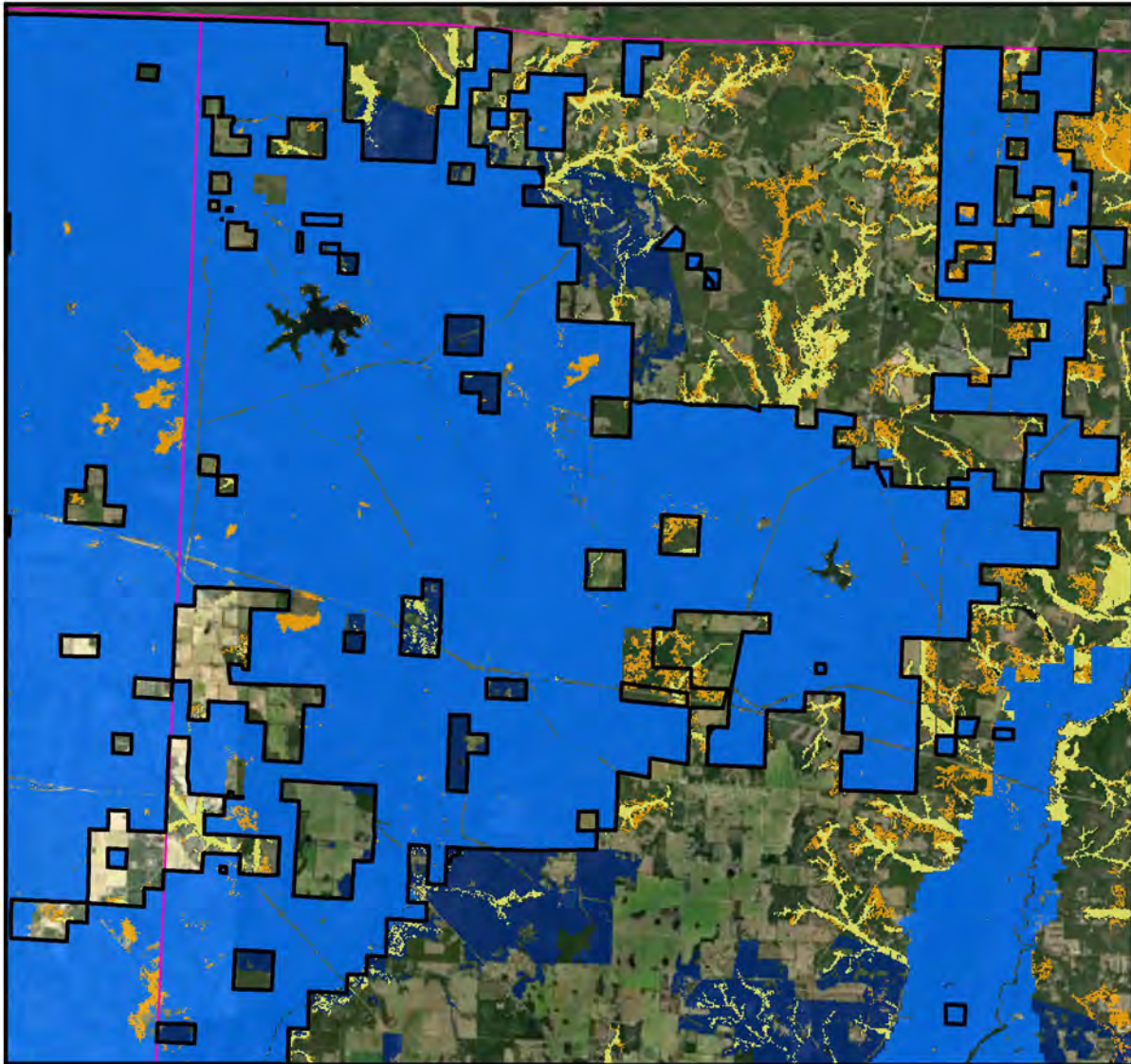
This composite map of prioritized SHCA highlight those areas in need of conservation for the benefit of listed and managed wildlife. The 5 classes of SHCA are based on a number of factors including known occurrence locations, estimated abundance, range, amount of habitat currently protected, perceived levels of threats towards the species, and ecological fragility. Priorities 1 and 2 are the highest value to a range of imperiled species.

Blackwater River State Forest









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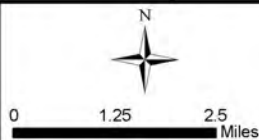


Prioritized SHCA's

-  Blackwater River State Forest
-  Priority 1
-  Priority 2
-  Priority 3
-  Priority 4
-  Priority 5

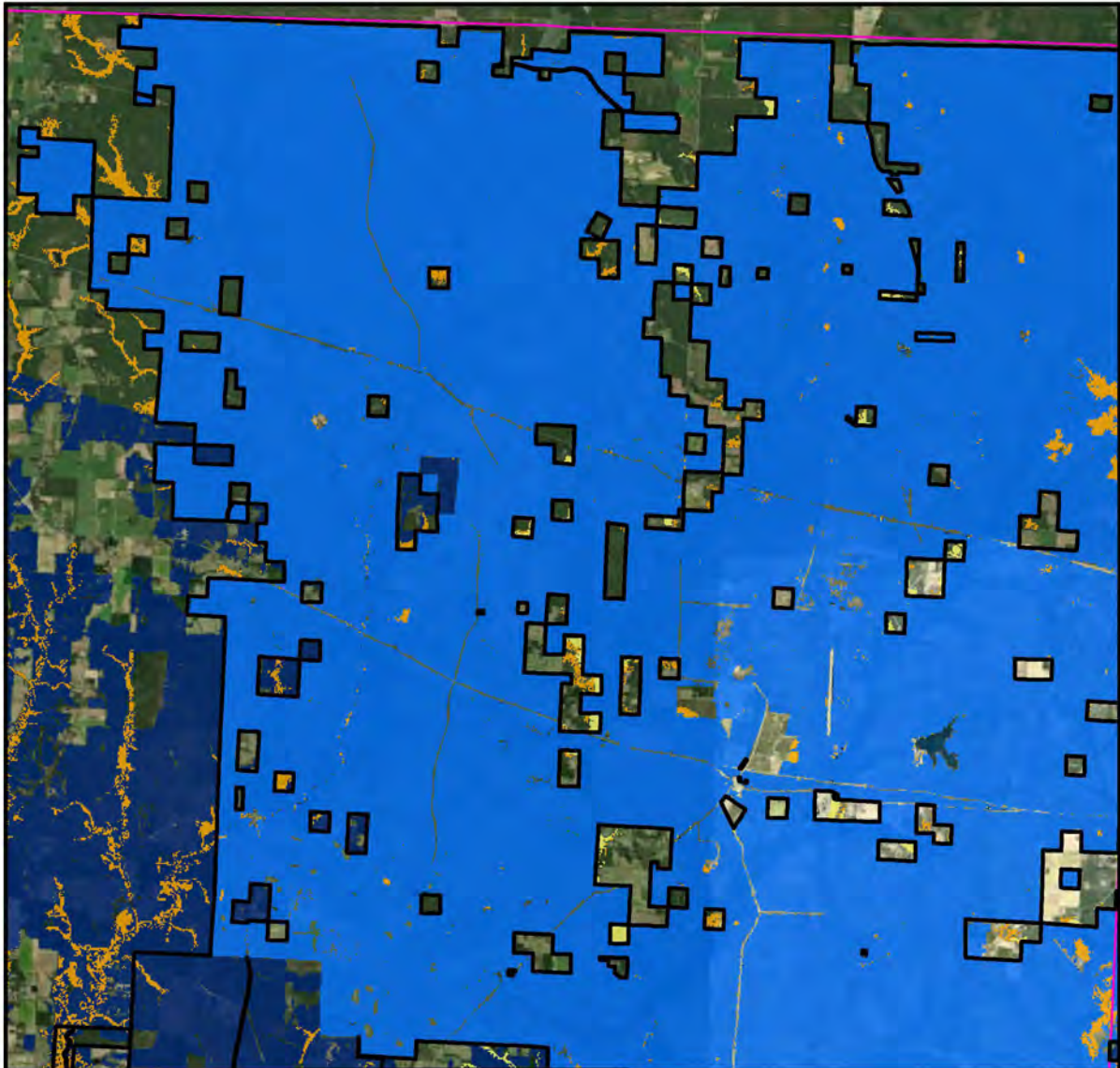
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Blackwater River State Forest









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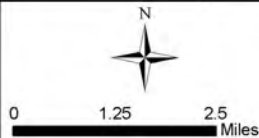


Prioritized SHCA's

-  Blackwater River State Forest
-  Priority 1
-  Priority 2
-  Priority 3
-  Priority 4
-  Priority 5

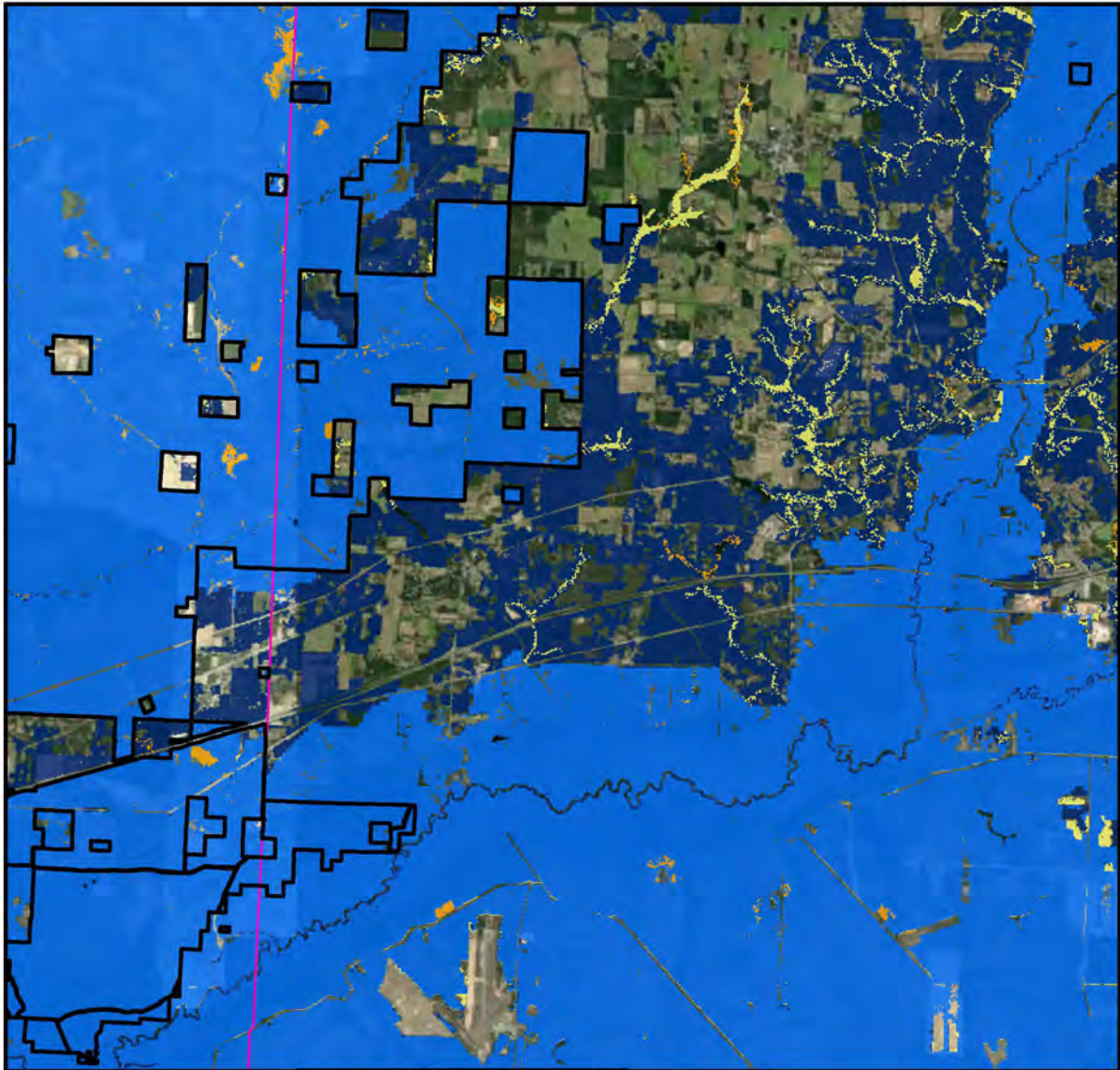
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Blackwater River State Forest









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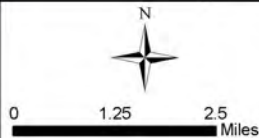


Prioritized SHCA's

-  Blackwater River State Forest
-  Priority 1
-  Priority 2
-  Priority 3
-  Priority 4
-  Priority 5

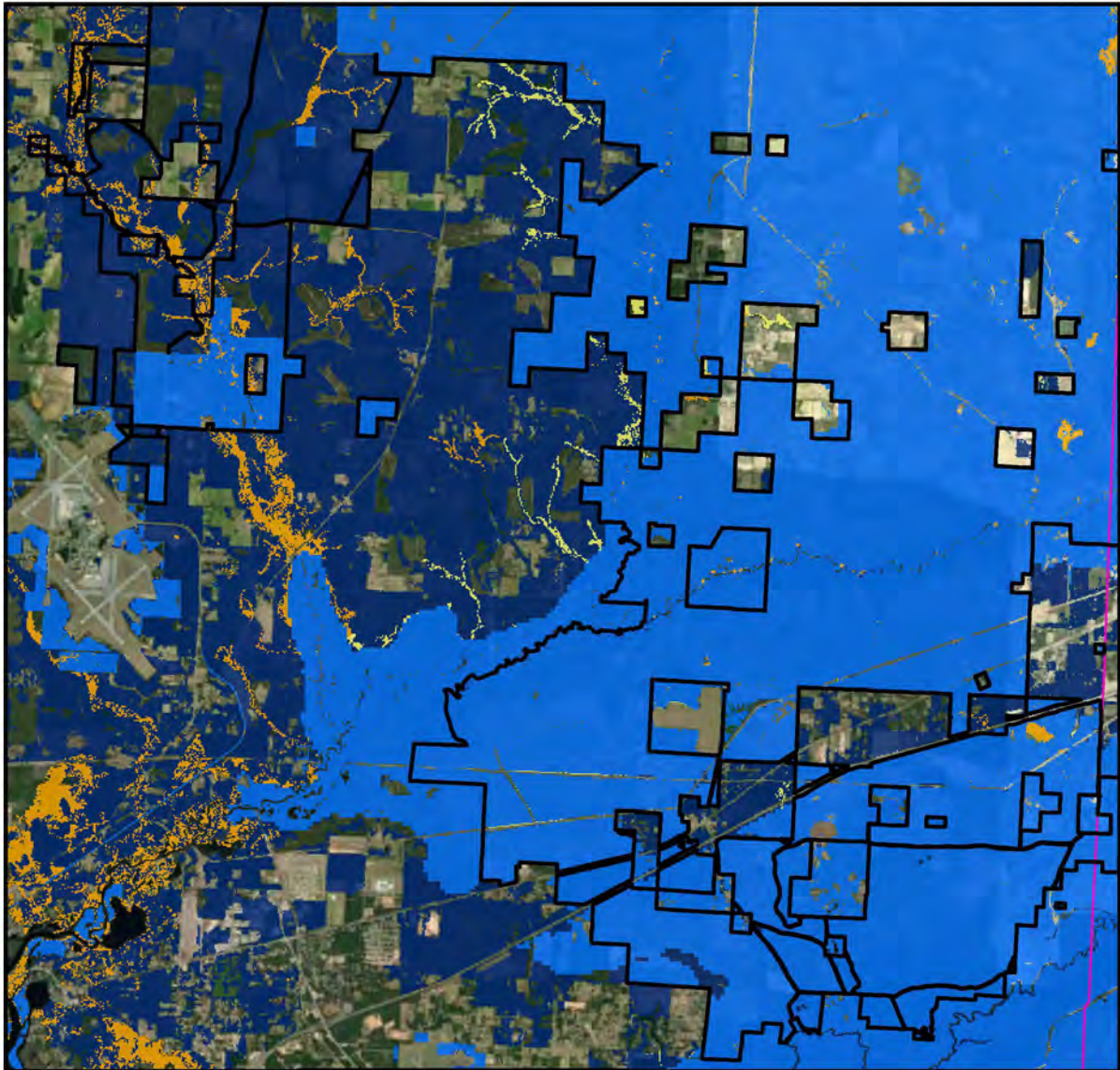
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Blackwater River State Forest









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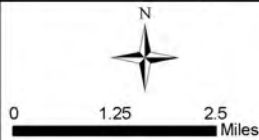


Prioritized SHCA's

-  Blackwater River State Forest
-  Priority 1
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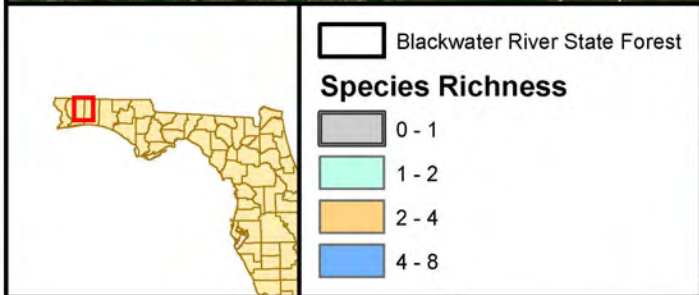
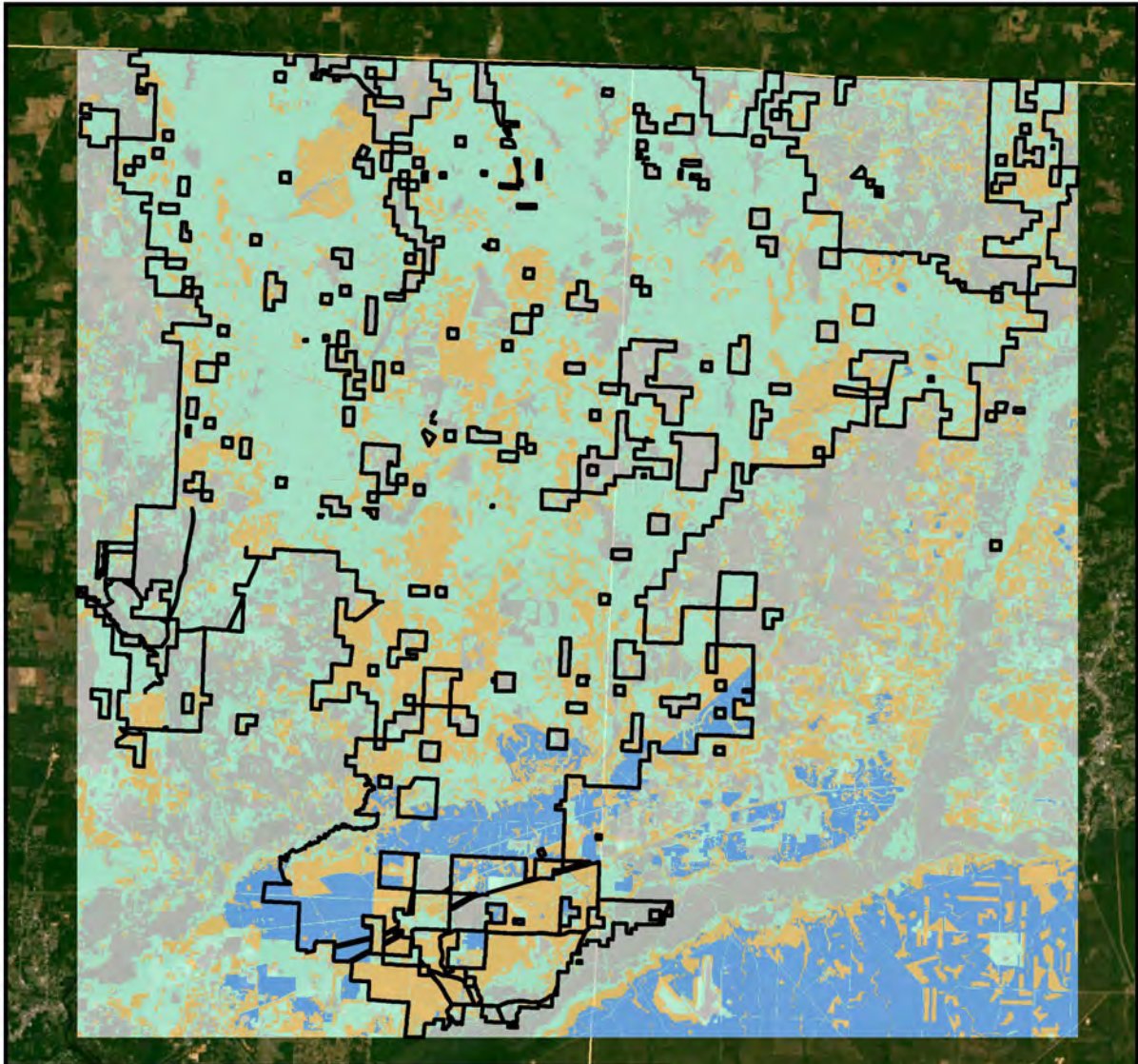
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Blackwater River State Forest



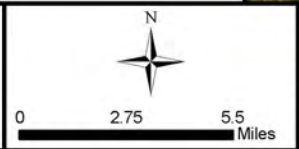
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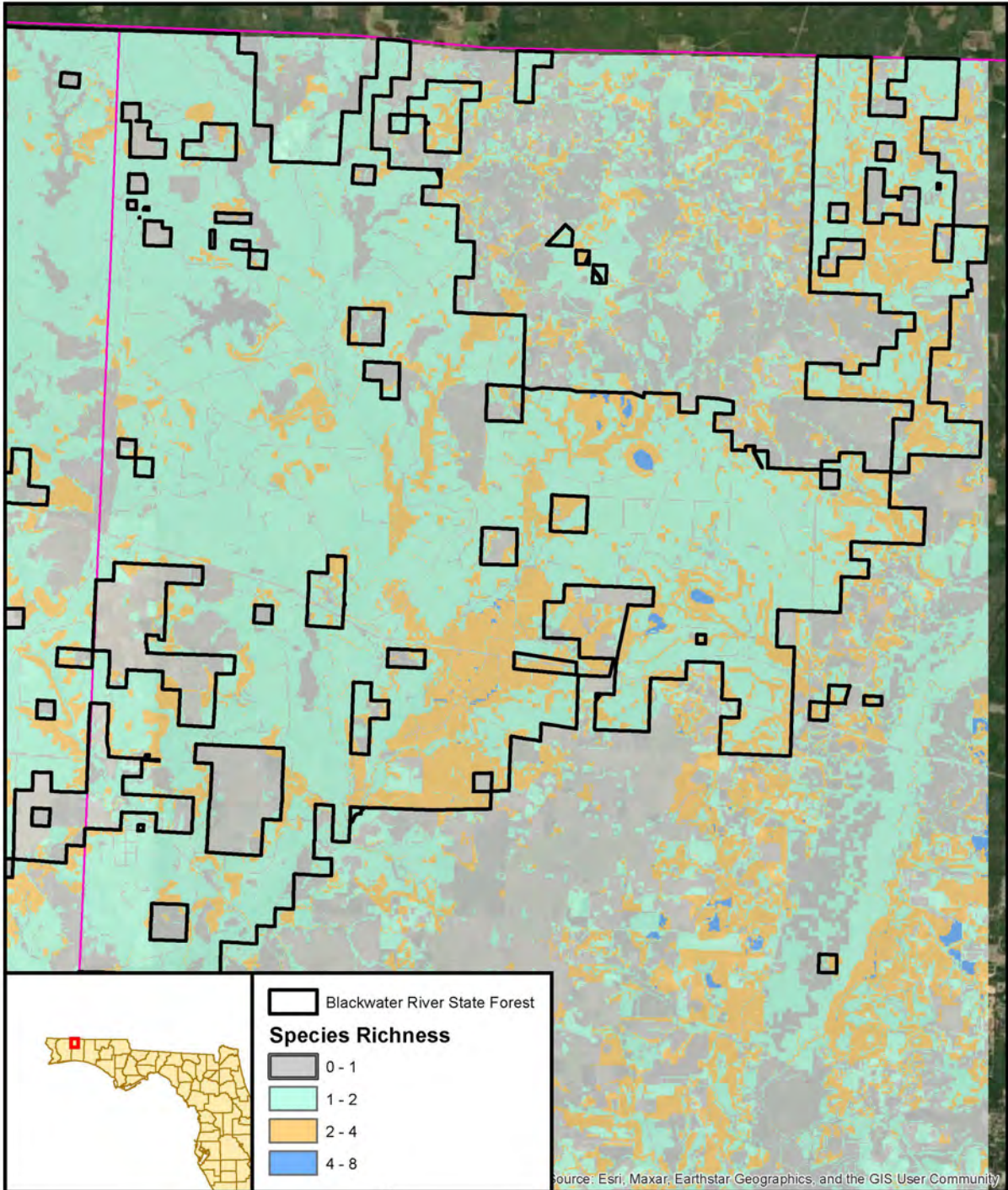
Esti, Maxar, Earthstar Geographics, and the GIS User Community

Blackwater River State Forest

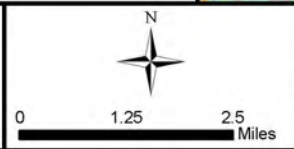


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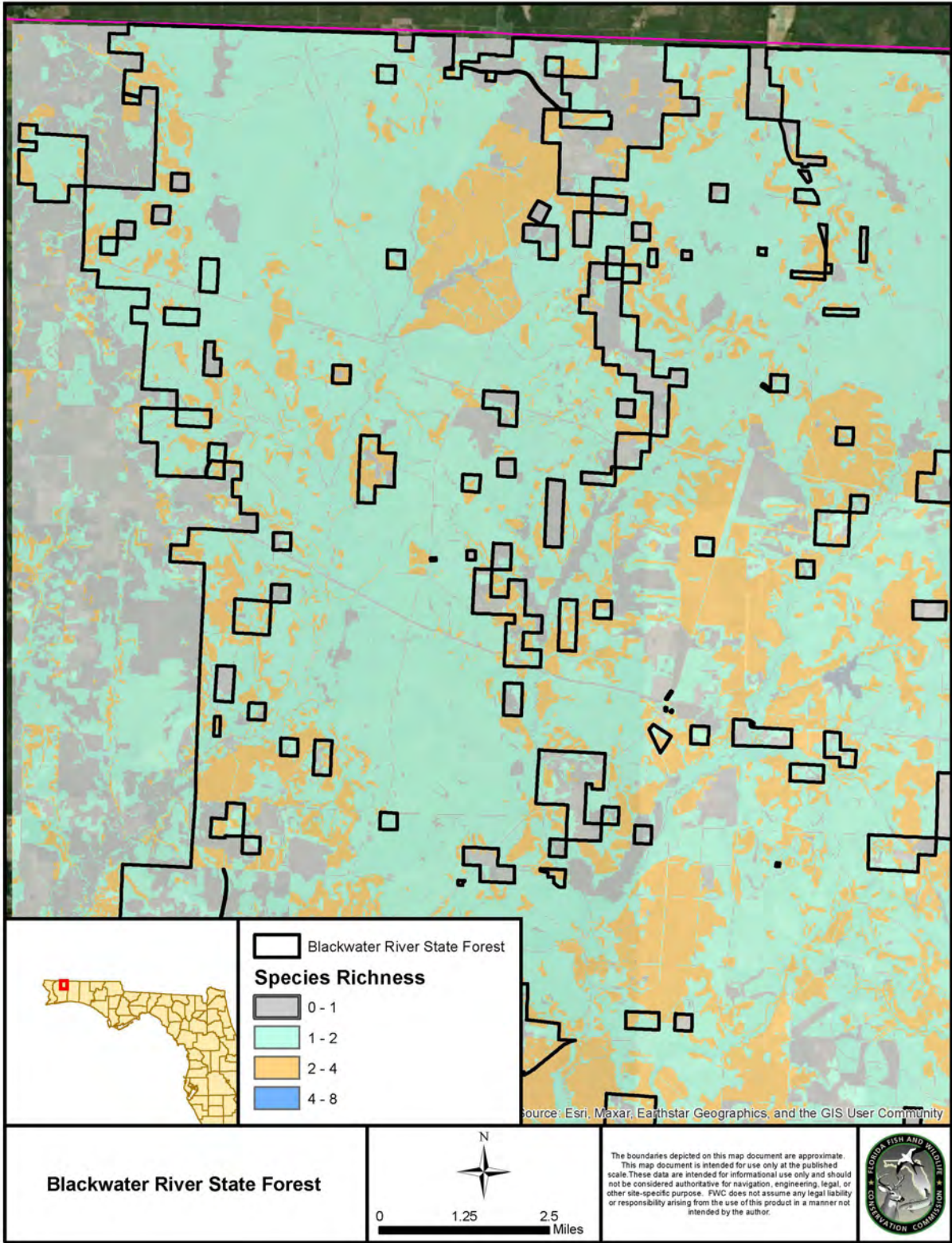


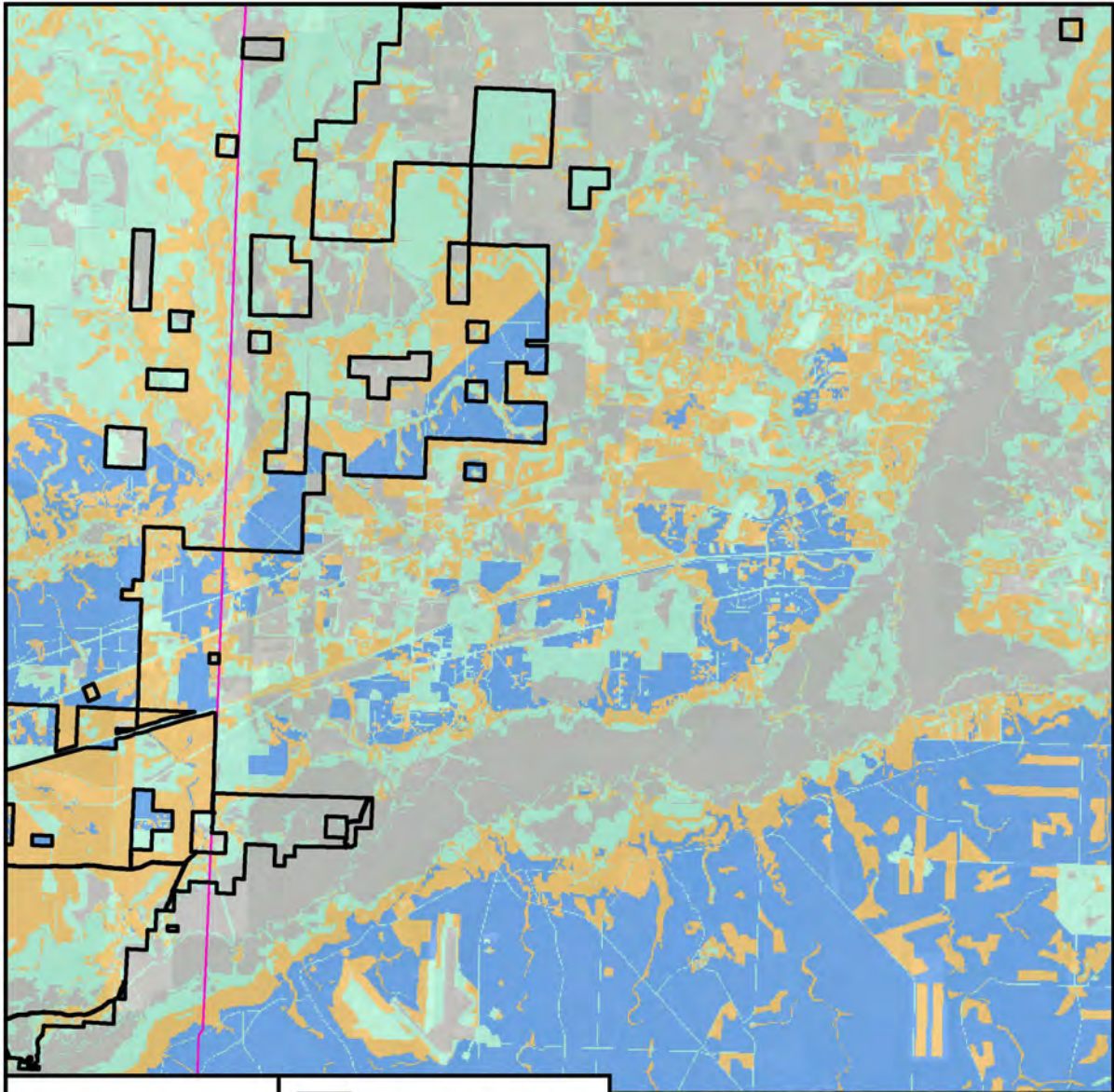
Blackwater River State Forest



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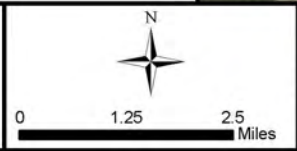
Blackwater River State Forest

Species Richness

- 0 - 1
- 1 - 2
- 2 - 4
- 4 - 8

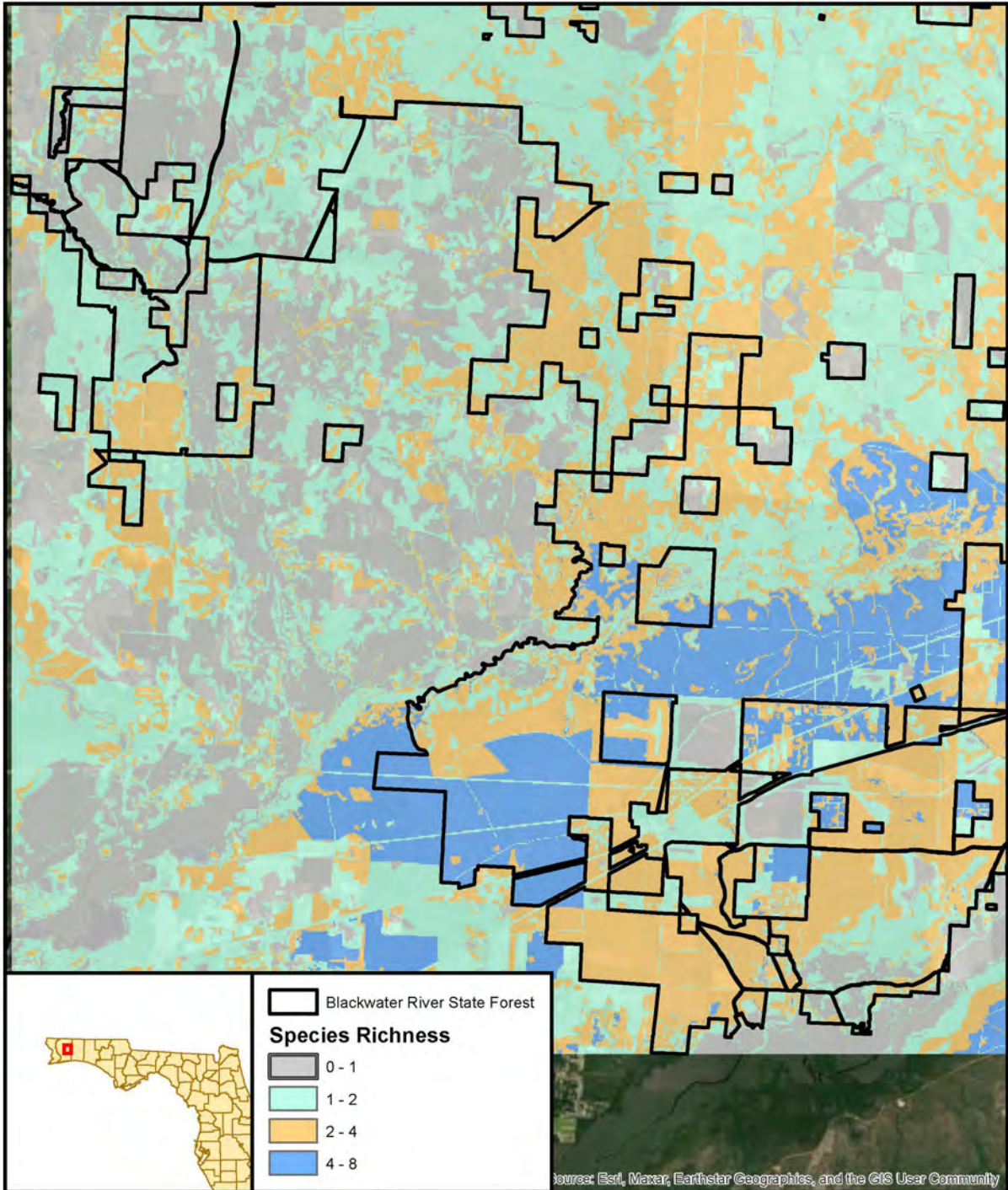
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Blackwater River State Forest

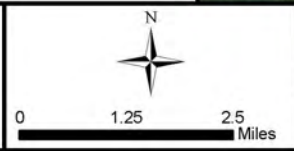


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Blackwater River State Forest



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Exhibit O

Fire History

Blackwater River State Forest Burn Acres by Fiscal Year

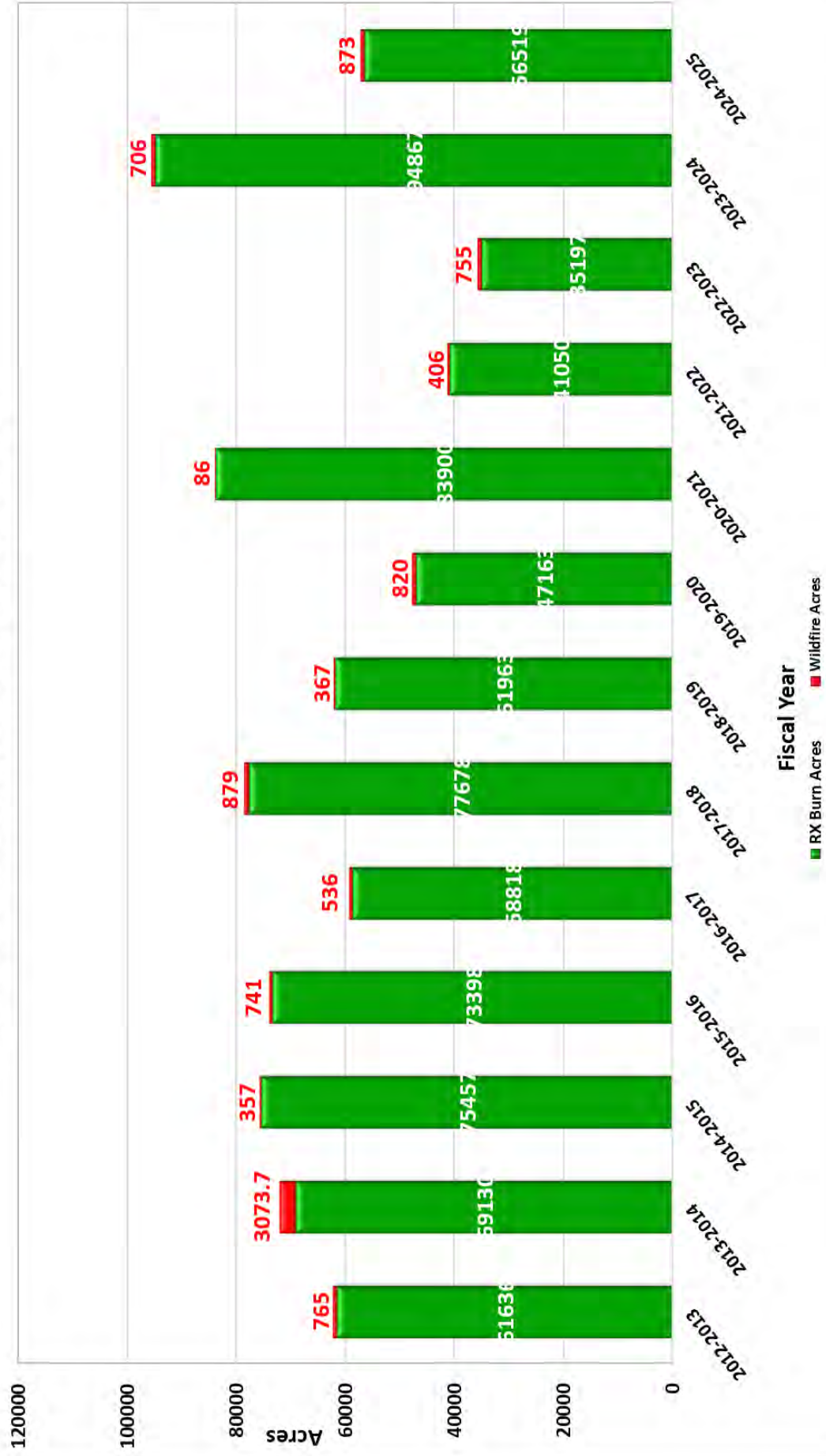


Exhibit P

Invasive Species Map



Florida Forest Service

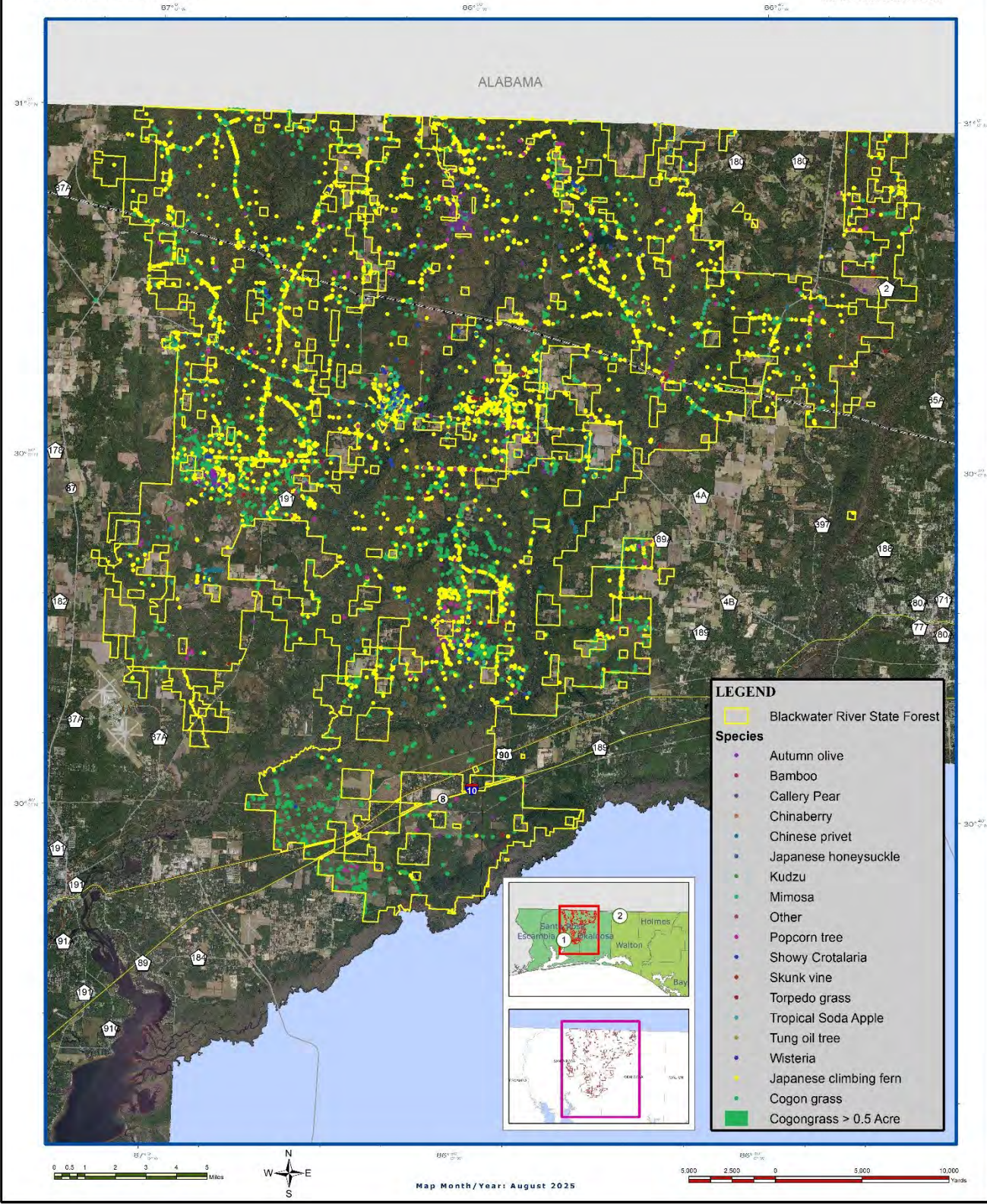
Blackwater River State Forest

Invasive Species Map

Coordinate System: Florida Albers
High Accuracy Reference Network (HARN) Datum

DISCLAIMER
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Boundary Area Shaded in County of
the Florida National Forest Inventory
normally used in the State of Florida
from the US Army Corps of Engineers

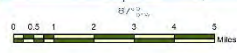
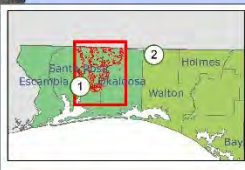


LEGEND

- Blackwater River State Forest

Species

- Autumn olive
- Bamboo
- Callery Pear
- Chinaberry
- Chinese privet
- Japanese honeysuckle
- Kudzu
- Mimosa
- Other
- Popcorn tree
- Showy Croton
- Skunk vine
- Torpedo grass
- Tropical Soda Apple
- Tung oil tree
- Wisteria
- Japanese climbing fern
- Cogon grass
- Cogongrass > 0.5 Acre



Map Month/Year: August 2025



Exhibit Q

Current FNAI Natural Communities Map



Florida Forest Service

Blackwater River State Forest Current FNAI Natural Communities and Cover Types Map

Coordinate System: Florida Albers
High Accuracy Reference Network (HARN) Datum

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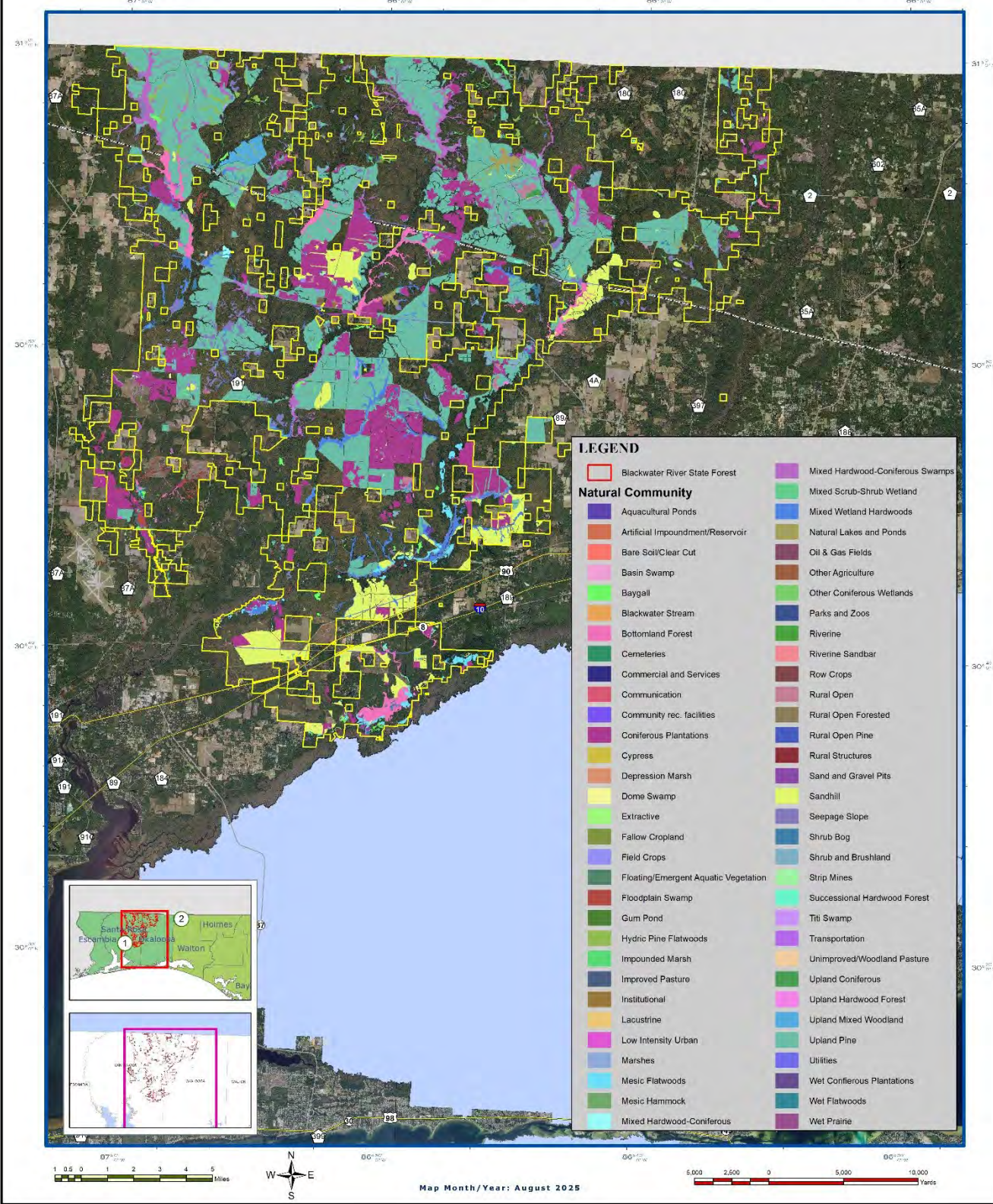


Exhibit R

Historic FNAI Natural Communities Map



Florida Forest Service

Blackwater River State Forest Historic FNAI Natural Communities and Cover Types Map

Coordinate System: Florida Albers
High Accuracy Reference Network (HARN) Datum

DISCLAIMER:
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is not responsible for any errors or omissions in
this map.

Managed Area Boundaries: courtesy of
the Florida Forest Service, Inventory
Formally Used Database Sites (FUDS),
from the US Army Corps of Engineers

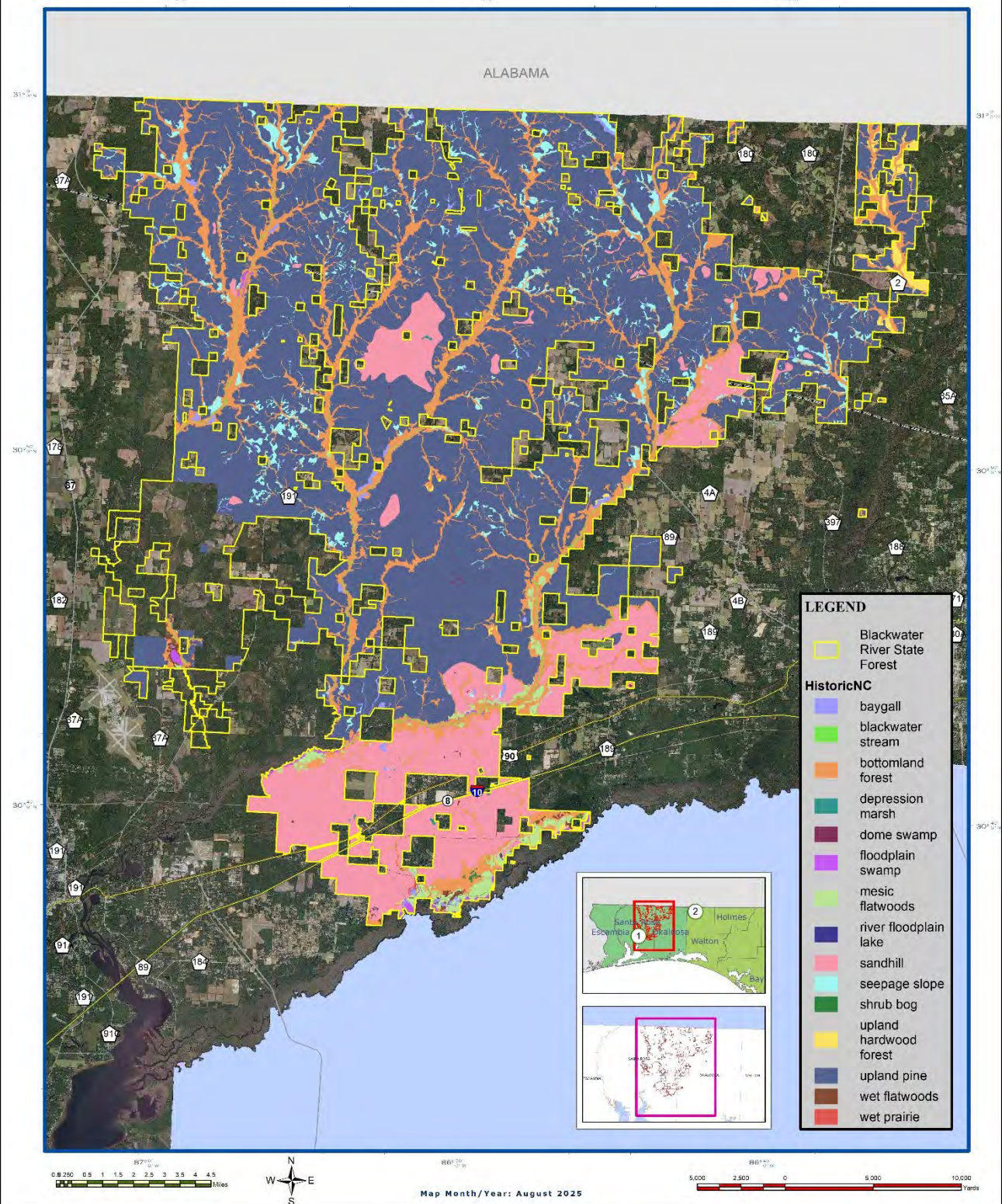


Exhibit S

Yellow River Ravines Management Prospectus

Yellow River Ravines - Group A/Full Fee

Yellow River Ravines

Santa Rosa and Okaloosa County

**Group A
Full Fee**

Purpose for State Acquisition

Public acquisition of this project would protect a high quality example of an imperiled natural community and threatened and endangered plant and animal species. Combined with the 194,668 acres of the Blackwater River State Forest, it will form a continuous corridor of public land from the Eglin Air Force Base through the Conecuh State Forest in Alabama. Acquisition of the project would meet Florida Forever goals of restoring natural habitat and ensuring biodiversity by restoring prescribed fire to areas that would benefit from it, and of increasing natural resource-based recreation by providing areas for camping, picnicking, nature appreciation, hiking and horseback riding. Acquisition of the Yellow River Ravines has also been endorsed by representatives of the U.S. Navy's Pensacola Naval Air Station. Naval officers said at the June 6, 2002 meeting of the Acquisition and Restoration Council that preserving undeveloped land around their satellite airfields would enhance military training by preventing encroachment on military reservations. The Florida National Scenic Trail, a cross-Florida hiking and non-motorized trail, is also planned to cross this project. The trail is a congressionally designated national scenic trail.

Manager

Florida Department of Agriculture and Consumer Services, Division of Forestry (DOF).

General Description

As originally proposed, this 16,652-acre project consisted of two parcels of land, one on the Yellow River about nine miles east of Milton, and the other being an "infill" parcel in the existing Blackwater River State Forest. The main parcel stretches from the Blackwater River State Forest south to the Yellow River. This project includes a mix of floodplain swamp and floodplain forest, sandhill, mesic flatwoods, wet prairie, dome swamp and seepage stream. About 1,061 acres would protect natural floodplain functions. Much of the floodplain in this project is second-growth forest. The project includes approximately 2,501 acres of functional wetlands and approximately 10,033 acres of land that would provide protection to the surface waters of the state. About 70 percent of the project was originally sandhill, but has been disturbed in the past by being used for silviculture.

Public Use

The DOF will promote recreation and environmental education in the natural environment. It is anticipated that interpretive and user services recreation facilities will be developed and the use of low-impact rustic facilities will be stressed.

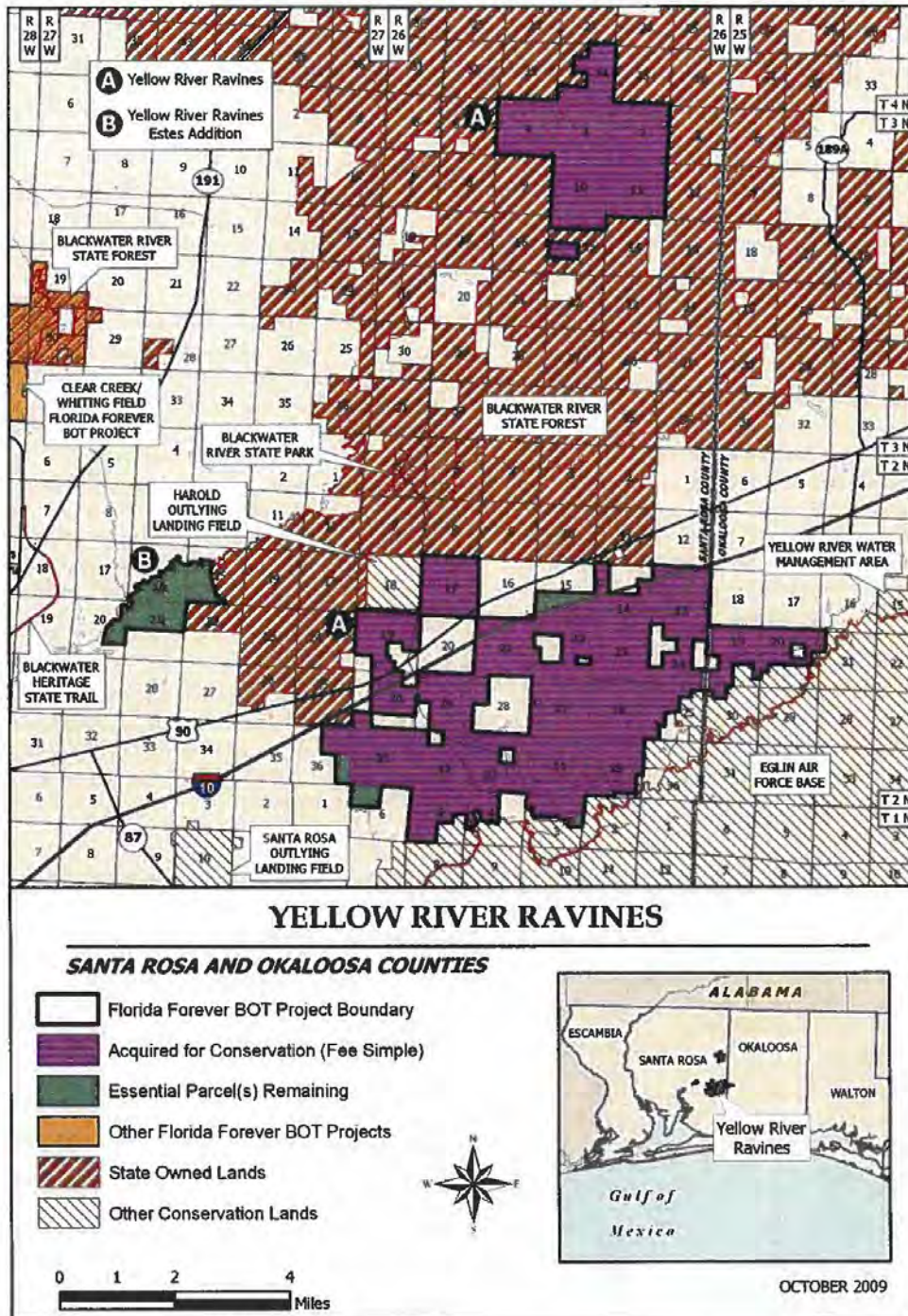
Acquisition Planning

On June 6, 2002, the Acquisition & Restoration Council (ARC) added the Yellow River Ravines project to Group A of the Florida Forever (FF) 2002 Priority list. This fee-simple project, sponsored by the Nature Conservancy (TNC) and Division of Forestry (DOF), consisted of approximately 16,652 acres, five owners, and a 2001 taxable value of \$12,227,546.

Yellow River Ravines FNAI Elements - July 2009	
Reticulated Flatwoods Salamander	G2/S2
Florida Black Bear	G5T2/S2
Swallow-tailed Kite	G5/S2
Panhandle Lily	G2/S2
Florida Bog Frog	G2/S2
White-top Pitcherplant	G3/S3
Hairy Wild Indigo	G3T3/S3
Florida Pine Snake	G4T3/S3
Alligator Snapping Turtle	G3G4/S3
Sweet Pitcherplant	G4/S3
Pine Barrens Treefrog	G4/S3
Eastern Diamondback Rattlesnake	G4/S3
12 rare species are associated with the project	

Placed on list	2002
Project Area (acres)	17,626
Acres Acquired	15,209
At a Cost of	\$32,287,484
Acres Remaining	2,417
Estimated 2001 (tax assessed) Value of	\$1,687,429

Yellow River Ravines - Group A/Full Fee



Yellow River Ravines - Group A/Full Fee

The essential parcels were defined as those held by the International Paper Company.

On August 12, 2005, the ARC approved a fee-simple, 974-acre addition to the project boundary. It was sponsored by TNC and DOF, consisted of one owner, James Estes, and a 2004 taxable value of \$78,040. The parcels were defined as essential.

In October 2007, the BOT acquired 11,208 acres from The Nature Conservancy.

In August and November 2009, the Division of State Lands purchased 547 acres from The Nature Conservancy making this project approximately 92% complete. ARC voted in December 2009 to remove the project from the FF Priority Lsit.

Coordination

The Nature Conservancy is an acquisition partner.

Management Policy Statement

The primary land management goal for the Division of Forestry is to restore, maintain and protect in perpetuity all native ecosystems; to integrate compatible human use; and to insure long-term viability of populations and species considered rare. This ecosystem approach will guide the Division of Forestry's management activities on this project.

Management Prospectus

Qualifications for State Designation

The majority of the acreage of this project consists of what appears to be disturbed sandhill, which has been converted to planted pines of various ages. This acreage has been estimated at 70% of the project, or 9,190 acres. Floodplain swamp represents the second largest land type, and occupies about 2,360 acres. There are lesser acreages of mesic flatwoods, baygalls, seepage streams, wet prairies, and dome swamps. The project's size and diversity makes it desirable for use and management as a state forest. Management by the Division of Forestry as a state forest is contingent upon acquiring fee simple title to the property.

Manager

The Florida Division of Forestry (DOF) of the Department of Agriculture and Consumer Services (DACS) is recommended to be the managing agency.

Conditions affecting intensity of management

Much of the project's plantable areas has been disturbed, and will require restoration efforts. There are approximately 1,200 acres of active timber sales

or areas previously harvested that have not been site prepared and planted. Over the next couple of years, these acres will be harvested and will not be replanted by the current landowner. This acreage will require some level of restoration activity. There is at least one linear facility that bisects the parcel, which will be an area of management concern for monitoring unauthorized uses and introduction of invasive exotic species. Additionally, water resource development projects, water supply development projects, stormwater management projects and any linear facilities are considered incompatible with this ecosystem and with the resource values of this project. The activities of Eglin Air Force base may restrict prescribed burning in this area. The level of management intensity and related management costs is expected to be initially high to obtain the necessary information and resources to restore and manage this system as a State Forest. Once this information is obtained and the resources are available, long-term management costs are expected to be moderate to maintain this area as a State Forest, as the Division of Forestry currently manages approximately 189,600 acres in this area.

Timetable for implementing management, and provisions for security and protection of infrastructure

Once the project area is acquired and assigned to the Division of Forestry, public access will be provided for low intensity outdoor recreation activities. The Division of Forestry proposes to manage the site as a part of Blackwater River State Forest, and the Blackwater Forestry Center personnel will carry out management activities and coordinate public access and use. The Division of Forestry will cooperate with and seek the assistance of other state agencies, local government entities and interested parties as appropriate.

Revenue-generating potential

Timber sales will be conducted as needed to improve or maintain desirable ecosystem conditions. These sales will primarily take place in upland pine stands and will provide a variable source of revenue dependent upon a variety of factors. Due to the existing condition of the timber resource on the property, revenue generating potential of this project is expected to be medium.

Management costs and sources of revenue

It is anticipated that management funding will come from the CARL trust fund. Budget needs for interim management are estimated as follows:

SALARY (5 FTE)	\$164,000
EXPENSE	\$375,000
OPERATING CAPITAL OUTLAY	\$510,000
TOTAL	\$1,049,000

Exhibit T

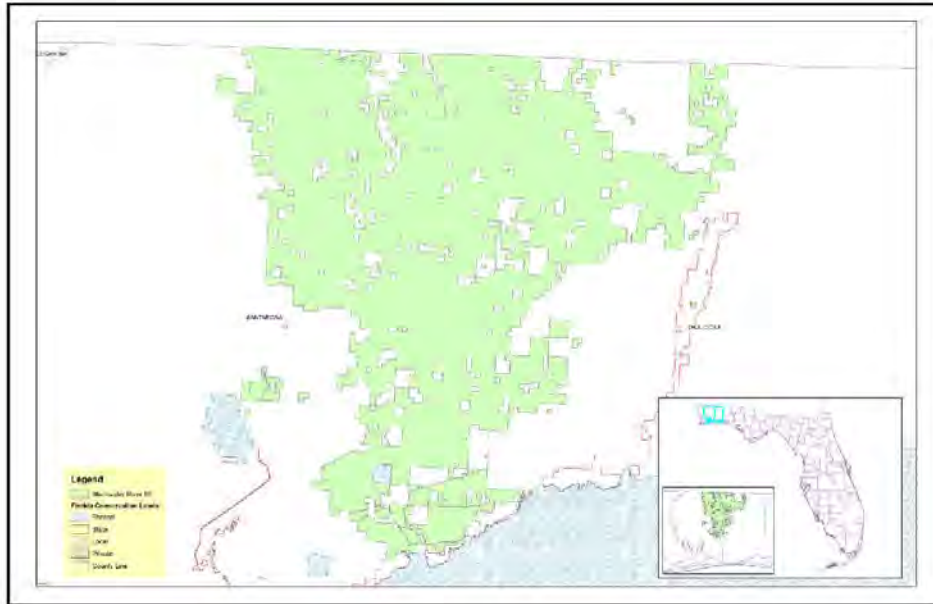
Land Management Reviews

(2012, 2017 & 2021)

Name of Site: Blackwater River State Forest **County:** Santa Rosa County

Managed by: Department of Agriculture and Consumer Services **Acres:** 206,351 Acres
 Florida Forest Service

Review Date: 04/30/12 **Management Plan Approval Date:** 12/16/10



Review Team Determination

Managed in accordance with acquisition purpose? Yes = 7, No = 0



Management practices, including public access, in compliance with the management plan? Yes = 7, No = 0



Categories	Management Plan Review	Field Review
Natural Communities	0.99	5.00
Listed Species	0.77	4.78
Natural Resource Survey	0.90	4.63
Cultural Resources	0.93	4.45
Prescribed Fire	1.00	4.86
Restoration	0.86	4.67
Exotic Species	0.93	4.68
Hydrology	0.79	4.86
Groundwater Monitoring	0.57	4.80
Surface Water Monitoring	0.69	4.27
Resource Protection	0.71	4.32
Adjacent Property Concerns	0.91	4.55
Public Access & Education	0.91	4.50
Management Resources	N/A	4.69
Managed Area Uses	1.00	N/A
Buildings, Equipment, Staff & Funding	N/A	3.36

Consensus Commendations to the Managing Agency

The following commendations resulted from discussion and vote of the review team members.

1. The team commends the FFS for the outstanding fire program at the forest, including the excellent working relationships with the military and surrounding landowners. (VOTE: 7+, 0-)



2. The team commends the FFS for their outstanding use of existing and recycled materials, and labor to very cost effectively maintain and replace bridges and equipment. (VOTE: 7+, 0-)



3. The team commends the FFS for their erosion and sedimentation control on the area's streams and creeks. (VOTE: 7+, 0-)



4. The team commends the FFS for the acquisition and restoration implementation of the Ates Pasture and Yellow River additions. (VOTE: 7+, 0-)



5. The team commends the FFS for the provision of separation of user groups by providing an off-highway vehicle use area. (VOTE: 7+, 0-)



6. The team commends the FFS for the red-cockaded woodpecker habitat management and population monitoring program at the forest. (VOTE: 7+, 0-)



Consensus Recommendations to the Managing Agency

The following recommendations resulted from a discussion and vote of review team members. The management plan must include responses to the recommendations identified below.

1. The team recommends the inclusion of Florida bog frog and reticulated flatwoods salamander management and monitoring at the forest. (VOTE: 7+, 0-)



Managing Agency Response: The Florida bog frog and reticulated flatwoods salamander has been added into the updated ten year management plan for habitat improvement and monitoring. p. 7, 26, 31

2. The team recommends that FFS focus the archaeological efforts on a plan which includes pre-development surveys, listing support of academic resources as necessary, and existing GIS databases. (VOTE: 7+, 0-)



Managing Agency Response: The Florida Forest Service has included this in its updated ten year management plan. See pages. 21, 22, 34, 35

3. The team recommends that funding levels for invasive exotic species control be restored and sustained to previous funding and staffing levels. (VOTE: 7+, 0-)



Managing Agency Response: Blackwater River State Forest staff will seek grants and other funding opportunities and work with the forest health section to fund the exotic species control program.

Field Review Checklist Findings

The following items received high scores on the review team checklist, indicating the management actions in the field exceeded expectations.

- Natural Communities, specifically upland pine forest, sandhill, upland mixed forest, slope forest, seepage slope, mesic flatwoods, floodplain swamp, depression marsh, spring-run stream blackwater stream, baygall and bottomland forest.
- Listed Species, specifically animal inventory, red cockaded woodpecker, gopher tortoise, reticulated flatwoods salamander and plant inventory.
- Natural Resources Survey, specifically sport fish or habitat monitoring, listed species or habitat monitoring, other non-game species or habitat monitoring, fire effects monitoring, other habitat management effects monitoring and invasive species survey/monitoring.
- Cultural Resources, specifically cultural resource survey, protection and preservation.
- Resource Management, Prescribed Fire, specifically area being burned (no. acres), frequency and quality.
- Restoration of Ruderal Areas, specifically sandhill restoration in Yellow River and plantation conversion to sandhill & upland.
- Forest Management, specifically, timber inventory, timber harvesting, reforestation/afforestation and site preparation.
- Non-Native, Invasive & Problem Species, specifically prevention and control of plants, animals and pests/pathogens.
- Hydrologic/Geologic Function, specifically roads/culverts, dams, reservoirs or other impoundments and stream sedimentation.
- Ground and Surface Water Monitoring, specifically water quality and control.
- Resource Protection, specifically boundary survey, gates/fencing, signage and law enforcement presence.
- Adjacent Property Concerns, specifically expanding development, military operation and inholdings/additions.
- Public Access & Education, specifically roads and parking.
- Environmental Education & Outreach, specifically wildlife, invasive species, habitat management activities and interpretive facilities, signs, recreational opportunities and management of visitor impacts.
- Management Resources, specifically waste disposal, sanitary facilities, buildings and equipment.

Items Requiring Improvement Actions in the Management Plan

The following items received low scores on the review team checklist, which indicates that the text noted in the Management Plan Review does not sufficiently address this issue (less than .5 score on average.) Please note that overall good scores do not preclude specific recommendations by the review team requiring remediation. The management plan must include responses to the checklist items identified below:

1. Discussion in the management plan regarding listed species, specifically reticulated flatwoods salamander. *Management discussion for the reticulated flatwoods salamander has been added to the updated ten year management plan. pages 8, 26, 31*
2. Discussion in the management plan regarding restoration of ruderal areas, specifically sandhill restoration in Yellow River. *Management discussion has been added in the updated ten year management plan concerning restoration of sand hill communities in the Yellow River Unit. page 7, and detailed in Sandhill Management Section, pages 48-50*
3. Discussion in the management plan regarding resource protection, specifically gates & fencing.

Management discussion has been added in the updated ten year management plan concerning gates and fencing. Pages 24 and 40.

PLAN REVIEW		1	2	3	4	5	6	7	AVERAGE
Natural Communities (I.A)									
Upland Pine Forest	I.A.1	1	1	1	1	1	1	1	1.00
Sandhill	I.A.2	1	1	1	1	1	1	1	1.00
Upland Mixed Forest	I.A.3	1	1	1	1	1	1	1	1.00
Slope Forest	I.A.4	1	1	1	1	1	1	1	1.00
Seepage Slope	I.A.5	1	1	1	1	1	1	1	1.00
Mesic Flatwoods	I.A.6	1	1	1	1	1	1	1	1.00
Floodplain Swamp	I.A.7	1	1	1	1	1	1	1	1.00
Depression Marsh	I.A.8	1	1	1	1	1	1	1	1.00
Spring-Run Stream	I.A.9	1	1	1	1	1	1	1	1.00
Blackwater Stream	I.A.10	1	1	1	1	1	1	1	1.00
Baygall	I.A.11	1	0	1	1	1	1	1	0.86
Bottomland Forest	I.A.12	1	1	1	1	1	1	1	1.00
Listed species:Protection & Preservation (I.B)									
Animal Inventory	I.B.1	1	1	1	1	1	1	1	1.00
Red Cockaded Woodpecker	I.B.1.a	1	1	1	1	1	1	1	1.00
Gopher Tortoise	I.B.1.b	1	1	1	1	1	0	1	0.86
Reticulated Flatwoods Salamander	I.B.1.d	0	0	0	0	0	0	0	0.00
Plant Inventory	I.B.2	1	1	1	1	1	1	1	1.00
Natural Resources Survey/Management Resources (I.C)									
Sport fish or habitat monitoring	I.C.1	1	1	1	1	1	0	1	0.86
Listed species or habitat monitoring	I.C.2	1	1	1	1	1	1	1	1.00
Other non-game species or habitat monitoring	I.C.3	1	1	1	1	1	0	1	0.86
Fire effects monitoring	I.C.4	1	1	1	1	1	1	1	1.00
Other habitat management effects monitoring	I.C.5	1	0	1	0	1	1	1	0.71
Invasive species survey / monitoring	I.C.6	1	1	1	1	1	1	1	1.00
Cultural Resources (Archeological & Historic sites) (II.A,II.B)									
Cultural Res. Survey	II.A	1	0	1	1	1	1	1	0.86
Protection and preservation	II.B	1	1	1	1	1	1	1	1.00
Resource Management, Prescribed Fire (III.A)									
Area Being Burned (no. acres)	III.A.1	1	1	1	1	1	1	1	1.00
Frequency	III.A.2	1	1	1	1	1	1	1	1.00
Quality	III.A.3	1	1	1	1	1	1	1	1.00
Restoration of Ruderal Areas (III.B)									

Sandhill Restoration in Yellow River	III.B.1	0	1	0	0	0	0	0	0.14
Plantation Conversion to Sandhill & Upland Pine	III.B.2	1	1	1	1	1	1	1	1.00
Forest Management (III.C)									
Timber Inventory	III.C.1	1	1	1	1	1	1	1	1.00
Timber Harvesting	III.C.2	1	1	1	1	1	1	1	1.00
Reforestation/Afforestation	III.C.3	1	1	1	1	1	1	1	1.00
Site Preparation	III.C.4	1	1	1	1	1	1	1	1.00
Non-Native, Invasive & Problem Species (III.E)									
Prevention									
prevention - plants	III.E.1.a	1	1	1	1	1	1	1	1.00
prevention - animals	III.E.1.b	1	1	1	1	1	1	1	1.00
prevention - pests/pathogens	III.E.1.c	1	1	1	1	1	0	1	0.86
Control									
control - plants	III.E.2.a	1	1	1	1	1	1	1	1.00
control - animals	III.E.2.b	1	1	1	1	1	0	1	0.86
control - pest/pathogens	III.E.2.c	1	1	1	1	1	0	1	0.86
Hydrologic/Geologic function Hydro-Alteration (III.F.1)									
Roads/culverts	III.F.1.a	1	1	1	1	1	1	1	1.00
Dams, Reservoirs or other impoundments	III.F.1.e	0	1	1	0	1	0	1	0.57
Stream Sedimentation	III.F.1.f	0	1	1	1	1	0	1	0.71
Ground Water Monitoring (III.F.2)									
Ground water quality	III.F.2.a	1	1	0	0	1	0	1	0.57
Ground water quantity	III.F.2.b	1	1	0	0	1	0	1	0.57
Surface Water Monitoring (III.F.3)									
Surface water quality	III.F.3.a	1	1	1	0	1	0	1	0.71
Surface water quantity	III.F.3.b	1	1	1	0	1	0		0.67
Resource Protection (III.G)									
Boundary survey	III.G.1	1	1	1	1	1	1	1	1.00
Gates & fencing	III.G.2	1	0	0	0	0	0	1	0.29
Signage	III.G.3	1	1	1	1	0	0	1	0.71
Law enforcement presence	III.G.4	1	0	1	1	1	1	1	0.86
Adjacent Property Concerns (III.H)									
Land Use									
Expanding development	III.H.1.a	1	1	1	1	1	1	1	1.00
Military Operation	III.H.1.b	0	1	0	0	1	1	1	0.57
Inholdings/additions	III.H.2	1	1	1	1	1	1	1	1.00
Discussion of Potential Surplus Land Determination	III.H.3	1	1	1	1	1	1	1	1.00
Surplus Lands Identified?	III.H.4	1	1	1	1	1	1	1	1.00
Public Access & Education									
Public Access									

Floodplain Swamp	I.A.7	5	5	5	5	5	5	5	5.00
Depression Marsh	I.A.8	5	5	5	5	5	5	5	5.00
Spring-Run Stream	I.A.9	5	5	5	5	5	5	5	5.00
Blackwater Stream	I.A.10	5	5	5	5	5	5	5	5.00
Baygall	I.A.11	5	X	5	5	5	5	5	5.00
Bottom land Forest	I.A.12	5	X	5	5	5	5	5	5.00
Listed species:Protection & Preservation (I.B)									
Animal Inventory	I.B.1	4		5	5	5	5	5	4.83
Red Cockaded Woodpecker	I.B.1.a	4	5	5	5	5	5	5	4.86
Gopher Tortoise	I.B.1.b	3	X	5	5	5	5	5	4.67
Reticulated Flatwoods Salamander	I.B.1.d	4	4	5	5	5	5	5	4.71
Plant Inventory	I.B.2	4	X	5	5	5	5	5	4.83
Natural Resources Survey/Management Resources (I.C)									
Sport fish or habitat monitoring	I.C.1	X	4	5	5	5	5	4	4.67
Listed species or habitat monitoring	I.C.2	4	4	5	5	5	5	4	4.57
Other non-game species or habitat monitoring	I.C.3	4	X	5	5	5	5	4	4.67
Fire effects monitoring	I.C.4	4	X	5	5	5	5	5	4.83
Other habitat management effects monitoring	I.C.5	3		5	4	5	5	4	4.33
Invasive species survey / monitoring	I.C.6	5	5	5	4	5	5	4	4.71
Cultural Resources (Archeological & Historic sites) (II.A,II.B)									
Cultural Res. Survey	II.A	4	X	X	4	5	5	4	4.40
Protection and preservation	II.B	4	4	X	5	5	5	4	4.50
Resource Management, Prescribed Fire (III.A)									
Area Being Burned (no. acres)	III.A1	5	5	5	5	5	5	5	5.00
Frequency	III.A.2	4	5	5	5	5	5	5	4.86
Quality	III.A.3	3	5	5	5	5	5	5	4.71
Restoration of Ruderal Areas (III.B)									
Sandhill Restoration in Yellow River	III.B.1	4	5	5	4	4	5	5	4.57
Plantation Conversion to Sandhill & Upland Pine	III.B.2	4	5	5		5	5	5	4.83
Forest Management (III.C)									
Timber Inventory	III.C.1	4	X	4	4	5	5	4	4.33
Timber Harvesting	III.C.2	5	5	5	5	5	5	4	4.86
Reforestation/Afforestation	III.C.3	4	5	5	5	5	5	4	4.71
Site Preparation	III.C.4	4	5	5	5	5	5	4	4.71
Non-Native, Invasive & Problem Species (III.E)									
Prevention									
prevention - plants	III.E.1.a	4	5	5	5	5	5	5	4.86
prevention - animals	III.E.1.b	5	X	5	5	5	3	5	4.67
prevention - pests/pathogens	III.E.1.c	4	X	5	5	5	3	5	4.50
Control									

control - plants	III.E.2.a	4	5	5	4	5	5	5	4.71
control - animals	III.E.2.b	4	X	5	5	5	5	4	4.67
control - pest/pathogens	III.E.2.c	4	X	5	4	5	5	5	4.67
Hydrologic/Geologic function Hydro-Alteration (III.E.1)									
Roads/culverts	III.F.1.a	5	5	5	5	5	5	5	5.00
Dams, Reservoirs or other impoundments	III.F.1.e	4	5	5	5	5	5	4	4.71
Stream Sedimentation	III.F.1.f		5	5	4	5	5	4	4.67
Ground Water Monitoring (III.F.2)									
Ground water quality	III.F.2.a	5	X	X	5	5	5	4	4.80
Ground water quantity	III.F.2.b	5	X	X	5	5	5	4	4.80
Surface Water Monitoring (III.E.3)									
Surface water quality	III.F.3.a	3	X	4	5	5	5	4	4.33
Surface water quantity	III.F.3.b	3	X	4	X	5	5	4	4.20
Resource Protection (III.F)									
Boundary survey	III.G.1	5	3	5	4	5	5	4	4.43
Gates & fencing	III.G.2	5	X	X	5	5	5	5	5.00
Signage	III.G.3	4	5	5	5	5	5	5	4.86
Law enforcement presence	III.G.4	2	X	3	4	2	4	3	3.00
Adjacent Property Concerns (III.G)									
Land Use									
Expanding development	III.H.1.a	3	5	4	4	5	5	3	4.14
Military Operation	III.H.1.b	5	5	X	4	5	5	4	4.67
Inholdings/additions	III.H.2	4	5	5	5	5	5		4.83
Public Access & Education									
Public Access									
Roads	IV.1.a		5	5	5	5	5	4	4.83
Parking	IV.1.b		5	5	4	5	5	4	4.67
Environmental Education & Outreach									
Wildlife	IV.2.a	3	4	4	5	5	5	4	4.29
Invasive Species	IV.2.b	3	X	4	5	5	5	4	4.33
Habitat Management Activities	IV.2.c	3	4	4	4	5	5	4	4.14
Interpretive facilities and signs	IV.3	3	4	5	4	5	5	4	4.29
Recreational Opportunities	IV.4	5	4	5	5	5	5	5	4.86
Management of Visitor Impacts	IV.5	4	4	5	4	5	5	5	4.57
Management Resources									
Maintenance									
Waste disposal	V.1.a	4	5	5	5	5	5	4	4.71
Sanitary facilities	V.1.b	4	X	5	5	5	5	4	4.67
Infrastructure									
Buildings	V.2.a	5	4	5	5	5	5	4	4.71
Equipment	V.2.b	5	5	5	5	5	5	4	4.86
Staff	V.3	2	2	1	1	1	4	3	2.00
Funding	V.4	2	2	1	1	1	3	3	1.86

Forestry Forest Service Manager and Key Staff Present:

Ricky Jones, DOF Forester
Sonny Greene
Mike Hudson
Deamian Fischer
Craig Iverson
Tom Ledew
David Creamer
David Smith

APPENDIX:

The following comments represent individual comments, and may not represent the consensus of the land management review team.

I.A. Natural Communities

- Particularly good work was noticeable when runoff has been stopped or diverted.
- Yellow River includes sandhill where restoration not included above.
- Sandhill is currently under restoration approximately 50% of total sandhill.
- Sandhill does not include Yellow River Ravines.

I.B. Listed Species: Protection and Preservation

- As management plan states protection as preservation of one species will benefit all listed species.
- Make mgmt. recommendation to include Florida bog frog.
- Bog frog needs to be added to plan.

I.C. Natural Resources Survey/Management Resources

- Invasive species documentation (mapping) is ongoing & staff OPS are constantly on alert to reporting and treating occurrences.
- Add list of fish if mission from plan exhibits. Consider adding vegetative monitoring to plan-diversity, dominance, coverage.
- No list of fish in exhibit K as totaled in management plan.
- No fish species occurrences listed in plan. Recommendation to include UERP and monitoring protocols in mgmt. plan.
- Add UERP to the management plan as a habitat to be monitored.

II.A.B. Cultural Resources

- Forest personnel include trained staff. Protection cemeteries, seismic survey included archaeological data collection.
- This section is listed in management plan (Page 6) and referenced as Exhibit I.

III.A. Resource Management

- Graminoid cover compared to bracken fern dominated ground cover suggests less than optimal burning during growing season. Seems unavoidable given size of the area and the personnel that are available.
- Biomass being used as an alternative where fire may be problematic.
- Recommend emphasis on growing season burns on maintained longleaf pine stands.

III.B. Restoration

- Ecosystem restoration listed under management needs ad cost on page 20. Acquired after management plan was written.
- Restoration only mentioned in timber harvest & reforestation sections, There is no mention of ecosystem restoration including ground cover restoration if needed.
- Need to have a section in the management plan on restoration.

III.C. Forest Management

- Further year round does appear to result in overall safer fire conditions and minimize chance of dangerous fires. Other forest uses and products optimized with spacing burns throughout the year.
- Add afforestation to plan.

III.D. Non-native, Invasive & Problem Species

- To have training program for road maintenance crews. Hog hunting, trapping.
- Good narrative from Forestry staff concerning plants, animal and pest/pathogens for prevention. Good discussion concerning the control of plants, animals and pest/pathogens.
- Need more info on animals, and pests/pathogens in plan. Need more info on animals, and pests/pathogens in plan.

III.E. Hydrologic/Geologic Functions

- Significant improvement to stream sedimentation from road closings and improvements.
- Dams are recreational lakes are managed with FWC. Quantity is monitored by water management district. Quality is by DEP monitoring.

- Lakes/dams are mostly done with FWCC. Did not see any reference to ground water in the plan but there was discussion from Forestry staff.
- Ground water quality monitoring protocols should be included in plan.
- Need more info on dams. Need info in plan on both quality, and quantity.

III.F. Resource Protection

- Only special areas are fenced. Appropriate for state forest access by public/law enforcement presence. Very good law enforcement cooperation through other agencies. Law enforcement recent budget cuts in state have understandably resulted in hopefully temporary reduction.
- Need a mention in the plan about gates, and signage.

III.G. Adjacent Property Concerns

- UHV acquisition very good example of working to control adjacent development. A parcel has been identified.

IV. Public Access and Education

- Plus two small incidental access points on Yellow River. Not really applicable.

V. Infrastructure/ Management Resources

- Staff needed for vegetative quantitative monitoring of ground cover and listed plants. Staff needed to assist with gopher tortoise and listed animal species (e.g. flatwoods salamander) in addition to the ongoing RCW monitoring. Move staff in seed orchard & processing would allow for greater production and revenue. Current staff are doing an exemplary job and have many talents that allowed extraordinary level of recreation opportunities. As well as revenue generation. However, the forest could be better run with more staff. This lack of adequate staff numbers may result in increase in cover of invasive exotics & maintenance of roads & facilities into the near future.
- Very resourceful staff. Staff augmented by DOC inmates. Excellent cross training. CARL budget needs to be reestablished.
- Park Ranger inspects primitive camp sites on Mondays on a weekly basis.

2017 Land Management Review Team Report for Blackwater River State Forest

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1. Introduction

Section 259.036, F.S. requires a periodic on-site review of conservation and recreation lands titled in the name of the Board of Trustees to determine (1) whether the lands are being managed for the purposes for which they were acquired and (2) whether they are being managed in accordance with their land management plan adopted pursuant to s. 259.032, F.S. In case where the managed areas exceed 1,000 acres in size, such a review must be scheduled at least every five years. In conducting this review, a statutorily constructed review team “shall evaluate the extent to which the existing management plan provides sufficient protection to threatened or endangered species, unique or important natural or physical features, geological or hydrological functions or archaeological features. The review shall also evaluate the extent to which the land is being managed for the purposes for which it was acquired and the degree to which actual management practices, including public access, are in compliance with the adopted management plan.”

The land management review teams are coordinated by the Division of State Lands and consist of representatives from the Division of Recreation and Parks (DEP), the Florida Forest Service (DACS), the Fish and Wildlife Conservation Commission, the local government in which the property is located, the DEP District in which the parcel is located, the local soil and water conservation district or jurisdictional water management district, a conservation organization member, and a local private land manager.

Each Land Management Review Report is divided into three sections. Section 1 provides the details of the property being reviewed as well as the overall results of the report. Section 2 provides details of the Field Review, in which the Review Team inspects the results of management actions on the site. Section 3 provides details of the Land Management Plan Review, in which the team determines the extent to which the Management Plan provides for and documents adequate natural and recreational resource protection.

Finally, each report may also contain an Appendix that lists individual team member comments. This is a compilation of feedback, concerns or other thoughts raised by individual team members, but not necessarily indicative of the final consensus reached by the Land Management Review Team.

1.1. Property Reviewed in this Report

Name of Site: Blackwater River State Forest

Managed by: Department of Agriculture and Consumer Services, Florida Forest Service

Acres: 211,099 **County:** Okaloosa, Santa Rosa

Purpose(s) for Acquisition: Original property was granted to the State of Florida from the U.S. Government.

Acquisition Program(s): P2000, Florida Forever (subsequent additions)

Original Acquisition Date: November 1938

Area Reviewed: Entire Property

Last Management Plan Approval Date: December 18, 2013

Review Date: April 3, 2017

Agency Manager and Key Staff Present:

Eric Howell, David Smith, David Creamer, Daniel Hayes, Dom Marcanio, Craig Iversen, Roger Williams, Catherine Ingram, John Browne, **Mike Hudson**

Review Team Members Present (voting)

NFWFMD: Steve Brown

DRP-DEP: Michael Maples

FWC: Diana Pepe

DEP-NWD: Mark Gillman

Conservation Organization (Longleaf Alliance): Bob Wilken

FFS: Bill Korn

Private Land Manager (Resource Management Service): Shane Reeves

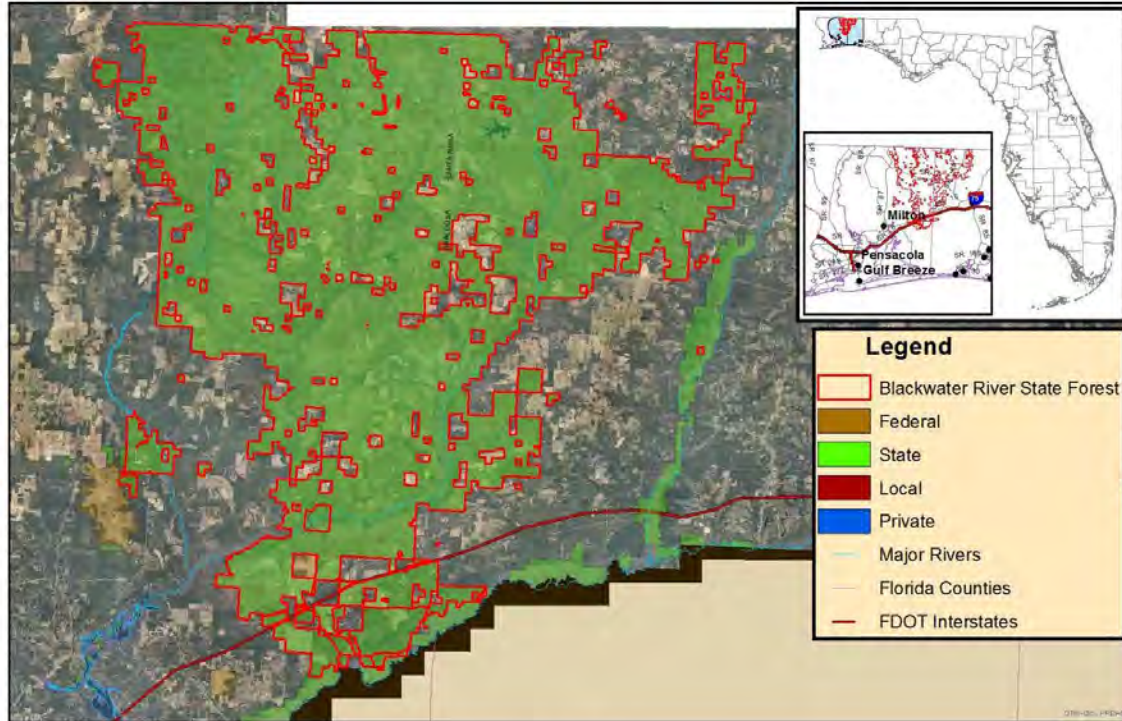
Local Gov't: None

Other Non-Team Members Present (attending)

Arie Larson, DEP/DSL

Barbara Almario, FWC

1.2 Property Map



1.3. Overview of Land Management Review Results

Is the property managed in accordance with the purposes for which it was acquired?

Yes = 7, No = 0

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

Yes = 7, No = 0

Table 1 shows the average scores received for each applicable category of review. *Field Review* scores refer to the adequacy of management actions in the field, while *Management Plan Review* scores refer to adequacy of discussion of these topics in the management plan. Scores range from 1 to 5 with 5 signifying excellence. For a more detailed key to the scores, please see *Appendix A*.

Table 1: Results at a glance.

Major Land Management Categories	Field Review	Management Plan Review
Natural Communities / Forest Management	4.46	4.39
Prescribed Fire / Habitat Restoration	4.62	4.25
Hydrology	4.52	4.06
Imperiled Species	4.72	4.27
Exotic / Invasive Species	4.67	4.45
Cultural Resources	4.86	4.43
Public Access / Education / Law Enforcement	4.46	4.18
Infrastructure / Equipment / Staffing	4.05	N/A
Color Code (See Appendix A for detail)		
Excellent	Above Average	Below Average
		Poor

1.3.1 Consensus Commendations for the Managing Agency

The following commendations resulted from discussion and vote of the review team members:

1. The team commends FFS for cooperating with FWC to restore critical habitat for listed species including the Florida bog frog, and reticulated flatwoods salamander. (7+, 0-)
2. The team commends FFS for continued outstanding efforts at sustaining a prescribed fire program that has consistently averaged well above 60,000 acres per year. In addition, FFS has increased the growing season component on BRSF to average approximately a third of the burns. (7+, 0-)
3. The team commends FFS for efforts to address cultural resource management responsibilities including increasing staff participation in ARM training and completing a very organized approach to site monitoring visits. (7+, 0-)
4. The team commends FFS for work to enhance RCW habitat and management of RCW clusters as well as the intensive monitoring efforts that have seen an increase from 87 to 108 breeding pairs within the last five years. (7+, 0-)
5. The team commends FFS for implementation of a dynamic program of timber harvests which has maintained desired stocking levels and assisted with achieving initial restoration objectives. (7+, 0-)
6. The team commends FFS for past and current efforts to pave or improve a vast network (800+ miles) of high-maintenance clay roads throughout the forest. These road improvements, along with upgrades to culverts (838), bridges (55), and use of low water crossings (148) have reduced sedimentation into streams and adjacent habitats and improved the visitor experience. (7+, 0-)

1.3.2. Consensus Recommendations to the Managing Agency

The following recommendations resulted from a discussion and vote of review team members. The next management plan update should include information about how these recommendations have been addressed:

1. The team recommends that FFS continue to implement strategies for control of sand pine recruitment and hardwood regeneration associated with sandhill and upland pine restoration activities. (7+, 0-)

Managing Agency Response: The FFS will continue efforts to restore longleaf pine on upland and sandhill sites. Various measures of sand pine eradication are being implemented, such as prescribed burning and removal by cutting/girdling. The FFS has received and continues to apply for grant and cost-share money to eliminate the sand pine and reduce hardwood competition on these planted longleaf sites. We will plan for more aggressive and effective site prep methods in the future. Key personnel have recently attended training sessions regarding herbicide uses for site prep and pine release; we hope to use this knowledge to be more effective at restoration efforts. We will also continue to consult other agencies and organizations for effective treatments.

2. Field Review Details

2.1 Field Review Checklist Findings

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

1. Natural communities specifically upland pine, alluvial forest, seepage slope, baygall, upland hardwood forest, blackwater stream, floodplain swamp, dome swamp, depression marsh, seepage stream, shrub bog, and wet prairie.
2. Listed species protection and preservation, specifically listed animals and plants in general, and specifically reticulated flatwoods salamander, red-cockaded woodpecker, bog frog, Southeastern American Kestrel, and gopher tortoise.
3. Natural resources survey/monitoring specifically sport fish or their habitat monitoring, listed species or their habitat monitoring, other non-game species or their habitat monitoring, fire effects monitoring, and invasive species monitoring.
4. Cultural resources, specifically cultural resource survey, and protection and preservation
5. Resource management (prescribed fire), specifically area being burned, frequency, and quality.
6. Restoration, specifically sandhill/upland pine (off-site pine removal, re-planting) and ground cover restoration.
7. Forest Management, specifically timber inventory/assessment, timber harvesting, reforestation/afforestation and site preparation.
8. Non-native, invasive, and problem species, specifically prevention and control of plants, animals and pest/pathogens.
9. Hydrologic/geologic function, specifically roads/culverts, and dams/reservoirs or other impoundments.

10. Ground water monitoring, specifically quality and quantity.
11. Surface water monitoring, specifically quality and quantity.
12. Resource protection, specifically boundary survey, gates and fencing, signage and law enforcement presence.
13. Adjacent property concerns, specifically inholdings/additions, discussions of potential surplus land determination and surplus lands identified.
14. Public access, specifically parking, roads and boat access.
15. Environmental education and outreach, specifically wildlife, invasive species, habitat management activities, interruptive facilities and signs, recreational opportunities and management of visitor impacts.
16. Management resources, specifically waste disposal, sanitary facilities, buildings and staff.

2.2. Items Requiring Improvement Actions in the Field

The following items received low scores on the review team checklist, which indicates that management actions noted during the Field Review were not considered sufficient (less than 3.0 score on average). Please note that overall good scores do not preclude specific recommendations by the review team requiring remediation. **The management plan update should include information on how these items have been addressed:**

**** The review team scores did not identify items requiring improvement actions in the field. ****

2.3. Field Review Checklist and Scores

Field Review Item	Reference #	Anonymous Team Members								Average
		1	2	3	4	5	6	7	8	
Natural Communities (I.A)										
Upland pine	I.A.1	4	5	5	5	5	5	5	5	4.86
Alluvial forest	I.A.2	4	5	5	5	4	5	5	5	4.71
Sandhill	I.A.3	4	3	3	4	5	3	3	5	3.57
Seepage slope	I.A.4	5	5	4	5	5	5	5	5	4.83
Baygall	I.A.5	4	5	5	5	5	5	5	5	4.86
Upland hardwood forest	I.A.6	4	4	4	4	5	4	4	5	4.14
Mesic flatwoods	I.A.7	3	2	3	3	5	4	2	5	3.14
Blackwater stream	I.A.8	5	5	5	5	5	5	5	5	5.00
Floodplain swamp	I.A.10	3	5	5	4	5	5	5	5	4.57
Dome swamp	I.A.11	4	5	5	4	5	5	5	5	4.71
Depression marsh	I.A.12	4	4	4	4	5	4	4	5	4.14
Seepage stream	I.A.13	4	5	5	5	5	5	5	5	4.86
Shrub Bog	I.A.14	4	4	4	4	5	4	4	5	4.14
Wet Flatwoods	I.A.15	3	3	3	3	5	3	3	5	3.29
Wet Prairie	I.A.16	4	4	4	3	5	4	4	5	4.00
Natural Communities Average Score										4.32
Listed species: Protection & Preservation (I.B)										
Animals	I.B.1	4	5	5	5	5	5	5	5	4.83

Reticulated flatwoods salamander	I.B.1.a	5	5	5	5	5	5	4		4.86
Red-cockaded woodpecker	I.B.1.b	5	5	5	5	5	5	5		5.00
Bog Frog	I.B.1.c	3	5	5	5	5	4	5		4.50
SE American Kestrel	I.B.1.d	3	5	5	5	5	4	4		4.33
Gopher Tortoise	I.B.1.e	3	5	5	5	5		5		4.60
Plants	I.B.2	4	5	5	5	5		4		4.60
Listed Species Average Score										4.67
Natural Resources Survey/Management Resources (I.C)										
Sport fish or their habitat monitoring	I.C.1	5	5	5	5	4	5	5		4.86
Listed species or their habitat monitoring	I.C.2	4	5	5	5	5	5	5		4.86
Other non-game species or their habitat monitoring	I.C.3	4	5	5	5	4	5	5		4.71
Fire effects monitoring	I.C.4	3	5	5	5	5	5	5		4.71
Other habitat management effects monitoring	I.C.5	3	5	5	4	4	4	5		4.29
Invasive species survey / monitoring	I.C.6	4	5	5	5	5	5	5		4.86
Cultural Resources (Archeological & Historic sites) (II.A, II.B)										
Cultural Res. Survey	II.A	4	5	5	5	5	5	5		4.86
Protection and preservation	II.B	4	5	5	5	5	5	5		4.86
Cultural Resources Average Score										4.86
Resource Management, Prescribed Fire (III.A)										
Area Being Burned (no. acres)	III.A1	5	5	5	5	5	5	5		5.00
Frequency	III.A.2	4	5	5	5	5	5	5		4.86
Quality	III.A.3	5	5	5	5	5	5	5		5.00
Resource Management, Prescribed Fire Average Score										4.95
Restoration (III.B)										
Sandhill / upland pine (off-site pine removal, re-planting)	III.B.1	4	5	4	5	5	3	4		4.29
Groundcover restoration	III.B.2	3	5	5	5	5	4	3		4.29
Restoration Average Score										4.29
Forest Management (III.C)										
Timber Inventory / Assessment	III.C.1	4	5	5	5	5	4	5		4.71
Timber Harvesting	III.C.2	4	5	5	5	5	4	5		4.71
Reforestation/Afforestation	III.C.3	5	5	5	5	5	4	4		4.71
Site Preparation	III.C.4	4	5	4	5	5	3	4		4.29
Forest Management Average Score										4.61
Non-Native, Invasive & Problem Species (III.D)										
Prevention										
prevention - plants	III.D.1.a	4	5	5	5	5	5	4		4.71
prevention - animals	III.D.1.b	4	4	5	5	5	5	4		4.57
prevention - pests/pathogens	III.D.1.c	3	4	5	5	5	4	4		4.29
Control										
control - plants	III.D.2.a	5	5	5	5	5	5	5		5.00
control - animals	III.D.2.b	4	5	5	5	5	5	5		4.86
control - pest/pathogens	III.D.2.c	4	5	5	5	5	4	4		4.57
Non-Native, Invasive & Problem Species Average Score										4.67

Hydrologic/Geologic function Hydro-Alteration (III.E.1)										
Roads/culverts	III.E.1.a	4		5	5	5	5	5		4.83
Dams, Reservoirs, other impoundments	III.E.1.e	4	4	5	5	4	5	5		4.57
Hydrologic/Geologic function, Hydro-Alteration Average Score										4.70
Ground Water Monitoring (III.E.2)										
Ground water quality	III.E.2.a	4	4	5	5	5	5	3		4.43
Ground water quantity	III.E.2.b	4	4	5	5	5	5	3		4.43
Ground Water Monitoring Average Score										4.43
Surface Water Monitoring (III.E.3)										
Surface water quality	III.E.3.a	4	4	5	5	5	5	3		4.43
Surface water quantity	III.F.3.b	4	4	5	5	5	5	3		4.43
Surface Water Monitoring Average Score										4.43
Resource Protection (III.F)										
Boundary survey	III.F.1	4	5	4	4	5	4	3		4.14
Gates & fencing	III.F.2	4	5	5	5	4	5	4		4.57
Signage	III.F.3	4	5	4	5	4	4	4		4.29
Law enforcement presence	III.F.4	4	5	4	5	4	4	4		4.29
Resource Protection Average Score										4.32
Adjacent Property Concerns (III.G)										
Land Use										
Inholdings/additions	III.G.2	3	5	4	5	4	4	4		4.14
Discussion of Potential Surplus Land Determination	III.G.3	3	3	4	3	4	4	3		3.43
Surplus Lands Identifier	III.G.4	3	3	4	4	5	4	3		3.71
Public Access & Education (IV.1, IV.2, IV.3, IV.4, IV.5)										
Public Access										
Roads	IV.1.a	4	5	4	5	4	5	5		4.57
Parking	IV.1.b	4	5	5	5	5	5	4		4.71
Boat Access	IV.1.c	4	5	5	5	5	5	5		4.86
Environmental Education & Outreach										
Wildlife	IV.2.a	4	5	5	4	5	5	4		4.57
Invasive Species	IV.2.b	4	5	5	4	4	5	4		4.43
Habitat Management Activities	IV.2.c	4	5	5	4	4	5	4		4.43
Interpretive facilities and signs	IV.3	4	5	5	4	4	5	4		4.43
Recreational Opportunities	IV.4	4	5	5	5	4	5	5		4.71
Management of Visitor Impacts	IV.5	4	5	5	5	4	5	5		4.71
Public Access & Education Average Score										4.60
Management Resources (V.1, V.2, V.3, V.4)										
Maintenance										
Waste disposal	V.1.a	4	4	5	4	5	5	4		4.43
Sanitary facilities	V.1.b	4	4	5	4	5	5	3		4.29
Infrastructure										
Buildings	V.2.a	4	4	5	4	5	4	4		4.29
Equipment	V.2.b	4	4	3	3	5	4	3		3.71
Staff	V.3	3	4	5	3	5	4	4		4.00
Funding	V.4	3	3	4	3	5	4	3		3.57



3. Land Management Plan Review Details

3.1 Items Requiring Improvements in the Management Plan

The following items received low scores on the review team checklist, which indicates that the text noted in the Management Plan Review does not sufficiently address this issue (less than 3.0 score on average.). Please note that overall good scores do not preclude specific recommendations by the review team requiring remediation. The next management plan update should address the checklist items identified below:

**** The review team scores did not identify items requiring improvement in the management plan****

3.2 Management Plan Review Checklist and Scores

Plan Review Item	Reference #	Anonymous Team Members								Average
		1	2	3	4	5	6	7	8	
Natural Communities (I.A)										
Upland pine	I.A.1	4	5	5	5	5	5	4		4.71
Bottomland Forest	I.A.2	4	4	5	3	4	5	3		4.00
Sandhill	I.A.3	5	5	5	5	5	5	4		4.86
Seepage slope	I.A.4	5	5	5	5	5	5	5		5.00
Baygall	I.A.5	4	5	5	5	5	5	5		4.86
Upland hardwood forest	I.A.6	5	5	5	5	5	4	4		4.71
Mesic flatwoods	I.A.7	4	4	5	5	5	5	4		4.57
Blackwater stream	I.A.8	4	4	5	5	5	5	5		4.71
Floodplain swamp	I.A.10	4	5	5	5	5	5	5		4.86
Dome swamp	I.A.11	3	5	5	5	5	5	4		4.57
Depression marsh	I.A.12	5	5	5	5	5	4	3		4.57
Seepage Stream	I.A.13	4	5	5	5		5	4		4.67
Shrub Bog	I.A.14	3		5	3		4	2		3.40
Wet Flatwoods	I.A.15	3		5	3		4	2		3.40
Wet Prairie	I.A.16	3		5	3		4	2		3.40
Natural Communities Average Score										4.42
Listed species: Protection & Preservation (I.B)										
Animals	I.B.1	4	5	5	4	5		4		4.50
Reticulated flatwoods salamander	I.B.1.a	5	4	5	4	5	5	3		4.43
Red-cockaded woodpecker	I.B.1.b	5	4	5	4	5	5	4		4.57
Bog Frog	I.B.1.c		4	5	4		5	2		4.00
SE American Kestrel	I.B.1.d	4	4	5	4		5	2		4.00
Gopher Tortoise	I.B.1.e	4	4	5	4		5	3		4.17
Plants	I.B.2	4	4	5	4			4		4.20

Listed Species Average Score										4.27
Natural Resources Survey/Management Resources (I.C)										
Sport fish or their habitat monitoring	I.C.1	4	4	5	3	4	4	4		4.00
Listed species or their habitat monitoring	I.C.2	4	5	5	3	5	4	4		4.29
Other non-game species or their habitat monitoring	I.C.3	4	5	5	4	4	4	3		4.14
Fire effects monitoring	I.C.4	3	5	5	4	5	4	3		4.14
Other habitat management effects monitoring	I.C.5	4	5	5	4	4	4	3		4.14
Invasive species survey / monitoring	I.C.6	4	5	5	5	5	5	3		4.57
Cultural Resources (Archeological & Historic sites) (II.A, II.B)										
Cultural Res. Survey	II.A	4	4	5	4	5	5	4		4.43
Protection and preservation	II.B	4	4	5	4	5	5	4		4.43
Cultural Resources Average Score										4.43
Resource Management, Prescribed Fire (III.A)										
Area Being Burned (no. acres)	III.A.1	4	5	5	4	5	5	3		4.43
Frequency	III.A.2	4	5	5	4	5	5	3		4.43
Quality	III.A.3	4	5	5	4	5	5	3		4.43
Resource Management, Prescribed Fire Average Score										4.43
Restoration (III.B)										
Sandhill / upland pine (off-site pine removal, re-planting)	III.B.1	4	4	5	4	5	5	2		4.14
Groundcover restoration	III.B.2	4	4	5	4	5	4	2		4.00
Restoration Average Score										4.07
Forest Management (III.C)										
Timber Inventory / Assessment	III.C.1	4	4	5	5	5	5	3		4.43
Timber Harvesting	III.C.2	4	4	5	5	5	5	3		4.43
Reforestation/Afforestation	III.C.3	4	4	5	5	5	5	3		4.43
Site Preparation	III.C.4	4	4	5	5	5	3	3		4.14
Forest Management Average Score										4.36
Non-Native, Invasive & Problem Species (III.D)										
Prevention										
prevention - plants	III.D.1.a	4	5	5	5	5	5	3		4.57
prevention - animals	III.D.1.b	4	4	5	5	5	5	3		4.43
prevention - pests/pathogens	III.D.1.c	4	4	5	5	5	3	3		4.14
Control										
control - plants	III.D.2.a	4	5	5	5	5	5	4		4.71
control - animals	III.D.2.b	4	4	5	5	5	5	4		4.57
control - pest/pathogens	III.D.2.c	4	4	5	5	5	4	3		4.29
										4.45
Hydrologic/Geologic function, Hydro-Alteration (III.E.1)										
Roads/culverts	III.E.1.a	4		5	4	5	4	4		4.33
Dams, Reservoirs, other impoundments	III.E.1.e	4		5	4	4	4	4		4.17
Hydrologic/Geologic function, Hydro-Alteration Average Score										4.25
Ground Water Monitoring (III.E.2)										
Ground water quality	III.E.2.a	4	4	5	4	4	4	3		4.00
Ground water quantity	III.E.2.b	4	4	5	4	4	4	3		4.00

Ground Water Monitoring Average Score										4.00
Surface Water Monitoring (III.E.3)										
Surface water quality	III.E.3.a	4	4	5	4	4	4	2		3.86
Surface water quantity	III.E.3.b	4	4	5	4	4	4	3		4.00
Surface Water Monitoring Average Score										3.93
Resource Protection (III.F)										
Boundary survey	III.F.1	4	4	5	4	4	3	3		3.86
Gates & fencing	III.F.2	4	4	5	4	4	3	3		3.86
Signage	III.F.3	4	4	5	4	5	4	3		4.14
Law enforcement presence	III.F.4	4	4	5	4	5	4	3		4.14
Resource Protection Average Score										4.00
Adjacent Property Concerns (III.G)										
Land Use										
Inholdings/additions	III.G.2	3	3	5	4	4	4	4		3.86
Discussion of Potential Surplus Land Determination	III.G.3	3	3	5	3	4	4	3		3.57
Surplus Lands Identified?	III.G.4	3	3	5	4	5	4	3		3.86
Public Access & Education (IV.1, IV.2, IV.3, IV.4, IV.5)										
Public Access										
Roads	IV.1.a	4	5	5	4	4	5	3		4.29
Parking	IV.1.b	4	5	5	4	5	5	3		4.43
Boat Access	IV.1.c	4	4	5	4	4	5	3		4.14
Wildlife										
Wildlife	IV.2.a	4	5	5	4	4	5	3		4.29
Invasive Species	IV.2.b	4	4	5	4	5	5	3		4.29
Habitat Management Activities	IV.2.c	4	5	5	4	5	5	3		4.43
Interpretive facilities and signs	IV.3	4	4	5	4	4	5	3		4.14
Recreational Opportunities	IV.4	4	5	5	5	5	5	4		4.71
Management of Visitor Impacts	IV.5	4	5	5	5	5	5	3		4.57
Public Access & Education Average Score										4.37
Managed Area Uses (VI.A, VI.B)										
Existing Uses										
Camping	VI.A.1	4	5	5	5	5	5	5		4.86
picnicking	VI.A.2	4	5	5	5	5	5	5		4.86
Boating / paddling	VI.A.3	4	5	5	5	5	5	5		4.86
fishing	VI.A.4	4	5	5	5	4	5	5		4.71
hiking	VI.A.5	4	5	5	5	5	5	5		4.86
biking	VI.A.6	4	5	4	5	4	5	4		4.43
Nature study	VI.A.7	3	5	5	5	5	5	5		4.71
Equestrian	VI.A.8	4	5	4	5	4	5	4		4.43
Bird-dog trials	VI.A.9	4	5	4	5	4	5	4		4.43
Hunting	VI.A.10	4	5	4	5	4	5	5		4.57
OHV Trail Riding Area										
OHV Trail Riding Area	VI.B.1	4	5	5	5	5	4	4		4.57
Color Code:		Excellent	Above Average	Below Average	Poor	Missing Vote		Insufficient Information	See Appendix A for detail	

Appendix A: Scoring System Detail

Explanation of Consensus Commendations:

Often, the exceptional condition of some of the property's attributes impress review team members. In those instances, team members are encouraged to offer positive feedback to the managing agency in the form of a commendation. The teams develop commendations generally by standard consensus processes or by majority vote if they cannot obtain a true consensus.

Explanation of Consensus Recommendations:

Subsection 259.036(2), F.S., specifically states that the managing entity shall consider the findings and recommendations of the land management review. We ask team members to provide general recommendations for improving the management or public access and use of the property. The teams discuss these recommendations and develop consensus recommendations as described above. We provide these recommendations to the managing agency to consider when finalizing the required ten-year management plan update. We encourage the manager to respond directly to these recommendations and include their responses in the final report when received in a timely manner.

Explanation of Field Review Checklist and Scores, and Management Plan Review Checklist and Scores:

We provide team members with a checklist to fill out during the evaluation workshop phase of the Land Management Review. The checklist is the uniform tool used to evaluate both the management actions and condition of the managed area, and the sufficiency of the management plan elements. During the evaluation workshop, team members individually provide scores on each issue on the checklist, from their individual perspective. Team members also base their evaluations on information provided by the managing agency staff as well as other team member discussions. Staff averages these scores to evaluate the overall conditions on the ground, and how the management plan addresses the issues. Team members must score each management issue 1 to 5: 1 being the management practices are clearly insufficient, and 5 being that the management practices are excellent. Members may choose to abstain if they have inadequate expertise or information to make a cardinal numeric choice, as indicated by an "X" on the checklist scores, or they may not provide a vote for other unknown reasons, as indicated by a blank. If a majority of members failed to vote on any issue, that issue is determined to be irrelevant to management of that property or it was inadequately reviewed by the team to make an intelligent choice. In either case staff eliminated the issue from the report to the manager.

Average scores are interpreted as follows:

Scores 4.0 to 5.0 are *Excellent*

Scores 3.0 to 3.99 are *Above Average*

Scores 2.0 to 2.99 are *Below Average*

Scores 1.0 to 1.99 are considered *Poor*

2021 Land Management Review Team Report for Blackwater River State Forest

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Introduction

Section 259.036, F.S. requires a periodic on-site review of conservation and recreation lands titled in the name of the Board of Trustees to determine (1) whether the lands are being managed for the purposes for which they were acquired and (2) whether they are being managed in accordance with their land management plan adopted pursuant to s. 259.032, F.S. In cases where the managed areas exceed 1,000 acres in size, such a review must be scheduled at least every five years. In conducting this review, a statutorily constructed review team “shall evaluate the extent to which the existing management plan provides sufficient protection to threatened or endangered species, unique or important natural or physical features, geological or hydrological functions or archaeological features. The review shall also evaluate the extent to which the land is being managed for the purposes for which it was acquired and the degree to which actual management practices, including public access, are in compliance with the adopted management plan.”

The land management review teams are coordinated by the Division of State Lands and consist of representatives from the Division of Recreation and Parks (DEP), the Florida Forest Service (DACS), the Fish and Wildlife Conservation Commission, the local government in which the property is located, the DEP District in which the parcel is located, the local soil and water conservation district or jurisdictional water management district, a conservation organization member, and a local private land manager.

Each Land Management Review Report is divided into three sections. Section 1 provides the details of the property being reviewed as well as the overall results of the report. Section 2 provides details of the Field Review, in which the Review Team inspects the results of management actions on the site. Section 3 provides details of the Land Management Plan Review, in which the team determines the extent to which the Management Plan provides for and documents adequate natural and recreational resource protection.

Finally, each report may also contain an Appendix that lists individual team member comments. This is a compilation of feedback, concerns or other thoughts raised by individual team members, but not necessarily indicative of the final consensus reached by the Land Management Review Team.

Property Reviewed in this Report

Name of Site: Blackwater River State Forest

Managed by: Department of Agriculture and Consumer Services, Florida Forest Service

Acres: 210,463

County: Okaloosa, Santa Rosa

Purpose(s) for Acquisition: Original property was granted to the State of Florida from the U.S. Government.

Acquisition Program(s): Florida Forever

Original Acquisition Date: 11/1/38

Area Reviewed: Entire Property

Last Management Plan Approval Date: 12/18/13

Review Date: 12/8/21

Agency Manager and Key Staff:

- Mike Hudson, Manager
- Eric Howell, Resource Administrator
- Courtney Stotts
- David Creamer
- Craig Iverson
- Michael Baker

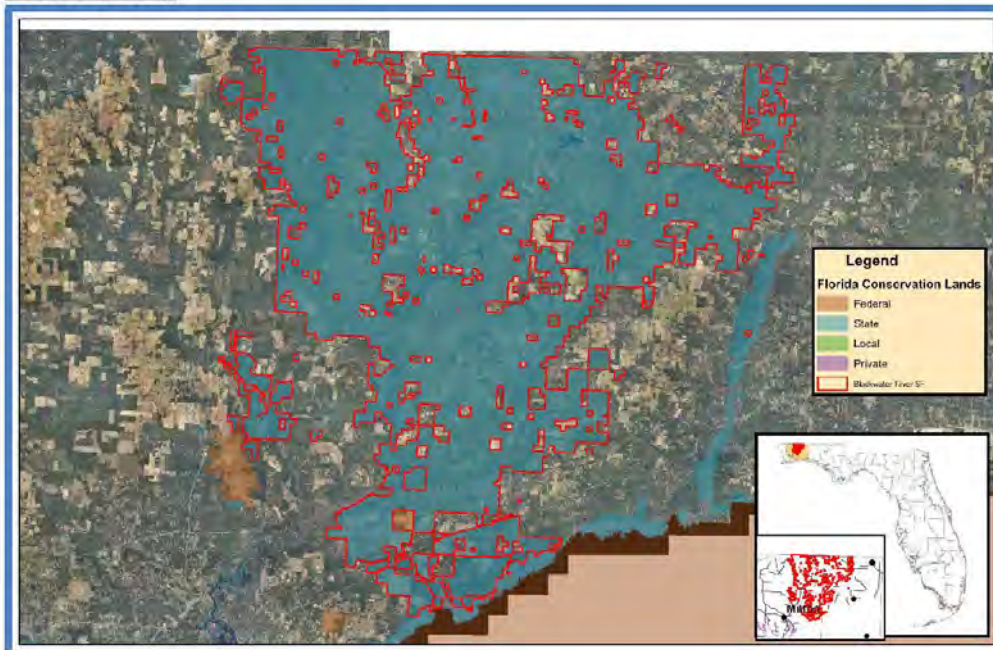
Review Team Members (voting)

- Aimee Wolters, DRP District
- Local Gov't., None
- Barbara Almario, FWC
- Mark Gillman, DEP District
- Jason Love, FFS
- Aaron Waits, NFWFMD
- Lilly Anderson Messec, Conservation Org.
- Vernon Compton, Private Land Manager

Non-Team Members (attending)

- Keith Singleton, DEP/DSL
- James Parker, DEP/DSL
- Monica Hardin, DEP

Property Map



Overview of Land Management Review Results

Is the property managed for purposes that are compatible with conservation, preservation, or recreation?

Yes = 7, No = 0

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

Yes = 7, No = 0

Table 1 shows the average scores received for each applicable category of review. *Field Review* scores refer to the adequacy of management actions in the field, while *Management Plan Review* scores refer to adequacy of discussion of these topics in the management plan. Scores range from 1 to 5 with 5 signifying excellence. For a more detailed key to the scores, please see *Appendix A*.

Table 1: Results at a glance.

Major Land Management Categories	Field Review	Management Plan Review
Natural Communities / Forest Management	4.67	4.90
Prescribed Fire / Habitat Restoration	4.51	4.79
Hydrology	4.74	4.49
Imperiled Species	4.89	4.61
Exotic / Invasive Species	4.44	4.31
Cultural Resources	4.42	4.35
Public Access / Education / Law Enforcement	4.48	4.54
Infrastructure / Equipment / Staffing	4.28	N/A

Color Code (See Appendix A for detail)

Excellent	Above Average	Below Average	Poor
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Consensus Commendations for the Managing Agency

The following commendations resulted from discussion and vote of the review team members:

1. The team commends the Florida Forest Service (FFS) on their significant accomplishment in red-cockaded woodpecker and Florida bog frog recovery efforts. (7+, 0-)
2. The team commends FFS for their prescribed fire, invasive species control and forest restoration actions that have either kept the natural communities in, or moved them toward, maintenance condition. (7+, 0-)
3. The team commends FFS for the excellent multiple public access across the forest, including well-managed roads and bridges, trails and dispersed recreation, and developed recreation sites. (7+, 0-)

Consensus Recommendations to the Managing Agency

The following recommendations resulted from a discussion and vote of review team members. The next management plan update should include information about how these recommendations have been addressed:

1. Public use and demands on the forest are increasing as well as critical lands being added, so the team recommends that FFS request additional staffing resources and funding needed to meet these demands. (7+, 0-)

Managing Agency Response: The Florida Forest Service balances staffing, vehicles, equipment, and funding needs on a statewide basis within the large state forest system. Additional staffing resources and funding will be considered and requested in the legislative budget request if feasible.

Field Review Details

Field Review Checklist Findings

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

1. Natural communities, specifically upland pine, bottomland forest, sandhill, seepage slope, baygall, blackwater stream, floodplain swamp, dome swamp, depression marsh, seepage stream, shrub bog, and wet flatwoods.
2. Listed species, listed animal and plant species in general, and specifically reticulated flatwoods salamander, red-cockaded woodpecker, bog frog, and Southeastern American kestrel.
3. Natural resources survey/monitoring resources; specifically sport fish or their habitat monitoring, listed species or their habitat monitoring, other non-game species or their habitat monitoring, fire effects monitoring, other habitat management effects monitoring, and invasive species survey and monitoring.
4. Cultural resources, specifically cultural resource survey, and protection and preservation.
5. Prescribed fire, specifically area being burned, frequency and quality.
6. Restoration, specifically sandhill/upland pine (off-site pine removal, re-planting).
7. Forest management, specifically timber inventory, timber harvesting, reforestation/afforestation and site preparation.
8. Non-native, invasive, and problem species, specifically prevention and control of plants, animals, and pests/pathogens.
9. Hydro-alteration, specifically roads and culverts, and dams/reservoirs or other impoundments.
10. Ground water monitoring, specifically quality and quantity.
11. Surface water monitoring, specifically quality and quantity.
12. Resource protection, specifically gates and fencing, signage and law enforcement presence.
13. Adjacent property concerns, specifically inholdings and additions.
14. Public access, specifically parking, roads and boat access.
15. Environmental education and outreach, specifically wildlife, invasive species, habitat management activities, interpretive facilities and signs, recreational opportunities, and management of visitor impacts.
16. Management resources, specifically waste disposal, sanitary facilities, and buildings.

Items Requiring Improvement Actions in the Field

The following items received low scores on the review team checklist, which indicates that management actions noted during the Field Review were not considered sufficient (less than 3.0 score on average). Please note that overall good scores do not preclude specific recommendations by the review team requiring remediation. The management plan update should include information on how these items have been addressed:

The review team scores did not identify items requiring improvement actions in the field.

Field Review Checklist and Scores

Field Review Item	Reference #	Anonymous Team Members								Average
		1	2	3	4	5	6	7	8	
Natural Communities (I.A)										
Upland pine	I.A.1	5	5	5	5	5				5.00
Bottomland forest	I.A.2	5	5	5	5	5	4			4.83
Sandhill	I.A.3	4	5	4	4	4	4			4.17
Seepage slope	I.A.4	5	4	5	5	5	5			4.83
Baygall	I.A.5	5	5	5	5	5	5			5.00
Upland hardwood forest	I.A.6	3	5	3	4	3	3			3.50
Mesic flatwoods	I.A.7	4	4	4	4	3	3			3.67
Blackwater stream	I.A.8	5	5	5	5	5	4			4.83
Floodplain swamp	I.A.9	5	5	5	5	5	5			5.00
Dome swamp	I.A.10	5	5	5	5	5	3			4.67
Depression marsh	I.A.11	4	4	4	4	4	4			4.00
Seepage stream	I.A.12	5	5	5	5	5	5			5.00
Shrub bog	I.A.13	5	5	5	5	5	5			5.00
Wet flatwoods	I.A.14	3	5	4	4	5	3			4.00
Wet prairie	I.A.15	3	3	4	4	4	3			3.50
Natural Communities Average Score										4.47
Listed species: Protection & Preservation (I.B)										
Animals	I.B.1	5	5		5	5	5			5.00
Reticulated flatwoods salamander	I.B.1.a	5	4	3	5	5	4			4.33
Red-cockaded woodpecker	I.B.1.b	5	5	5	5	5	5			5.00
Bog frog	I.B.1.c	5	5	5	5	5	5			5.00
Southeastern American kestrel	I.B.1.d	5	5	5	5	5	5			5.00
Plants	I.B.2	5	5	5		5	5			5.00
Listed Species Average Score										4.89
Natural Resources Survey/Management Resources (I.C)										
Sport fish or their habitat monitoring	I.C.1	5	5	5	5	5	5			5.00
Listed species or their habitat monitoring	I.C.2	5	5	5	5	5	4			4.83
Other non-game species or their habitat monitoring	I.C.3	5	5	5	5	5	5			5.00
Fire effects monitoring	I.C.4	5	5	5	5	5	5			5.00
Other habitat management effects monitoring	I.C.5	5	5	5	5	5	5			5.00
Invasive species survey / monitoring	I.C.6	5	5	5	5	5	5			5.00
Cultural Resources (Archeological & Historic sites) (II.A, II.B)										
Cultural Res. Survey	II.A	5	5	4	5	5	4			4.67
Protection and preservation	II.B	4	5	3	5	5	3			4.17
Cultural Resources Average Score										4.42
Resource Management, Prescribed Fire (III.A)										
Area Being Burned (no. acres)	III.A.1	5	5	5	5	5	5			5.00
Frequency	III.A.2	5	5	5	5	5	5			5.00

Quality	III.A.3	5	5	5	5	4	5			4.83
Resource Management, Prescribed Fire Average Score										4.94
Restoration (III.B)										
Sandhill / upland pine (off-site pine removal, re-planting)	III.B.1	4	5	4	5	5	5			4.67
Groundcover restoration	III.B.2	3	3	5	4	3	3			3.50
Restoration Average Score										4.08
Forest Management (III.C)										
Timber Inventory	III.C.1	5	5	5	5	5	5			5.00
Timber Harvesting	III.C.2	5	5	5	5	5	4			4.83
Reforestation/Afforestation	III.C.3	5	5	4	5	5	5			4.83
Site Preparation	III.C.4	5	5	5	5	4	5			4.83
Forest Management Average Score										4.88
Non-Native, Invasive & Problem Species (III.D)										
Prevention										
prevention - plants	III.D.1.a	5	5	5	5	5	5			5.00
prevention - animals	III.D.1.b	4	5	5	3	4	4			4.17
prevention - pests/pathogens	III.D.1.c	5	5	4	3	4	4			4.17
Control										
control - plants	III.D.2.a	5	5	5	5	5	5			5.00
control - animals	III.D.2.b	4	5	5	3	5	3			4.17
control - pests/pathogens	III.D.2.c	5	5	4	3	3	5			4.17
Non-Native, Invasive & Problem Species Average Score										4.44
Hydrologic/Geologic function Hydro-Alteration (III.E.1)										
Roads/culverts	III.E.1.a	5	4	5	5	5	4			4.67
Dams, Reservoirs or other impoundments	III.E.1.e	5		4	5	5	5			4.80
Hydrologic/Geologic function, Hydro-Alteration Average Score										4.73
Ground Water Monitoring (III.E.2)										
Ground water quality	III.E.2.a	5	5	5	5	5	5			5.00
Ground water quantity	III.E.2.b	5	5	5	5	5	5			5.00
Ground Water Monitoring Average Score										5.00
Surface Water Monitoring (III.E.3)										
Surface water quality	III.E.3.a	5	4	5	5	5	4			4.67
Surface water quantity	III.F.3.b	5	4	5	5	3	4			4.33
Surface Water Monitoring Average Score										4.50
Resource Protection (III.F)										
Boundary survey	III.F.1	4	4	4	4	4	3			3.83
Gates & fencing	III.F.2	5	4	5	4	5	4			4.50
Signage	III.F.3	4	4	4	5	5	4			4.33
Law enforcement presence	III.F.4	4	3	5	5	5	3			4.17
Resource Protection Average Score										4.21
Adjacent Property Concerns (III.G)										
Land Use										
Inholdings/additions	III.G.2	4	4	4	5	3	5			4.17

Public Access & Education (IV.1, IV.2, IV.3, IV.4, IV.5)										
Public Access										
Roads	IV.1.a	5	5	5	5	5	4			4.83
Parking	IV.1.b	4	5	5	5	5	5			4.83
Boat Access	IV.1.c	5	5	5	5	5	5			5.00
Environmental Education & Outreach										
Wildlife	IV.2.a	4	5	4	5	4	5			4.50
Invasive Species	IV.2.b	4	5	4	5	5	5			4.67
Habitat Management Activities	IV.2.c	4	5	5	5	4	5			4.67
Interpretive facilities and signs	IV.3	5	5	4	5	5	5			4.83
Recreational Opportunities	IV.4	5	5	5	5	5	4			4.83
Management of Visitor Impacts	IV.5	5	5	5	5	5	3			4.67
Public Access & Education Average Score										4.76
Management Resources (V.1, V.2, V.3, V.4)										
Maintenance										
Waste disposal	V.1.a	5	5	5	5	4	5			4.83
Sanitary facilities	V.1.b	5	5	5	5	5	5			5.00
Infrastructure										
Buildings	V.2.a	5	5	4	4	3	5			4.33
Equipment	V.2.b	4	5	4	4	3	3			3.83
Staff	V.3	4	4	4	4	3	4			3.83
Funding	V.4	4	4	5	4	3	3			3.83
Management Resources Average Score										4.28

Color Code:

Excellent	Above Average	Below Average	Poor	See Appendix A for detail
Missing Vote	Insufficient Information			

Land Management Plan Review Details

Items Requiring Improvements in the Management Plan

The following items received low scores on the review team checklist, which indicates that the text noted in the Management Plan Review does not sufficiently address this issue (less than 3.0 score on average.). Please note that overall good scores do not preclude specific recommendations by the review team requiring remediation. The next management plan update should address the checklist items identified below:

The review team scores did not identify items requiring improvements in the management plan.

Management Plan Review Checklist and Scores

Plan Review Item	Reference #	Anonymous Team Members								Average
		1	2	3	4	5	6	7	8	

Natural Communities (I.A)										
Upland pine	I.A.1	5	5	5	5	5	5			5.00
Bottomland forest	I.A.2	5	5	5	5	5	5			5.00
Sandhill	I.A.3	5	5	5	5	5	5			5.00
Seepage slope	I.A.4	5	5	5	5	5	5			5.00
Baygall	I.A.5	5	5	5	5	5	5			5.00
Upland hardwood forest	I.A.6	5	5	4	5	5	5			4.83
Mesic flatwoods	I.A.7	5	5	5	5	5	5			5.00
Blackwater stream	I.A.8	5	5	5	5	5	5			5.00
Floodplain swamp	I.A.9	5	5	5	5	5	5			5.00
Dome swamp	I.A.10	5	5	5	5	5	5			5.00
Depression marsh	I.A.11	5	5	5	5	5	5			5.00
Seepage stream	I.A.12	5	5	5	5	5	5			5.00
Shrub bog	I.A.13	2	5	5	4	5	5			4.33
Wet flatwoods	I.A.14	2	5	5	5	4	5			4.33
Wet prairie	I.A.15	2	5	5	4	4	5			4.17
Natural Communities Average Score										4.84
Listed species: Protection & Preservation (I.B)										
Animals	I.B.1	5	5		5	5	5			5.00
Reticulated flatwoods salamander	I.B.1.a	5	5	4	5	3	4			4.33
Red-cockaded woodpecker	I.B.1.b	5	5	5	5	5	5			5.00
Bog frog	I.B.1.c	4	5	5	5	2	5			4.33
Southeastern American kestrel	I.B.1.d	4	5	4	5	2	5			4.17
Plants	I.B.2	5	5	5		4	5			4.80
Listed Species Average Score										4.61
Natural Resources Survey/Management Resources (I.C)										
Sport fish or their habitat monitoring	I.C.1	5	5	5	4	3	5			4.50
Listed species or their habitat monitoring	I.C.2	5	5	5	5	5	5			5.00
Other non-game species or their habitat monitoring	I.C.3	5	5	5	5	4	5			4.83
Fire effects monitoring	I.C.4	5	5	5	5	5	5			5.00
Other habitat management effects monitoring	I.C.5	5	5	5	5	4	5			4.83
Invasive species survey / monitoring	I.C.6	5	5	5	5	5	5			5.00
Cultural Resources (Archeological & Historic sites) (II.A, II.B)										
Cultural Res. Survey	II.A	4	5	5	5	5	3			4.50
Protection and preservation	II.B	4	5	3	5	5	3			4.17
Cultural Resources Average Score										4.33
Resource Management, Prescribed Fire (III.A)										
Area Being Burned (no. acres)	III.A.1	5	5	5	5	5	5			5.00
Frequency	III.A.2	5	5	5	5	5	5			5.00
Quality	III.A.3	5	5	5	5	5	5			5.00
Resource Management, Prescribed Fire Average Score										5.00
Restoration (III.B)										
Sandhill / upland pine (off-site pine removal, re-planting)	III.B.1	4	5	5	5	5	5			4.83

Groundcover restoration	III.B.2	3	4	4	5	5	5			4.33
Restoration Average Score										4.58
Forest Management (III.C)										
Timber Inventory	III.C.1	5	5	5	5	5	5			5.00
Timber Harvesting	III.C.2	5	5	5	5	5	5			5.00
Reforestation/Afforestation	III.C.3	5	5	4	5	5	5			4.83
Site Preparation	III.C.4	5	5	5	5	5	5			5.00
Forest Management Average Score										4.96
Non-Native, Invasive & Problem Species (III.D)										
Prevention										
prevention - plants	III.D.1.a	5	4	4	5	5	5			4.67
prevention - animals	III.D.1.b	4	4	4	3	4	5			4.00
prevention - pests/pathogens	III.D.1.c	4	4	4	3	5	4			4.00
Control										
control - plants	III.D.2.a	5	4	5	5	5	5			4.83
control - animals	III.D.2.b	4	4	5	3	5	4			4.17
control - pests/pathogens	III.D.2.c	4	4	4	3	5	5			4.17
Non-Native, Invasive & Problem Species Average Score										4.31
Hydrologic/Geologic function, Hydro-Alteration (III.E.1)										
Roads/culverts	III.E.1.a	5	4	3	4	5	5			4.33
Dams, Reservoirs or other impoundments	III.E.1.e	5		3	5	5	5			4.60
Hydrologic/Geologic function, Hydro-Alteration Average Score										4.47
Ground Water Monitoring (III.E.2)										
Ground water quality	III.E.2.a	4	5	5	5	4	5			4.67
Ground water quantity	III.E.2.b	4	5	5	5	4	5			4.67
Ground Water Monitoring Average Score										4.67
Surface Water Monitoring (III.E.3)										
Surface water quality	III.E.3.a	4	4	5	3	5	5			4.33
Surface water quantity	III.E.3.b	4	4	5	3	5	5			4.33
Surface Water Monitoring Average Score										4.33
Resource Protection (III.F)										
Boundary survey	III.F.1	5	4	5	4	5	5			4.67
Gates & fencing	III.F.2	5	4	3	4	5	5			4.33
Signage	III.F.3	5	4	3	5	5	5			4.50
Law enforcement presence	III.F.4	4	4	5	5	5	4			4.50
Resource Protection Average Score										4.50
Adjacent Property Concerns (III.G)										
Land Use										
Inholdings/additions	III.G.2	5	4	5	4	5	5			4.67
Discussion of Potential Surplus Land Determination	III.G.3	4	2	4	3	4	5			3.67
Surplus Lands Identified?	III.G.4	5	5	5	5	5	5			5.00
Public Access & Education (IV.1, IV.2, IV.3, IV.4, IV.5)										
Public Access										

Roads	IV.1.a	5	4	5	5	5	5			4.83
Parking	IV.1.b	5	4	5	5	5	5			4.83
Boat Access	IV.1.c	5	4	5	5	5	5			4.83
Environmental Education & Outreach										
Wildlife	IV.2.a	4	4	5	4	3	5			4.17
Invasive Species	IV.2.b	4	4	5	4	4	5			4.33
Habitat Management Activities	IV.2.c	4	4	5	4	5	5			4.50
Interpretive facilities and signs	IV.3	5	4	3	4	5	5			4.33
Recreational Opportunities	IV.4	5	4	5	4	5	5			4.67
Management of Visitor Impacts	IV.5	5	4	5	4	5	5			4.67
Public Access & Education Average Score										4.57
Managed Area Uses (VI.A, VI.B)										
Existing Uses										
Camping	VI.A.1	5	5	5	5	5	5			5.00
picnicking	VI.A.2	5	5	5	5	5	5			5.00
Boating / paddling	VI.A.3	5	5	5	5	5	5			5.00
fishing	VI.A.4	5	5	5	5	5	5			5.00
hiking	VI.A.5	5	5	5	5	5	5			5.00
biking	VI.A.6	5	5	4	5	5	5			4.83
Nature study	VI.A.7	5	5	5	5	5	5			5.00
Equestrian	VI.A.8	4	5	3	5	5	5			4.50
Bird-dog trials	VI.A.9	4	5	3	5	5	5			4.50
Hunting	VI.A.10	5	5	5	5	5	5			5.00
Proposed Uses										
OHV Trail Riding Area	VI.B.1	5	5	3	3	5	5			4.33

Color Code:

Excellent	Above Average	Below Average	Poor
	Missing Vote	Insufficient Information	

See Appendix A for detail

Appendix A: Scoring System Detail

Explanation of Consensus Commendations:

Often, the exceptional condition of some of the property's attributes impress review team members. In those instances, team members are encouraged to offer positive feedback to the managing agency in the form of a commendation. The teams develop commendations generally by standard consensus processes or by majority vote if they cannot obtain a true consensus.

Explanation of Consensus Recommendations:

Subsection 259.036(2), F.S., specifically states that the managing entity shall consider the findings and recommendations of the land management review. We ask team members to provide general recommendations for improving the management or public access and use of the property. The teams discuss these recommendations and develop consensus recommendations as described above. We provide these recommendations to the managing agency to consider when finalizing the required ten-year management plan update. We encourage the manager to respond directly to these recommendations and include their responses in the final report when received in a timely manner.

Explanation of Field Review Checklist and Scores, and Management Plan Review Checklist and Scores:

We provide team members with a checklist to fill out during the evaluation workshop phase of the Land Management Review. The checklist is the uniform tool used to evaluate both the management actions and condition of the managed area, and the sufficiency of the management plan elements. During the evaluation workshop, team members individually provide scores on each issue on the checklist, from their individual perspective. Team members also base their evaluations on information provided by the managing agency staff as well as other team member discussions. Staff averages these scores to evaluate the overall conditions on the ground, and how the management plan addresses the issues. Team members must score each management issue 1 to 5: 1 being the management practices are clearly insufficient, and 5 being that the management practices are excellent. Members may choose to abstain if they have inadequate expertise or information to make a cardinal numeric choice, as indicated by an "X" on the checklist scores, or they may not provide a vote for other unknown reasons, as indicated by a blank. If a majority of members failed to vote on any issue, that issue is determined to be irrelevant to management of that property or it was inadequately reviewed by the team to make an intelligent choice. In either case staff eliminated the issue from the report to the manager.

Average scores are interpreted as follows:

Scores 4.0 to 5.0 are *Excellent*

Scores 3.0 to 3.99 are *Above Average*

Scores 2.0 to 2.99 are *Below Average*

Scores 1.0 to 1.99 are considered *Poor*

Exhibit U

Compliance with Local Comprehensive Plans (Requested of counties after MPAG)

Exhibit V

State Forest Management Plan Advisory Group Summary (Meeting minutes)

Exhibit W

State Forest Summary Budget

	BLACKWATER RIVER STATE FOREST 2024-25 EXPENDITURES	Percentages Based on Total Dollar Amount of Expenditures	Assessed Needed Funding Based Upon LMUAC Resource Management
Resource Management	\$ 770,246	26.17%	\$ 2,795,327.85
Exotic Species Control	\$ 59,539	3.83%	\$ 408,517.52
Prescribed Burning	\$ 424,751	3.98%	\$ 424,751.42
Cultural Resources Management	\$ 3,207	0.21%	\$ 22,001.20
Timber Management	\$ 129,101	8.29%	\$ 885,815.50
Hydrological Management	\$ 8,079	0.52%	\$ 55,430.22
	\$ -		\$ -
OTHER RESOURCE MANAGEMENT	\$ 145,570	9.35%	\$ 998,811.98
Listed Species Management	\$ -		\$ -
Forest Pest and Disease	\$ -		\$ -
Plant Conservation Program	\$ -		\$ -
State Forest Research Projects	\$ -		\$ -
Boundary Surveys for State Forests	\$ -		\$ -
Other Activities Also Include: Liaison Community Meetings / Boundary Line Maintenance / Forest Inventories and Various Other Activities / Wildfire Suppression on State Forests	\$ -		\$ -
			\$ -
Administration	\$ -	7.78%	\$ -
Central Office Headquarters	\$ -		\$ -
District/Regions	\$ -	7.78%	\$ -
Units/Projects	\$ -		\$ -
	\$ -		\$ -
Support	\$ 507,393	32.60%	\$ 3,481,423.68
Land Management Planning	\$ 28,003	1.80%	\$ 192,136.74
Land Management Reviews	\$ 4,265	0.27%	\$ 29,263.74
Training/Staff Development	\$ 112,431	7.22%	\$ 771,430.60
Vehicle Purchase	\$ 5,915	0.38%	\$ 40,584.75
Vehicle Operations and Maintenance	\$ 261,269	16.79%	\$ 1,792,671.00
	\$ -		\$ -
OTHER SUPPORT	\$ 95,511	6.14%	\$ 655,336.86
State Forest Land Acquisition Support			\$ -
Other Support Activities Also Include: Computer Maintenance / Radio Maintenance / Technical Support / Management of Apiary and Cattle Leases / State Forest Leases, Lease Amendments, Easements and Other Various Activities	\$ -		\$ -
	\$ -		\$ -
Capital Improvements	\$ 293,988	18.89%	\$ 2,017,168.73
New Facility Construction	\$ 32,236	2.07%	\$ 221,186.87
Facility Maintenance	\$ 261,752	16.82%	\$ 1,795,981.86
			\$ -
Visitor Services/Recreation	\$ 226,791	14.57%	\$ 1,556,104.64
Information/Education	\$ 55,803	3.59%	\$ 382,885.05
Operations	\$ 170,989	10.99%	\$ 1,173,219.59
			\$ -
Law Enforcement	\$ -	0.00%	\$ -
Total	\$ 1,556,563.58	100.00%	\$10,680,196.58

Exhibit X

Arthropod Control Plans

(Okaloosa & Santa Rosa County Responses)



**OKALOOSA COUNTY PUBLIC
WORKS DEPARTMENT -
MOSQUITO CONTROL DIVISION**

BRIAN SHEPHEARD
Mosquito Control Supervisor
bshepherd@myokaloosa.com

84 Ready Avenue NW | Fort Walton Beach, Florida 32548

November 20, 2023

Eric Howell
3125 Conner Boulevard
Tallahassee, Florida 32399-1650

RE: Blackwater River State Forest Arthropod Control Plan

Mr. Howell,

In response to the Florida Department of Agriculture and Consumer Services letter dated October 23, 2023, the Okaloosa County Public Works Department, Mosquito Control Division has no plans to conduct mosquito control operations in the Blackwater River State Forest.

If the situation changes due to an unexpected increase in mosquito populations or a threat to residents such as the Zika virus, the Okaloosa County Public Works Department will contact the Florida Department of Agriculture and Consumer Services and Florida Forest Service to coordinate mosquito control services as needed.

If you have questions or require additional information, please contact me at your earliest convenience.

Sincerely,

Brian Shepheard
Mosquito Control Supervisor
Okaloosa County Public Works Department
Tel: (850) 609-6170 Fax: (850) 651-7397
bshepherd@myokaloosa.com



**SANTA ROSA COUNTY
ENVIRONMENTAL DEPARTMENT**

MICHAEL W. SCHMIDT P.E., Environmental &
Public Works Director
michaels@santarosa.fl.gov

6051 Old Bagdad Highway, Suite 301 | Milton, Florida 32583

TANYA LINZY, Assistant Environmental Director
tanyal@santarosa.fl.gov

October 23, 2023

Eric Howell
3125 Conner Boulevard
Tallahassee, Florida 32399-1650

RE: Blackwater River State Forest Arthropod Control Plan

To Whom It May Concern,

In response to the Florida Department of Agriculture and Consumer Services letter dated October 23, 2023, the Santa Rosa County Environmental Department, Mosquito Control Division has no plans to conduct mosquito control operations in the Blackwater River State Forest.

If the situation changes due to an unexpected increase in mosquito populations or a threat to residents such as the Zika virus, the Santa Rosa County Environmental Department will contact the Florida Department of Agriculture and Consumer Services and Florida Forest Service to coordinate mosquito control services as needed.

If you have questions or require additional information, please contact me at your earliest convenience.

Sincerely,

Keith R. Hussey
Mosquito Control Director
6051 Old Bagdad Highway, Suite 301 | Milton, Florida 32583
P: 850.981.7135 | F: 850.981.7133

tt

Exhibit Y

Borrow Pits Map



Florida Forest Service

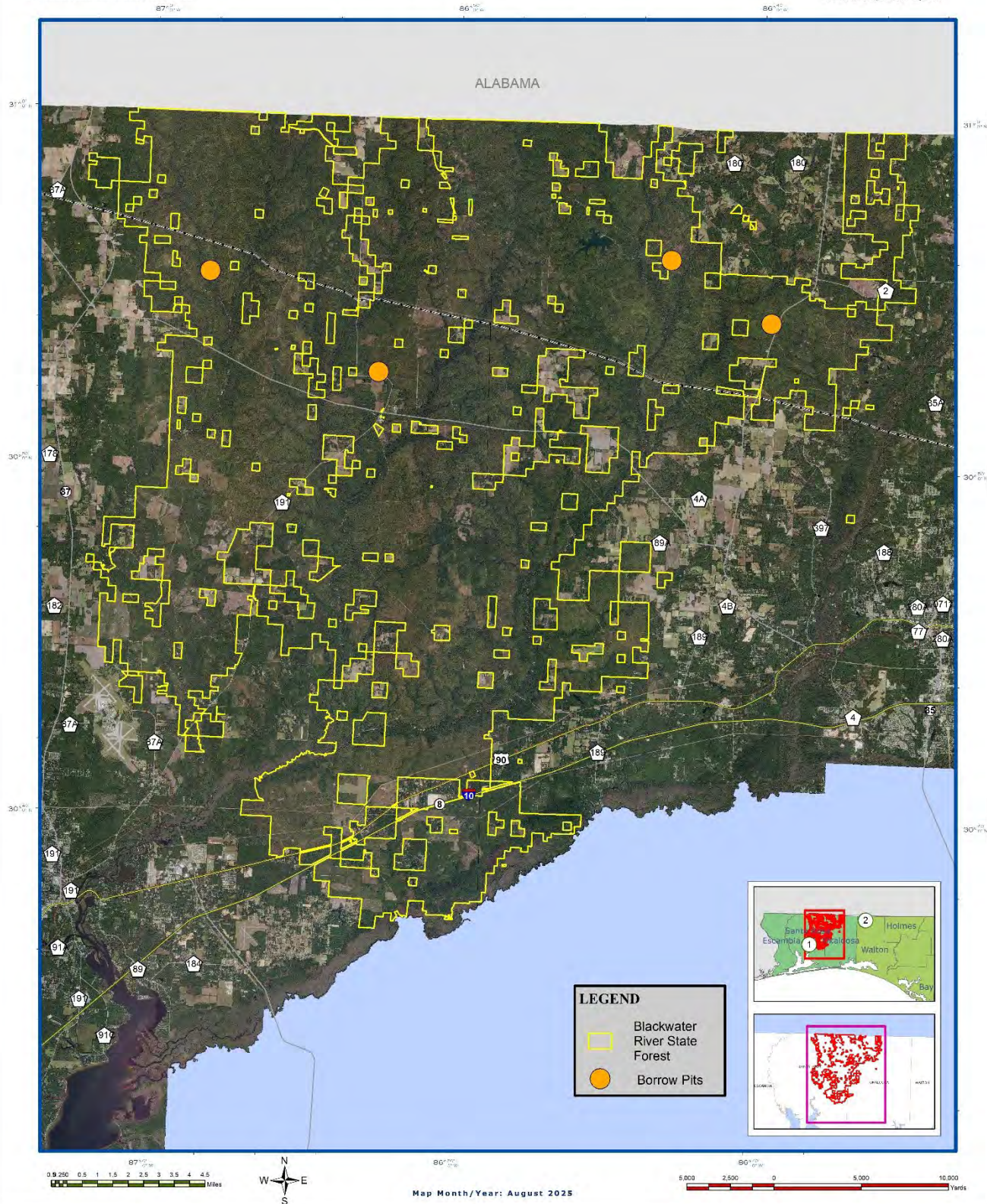
Blackwater River State Forest

Borrow Pits Map

Coordinate System: Florida Albers
High Accuracy Reference Network (HARN) Datum

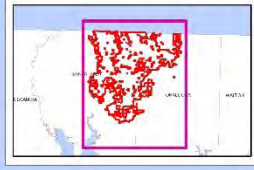
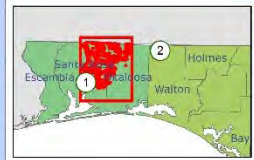
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Managed Area Boundary is Courtesy of the Florida Game and Inland Fisheries Commission (FGIFC) from the 5th & 6th Series of 1980s.



LEGEND

- Blackwater River State Forest
- Borrow Pits



Map Month/Year: August 2025

Exhibit Z

Pitcher Plant Bogs Map



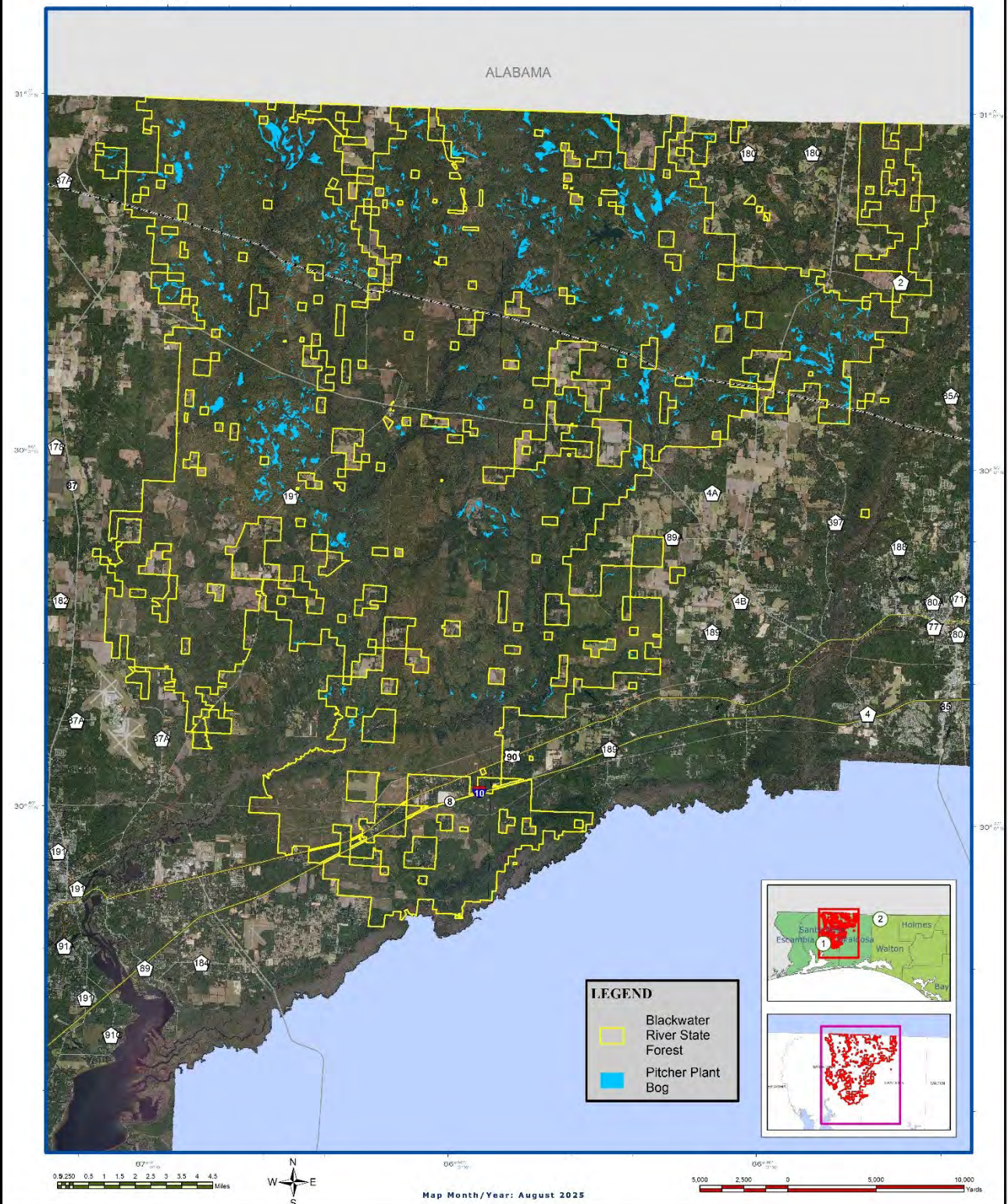
Florida Forest Service

Blackwater River State Forest

Pitcher Plant Bog Map

Coordinate System: Florida Albers
High Accuracy Reference Network (HARN) Datum

DISCLAIMER:
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LEGEND

- Blackwater River State Forest
- Pitcher Plant Bog



Map Month/Year: August 2025