

Land Management Plan

Green Swamp Wilderness Preserve

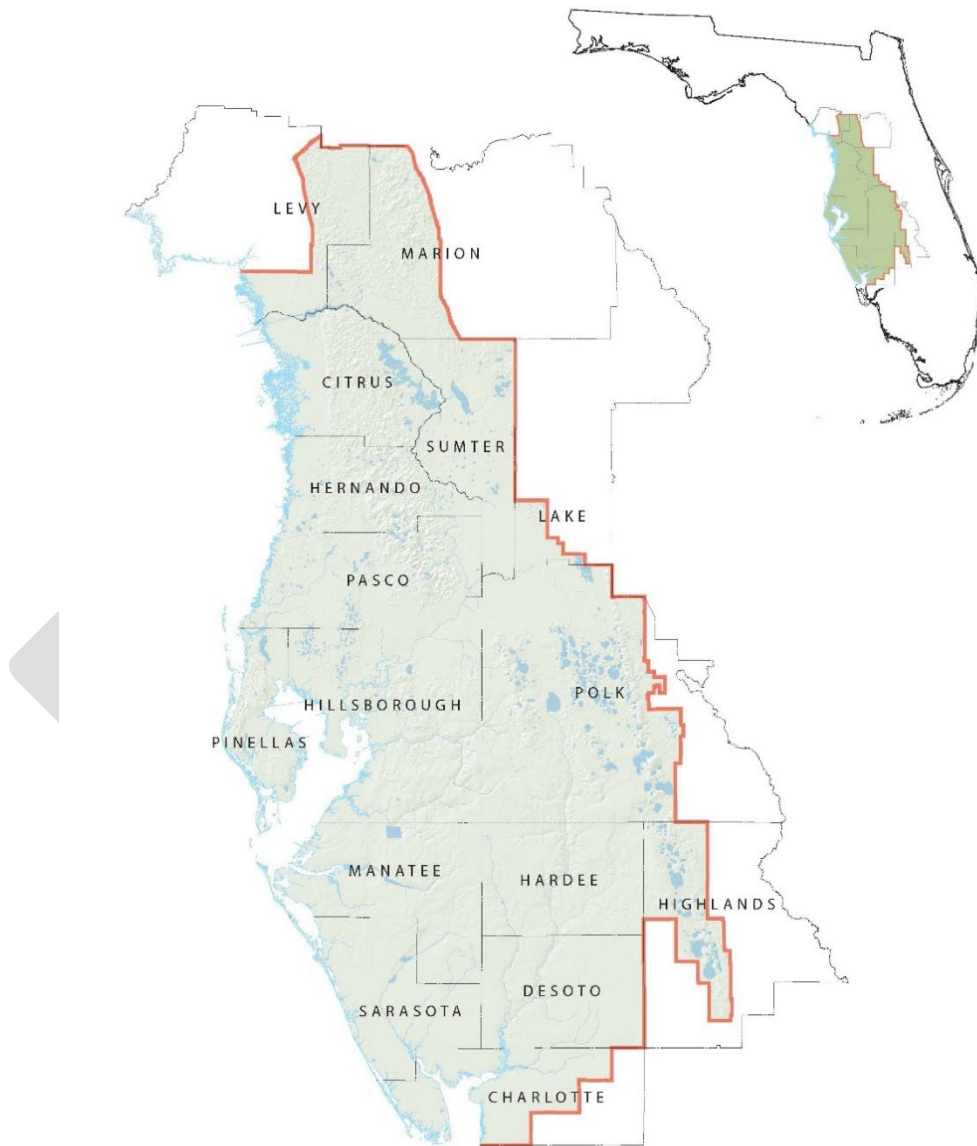
Land Resources Bureau

Southwest Florida Water Management District

July 25, 2024

The Southwest Florida Water Management District (District) is responsible for managing and protecting water resources in west-central Florida and utilizes a science-based approach to accomplish this mission. The District's also ensures there are adequate water supplies to meet the needs of current and future users while protecting and restoring water and related natural resources.

The District encompasses all or part of 16 counties, from Levy County in the north to Charlotte County in the south and extends from the Gulf of Mexico east to the highlands of central Florida. The District contains 97 local governments spread over approximately 10,000 square miles, with an estimated 5.56 million permanent residents in 2021.



Southwest Florida Water Management District

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The Southwest Florida Water Management District (District) does not discriminate on the basis of disability. This nondiscrimination policy involves every aspect of the District's functions, including access to and participation in the District's programs, services and activities. Anyone requiring reasonable accommodation, or who would like information as to the existence and location of accessible services, activities, and facilities, as provided for in the Americans with Disabilities Act, should contact the Human Resources Office Chief, at 2379 Broad St., Brooksville, FL 34604-6899; telephone (352) 796-7211 or 1-800-423-1476 (FL only); or email ADACoordinator@WaterMatters.org. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1-800-955-8771 (TDD) or 1-800-955-8770 (Voice). If requested, appropriate auxiliary aids and services will be provided at any public meeting, forum, or event of the District. In the event of a complaint, please follow the grievance procedure located at WaterMatters.org/ADA.

Executive Summary

Property: Green Swamp Wilderness Preserve

Size: 103,846 acres

Acquisition Date(s): Acquisition of the Green Swamp Wilderness Preserve (Preserve) began in 1965, when the District acquired portions of the Green Swamp East Tract in Sumter, Lake, and Polk counties. In the 1980s, the District purchased a significant portion of land along the Withlacoochee River, adding to the Preserve. In the early 1990s, the District acquired the majority of the Green Swamp West Tract and some portions of the East Tract. Acquisition continued into the 2000s with the purchase of the Hampton Tract in 2001, and the co-purchase of the Colt Creek State Park with the State of Florida Board of Trustees in 2006.

Plan Term: 10 Years (2025-2034)

Primary Basin: Withlacoochee River and Hillsborough River

Secondary Basin: Devils Creek Swamp, Ashley Bay, Gator Hole Slough, Upper Withlacoochee Swamp, Lower Withlacoochee Swamp, Colt Creek, Gator Creek, Pony Creek, Dobes Hole Lake

Location: Lake, Pasco, Polk, and Sumter Counties

Funding Source: Water Management Lands Trust Fund (Save Our Rivers), Preservation 2000 Program, Ad Valorem, Donation, and Florida Forever

Partnerships: Florida Department of Environmental Protection (FDEP), Florida Forest Service (FFS), Florida Trail Association (FTA), Florida Fish and Wildlife Conservation Commission (FWC), Pasco County, United States Department of Agriculture (USDA)

Natural Systems: The District uses natural communities as defined by the Florida Natural Areas Inventory (FNAI) to describe habitats of the Preserve. Seventeen (17) natural communities were identified by FNAI. Nineteen (19) altered land cover types were also mapped, including areas of restoration. Wetlands comprise about 56 percent of the 103,846-acre Preserve, including 36 miles along the Withlacoochee River. Mesic flatwoods encompass approximately 31 percent of the Preserve as the largest natural community. Of the wetland communities, approximately 17 percent of the Preserve is comprised of basin swamp communities which constitutes the second largest community after mesic flatwoods. The remaining natural communities occur in smaller quantities scattered throughout the Preserve, with scrub and sandhill communities exclusively occurring on the West Tract of the Preserve.

Water Resources: Water Resource benefits provided by the Preserve are abundant and include flood protection, water supply, water quality enhancement, and natural system protection including nearly 36 miles of the Withlacoochee River floodplain, which is designated as an Outstanding Florida Water by the FDEP. Wetlands associated with the Preserve and greater Green Swamp region store surface water and slow the flow of floodwaters while sustaining rivers and streams. The relatively high elevation and shallow depth to the aquifer keep water levels high and acts as a pressure head for the aquifer. The Green Swamp Area gives rise to four major river systems

(Hillsborough, Withlacoochee, Ocklawaha, and Peace Rivers) and provides an indirect source of drinking water to several Florida communities. The protection and management of wetland communities on the Preserve will continue to enhance water quality functions by infiltrating runoff and slowly discharging surface water to the surrounding rivers.

Land Management: Management activities on the Preserve include prescribed fire, habitat management, restoration, feral hog control, and invasive plant control. The District aims to apply fire to all fire-dependent natural communities based on their natural fire return intervals defined by FNAI. A network of firelines and natural firebreaks throughout the property allow for successful fire management and limits the potential for wildfires.

Cultural and Historical Resources: According to the Florida Master Site File, several archeological sites have been identified and are scattered throughout the Preserve. These sites are preserved under the guidelines of the state's Division of Historical Resources and are further protected by the District's ownership. Evidence of human presence in the region dates back to 6,000 B.C.; however, use of the Preserve by aboriginal people was limited to hunting and collecting stone for arrowheads and tools. No large, permanent habitation sites have been identified.

Recreation: The recreational activities permitted at the Preserve include birding, hiking, bicycling, equestrian, boating, canoeing-paddling, fishing, hunting, picnicking, and camping. The separate tracts within the Preserve offer their own recreational opportunities. In total, the trail system at the Preserve includes approximately 187 miles of multi-use trails. Approximately 39 miles of trails are available for hiking only, approximately 61 miles are for hiking and biking, and approximately 87 miles are for hiking, biking, and equestrian use.

Special Use Authorization (SUA): There are various special uses on the Preserve which require SUA approval from the District as set forth in Florida Administrative Code §40D-9. The typical types of special uses occurring on the Preserve can be categorized as recreation, research, and law enforcement training.

Access: Access to the Preserve is provided at various locations within the different tracts. Within the Green Swamp East Tract, the primary access occurs in two locations. On the southeast side of the Preserve, the Rock Ridge access point is on Rock Ridge Road approximately 10 miles north of U.S. Highway 98 and six miles west of State Road 33. The other primary access is on State Road 471 at Main Grade which is approximately seven miles north of U.S. Highway 98. Several additional walk-through gates are located throughout the property. For access to the Hampton Tract, the primary access is at the intersection of Deen Still Road and Rock Ridge Road in Polk County. Access to Green Swamp West Tract is also provided at multiple locations. From U.S. Highway 301 in Dade City, the main entrance occurs at the end of River Road near the intersection of Auton Road. This access includes a small boat ramp, a trailhead for hiking trails, equestrian access, campgrounds, and the WMA check station. Additional access is available off State Road 471 at the Cumpresco and McNeill entrances.

Real Estate: The Preserve is comprised of three primary tracts: the East, West, and Hampton Tracts. The District is responsible for management activities on each of these tracts covered under this Plan. The primary acquisitions included the majority of Green Swamp East in the 1960s, then

portions along the Withlacoochee River in the 1970s-80s before the purchase of Green Swamp West in 1994 and the Hampton Tract in 2001. There have been other smaller acquisitions that have occurred over the decades. Adjacent to the Preserve is Colt Creek State Park which the District co-purchased in 2006 and is administered by the Division of Recreation and Parks within FDEP through a long-term lease. Also, north of the East Tract is the Little Withlacoochee Tract which is owned by the District and is cooperatively managed by the FFS as part of the Withlacoochee State Forest - Richloam Tract. The District has also sold a small number of parcels along the perimeter of the Preserve through a surplus lands evaluation process. The District will continue to consider opportunities to purchase lands adjacent to the Preserve with the goal of completing the District's acquisition plan to protect the water resources and natural features of conservation lands for the benefit of flood protection, water quality, and water supply.

Cooperative Agreements, Leases, and Easements: There are many agreements with various cooperators in place on the Preserve. The largest is a cooperative agreement between the District and the FWC for the management of a Wildlife Management Area (WMA) that covers a 90,713-acre portion of the Preserve within the Green Swamp East and Green Swamp West Tracts. Additional agreements include: seven utility easements (five within the East Tract and two within the West Tract), one ingress/egress license agreement for hydrological monitoring, one ingress/egress easement for access, one flood easement, one recreation license agreement with Pasco County for Withlacoochee River Park, one recreation agreement with the USDA for the Florida National Scenic Trail, several FDEP agreements for various uses, four cattle leases, two security agreements with FWC, one security agreement with Pasco County for the West Tract, one long-term management lease with FDEP, Division of Recreation and Parks for Colt Creek State Park, a cooperative management agreement with FFS for the Little Withlacoochee Tract, a lease with FFS for a forestry tower site, and six license agreements for apiaries within the Preserve.

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Introduction and General Information

Management Plan Purpose

The purpose of this Management Plan is to set forth the District's management strategy for the Preserve for the next 10 years. This Management Plan is governed by the District's Governing Board Policy titled Land Use and Management (District Policy) and the District's Executive Director Procedure titled Land Use and Management Planning (District Procedure) which outline the use and management of District-owned conservation lands. District-owned conservation lands are managed for the protection of water resources and natural systems through the application of effective and efficient land management practices. This Management Plan provides a detailed overview of the Preserve, a description of the natural resources, a summary of the important water resources, a summary of the past management accomplishments, and an outline of goals and objectives for the next 10-year planning period.

District Planning Philosophy

The District's planning philosophy seeks to ensure Management Plans are developed and implemented with input from both internal and external stakeholders. Management Plans are designed to guide the use and management of District conservation lands and incorporate input from stakeholders as to the use and management.

Management Plans are developed following an extensive process of planning, coordination, data review, field review, and creation of strategic goals and objectives. Through this process, a draft Management Plan is created and reviewed by key stakeholders, including District staff, subject matter experts, state agencies, local governments, partners, non-governmental organizations, and other interest groups.

Following review of the draft Management Plan by the key stakeholders identified above, a public workshop is held to solicit public input on the draft Management Plan. The workshop is advertised through a press release, on the District's website, and via social media. Additionally, the public has an opportunity to provide input via the District's website for a period both preceding and following the workshop. Once the public comment period has expired, a final draft of the Management Plan that includes consideration of public input is presented to the District's Governing Board for approval at a regular Governing Board meeting.

Management Authority

The District considers the Preserve to be conservation land which dictates the management intent for the property. Pursuant to Subsection 373.089(6)(c) of the Florida Statutes, all lands titled to the District prior to July 1, 1999, were designated as having been acquired for conservation purposes. This brings parcels that were purchased originally as water control projects within the purview of conservation land management. Other parcels that were later acquired under conservation land acquisition programs are also managed for these same purposes.

Furthermore, pursuant to Section 373.1391 of the Florida Statutes, lands titled to the District should be managed and maintained, to the extent practicable, in such a way as to ensure a balance

between public access, recreation, and the restoration and protection of their natural state and condition. District Policy and District Procedure govern the use and management of these lands in accordance with Chapters 259 and 373 of the Florida Statutes.

Strategic Plan

The 2024 – 2028 Strategic Plan outlines the District’s focus in each of the four planning regions over the next five-year planning cycle (SWFWMD, 2024). The Strategic Plan identifies 12 strategic initiatives as they relate to the District’s Areas of Responsibility which are water supply, water quality, natural systems, and flood protection. The Natural Systems Goal is to preserve, protect, and restore natural systems to support their natural hydrologic and ecologic functions. The Conservation and Restoration Strategic Initiative supports the Natural Systems Goal, and the major components of this initiative include land acquisition and management, ecosystem monitoring and restoration, education, and regulation. Land acquisition and management are critical to the District’s conservation and restoration objectives. If land acquired has been altered, that land may be restored if necessary and then managed to maintain ecological and hydrological functions. In addition, land management is identified as one of seven Core Business Processes critical to achieving the District’s Strategic Initiatives and Regional Priorities as defined in the Strategic Plan. Management of these conservation lands restore and sustain natural systems, store flood waters, recharge the aquifer and improve water quality. District conservation lands are managed following an adaptive management strategy based on science to achieve land management goals.

District Land Use Rules

Section 373.1391, Florida Statutes, provides that the District may establish rules related to District lands. Those rules are contained in the Florida Administrative Code Chapter 40D-9, District Land Use Rules for the Southwest Florida Water Management District. These Administrative Rules govern uses on District lands including recreational activities like hiking, camping, hunting, and horseback riding.

Location

The Preserve is located in the heart of Central Florida between Tampa and Orlando. The District’s Preserve exists in an area known generally as the Green Swamp Region that lies north of the Interstate 4 corridor. The Preserve occurs at the intersection of four central Florida counties which include eastern Pasco, southern Sumter, southern Lake, and northern Polk Counties (**Figure 1** and **Figure 2**). It is bound generally by State Highway 33 on the east, State Highway 50 on the north, U.S. Highway 301 on the west, and U.S. Highway 98 on the south. It is located several miles east of Dade City and approximately 10 miles north of Lakeland.

The Preserve contains three distinct management units: the East, West, and Hampton Tracts totaling 103,846 acres (**Figure 3**). In addition, the District also has ownership interest in the adjacent Colt Creek State Park and the Little Withlacoochee Tract which are cooperatively managed. The Preserve exists at the intersection of three of the District’s planning regions outlined in the Strategic Plan which are the Heartland, Northern, and Southern Planning Regions.

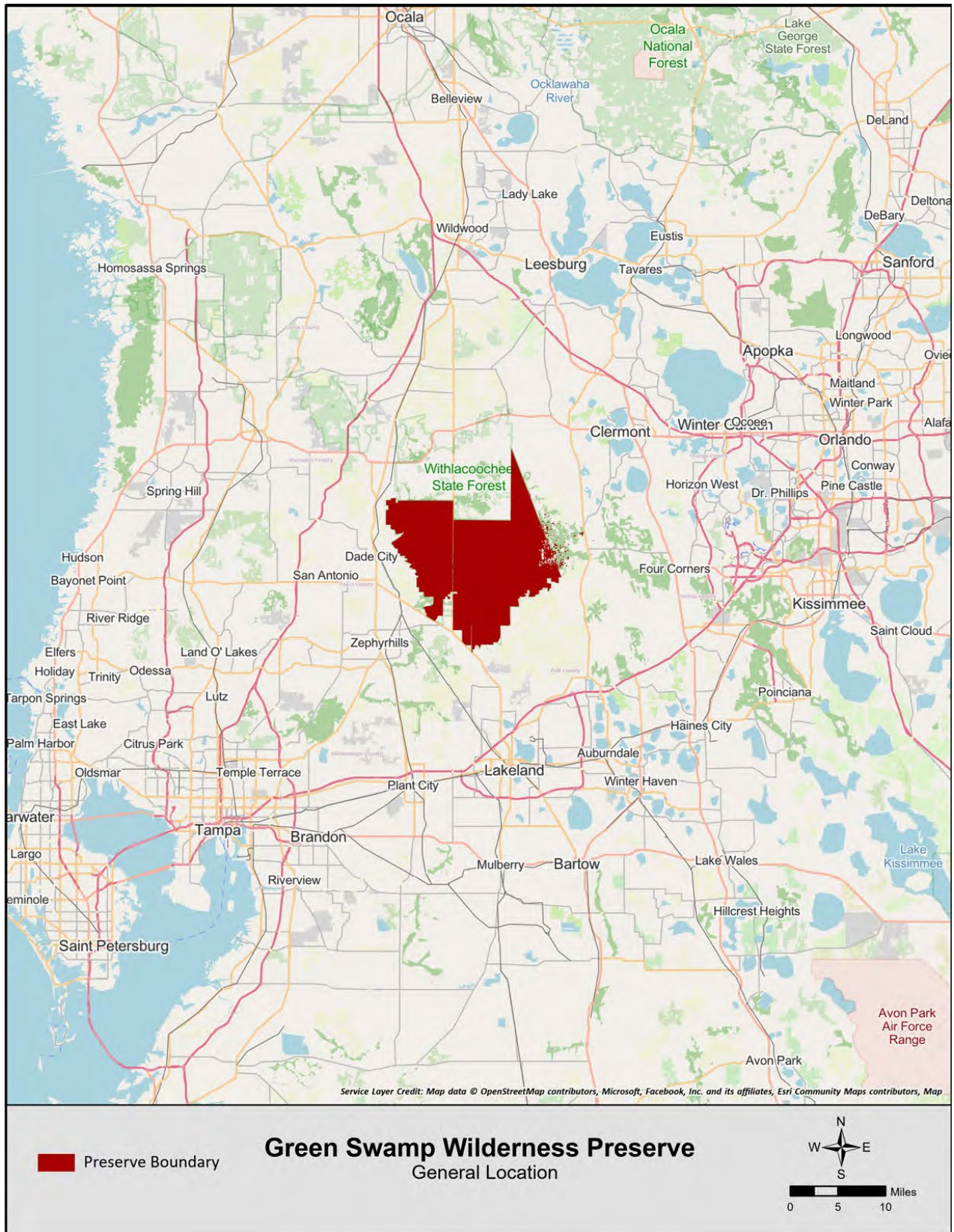


FIGURE 1. GENERAL LOCATION

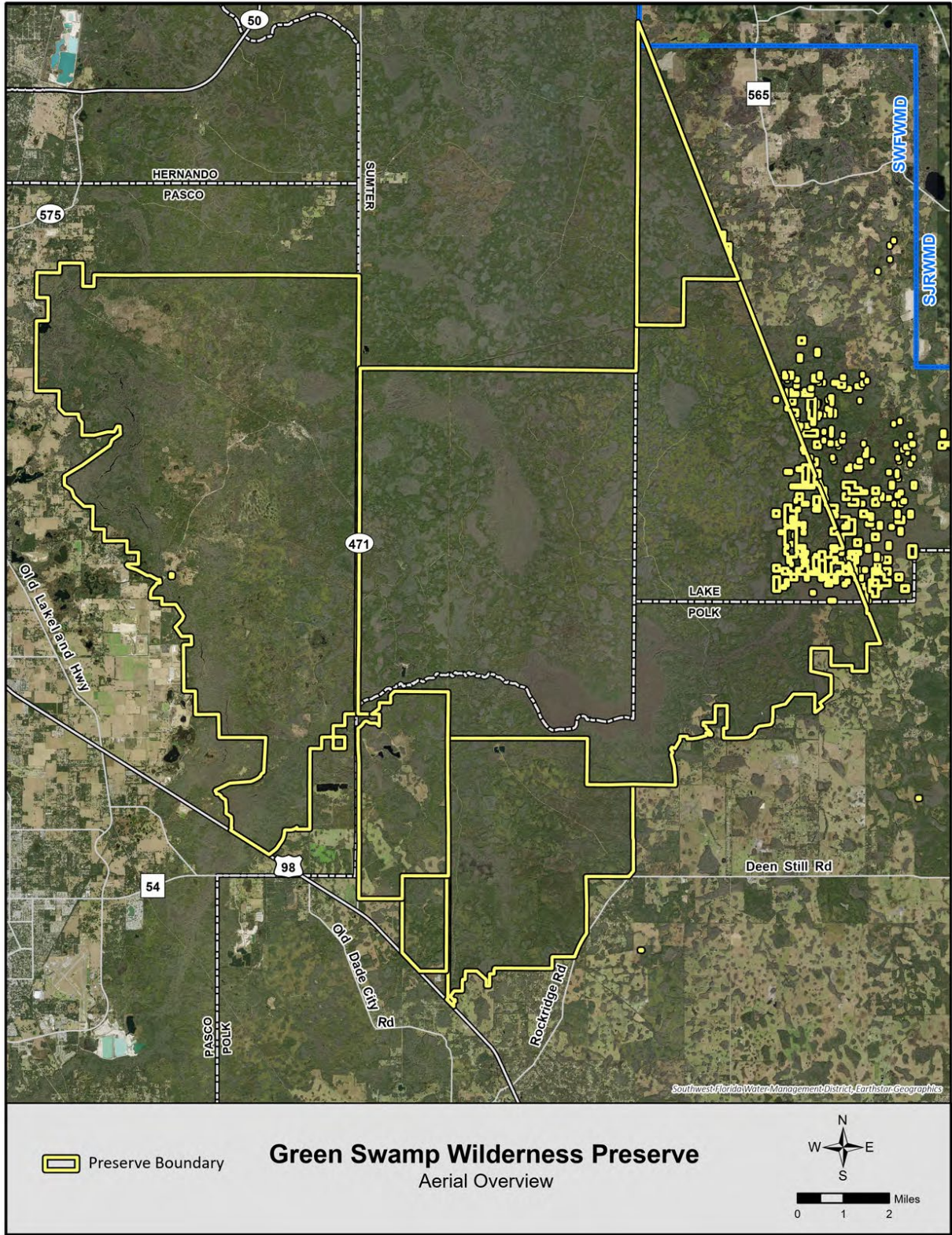


FIGURE 2. AERIAL OVERVIEW

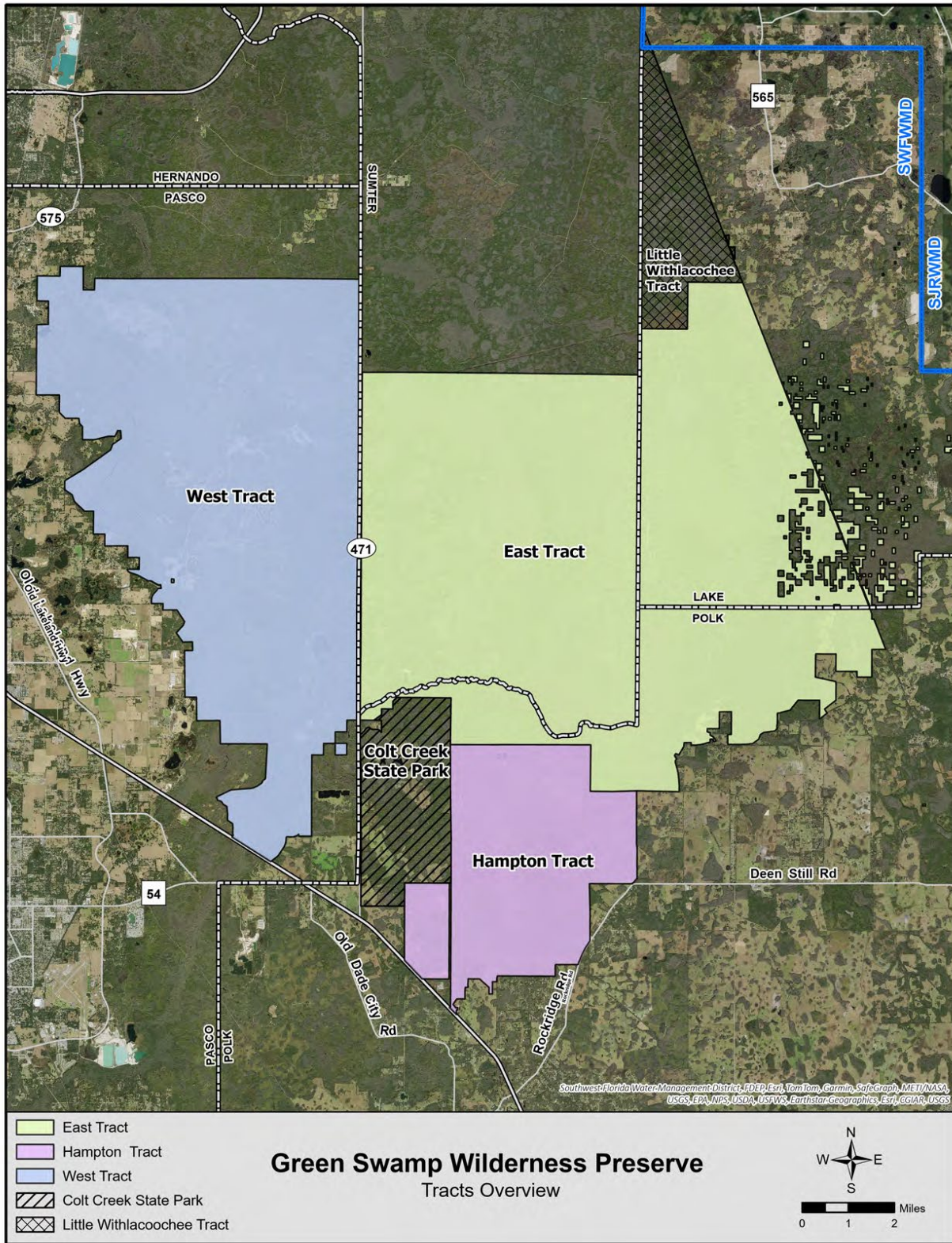


FIGURE 3. TRACTS WITHIN GREEN SWAMP WILDERNESS PRESERVE

Real Estate and Land Acquisition

Land Acquisition Policy

Pursuant to Section 373.139(2), Florida Statutes, the District's Governing Board is empowered and authorized to acquire title to real property for purposes of flood control, water storage, water management, conservation and protection of water resources, aquifer recharge, water resource and water supply development, and preservation of wetlands, streams, and lakes. Lands evaluated for purchase by the District shall be evaluated based on the District's four (4) Areas of Responsibility (AORs): water supply, water quality, flood control, and natural systems. The Governing Board Land Acquisition Policy states the District is primarily interested in acquiring conservation lands that meet at least two (2) of the four (4) AORs, is adjacent to existing District land, does not create management inefficiencies, and contributes to the completion of a project within the Florida Forever Work Plan. The specific resource management is discussed further in the proceeding sections.

Acquisition History

Since 1965, the District has purchased approximately 103,846 acres in the Green Swamp to support the District's mission to protect water resources, minimize flood risk, and ensure the public's water needs are met. The Preserve consists of three contiguous management tracts acquired to protect and manage water resources and ecosystem functions within the headwater swamps, floodplains and supporting watershed areas in the greater Green Swamp region. The present-day Preserve includes the East, West, and Hampton Tracts. The District's acquisition of lands at the Preserve continues today, considering purchases that contribute to meeting its AORs.

The first acquisitions in 1965 focused on large tracts within Sumter, Lake, and Polk counties. From 1965-1972, the District acquired a large portion of the present-day Green Swamp East Tract from the Cummer Son's Cypress Company under the Four Rivers Basin Project. In addition to those fee purchases, in July 1967, a 19,000-acre flood easement was acquired by the District for use as a water retention site over portions of the Richloam Tract of the Withlacoochee State Forest.

Over time, with changes in policy and public perception, flood protection strategies in this area shifted from a structural approach to the non-structural strategy which was determined to be more cost effective and more environmentally favorable. As a result, the implementation of the Four Rivers Basin Project in Green Swamp changed, and the District began focusing on land acquisition to support this approach of non-structural flood protection. In furtherance of these flood protection goals, the District began purchasing additional large parcels along the corridor of the Withlacoochee River with funding under the Save Our Rivers program throughout the 1980s. In the early 1990s, the District purchased the majority of the Green Swamp West Tract and some portions of the East Tract from the Agri Timber Corporation. Throughout this period and into the 2000s, the District acquired several adjacent parcels, including the Hampton Tract, the McNeill Tract, and co-purchased Colt Creek State Park, which was a joint purchase between the District, the Board of Trustees of the Internal Improvement Trust Fund, and Polk County, with the FDEP, Division of Recreation and Parks becoming the managing agency through a long-term lease. The Little Withlacoochee Tract on the northeast portion of the Preserve is cooperatively managed by the FFS as part of the Richloam Tract of the Withlacoochee State Forest.

Regional Significance

The Preserve is the District's largest landholding and includes large portions of land along the reaches of two of the Green Swamp region's principal river systems: the Withlacoochee and Hillsborough Rivers. As a plateau above surrounding areas, the Green Swamp region is an important physiographic feature of Florida. The Green Swamp, in its entirety, comprises 560,000 acres between Tampa and Orlando, is recognized as one of the two most important swamps in Florida, and is an essential piece of the Florida Wildlife Corridor. Its large expanses of wetlands, flatlands, and low ridges are bounded by prominent sandy ridgelines. Rainwater drains across the Green Swamp to create the headwaters of the Withlacoochee, Ocklawaha, Hillsborough, and Peace Rivers. Swamps, floodplains, and low-lying pinelands within the Preserve serve as natural collectors of seasonal rains that drive the flowing rivers, while higher upland areas serve as areas of natural recharge to the underlying aquifer. Named as the "Heart of the Floridan Aquifer," the Green Swamp serves as an important pressure head for the Upper Floridan Aquifer (UFA) which supplies drinking water for most Floridians. Protecting the Green Swamp is vital to protecting the quality and quantity of Florida's water supply. District ownership of these lands also ensures extensive floodplain areas are protected to serve as natural floodwater storage areas. The Areas of Critical State Concern was created by the Florida Environmental Land and Water Management Act of 1972 to protect resources and public facilities of major statewide significance. Recognizing the significance of this area, in 1974 the state of Florida designated 322,000 acres of the Green Swamp region as an Area of Critical State Concern. The Green Swamp is one of four designated areas given this distinction. Nearly 36 miles of the Withlacoochee River's 160-mile length are protected within the Preserve. Additionally, the Preserve assures the protection of several other tributaries and large, forested wetland systems, including Gator Hole Slough, Devils Creek, Cross Creek, Gator Creek, Colt Creek, and Tanic Road Slough. The Preserve is distinguished by its large size, state-wide importance as a haven for wildlife and connectivity with surrounding conservation areas. The topography and hydrology of the Preserve are integral for floodplain conservation.

The Florida Natural Areas Inventory (FNAI) maintains the Florida Forever Conservation Data Viewer (FNAI, 2022) which provides access to the ranking of the resource value of natural and agricultural lands across the state. This database provides a general characterization of the regional significance of the Preserve. The majority of the Preserve ranks as Priority 2 or 3 Strategic Habitat Conservation Area, and it provides an important link in the Florida Ecological Greenways Network. The FNAI Critical Lands and Waters Identification Project (CLIP) also ranks the majority of the Preserve as Priority 2 (with Priority 1 being the highest) for Biodiversity Resource Priorities; Priority 3 for Landscape Resource Priorities; Priority 1, 2, 3, and 4 for Surface Water Resource Priorities (large portions of the East Tract are Priority 1); and Priority 1 and 2 for Aggregated Resource Priorities.

Regional Conservation Network

The Preserve, together with adjacent conservation lands including the Richloam Tract of the Withlacoochee State Forest managed by the FFS and the District owned Upper Hillsborough Preserve, comprise a contiguous land area of over 278,000 acres within the Green Swamp region. Additional conservation easements also buffer the Preserve on the east, south, and west, further

protecting these lands that have been recognized as a natural area of state-wide significance (**Figure 4**). Due to the importance of the Green Swamp, dozens of tracts in this portion of the state have been acquired or dedicated to natural resource protection through efforts of federal, state, and local governments, as well as non-profit and private entities (**Table 1**). Conservation initiatives have successfully resulted in the protection of natural lands in the regional vicinity of the Preserve through fee simple acquisition or purchase of conservation easements.

Together, these publicly owned lands are an integral component to protecting the region's water quality, supply, and storage while also providing habitat for native flora and fauna. These lands provide vital expanses of core wildlife habitat and natural areas which provide important strategic ecological networks. The Preserve is also part of the Florida Wildlife Corridor and the Florida Ecological Greenways Network, both of which are statewide networks consisting of vast expanses of contiguous undeveloped and/or protected lands crucial to the protection of Florida's native habitats, and to the survival of Florida's imperiled species.

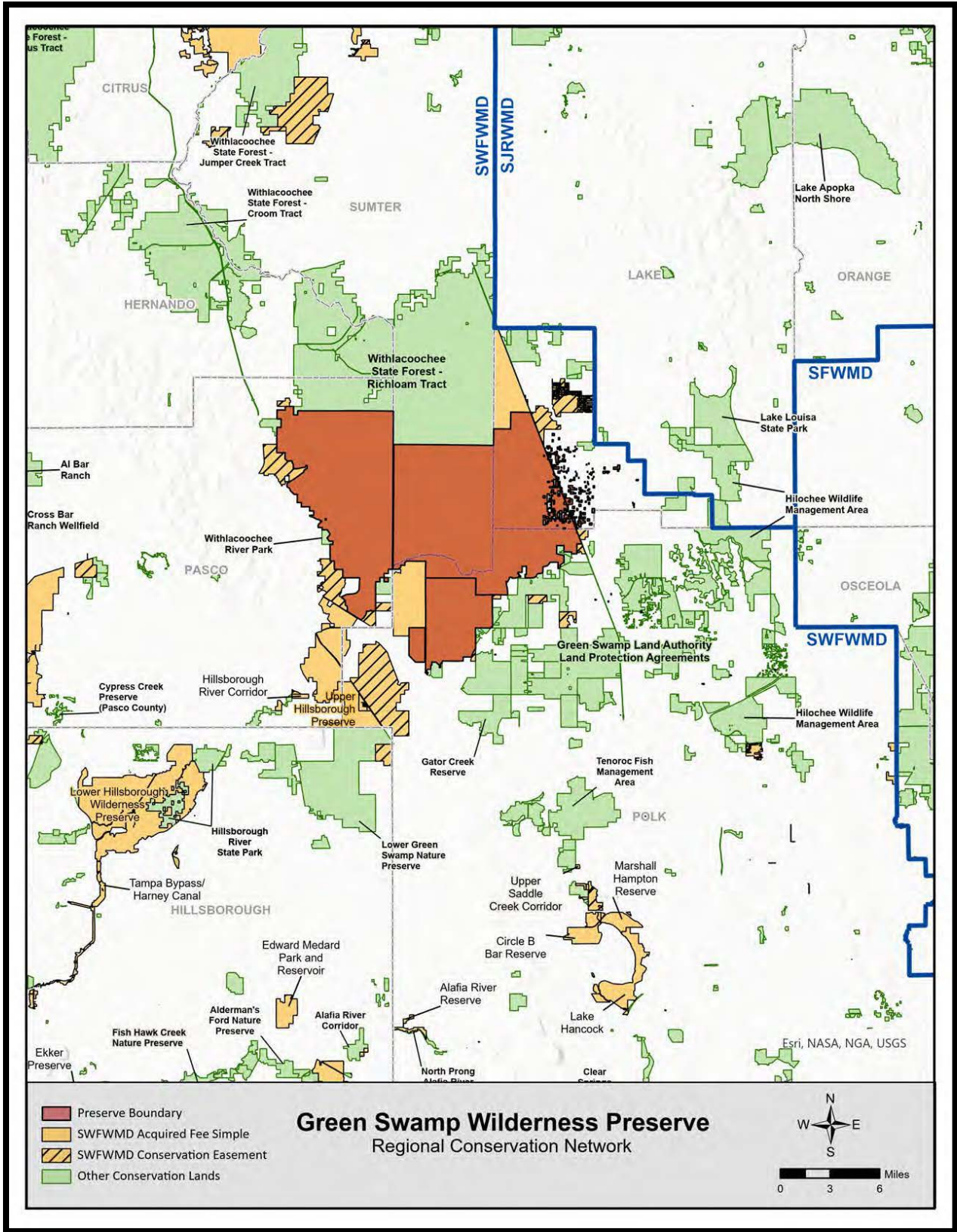


FIGURE 4. REGIONAL CONSERVATION NETWORK

TABLE 1. CONSERVATION LANDS WITHIN THE VICINITY

PROPERTY	MANAGER	OWNER	ACREAGE	COUNTY
Green Swamp Wilderness Preserve	SWFWMD	SWFWMD	103,846	Lake, Pasco, Polk, Sumter
Lower Hillsborough Wilderness Preserve	SWFWMD	SWFWMD	15,190	Hillsborough
Upper Hillsborough	SWFWMD	SWFWMD	9,439	Hillsborough, Pasco, Polk
Cypress Creek Preserve	SWFWMD	SWFWMD	8,471	Pasco
Lake Hancock	SWFWMD	SWFWMD	5,835	Polk
Conner Preserve	SWFWMD	SWFWMD	3,057	Pasco
Hillsborough River Corridor	SWFWMD	SWFWMD, Private	355	Pasco
Lake Marion Creek Horseshoe Scrub Tract	SFWMD	SWFWMD	290	Polk
SWFWMD Green Swamp Conservation Easements	SWFWMD	Private	9,084	Lake, Pasco, Polk
Upper Hillsborough Conservation Easement	SWFWMD	Private	7,915	Hillsborough, Pasco, Polk
Lake Panasoffkee Conservation Easement	SWFWMD	Private	5,823	Sumter
Lake Panasoffkee Conservation Easement	SWFWMD	Private	1,003	Sumter
Cypress Creek Conservation Easement (SWFWMD)	SWFWMD	Private	786	Pasco
Polk County Conservation Easement	SWFWMD	Polk County	562	Polk
Upper Lakes Basin Watershed	SFWMD	SFWMD, Polk County	12,996	Osceola, Polk
Kissimmee Chain of Lakes	SFWMD	SFWMD, Private, TIITF	2,232	Osceola, Polk
Shingle Creek	SFWMD	SFWMD, Private	1,464	Orange, Osceola
Withlacoochee State Forest	FFS	TIITF, SWFWMD	98,694	Citrus, Hernando, Pasco, Sumter
Seminole State Forest	FFS	TIITF, SJRWMD	120	Lake
Colt Creek State Park	FDEP	TIITF, SWFWMD	5,068	Polk
Lake Louisa State Park	FDEP	TIITF	4,606	Lake
Hillsborough River State Park	FDEP	TIITF, Hillsborough County	3,319	Hillsborough
General James A. Van Fleet State Trail	FDEP	TIITF	430	Lake, Polk, Sumter
Hilochee Wildlife Management Area	FWC	TIITF	9,756	Lake, Polk
Tenoroc Public Use Area	FWC	TIITF	8,528	Polk
Hilochee-Osprey Unit	FWC	TIITF	6,102	Polk
Chinsegut Wildlife and Environmental Area	FWC	TIITF, FWC	821	Hernando
Little Gator Creek Wildlife and Environmental Area	FWC	TIITF	566	Pasco
Everglades Headwaters National Wildlife Refuge and Conservation Area	USFWS	USFWS	446	Okeechobee, Polk
Lake Wales Ridge National Wildlife Refuge	USFWS	USFWS	181	Highlands, Polk
Gator Creek Reserve	Polk County	Polk County	2,710	Polk
Circle B Bar Reserve	Polk County	Polk County, SWFWMD	1,268	Polk
Saddle Creek County Park	Polk County	Polk County	729	Polk
Lake Lowery Marsh	Polk County	Polk County, SWFWMD	390	Polk

Sherwood L. Stokes Preserve/Lake Marion	Polk County	Polk County	220	Polk
Withlacoochee River Park	Pasco County	Pasco County, SWFWMD	258	Pasco
Cross Bar Ranch Wellfield	Pinellas County	Pinellas County	7,787	Pasco
Al Bar Ranch	Pinellas County	Pinellas County	4,253	Pasco
Lower Green Swamp Nature Preserve	Hillsborough County	Hillsborough County	12,822	Hillsborough
Blackwater Creek Nature Preserve	Hillsborough County	Hillsborough County	2,026	Hillsborough
Cypress Creek Nature Preserve	Hillsborough County	Hillsborough County	723	Hillsborough
English Creek	Hillsborough County	Hillsborough County	308	Hillsborough
Lake Townsen Preserve	Hernando County	Hernando County	374	Hernando
Cypress Lakes Preserve	Hernando County	Hernando County	331	Hernando
Disney Wilderness Preserve	The Nature Conservancy	The Nature Conservancy	2,828	Osceola, Polk
Saddle Creek Sanctuary	Florida Audubon Society, Inc.	Florida Audubon Society, Inc.	457	Polk
Ahhochee Hill Sanctuary	Florida Audubon Society, Inc.	Florida Audubon Society, Inc.	276	Hernando

SWFWMD – Southwest Florida Water Management District

FFS – Florida Forest Service

FWC – Florida Fish and Wildlife Conservation Commission

USFWS – United States Fish and Wildlife Service

FDEP – Florida Department of Environmental Protection

SJRWMD – St. Johns River Water Management District

TIITF – Trustees of the Internal Improvement Trust Fund

SFWMD – South Florida Water Management District

Current Land Use

The Preserve is managed for the conservation and protection of its water resources and natural systems. In addition, the Preserve offers recreational resources and public access opportunities to the public. The Preserve will continue to support a multiple-use concept for environmental conservation, water resource protection, and recreational access. It is the policy of the District that appropriate public recreational use of District lands be permitted, provided the use is compatible with natural resource management and protection needs. This approach is consistent with Chapter 373 of the Florida Statutes, which states that “Lands titled to the governing boards of the districts shall be managed and maintained, to the extent practicable, in such a way as to ensure a balance between public access, general public recreational purposes, and restoration and protection of their natural state and condition.” The Preserve protects natural wetland and upland systems that provide habitat for many notable species of wildlife and plants, including federal- and state-listed species. The Preserve offers visitors opportunities for passive nature-based recreation. Various recreational opportunities that are available to the public are outlined later in this plan. Current natural resource management on the Preserve includes prescribed burning, forest management, invasive species control, restoration, recreational maintenance, and security, among many others.

Local Government Land Use Designation

Per Section 163, Florida Statutes, local governments are required to create, adopt, and maintain a Comprehensive Plan that addresses where residential and nonresidential uses occur in the area. The Pasco, Polk, Lake, and Sumter County Comprehensive Plans were developed in accordance with the requirements of Chapter 163 of the Florida Statutes, and Chapter 9J-5 of the Florida Administrative Code. These Comprehensive Plans provide a comprehensive framework for future development in that County that is designed to provide all the services and amenities necessary to maintain a high quality of life for its residents. The Future Land Use maps for each county within the Preserve boundaries were assessed. The Polk County Future Land Use 2030 Map designates the Preserve as Preservation; the Pasco County 2025 Future Land Use Map designates the Preserve as Conservation Lands; the Sumter County 2035 Future Land Use Map designates the Preserve as Conservation; and the Lake County 2030 Adopted Future Land Use Map also designates the Preserve as Conservation.

Adjacent Land Uses

The Preserve is bounded by the Withlacoochee State Forest-Richloam Tract to the north. Otherwise, the majority of the Preserve is surrounded by low density rural and agricultural land uses. In addition, the District maintains approximately of less than fee interests or conservation easements on properties around the Preserve. The Colt Creek State Park and District-held Upper Hillsborough Preserve also occur just south and west of the Preserve.

The Polk County Future Land Use 2030 Map shows the Colt Creek State Park as Recreation Open Space, with all other surrounding Polk County lands mapped as Preservation. The Pasco County 2025 Future Land Use Map shows most adjacent lands mapped as Agricultural/Rural. The Sumter County 2035 Future Land Use Map shows all adjacent lands north of the Preserve mapped as Agricultural. The Lake County 2030 Adopted Future Land Use Map shows the adjacent lands to

the east of the Preserve mapped as Core Conservation and Rural Conservation, as these lands are within the Green Swamp Area of Critical State Concern.

Management Challenges

The challenges associated with the management of the Preserve are primarily due to its vast geographic size, the multitude of recreational uses, the number of users, and the coordination with various other agencies, such as the Florida National Scenic Trail managed by the FTA, the WMA managed by the FWC, the Withlacoochee River Park managed by Pasco County, and the Withlacoochee State Forest - Richloam Tract managed by the FFS. The western boundary of the West Tract is in close proximity to existing development, increasing the wildland-urban interface, which often serves as a vector for the introduction of invasive or nuisance plant and animal species and can also constrain the District's ability to conduct prescribed burns. State Road 471 bisects the East and West Tracts, the Hampton Tract is adjacent to residential areas along the southern boundary in northern Lakland, and U.S 98 borders a portion of the West and Hampton Tracts, all adding to the management challenges that the wildland urban interface presents.

Though hunting is a valid and popular activity on the Preserve, this use activity brings along with it additional challenges which arise from managing and maintaining infrastructure due to the number of recreational users on the Preserve. Green Swamp East is the most popular wildlife management area in the state and over the last 10-year period there have been over 140,000 hunter days on the tract. This number of hunter days results in increased maintenance needs like grading roads, purchasing aggregate, maintaining low-water crossings, and replacing culverts. This high volume of users also makes it challenging to conduct land management activities like prescribed burning during certain hunts and seasons. Similarly, road and culvert work must be timed to minimize impacts to uses and users on the Preserve and this must be balanced with other priority work like levee and structure repairs and other maintenance of District works projects. These District works projects are also predominantly timed during the dry season.

Past land uses activities and land alterations also create challenges. Examples include the historical lack of fire maintenance on the Hampton tract prior to District acquisition. Until such time that the District can bring this tract back under consistent fire management, the management units require extra precautions due to heavy fuel loading. This heavy fuel loading results in additional smoke production and fire containment and control challenges. District staff are mitigating this by mechanically treating units followed by fire applications, increasing staffing resources on burns, burning during wet conditions, and aerial burn applications when parameters are favorable.

The Green Swamp West tract also has a long history of past land use alterations that have degraded the natural systems. Though well within good fire maintenance, there are a lot of areas on this tract that will require additional enhancement or restoration efforts to improve overall habitat and natural systems.

Recreational opportunities on all District managed conservation lands are passive, nature-based outdoor activities. As the population in the regional vicinity of the Preserve grows, there is the possible challenge for the District to manage requests for more expansive recreational opportunities. In similar past situations, the District has approved cooperative agreements with

other local governing agencies to manage expansive recreational opportunities as the District does not have the resources to manage such expanded opportunities. Prior to the District approving any cooperative agreements for expansive recreational opportunities, the District Governing Board will need to deem such opportunities as “compatible,” as outlined in the District Policy and District Procedure.

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Historical Land Use and Cultural Resources

Historical Land Use

Many of the lands comprising the present-day Preserve, specifically within the West Tract, were intensively used for consumptive uses including ranching, timbering, mining, hunting, and agriculture prior to acquisition. Timber resources were a large source of revenue in the early economy of the Green Swamp and surrounding area. Large portions of the Preserve were historically owned by the Cummer Son's Cypress Company during the first half of the 20th century (Jeffares, 1987). The lumber mill that processed the timber opened in 1922 and closed in 1959 when there was no longer sufficient timber to support the industry. Additionally, a small settlement known as Cumpressco (named after Cummer Son's Cypress Company), was established in the 1920s within the East Tract of the present-day Preserve. Cumpressco operated on two rail lines to transport timber west to Dade City and northwest to the mill located in Lacoochee. Logging operations in Cumpressco ended in 1939 and both rail lines and the town of Cumpressco were abandoned. The rail line west to Dade City is now known as Cumpressco Grade Road running to the Withlacoochee River while the line to Lacoochee is now Main Line Road. The town site of Cumpressco is now part of a hiking trail in the Preserve. Although other tree species were harvested from the Green Swamp, including longleaf pine from flatwoods communities, most of the logging was of old-growth cypress trees. This historical logging of cypress within the Preserve is particularly evident in the floodplain of the Withlacoochee River, as very few old cypress remain. Beyond timber, ranching operations were also widespread throughout the present-day West Tract. The Larkin family established the Two Rivers Ranch in the 1920s which historically occupied a large portion of the West Tract before District ownership. Many of these ranching lands were also used for turpentine.

Most of the initial acquisitions were acquired from the Cummer Company in phases between 1965 and 1972. In 1976, the Cummer Company sold some of their land not yet under District ownership to Agri-Timber, Inc. Under Agri-Timber management, lands were leased for hunting and cattle, a sawmill and mulching plant supported additional logging operations, and sand, peat, and limerock mines were operated in the area. The District acquired these lands in increments between 1984 and 1992. Initially upon purchase, the Preserve was part of the Four Rivers Basin (FRB) flood control project. The proposed project involved constructing a large network of levees and water control structures across the Preserve, with the goal of converting District-owned Green Swamp lands into a series of three flood detention areas. Eventually, after evaluating the natural values of these lands, a non-structural approach to flood protection was adopted and the Green Swamp portion of the project was placed in deferred or inactive status by the District and the United States Army Corps of Engineers (USACE).

Cultural and Archeological Resources

The Florida Division of Historical Resources (DHR) is responsible for preserving and promoting Florida's historical, archaeological, and folk culture resources. The DHR provided information on known cultural and historical resources on the Preserve. According to the Florida Master Site File, several archeological sites scattered throughout the Preserve have been identified. They are

preserved under the guidelines of the state's Division of Historical Resources and are further protected by the District's ownership. Multiple sites have been determined to be of significance.

There are several sites of local and regional historical interest within the Preserve. Archaeologists have found evidence of human presence in the region dating back to 6,000 B.C. (Pilcher et al., 1980). Use of the area by aboriginal people was apparently limited to hunting and stone collecting for tools. The wet, low-lying nature of the Preserve likely limited aboriginal people to seasonal usage of the Green Swamp. The thick forests of the Green Swamp provided the Seminoles refuge during the Second Seminole War, as well as "perches of ambush" deep in the wilderness in their battle against the United States. Additionally, traces of the logging community of Cumpresco, which was located in the Preserve during the 1920s to 1940s, still remain on the property.

The District will utilize Best Management Practices (BMPs) for upholding the integrity of the historical and cultural resources that are documented within the confines of the Preserve. Management of these archaeological resources will consist primarily of preventing disturbance.

Water Resources and Natural Systems

Areas of Responsibility

The acquisition of conservation lands is important for the management of water resources and is a strategic element in the District's effort to meet its four primary Areas of Responsibility or AORs. These AORs are flood protection, water supply, water quality, and natural systems. The District's Mission is to protect water resources, minimize flood risks, and ensure the public's water needs are met. The District is one of five regional agencies directed by state law to protect and preserve water resources within its boundaries. Established in 1961 to operate and maintain several large flood protection projects, the District's responsibilities have since expanded to include managing water supply, protecting water quality, and protecting natural systems including rivers, lakes, wetlands, and associated uplands.

The Green Swamp includes more than a half a million acres of relatively undeveloped land in the heart of central Florida and is a rich reservoir of biological diversity. It is recognized as an Area of Critical State Concern because of its ecological and hydrologic significance. It is also well known for its high Upper Floridan aquifer levels. Land surface elevations are also high, and the region serves as the headwaters of four major rivers: the Withlacoochee, Hillsborough, Ocklawaha, and Peace Rivers (**Figure 5**). The Green Swamp also contributes surface runoff to Reedy Creek which flows east into the Kissimmee River. While flow can occur in multiple directions, over 80 percent of the Green Swamp lies within the watershed of the Withlacoochee River, a 160-mile-long stream that meanders west and north through eight counties before discharging into the Gulf of Mexico near Yankeetown, Florida.

The Preserve covers portions of Pasco, Sumter, Polk, and Lake Counties. It is one of several conservation lands within the Green Swamp that help protect this unique natural resource. Within its boundaries is a complex, integrated and delicate natural system composed of cypress swamps, riverine wetlands, hardwood forests, marshes, pine flatwoods, and sandhills. The Preserve is a critical hydrological resource and several streams flow through it as depicted in **Figure 6**. In addition to the preservation of miles of the Withlacoochee River, including its headwaters, the Preserve also assures the protection of several other tributaries and large sloughs, such as Gator Hole Slough, Devils Creek, Cross Creek, Gator Creek, Colt Creek, and Tanic Road Slough.

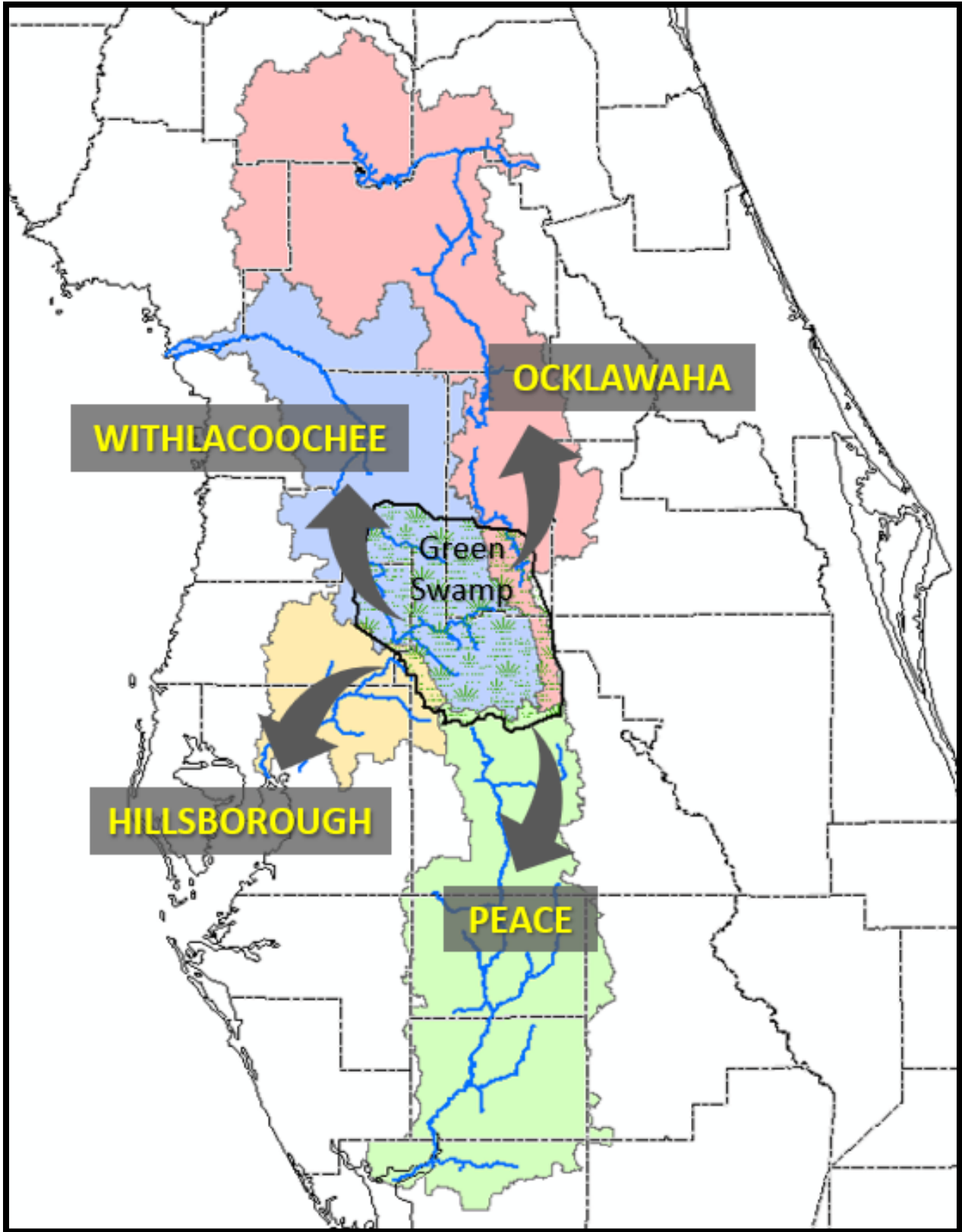


FIGURE 5. MAJOR RIVER SYSTEMS ORIGINATING IN GREEN SWAMP REGION

Water Quality

The District is actively involved in maintaining and improving water quality through both regulatory and non-regulatory programs. Protecting and improving surface and groundwater quality are the two primary objectives of the Water Quality Area of Responsibility (SWFWMD, 2021). The ability of natural systems, particularly wetlands, to improve water quality has become an important consideration in water quality related issues. Wetlands sequester nitrogen through denitrification, plant uptake, and accumulation of soil organic matter and remove phosphorus through geochemical and biological processes such as plant uptake and incorporation into soil organic matter (Widney, 2018).

The Preserve's expansive, unaltered forested riverine floodplain swamp and associated wetlands receive surface waters originating from adjoining or nearby up-gradient areas. These wetlands and swamps have the capability to substantially improve the quality of surface waters that flow through the Preserve. This benefits the Withlacoochee and Hillsborough Rivers by providing good water quality at their source. Detention of floodwaters within the Preserve reduces flow velocities, allowing suspended particles to be consolidated into bottom sediments or taken up through biological process of various organisms, thereby reducing nutrient loading and improving the quality of discharges. The undeveloped uplands provide additional water quality protection from erosion and sedimentation while buffering these wetlands and associated waterways. Additionally, the Preserve protects nearly 36 miles of the Withlacoochee River floodplain which has been designated as an Outstanding Florida Water (OFW) by Florida Statutes. An OFW is a water body designated worthy of special protection because of its natural attributes. This special designation is intended to protect existing good water quality. The OFW designation prohibits point source discharges that would result in any reduction in water quality and requires a higher level of treatment for stormwater that drains to the system. The Green Swamp has also been designated an Area of Critical State Concern, one of only four such designations in the State, providing additional protection due to its unique natural resources.

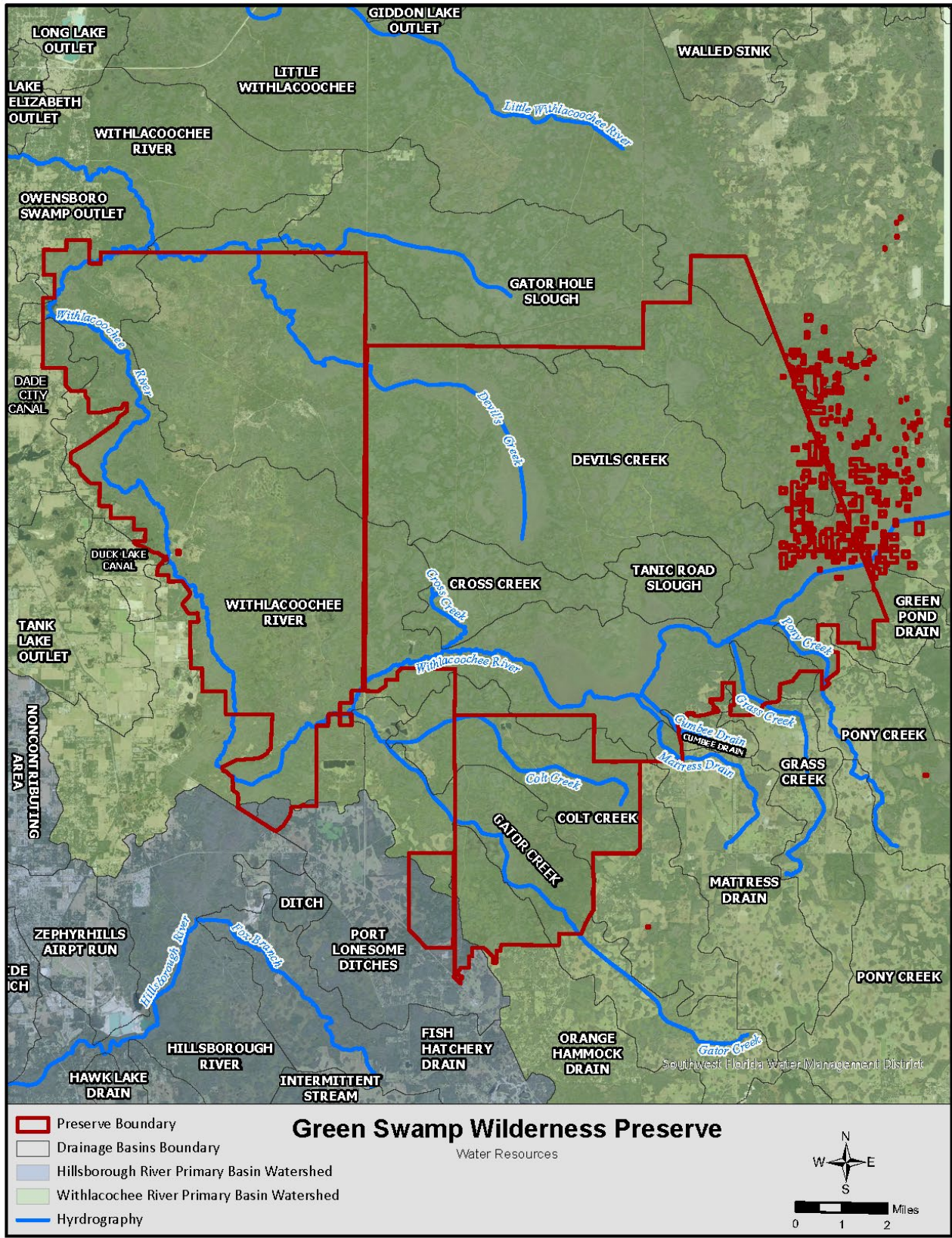


FIGURE 6. WATER RESOURCES

Water Supply

Ensuring adequate water supplies for humans and the environment is central to the District's Mission. A variety of effective water supply programs, including water use permitting, address the use and management of surface and groundwater sources. The District's regulatory efforts are balanced with other strategies, including incentives provided through the Cooperative Funding Initiative that support water conservation and development of alternative water supplies such as reclaimed water, surface water, brackish groundwater, seawater desalination, or other non-traditional sources.

The Green Swamp is important to both surface and groundwater resources in central Florida. The Swamp includes the headwaters of several important rivers. Water levels within the Upper Floridan aquifer (UFA) underlying the Swamp represent the highest potentiometric levels in peninsular Florida. Groundwater within the Floridan aquifer moves laterally from the Swamp to supply downgradient parts of the aquifer in other parts of central Florida.

The hydrogeologic framework of the Green Swamp area includes a surficial aquifer, a discontinuous intermediate confining unit (ICU), and a thick carbonate Floridan aquifer. At land surface and extending several tens of feet are generally fine-grained quartz sands that grade into clayey sand just above the contact with limestone. A thin, sometimes absent, sandy clay layer forms the ICU and overlies the limestone units of the UFA. The Upper Floridan aquifer is mostly semi-confined in the Green Swamp area and includes the Suwannee Limestone, Ocala Limestone, and portions of the Avon Park Formation. The Upper Floridan aquifer is low-to-moderately productive and provides the primary source of groundwater in the area. Karst activity is generally absent in the Green Swamp due to a shallow water table and dense limestone of the UFA. The entire carbonate sequence of the UFA thickens and dips toward the south and southwest. Average thickness of the UFA is about 1,000 feet in the Green Swamp area (Miller, 1986). While the limestone is generally shallow (close to land surface), it is relatively dense and impermeable which allows rainfall that infiltrates into the soil to mound or stack up at the surface. This creates a rather large reservoir of standing water, marshes, and cypress wetlands. Due to the extensive area of open water and swamps, evaporation or evapotranspiration rates are high, approximately 45 inches per year. This only provides enough water left over from rainfall to produce low to moderate recharge to the Upper Floridan aquifer (SWFWMD, 1988). Because the Green Swamp sits at a high land surface elevation and there are no significant groundwater withdrawals affecting aquifer levels, it is a regional high point in the Upper Floridan aquifer groundwater flow system.

Numerous wetlands and streams in the Green Swamp store surface water most of the year. During the wet season, when enough rainfall has saturated the soils and filled these depressional areas, flow will occur between wetlands and into the river channels. As river levels rise, high flows will exit the Green Swamp and continue downstream along the major river systems that originate in this area. Although the Preserve does not serve directly as a water supply source, it contributes indirectly to advancing the District's water supply mission by conserving and protecting the natural characteristics of the Green Swamp that sustain the region's surface and groundwater resources.

Flood Protection

Flood protection is another important element of the District's mission. Historically, flood protection relied upon control structures to provide storage and "controlled" conveyance of floodwater. Today, one of the District's primary flood protection strategies is identifying and preserving natural flood prone areas and other land that act as storage areas for storm-generated floodwater. This approach of land conservation allows the land to maintain its natural function and is a more environmentally sound and cost-effective method.

Flood protection is another important element of the District's mission. Historically, flood protection relied upon control structures to provide for the storage and "controlled" conveyance of floodwater. The current approach of land conservation allows the land to maintain its natural function and is a more environmentally sound and cost-effective method. The District's primary flood protection strategy includes identifying and preserving natural flood prone areas and other land that act as storage areas for storm-generated floodwater.

The Green Swamp serves as the headwaters of four major river systems. Retaining storm-generated surface waters within the large, gently sloping basin of the Green Swamp reduces excessive downstream flows into developed areas and subsequently reduces the potential for flooding. The 100-year floodplain encompasses over 73,500 acres (71 percent) of the Preserve (**Figure 7**). It is estimated that approximately 82 percent of the greater Green Swamp region lies within the upper basin of the Withlacoochee River. Additionally, the Withlacoochee River receives and conveys over 90 percent of the surface discharge that exits the Green Swamp. Approximately 57,820 acres (56%) of the Preserve is made up of wetland communities, the largest being basin swamps, dome swamps, floodplain swamps, and wet flatwoods. The single largest natural community on the Preserve is mesic flatwoods, which are seasonally inundated and assist in the passive role of floodwater storage benefits on the Preserve.

While most of the Preserve lies within the Withlacoochee River Watershed, during periods of high water a small area in the southwest corner of the Preserve will contribute some flow to the Hillsborough River through a natural overflow wetland, serving as the most upstream origin of the Hillsborough River (Pride, et. al. 1966). This flow only occurs a handful of days each year when water levels in the Green Swamp are high following periods of excess rainfall.

In the 1960s, land was purchased in the Green Swamp as part of the Four River Basins Project, which was a plan designed to hold back and divert flood waters throughout the region. Ideas included the construction of a series of levees, ditches, and structures that would have created permanent pools to manage flood waters and effectively control discharges to the Withlacoochee and Hillsborough Rivers. By the 1980s, after additional studies and prior to any construction, it was determined that the high economic costs and widespread environmental destruction associated with the project far outweighed any benefits that would have been gained through structural alterations, including minimal improvements to downstream flooding. As a result, a non-structural approach was implemented to conserve and purchase additional land in the Green Swamp, allowing it to naturally detain flood waters and maintain its water quality benefits. Preserving land in this unique region also limits future flooding challenges posed by increased land development.

In 2007 and 2008, as part of the Withlacoochee River Watershed Initiative, District staff collected channel profile elevations along the centerline of the Withlacoochee River for 40 miles through the Preserve. Those data were used to create a comprehensive watershed model capable of simulating the surface water conditions in the Green Swamp and Withlacoochee River Watershed. This tool was used to better understand how historical alterations and natural fluctuations affect water levels and flows throughout the Green Swamp and beyond.

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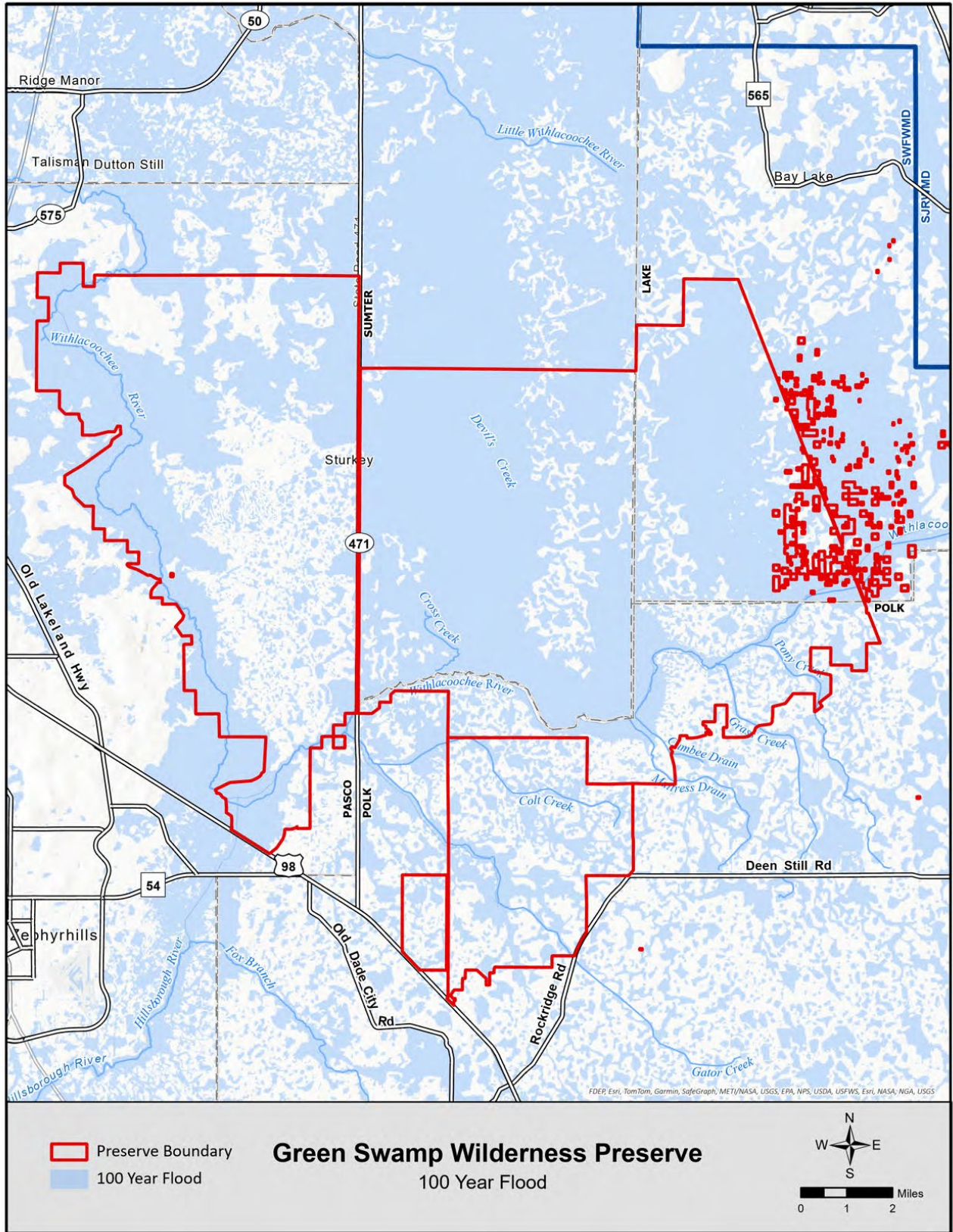


FIGURE 7. 100-YEAR FLOODPLAIN

Natural Systems

The District uses natural communities as defined by the FNAI in the 2010 Guide to the Natural Communities of Florida to describe habitats of the Preserve. Seventeen (17) natural communities were identified by FNAI. Nineteen (19) altered land cover types were also mapped, including restoration of natural communities (**Figure 8**). **Table 2** summarizes the acreage and percent cover of each type. FNAI has compiled an extensive database of plants observed in each natural community based on fieldwork conducted in 2006. Additional fieldwork was conducted in February and November 2023 as a part of this Management Plan update to verify current conditions and to evaluate the effects of land management on each natural community. An excerpt of the FNAI community descriptions and a representative group of the plants observed are provided below for each natural community. **Appendix A** provides a list of all plants documented on the Preserve. This list is not an exhaustive list, but represents all plants documented by the District or inventoried by FNAI over time.

TABLE 2. NATURAL COMMUNITY TYPE SUMMARY

FNAI Natural Community	Acres	Percentage of Community Type
Natural Community (2010)		
Basin Marsh	1,193	1.1%
Basin Swamp	17,454	16.8%
Blackwater Stream	235	0.2%
Bottomland Forest	391	0.4%
Depression Marsh	2,248	2.2%
Dome Swamp	12,042	11.6%
Floodplain Swamp	9,754	9.4%
Hydric Hammock	4,173	4.0%
Mesic Flatwoods	37,167	35.7%
Mesic Hammock	1,319	1.3%
River Floodplain Lake	53	0.1%
Sandhill	3,209	3.1%
Scrub	316	0.3%
Scrubby Flatwoods	477	0.5%
Swamp Lake	11	0.0%
Wet Flatwoods	6,847	6.6%
Wet Prairie	3,376	3.2%
Xeric Hammock	62	0.1%
Altered Land Cover Types (2010)		
Artificial Pond, Canal, Ditch, Spoil, Utility	274	0.3%
Abandoned Field, Clearing	578	0.6%
Pasture- Improved/Semi-Improved	1,201	1.2%
Developed	84	0.1%
Successional Hardwood/Hydric Forest	674	0.6%
Pine Plantation	936	0.9%
Total Acreage	104,074	100.0%

Natural Community Descriptions

Wetland Communities

Basin Marsh (1,192.7 acres)

Basin marshes are large, irregularly shaped, herb-dominated wetlands, the deepest portions of which may remain saturated year-round. Basin marshes are distinguished from depression marshes by their irregular shape, larger size, and deep organic soils resulting from longer periods of saturation. The largest basin marsh at the Preserve exceeds 100 acres in size. Basin marshes are typically associated with wet prairies, wet flatwoods, mesic flatwoods, hydric hammocks, and strand swamps. Natural fires may occur during the end of dry season which burn dense herbaceous cover despite inundation. Seasonal and long-term water fluctuations are essential to maintaining the natural diversity of this community.

Basin marshes often have concentric zones of vegetation that reflect water depth, hydroperiod, or the organic soil depth. The deepest zones typically occur in the center but may also exist in pockets throughout the marsh where open water is often present. In and around the deepest zones are broadleaf pondlily, white waterlily, duckweed, bulltongue arrowhead, maidencane, lizard's tail, coastalplain willow, and occasionally scattered pond cypress. The shallower central zones of the marshes support sawgrass, flatsedges, Virginia chain fern, soft rush, common buttonbush, and scattered pond cypress. The shallowest zone, occurring near the edges of marshes, supports marshpennywort, southern umbrellasedge, mock bishopsweed, meadowbeauty, beaksedges, blue maidencane, maidencane, and sand cordgrass. The perimeters of some basin marshes may support the trees and shrubs such as red maple, swamp bay, slash pine, laurel oak, sweetgum, and pond cypress.

Basin Swamp (17,453.6 acres)

Basin swamp constitutes approximately 17,454 acres of the Preserve. This community occurs within large, irregularly shaped basins that are not associated with rivers. Basin swamps are vegetated with hydrophytic trees and shrubs capable of withstanding extended hydroperiods. Basin swamps are often associated with wet flatwoods, hydric hammocks, and bottomland forests. Maintaining hydroperiods lasting around 200 to 300 days is important for the management of basin swamps. Shortened hydroperiods, occurring naturally or artificially, allow for colonization of mesophytic hardwoods. While occasional fires are necessary for maintaining cypress- and pine-dominated basin swamps, natural fires occur less frequently in blackgum and hardwood-dominated swamps. The typical fire return in basin swamps ranges from ten to as many as 150 years.

Basin swamps in the Preserve typically have a dense canopy of pond cypress or bald cypress. Other less common canopy species include red maple, loblolly bay, dahoon, sweetgum, sweetbay, swamp tupelo, and slash pine.

The dense to moderately dense shrub layer includes the afore mentioned canopy species as well as common buttonbush, swamp dogwood, gallberry, Virginia willow, fetterbush, southern bayberry, hairy highbush blueberry, peelbark St. John's wort, and St. Andrew's cross.

Basin swamp herbaceous species can be sparse to dense with relatively low turnover of diversity. The most common herbaceous species found in basin swamps include blue maidencane, maidencane, bluestem, toothed midsorus fern, giant sedge, clustered sedge, spadeleaf, sawgrass, flatsedge, prairie iris, soft rush, Carolina reedroot, cinnamon fern, royal fern, pickerelweed, mock bishopsweed, bulltongue arrowhead, lizard's tail, alligator flag, Virginia chain fern, and yellow-eyed grass.

Blackwater Stream (235.4 acres)

The Withlacoochee River is a blackwater stream which meanders along the western and southern boundaries of the Preserve. Blackwater streams include streams and rivers that originate in the acidic, nutrient poor, sandy soils of the Coastal Plain. Tannins, particulates, and dissolved organic matter, derived from drainage through associated swamps and marshes, give these water bodies characteristic tea-colored water. Dark waters inhibit light penetration and subsequently photosynthesis of submersed aquatic plants, though emergent and floating aquatic vegetation is sometimes quite abundant.

Trees and shrubs from adjoining floodplain swamps and bottomland forests may grow along the banks of blackwater streams or take root within the stream course during periods of low water flow. Canopy and sub-canopy species that are commonly found along the Withlacoochee River include swamp laurel oak, bald cypress, pond cypress, red maple, Carolina ash, slippery elm, water locust, and American hornbeam. Associated shrubs and subshrubs typically include common buttonbush, swamp rose, swamp dogwood, and coastalplain willow. Dominant aquatic and semi-aquatic herbs in the Withlacoochee River at the Preserve are broadleaf pondlily, pickerelweed, and common duckweed. Common in the shallower waters of blackwater streams are giant sedge, spadeleaf, spotted water hemlock, rush, water paspalum, turkey tangle frogfruit, smartweed, and coastal rosegentian. Common epiphytic species found along blackwater streams include Balbis' airplant, Bartram's air-plant, and Spanish moss.

Bottomland Forest (391.2 acres)

Bottomland forests are found in low-lying flatlands adjacent to the Withlacoochee River and scattered lowlands throughout the Preserve. This natural community is characterized by a diverse closed canopy with an understory that ranges from a dense shrub layer with sparse groundcover, to an open shrub layer with a diverse groundcover. This community experiences infrequent flooding, except during peak seasonal floods. High humidity levels result from a closed canopy that restricts air movement and light penetration which contributes to the lack of fire frequency characterizing this community. The Preserve bottomland forest occupies approximately 391 acres, and is associated with blackwater streams, floodplain forests, floodplain swamps, hydric hammocks, mesic flatwoods, and wet flatwoods.

The diverse bottomland forest canopy and sub-canopy is made up of red maple, water locust, sweetgum, swamp tupelo, slash pine, longleaf pine, swamp laurel oak, pond cypress, bald cypress, and American elm. Shrubs and sub-shrubs found in bottomland forests include common buttonbush, common persimmon, dahoon, southern bayberry, cabbage palm, groundsel tree, American beautyberry, sweetbay, saw palmetto, coastalplain willow, and Walter's viburnum.

Typical herbaceous species include broomsedge bluestem, big carpetgrass, false nettle, giant sedge, spadeleaf, longleaf woodoats, flatsedge, witchgrass, whorled marshpennywort, clustered bushmint, maidencane, smartweed, pickerelweed, beaksedges, lizard's tail, blue-eyed grass, and primroseleaf violet.

Depression Marsh (2,248.4 acres)

Depression marsh is characterized as a shallow, usually rounded depression of sand substrate with herbaceous vegetation or subshrubs, often in concentric bands. Depression marshes typically occur in landscapes occupied by fire-maintained matrix communities such as mesic flatwoods, dry prairie, or sandhill. The concentric zones or bands of vegetation are related to length of the hydroperiod and depth of flooding. Depression marshes are maintained by rainfall or seepage and runoff from surrounding uplands contributing to this community's propensity to dry out during periods of low rainfall. As a result, depression marshes may burn more frequently and more completely than basin marshes, preventing woody encroachment and restricting organic soil buildup. Depression marshes are frequent throughout the Preserve and range from 0.2 to 32 acres in size. This community is commonly associated with wet prairies, dome swamps, wet flatwoods, and mesic flatwoods.

The deepest portions of the depression marsh often are dominated with species which prefer long hydroperiods such as pickerelweed, herb-of-grace, sawgrass, broadleaf pondlily, alligator flag, and maidencane. Additionally, this zone may contain loosely scattered canopy and subcanopy species such as swamp tupelo or pond cypress. In the shallower areas, species richness increases, and the natural community may transition to a wet prairie ecotone between the marsh and adjacent upland. Common herbaceous species in this area includes bluestem, maidencane, Carolina redroot, beaksedge, spadeleaf, Virginia chain fern, Virginia buttonweed, flattened pipewort, pickerelweed, and Elliott's yellow-eyed grass. While this portion of the community is generally dominated by herbaceous species, peelbark St. John's wort often forms a dense midstory. Other shrubs potentially scattered throughout the edges of depression marshes include common persimmon, fourpetal St. John's wort, southern bayberry, and slash pine. The upland edges of the community may have a slash pine canopy or subcanopy, especially in areas near current or former pine plantations.

Dome Swamp (12,042.30 acres)

Dome swamps are isolated, forested, depressions occurring in fire-maintained communities. This community's characteristic profile is formed by smaller trees in shallow waters along the outer edge, while taller trees grow in the deeper interior of the swamp. Dome swamps occur throughout the Preserve but are especially abundant on the east side of the property where they form a mosaic with mesic flatwoods and wet prairies. This community comprises approximately 12,041 acres in the Preserve.

Dome swamps in the Preserve are dominated by a dense to sparse canopy of pond cypress. Less frequent canopy and subcanopy species include swamp tupelo, slash pine, Carolina ash, and sweetgum. The woody mid-story varies greatly between swamps and can range from dense to very sparse and is made up of primarily dahoon, pond cypress, swamp tupelo, swamp bay, and red

maple. Common species in the woody understory include dahoon, fetterbush, swamp bay, and pond cypress. The herbaceous cover is similarly variable, and dependent on the water levels in the swamp. Common species include Virginia chain fern, narrowfruit horned beaksedge, panic grass, sawgrass, spadeleaf, and false nettle.

Fire is an important factor for maintaining the structure of a dome swamp. Allowing prescribed fires in the adjacent uplands to burn into dome swamps will limit woody plant growth while maintaining the domed profile. Cypress trees are generally tolerant to light surface fires, however, fires that burn areas with trees growing in deep organic soils may kill older trees. The District has identified areas within this natural community that are suitable for implementing restoration and enhancement projects to align with the management objectives for the Preserve.

Floodplain Swamp (9,753.8 acres)

Floodplain swamps are forested, riverine wetlands that remain inundated or saturated for large portions of the year. Hydroperiods and highly variable soil mixtures determine species composition and community structure. A closed canopy of buttressed, hydrophytic trees, notably swamp tupelo and pond cypress, characterize floodplain swamps. Seasonal, and often prolonged, inundations restrict the growth of most shrubs and herbs. These plants are sometimes restricted to growing on buttressed trunks or cypress stumps. The species composition of floodplain swamps is often similar to dome swamps and basin swamps.

Floodplain swamps may occur as narrow strips of cypress along primary and secondary streams, as expansive stands along river channels, or in depressions and oxbows within floodplains. This community is usually too wet to support fire. Floodplain swamps are often associated with, and may grade into, floodplain forests, bottomland forests, and hydric hammocks.

The dense canopy layer is made up of swamp tupelo, pond cypress, slash pine, bald cypress, and water locust. The subcanopy additionally contains cabbage palm and Carolina buckthorn. The woody midstory is generally sparse and contains red maple, Virginia willow, common persimmon, fourpetal St. John's wort, cabbage palm, and pond cypress. Similarly, the herbaceous layer is quite sparse, with hydrophytic species such as narrowfruit horned beaksedge, spadeleaf, sedge, panic grass, Carolina redroot, Virginia chain fern, royal fern, lemon bacopa, manyflower marshpennywort, and lizard's tail scattered throughout.

Hydric Hammock (4,173.2 acres)

Hydric hammocks are forested wetlands dominated by hardwood species and cabbage palm. This community typically occurs in low areas where limestone is near the soil surface and the soils are quite moist. Hydric hammocks in the Preserve occasionally exist as isolated islands within basin marshes but are primarily found adjoining wet flatwoods, mesic flatwoods, mesic hammocks, bottomland forests, floodplain swamps, floodplain forests, wet prairies, and basin swamps. Hydric hammock accounts for 4,173 acres in the Preserve. Individual hammocks vary in size from one acre to more than 714 acres. Fires may reach the edge of a hydric hammock, but saturated soils and humid, shaded conditions typically limit the extent of burning into the hammock.

Canopy cover is usually dense, dominant species include swamp laurel oak, pond cypress, bald cypress, sweetgum, and American elm. The subcanopy contains similar species to the canopy with cabbage palm occurring commonly. The dense canopy and subcanopy limit available sunlight for lower strata and consequently the shrub stratum is typically sparse to moderately dense. Typical shrub species include southern bayberry, swamp bay, common persimmon, swamp dogwood, and American hornbeam. The herbaceous layer can vary widely in density, but often includes hydrophytic species such as woodoats, panic grass, flatsedge, maidencane, spadeleaf, Virginia chain fern, beaksedges, clustered bushmint, millet beaksedge, manyflower marshpennywort, and slender woodoats.

River Floodplain Lake (52.9 acres)

River floodplain lake is a permanently inundated zone of shallow, open water. This natural community generally forms when a river channel cuts across a meander loop, creating an oxbow, or when the extreme forces of flood stage waters create erosion scours. River floodplain lakes are characterized by dark-colored, acidic waters with a high mineral content and moderate to high nutrient levels. Water depth may fluctuate substantially, and significant drawdowns may occur during extreme droughts.

At the Preserve, there are two river floodplain lakes, the largest known as Dobes Hole. Water levels across this 53-acre lake typically range from 0 to 24 inches with high water marks reaching upwards of eight feet. In 2006, divers confirmed the presence of a second magnitude spring in the northwest corner of the lake with ground-water discharge from the Floridan aquifer. The Dobes Hole river floodplain lake is associated with floodplain swamp, bottomland forest, basin swamp, and basin marsh.

The river floodplain lake is surrounded by a canopy of bald cypress with a subcanopy of red maple. The herb layer is dominated by emergent aquatic species and consists of broadleaf pondlily, dotted smartweed, narrowfruit horned beaksedge, and broadleaf cattail. Other herbaceous species that persist along the periphery include dock, danglepod, coast cockspur, fireweed, and dogfennel.

Swamp Lake (11.4 acres)

Swamp Lakes and River Floodplain Lakes are 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 emergents, plants may be absent altogether, or they may almost completely cover the water surface. When present, typical plants include waterlily, American lotus, duckweed, water spangles, frog's bit, waterhyssop, marshpennywort, and bladderwort. Scattered emergent plants such as lizard's tail, pickerelweed, slender spikerush, and goldenclub may also occur.

Wet Flatwoods (6,846.50 acres)

Wet flatwoods are relatively open, pine-canopy forests with a variable density of hydrophytic shrubs and herbs. This community is present in areas of relatively flat and poorly drained terrain, typically on Spodosols. The species richness and composition benefit from a two-to-four-year fire

return interval, optimally during late spring, early summer growing season. Lengthy fire return intervals favor the transition of wet flatwoods to closed canopy, hardwood-dominated forests with a limited groundcover layer. Wet flatwoods, including high quality examples of this community, are common across the Preserve, occupying 5,667 acres. Individual sites range from 0.5 to more than 900 acres. This community is often associated with drier mesic flatwoods and wetter basin marshes, depression marshes, hydric hammocks, dome swamps, and wet prairies. Wet Flatwoods in the southeast portion of the property often formed a mosaic with wet prairies, mesic flatwoods, dome swamps, and depression marshes.

The canopy of wet flatwoods is sparse and dominated by slash pine. Other species occasionally scattered throughout the community include laurel oak, red maple, pond cypress, swamp laurel oak, and water oak. The open subcanopy is made up of similar species in addition to cabbage palm, and sweetgum. The density and height of the woody midstory in wet flatwoods is dependent of the time since the last fire occurred and the frequency of the fire return interval. Areas with low fire return intervals begin to form tall, dense shrub layers, as opposed to those with frequent fires. The woody midstory and understory of this community is dominated by saw palmetto, and gallberry, but can also include cabbage palm, slash pine, red maple, sweetgum, southern bayberry, St. John's wort, common buttonbush, and American beautyberry. The herbaceous layer is generally dense and diverse, especially in areas with frequent fires. Southern wiregrass is often a common species in this community, along with other graminoids like bluestem, maidencane, beaksedge, and blue maidencane. Other common herbs include: spadeleaf, Virginia chain fern, clustered bushmint, rosy camphorweed, tenangle pipewort, yellow-eyed grass, and oldenlandia. The District has identified areas within this natural community that are suitable for implementing restoration and enhancement projects to align with the management objectives for the Preserve.

Wet Prairie (3,376.10 acres)

Wet prairies are primarily herbaceous communities that remain continuously wet, yet not inundated. They tend to form between lower lying wet communities (marshes and swamps) and the drier upland communities (flatwoods). This community has a natural fire interval of every one to three years, which prevents the establishment of a thick woody midstory. Frequent fires allow for Southern wiregrass to become a dominant feature of this habitat and promote a high diversity of herbaceous species. At the Preserve, wet prairie occurs between and around low-lying depression marshes, dome swamps, basin swamps, slightly higher wet flatwoods, and mesic flatwoods.

Wet prairies are defined by an absence of canopy and subcanopy species, although the occasional slash pines, pond cypress, and red maple can occur. Shrub cover is generally low but may become dense in fire-excluded areas. Typical shrubs are peelbark St. John's wort, southern bayberry, groundsel tree, and swamp bay. Herbaceous species are the dominant plant form in wet prairies. Common species include beaksedge, tenangle pipewort, spadeleaf, blue maidencane, maidencane, narrowfruit horned beaksedge, Virginia chain fern, lemon bacopa, saltmarsh umbrellasedge, and meadowbeauty. The District has identified areas within this natural community that are suitable for implementing restoration and enhancement projects to align with the management objectives for the Preserve.

Upland Communities

Mesic Flatwoods (37,167.30 acres)

Mesic flatwoods are the predominant upland natural community in the Preserve, covering 32,456 acres. Mesic flatwoods are characterized by an open canopy of tall pines and a dense, ground layer of low shrubs, grasses, and herbs. Characteristic species are saw palmetto and wiregrass which are essential in carrying fire across the landscape. Frequent fire (two-to-four-year interval) is necessary for maintaining vegetative structure and relatively high species diversity found in mesic flatwoods and the surrounding communities. The Preserve is no exception from typical mesic flatwoods which forms mosaic formations across the landscape with other pyrogenic communities such as wet prairies, wet flatwoods, depression marshes, scrubby flatwoods, and sandhills. Species of mesic flatwoods are tolerant to moist soils but are not typically inundated during drier portions of the year as the sandy soils drain during the dry season.

The primary mesic flatwoods canopy species at the Preserve are slash pine, and occasionally longleaf pine. Fire-suppressed areas support oak species such as sand live oak, laurel oak, water oak, and live oak. The subcanopy is generally quite sparse, occasionally containing younger trees common in the canopy. The woody midstory typically contains saw palmetto, with additional common woody species including gallberry, winged sumac, shiny blueberry, fetterbush, American beautyberry, and cabbage palm.

Despite southern wiregrass being a keystone herbaceous species in mesic flatwoods the herbaceous layer can be abundant and diverse. Some common herbaceous species observed in the mesic flatwoods of the Preserve includes bluestem, witchgrass, Elliott's milkpea, dryland white bluestem, fireweed, coastalplain chaffhead, bracken fern, and blackroot. The District has identified areas within this natural community that are suitable for implementing restoration and enhancement projects to align with the management objectives for the Preserve.

Mesic Hammock (1,319.1 acres)

Mesic hammocks are closed-canopy forests of temperate hardwood species, typically dominated by live oak. Heavy canopy shading and accumulated leaf litter maintain high humidity and soil moisture levels, which, in turn, supports an abundance of epiphytes. Mesic hammocks typically develop in naturally fire-protected areas, often along or within wetlands. Fire is an uncommon occurrence in hammock communities, although occasional, low-intensity fires may spread from adjoining natural communities. Mesic hammocks are present throughout the Preserve, bordering depression marshes, basin marshes, or basin swamps, embedded within floodplain swamps, or adjoining scrub or scrubby flatwoods.

Mesic hammock at the Preserve have a dense canopy typically dominated by live oak, with occasional laurel oak, Carolina ash, sweetgum, slash pine, and sand live oak. The subcanopy consists of the same species but can also include cabbage palm, and common persimmon. The shrubby midstory is made up of younger versions of the same trees found in the canopy and subcanopy. In addition, there is often a fairly dense layer of saw palmetto, swamp bay, sparkleberry, American beautyberry, and shiny blueberry. The herbaceous groundcover is

generally quite sparse, but often includes flatsedge, witchgrass, pinebarren flatsedge, and Elliott's milkpea.

Sandhill (3,208.50 acres)

Sandhills are open, fire-dependent communities found on rolling hills created from ancient dunes. They are generally characterized by widely spaced pine trees with a sparse midstory of deciduous oaks and a moderate to dense groundcover of grasses, herbs, and low shrubs. This community is restricted to deep, well-drained, sandy soils, which contribute to a xeric environment with specific species adaptations. Sandhills require frequent, primarily growing-season fires to maintain an open structure, as a result many sandhill species are adapted to frequent fire. Sandhills are often associated with, and grade into mesic flatwoods, xeric hammocks, wet flatwoods, basin marshes, and depression marshes.

The natural fire return interval in sandhill is one to three years, although some sites are maintained with fire intervals of up to five years. Without frequent fires, sandhill communities are subject to succeeding into a hardwood canopied forest (xeric hammock or successional hardwood forest) with few shrubs and a sparse groundcover.

The open canopy is dominated by either longleaf pine or slash pine, with an occasional scattered sand live oak. The subcanopy is similarly open with primarily sand live oak and turkey oak. In well burned areas, the shrubs remain short and moderately dense consisting of saw palmetto, turkey oak, common persimmon, cabbage palm, winged sumac, gopher apple, Chapman's oak, and bluejack oak. In a well burned sandhill, Southern wiregrass, is a dominant herbaceous species and provides fuel for the frequent fires that maintain this community. Other species common in this community includes rough witchgrass, Elliott's milkpea, blackroot, sweet goldenrod, threeawn, chaffhead, sensitive pea, Carolina indigo, blazing star, whitetop aster, and lopsided indiagrass. The District has identified areas within this natural community that are suitable for implementing restoration and enhancement projects to align with the management objectives for the Preserve.

Scrub (316.0 acres)

Scrub is a community composed of evergreen shrubs, with or without a canopy of pines, and is found on dry, infertile, sandy ridges. The signature scrub species, shrubby oaks, Florida rosemary, and sand pine, are common in scrub throughout the state. The dominance of these species, however, is variable from site to site. Scrub is a fire-maintained community with a five-to-20-year fire return interval, naturally burning less frequently than other fire-maintained communities. This community is associated with mesic flatwoods, scrubby flatwoods, xeric hammocks, and sandhills.

At the Preserve, scrub communities are embedded within a mosaic of mesic flatwoods and scrubby flatwoods on the northwest edge of the property. Infrequent, hot fires and a xeric hydrologic regime maintain the open patches of bare sand and sparse groundcover that is characteristic of scrub.

Scrub canopy and subcanopy trees are generally sparse to absent but when occasionally present primarily consists of sand live oak. The height and density of the woody midstory can vary greatly depending on when the last fire occurred, fire frequency, and interval. This layer is dominated by

scrub oak species coastalplain Chapman's oak, sand live oak, and myrtle oak, as well as gallberry, saw palmetto, winged sumac, shiny blueberry, staggerbush, and sparkleberry. The sparse herbaceous layer includes bluestem, slender flattop goldenrod, Elliott's milkpea, flatsedge, witchgrass, blackroot, and rough hedgehyssop.

Scrubby Flatwoods (477.20 acres)

Scrubby flatwoods have an open canopy of widely spaced pine trees and a low, shrubby understory dominated by scrub oaks and saw palmetto, often interspersed with areas of barren white sand. Typically, the fire interval for this community is five to 15 years which is essential for maintaining the community's diversity and structure. At the Preserve scrubby flatwoods is uncommon with a total area of 463 acres.

The canopy consists of scattered slash pine, longleaf pine, and sand live oak. The subcanopy contains scattered sand live oaks, as well as turkey oak. The woody midstory and understory varies in density and height depending on when the last fire occurred and frequency of the fire return interval. Areas with less recent or infrequent fire have a taller and denser midstory, while those with more recent and/or frequent fires had a shorter and less dense midstory. The woody midstory is dominated by saw palmetto, sand live oak, myrtle oak, and Chapman's oak. Additionally, many other woody species are common including winged sumac, turkey oak, shiny blueberry, laurel oak, gopher apple, bluejack oak, dwarf live oak, Adam's needle, fetterbush, and rusty staggerbush. The herbaceous layer is dominated by Southern wiregrass but can be quite diverse and includes species such as Elliott's milkpea, pinebarren flatsedge, sweet goldenrod, partridge pea, Carolina indigo, whitetop aster, tread softly, and queen's delight. The District has identified areas within this natural community that are suitable for implementing restoration and enhancement projects to align with the management objectives for the Preserve.

Xeric Hammock (61.6 acres)

Xeric hammock is an evergreen oak forest growing on well-drained sandy soils. Xeric hammocks form in areas where there is a fire shadow from the surrounding pyrogenic communities. The lack of fire allows for the establishment and growth of shrubby species, especially oaks and cabbage palm. This can occur naturally, or because of fire suppression in dry upland communities. At the Preserve, xeric hammocks are generally the result of natural or semi-natural fire exclusion such as in fire shadows, while successional hardwood forests are associated with naturally pyrogenic communities that have experienced long periods of fire exclusion. Xeric hammocks at the Preserve vary from one to over 12 acres and currently occupy a total of 61 acres.

Xeric hammocks generally have a dense canopy and subcanopy. Species that typify xeric hammocks include sand live oak, laurel oak, and live oak. Slash pine and longleaf pine may also be present. The woody mid-story is generally sparse and includes species such as saw palmetto, sparkleberry, common persimmon, cabbage palm, rusty staggerbush, American beautyberry, and myrtle oak. Heavy shade, leaf litter, and a xeric environment contribute to a depauperate herbaceous layer which may include Elliott's milkpea, pinebarren flatsedge, panic grass, bahiagrass, and sandyfield beaksedge.

Historic xeric hammocks require no active management. Prescribed burns in the adjacent natural communities should naturally extinguish along the hammock edge. The use of firebreaks to isolate xeric hammocks is discouraged.

Altered Land Cover Types

Abandoned Field/Abandoned Pasture (532.0 acres)

Abandoned pasture at the Preserve includes pasture and planted fields which have not had recent maintenance activity such as formerly grazed pasture, old agricultural fields, fallow pastures, and early successional areas. These areas are often dominated by weedy native species like blackberry, southern bayberry, muscadine and non-native species like hairy indigo.

Artificial Pond (112.0 acres)

This altered community includes water retention ponds and cattle ponds located within the Preserve. They are generally void of vegetation except for the banks and consist only of open water.

Canal/Ditch (0.4 acres)

This altered community includes a small stretch of a canal/ditch within the Preserve. Vegetation is limited to the banks.

Clearing (45.7 acres)

Clearing/regeneration areas are altered communities that include dove fields, wildlife food plots, old home sites, or recent/historic clearings that have significantly altered the groundcover and/or overstory of the original natural community.

Developed (83.9 acres)

This altered community encompasses check stations, off-road vehicle use areas, parking lots, buildings, maintained lawns (as part of recreational, business, or residential areas), botanical or ornamental gardens, campgrounds, recreational, industrial, and residential areas.

Pasture – Improved (906.0 acres)

Pasture – improved is not a natural community, but a type of disturbance where most of the natural vegetation has been removed to improve cattle grazing conditions. At the Preserve, the term is applied to areas with well established, bahiagrass monocultures that are maintained by cattle grazing and/or mowing and only have a few persistent native species. Weedy native species common in this area include slender flattop goldenrod and flatsedge.

Pasture – Semi-Improved (295.2 acres)

Pasture - semi-improved is not a natural community but a type of disturbance where much of the natural vegetation has been removed to improve cattle grazing conditions. At the Preserve, the term is applied to areas with established bahiagrass that are overgrown woody species such as live oak, southern bayberry, and pines. As a result, the remaining bahiagrass is not as vigorous as in

areas without woody cover. Pockets of native vegetation often occur as patches of longleaf pine and saw palmetto.

The pasture areas often show affinity to their respective historic natural community. Species typical of mesic flatwoods, scrubby flatwoods, mesic hammock, and sandhill are present in greater abundance in semi-improved pasture than in improved pasture. Potential for restoration is greater in semi-improved pasture by means of appropriate management strategies such as fire.

Pine Plantation (935.7 acres)

Pine plantations are areas altered by silvicultural activities. These include lands where either 1) planted pines are having or will have an ongoing detrimental effect on native groundcover, 2) the history of planted pines has damaged ground cover to the point where further restoration beyond thinning and burning is required, and/or 3) the method of planting (e.g., bedding) has severely impacted groundcover. Pine plantations at the Preserve are often dominated by even-aged slash pine.

These plantations may be very shrubby, vine-dominated, or open at ground level. Often the mid and understory contain species such as sand blackberry, red maple, sand live oak, water oak, sweetgum, laurel oak, common persimmon, and groundsel tree.

Dense pine plantations typically have sparse to absent herbaceous vegetation as a result of shading or a cover of deep pine needle duff. The groundcover in most cases has been severely impacted by mechanical site preparation, such as roller chopping and bedding, which can introduce invasive species and may require treatment. This is especially true in some of the more recent acquisitions in the eastern portion of the property.

While perennial grasses such as Southern wiregrass may be greatly reduced, many components of the native groundcover may persist even though the relative abundance is altered. Groundcover can be partially restored by thinning and/or frequent burning, although some planting of perennial grasses such as wiregrass may be required. With activities such as thinning and burning, plantations with intact native groundcover can be restored to the former natural community.

Spoil Area (18.4 acres)

This altered land use includes any area where dredge or spoil material is deposited. These areas may be re-colonized by plants in the future.

Successional Hardwood Forest (632.1 acres)

Successional hardwood forests are classified as altered lands and consist of closed-canopy forests dominated by fast growing hardwoods such as live oak, laurel oak, water oak, and/or sweetgum, often with remnant slash pine. These forests are either invaded natural habitat (i.e., mesic flatwoods, sandhill, scrubby flatwoods, scrub) resulting from lengthy fire-suppression or old fields that have succeeded to forest.

The subcanopy and woody midstory is often quite dense due to fire suppression containing species such as laurel oak, sweetgum, slash pine, water oak, cabbage palm, fetterbush, southern bayberry, common persimmon, saw palmetto, and gallberry. Often the herbaceous layer is sparse due to low

light penetrating the upper strata, species commonly observed includes maidencane, witchgrass, turkey tangle fogfruit, fascicled beaksedge, panic grass, woodoats, Southern wiregrass, beggarticks, and bahiagrass.

While perennial grasses such as Southern wiregrass may be greatly reduced, many components of the native groundcover may persist even though the relative abundance is altered. Groundcover can be partially restored by thinning and/or frequent burning, although some planting of perennial grasses such as Southern wiregrass may be required. With activities such as thinning and burning, plantations with intact native groundcover can be restored to the former natural community.

Successional Hydric Shrubland/Forest (42.1 acres)

Successional hydric shrubland/forest are closed canopy, fire excluded, or disturbed areas that are dominated by fast growing hydrophytic hardwoods. These shrubland/forests may invade herbaceous habitats such as wet flatwoods due to lengthy fire-suppression and/or hydrological alterations. Although some shifts in community type may be better described with a natural community designation, the use of “successional hydric shrubland” is suitable to label areas that are known to be highly disturbed and altered, and where restoration efforts of hydrology restoration and/or re-introduction of fire would be particularly beneficial. These forests are either invaded natural habitat (i.e., wet flatwoods, wet prairies, shrub bogs, marshes, swamps) due to lengthy fire-suppression or old fields that have succeeded to forest.

The canopy is generally dominated by slash pine, or red maple with a similarly dense subcanopy of water oak, slash pine, red maple, and swamp laurel. The dense woody midstory is made up of younger version of the canopy and subcanopy species, as well as, common persimmon, saw palmetto, pond cypress, southern bayberry, sweetgum, swamp bay, American hornbeam, cabbage palm, and swamp laurel oak. The herbaceous species are often quite sparse and weedy, although may have infrequent occurrences of perennial grasses such as Southern wiregrass, many components of the native groundcover may persist even though the relative abundance is altered. Common herbs found in successional hydric shrubland/forests at the Preserve include Virginia chain fern, maidencane, spadeleaf, sugarcane plumegrass, beaksedges, and soft rush.

Utility Corridor (143.2 acres)

Multiple utility corridors including electric distribution lines and a gas pipeline traverse through the Preserve and are categorized with this altered land use designation.

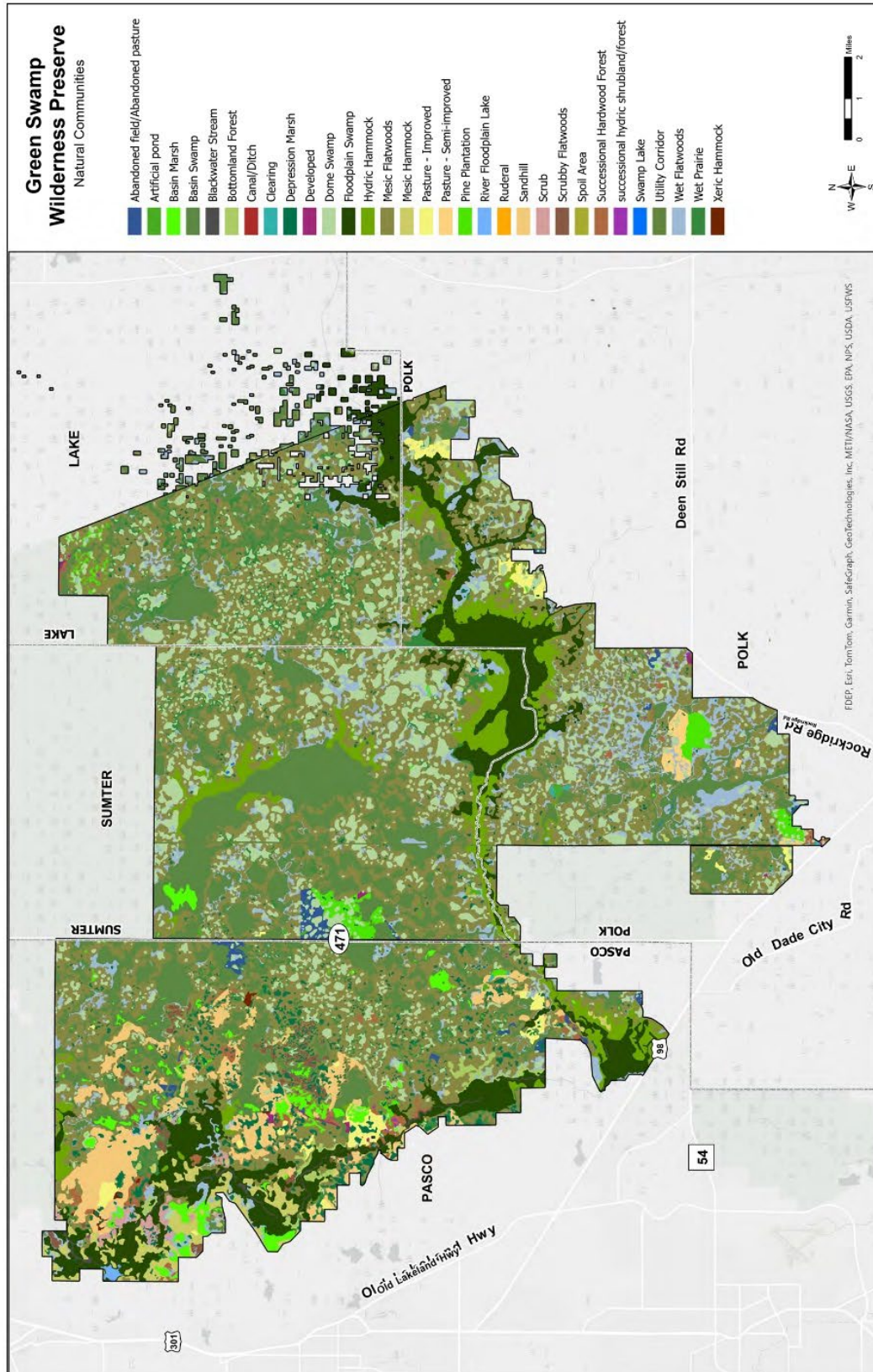


FIGURE 8. NATURAL COMMUNITIES – FNAI

Soils and Topography

Soils

Soils mapped by the Natural Resource Conservation Service (NRCS) are depicted in **Figure 9**. Additional information on soil types on the Preserve was derived from the Soil Surveys of Lake County (USDA, 1975), Pasco County (USDA, 1982), Polk County (USDA, 1990) and Sumter County (USDA, 1988). Generally, there are three distinct soil groupings based on soil moisture: xeric, mesic, and hydric.

Xeric soils are located on higher and drier areas, capable of supporting the Preserve's scrub, sandhill, scrubby flatwoods, and xeric hammock. These areas only occur within the West Tract on the Preserve. They are typically sandy with rapid permeability, and the water table is typically well below the surface. Xeric soils occur on approximately 3,917 acres (4%) of the Preserve. Xeric soils include: Tavares, Astatula, Cassia, Candler, Paola, Lake, Pomello, and Zolfo sands and/or fine sands.

Mesic soils occur in flat areas that seasonally retain moisture but are higher in elevation relative to hydric soils. These mesic soils are characterized by a slow permeability and a high-water table within 10 - 40 inches of the surface for one to four months per year. Internal drainage and runoff are slow. Mesic soils occur on approximately 25,549 acres (25%) of the Preserve and are mainly associated with the mesic flatwoods and mesic hammock communities on the Preserve. The predominant mesic soils include Pomona, Smyrna, Wabasso, Adamsville, Pompano, and Wauchula fine sands. Multiple other mesic soils occur in small quantities.

Hydric soils are poorly drained and are located in lower, wetter areas that support the expansive wetland systems on the Preserve. Approximately 74,493 acres (72%) of the Preserve is underlain by hydric soils or water. These soils occur in smaller quantities within the West Tract; however, are the dominant soil classification on the East Tract. Hydric soils are poorly drained mineral and organic soils that are ponded or have a water table near the surface for significant portions of the year. Hydric soils and water on the Preserve are associated with all wetland communities, with the largest wetland communities being basin swamp, dome swamp, floodplain swamp, wet flatwoods, hydric hammock, wet prairie, and depression marsh. The predominant hydric soils include Myakka-Myakka wet sands, Swamp, Nittaw muck, Floridana mucky fine sand, Chobee, Anclote-Tavares-Pomello association, and Paisley, Eagallie, Bradenton, and Basinger fine sands. Multiple other hydric soils occur in small quantities.

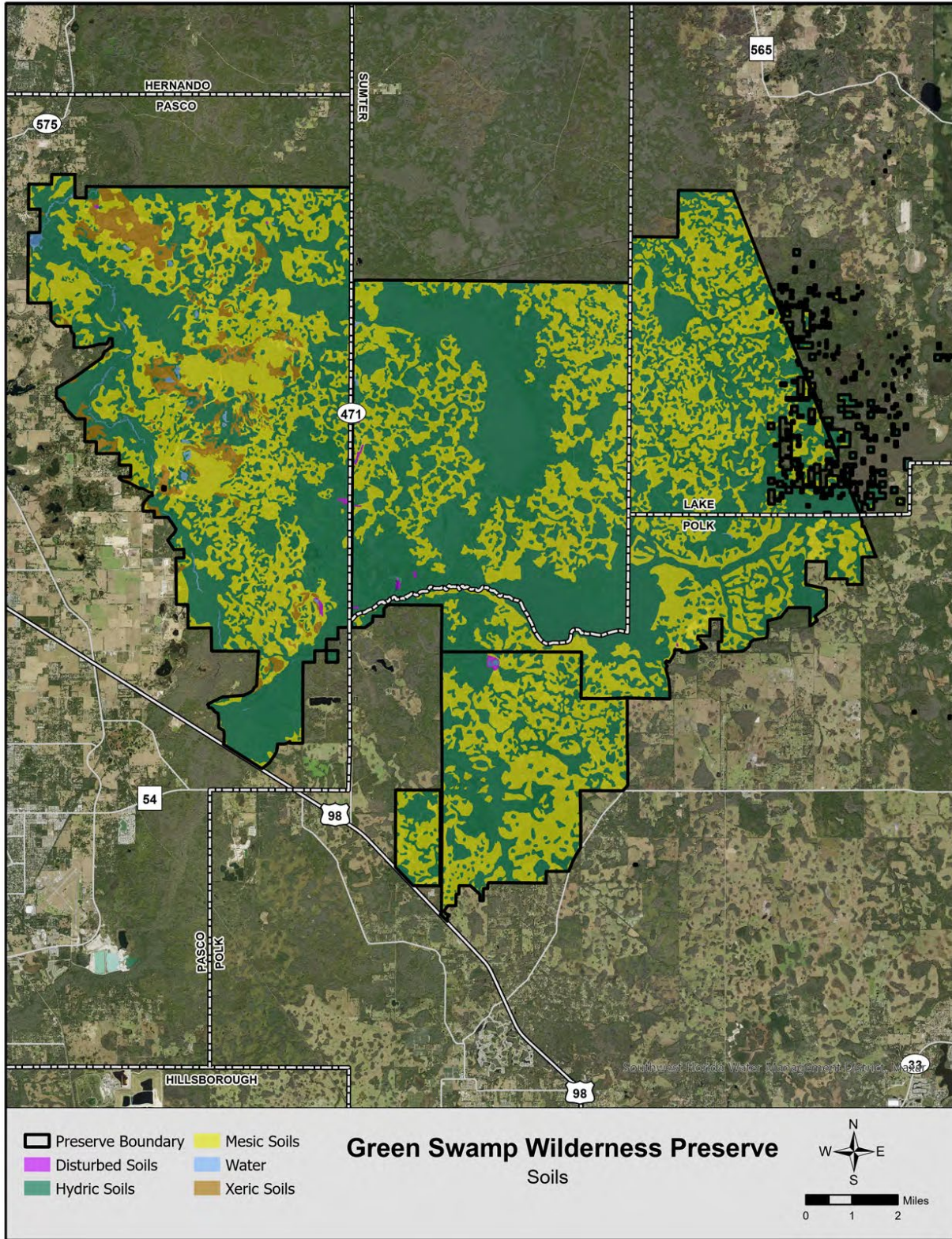


FIGURE 9. SOIL TYPES

Topography

As a plateau above surrounding areas, the Green Swamp region is an important physiographic feature of Florida. The Preserve is within the west-central portion of the larger Green Swamp. The Green Swamp region is surrounded on the east, south, and west by sandy ridgelines.

Within the Preserve, the lowest elevation is 57 feet (NAVD88) on the northwestern border of the Preserve within the West Tract where the Withlacoochee River exits the Preserve near its confluence with Devils Creek, while the highest elevation (greater than 105 feet NAVD88) occurs along the eastern boundary of the East Tract (**Figure 10**). Land elevations in the East and Hampton Tracts of the Preserve generally range between 100 and 90 feet as you move from east to west. Within the West Tract of the Preserve, land elevations generally slope from 90 feet to 70 feet in most areas, moving west to east. The most downstream segments of the Withlacoochee River in the northwest corner of the West Tract are distinctly different from the upstream segments in terms of topography, appearance, and vegetative structure. The river channel in the northwest (downstream) portion of the Preserve is more well-defined, with adjoining uplands exhibiting more topographic relief than the flatter, broad floodplain terrain within the East Tract and Hampton Tract. A large portion of the Preserve drains into Devils Creek, and flows northward, before eventually discharging back into the Withlacoochee River just beyond the northwest corner of the Preserve. Gator Hole Slough drains northwestward from Gator Hole Swamp, into the Withlacoochee State Forest, and discharges to Devils Creek just above its confluence with the Withlacoochee River.

The Preserve is predominantly within the Withlacoochee River Basin, with a small southwestern portion of the Preserve falling within the Hillsborough River Basin. Topographic contours at the Preserve closely parallel the elevation of the potentiometric surface, which is lowest on the western boundary of the Preserve and highest in the southeastern corner. The elevations place the potentiometric surface near and at times above the land surface over a large portion of the Preserve.

The Preserve is within the Southern Coastal Plain ecoregion; specifically, the Southwestern Florida Flatwoods subregion. The Southwestern Florida Flatwoods subregion stretches from southwestern Florida north of Big Cypress, north spanning the west half of the state up to Lake, Sumter, and Hernando Counties. This Subregion includes barrier islands and peninsulas, Gulf coastal lowlands and valleys, as well as higher elevation areas. This subregion contains most of the forested Green Swamp area, including the Preserve.

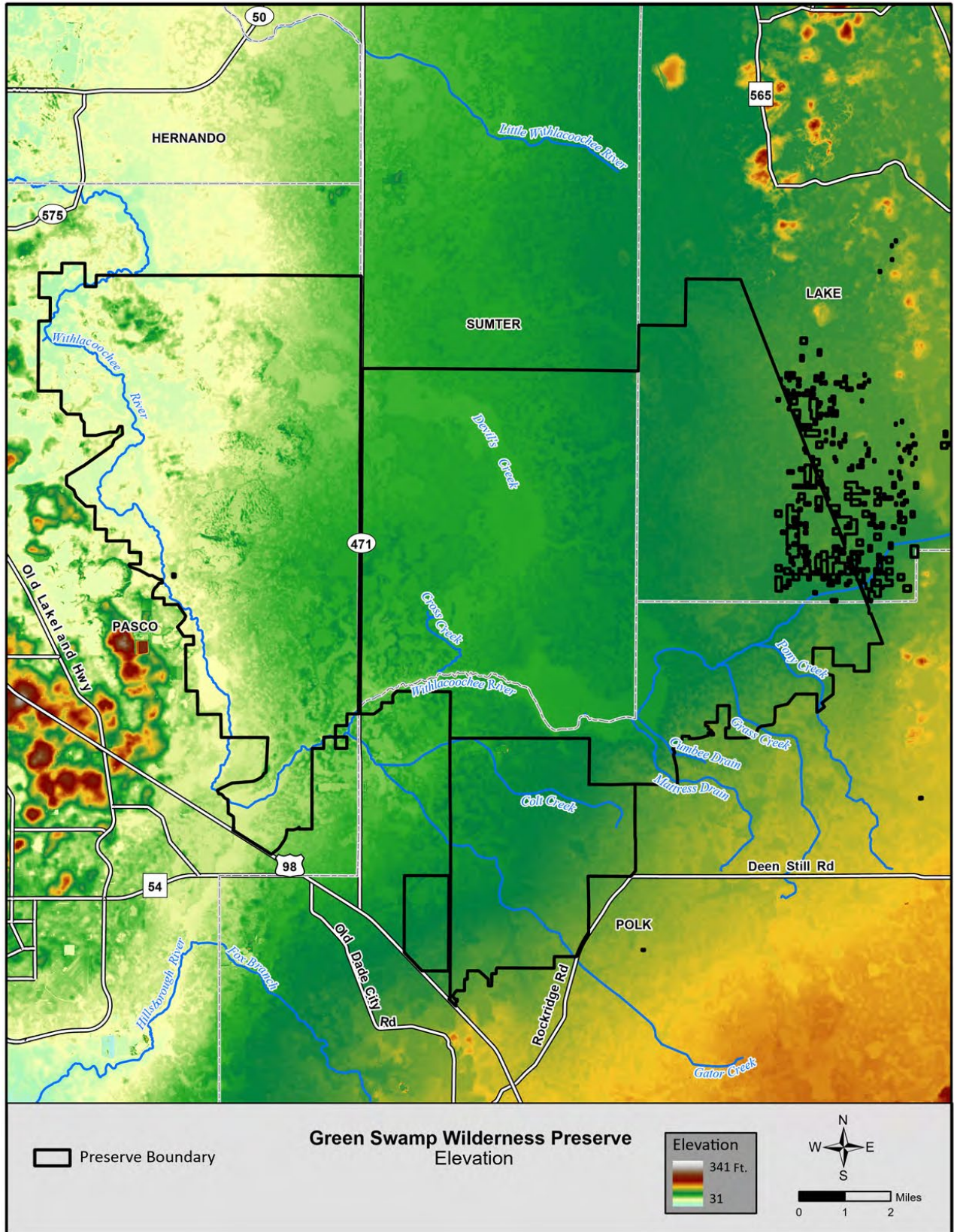


FIGURE 10. DIGITAL ELEVATION MODEL (NAVD88)

Land Management and Land Use

Land Management

As part of ownership of conservation lands, the District is responsible for protection of water resources and natural systems through the application of effective and efficient land management practices. These land management practices include prescribed fire, forest management, habitat restoration, exotic and invasive species control, and habitat maintenance. The primary land management tool that land managers utilize at the Preserve is the application of prescribed fire. This is the most cost-effective method to maintain the Preserve's natural communities in their natural condition. Along with prescribed fire, the District uses some of the other common land management techniques referenced above to achieve specific land management objectives. The goal of the District's land management program is to maintain and restore natural systems according to their natural community descriptions outlined by the FNAI Natural Communities Guide.

Fire Management

Prescribed fire is the primary tool for management of District conservation lands. Fire is a natural process that has occurred on Florida's landscape for thousands of years. The goal of the District's fire program is to mimic that natural process and apply prescribed fire in a safe, efficient, and effective manner to maintain the natural function of the plant and animal communities. Many of the plant and animal species that occur on the Preserve are specifically adapted to fire to maintain a healthy and successful population. As a result, the District aims to apply fire to all fire-dependent natural communities based on their natural fire return intervals defined by FNAI (FNAI 2010).

The program targets the natural fire season, or the "growing" season, which occurs during the spring and summer. Research indicates that burning during the growing season has the most beneficial impact on native plant communities but maintaining a consistent burn frequency can be just as valuable. Therefore, the District conducts prescribed burns throughout the year to achieve various objectives.

The District's fire management program seeks to achieve the following:

- Maintain and restore natural systems.
- Promote water resource benefits.
- Reduce hazardous fuel loads and minimize wildfire risk.
- Promote native plant diversity and habitat function.
- Maintain wildlife habitat quality.
- Support forest management activities.
- Maintain aesthetics and access for recreation.

The Preserve is divided into 388 distinct management units covering approximately 54,833 acres of fire-dependent natural communities (53% of the Preserve). These management units are illustrated in **Figure 11**. District burn managers always take precautions to limit potential impacts from prescribed burns and target specific weather conditions. There is a network of firelines and

natural firebreaks throughout the property that allow for successful fire management and limit the potential for wildfires.

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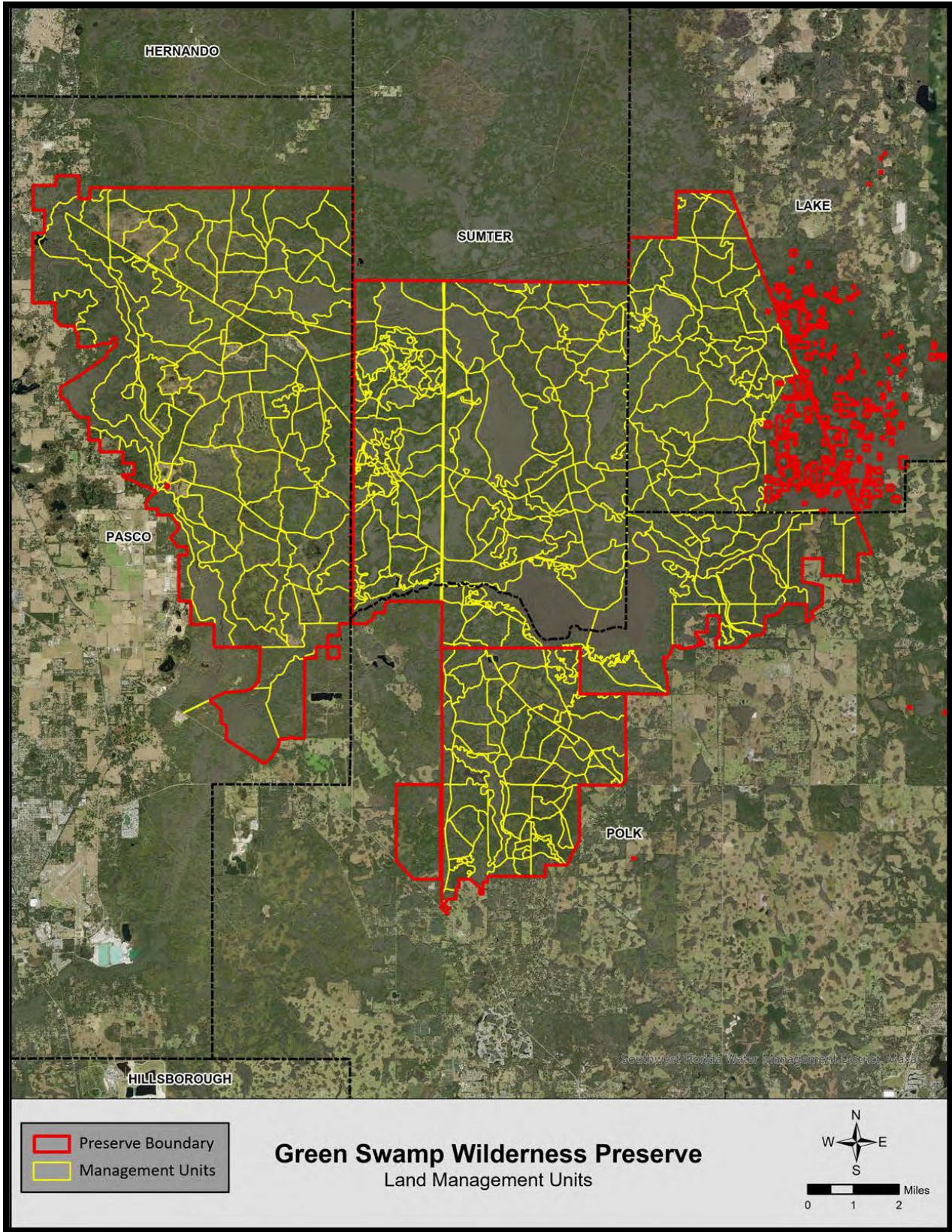


FIGURE 11. MANAGEMENT UNITS

Condition Class

The term “condition class” is a reference to the status of District-owned and managed lands relative to a historic fire return interval described in the natural history of each community type. The fire return interval demonstrates the amount of time between disturbances that resets succession within a natural community. For example, with mesic flatwoods which is the most prevalent upland natural community, the District has identified four years as the fire return interval. Condition Class 1 would be within one fire return interval and Condition Class 2 would be within two fire return intervals. Condition Class 3 would represent any unit that is at three or more intervals since the last disturbance. Condition Class 4 represents any system that has had fire excluded for so long that it is beyond recovery through reintroduction of fire without implementing more expensive mechanical restoration measures. Condition Class 5 was developed to represent systems that are not regularly fire-maintained, such as swamps and hydric hammocks. Condition Classes 1-4 represent fire-maintained management units. Aside from these fire-maintained communities and extensive wetland systems, special circumstances have been identified and treated separately for a variety of reasons. These special circumstances can include timber management zones, restoration areas, cattle leases, recreational areas, or special use areas.

The primary objective of the Land Management Condition Class Evaluation Program is to assign a Condition Class value to all fire management units based on the natural fire return interval of the targeted community type. The purpose of the Condition Class Evaluation Program is to provide an accurate representation of the condition of lands managed by the District with fire. It is the District’s goal to preserve, protect, and restore natural systems to support their natural hydrologic and ecological functions. The latest Condition Class status for the Preserve is outlined in **Figure 12** and **Table 3**. As part of the strategy and land management objectives for District lands, the District seeks to maintain the amount of Condition Class 1 above 75 percent. It is worth noting that the condition class data represents a snapshot of the Preserve’s management units at the end of each fiscal year.

TABLE 3. FY23 CONDITION CLASS SUMMARY

Condition Class	Description	Acres	Overall Composition	Fire Maintained (Class 1-4)
1	Less than 1 Fire Return Interval	63,072	61.3%	78%
2	Less than 2 Fire Return Intervals	14,408	14.0%	18%
3	More than 2 Fire Return Intervals	3,537	3.4%	4%
4	Requires restoration or mechanical treatment	0	0%	0%
5	System not maintained by fire	18,259	17.8%	
6	Timber Management Zone	261	0.3%	
7	Cattle Lease	2,905	2.8%	
8	Recreation	281	0.3%	
9	Special Use	102	0.1%	
Grand Total		102,824	100.0%	100%

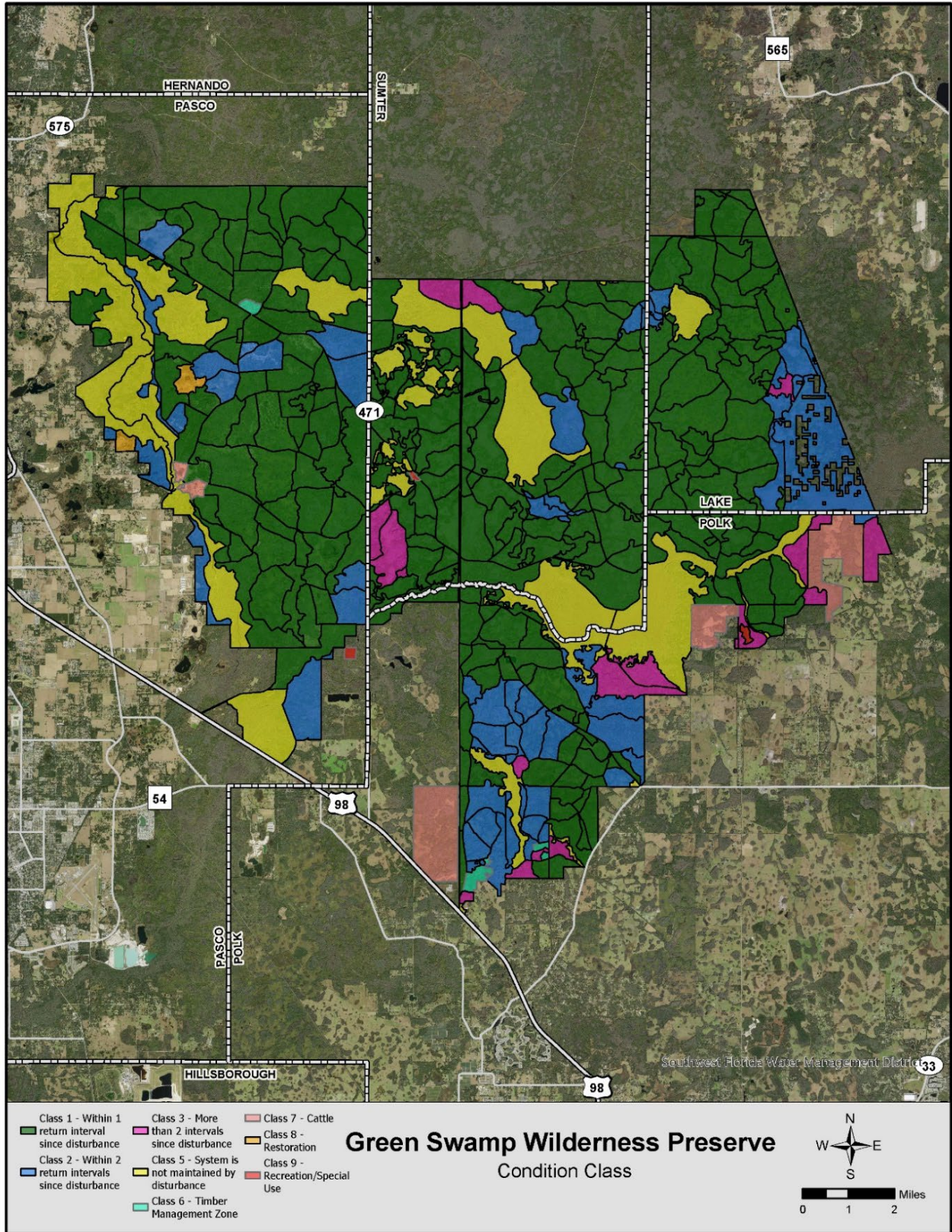


FIGURE 12. CURRENT CONDITION CLASS

Forest Management

Forest management activities within the Preserve are utilized to support the management objectives outlined in this Plan. Additionally, these activities are further outlined in the District's Ten-Year Timber Management Plan which contains detailed harvest scheduling and planning objectives. The Timber Management Program supports fundamental land management objectives of the Preserve which include the maintenance of natural systems and maintaining the ecological characteristics outlined in the natural community descriptions. The District utilizes the Timber Management Program to achieve several objectives; including, sustainable forest management, natural systems resiliency, support of District land management goals, restoration and enhancement of natural communities, and revenue generation to offset the cost to manage District conservation lands.

The history of logging and forest management in Green Swamp is extensive. Near the turn of the century and the industrial revolution, the need for forest resources increased significantly. Consequently, there was increased pressure for natural resources like timber. Most significant was the establishment of the Cummer Cypress Company and an extensive sawmill in Lacoochee, Florida. Along with the mill, the acquisition of the vast majority of what is known today as Green Swamp. This resulted in a substantial effort to harvest timber resources from both the Withlacoochee River and the associated pine flatwoods. Through an extensive network of trams and railways, nearly the entire length of the Withlacoochee River from Lacoochee, south and east all the way to State Road 33, was logged for its old growth cypress. The adjacent uplands were also used to both support these operations and provide additional timber through the harvest of old growth longleaf and slash pine. Later in the 1950s, after most of the old growth cypress was harvested, there was more significant logging that occurred, specifically in the Lake County portion of Green Swamp East.

After the acquisition of Green Swamp East and additional tracts in later years, the District's Land Management Section has worked to recover the overstory in areas where significant overharvesting had occurred. One of the District's objectives has been to recover this forest canopy through directly planting timber management zones and through natural regeneration supported by the prescribed fire program. The goal has been to recover the historic longleaf pine dominated flatwoods where feasible using land management techniques to encourage natural regeneration. Separately, the District has established timber management zones by planting pines and managing these areas through silvicultural practices to achieve the desired future conditions.

In addition to reforestation efforts, the District also performs timber stand improvement harvests to improve stand characteristics in natural pine stands. This typically involves timber harvesting in overstocked areas to achieve the desired density and species composition through selective harvest operations. These activities contribute to restoring the natural communities to their composition outlined in the natural community descriptions which is primarily a longleaf dominated uneven aged forest. The District also performs other types of timber harvests focused on salvage from storms and wildfires, along with harvests along roads and other rights-of-way.

Within the Preserve, there are a total of 39 timber management zones (**Figure 13**), with 25 occurring in Green Swamp East and 9 in Green Swamp West, and 5 within the Hampton Tract (**Table 4**). There are a total of 6,003 acres of plantations throughout Green Swamp and these exist within each of the four counties. These stands are managed using standard silvicultural practices and the harvest schedule is outlined in the District’s Ten-Year Timber Management Plan. Typically, harvests occur at intervals of approximately 15 years, but can be altered to meet specific management needs as determined by land management staff. These stands would undergo at least two thinning operations using third row and selection harvest techniques. From there, based on the specific goals for each stand, the third harvest could be an additional thinning, a seed tree harvest, or even a clearcut if it is determined that is necessary. The timber harvest history from the past 10 years is outlined in **Table 5**.

Along with harvesting operations in existing timber management zones, timber stand improvement harvests occur on an as needed basis to achieve specific land management objectives. These harvests are conducted to manage stand structure, species, composition, and density of the uneven-aged mixed pine forest. In most cases, this would be focused on reducing basal area in overstocked areas and harvesting selectively to maintain a longleaf pine dominated ecosystem.

TABLE 4. TIMBER MANAGEMENT ZONE INVENTORY

Stand #	Stand Name	Tract	Species	Acres	Established
1	Closed Area	Hampton	Slash	72	1959
2	Devil's Creek	Green Swamp East	Slash	61	1956
3	Bull Barn	Green Swamp East	Slash	101	1956
4	Ball Glove	Green Swamp East	Slash	169	1972
5	Richards	Green Swamp East	Slash	148	1972
6	Tram South	Green Swamp East	Slash	27	1973
7	Tram East	Green Swamp East	Slash	141	1973
8	Tram West	Green Swamp East	Slash	36	1973
9	Levee	Green Swamp East	Slash	61	1975
10	County Line	Green Swamp East	Slash	55	1975
11	Ellis	Green Swamp East	Slash	36	1974
12	Seahorse	Green Swamp East	Slash	170	1974
13	Three Run	Green Swamp East	Slash	83	1974
14	Main Grade	Green Swamp East	Slash	17	1975
15	Ball Plate	Green Swamp East	Slash	350	1979
16	Powder	Green Swamp East	Slash	114	1981
17	Peanut	Green Swamp East	Slash	44	1983
18	Island Pond	Green Swamp East	Slash	125	1983
19	Railroad East	Green Swamp East	Slash	192	1984
20	Railroad	Green Swamp East	Slash	52	1984
21	Toole	Green Swamp East	Slash	84	1989
22	District Plant	Green Swamp East	Slash	135	1989
23	Batman	Green Swamp East	Longleaf	84	1990

24	Three Run Longleaf	Green Swamp East	Longleaf	259	1991
25	Cumpresso East	Green Swamp East	Slash	259	1999
26	Micaloney	Green Swamp East	Slash	522	2003
27	Fire Tower I	Hampton	Slash	40	2000
28	Fire Tower II	Hampton	Slash	105	2012
29	Hampton	Hampton	Slash	600	2002
30	Hampton South	Hampton	Slash	130	2009
31	Sand Pit	Green Swamp West	Slash	65	1986
32	Mennonite	Green Swamp West	Slash	17	1986
33	Cumpresso	Green Swamp West	Slash	125	1998
34	Tully	Green Swamp West	Slash	725	1998
35	Triangle	Green Swamp West	Slash	150	1998
36	South Field	Green Swamp West	Slash	268	1998
37	North Field	Green Swamp West	Longleaf	58	1999
38	Landing Strip	Green Swamp West	Slash	203	1999
39	Melon Field	Green Swamp West	Slash	120	2000

TABLE 5. TIMBER HARVEST SUMMARY

Year	Stand Name	Tract	Harvest	Tons	Revenue	Acres
2014	Triangle	Green Swamp West	First	6,747	\$96,789.97	150
2015	Cumpresso East	Green Swamp East	First	8,971	\$147,123.25	257
2015	Cumpresso	Green Swamp West	First	5,942	\$91,620.70	125
2015	Landing Strip	Green Swamp West	First	10,794	\$175,721.47	170
2015	North Field	Green Swamp West	First	9,485	\$154,422.32	248
2016	Fire Tower	Green Swamp East	First	920	\$11,495.63	28
2017	Micaloney	Green Swamp East	First	23,439	\$413,237.19	522
2017	WRB	Green Swamp West	First	4,187	\$71,889.24	120
2018	Hampton	Hampton	First	22,207	\$321,115.49	600
2020	Micaloney	Green Swamp East	Clearcut	5,707	\$81,503.52	200
2020	Peanut	Green Swamp East	Second	1,193	\$20,062.00	43
2020	Railroad East	Green Swamp East	Second	2,733	\$46,492.07	196
2021	Railroad Track	Green Swamp East	Second	1,089	\$18,986.40	50
2021	Mennonite	Green Swamp West	Second	1,323	\$24,412.14	42
2023	Island Pond	Green Swamp East	Second	3,187	\$94,227.00	125
2023	Powder	Green Swamp East	Second	3,251	\$73,021.00	114
2023	Smith Place	Green Swamp East	Selection	4,133	\$84,538.00	238
Total				115,310	\$1,926,657.39	3,228

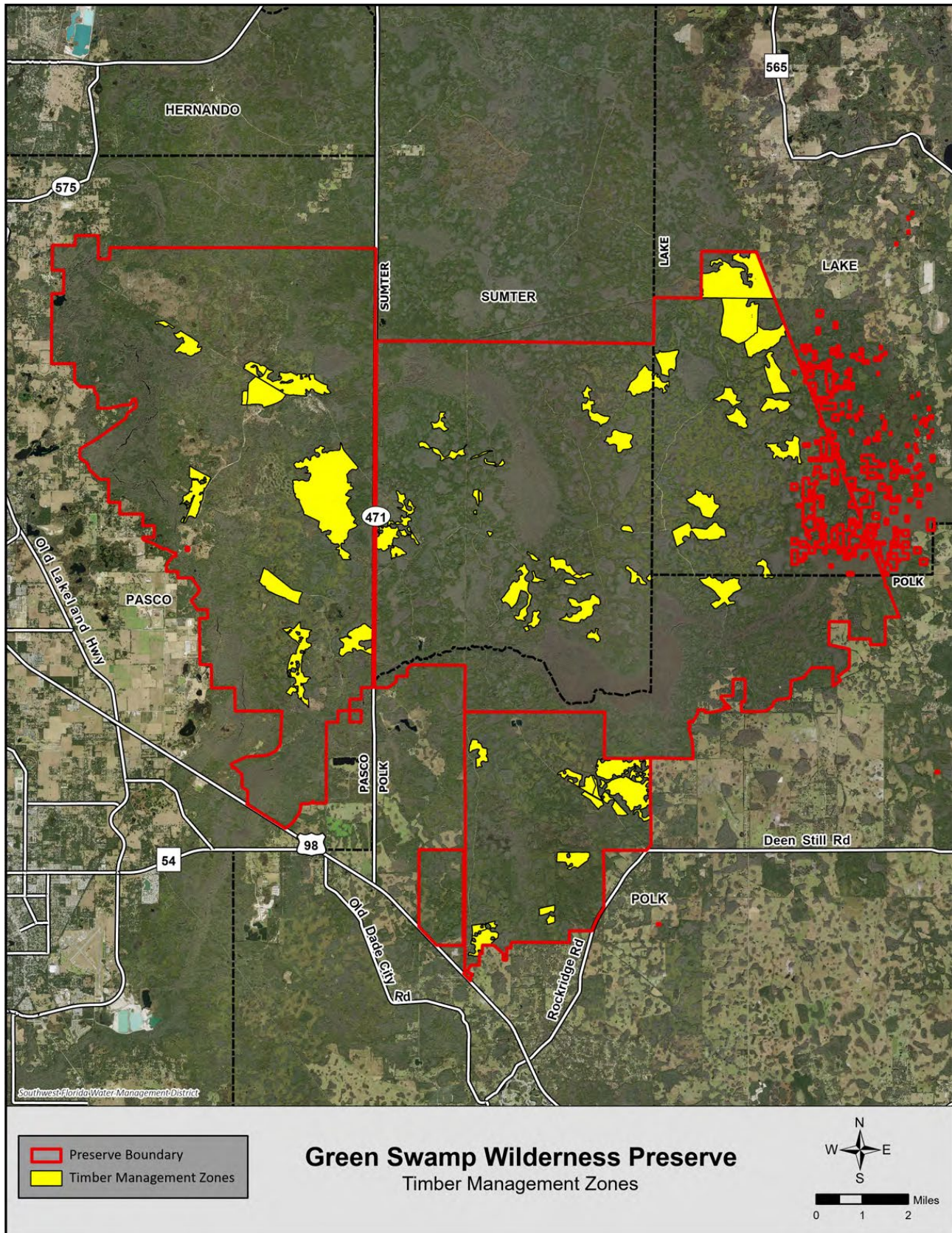


FIGURE 13. TIMBER MANAGEMENT ZONES

Habitat Restoration

The District focuses on maintaining high-quality natural communities, and restoration of the communities on District lands is sometimes necessary to achieve this. Restoration of disturbed areas may be achieved by the reintroduction of fire, the use of mechanical or chemical forest management techniques, timber planting, and by restoring historic hydrological functions. The Preserve has a long history of previous land use that has altered the historic natural communities. In these situations, when practical, the District has actively developed management techniques to restore natural communities to achieve the characteristics necessary to function properly. These areas identified for restoration have become altered due to fire suppression, heavy logging, converting uplands to pastures, ditching wetlands, and other land altering practices.

Restoring uplands can be a long complex process but doesn't always need to be. Sometimes the reintroduction of fire and establishing a proper rotation will be enough to accomplish the goals, but other situations may require a more robust approach. Roller chopping and hydro-axing are both useful tools to reduce mid-story vegetation and allow fire to be reintroduced. This approach has been used with great success on the Preserve, mostly through the National Wild Turkey Federation grand funds, and will continue, as needed. Chemical restoration has also been used to reduce mid-story, but due to high cost per acre is limited to areas that are sensitive to ground disturbance from heavy equipment.

Pastures and other disturbed areas on the Preserve have undergone full restorations from the ground cover up. This is done by eradicating pasture grasses, planting native seed, then reintroducing longleaf pine back into the treatment areas. Most of this restoration has occurred on the West Tract due to heavy logging from historic land use. Additionally, many areas on the Preserve with low pine densities have been augmented with tree plantings.

Hydrological restorations have been used sparingly compared to other areas since they were mostly still intact during the time of acquisitions. A few areas, mainly on the Hampton Tract, were ditched to drain the wetlands but have since been plugged to ensure that natural water systems are functioning properly. The Preserve will continue to be evaluated and monitored for any restoration needs, and when identified, restoration projects will be initiated using BMPs.

Invasive Species Management

Invasive Plant Management

Invasive, exotic plants are a threat to ecosystems worldwide and are an especially serious issue in Florida due to the state's warm, amenable climate and many ports of entry which import non-native plants. This high rate of introduction, combined with the sub-tropical climate, makes it more likely for non-native plant species to be introduced into the wild and to establish successful self-propagating populations. As a result, Florida is home to many non-native plant species that have become aggressive invaders severely impacting natural systems.

The Florida Invasive Species Council (FISC), formerly the Florida Exotic Pest Plant Council, tracks invasive, exotic (non-native) plant species in the state, compiles species lists, and categorizes these species based on their impact to natural systems. Category I species are the most aggressive and can impact natural communities by displacing native species, changing community structure or ecological functions, or by hybridizing with native species. Category II species are those that are increasing in abundance but have not yet altered Florida plant communities to the extent shown by Category I species. Many species on the FISC lists also appear on the Florida Department of Agriculture and Consumer Service's Noxious Weed List.

The District is committed to the management of invasive plant species and uses an adaptive management strategy to control their establishment and spread on the Preserve. The District has a Vegetation Management Section with dedicated staff who spearhead control efforts by surveying, prioritizing, and treating invasive plant populations on District conservation lands. The District focuses management efforts on invasive plant species that the FISC has deemed Category I or II plants as set forth above. Furthermore, the Vegetation Management Section uses the framework set out in The Nature Conservancy's Site Weed Management Plan Template to analyze and prioritize invasive plant species for treatment based on several factors, including:

1. their infestation levels;
2. the current and potential impacts of the species;
3. the value of habitat that the species does or could infest; and
4. the difficulty controlling the species.

Under this system the species that are the highest priority for control efforts receive a score of 4, while the lowest priority species receive a score of 16. This prioritization scheme ensures that the District's resources are spent where they will have the greatest impact on the ecosystem. Additionally, the Green Swamp Invasive Plant Management Prioritization Plans (IPMPP) were developed jointly by the Land Management and Vegetation Management staff in order to manage invasive plant populations of the Preserve in a coordinated manner to address the highest priority goals. Three separate IPMPPs have been created for the West, East, and Hampton Tracts.

The most common nuisance species observed within the West Tract are cogongrass, Caesarweed, and natal grass. More heavily disturbed areas, including campgrounds, are especially vulnerable to nuisance species infestations. The species that have been identified to be the highest priority for invasive plant control operations of the West Tract are Brazilian pepper tree, air potato, Old World climbing fern, and coral ardisia. Additionally, the District has implemented an Early Detection,

Rapid Response (EDRR) strategy which identifies and rapidly treats occurrences of exotic species that are not currently present or are not widespread on the property but have the potential to become invasive if they become established. EDRR species for the West Tract include Brazilian pepper tree, coral ardisia, Old World climbing fern, arrowhead vine, and Chinese tallow. **Table 6** lists the most common or problematic invasive plant species found on the West Tract, their priority level for control if applicable and their FISC status.

The most common nuisance species observed within the East Tract are cogongrass, Caesarweed, and tuberous sword fern. The species that has been identified to be the highest priority for invasive plant control operations of the East Tract is Old World climbing fern. EDRR species for the East Tract include coral ardisia and melaleuca tree. **Table 7** lists the most common or problematic invasive plant species found on the East Tract, their priority level for control if applicable and their FISC status.

Within the Hampton Tract, the most common nuisance species observed is Caesarweed. The species that has been identified to be the highest priority for invasive plant control operations of the Hampton Tract is the Brazilian pepper tree. EDRR species for the Hampton Tract include coral ardisia and melaleuca tree. **Table 8** lists the most common or problematic invasive plant species found on the Hampton Tract, their priority level for control if applicable and their FISC status.

The District employs a variety of measures to control invasive plant species including thorough surveying, chemical treatment (basal-bark treatment, cut-stump applications, hack-and-squirt methods, and foliar applications), mechanical treatment, and the use of biological control agents or some combination thereof, which are done with both in-house and through contracted labor. Upland treatments are often scheduled to occur in the year following a prescribed burn because access to a site is easier and visibility is increased at this time. Personnel using herbicides comply with instructions found on the herbicide label and employ BMPs for their application.

TABLE 6. INVASIVE PLANTS KNOWN TO OCCUR ON THE WEST TRACT

Common Name	Scientific Name	FISC Status	Priority Level for Control
Air potato	<i>Dioscorea bulbifera</i>	Category I	4
Arrowhead vine (EDRR)	<i>Syngonium podophyllum</i>	Category I	5
Brazilian pepper (EDRR)	<i>Schinus terebinthifolia</i>	Category I	4
Caesarweed	<i>Urena lobata</i>	Category I	15
Camphor tree	<i>Cinnamomum camphora</i>	Category I	6
Chinaberry	<i>Melia azedarach</i>	Category II	8
Chinese tallow (EDRR)	<i>Triadica sebifera</i>	Category I	5
Cogongrass	<i>Imperata cylindrica</i>	Category I	6
Coral ardisia (EDRR)	<i>Ardisia crenata</i>	Category I	4
Elephant ear	<i>Colocasia esculenta</i>	Category I	5
Guineagrass	<i>Urochloa maxima</i>	Category II	8
Japanese climbing fern	<i>Lygodium japonicum</i>	Category I	6
Natal grass	<i>Melinis repens</i>	Category I	10

Old World climbing fern (EDRR)	<i>Lygodium microphyllum</i>	Category I	4
Peruvian primrosewillow	<i>Ludwigia peruviana</i>	Category I	5
Rosary pea	<i>Abrus precatorius</i>	Category I	5
Septicweed	<i>Senna occidentalis</i>	N/A	5
Skunk vine	<i>Paederia foetida</i>	Category I	7
Tropical soda apple	<i>Solanum viarum</i>	Category I	6
Tuberous sword fern	<i>Nephrolepis cordifolia</i>	Category I	8

TABLE 7. INVASIVE PLANTS KNOWN TO OCCUR ON THE EAST TRACT

Common Name	Scientific Name	FISC Status	Priority Level for Control
Air potato	<i>Dioscorea bulbifera</i>	Category I	9
Caesarweed	<i>Urena lobata</i>	Category I	15
Camphor tree	<i>Cinnamomum camphora</i>	Category I	8
Cogongrass	<i>Imperata cylindrica</i>	Category I	7
Coral ardisia (EDRR)	<i>Ardisia crenata</i>	Category I	6
Japanese climbing fern	<i>Lygodium japonicum</i>	Category I	7
Melaleuca tree (EDRR)	<i>Melaleuca quinquenervia</i>	Category I	5
Old world climbing fern	<i>Lygodium microphyllum</i>	Category I	4
Skunk vine	<i>Paederia foetida</i>	Category I	8
Tropical soda apple	<i>Solanum viarum</i>	Category I	7
Tuberous sword fern	<i>Nephrolepis cordifolia</i>	Category I	9

TABLE 8. INVASIVE PLANTS KNOWN TO OCCUR ON THE HAMPTON TRACT

Common Name	Scientific Name	FISC Status	Priority Level for Control
Air potato	<i>Dioscorea bulbifera</i>	Category I	9
Brazilian pepper	<i>Schinus terebinthifolia</i>	Category I	4
Caesarweed	<i>Urena lobata</i>	Category I	15
Camphor tree	<i>Cinnamomum camphora</i>	Category I	8
Chinese tallow	<i>Triadica sebifera</i>	Category I	5
Cogongrass	<i>Imperata cylindrica</i>	Category I	7
Japanese climbing fern	<i>Lygodium japonicum</i>	Category I	7
Old world climbing fern	<i>Lygodium microphyllum</i>	Category I	5
Skunk vine	<i>Paederia foetida</i>	Category I	8
Tropical soda apple	<i>Solanum viarum</i>	Category I	7
Tuberous sword fern	<i>Nephrolepis cordifolia</i>	Category I	8

Invasive Wildlife Management

The monitoring and control of non-native animal species statewide is overseen by the FWC. The District obtains annual control permits through FWC to track and conduct invasive wildlife removal practices on District-owned properties.

The primary invasive wildlife species that the District focuses control efforts on is the feral hog (*Sus scrofa*). Feral hogs are the most conspicuous and destructive exotic animal species found throughout the conservation lands owned and managed by the District. The species' ability to readily adapt to a wide variety of habitats, combined with their high reproductive rates and a lack of significant natural predators, has led to rapidly increasing population densities throughout North America (West et al. 2009).

Feral hogs cause millions of dollars in damage to lawns, ponds, natural areas, flood control structures, and rights-of-way each year (Giuliano 2016). Feral hogs can carry multiple zoonotic and epizootic diseases, including brucellosis, leptospirosis, and pseudorabies. They also have the potential to be aggressive if startled or angered and are vectors for many invasive plant species on site; specifically, caesarweed. Feral hogs are known to consume young from nests of reptiles and ground nesting birds (Coblentz and Baber 1987). They are prolific breeders capable of producing three litters per year (Dzieciolowski et al. 1992), and they are renowned for impacts caused by rooting, resulting in destabilized soil surfaces and disruption of native vegetation (Singer et al. 1984).

Recognizing the severe ecological threat posed by this exotic species, the District first developed and implemented a feral hog population control plan in 1995. Due to the adaptive nature of feral hogs, the District has since taken a multi-faceted approach to their removal. Current control methods include trapping, FWC-administered WMA hog hunts, special District administered hog hunts, and on select properties, operations conducted by the USDA – Wildlife Services program. The use of electronically controlled hog traps in targeted areas has also proven highly effective.

Given the current array of practical, environmental, and social constraints, it is generally recognized that the complete eradication of feral hogs from District conservation lands is an unattainable goal. Therefore, the overall goal of the feral hog management strategy is to reduce the number of feral hogs on District conservation lands to a maintenance level, thus reducing the overall ecological damage resulting from feral hog rooting. This is done using a comprehensive and scientifically based management strategy that is humane, cost-effective, and compatible with ecologically sustainable land management.

Imperiled Species Management

For the purposes of this Plan, the term ‘Imperiled Species’ refers to plant and animal species that are designated as Endangered or Threatened by the FWC, FDACs, or the U.S. Fish and Wildlife Service (USFWS) under federal or state laws. The diverse natural communities within the Preserve provide significant habitat for a variety of imperiled and locally important species. The District’s continued land management efforts within the property maintain important ecosystem functions and landscape structure that can support a mix of species.

Imperiled Wildlife

The District manages the Preserve in a comprehensive fashion with an overall objective to sustain the vegetative community structure and diversity, hydrologic regime, and fire return intervals characteristic of the defined natural communities on the Preserve. This approach is believed to benefit a wide array of native plant and animal species, including those that are considered imperiled.

The mixture of habitats and vast acreage of protected lands provides significant habitat for a large diversity of wildlife. A number of imperiled wildlife species have been documented at the Preserve through various surveys and staff observations over the course of management of the Preserve. Examples of species observed in upland communities include the gopher tortoise and Florida scrub-jay. Within wetland communities, observed species include the American alligator, little blue heron, Florida sandhill crane, and wood stork. Additional species are likely to occur; however, have not been directly documented. The FNAI Biodiversity Matrix Map Server is a screening tool that provides site-specific lists of the rare species that are known to occur or are likely to occur on a given parcel of land. **Table 9** lists all the federal and/or state listed wildlife species known or expected to be present on the Preserve based on surveys, direct observations, and the FNAI Biodiversity Matrix analysis.

TABLE 9. IMPERILED WILDLIFE SPECIES KNOWN OR LIKELY TO OCCUR

Common Name	Scientific Name	Federal Status*	State Status*	Management Recommendations
American alligator	<i>Alligator mississippiensis</i>	FT(S/A)	FT(S/A)	Protect from illegal take; manage wetlands.
Eastern indigo snake	<i>Drymarchon couperi</i>	FT	FT	Manage habitats holistically; maintain appropriate fire-return frequencies in pyrogenic communities.
Florida sandhill crane	<i>Antigone canadensis pratensis</i>		ST	Maintain nesting habitats (marsh); periodically burn marsh habitat to discourage encroachment of woody species.
Florida scrub-jay	<i>Aphelocoma coerulescens</i>	FT	FT	Maintain scrub areas with oak height between 1-3 meters. Eliminate any trees (predator perches).
Gopher tortoise	<i>Gopherus polyphemus</i>		ST	Manage areas with tortoise populations and/or xeric soils by maintaining <40% canopy using fire or mechanical thinning.
Little blue heron	<i>Egretta caerulea</i>		ST	Protect rookeries and manage foraging sites; maintain natural hydroperiods.

Tricolored heron	<i>Egretta tricolor</i>		ST	Protect rookeries and manage foraging sites.
Wood stork	<i>Mycteria americana</i>	FT	FT	Protect rookeries and maintain hydrology.

*FT=Federally Threatened, ST=State Threatened, (S/A)=Similarity of Appearance

Imperiled Plants

Table 10 lists 18 state listed plant species that are known or likely to occur on the Preserve’s variety of habitat types and presence within the documented range of the species. Management guidelines for all species call for either burning within recommended fire return intervals, maintaining natural hydrology, and/or avoiding soil disturbance. These practices are all consistent with the District’s fundamental approach to land management and will promote persistence of those species that are present, or immigration by those that may currently be absent.

TABLE 10. IMPERILED PLANT SPECIES KNOWN OR LIKELY TO OCCUR

Common Name	Scientific Name	Listing Status*	Habitat	Management Recommendations
Auricled spleenwort	<i>Asplenium erosum</i>	SE	Epiphytic on oaks in hydric hammock and cypress in swamp.	Control exotics, avoid disturbance to substrate, maintain hydrology quality and quantity.
Britton’s beargrass	<i>Nolina brittoniana</i>	SE	Scrub, sandhill, scrubby flatwoods, xeric hammock.	Use of prescribed fire to stimulate flowering and eliminate competition.
Celestial lily	<i>Nemastylis floridana</i>	SE	Wet flatwoods, prairies, marshes, cabbage palm hammock edges.	Protection and proper management of habitat with appropriate burn regime.
Comb polypody	<i>Pechuma ptilota var. bourgeauana</i>	SE	Floodplain forests and swamps.	Control exotics, avoid disturbance to substrate, maintain hydrology quality and quantity.
Cutthroatgrass	<i>Coleataenia abscissa</i>	SE	Wet flatwoods, prairies, seepage areas.	Prescribed fires to stimulate flowering and reduce woody competition. Maintain property hydrology.
Florida pygmy-pipes	<i>Monotropsis reynoldsiae</i>	SE	Upland mixed hardwood forest, mesic/xeric hammock, scrub.	Avoid ground disturbance, control invasive plant species.
Florida spiny-pod	<i>Matelea floridana</i>	SE	Sandhill, upland pine, and dry hammocks.	Prescribed fire to maintain open ecotones, avoid soil disturbance.
Giant air plant	<i>Tillandsia utriculate</i>	SE	Cypress swamps and hammocks.	Wetland protection and control invasive plant species.
Giant orchid	<i>Pteroglossaspis ecristata</i>	ST	Scrubby and mesic pine flatwoods.	Use of prescribed fire to create sunny openings and reduce competition of woody species.
Hammock rein orchid	<i>Habenaria distans</i>	SE	Hydric hammock and strand swamp.	Control exotics, avoid disturbance to substrate, maintain hydrology quality and quantity.

Hooded pitcher plant	<i>Sarracenia minor</i>	ST	Wet flatwoods, seeps, wet prairie.	Maintain hydrology quality and quantity, avoid soil disturbance.
Leafless beaked ladies-tresses	<i>Sacola lanceolata</i>	ST	Swamps and hydric hammocks.	Protect swamps from hydrologic alterations, control exotics, avoid soil disturbance.
Pine lily	<i>Lilium catesbaei</i>	ST	Pine flatwoods, savannas, and bogs.	Use of prescribed fire to increase flowering and reproduction.
Pinewoods bluestem	<i>Andropogon arctatus</i>	ST	Dry to wet flatwoods and sand pine scrub.	Use of prescribed burns to help reproduce and maintain open ecotones.
Plume polypody	<i>Pechuma plumula</i>	SE	Wet hammocks and swamps.	Control exotics, avoid disturbance to substrate, maintain hydrology quality and quantity.
Redmargin zephyrlily	<i>Zephyranthes simpsonii</i>	ST	Wet flatwoods and meadows. Ditches and wet pastures in burned over areas.	Control exotics, avoid soil disturbance, prescribed fire.
Sand butterfly pea	<i>Centrosema arenicola</i>	SE	Sandhill, scrubby flatwoods, dry upland woods.	Protection and proper management of habitat with appropriate burn regime.
Scrub buckwheat	<i>Eriogonum longifolium</i> var. <i>gnaphalipholium</i>	SE/FT	Sandhill and ecotones with scrub.	Maintain fire interval to promote flowering reproduction.

*SE=State Endangered, ST=State Threatened, FT=Federally Threatened

Arthropod Management

In compliance with Section 388.4111, Florida Statutes and in Section 5E-13.042, Florida Administrative Code, land within the Preserve in Polk, Pasco, Lake and Sumter County has 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 could impose a potential hazard to fish, wildlife, and other natural resources existing on this property.

Recreation and Public Access

District lands provide important benefits to the water related resources within west-central Florida and offer many recreational opportunities. Resource-based recreational opportunities allow for an enjoyable outdoor experience while meeting District management objectives. District Policy outlines the authority of the District to provide passive, natural resource-dependent recreational uses on its conservation lands, as well as appropriate public access. The compatibility for such recreational uses and public access points considers the environmental sensitivity and the suitability of the property. Compatible uses generally consist of outdoor recreation and educational activities. These opportunities are provided through designated access points outlined below and are also available in the District's Recreation Guide.

The District's recreation program supports the Leave No Trace program, which outlines principles to minimize recreational impacts on conservation lands. There are many state and local parks that are owned by the District that provide additional recreational amenities and these are often managed in partnership with other entities. This partnership allows the District to protect water resources, while our partners recreational amenities such as restrooms, environmental education centers, picnic pavilions, and camping areas. These areas are referred to as cooperatively managed properties. The District Governing Board holds authority to determine the compatibility of recreational uses on District conservation lands, as based upon the purpose of the property acquisition. Further information on the District's recreation program and detailed trail maps can be found on the District's website, www.watermatters.org/recreation.

Recreation Overview

The recreational activities permitted at the Preserve include bicycling, birding, boating, camping, canoeing-paddling, dog walking, equestrian, fishing, hiking, and hunting (**Figure 14**). In total, the trail system at the Preserve includes approximately 187 miles of multi-use trails. Approximately 39 miles of trails are available for hiking only; approximately 61 miles are for hiking and biking; and approximately 87 miles are for hiking, biking, and equestrian use. The size of the Preserve provides opportunities for short trail segments that are suitable for day hikes, or extended trail loops and linked trail networks suitable for backcountry hikes. Backcountry, equestrian, and primitive camping opportunities are offered at the Preserve and require a reservation. These sites have picnic tables, fire rings, and grills. The primitive and equestrian sites allow campers to drive their vehicle to the assigned campgrounds, while the back country sites are located along hiking trails and are tent camping only.

The Preserve has a wide variety of wildlife viewing opportunities. The mosaic of habitats on the Preserve provides the opportunity for observing an abundance of wildlife species. This species richness is indicative of land management practices that provide habitat for a diverse abundance of wildlife in natural communities managed for their historical vegetative structure, fire regime, and hydrology. Designated access to the Preserve is provided through six parking areas and three walk-thru access points. The separate tracts within the Preserve each offer their own set of appropriate recreational opportunities and are discussed in greater length in the following subsections.

East Tract

The East Tract offers bicycling, camping, fishing, hiking, and hunting. Within the Green Swamp East Tract, approximately 60 miles of multiuse trails are available for hiking and biking, and a portion of the trail system is part of the Florida National Scenic Trail. There is an approximate 15-mile overnight loop and an eight-mile day loop. Camping at the East Tract is permitted at three backcountry campsites. These campsites are located along the hiking trails and are not accessible by vehicle. Equestrian opportunities are offered nearby at the West and Hampton Tracts. Within the East Tract, parking is available on the south side of the Preserve on Rock Ridge Road, approximately 10 miles northeast of U.S. Highway 98 and six miles west of State Road 33. Parking is also available at Main Grade and State Road 471. A walk-thru gate is located southwest of the Rock Ridge Road parking area.

West Tract

The West Tract offers bicycling, birding, boating, camping, canoeing-paddling, equestrian trails, fishing, hiking, and hunting. There are approximately 65 miles of multiuse trails for biking and hiking, with 63 miles available for equestrian use. Horse-drawn buggy riding is allowed on trails marked for equestrian use and requires a day-use reservation. The trail system at the West Tract includes a portion of the Florida National Scenic Trail. A small boat ramp at the end of River Road allows access to the Withlacoochee River, which offers ample fishing opportunities and a remote wilderness experience as it winds through the Green Swamp. The West Tract also is a designated site on the Great Florida Birding and Wildlife Trail and is part of the Green Swamp Ecosystem Important Bird Area. Camping opportunities include backcountry, equestrian, and primitive campgrounds. There are four backcountry campsites located along the Florida National Scenic Trail. In addition to backcountry camping, equestrian and primitive campgrounds are available and allow for vehicle access. Access to the West Tract is provided at multiple locations. From U.S. Highway 301 in Dade City, parking is five miles east on River Road near the intersection of Auton and Ranch roads. Additional parking is available off State Road 471 at the Cumpresco and McNeil entrances.

Hampton Tract

The Hampton Tract offers bicycling, camping, fishing, hiking, and hunting. The multi-use trail system offers 30 miles of trails for hiking, biking, and equestrian use. Horse-drawn buggy riding is allowed on trails marked for equestrian use and requires a day-use reservation. Camping opportunities include equestrian and primitive campsites. Parking is located on the south side of the Preserve on Rick Ridge Road, approximately seven miles northeast of U.S. Highway 98. There are two designated walk-thru access points at the Hampton Tract. One is located on the boundary between the Hampton Tract and Colt Creek State Park for access between these two trail systems, and the other is located off U.S. Highway 98.

Florida National Scenic Trail

Visitors can hike over the vast road network or hike the Florida National Scenic Trail, a congressionally designated, long-distance hiking trail that meanders its way across Florida from Big Cypress National Preserve in the south to Gulf Islands National Seashore in the western end of Florida's panhandle. Approximately 31 miles of the 1,500-mile Florida National Scenic Trail run through the Preserve. The District works jointly with the FTA to maintain this trail which bisects the East Tract and continues through the West Tract and up to the Richloam Tract of the Withlacoochee State Forest. The trail crosses prairies and sandhills and meanders beneath tall pines. The Florida National Scenic trail connects to the Van Fleet State Trail, which follows the eastern border of the East Tract. These trail connections allow for additional accessibility for hiking. The Van Fleet State Trail is officially designated as part of Florida's statewide system of greenways and trails and is one of Florida's most rural, paved rail-trails. This non-consumptive, passive recreational use is the most easily accommodated public use within the East and West Tracts of the Preserve.

Hunting

There is a significant amount of hunting opportunity within the Preserve and the District maintains an agreement with FWC to operate two separate WMAs, which contains the East and West tracts. The Green Swamp WMA exists entirely within the East Tract and is 51,179 acres and this is the busiest WMA in the state. There are check stations located at Highway 471 and Rock Ridge Road which are staffed with personnel to manage access and monitor hunting activities. This WMA provides significant opportunity with 750 quota permits per day during archery and general gun, 300 permits per day during small game, 200 permits per day during spring turkey, 160 permits per day during wild hog, and first come first serve during fishing season. These seasons occur from September through June. The Green Swamp West WMA is 34,510 acres and includes one check station that is located on the west side of the Preserve on River Road near Dade City. This WMA includes special opportunity hunts during archery, general gun, and turkey, it also includes quota hunting during wild hog and small game hunting seasons. In addition, there are camping areas established for hunters at both WMAs. Please refer to FWC for the most up to date rules and regulations.

The District permits additional hunting opportunities, such as District's administered feral hog control hunts or Special Use Authorization hunts. These include several District-managed public feral hog hunts throughout the year and additional hunting opportunities for veterans, persons with disabilities, families, and youth.

Cooperatively Managed Properties

Colt Creek State Park is a 5,608-acre park nestled within the Preserve and consists of mainly pine flatwoods, cypress domes and open pastureland. While the District co-owns the property, it is leased to the FDEP and is managed by the Division of Recreation and Parks. Recreational opportunities at Colt Creek State Park include hiking, horseback riding, picnicking, birding, birding, camping, and paddling.

Little Withlacoochee River Tract is another cooperatively managed part of the Preserve. Management of this tract is conducted by the FFS, and access to the hiking trail is provided through provided through Withlacoochee State Forest or Van Fleet State Trail.

A portion of Withlacoochee River Park is cooperatively managed by Pasco County through a license agreement. The District provides the county with the use of 146 acres of the West Tract to accommodate riverfront access for the canoe launch, dock, and a small network of hiking trails. Further details can be found in the Partnerships and Cooperative Management section of this plan.

Environmental Education

While the Green Swamp does provide an ideal setting for nature study, the Preserve does not have any developed facilities to accommodate usage for environmental education purposes. However, Special Use Authorizations can be submitted for review and approval by the District to allow for compatible environmental education uses. Several scientific research projects have been conducted within the Preserve, through college universities and government agencies.

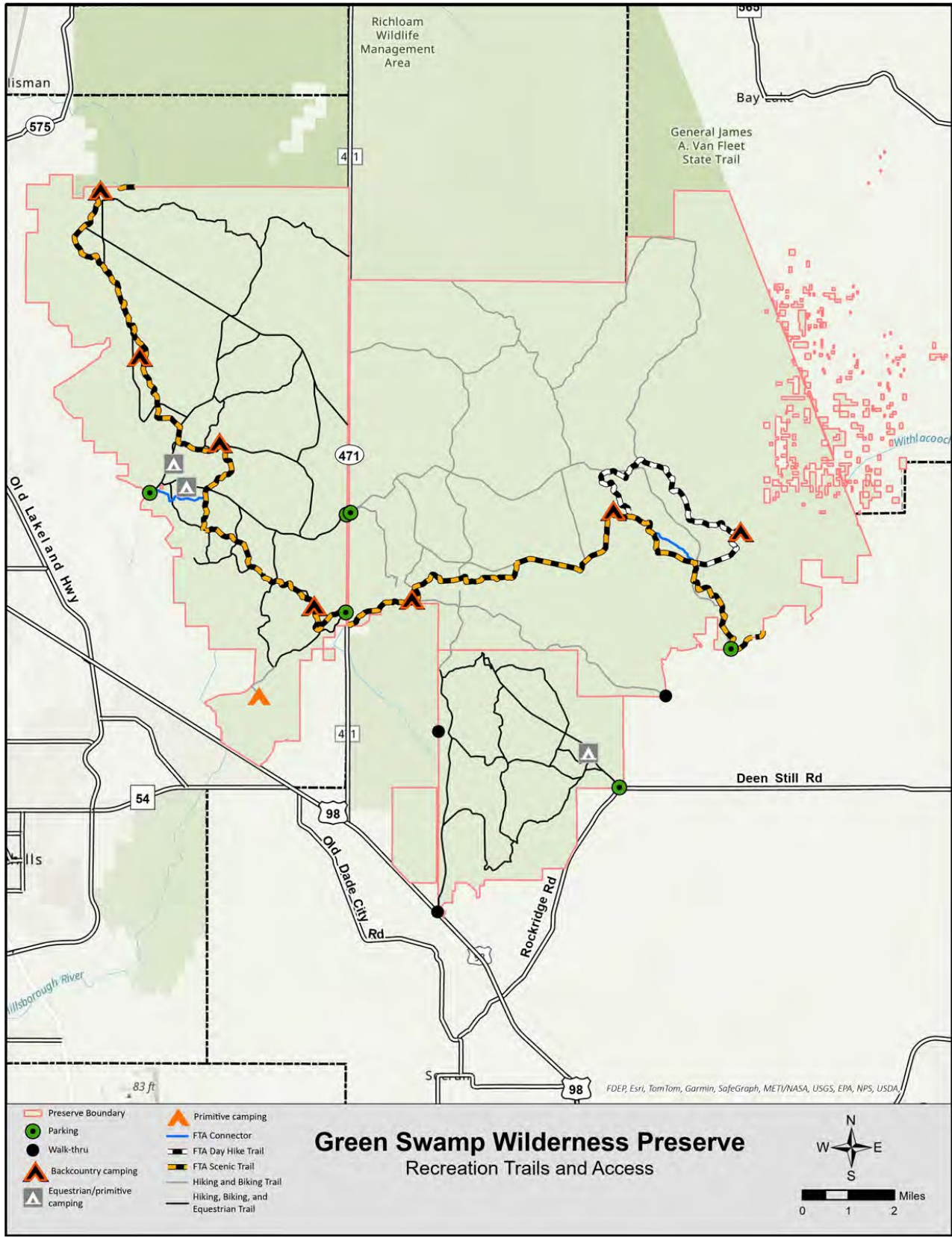


FIGURE 14. RECREATION TRAILS AND ACCESS

Land Use Administration

The land uses administered on District conservation lands are governed by both District Policy and rules established in the Florida Administrative Code. According to District Policy, appropriate land use types are separated into two categories: public recreation use and non-recreational public use. Public recreation uses vary by property and compatibility is based upon the environmental sensitivity and suitability of the property. Furthermore, some District conservation lands are subject to cooperative agreements with other public agencies to administer the responsibilities for any expansive recreational opportunities that the District may deem as compatible on its conservation land. Cooperative agreements support the District's efforts to protect water resources and provide nature-based recreation to the greatest extent practicable by working together to create partnerships with other agencies to streamline management. The specific public recreation uses at the Preserve are discussed in the previous section. Non-recreational public uses include, but are not limited to, linear facilities, scientific research opportunities, water resource development projects, sustainable forestry, and environmental education. Like cooperative agreements for expansive recreational uses, the District is a party to a variety of agreements with private entities for the allowance of the aforementioned use types. The administration of non-recreational and recreational public uses for the Preserve is discussed in the subsequent sections.

Partnerships and Cooperative Management

The District has entered into several cooperative relationships to provide for public use of lands within the Preserve and adjacent conservation lands. Since 1977, the District has had an agreement with the FWC to manage the Green Swamp WMA, which provides the public with hunting opportunities. The Green Swamp WMA consists of 51,179 acres within the East Tract in Lake, Polk, and Sumter Counties. With the acquisition of Green Swamp West in the early 1990s, the Green Swamp West Unit was added to the District's WMA agreement which consists of 34,510 acres within the West Tract in Pasco County.

Since the 1980s, the District has worked with United States Forest Service and the Florida Trail for the administration of the Florida Natural Scenic Trail as one of the eleven National Scenic Trails in the United States. This partnership designates the FTA as the responsible entity for maintenance of the trail. The FTA is a private, non-profit organization group dedicated to developing and maintaining a state-wide trail network. More than 31 miles of the Florida National Scenic Trail traverse the area. Portions of the trail are inundated in all but the driest years. The District issued a permit to FTA in 1982 allowing for the development and maintenance of the primitive footpath traversing the Preserve.

In 1987, the District initiated a cooperative relationship with Pasco County to provide for the development of the Withlacoochee River Park. Pasco County operates this regional park near the Withlacoochee River. The District has worked cooperatively with the FTA and Pasco County to create hiking trails within the Withlacoochee River Park. The District provides the county with the use of 146 acres of the Green Swamp West Tract to accommodate riverfront access for the canoe launch, dock, and five miles of hiking trails.

The Colt Creek State Park on the southern portion of the Preserve in Polk County was purchased in May 2006 and is jointly owned by the District, FDEP, and Polk County, with the FDEP, Division of Recreation and Parks taking the role as the lead managing agency.

The Little Withlacoochee Tract on the northeast portion of the Preserve is cooperatively managed with the FFS as part of the Richloam Tract of the Withlacoochee State Forest. On this tract, the Florida Foerst Service is responsible for all aspects of management. Aside from the cooperative management agreement. An extensive shared property line with the Withlacoochee State Forest often requires cooperation for prescribed fires, wildfire control, maintenance and restoration of surface water flows and connections, and managing recreational uses.

Since the early 2000s, the National Wild Turkey Federation (NWTf), in cooperation with District and FWC have conducted a significant amount of habitat management activities to improve conditions for turkeys, as well other wildlife species. The NWTf is a private, non-profit organization dedicated to enhancing wild turkey population in the United States. The NWTf contributes funding assistance for projects improving habitat conditions for turkey populations, such as mowing and roller chopping.

Special Use Authorizations

A Special Use Authorization (SUA) from the District's Land Resources Bureau (LRB) is required for any use of District property not authorized through statute or rule and are available upon approved application. When an application for the SUA is made to the LRB, its staff reviews the application to determine the compatibility of the requested special use with the specified District conservation lands. If LRB staff determine the requested special use is compatible and no other conflict exists, the SUA is issued for the time period necessary to accommodate the requested use.

The types of approved SUAs on the Preserve can be categorized under recreational uses, research opportunities, training, and general granted access allowances. As previously mentioned, the approval for obtaining accommodations to the designated trails for a mobility impaired person is completed through the SUA process.

District properties provide for a variety of research opportunities for the benefit of natural resource conservation and preservation efforts and advancements. These opportunities can consist of wildlife surveys, groundwater sampling, natural communities research or wetland studies. Overall, District properties provide an abundance of research opportunities due to the proper management of healthy ecosystems.

License Agreements and Other Encumbrances

There are many agreements in place on the Preserve. Beyond the cooperative agreements and leases outlined above, the District often enters into license agreements and other forms of agreements that allow other entities to utilize portions of the Preserve.

Seven utility easements occur on the Preserve, five within the East Tract and two within the West Tract. The District has granted utility easements to Duke Energy, Withlacoochee River Electric Cooperation (WREC), Sabal Pipeline Company, and Florida Power Corporation.

The District has approved three ingress/egress agreements on the Preserve. One is with the U.S. Geological Survey for hydrological monitoring at five wells within the West Tract, the second is a flowage easement through the Richloom Tract that has been in place since October 1967, and the third is an access easement to the Withlacoochee Baptist Church.

For the recreational opportunities on the Preserve, the District maintains a recreation license agreement with Pasco County for Withlacoochee River Park and a recreation agreement with the USDA for the Florida National Scenic Trail.

Several FDEP agreements have been granted for various uses including recreation and remediation activities.

For the purposes of security, the Hampton Tract and West Tract both have a live-on officer residence security agreement. The District also has an additional enhanced patrol agreement with FWC for security services on the Preserve.

Two intergovernmental leases exist on the Preserve. One lease is with the FDEP, Division of Recreation and Parks for Colt Creek State Park. A second lease is with the FFS on the Little Withlacoochee Tract. Polk County and the District have also agreed on an easement to install, replace, operate, and maintain draining ditches, culverts, and other water control devices on the Preserve.

Four cattle leases are present on the Preserve within pasture lands. These leases occur on portions of the property that were previously used for cattle grazing and contain the necessary infrastructure to support cattle operations. The District entered into a license agreement with the Pasco County School Board for the Pasco County High School in Dade City and the associated Future Farmers of America to maintain a small cattle lease near the front entrance to Green Swamp West. The remaining three cattle leases are within the East Tract and Hampton Tract.

Board Policy for Land Use and Management allows apiaries to be established on District-owned lands provided there will not be any long-term impacts. Six license agreements for apiaries are ongoing within the Preserve.

Land Maintenance and Operations

Roads and Boundaries

The District is responsible for maintaining the infrastructure on District lands for access to conduct management activities, to provide recreational opportunities, and to provide site security. This includes roads, trails, firelines, culverts, wet-crossings, recreational amenities, and perimeter fencing that requires periodic maintenance which occurs throughout the year. Properly established and maintained roads are required to provide access for management activities and public use. Well-maintained roads minimize erosion, sedimentation, and minimize water quality impacts. These roads also provide quick access for wildfire protection and serve as firelines for prescribed fires. Continuous observation will ensure that roads remain clear and that they are suitable for vehicles essential for management and public use. District staff engage in continuing maintenance of the road network to ensure it remains clear of obstructions and to repair or enhance impaired sections of the road and trail network.

Motorized access on the Preserve is limited on each Tract. Motorized access is allowed to provide access to certain campgrounds, under rules outlined by FWC under the WMAs, or otherwise authorized by the District. Additional motorized access is restricted to authorized personnel only. Properly marked and maintained boundaries of District conservation lands help to minimize disputes, encroachments, trespassing, and other unwanted impacts from adjoining properties. Well-marked boundaries also aid in proper placement of firelines for wildfire protection and prescribed fire application. Boundaries on the Preserve are identified by perimeter fencing and District boundary signs.

District staff secure the Preserve by maintaining perimeter fencing, removing unauthorized access gates, posting appropriate boundary signage, identifying frequent points of unauthorized access, documenting evidence of illegal activities, and placing entry barriers at designated points to stop unauthorized vehicle access. While the FWC maintains security within the WMA portions of the Preserve, the security within the West Tract is provided more exclusively by District staff, with the exception of the Withlacoochee River Park managed by Pasco County. Supplemental security is also provided by two resident security officers, one on the Hampton Tract and one on the West Tract.

Facilities and Infrastructure

Consistent with legislation that was adopted by the state in 1999, lands acquired through state-funded acquisition programs can be used for a variety of public facilities. These include utility lines and other linear resources, stormwater management projects, and water supply development projects. Approval of such uses is contingent upon several criteria, such as compatibility with the natural resource values of the property, compensation provided for the use, location of the proposed use within the Preserve, and consistency with the Management Plan. The number of facilities and infrastructure facilities within the Preserve is limited. Facilities that existed at the acquisition were evaluated and have since been removed. What remains is primarily in place to support recreational access and public use. This typically includes campgrounds, non-potable water, temporary restrooms, fire rings and picnic tables. In addition, there are facilities associated with the WMA which include three check station facilities and associated campgrounds for administration of hunting activities. There are two pole barns planned to store District equipment located in Green Swamp East and West. For more specific details, access the District's Recreation Guide or refer to the Recreation and Public Access portion of this plan.

The District also maintains a small meeting facility in Green Swamp West.

The Preserve also supports a number of public facilities and utilities lines. Within the East Tract this includes utility easements for Duke Energy, WREC, and Florida Power Corporation. Within West Tract, there are two utility easements, one for Duke Energy and one for WREC.

Goals and Objectives

Overview

The following represents a general overview of the goals and objectives over the next 10-year planning period for the Preserve. This set of goals will serve as an outline of management expectations and provide direction over the management activities for the life of this plan. These goals are not an annual work plan, which is beyond the scope of this plan.

Resource Protection and Management

Hydrologic Management

Goal: *Protect water resources within the Preserve.*

- Objective 1: Continue to observe and assess water resources within the Preserve to ensure desired hydrologic function by maintaining current restoration projects and developing new projects, as necessary.
- Objective 2: Continue monitoring water quality and wetland conditions through the data collection network and periodic wetland assessments.
- Objective 3: Protect water resources during management activities by continued implementation of Silvicultural and Agricultural Best Management Practices.

Fire Management

Goal: *Maintain and restore function of natural systems through application of prescribed fire as the primary management tool.*

- Objective 1: Develop and implement an annual burn plan and apply prescribed fire according to the District's Fire Management Guidelines.
- Objective 2: Assure prescribed burns are conducted in a manner to meet the specific burn objectives. Where appropriate, conduct majority of prescribed burns during the growing season to support development of native fire-dependent species and habitat function.
- Objective 3: Update and maintain a condition class database to track management activities on specific management units.
- Objective 4: Maintain perimeter firelines on an annual basis and disk strategic internal management lines supporting the seasonal needs of prescribed fire program.

Restoration and Natural System Maintenance

Goal: *Evaluate individual management units and develop restoration projects to recover historic natural communities.*

- Objective 1: Assess habitat conditions and develop restoration strategy to recover historic natural communities on previously altered sites targeting imperiled natural communities.
- Objective 2: Utilize information obtained from historic imagery, FNAI Natural Communities Mapping, and on-site investigations to implement site specific restoration projects that support the District's restoration goals.

Goal: Maintain and enhance natural system structure and function.

- Objective 1: Continue to maintain existing habitat enhancement projects over the long-term to achieve desired future conditions outlined in the FNAI Natural Community Guide.
- Objective 2: Evaluate and develop habitat enhancement projects to improve habitat function.
- Objective 3: Implement habitat management projects that support the improvement and development of native plant and animal communities, including imperiled species.

Forest Management

Goal: Manage the forest resources on the Preserve by applying sound silvicultural techniques, with consideration for maintenance of sustainable forest resources to achieve the District's land stewardship goals.

- Objective 1: Manage the forest resources in accordance with the District's 10-Year Timber Management Plan and conduct timber harvests as scheduled.
- Objective 2: Evaluate and develop forest management projects to support specific restoration and enhancement objectives developed for the Preserve.
- Objective 3: Conduct annual inspections of forest resources for indication of disease, insect infestations, or damage from fire to promote forest health and sustainability.

Imperiled Species Management

Goal: Manage and maintain natural systems to support imperiled, threatened, or endangered plant and animal species.

- Objective 1: Implement land management strategies and techniques that support development of habitat required for known imperiled species.
- Objective 2: In cooperation with other agencies and partners, implement survey and monitoring protocol where feasible for imperiled species and identify strategies for their recovery.

- Objective 3: Work with other state agencies, conservation organizations, and landowners to maintain habitat connectivity.

Invasive and Exotic Species Management

Goal: Manage the populations of exotic and invasive plants and animals found on the Preserve at a maintenance level.

- Objective 1: Implement the District's Invasive Plant Management Plan for the Preserve.
- Objective 2: Employ an Early Detection Rapid Response methodology on infestations of newly emerging or occurring, significantly invasive plants as identified in the Invasive Plant Management Plan.
- Objective 3: Implement the feral hog control plan and manage the feral hog population on the Preserve.

Infrastructure and Maintenance

Goal: Manage and maintain the infrastructure to protect the water resources and support the District's management objectives.

- Objective 1: Annually inspect and maintain roads and trails according to their designated maintenance schedule.
- Objective 2: Monitor and maintain culverts, bridges, and low water crossings to prevent adverse impacts on hydrology.
- Objective 3: Periodically inspect boundary fencing and gates to ensure adequate protection and site security of resources and repair as needed.
- Objective 4; Monitor and maintain all facilities, buildings, security sites, and fire wells on District lands as needed.

Administration

Land Acquisition

Goal: Pursue land acquisition projects that support the Florida Forever acquisition plan and seek to obtain conservation easements to maintain critical habitat linkages.

- Objective 1: Consider acquisition of inholding parcels to complete project boundary and improve management.
- Objective 2: Evaluate opportunities to acquire fee interest of parcels within the District's optimal boundary and the Florida Forever work plan.
- Objective 3: Pursue acquisition of less-than-fee interest through strategic conservation easements that complement the District's existing network of fee interest and less-than-fee acquisitions.

Land Use and Recreation

Goal: Manage District lands for multiple-use purposes through the administration of leases, easements, and various types of agreements.

- Objective 1: Routinely review agreements, easements, and leases and update as necessary.
- Objective 2: Review special requests and issue special use authorizations for uses that are consistent with District policies.
- Objective 3: Maintain cooperative relationships with state, local, and other governmental entities along with stakeholders.

Goal: Provide quality, resource-based passive recreational opportunities for the public's enjoyment.

- Objective 1: Maintain appropriate public access and quality compatible recreational opportunities.
- Objective 2: Evaluate requests for additional compatible public access and recreational opportunities.
- Objective 3: Continue to work with Florida Trail Association to maintain all trails associated with the Florida National Scenic Trail.
- Objective 4: Maintain the cooperative agreement between the District and the Florida Fish and Wildlife Conservation Commission to deliver quality hunting opportunities for the public.
- Objective 5: Maintain the cooperative agreement between the District and Pasco County to continue providing public recreational opportunities at the Withlacoochee River Park.

Goal: Manage and maintain recreational infrastructure to support the District's recreation program and passive recreation opportunities.

- Objective 1: Complete annual inventory of entrance signs, kiosks, associated maps, and educational materials to update as necessary.
- Objective 2: Conduct annual inventory of campground amenities, evaluate and address campground carrying capacity as needed.
- Objective 3: Carry out bi-annual inspection of public trail systems and reinstall trail markers if necessary.

Archaeological and Cultural Resources

Goal: Manage cultural and historical resources to protect and preserve natural and cultural history.

- Objective 1: Coordinate and follow the Division of Historical Resources' recommendations for protection of known sites. Continue to monitor, protect, and preserve known sites as necessary
- Objective 2: Take necessary and reasonable precautions to protect these sites from potential impacts resulting from management or maintenance activities.
- Objective 3: Ensure members of the land management staff have taken the Archaeological Resource Management (ARM) Training offered by the Florida Division of Historical Resources and that they are currently "ARM Certified".

Security

Goal: Provide site security and resource protection.

- Objective 1: Identify, document, and address security issues, including encroachments and unauthorized access.
- Objective 2: Maintain and inspect boundary fences, boundary lines, and gates to deter encroachment and unauthorized access. Post and maintain rule and boundary signage.
- Objective 3: Maintain and as needed, update law enforcement agreement with FWC or other agencies as appropriate.

Management Accomplishments

Below is a summary of the significant management accomplishments over the last ten years for the Preserve. This is not an exhaustive list of all the management activities that have occurred, but a brief highlight of the significant accomplishments over the last ten years.

Land Management

- Developed annual work plans, which include burn goals, habitat restoration projects, timber management, mowing, culvert and road maintenance, and recreation.
- Over the last 10 years, the District has conducted over 500 prescribed burns and averaged just over 20,000 prescribed burn acres annually as outlined in the table below. These burns occurred on all three tracts for a total of 201,648 acres.

Green Swamp Wilderness Preserve - 10-year Prescribed Burn History (acres)			
Fiscal Year	Green Swamp East (Including Hampton)	Green Swamp West	Annual Total
2015	14,777	5,750	20,527
2016	16,944	10,153	27,097
2017	12,179	8,706	20,885
2018	14,851	9,643	24,494
2019	5,557	5,340	10,897
2020	11,994	5,176	17,170
2021	4,648	3,627	8,275
2022	13,430	7,089	20,519
2023	14,907	10,093	25,000
2024	16,040	10,744	26,784
Total	125,327	76,321	201,648

- Annually maintained perimeter, timber management zone, and annual burn plan firelines for prescribed fire and wildfire mitigation.
- Performed annual maintenance of 82 miles of internal roads open to the public during public hunts, this included grading, adding new material, filling potholes, and replacing culverts, as necessary. An additional 162 miles of secondary roads are maintained annually for staff to perform land management and water resource management activities.
- Each year, provided mowing of 270 miles of roads and trails totaling 1,035 acres in the spring, summer, and fall.
- A total of 3,933 feral hogs were removed through various methods and are summarized in the table below:

Green Swamp Wilderness Preserve Feral Hog Removal Data			
Fiscal Year	Green Swamp East and Hampton	Green Swamp West	Annual Total
2015	428	226	654
2016	272	274	546
2017	203	133	336
2018	259	205	464
2019	306	83	389
2020	209	121	330
2021	225	112	337
2022	158	155	313
2023	143	157	300
2024	172	92	264
Total	2,375	1,558	3,933

- Conducted 17 timber harvests in accordance with the timber management objectives for the Preserve which resulted in 3,228 acres harvested which generated \$1,926,657 in revenue.

Green Swamp Wilderness Preserve Timber Harvest Data (2014-2023)					
Year	Stand Name	Tract	Harvest	Revenue	Acres
2014	Triangle	Green Swamp West	First	\$96,789.97	150
2015	Cumpressco East	Green Swamp East	First	\$147,123.25	257
2015	Cumpressco	Green Swamp West	First	\$91,620.70	125
2015	Landing Strip	Green Swamp West	First	\$175,721.47	170
2015	North Field	Green Swamp West	First	\$154,422.32	248
2016	Fire Tower	Green Swamp East	First	\$11,495.63	28
2017	Micaloney	Green Swamp East	First	\$413,237.19	522
2017	WRB	Green Swamp West	First	\$71,889.24	120
2018	Hampton	Hampton	First	\$321,115.49	600
2020	Micaloney	Green Swamp East	Clearcut	\$81,503.52	200
2020	Peanut	Green Swamp East	Second	\$20,062.00	43
2020	Railroad East	Green Swamp East	Second	\$46,492.07	196
2021	Railroad Track	Green Swamp East	Second	\$18,986.40	50
2021	Mennonite	Green Swamp West	Second	\$24,412.14	42
2023	Island Pond	Green Swamp East	Second	\$94,227.00	125
2023	Powder	Green Swamp East	Second	\$73,021.00	114
2023	Smith Place	Green Swamp East	Selection	\$84,538.00	238
Total		--	--	\$1,926,657.39	3,228

- Treated over 983 acres of more than 30 different invasive plant species including cogon grass, Japanese and Old World climbing fern, tropical soda apple, skunk vine, Ceasar weed and camphor tree. This includes both spot treatments and broadcast.

Green Swamp Wilderness Preserve - Invasive Plant Treatment History (acres)			
Fiscal Year	Green Swamp East	Green Swamp West	Annual Total
2015	41.75	70.75	113
2016	136.5	48.75	185
2017	27.75	67.95	96
2018	25.9	51.25	77
2019	40.5	79.75	120
2020	35	68.875	104
2021	17.75	34.85	53
2022	20.75	60.1	81
2023	44	111.25	155
Total	390	594	983

- Conducted 4,561 acres of habitat management and restoration projects using mechanical (roller chopping/hydro-axing) and chemical techniques to improve habitat and restore natural communities throughout the Preserve.

Green Swamp Wilderness Preserve Habitat Management History (acres)				
Fiscal Year	Green Swamp East	Hampton	Green Swamp West	Annual Total
2015	301	-	-	301
2016	646	-	213	859
2017	-	279	110	389
2018	366	269	140	775
2019	277	-	-	277
2020	205	-	-	205
2021	-	-	-	0
2022	-	-	705	705
2023	-	-	700	700
2024	-	350	-	0
Total	1,795	898	1,868	4,561

- Planted 626 acres of longleaf pine seedlings on restoration sandhill sites at Green Swamp West.

Water Resources

- Routine maintenance is conducted on existing culverts and low water crossings to ensure that the existing hydrologic flow conditions are protected.

Recreation

- Redesigned main entrance signs to include new District conservation land logo. The associated kiosk maps were also redesigned to align with the new entrance signs and include confidence markers on the trail maps.
- Improved trail marking system of the recreational trails to include Carsonite markers with reflective numbers that correlate to the trail map.
- The Preserve has provided opportunities for multiple types of camping for visitors. Since 2017, 39,797 camping reservations have been made at the campgrounds. The table below illustrates the breakdown of camping reservations provided at each Tract within the Preserve. (2015-2016 camping reservation data corrupt)

Fiscal Year	Green Swamp East	Green Swamp West	Hampton	Total
2017	337	4,194	1,159	5,690
2018	159	1,827	503	2,489
2019	312	2,346	842	3,500
2020	297	3,277	1,365	4,939
2021	541	4,570	2,267	7,378
2022	397	3,932	2,128	6,457
2023	352	3,394	1,674	5,420
2024	216	2,493	1,215	3,924
Total	2,611	26,033	11,153	39,797

- Over the past 10 years, volunteers have spent approximately 14,600 hours dedicating their time to assist with trail maintenance, trash cleanup, amenities maintenance, and invasive plant control. The current estimated national value of each volunteer hour is valued at \$33.49 per hour. Overall, this equates to roughly \$488,954 in contributions to work on the Preserve.
- The Preserve, through FWCs managed hunts, provided 162,214 man-days of hunting over the past 10 years (table below). Of that, 141,765 man-days occurred on the Green Swamp WMA and 20,449 man-days occurred on the Green Swamp West WMA.

Green Swamp Wilderness Preserve- WMA Hunting Data (Man-days)			
Fiscal Year	Green Swamp WMA	Green Swamp West WMA	Total
2014-2015	16,671	2,333	19,004
2015-2016	15,989	2,208	18,197
2016-2017	14,721	2,814	17,535
2017-2018	14,418	1,696	16,114
2018-2019	14,226	1,804	16,030
2019-2020	11,850	1,776	13,626
2020-2021	12,978	1,796	14,774
2021-2022	13,012	2,000	15,012
2022-2023	13,682	1,982	15,664
2023-2024	14,218	2,040	16,258
Total	141,765	20,449	162,214

Real Estate and Land Acquisition

- Over the last 10 years, the District has sold a total of seven parcels for approximately 1,398 acres through the Biennial Surplus Lands Assessment process. Along with the sale of these parcels, the District also reserved a less than fee interest in the form of a conservation easement.

Administration

- Authorized 69 SUAs for access, special events, hunting, recreation, research and education, and training.
- Maintained license agreements for six separate apiary sites throughout the Preserve.
- Maintained a total of four cattle leases within the Preserve for a total of 2,885 acres.

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Appendix A - Plant list

PLANT SPECIES KNOWN TO OCCUR OR LIKELY TO OCCUR

Common Name	Scientific Name
Adam's Needle	<i>Yucca filamentosa</i>
Air Potato	<i>Dioscorea bulbifera</i>
Airplant	<i>Tillandsia</i> sp.
Alligator Weed	<i>Alternanthera philoxeroides</i>
Alligator flag	<i>Thalia geniculata</i>
Alligatorlily	<i>Hymenocallis palmeri</i>
American Beautyberry	<i>Callicarpa americana</i>
American Bluehearts	<i>Buchnera americana</i>
American Cupscale	<i>Sacciolepis striata</i>
American Elm	<i>Ulmus americana</i>
American Hornbeam	<i>Carpinus caroliniana</i> var. <i>caroliniana</i>
American Pokeweed	<i>Phytolacca rigida</i>
American Strawberrybush	<i>Euonymus americanus</i>
American Waterfern	<i>Azolla caroliniana</i>
American Waterhorehound	<i>Lycopus americanus</i>
American Wisteria	<i>Wisteria frutescens</i> var. <i>frutescens</i>
Arrowfeather Threeawn	<i>Aristida purpurascens</i>
Arrowhead	<i>Sagittaria</i> sp.
Ash	<i>Fraxinus</i> sp.
Asian Sword Fern	<i>Nephrolepis brownii</i>
Aster	<i>Symphotrichum</i> sp.
Atlantic Blue-Eyed Grass	<i>Sisyrinchium atlanticum</i>
Atlantic St. John's Wort	<i>Hypericum tenuifolium</i>
Auricled spleenwort	<i>Asplenium erosum</i>
Axilflower	<i>Mecardonia</i> sp. (<i>acuminata</i> var. <i>acuminata</i> / <i>acuminata</i> var. <i>peninsularis</i>)
Bahama Wild Coffee	<i>Psychotria ligustrifolia</i>
Bahiagrass	<i>Paspalum notatum</i>
Balbis' Airplant	<i>Tillandsia balbisiana</i>
Bald Cypress	<i>Taxodium distichum</i>
Baldwin's Beaksedge	<i>Rhynchospora baldwinii</i>
Baldwin's Eryngo	<i>Eryngium baldwinii</i>
Baldwin's Flatsedge	<i>Cyperus croceus</i>
Baldwin's Milkwort	<i>Polygala balduinii</i>
Baldwin's Spikerush	<i>Eleocharis baldwinii</i>
Ballmoss	<i>Tillandsia recurvata</i>
Bandana-Of-The-Everglades	<i>Canna flaccida</i>

Bartram's Air-Plant	<i>Tillandsia bartramii</i>
Bartram's Rosegentian	<i>Sabatia decandra</i>
Basketgrass	<i>Oplismenus</i> sp.
Bay	<i>Persea</i> sp.
Bay Lobelia	<i>Lobelia feayana</i>
Beach False Foxglove	<i>Agalinis fasciculata</i>
Beaked Cornsalad	<i>Valerianella radiata</i>
Beaked Panicum	<i>Coleataenia anceps</i>
Beaksedge	<i>Rhynchospora filifolia</i> , <i>Rhynchospora harperi</i>
Beaksedge	<i>Rhynchospora</i> sp.
Bearded Grass-Pink	<i>Calopogon barbatus</i>
Beardtongue	<i>Penstemon</i> sp.
Bedstraw	<i>Galium</i> sp.
Bedstraw	<i>Galium tinctorium</i>
Bedstraw St. John's Wort	<i>Hypericum galioides</i>
Beggarticks	<i>Bidens alba</i> var. <i>radiata</i>
Beggarticks	<i>Bidens</i> sp.
Bermudagrass	<i>Cynodon dactylon</i>
Big Carpetgrass	<i>Axonopus furcatus</i>
Big Floatingheart	<i>Nymphoides aquatica</i>
Big Threeawn	<i>Aristida condensata</i>
Birdbill Woodoats	<i>Chasmanthium ornithorhynchum</i>
Bitternut Hickory	<i>Carya cordiformis</i>
Blackberry	<i>Rubus</i> sp.
Blackeyed Susan	<i>Rudbeckia hirta</i>
Blackgum	<i>Nyssa sylvatica</i>
Blackroot	<i>Pterocaulon pycnostachyum</i>
Bladderwort	<i>Utricularia</i> sp.
Blazing Star	<i>Liatris</i> sp.
Blue Huckleberry	<i>Gaylussacia tomentosa</i>
Blue Maidencane	<i>Amphicarpum muehlenbergianum</i>
Blue Mistflower	<i>Conoclinium coelestinum</i>
Blueberry	<i>Vaccinium</i> sp.
Bluecurls	<i>Trichostema</i> sp.
Blue-Eyed Grass	<i>Sisyrinchium</i> sp.
Bluejack Oak	<i>Quercus incana</i>
Bluestem	<i>Andropogon</i> sp.

Bluestem	Andropogon glomeratus
Bluestem	Schizachyrium sp.
Bluestem Palmetto	Sabal minor
Bog White Violet	Viola lanceolata
Bogbutton	Lachnocaulon sp.
Bottlebrush Threeawn	Aristida spiciformis var. spiciformis
Brace's Aster	Symphyotrichum carolinianum
Britton's Beargrass	Nolina brittoniana
Broadleaf Cattail	Typha latifolia
Broadleaf Pondlily	Nuphar advena
Brome	Bromus sp.
Bulltongue Arrowhead	Sagittaria lancifolia
Bulltongue Arrowhead	Sagittaria lancifolia var. lancifolia
Bully	Sideroxylon sp.
Bulrush	Scirpus sp.
Bunched Beaksedge	Rhynchospora cephalantha var. cephalantha
Bunched Beaksedge	Rhynchospora microcephala
Buttercup	Ranunculus sp.
Butterweed	Packera glabella
Butterwort	Pinguicula sp.
Cabbage Palm	Sabal palmetto
Caesar's Weed	Urena lobata
Calloose Grape	Vitis shuttleworthii
Camphor Tree	Camphora officinarum
Camphorweed	Heterotheca subaxillaris
Camphorweed	Pluchea sp.
Canadian Blacksnakeroot	Sanicula canadensis
Canadian Germander	Teucrium canadense
Canadian Germander	Teucrium sp. (canadense var. canadense / canadense var. hypoleucum)
Canadian Horseweed	Erigeron canadensis / Erigeron pusillus
Canadian Toadflax	Linaria canadensis
Canadian Woodnettle	Laportea canadensis
Candyroot	Polygala nana
Carolina Ash	Fraxinus caroliniana
Carolina Buckthorn	Frangula caroliniana
Carolina Elephantsfoot	Elephantopus carolinianus
Carolina Frostweed	Crocantemum carolinianum
Carolina Holly	Ilex ambigua
Carolina Indigo	Indigofera caroliniana
Carolina Laurelcherry	Prunus caroliniana

Carolina Ponysfoot	Dichondra carolinensis
Carolina Redroot	Lachnanthes caroliniana
Carolina Wild Petunia	Ruellia sp. (caroliniensis / ciliosa)
Carolina Yellow-Eyed Grass	Xyris caroliniana
Carpgrass	Axonopus sp.
Cary's Horned Beaksedge	Rhynchospora cephalantha
Cat Greenbrier	Smilax glauca
Cattail	Typha sp.
Celestial Lily	Nemastylis floridana
Centipede Grass	Eremochloa ophiuroides
Chaffhead	Carphephorus sp.
Chapman's Beaksedge	Rhynchospora chapmanii
Chapman's Gayfeather	Liatriis chapmanii
Chapman's Oak	Quercus chapmanii
Chapman's Skeletongrass	Gymnopogon chapmanianus
Cherry	Prunus sp.
Chestnutleaf Falsecrotton	Caperonia castaneifolia
Chinaberry	Melia azedarach
Chinese Tallow Tree	Triadica sebifera
Cinnamon Fern	Osmundastrum cinnamomeum / Osmundastrum cinnamomeum var. cinnamomeum
Citrus	Citrus sp.
Climbing Aster	Ampelaster carolinianus
Climbing Fetterbush	Pieris phyllireifolia
Climbing Hempvine	Mikania scandens
Climbing Hydrangea	Hydrangea barbara
Club-Moss	Lycopodiella sp.
Clustered Bushmint	Hyptis alata
Clustered Bushmint	Hyptis sp. (alata var. alata / alata var. stenophylla)
Clustered Pellitory	Parietaria praetermissa
Clustered Sedge	Carex glaucescens
Clusterspike False Indigo	Amorpha herbacea var. herbacea
Coast Cockspur	Echinochloa walteri
Coastal Bedstraw	Galium bermudense
Coastal Lovegrass	Eragrostis refracta
Coastal Rosegentian	Sabatia calycina
Coastalplain Chaffhead	Carphephorus corymbosus
Coastalplain Dawnflower	Stylisma patens
Coastalplain Honeycomb-Head	Balduina angustifolia
Coastalplain Milkwort	Polygala setacea

Coastalplain Palafox	<i>Palafoxia integrifolia</i>
Coastalplain St. John's Wort	<i>Hypericum brachyphyllum</i>
Coastalplain Staggerbush	<i>Lyonia fruticosa</i>
Coastalplain Willow	<i>Salix caroliniana</i>
Coastalplain Yellow-Eyed Grass	<i>Xyris ambigua</i>
Cockspur	<i>Echinochloa</i> sp.
Coffeeweed	<i>Senna obtusifolia</i>
Cogongrass	<i>Imperata cylindrica</i>
Colombian Waxweed	<i>Cuphea carthagenensis</i>
Comb Polypody	<i>Pecluma ptilodon</i> var. <i>bourgeauana</i>
Combleaf Mermaidweed	<i>Proserpinaca pectinata</i>
Common Arrowhead	<i>Sagittaria latifolia</i> var. <i>latifolia</i>
Common Boneset	<i>Eupatorium perfoliatum</i>
Common Buttonbush	<i>Cephalanthus occidentalis</i>
Common Chickweed	<i>Stellaria media</i>
Common Dayflower	<i>Commelina diffusa</i>
Common Duckweed	<i>Spirodela polyrhiza</i>
Common Eveningprimrose	<i>Oenothera biennis</i>
Common Lantana	<i>Lantana strigocamara</i>
Common Persimmon	<i>Diospyros virginiana</i>
Common Ragweed	<i>Ambrosia artemisiifolia</i>
Common Sneezeweed	<i>Helenium autumnale</i>
Common Wild-Pine	<i>Tillandsia</i> sp. (<i>fasciculata</i> var. <i>clavispica</i> / <i>fasciculata</i> var. <i>densispica</i>)
Common Yellow Stargrass	<i>Hypoxis curtisii</i>
Coral Ardisia	<i>Ardisia crenata</i>
Coral Greenbrier	<i>Smilax walteri</i>
Coralbean	<i>Erythrina herbacea</i>
Cordgrass	<i>Spartina</i> sp.
Corkscrew Threawn	<i>Aristida gyrans</i>
Cottonleaf Goldenaster	<i>Chrysopsis gossypina</i>
Cottonweed	<i>Froelichia</i> sp. (<i>floridana</i> var. <i>floridana</i> / <i>floridana</i> var. <i>pallescens</i>)
Crabgrass	<i>Digitaria</i> sp.
Crapemyrtle	<i>Lagerstroemia indica</i>
Creeping Bramble Fern	<i>Hypolepis repens</i>
Creeping Cucumber	<i>Melothria pendula</i>
Creeping Eryngo	<i>Eryngium prostratum</i>
Creeping Little Bluestem	<i>Schizachyrium stoloniferum</i>
Creeping Primrosewillow	<i>Ludwigia repens</i>
Croton	<i>Croton</i> sp.
Crownbeard	<i>Verbesina</i> sp.

Crowngrass	<i>Paspalum</i> sp.
Cup Lichen	<i>Cladonia leporina</i>
Cupscale	<i>Saccharum</i> sp.
Cupscale	<i>Sacciolepis</i> sp.
Cutthroatgrass	<i>Coleataenia abscissa</i>
Cypress	<i>Taxodium</i> sp.
Cypress Witchgrass	<i>Dichanthelium dichotomum</i>
Dahoon	<i>Ilex cassine</i>
Danglepod	<i>Sesbania herbacea</i>
Darrow's Blueberry	<i>Vaccinium darrowii</i>
Dawnflower	<i>Stylisma</i> sp.
Deerberry	<i>Vaccinium stamineum</i>
Denseflower Knotweed	<i>Persicaria densiflora</i>
Devil's Grandmother	<i>Elephantopus tomentosus</i>
Devil's Walkingstick	<i>Aralia spinosa</i>
Dewflower	<i>Murdannia</i> sp.
Dock	<i>Rumex</i> sp.
Dogfennel	<i>Eupatorium capillifolium</i>
Dogtongue Wild Buckwheat	<i>Eriogonum tomentosum</i>
Dollarleaf	<i>Rhynchosia reniformis</i>
Dotted Duckweed	<i>Landoltia punctata</i>
Dotted Smartweed	<i>Persicaria punctata</i>
Downy Milkpea	<i>Galactia volubilis</i>
Drug Fumitory	<i>Fumaria officinalis</i>
Duckweed	<i>Lemna</i> sp.
Durban Crowfootgrass	<i>Dactyloctenium aegyptium</i>
Dwarf Bayberry	<i>Morella pumila</i>
Dwarf Huckleberry	<i>Gaylussacia dumosa</i>
Dwarf Live Oak	<i>Quercus minima</i>
Dwarf St. John's Wort	<i>Hypericum</i> sp. (<i>mutilum</i> var. <i>latisepalum</i> / <i>mutilum</i> var. <i>mutilum</i>)
Dwarf Sundew	<i>Drosera brevifolia</i>
Earleaf Greenbrier	<i>Smilax auriculata</i>
Early Paspalum	<i>Paspalum praecox</i>
Early Whitetop Fleabane	<i>Erigeron vernus</i>
Eastern Gamagrass	<i>Tripsacum dactyloides</i> var. <i>dactyloides</i>
Eastern Poison Ivy	<i>Toxicodendron radicans</i> var. <i>radicans</i>
Eastern Poison Oak	<i>Toxicodendron radicans</i>
Eastern Purple Bladderwort	<i>Utricularia purpurea</i>
Eastern Red Cedar	<i>Juniperus virginiana</i>
Eastern Wild Black Cherry	<i>Prunus serotina</i> var. <i>serotina</i>
Ebony Spleenwort	<i>Asplenium platyneuron</i>

Egyptian Paspalidium	<i>Paspalidium geminatum</i>
Elephant Ear	<i>Xanthosoma sagittifolium</i>
Elephantsfoot	<i>Elephantopus</i> sp.
Elliott's Aster	<i>Symphotrichum elliotii</i>
Elliott's Blueberry	<i>Vaccinium elliotii</i>
Elliott's Bluestem	<i>Andropogon gyrans</i>
Elliott's Lovegrass	<i>Eragrostis elliotii</i>
Elliott's Milkpea	<i>Galactia elliotii</i>
Elliott's Yellow-Eyed Grass	<i>Xyris elliotii</i>
Elm	<i>Ulmus</i> sp.
Erectleaf Witchgrass	<i>Dichantherium erectifolium</i>
Eryngo	<i>Eryngium</i> sp.
Evans' Reindeer Lichen	<i>Cladonia evansii</i>
Evergreen Bayberry	<i>Morella caroliniensis</i>
Everlasting	<i>Gamochaeta</i> sp.
Fairy Beaksedge	<i>Rhynchospora pusilla</i>
False Foxglove	<i>Agalinis</i> sp.
False Nettle	<i>Boehmeria cylindrica</i>
Falsefennel	<i>Eupatorium leptophyllum</i>
Fanpetals	<i>Sida</i> sp.
Fascicled Beaksedge	<i>Rhynchospora fascicularis</i>
Fascicled Beaksedge	<i>Rhynchospora</i> sp. (<i>distans</i> / <i>fascicularis</i>)
Fernald's Beaksedge	<i>Rhynchospora fernaldii</i>
Fernleaf Yellow False Foxglove	<i>Aureolaria pectinata</i>
Fetterbush	<i>Lyonia lucida</i>
Fewflower Milkweed	<i>Asclepias lanceolata</i>
Fimbry	<i>Fimbristylis</i> sp.
Fingergrass	<i>Eustachys</i> sp.
Fireweed	<i>Erechtites hieraciifolius</i>
Fivefingers	<i>Syngonium podophyllum</i>
Flatsedge	<i>Cyperus</i> sp.
Flattened Pipewort	<i>Eriocaulon compressum</i>
Flattop Mille Graines	<i>Oldenlandia corymbosa</i>
Fleabane	<i>Erigeron</i> sp.
Floating Bladderwort	<i>Utricularia inflata</i>
Floating Marshpennywort	<i>Hydrocotyle ranunculoides</i>
Florida Air-Plant	<i>Tillandsia simulata</i>
Florida Bully	<i>Sideroxylon reclinatum</i> ssp. <i>reclinatum</i>
Florida Bully	<i>Sideroxylon reclinatum</i> subsp. <i>reclinatum</i>
Florida Butterfly Orchid	<i>Encyclia tampensis</i>
Florida Clover Ash	<i>Micranthemum glomeratum</i>

Florida Dewberry	<i>Vaccinium stamineum</i> var. <i>caesium</i>
Florida Elm	<i>Ulmus americana</i> var. <i>floridana</i>
Florida Greeneyes	<i>Berlandiera subacaulis</i>
Florida Hoary-Pea	<i>Tephrosia florida</i>
Florida Indian-Plantain	<i>Arnoglossum floridanum</i>
Florida Jack-In-The-Pulpit	<i>Arisaema acuminatum</i>
Florida Keys Hempvine	<i>Mikania cordifolia</i>
Florida Milkpea	<i>Galactia floridana</i>
Florida Milkweed	<i>Asclepias feayi</i>
Florida Mudmidget	<i>Wolffiella gladiata</i>
Florida pygmy-pipes	<i>Monotropis reynoldsiae</i>
Florida Spiny-Pod	<i>Matelea floridana</i>
Florida Tick-Trefoil	<i>Desmodium floridanum</i>
Florida Yellow Flax	<i>Linum floridanum</i>
Flowering Dogwood	<i>Benthamedia florida</i>
Forest Bedstraw	<i>Galium hispidulum</i>
Fourleaf Vetch	<i>Vicia acutifolia</i>
Fourpetal St. John's Wort	<i>Hypericum tetrapetalum</i>
Foxtail	<i>Setaria</i> sp.
Fringed Beaksedge	<i>Rhynchospora ciliaris</i>
Fringed Meadowbeauty	<i>Rhexia petiolata</i>
Fringed Nutrush	<i>Scleria ciliata</i>
Fringed Yellow Stargrass	<i>Hypoxis juncea</i>
Frog's Bit	<i>Limnobium spongia</i>
Gallberry	<i>Ilex glabra</i>
Giant Bristlegrass	<i>Setaria magna</i>
Giant Ironweed	<i>Vernonia gigantea</i>
Giant Leather Fern	<i>Acrostichum danaeifolium</i>
Giant Orchid	<i>Pteroglossaspis ecristata</i>
Giant Sedge	<i>Carex gigantea</i>
Glade Lobelia	<i>Lobelia glandulosa</i>
Glaucous Knotweed	<i>Polygonum glaucum</i>
Globe Beaksedge	<i>Rhynchospora globularis</i>
Goat's Rue	<i>Tephrosia virginiana</i>
Godfrey's Sedge	<i>Carex godfreyi</i>
Golden Polypody	<i>Phlebodium aureum</i>
Golden Trumpet	<i>Allamanda cathartica</i>
Goldenaster	<i>Chrysopsis</i> sp.
Goldenrod	<i>Solidago</i> sp.
Gopher Apple	<i>Geobalanus oblongifolius</i>
Gourd	<i>Cucurbita</i> sp.

Grassleaf Rush	Juncus sp. (biflorus / marginatus)
Grassy Arrowhead	Sagittaria graminea
Gray's Beaksedge	Rhynchospora grayi
Greater Marsh St. John's Wort	Triadenum walteri
Green Ash	Fraxinus pennsylvanica
Green Flatsedge	Cyperus virens
Green Fly Orchid	Epidendrum conopseum
Greenbrier	Smilax sp.
Greeneyes	Berlandiera sp.
Groundcherry	Physalis sp.
Groundnut	Apios americana
Groundsel Tree	Baccharis halimifolia
Hairsedge	Bulbostylis sp.
Hairsedge	Bulbostylis sp. (ciliatifolia / coarctata)
Hairy Bedstraw	Galium pilosum
Hairy Bedstraw	Galium sp. (orizabense ssp. laevicaule / pilosum)
Hairy Bittercress	Cardamine hirsuta
Hairy Indigo	Indigofera hirsuta
Hairy Lespedeza	Lespedeza hirta
Hairy Lespedeza	Lespedeza sp. (hirta var. curtissii / hirta var. hirta)
Hairy Needle-Leaved Witchgrass	Dichanthelium filirimum
Hairy Smartweed	Persicaria hirsuta
Hammock rein orchid	Habenaria distans
Hammock Snakeroot	Ageratina jucunda
Handsome Harry	Rhexia virginica
Haspan Flatsedge	Cyperus haspan
Hawkweed	Hieracium sp.
Hawthorn	Crataegus sp.
Heartleaf Nettle	Urtica chamaedryoides
Heartleaf Peppervine	Ampelopsis cordata
Heartseed	Cardiospermum microcarpum
Hedgehyssop	Gnaphalium sp.
Helmet Skullcap	Scutellaria integrifolia
Herb-Of-Grace	Bacopa monnieri
Hercules' Club	Zanthoxylum clava-herculis
Hickory	Carya sp.
Highbush Blueberry	Vaccinium corymbosum
Hoary Skullcap	Scutellaria incana var. australis
Hoary-Pea	Tephrosia sp.
Hog Plum	Ximenia americana
Honeycomb-Head	Balduina sp.

Hooded Pitcherplant	Sarracenia minor var. minor
Horned Beaksedge	Rhynchospora sp. (careyana / corniculata)
Horned Beaksedge	Rhynchospora sp. (careyana / inundata)
Hornpod	Mitreola sp.
Hottentot Fern	Cyclosorus interruptus
Huckleberry	Gaylussacia sp. (nana / tomentosa)
Indian Woodoats	Chasmanthium latifolium
Indigo	Indigofera sp.
Indigobush	Amorpha sp.
Iris	Iris sp.
Itchgrass	Rottboellia cochinchinensis
Japanese Climbing Fern	Lygodium japonicum
Japanese Redtip	Photinia pyrifolia
Lady Lupine	Lupinus villosus
Lanceleaf Greenbrier	Smilax smallii
Large Gallberry	Ilex coriacea
Largeflower Rosegentian	Sabatia grandiflora
Largeleaf Marshpennywort	Hydrocotyle bonariensis
Latexplant	Araujia odorata
Laurel Greenbrier	Smilax laurifolia
Laurel Oak	Quercus hemisphaerica
Laurel Oak	Quercus sp. (hemisphaerica / laurifolia)
Lax Hornpod	Mitreola petiolata
Leaf-Flower	Phyllanthus tenellus
Leafless Beaked Ladies-tresses	Sacoila lanceolata
Leavenworth's Tickseed	Coreopsis leavenworthii
Lemon Bacopa	Bacopa caroliniana
Lespedeza	Lespedeza sp.
Lesser Creeping Rush	Juncus repens
Licoriceweed	Scoparia dulcis
Limestone Sandmat	Euphorbia blodgettii
Little Duckweed	Lemna obscura
Little Floatingheart	Nymphoides cordata
Littlehead Nutrush	Scleria oligantha
Live Oak	Quercus sp. (geminata / virginiana)
Live Oak	Quercus sp. (minima / virginiana)
Live Oak	Quercus virginiana
Lizard's Tail	Saururus cernuus
Loblolly Bay	Gordonia lasianthus
Loblolly Pine	Pinus taeda
Long Strap Fern	Campyloneurum phyllitidis

Longhair Sedge	Carex comosa
Longleaf Camphorweed	Pluchea longifolia
Longleaf Milkweed	Asclepias longifolia
Longleaf Pine	Pinus palustris
Longleaf Threeawn	Aristida palustris
Longleaf Woodoats	Chasmanthium sessiliflorum var. sessiliflorum
Long-Leaved Panicum	Coleataenia longifolia
Long's Sedge	Carex longii
Loosehead Beaksedge	Rhynchospora chalarocephala
Lopsided Indiangrass	Sorghastrum secundum
Lovegrass	Eragrostis sp.
Lupine	Lupinus sp.
Lyreleaf Sage	Salvia lyrata
Mahogany Mistletoe	Phoradendron rubrum
Maid Marian	Rhexia nashii
Maidencane	Hymenachne hemitoma
Manyflower Beardtongue	Penstemon multiflorus
Manyflower Marshpennywort	Hydrocotyle umbellata
Manyspike Flatsedge	Cyperus polystachyos
Marsh Fern	Thelypteris palustris var. pubescens
Marsh Seedbox	Ludwigia palustris
Marsh St. John's Wort	Triadenum sp.
Marshpennywort	Hydrocotyle sp.
Meadowbeauty	Rhexia sp.
Melaleuca tree	Melaleuca quinquenervia
Mexican Clover	Richardia sp.
Mexican Petunia	Ruellia simplex
Mexican Prickly-Poppy	Argemone mexicana
Mexican Tea	Dysphania ambrosioides / Dysphania anthelmintica
Michaux's Croton	Croton michauxii
Mild Waterpepper	Persicaria hydropiperoides
Mile-A-Minute Vine	Ipomoea cairica
Milkpea	Galactia sp. (brachypoda / regularis / volubilis)
Milkpea	Galactia sp. (fasciculata / floridana / pinetorum / regularis / volubilis)
Milkwort	Polygala sp.
Millet Beaksedge	Rhynchospora miliacea
Mock Bishopsweed	Ptilimnium capillaceum
Mockernut Hickory	Carya tomentosa
Mohr's Thoroughwort	Eupatorium mohrii
Mohr's Thoroughwort	Eupatorium sp. (mohrii / recurvans)

Morning Glory	Ipomoea sp.
Muhly	Muhlenbergia sp.
Mulberry	Morus sp.
Muscadine	Muscadinia rotundifolia var. munsoniana / Muscadinia rotundifolia var. pygmaea / Muscadinia rotundifolia var. rotundifolia
Myrsine	Myrsine cubana
Myrtle Oak	Quercus myrtifolia
Myrtleleaf St. John's Wort	Hypericum myrtifolium
Narrow Pipewort	Eriocaulon lineare
Narrow Plumegrass	Erianthus strictus
Narrowfruit Horned Beaksedge	Rhynchospora inundata
Narrowleaf Bluestem	Andropogon perangustatus
Narrowleaf Primrosewillow	Ludwigia linearis
Narrowleaf Silkgrass	Pityopsis graminifolia
Narrowleaf Sunflower	Helianthus angustifolius
Nash's Blue-Eyed Grass	Sisyrinchium nashii
Natal Grass	Melinis repens ssp. repens
Needle Rush	Juncus roemerianus
Needleleaf Witchgrass	Dichantherium aciculare
Needlepod Rush	Juncus sp. (scirpoides var. compositus / scirpoides var. scirpoides)
Netted Chain Fern	Lorinseria areolata
Netted Nutrush	Scleria reticularis
Netted Pawpaw	Asimina reticulata
Nightshade	Solanum sp.
Nutrush	Scleria sp.
Nuttall's Meadowbeauty	Rhexia nuttallii
Nuttall's Thistle	Cirsium nuttallii
Oak	Quercus sp.
Oak	Quercus sp. (inopina / myrtifolia)
Oakleaf Fleabane	Erigeron quercifolius
Obedient Plant	Phytolacca americana
Oblongleaf Twinflower	Dyschoriste oblongifolia
Ogeechee Tupelo	Nyssa ogeche
Old World Climbing Fern	Lygodium microphyllum
Oldenlandia	Edrastima uniflora
Old-Man's Cap	Polycarpha corymbosa
Openflower Witchgrass	Dichantherium laxiflorum
Oppositeleaf Spotflower	Acmella repens
Orange Milkwort	Polygala lutea
Oriental False Hawksbeard	Youngia japonica

Pale Meadowbeauty	Rhexia mariana
Pale Meadowbeauty	Rhexia mariana var. mariana
Pan American Balsamscale	Elionurus tripsacoides
Panic Grass	Panicum sp.
Parrot Feather Water Milfoil	Myriophyllum aquaticum
Partridge Pea	Chamaecrista fasciculata
Partridge Pea	Chamaecrista sp. (fasciculata var. brachiata / fasciculata var. fasciculata)
Partridgeberry	Mitchella repens
Paw Paw	Asimina spatulata
Pawpaw	Asimina sp.
Peelbark St. John's Wort	Hypericum fasciculatum
Pellitory	Parietaria sp. (floridana / praetermissa)
Pennsylvania Bittercress	Cardamine pensylvanica
Pennsylvania Everlasting	Gamochaeta pensylvanica
Peppervine	Nekemias arborea
Peruvian Primrosewillow	Ludwigia peruviana
Phlox	Phlox sp.
Pickernelweed	Pontederia cordata
Pickernelweed	Pontederia sp. (cordata var. cordata / cordata var. lancifolia)
Piedmont Marshelder	Iva microcephala
Piedmont Primrosewillow	Ludwigia arcuata
Piedmont Roseling	Cuthbertia rosea
Pignut Hickory	Carya glabra
Pine	Pinus sp. (elliottii / palustris)
Pine lily	Lilium catesbaei
Pinebarren Flatsedge	Cyperus ovatus
Pinebarren Frostweed	Crocantemum corymbosum
Pinebarren Goldenrod	Solidago fistulosa
Pineland Chaffhead	Litrisa carnosa
Pineland Daisy	Chaptalia tomentosa
Pineland Flatsedge	Cyperus retrorsus
Pineland Lobelia	Lobelia homophylla
Pineland Water-Willow	Justicia angusta
Pineland Wild Indigo	Baptisia lecontei
Pinewoods Milkweed	Asclepias humistrata
Pineywoods Dropseed	Sporobolus junceus
Pink Sundew	Drosera capillaris
Pink Woodsorrel	Oxalis debilis
Pink-Tassels	Dalea carnea
Pinweed	Lechea sp.

Pinewoods bluestem	Andropogon arctatus
Pipewort	Eriocaulon sp.
Pitcherplant	Sarracenia sp.
Pitted Nutrush	Scleria muehlenbergii
Plume Polypody	Pecluma plumula
Plumed Beaksedge	Rhynchospora plumosa
Pond Cypress	Taxodium ascendens
Pondlily	Nuphar sp.
Ponysfoot	Dichondra sp.
Poor Joe	Hexasepalum teres
Poorland Flatsedge	Cyperus compressus
Possumhaw	Viburnum nudum
Post Oak	Quercus stellata
Povertygrass	Danthonia spicata
Pricklypear	Opuntia sp.
Pricklypear	Opuntia sp. (austrina / mesacantha ssp. lata)
Primroseleaf Violet	Viola primulifolia
Primrosewillow	Ludwigia sp.
Prostrate False Buttonweed	Spermacoce ocyroides
Purple Bluestem	Andropogon cretaceus
Purple Passion-Flower	Passiflora incarnata
Purple Thistle	Cirsium sp. (horridulum var. horridulum / horridulum var. vittatum)
Queen's Delight	Stillingia sp. (sylvatica / tenuis)
Queen's Delight	Stillingia sylvatica
Quill-Leaf Airplant	Tillandsia fasciculata var. densispica
Rabbitbells	Crotalaria rotundifolia
Rabbitbells	Crotalaria sp.
Rattan Vine	Berchemia scandens
Red Bay	Tamala borbonica / Tamala palustris
Red Chokeberry	Aronia arbutifolia
Red Maple	Acer rubrum
Red Mulberry	Morus rubra
Redtop Panicum	Coleataenia rigidula
Reindeer Lichen	Cladonia subtenuis
Resurrection Fern	Pleopeltis michauxiana
Rose Rush	Lygodesmia aphylla
Rosegentian	Sabatia sp.
Rosemallow	Hibiscus sp.
Rose-Of-Plymouth	Sabatia stellaris
Rosy Camphorweed	Pluchea baccharis

Rougeplant	Rivina humilis
Rough Barnyardgrass	Echinochloa muricata
Rough Boneset	Eupatorium pilosum
Rough Hedgehyssop	Sophronanthe hispida
Rough Witchgrass	Dichanthelium leucothrix
Roughleaf Dogwood	Swida asperifolia
Roundleaf Bluet	Houstonia procumbens
Roundleaf Greenbrier	Smilax rotundifolia
Roundleaf Thoroughwort	Eupatorium rotundifolium
Roundpod St. John's Wort	Hypericum cistifolium
Royal Fern	Osmunda spectabilis
Runner Oak	Quercus elliotii
Rustweed	Polypremum procumbens
Rusty Staggerbush	Lyonia ferruginea
Saltmarsh Morning Glory	Ipomoea sagittata
Saltmarsh Umbrellasedge	Fuirena breviseta
Saltwort	Salvia azurea
Sand Blackberry	Rubus cuneifolius
Sand Butterfly Pea	Centrosema arenicola
Sand Cordgrass	Spartina bakeri
Sand Croton	Croton glandulosus var. septentrionalis
Sand Live Oak	Quercus geminata
Sand Pine	Pinus clausa
Sand Tick-Trefoil	Desmodium lineatum
Sandgrass	Tripsacum dactyloides
Sandhill Hawthorn	Crataegus lasa var. lasa
Sandhill Pinweed	Lechea torreyi
Sandyfield Beaksedge	Rhynchospora megalocarpa
Sarsaparilla Vine	Smilax pumila
Satintail	Imperata sp. (brasiliensis / cylindrica)
Savanna Iris	Iris savannarum
Savannah Panicum	Phanopyrum gymnocarpon
Savannah Primrosewillow	Ludwigia sp. (maritima / virgata)
Savannah Yellow-Eyed Grass	Xyris flabelliformis
Saw Greenbrier	Smilax bona-nox
Saw Greenbrier	Smilax sp. (bona-nox var. bona-nox / bona-nox var. littoralis)
Saw Palmetto	Serenoa repens
Sawgrass	Cladium jamaicense
Sawtooth Blackberry	Rubus pensilvanicus
Sawtooth Blackberry	Rubus sp. (argutus / pensilvanicus)

Scare-Weed	Baptisia simplicifolia
Scarlet Milkweed	Asclepias curassavica
Scrub Palmetto	Sabal etonia
Scurf Hoary-Pea	Tephrosia chrysophylla
Seaside Primrosewillow	Ludwigia maritima
Sedge	Carex sp.
Sensitive Pea	Chamaecrista nictitans var. nictitans
Sensitive Pea	Chamaecrista sp.
Sensitive Plant	Mimosa sp.
Septicweed	Senna occidentalis
Sesban	Sesbania sp.
Shaggy Hedgehyssop	Sophronanthe pilosa
Shiny Blueberry	Vaccinium myrsinites
Shiny Woodoats	Chasmanthium nitidum
Shoestring Fern	Vittaria lineata
Shortbeak Beaksedge	Rhynchospora nitens
Shortbristle Beaksedge	Rhynchospora galeana
Shortleaf Wild Coffee	Psychotria tenuifolia
Shortleaf Yellow-Eyed Grass	Xyris brevifolia
Shortspike Bluestem	Andropogon brachystachyus
Showy Milkwort	Asemeia grandiflora
Showy Rattlebox	Crotalaria spectabilis
Shrubby Primrosewillow	Ludwigia suffruticosa
Silkgrass	Pityopsis sp.
Silkgrass	Pityopsis sp. (aequilifolia / latifolia / nervosa / tracyi)
Silky Dogwood	Swida amomum
Silver Croton	Croton argyranthemus
Silverling	Baccharis glomeruliflora
Simmonds' Aster	Symphotrichum simmondsii
Skunk Vine	Paederia foetida
Skyrocket	Clerodendrum indicum
Slash Pine	Pinus elliotii
Slash Pine	Pinus sp. (densa / elliotii)
Slender Bluestem	Schizachyrium tenerum
Slender Crabgrass	Digitaria filiformis var. filiformis
Slender Fimbry	Fimbristylis autumnalis
Slender Flattop Goldenrod	Euthamia caroliniana
Slender Scratchdaisy	Croptilon divaricatum
Slender Woodoats	Chasmanthium laxum
Slimleaf Pawpaw	Asimina angustifolia
Slippery Elm	Ulmus rubra

Small Butterwort	<i>Pinguicula pumila</i>
Smallflower Mock Buckthorn	<i>Sageretia minutiflora</i>
Smallflower Pawpaw	<i>Asimina parviflora</i>
Smallfruit Beggarticks	<i>Bidens mitis</i>
Smallhead Doll's Daisy	<i>Boltonia diffusa</i>
Small-Leaved Witchgrass	<i>Dichanthelium ensifolium</i>
Smartweed	<i>Polygonum</i> sp.
Smooth Nutrush	<i>Scleria distans</i>
Smooth Rattlebox	<i>Crotalaria pallida</i> var. <i>obovata</i>
Smooth Sumac	<i>Rhus glabra</i>
Smooth Tick-Trefoil	<i>Desmodium marilandicum</i>
Smutgrass	<i>Sporobolus indicus</i>
Snoutbean	<i>Rhynchosia</i> sp.
Snow Squarestem	<i>Melanthera nivea</i>
Soft Rush	<i>Juncus effusus</i> ssp. <i>solutus</i>
South Florida Little Bluestem	<i>Schizachyrium sanguineum</i>
Southeastern New Jersey Tea	<i>Ceanothus americanus</i> var. <i>intermedius</i>
Southern Arrowwood	<i>Viburnum scabellum</i>
Southern Bayberry	<i>Morella cerifera</i>
Southern Bayberry	<i>Morella cerifera</i> / <i>Morella pumila</i>
Southern Bristly Greenbrier	<i>Smilax hispida</i> var. <i>australis</i>
Southern Cattail	<i>Typha domingensis</i>
Southern Coastal Violet	<i>Viola sororia</i>
Southern Crownbeard	<i>Verbesina virginica</i> var. <i>laciniata</i>
Southern Cutgrass	<i>Leersia hexandra</i>
Southern Dewberry	<i>Rubus trivialis</i>
Southern Grape-Fern	<i>Sceptridium bitematum</i>
Southern Longsedge	<i>Carex lonchocarpa</i>
Southern Magnolia	<i>Magnolia grandiflora</i>
Southern Needleleaf	<i>Tillandsia setacea</i>
Southern Quillwort	<i>Isoetes flaccida</i>
Southern Rattlesnakemaster	<i>Eryngium yuccifolium</i> var. <i>synchaetum</i>
Southern Red Cedar	<i>Juniperus silicicola</i>
Southern Saltmarsh Fleabane	<i>Pluchea odorata</i> var. <i>odorata</i>
Southern Shield Fern	<i>Pelazoneuron kunthii</i>
Southern Umbrellasedge	<i>Fuirena scirpoidea</i>
Southern Umbrellasedge	<i>Fuirena</i> sp. (<i>longa</i> / <i>scirpoidea</i>)
Southern Water Violet	<i>Viola vittata</i>
Southern Wiregrass	<i>Aristida beyrichiana</i>
Southern Wood Fern	<i>Dryopteris ludoviciana</i>

Spadeleaf	<i>Centella erecta</i>
Spanish Moss	<i>Tillandsia usneoides</i>
Spanish Needles	<i>Bidens bipinnata</i>
Sparkleberry	<i>Vaccinium arboreum</i>
Sphagnum Moss	<i>Sphagnum</i> sp.
Spiderlily	<i>Hymenocallis</i> sp.
Spiderwort	<i>Tradescantia</i> sp.
Spiked Hoary-Pea	<i>Tephrosia spicata</i>
Spikerush	<i>Eleocharis</i> sp.
Spiny Sowthistle	<i>Sonchus asper</i>
Spiny-Pod	<i>Matelea</i> sp.
Spotted Beebalm	<i>Monarda punctata</i> var. <i>punctata</i>
Spreading Air-Plant	<i>Tillandsia utriculata</i>
Springtape	<i>Sagittaria kurziana</i>
St. Andrew's Cross	<i>Hypericum hypericoides</i>
St. Augustine Grass	<i>Stenotaphrum secundatum</i>
St. John's Wort	<i>Hypericum</i> sp.
St. Peter's Wort	<i>Hypericum crux-andreae</i>
Staggerbush	<i>Lyonia</i> sp.
Starrush White-Top	<i>Rhynchospora colorata</i>
Stiff Sunflower	<i>Helianthus radula</i>
Stinking Camphorweed	<i>Pluchea foetida</i>
String Lily	<i>Crinum americanum</i>
Sugarberry	<i>Celtis laevigata</i>
Sugarcane Plumegrass	<i>Erianthus giganteus</i>
Summer Farewell	<i>Dalea pinnata</i>
Summer Grape	<i>Vitis</i> sp. (<i>aestivalis</i> var. <i>aestivalis</i> / <i>rufotomentosa</i>)
Sundew	<i>Drosera</i> sp.
Swallow-Wort	<i>Cynanchum</i> sp.
Swamp Bay	<i>Tamala palustris</i>
Swamp Dock	<i>Rumex</i> sp. (<i>fascicularis</i> / <i>floridanus</i> / <i>verticillatus</i>)
Swamp Doghobble	<i>Eubotrys racemosus</i>
Swamp Dogwood	<i>Swida foemina</i>
Swamp Laurel Oak	<i>Quercus laurifolia</i>
Swamp Milkweed	<i>Asclepias perennis</i>
Swamp Milkwort	<i>Polygala balduini</i>
Swamp Rose	<i>Rosa palustris</i>
Swamp Rosemallow	<i>Hibiscus grandiflorus</i>
Swamp Tupelo	<i>Nyssa biflora</i>
Sweet Goldenrod	<i>Solidago odora</i>
Sweet Goldenrod	<i>Solidago odora</i> var. <i>chapmanii</i>

Sweet Tanglehead	Heteropogon melanocarpus
Sweetbay	Magnolia virginiana var. australis
Sweetgum	Liquidambar styraciflua
Sword Fern	Nephrolepis exaltata
Sword Fern	Nephrolepis sp.
Sword Fern	Nephrolepis cordifolia var. cordifolia
Tailed Bracken	Pteridium pseudocaudatum
Tall Elephantsfoot	Elephantopus elatus
Tall Pinebarren Milkwort	Polygala cymosa
Tall Pinebarren Milkwort	Polygala grandiflora
Tapered Witchgrass	Dichanthelium acuminatum
Taperleaf Waterhorehound	Lycopus rubellus
Tapertip Rush	Juncus acuminatus
Tarflower	Bejaria racemosa
Tenangle Pipewort	Eriocaulon decangulare
Tenangle Pipewort	Eriocaulon sp. (decangulare var. decangulare / decangulare var. latifolium)
Thin Paspalum	Paspalum setaceum
Thistle	Cirsium sp.
Thoroughwort	Eupatorium sp.
Threadleaf Arrowhead	Sagittaria filiformis
Threeawn	Aristida sp.
Threeway Sedge	Dulichium arundinaceum var. arundinaceum
Tickseed	Coreopsis sp.
Tick-Trefoil	Desmodium sp.
Titi	Cyrilla sp. (arida / parvifolia / racemiflora)
Toothache Grass	Ctenium aromaticum
Toothed Midsorus Fern	Telmatoblechnum serrulatum
Toothpetal False Rein Orchid	Habenaria floribunda
Torpedo Grass	Panicum repens
Tracy's Beaksedge	Rhynchospora tracyi
Tracy's Bluestem	Andropogon tracyi
Trailing Ratany	Krameria lanceolata
Tread Softly	Cnidocolus stimulosus
Tropical Bushmint	Cantinoa mutabilis
Tropical Resurrection Fern	Pleopeltis polypodioides var. michauxiana
Tropical Soda Apple	Solanum viarum
Trumpet Creeper	Campsis radicans
Trumpet Honeysuckle	Lonicera sempervirens
Tuberous Sword Fern	Nephrolepis cordifolia
Tupelo	Nyssa sp.

Turkey Oak	Quercus laevis
Turkey Tangle Fogfruit	Phyla nodiflora
Vanillaleaf	Trilisa odoratissima / Trilisa subtropicana
Vaseygrass	Paspalum urvillei
Viburnum	Viburnum sp.
Violet	Viola sp.
Viperina	Zornia bracteata
Virginia Buttonweed	Diodia virginiana
Virginia Chain Fern	Anchistea virginica
Virginia Creeper	Parthenocissus quinquefolia
Virginia Marsh St. John's Wort	Triadenum virginicum
Virginia Saltmarsh Mallow	Kosteletzkya pentacarpos
Virginia Willow	Itea virginica
Virginsbower	Clematis virginiana
Walter's Sedge	Carex striata var. striata
Walter's Viburnum	Viburnum obovatum
Warty Panicgrass	Kelloggloa verrucosa
Warty Sedge	Carex verrucosa
Water Cowbane	Tiedemannia filiformis
Water Cowbane	Tiedemannia filiformis ssp. filiformis
Water Hemlock	Cicuta sp. (maculata var. maculata / mexicana)
Water Hyacinth	Oshuna crassipes
Water Locust	Gleditsia aquatica
Water Oak	Quercus nigra
Water Paspalum	Paspalum fluitans
Water Pimpernel	Samolus ebracteatus var. ebracteatus
Water Spangles	Salvinia minima
Water Spangles	Salvinia sp.
Water Toothleaf	Stillingia aquatica
Water Tupelo	Nyssa aquatica
Watercrowngrass	Paspalidium sp.
Watergrass	Bulbostylis barbata
Waterhorehound	Lycopus sp.
Waterhyssop	Bacopa sp.
Water-Lettuce	Pistia stratiotes
Waterspider False Rein Orchid	Habenaria repens
Wavyleaf Noseburn	Tragia urens
Wedelia	Sphagneticola trilobata
West Indian Marsh Grass	Hymenachne amplexicaulis
West Indian Meadowbeauty	Rhexia cubensis
Whip Nutrush	Scleria sp. (flaccida / nitida / triglomerata)

Whip Nutrush	<i>Scleria triglomerata</i>
Whisk Fern	<i>Psilotum nudum</i>
White Ash	<i>Fraxinus americana</i>
White Crownbeard	<i>Verbesina virginica</i>
White Fringe Tree	<i>Chionanthus virginicus</i>
White Mulberry	<i>Morus alba</i>
White Thoroughwort	<i>Eupatorium album</i>
White Waterlily	<i>Nymphaea odorata</i> ssp. <i>odorata</i>
White-Edged Witchgrass	<i>Dichanthelium tenue</i>
Whitehead Bogbutton	<i>Lachnocaulon anceps</i>
Whitemouth Dayflower	<i>Commelina erecta</i> var. <i>angustifolia</i>
Whitestar	<i>Ipomoea lacunosa</i>
Whitotop Aster	<i>Oclemena reticulata</i>
Whitotop Aster	<i>Sericocarpus tortifolius</i>
White-Top Sedge	<i>Rhynchospora latifolia</i>
Whorled Marshpennywort	<i>Hydrocotyle</i> sp. (<i>tribotrys</i> / <i>verticillata</i>)
Wild Coffee	<i>Psychotria nervosa</i>
Wild Indigo	<i>Baptisia</i> sp.
Wild Lime	<i>Zanthoxylum fagara</i>
Wild Olive	<i>Cartrema americanum</i>
Wild Pennyroyal	<i>Piloblephis rigida</i>
Wild Taro	<i>Colocasia esculenta</i>
Willow	<i>Salix</i> sp.

Winged Elm	<i>Ulmus alata</i>
Winged Sumac	<i>Rhus copallinum</i> var. <i>copallinum</i>
Wiry Flatsedge	<i>Cyperus filiculmis</i>
Witchgrass	<i>Dichanthelium</i> sp.
Woodland Lettuce	<i>Lactuca graminifolia</i>
Woodoats	<i>Chasmanthium</i> sp.
Woodsgrass	<i>Oplismenus setarius</i>
Woodsorrel	<i>Oxalis</i> sp.
Woolgrass	<i>Scirpus cyperinus</i>
Woolly Pawpaw	<i>Asimina incana</i>
Wright's Nutrush	<i>Scleria lacustris</i>
Yankeeweed	<i>Eupatorium compositifolium</i>
Yaupon	<i>Ilex vomitoria</i>
Yellow Colic-Root	<i>Aletris lutea</i>
Yellow Hatpins	<i>Syngonanthus flavidulus</i>
Yellow Jessamine	<i>Gelsemium sempervirens</i>
Yellow Milkwort	<i>Polygala rugelii</i>
Yellow Nutgrass	<i>Cyperus esculentus</i>
Yellow Stargrass	<i>Hypoxis</i> sp.
Yellow Waterlily	<i>Nymphaea odorata</i>
Yellow-Eyed Grass	<i>Xyris</i> sp.
Yellowtops	<i>Flaveria</i> sp.
Zarabacoa Comun	<i>Desmodium incanum</i>
Zigzag Bladderwort	<i>Utricularia subulata</i>