LAND MANAGEMENT PLAN

WEEKIWACHEE PRESERVE

SEPT. 24, 2024

Southwest Florida
Water Management District

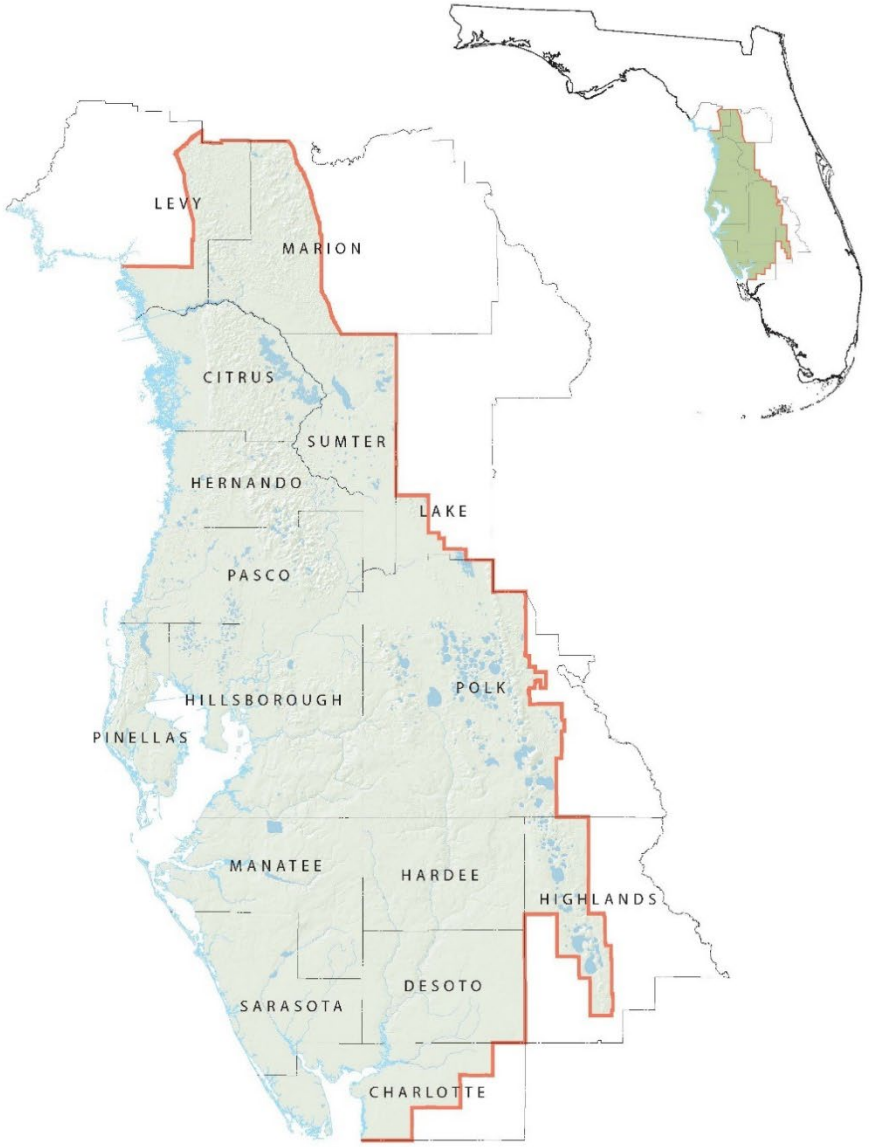
Land Management Plan

Weekiwachee Preserve

Land Resources Bureau
Southwest Florida Water Management District
September 24, 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: Weekiwachee Preserve

Size: 12,821 acres

Acquisition Date(s): 1994-1995

Plan Term: 10 Years (2025-2034)

Primary Basin: Upper Coastal Areas

Secondary Basin(s): Weeki Wachee River, Jenkins Creek-Ricky Creek Frontal, Indian Creek-Hammock Creek Frontal, Fillman Bayou-Sponge Crawl Creek Frontal

Location: Hernando and Pasco Counties

Funding Source: Water Management Lands Trust (Save Our Rivers) Funds, Environmentally Sensitive Lands Program (Hernando County), Penny for Pasco, Preservation 2000, Florida Forever

Partnerships: Florida Department of Environmental Protection (FDEP), Florida Fish and Wildlife Conservation Commission (FWC), Hernando County, Hernando County School Board, Pasco County

Natural Systems: The District uses natural communities as defined by the Florida Natural Areas Inventory (FNAI) to describe habitats of the Weekiwachee Preserve (Preserve). Twenty-six (26) natural communities were identified by FNAI. Wetlands comprise about 69 percent of the Preserve, including several miles adjacent to the Weeki Wachee River. Of the mapped wetland communities, over 41 percent of the Preserve is comprised of hydric hammock communities. Tidal/salt marshes are the second largest community after hydric hammock, comprising approximately 16 percent of the Preserve. The remaining natural communities occur in small quantities scattered throughout the Preserve. One anthropogenic land cover type, ruderal, was also mapped and accounts for approximately 10 percent of the Preserve.

Water Resources: The Weeki Wachee River is designated as an Outstanding Florida Water and an Outstanding Florida Spring by the state, which provides additional protections to ensure the river's conservation and restoration for future generations. Water Resource benefits provided by the Preserve include flood protection, water quality enhancement, and natural system protection including protecting several miles of the Weeki Wachee River floodplain. Wetlands associated with the Preserve protect important water conveyances, enhance water quality, and provide critical flood protection benefits. Much of the Preserve provides a buffer against storm damage between the Gulf of Mexico and residential areas. The wetlands within the Preserve also protect many small springs which slowly flow through the property and into to the Gulf of Mexico. These wetlands also provide important buffers from surrounding communities and filter out pollution and contaminants from runoff before reaching surrounding water bodies.

Land Management: Management activities on the Preserve include prescribed fire, habitat management, restoration, feral hog control, and control of invasive, exotic plant species. 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 allows for successful fire management and limits the potential for wildfires.

Cultural and Historical Resources: According to the Florida Master Site File, several archeological sites throughout the Preserve have been identified, and are preserved under the guidelines of the state's Division of Historical Resources and are further protected by the District's ownership.

Recreation: The recreational activities permitted at the Preserve include birding, hunting, hiking, canoeing-paddling, picnicking, non-motorized boating, bicycling, and fishing. The trail system at the Preserve includes approximately 17 miles of multi-use trails. Approximately seven miles of paved and unpaved trails are available for hiking and biking, while approximately 10 miles are hiking-only scenic trails.

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: The primary access to the Preserve is provided at the main entrance on Osowaw Boulevard just west of U.S. Highway 19 in Spring Hill. The access point includes a walk through, parking, kiosk, and signage with additional information. On the second and fourth Saturday of each month, visitors may drive into the Preserve through the Osowaw Boulevard entrance and park at the end of a paved road. There are two additional walk-through points present on the western boundary of the Preserve along Shoal Line Boulevard. The Aripeka Sandhills portion of the Preserve also provides parking and an access point on Aripeka Road, a half mile west of U.S. Highway 19.

Real Estate: The District will continue to consider opportunities to purchase lands adjacent to the Preserve with the goal of completing the District's acquisition plan in an effort 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 in place on the Preserve. The largest is a cooperative agreement between the District and the FWC for the management of the Weekiwachee Wildlife Management Area (WMA) that covers a 2,845-acre area on the northern portion of the Preserve. A second agreement between the District and the FWC is in place for an additional 678 acres of the Preserve falling within the Chassahowitzka WMA north of Cortez Boulevard. Additional agreements include: four utility easements (two with Hernando County and two with Withlacoochee River Electric Cooperative), a management agreement with Hernando County for Bayport Park, a lease agreement with Hernando County for a planned Park within the Preserve for enhanced recreation, a management agreement with Pasco County for Aripeka Sandhills, a lease agreement with the FDEP, Division of Recreation and Parks for the Weeki Wachee Springs State Park, two license agreements for apiaries within the Preserve, a cooperative agreement with Hernando County School Board for management of the Springs Coast Environmental Education Center, and one license agreement with the Florida National Guard.

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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 lands 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 along portions of coastal Hernando County west of U.S. Highway 19 near Spring Hill and extends south into coastal northern Pasco County in the vicinity of Aripeka and Hudson. The Preserve contains numerous parcels and is generally bound by U.S. Highway 19 to the east, Cortez Boulevard to the north, Old Dixie Highway and the town of Hudson to the south, and the Gulf of Mexico and Shoal Line Boulevard to the West. The Weeki Wachee River borders the main portion of the Preserve to the north from Weeki Wachee Springs State Park to Rogers Park (**Figure 1** and **Figure 2**).

The Preserve is approximately 12,821 acres of wetland and upland communities, including more than five miles along the southern bank of the spring-fed Weeki Wachee River. A large portion of the Preserve is located within the Weekiwachee Riverine System which is designated as an Outstanding Florida Water (OFW) by the state.

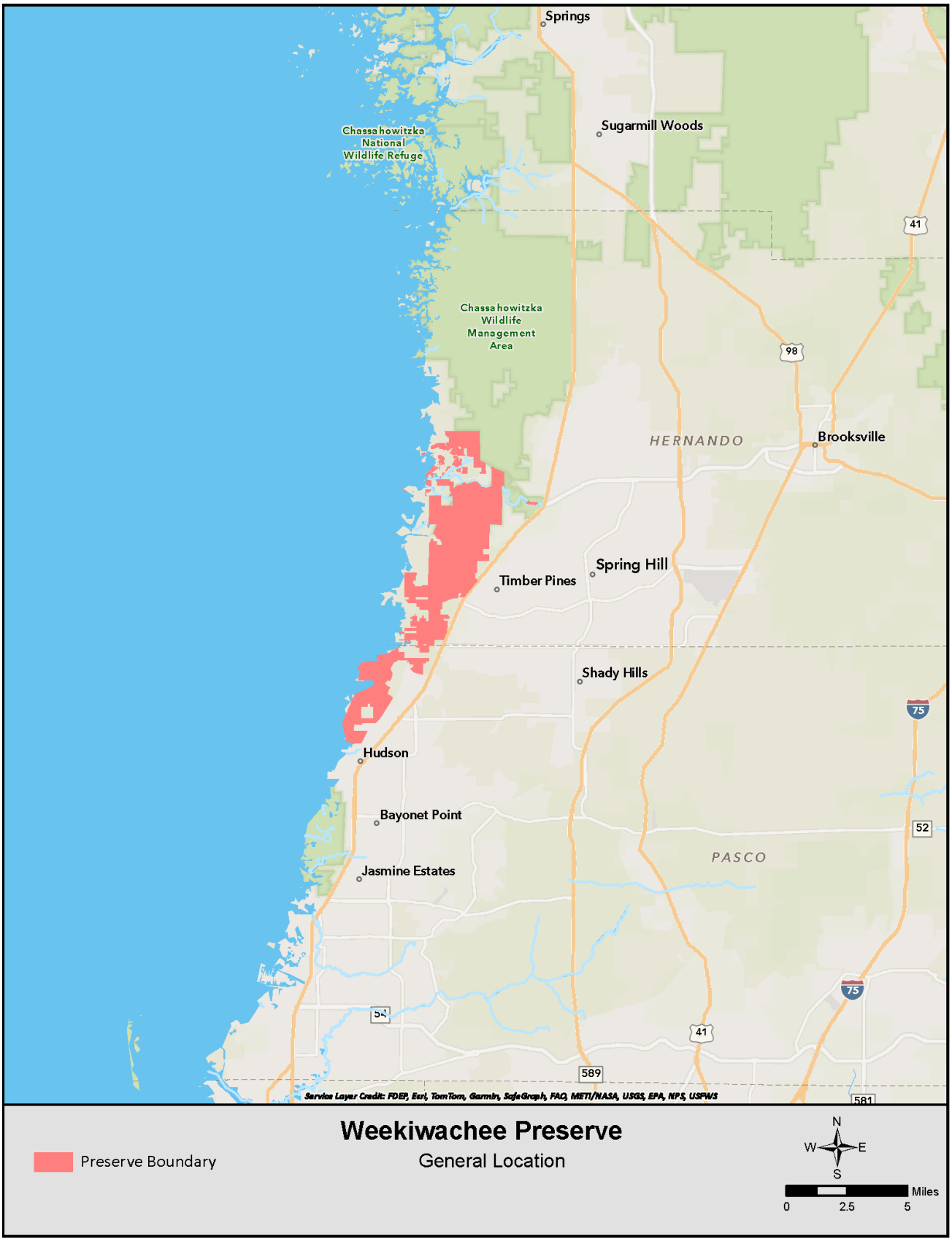

FIGURE 1. GENERAL LOCATION

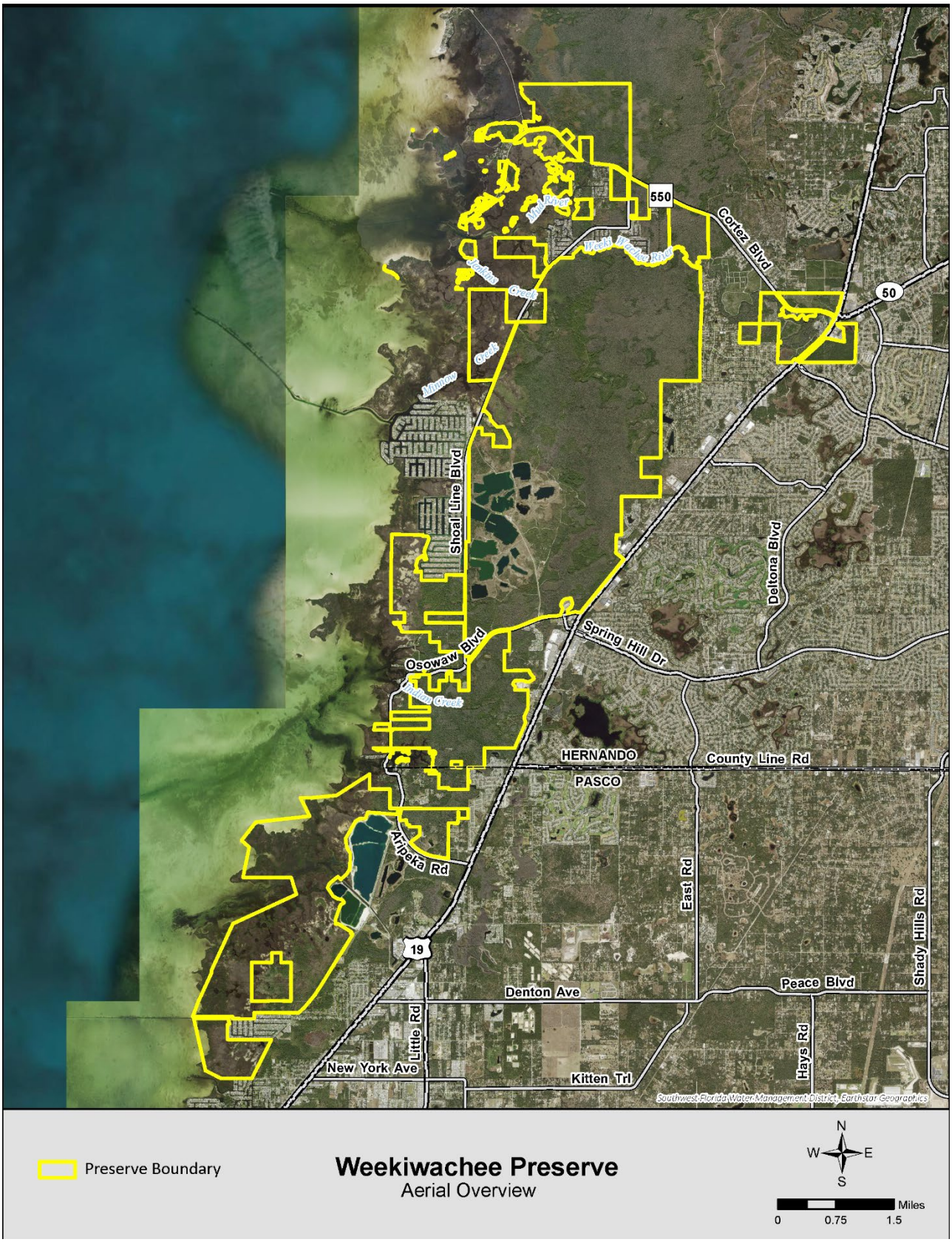

FIGURE 2. AERIAL OVERVIEW

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 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.

Acquisition History

Acquisition of the majority of the Preserve began with a series of successive land purchases between 1994 and 1996 using funding from the Save Our Rivers program as well as a small contribution from Hernando County through its Environmentally Sensitive Lands Program. In 2001, the District acquired the well-known tourist attraction of Weeki Wachee Springs and the property surrounding its namesake, which is classified as a first magnitude spring and an Outstanding Florida Spring. This purchase was funded through the Preservation 2000 (P-2000) program. In 2008, the District entered into a lease agreement with the FDEP, Division of Recreation and Parks for management of the former attraction as a state park. Aripeka Sandhills was acquired as part of the Preserve in November 2008 through a joint acquisition with Pasco County funded by the Penny for Pasco tax and the Florida Forever program. There have been additional small parcels and inholdings purchased since 1994 with the latest occurring in 2021. These were funded through the Save Our Rivers, P-2000, and Florida Forever programs. The primary purpose for the purchase of the Preserve was to protect, restore, and maintain the quality and natural functions of the land, water, and wetland systems, to promote natural flood control and water detention, and to provide natural resource-based public recreational opportunities within the region. Public ownership of extensive forested swamps along portions of the Weeki Wachee River and other undeveloped coastal habitats are important for the long-term support of regional wildlife populations and the fisheries resources of the estuary.

Regional Significance

The Preserve is part of a contiguous stretch of conservation lands that extend north up the western coastline to the Crystal River Preserve State Park, preserving the southernmost coastal hardwood hammock in western Florida. The District's ownership of this property takes a nonstructural approach to flood protection by retaining and protecting the coastal habitats and natural floodplains occurring within the Preserve. The rich mosaic of habitats includes Weeki Wachee River frontage, portions of the Mud River, dense hardwood swamps, freshwater and saltwater marshes, and pine-covered sandhills. The Preserve is also known for being an important habitat for the region's population of Florida black bears who spend most of their time deep in the forest. The Preserve

protects the last remaining expanse of significant natural lands along the developed coastline of Pasco and Hernando Counties, including both freshwater and saltwater communities that support a diversity of wildlife. The salt marshes, tidal creeks, and open water of the Gulf of Mexico exists along the western boundary of the Preserve while there are various forms of development along the eastern boundary. District ownership protects the wetlands' natural functions of conveying spring water to the Gulf of Mexico, filtering surface water and providing natural flood protection.

The 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 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 and 3 (with Priority 1 being the highest) for Biodiversity Resource Priorities; Priority 1 for Landscape Resource Priorities; Priority 1 and 2 for Surface Water Resource Priorities, with the entire western coastline scoring the highest priority 1; and Priority 1 for Aggregated Resource Priorities.

Regional Conservation Network

The Preserve serves as the southern end of a regional system of conservation lands that extends north towards Crystal River (**Figure 3**), which is often referred to as the Nature Coast. These conservation lands have been acquired for natural resource protection by both fee simple ownership and conservation easements through the efforts of federal, state, and local governments, non-profit organizations, and private entities (**Table 1**). The Preserve is adjacent to the state-owned Chassahowitzka Wildlife Management Area to the north. Further north exists the Chassahowitzka National Wildlife Refuge, the Withlacoochee State Forest, Crystal River Preserve State Park, and District-held Chassahowitzka River and Coastal Swamps that have also been protected through public acquisition and, in combination with the Preserve, serve to protect extensive areas of regionally significant natural communities including coastal habitats. Notably, because of their water resources functions, these dense forests areas along the coast support a broad range of wildlife and are key habitats as stop-over areas for migrating and wintering birds. To the south, additional conservation lands in close proximity to the Preserve include the Werner-Boyce Salt Springs State Park along the coastline, and a handful of inland conservation lands scattered throughout Pasco County including the District's Starkey Wilderness Preserve, Cypress Creek Preserve, and Hidden Lake. 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 a critical linkage for 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.

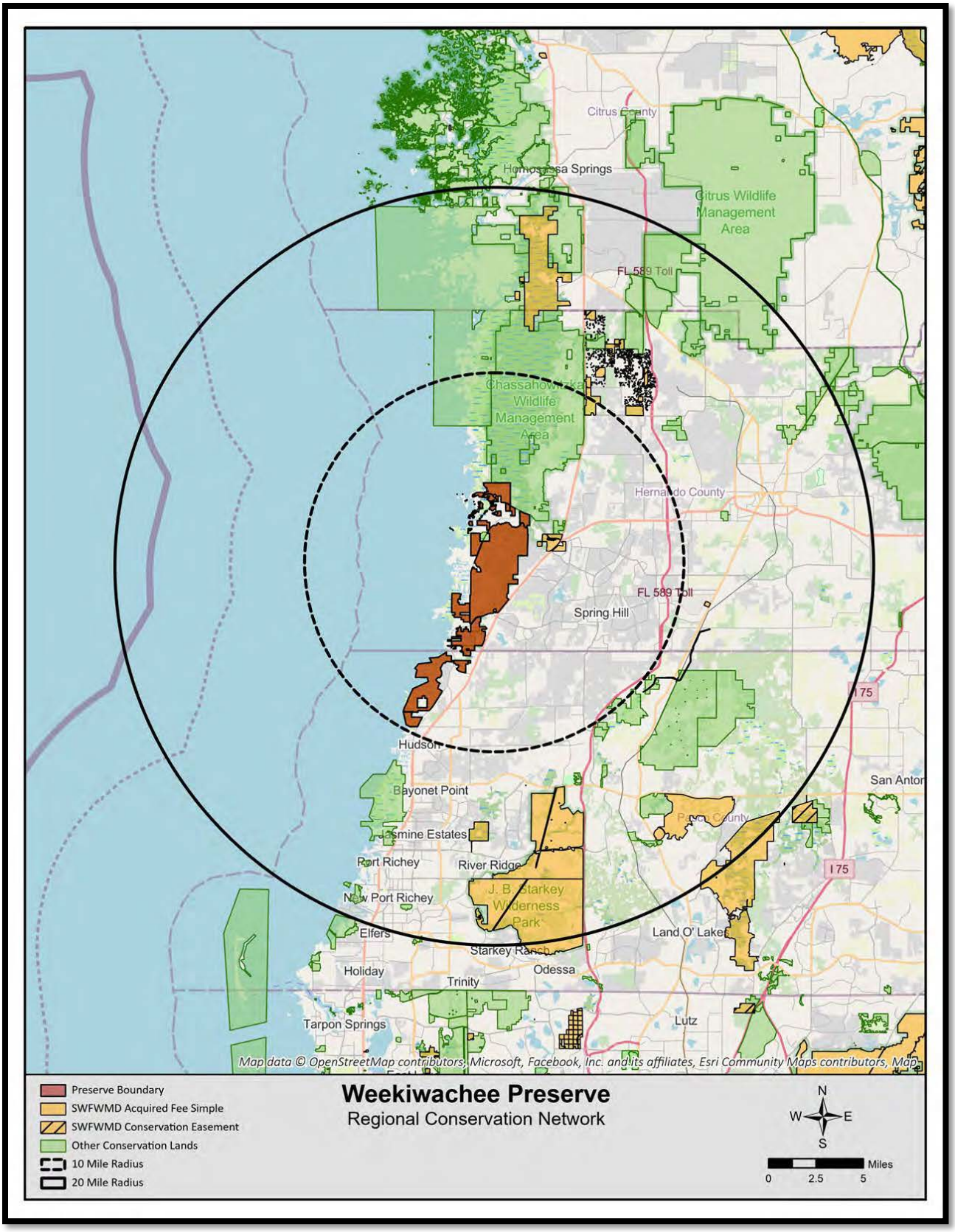

FIGURE 3. REGIONAL CONSERVATION NETWORK

TABLE 1. CONSERVATION LANDS WITHIN THE VICINITY

PROPERTY	MANAGER	OWNER	ACRES
Starkey Wilderness Preserve	SWFWMD	SWFWMD	19,865
Weekiwachee Preserve	SWFWMD	SWFWMD	12,818
Cypress Creek Preserve	SWFWMD	SWFWMD	8,506
Chassahowitzka River and Coastal Swamps	SWFWMD	SWFWMD	5,752
Conner Preserve	SWFWMD	SWFWMD	3,486
Annutteliga Hammock	SWFWMD	SWFWMD	1,779
Cypress Creek Conservation Easement (SWFWMD)	SWFWMD	Private	786
Hidden Lake Project	SWFWMD	SWFWMD	589
Withlacoochee State Forest	FFS	TIITF	166,208
Phillips Mathis Agricultural and Conservation Easement	FFS	Private	289
Chassahowitzka Wildlife Management Area	FWC	TIITF	28,211
Chinsegut Wildlife and Environmental Area	FWC	TIITF	821
Perry Oldenburg Wildlife and Environmental Area	FWC	FWC	369
Janet Butterfield Brooks Wildlife and Environmental Area	FWC	The Nature Conservancy	318
Crystal River Preserve State Park	FDEP	TIITF	27,648
Anclote Key Preserve State Park	FDEP	TIITF	12,210
Werner-Boyce Salt Springs State Park	FDEP	TIITF	4,004
Weeki Wachee Springs State Park	FDEP	SWFWMD	928
Robert Crown Wilderness Area	FDEP	TIITF	233
Ellie Schiller Homosassa Springs Wildlife State Park	FDEP	TIITF	201
Chassahowitzka National Wildlife Refuge	USFWS	USFWS	36,445
Crystal River National Wildlife Refuge	USFWS	USFWS	138
Linda Pedersen Preserve/Jenkins Creek Preserve	Hernando County	Hernando County	139
Jumping Gully Preserve	Pasco County	Pasco County	1,701
Five Mile Creek Conservation Area	Pasco County	Pasco County	200
Upper Pithlachascotee River Preserve	Pasco County	Pasco County	127
Brooker Creek Preserve	Pinellas County	Pinellas County	8,746
Cross Bar Ranch Wellfield	Pinellas County	Pinellas County	8,180
Al Bar Ranch	Pinellas County	Pinellas County	4,253
Lake Frances Preserve	Hillsborough County	Hillsborough County	1,664
Lake Dan Nature Preserve	Hillsborough County	Hillsborough County	1,172
Brooker Creek Headwaters Nature Preserve	Hillsborough County	SWFWMD	1,133

SWFWMD – Southwest Florida Water Management District
FWC – Florida Fish and Wildlife Conservation Commission
FDEP – Florida Department of Environmental Protection
TIITF – Trustees of the Internal Improvement Trust Fund
FFS – Florida Forest Service
USFWS – United States Fish and Wildlife Service

Current Land Use

The Preserve is managed for the conservation and protection of its water resources and natural communities. In addition, the Preserve offers recreational resources and opportunities to visitors. The Preserve will continue to support a multiple-use concept for environmental conservation, water resource protection, and public 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, exotic species control, trail and firebreak maintenance, and site security.

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 Hernando County and Pasco 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 the County that is designed to provide all the services and amenities necessary to maintain a high quality of life for its residents. The Hernando Comprehensive Plan designates the Preserve in the Conservation Category in its 2040 Future Land Use Map. Most Hernando County parcels are likewise currently zoned as Conservation. Smaller portions of the Preserve are zoned as Agricultural. The Pasco County 2025 Future Land Use Map designates the Preserve as Conservation Lands. The Pasco County parcels within the Preserve are currently zoned as Agricultural.

Adjacent Land Uses

The landscape surrounding the Preserve includes a multitude of land uses. Major transportation corridors that adjoin or occur in close proximity to the Preserve include U.S. Highway 19, Shoal Line Boulevard, and Cortez Boulevard. Several large residential subdivisions and numerous commercial enterprises are associated with these road systems in the immediate vicinity of the Preserve. There are many coastal communities adjacent to the Preserve, including Sea Pines, Aripeka, Hudson, Hernando Beach, Bayport, and Pine Island. Spring Hill also borders a large portion of the eastern boundary of the Preserve. To the north, the Preserve is bordered by the Chassahowitzka Wildlife Management Area.

Management Challenges

The Preserve presents a unique set of management challenges for the District. The majority of the challenges stem from the Preserve's location within an area of urban development and an increasing population. This increase in population results in an increased demand for public recreational opportunities. If this is not managed appropriately this could result in potential negative impacts to the resource. A large increase in the number of visitors could cause issues ranging from erosion from off-trail use to disruption to wildlife. The close proximity of a large human population to wildlife species also requires a sensitive approach to the management of wildlife.

The abrupt transition from wilderness area to urbanized landscape that occurs along most of the Preserve's eastern boundary imposes certain unavoidable constraints on management actions. U.S Highway 19 borders portions of the preserve along with developments and private residents, which adds to the challenges associated with the wildland urban interface. The abundance of wildland urban interface is a significant challenge with respect to prescribed fire operations and smoke management. This wildland urban interface also complicates management of invasive and exotic plant and animal species. Exotic plants are frequently introduced to the area at many points of entry through the illegal dumping of non-native landscaping and yard waste. Feral hog control is also more challenging as there are fewer effective control measures available in the wildland urban interface. Community involvement is an important aspect of the management of conservation lands in the wildland urban interface as effective communication and public interaction can help to mitigate these challenges.

The unique natural systems found on the Preserve also present certain challenges. The expansive hydric hammocks located on the preserve make the application of prescribed fire difficult and in many cases the burn manager must rely on these hydric hammocks as natural fire breaks. However, burning into these hydric hammocks can be challenging as they often contain an excess build-up of duff and in some areas have upland fingers that meander deep into the hammock. The preserve also contains pockets of xeric upland communities like scrub and scrubby flatwoods which can also present a management challenge. These naturally pyrogenic systems rely on intense, stand replacement fires that can be difficult to control and require additional resources and expertise to manage safely and responsibly.

Historical Land Use and Cultural Resources

Historical Land Use

The settlement of Bayport predates the Civil War. Beginning in the 1850s, the village of Bayport was settled, had its own post office, and was part of the shipping route for cotton and other goods navigating down the Weeki Wachee River. During the Civil War, larger ports along the Gulf coast were blockaded and small rivers including the Weeki Wachee River became important trade routes. Shipping slowed when the railroad transportation system was built in the late 1800s. In the 1980s and early 1990s, commercial limerock mining was conducted in the central portion of the Preserve. Hundreds of acres of the Preserve were disturbed by mining activities prior to District acquisition. As a result, a series of 15 pits were excavated. The limerock mining activity exposed the underlying Floridan Aquifer, filling the pits with water. Several of the lakes were linked together by dredging and culverts to redirect water flow. In 1995, reclamation was performed on these artificial lakes as a prerequisite to District acquisition. Reclamation of the pits involved recontouring some of the spoil to establish littoral vegetation along some sections of shoreline, but overall there is very little shallow water habitat in these artificially created lakes which range in depth from 40 to 60 feet. In addition to the lakes, there is a ditch that extends over a mile between the mined area and Shoal Line Boulevard. South of the mine lakes, the surface soil was removed, but no mining occurred. Over time, native vegetation has recolonized this area. In addition to mining, the additional historic land uses included logging and hunting.

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 the District with information on all of the sites recorded on the Preserve and the District retains this information in a secure GIS database. According to the Florida Master Site File, the Preserve contains numerous archeological sites of varied cultural origin and historical significance with sites ranging from the remains of a civil war battlefield to Native American burial mounds. These sites are preserved under the guidelines of the state's Division of Historical Resources and are further protected by the District's ownership.

The District utilizes Best Management Practices (BMPs) for preserving the historical and cultural resources documented on the Preserve. The District retains staff members who have completed the Archeological Resource Management course offered by the DHR. District staff with this training periodically monitor sites and report any disturbance to law enforcement and DHR. The DHR is also notified of any major ground disturbing activity planned in the vicinity of a site and is solicited for guidelines on how to safely proceed with the project without risking damage to cultural resources.

Water Resources and Natural Systems

District's 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. **Figure 4** depicts the hydrography of the Preserve and its water resources.

Water Quality

The Weeki Wachee River is a seven-and-a-half-mile spring-fed river that forms part of the northern border of the Preserve. Both Weeki Wachee Springs and the Weeki Wachee River are considered by the state to be impaired because of excess nutrients. The primary nutrient of concern is nitrate, which can be harmful to aquatic insects, amphibians and fish. One of the main strategies employed by the District to improve water quality is to improve/maintain natural systems through habitat conservation and recreation management. Maintaining the Preserve in a natural state inherently helps the River, estuaries, and other sensitive natural communities by providing a buffer between the coastline and the highly developed areas directly east of the Preserve.

The District is actively involved in maintaining and improving water quality through both regulatory and non-regulatory programs. The District also supports other agencies' regulatory programs that assist with maintaining and improving water quality such as the recent implementation of a Springs Protection Zone by the Florida Fish and Wildlife Conservation Commission (FWC) for a portion of the Weeki Wachee River. Florida Statute Section 327.45 provides rulemaking authority for FWC to create Springs Protection Zones that prohibit anchoring, mooring, beaching, and grounding and restrict the speed and operation of vessels within first, second, and third magnitude springs and spring groups and their associated spring runs for the purpose of protecting and preventing specific types of harm to the springs.

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). As a result of these processes, wetlands have often been considered "nature's kidneys" due to their ability to clean out pollutants that move through them.

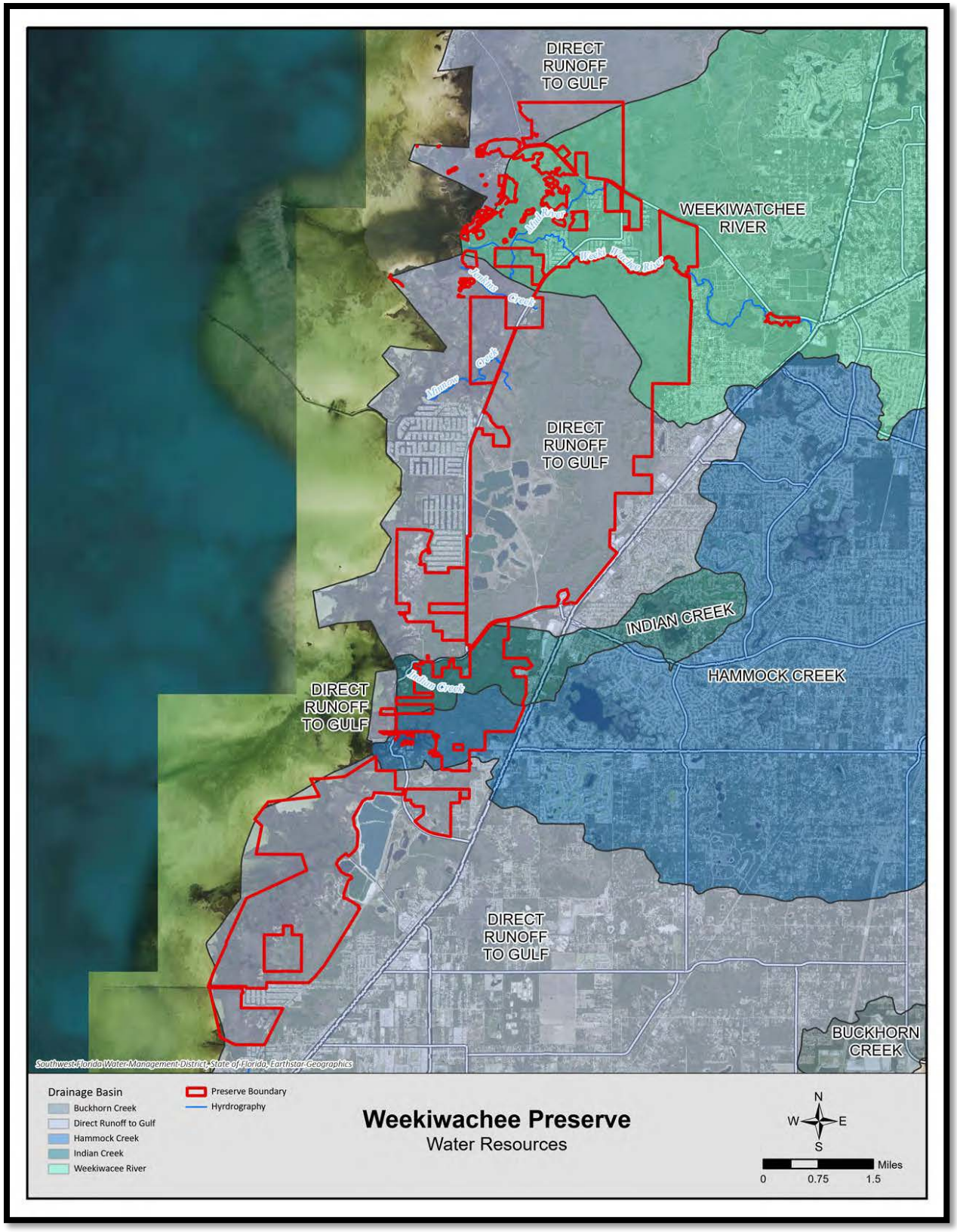

FIGURE 4. WATER RESOURCES

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 majority of the Weeki Wachee River's flow originates from the Weeki Wachee Spring Group, a first magnitude spring system and a designated Outstanding Florida Spring. Weeki Wachee Spring lies outside the Preserve's eastern boundary within the Weeki Wachee Springs State Park, which is District-owned land managed by the state. Additional sources of flow are contributed by Little Springs and other lesser seeps along the river's course. Numerous additional springs and seeps occur in the region as well, most of which are tidally influenced. Both the Weeki Wachee River and Mud River serve as conveyance channels for spring discharges and do not receive significant surface runoff from adjacent lands. The Preserve provides for protection of the freshwater/saltwater interfaces and floodplain of the Weeki Wachee River, which in turn protects estuarine and related natural communities that rely on regular, steady flows of freshwater critical to the healthy maintenance of these extremely productive habitats.

The Preserve lies within an area of the Floridan aquifer which exhibits high groundwater yield and quality, with groundwater in the aquifer generally flowing northwesterly toward Weekiwachee Springs. The top of the Floridan aquifer outcrops at the coastline and is approximately 600 feet deep (Yobbi, 1989a). This aquifer is generally unconfined at the Preserve due to a lack of thick clays or low-permeability limestone that would slow the vertical flow of water. While the Preserve does not serve directly as a water supply source, it is an important component in conserving and protecting surface waters and the groundwater resources of the Floridan aquifer.

Flood Protection

Flood protection is another important element of the District's mission. Historically, flood protection depended 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 floodplains and other land that act as storage areas for storm-generated floodwater. The substantial areas of coastline, salt marsh, and hydric hammock on the Preserve are integral for floodplain conservation relating directly to the District's core mission.

Maintaining the Preserve as an undeveloped natural area has many important flood control benefits. The Preserve functions as a natural buffer between the coast and existing inland developments, providing protection against tidal surge, erosion, high-velocity winds, hurricanes, and other impacts of severe weather. Nearly the entire Preserve, over 91 percent, is within the 100-year floodplain (**Figure 5**) and is susceptible to inundation from either rainfall-induced flooding

or coastal storm surge. The floodplains within the Preserve have the natural ability to store water and slow runoff generated by storms. The low-lying swamps also mitigate coastal flooding farther inland by absorbing storm surge and allowing coastal floodwaters to spread out, limiting how high the water rises. This non-structural approach to flood protection is a key goal of the District's ownership of the Preserve.

Another flood control benefit of the Preserve is the elimination of future developmental impacts within its boundaries. Several miles of natural, undisturbed land along the banks of the Weeki Wachee River are protected by the Preserve, which also contributes to flood protection and the improvement of water quality for the river and its downstream estuary. The coastline within and adjacent to the Preserve has a moderate tidal range and very low wave energy, giving rise to extensive salt marshes. The continuous flow of freshwater into the Gulf from the inland areas forms an estuarine environment along the entire coast. Marine flooding of the marsh occurs irregularly as the result of seasonal rises in sea level from lunar events, windblown tides, or tropical storm events. In addition, while incremental rise in sea level will limit the ability of coastal wetlands to migrate inland flooding, the marshes of the Preserve and along the Gulf coast may have more resilience given the expanses of natural lands that adjoin the existing salt marsh system. Overall, the potential for flooding from inland storms, coastal surge, and sea level rise emphasize the importance of maintaining the integrity of unaltered coastal lands and adjacent natural communities.

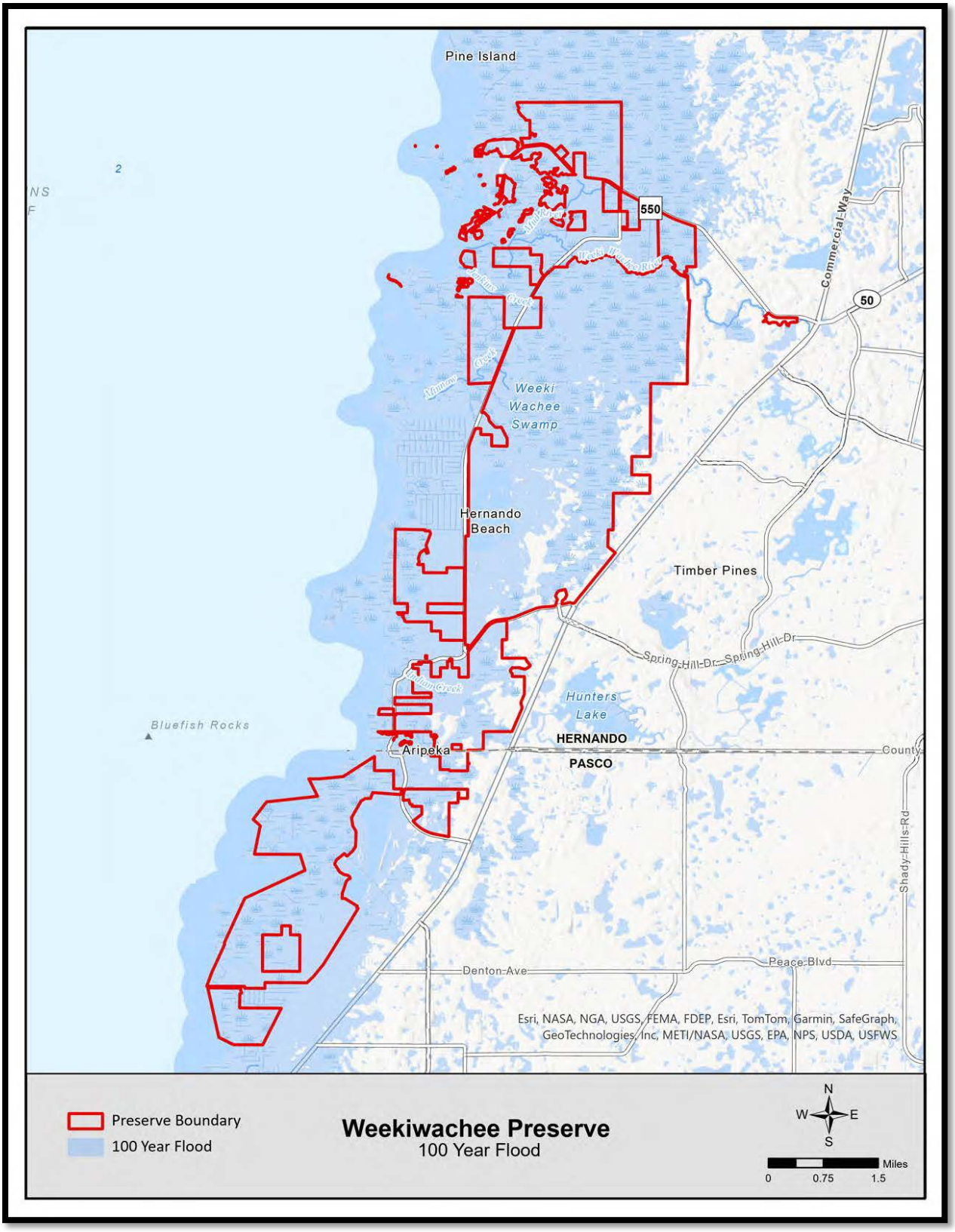

FIGURE 5. 100-YEAR FLOODPLAIN

Natural Systems

The District uses natural communities as defined by FNAI in the 2010 Guide to the Natural Communities of Florida to describe habitats of the Preserve. Twenty-six (26) natural communities were identified by FNAI, and one anthropogenic land cover type was also mapped (**Figure 6**). **Table 2** summarizes the acreage and percent cover of each land cover type. FNAI compiled an extensive database of plants observed in each natural community based on fieldwork conducted in 2004. Additional fieldwork was conducted in 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 (by common and scientific name) documented by the FNAI and by District staff.

TABLE 2. NATURAL COMMUNITY TYPE SUMMARY

FNAI Natural Community	Acreage	Percentage of Community Type
Basin Marsh	110.5	1%
Basin Swamp	117.8	1%
Baygall	230.0	2%
Cabbage Palm Flatwoods	89.1	1%
Coastal Hydric Hammock	26.3	0.2%
Depression Marsh	20.2	0.2%
Dome Swamp	26.3	0.2%
Estuarine	200.6	2%
Hydric Hammock	4,644.3	41%
Mangrove Swamp	204.3	2%
Maritime Hammock	21.5	0.2%
Mesic Flatwoods	775.4	7%
Mesic Hammock	13.9	0.1%
Oak Scrub	444.3	4%
Ruderal	1,101.9	10.2%
Salt Flat	8.5	0.1%
Salt Marsh	778.4	7%
Sand Pine Scrub	364.6	3%
Sandhill	26.6	0.2%
Scrubby Flatwoods	695.6	6%
Spring Run Stream	27.3	0.2%
Tidal Marsh	1,066.7	9%
Upland Hardwood Forest	30.3	0.3%
Wet Flatwoods	186.6	2%
Wet Prairie	8.5	0.1%
Xeric Hammock	26.0	0.2%
Total Acreage	11,245.4	100.00%

Natural Community Descriptions

Wetland Communities

Basin Marsh (110.5 acres)

Basin marshes are herbaceous or shrubby wetlands situated in a large and irregularly shaped basin. Basin marshes typically have a deep peat substrate and are inundated for much of the year. Species composition of basin marshes is influenced by water depth, length of hydroperiod, tidal influences, and fire intervals. On the Preserve, basin marshes are typically found in deeper areas within surrounding hydric hammock. Most basin marshes on the Preserve are dominated by Carolina willow, indicating a deep peat buildup. Many have a band of pond cypress and swamp tupelo around their edges. Other typical plants include red maple, buttonbush, cattails, duckweed, maidencane, and pickerelweed. Basin marshes near the coast are dominated by sawgrass and have bigleaf sumpweed, groundsel tree, marsh fimbry, hairawn muhly, as well as red cedar, and cabbage palm, which are woody species characteristic of the coastal variant of hydric hammock.

Basin Swamp (117.8 acres)

Basin swamps are large, forested, and irregularly shaped depressions that are vegetated with trees and shrubs which can withstand extensive hydroperiods. Basin swamps typically have a deep peat substrate and are inundated for much of the year. Species composition of basin marshes is influenced by water depth, length of hydroperiod, and fire intervals. On the Preserve, basin swamps are associated with, and intergrade with hydric hammock, occurring in deeper areas, often as channels, or headwaters of creeks. Pond cypress is the dominant canopy species in basin swamps of the Preserve. Swamp tupelo, red maple, sweetbay magnolia, and slash pine are also found in the canopy. Subcanopy species are dominated by younger canopy species as well as dahoon holly and swamp bay. Dependent on fire intervals, understory density and species composition vary. Basin swamps which have not burned within the last five to 10 years have a greater density of shrubs, and fewer herbs while more recently burned basin swamps have fewer shrubs and more herbs. Understory shrub species include sapling canopy species as well as cabbage palm, wax myrtle, and corkwood. Corkwood occurs in more recently burned basin marshes. Sawgrass is the dominant herb species, with camphorweed, royal fern, Virginia chain fern, and beaksedges. Epiphytes and vines are occasionally found, sometimes abundantly. Spanish moss is the dominant epiphytic species and rattan vine is the dominant vine.

Baygall (230.0 acres)

Baygalls are densely forested, evergreen wetlands occurring in seepage areas where a saturated peat substrate is maintained. Fires are rare, occurring in 50–100-year intervals, and may convert the baygall to a different community. Baygalls on the Preserve are typically found on the edges of hydric hammock adjacent to sand pine scrub or oak scrub where seepage from the uplands, as well as lowland water tables, help maintain soil moisture. Canopy dominants include slash pine, swamp tupelo, sweetbay magnolia, and swamp bay with live oak, laurel oak, sweetgum, and cabbage palm less frequent. The most common subcanopy species are loblolly bay and dahoon, with Carolina ash and younger canopy species less frequent. Shrubs are typically dense and include saw

palmetto, wax myrtle, shiny lyonia, gallberry, wild coffee, and saplings of canopy and subcanopy species. Herbs are usually sparse due to the closed canopy and dense shrubs. Herb species include sawgrass, cinnamon fern, royal fern, bracken fern, marsh fern, wood oats, millet beaksedge, and arrowheads. Vines are occasional with laurel greenbrier, saw greenbrier, and muscadine the most common.

Cabbage Palm Flatwoods (89.1 acres)

Cabbage palm flatwoods are wet flatwoods that occur on shelly sand where limestone is near the surface. This land use includes areas with a pine canopy over a cabbage palm understory. On the Preserve, cabbage palm flatwoods occur in small pockets, surrounded by salt marsh. These areas specifically occur on the southern portion of the Preserve. Wet flatwoods are inundated, sometimes for more than a month, especially during the rainy season. Sawgrass is the dominant herbaceous species.

Coastal Hydric Hammock (26.3 acres)

The coastal variant of hydric hammock is found near the Gulf shore. This vegetation is heavily influenced by maritime conditions such as saltwater inundation and salt spray caused by storms. Though many species found in typical hydric hammock are also found in the coastal variant, it is distinguished by a dominance of live oak, cabbage palm, and red cedar in the canopy and subcanopy. Slash pines are common. Typical shrubs include yaupon, wax myrtle, groundsel tree, and marsh elder. Spanish bayonet is occasionally seen in coastal hydric hammocks. In some areas, slash pines may dominate coastal hydric hammocks, especially nearest the salt marsh, and on small islands. The pines may surpass the cabbage palm, red cedar and live oak in height, and form an emergent canopy. Brazilian pepper is often found in these islands and can be quite dense on some of them.

Depression Marsh (20.2 acres)

Depression marshes are small, isolated herbaceous wetland occurring in shallow depressions. Depression marshes generally have less peat accumulation than basin marshes due to shorter hydroperiods and more frequent fires, which are often carried from surrounding uplands and usually burn the outer areas of the marsh but may burn through it completely. Most depression marshes on the Preserve occur within a mesic flatwoods matrix, though some are found within hydric hammock. The dominant herb of the depression marshes on the Preserve is sawgrass, with black needle rush a co-dominant in marshes near the coast. Other typical species include peelbark St. John's wort, hairawn muhly, white-top beaksedge, black sedge, and bladderworts.

Dome Swamp (26.3 acres)

Dome swamps are small, rounded, typically dome-shaped, forested wetlands occurring in shallow to deep depressions. Dome swamps have shorter hydroperiods and burn more frequently than basin swamps. Fire is often carried from surrounding uplands and usually burns the outer areas of the swamp but may occasionally burn completely through. Dome swamps on the Preserve are found within upland communities, sometimes bordering hydric hammock. Pond cypress is the dominant canopy species, with slash pine occasionally found. Red maple, sweetbay magnolia, swamp bay

and young pond cypress are common subcanopy species, with sweetgum, and persimmon less frequent. Common shrubs include shiny lyonia, loblolly bay, dahoon, wax myrtle, corkwood, and sapling canopy and subcanopy species. Common herbs are sawgrass, marsh fern, Virginia chain fern, redroot, and royal fern. Spanish moss is a frequent epiphyte.

Estuarine (200.6 acres)

Estuarine areas are subtidal, intertidal, and supratidal zones of the sea, landward to the point at which sea water becomes significantly diluted with freshwater inflow from the land. These areas within the Preserve are open water and are bordered by vegetated salt marsh and mangrove swamp.

Hydric Hammock (4,644.3 acres)

Hydric hammocks are forested wetlands of hardwood trees occurring on low, flat, wet sites where limestone is at or near the surface. This is the largest natural community within the Preserve. Hydric hammocks are seldom inundated for long periods of time, but soils remain saturated most of the year, completely drying only during droughts. Hydric hammocks typically have a dense canopy and subcanopy which prevents a diverse understory from developing. Fires are rare due to saturated soils and scarcity of herbaceous groundcover. There are two types, or variants, of hydric hammock which occur on the Preserve depending on distance from the coast: (1) the typical hydric hammock of seasonally inundated sites, and (2) a coastal variant influenced by maritime conditions near the Gulf of Mexico. The typical hydric hammock canopy includes laurel oak, sweet gum, red maple, black gum, American elm, sweetbay, green ash, persimmon, loblolly bay, and occasionally pond cypress, and slash pine. Common subcanopy trees are younger canopy species, as well as cabbage palm, swamp bay, dahoon, and mulberry. The most common shrubs are wax myrtle and cabbage palm, along with sapling canopy and subcanopy species. Less common but characteristic shrubs are yaupon, Virginia willow, swamp dogwood, wild coffee, and buttonbush. Saw palmetto may occur on drier hummocks but are typically infrequent. Herb cover is variable, typically sparse, and includes saw grass, millet beaksedge, lizard's tail, string lily, marsh fern, Virginia chain fern, jack-in-the-pulpit, royal fern, woodsgrass, toothpetal false reinorchid, and partridgeberry. Common vines are saw greenbrier, muscadine, Virginia creeper, and poison ivy. This community also provides dense cover and seclusion for the Preserve's black bear population.

Mangrove Swamp (204.3 acres)

Mangrove swamps are dense forests occurring along relatively flat, low wave energy, marine and estuarine shorelines. Dominant species are red mangrove and black mangrove, with red mangrove more abundant than black mangrove. All mangroves become more common towards the southern end of the Preserve boundary. Most mangrove areas occur in dense strands with no understory. Herbaceous species include saltwort, shoregrass, and giant leather fern.

Salt Flat (8.5 acres)

Salt flats are scattered throughout the tidal marsh and are mostly bare sands where, after a high tide, saltwater pools and then evaporates, leaving the soil more saline than the surrounding marsh. This extra salinity is the main cause of the lack of vegetation present. Common plants found on salt flats include buttonwood, glassworts, saltwort, bushy seaside oxeye, and shoregrass.

Salt Marsh (778.45 acres) and Tidal Marsh (1,066.7 acres)

Salt marshes and tidal marshes are expanses of grasses, rushes, and sedges occurring along low wave-energy coastlines and river mouths which are subject to tidal flooding. The soil is a poorly drained muck which often has high sulfur content. Tidal and salt marshes are found from just below sea level to slightly above sea level. On the Preserve, tidal and salt marshes are dominated by needle rush and sawgrass. Sawgrass, which is the least salt tolerant plant of tidal marshes, is only a co-dominant adjacent to the coast and in tidal marshes just inland of the coast. Other common herbs include salt marsh cordgrass, marshhay cordgrass, giant leather fern, southern cattail, wand loosestrife, marsh fimbry, marshgentian, and threesquare bulrush. Inland tidal marshes, which receive periodic inflows of salt water, occasionally have a shrubby component of cabbage palm, groundsel tree, swamp bay, wax-myrtle, and bigleaf sumpweed.

Spring Run Stream (27.3 acres)

Spring run streams are perennial water courses which derive most, if not all, of their water from artesian openings in the underground aquifer. The waters are generally clear, neutral to slightly alkaline, and constantly cool. On the Preserve, two spring run streams occur. One originates at Weekiwachee spring and meanders west through oak scrub, near the spring, and hydric hammock for most of its course before reaching the Gulf. Another stream originates approximately a half mile southwest of the Weekiwachee spring head and meanders north, eventually joining the Weekiwachee stream. This stream is mapped as an inclusion with the surrounding basin marsh.

Wet Flatwoods (186.6 acres)

Wet flatwoods are open canopy forests with an understory that varies widely in structure from shrub-dominated to open and grassy. Soils are generally acidic sands overlaying an organic hardpan. Wet flatwoods are inundated, sometimes for more than a month, especially during the rainy season. Frequent fire (every three to 10 years) is essential in maintaining the diversity of wet flatwoods. Wet flatwoods on the Preserve may represent fire-suppressed wet prairies. The canopy is open and includes slash pine and pond cypress, with cabbage palm infrequently attaining canopy size. The subcanopy is also open and consists of younger canopy species, along with swamp bay. Common shrubs include saw palmetto, wax myrtle, sweet bay magnolia, dahoon, and queen's delight, as well as sapling canopy species. Sawgrass is the dominant herb, along with black sedge, yellow eyed grasses, hairawn muhly, clustered bushmint, water cowbane, camphorweed, and dog fennel. Epiphytes and vines are infrequent.

Wet Prairie (8.5 acres)

Wet prairies are herbaceous wetlands with a dense ground cover of diverse grasses and herbs. Soils are generally sandy with a substantial organic component. Wet prairies are seasonally inundated and typically burn every two to four years. In the absence of fire, hardwoods may encroach and seriously impact the community. On the Preserve, pond cypress, slash pine, cabbage palm, and sweetbay magnolia are present in small amounts, as evidence of fire suppression. Dominant herbs include black rush, sawgrass, hairawn muhly, spikerush, camphorweed, water pimpernel, swamp milkweed, and string lily. Epiphytes and vines are infrequent.

Upland Communities

Maritime Hammock (21.5 acres)

Maritime hammocks are dense live oak-dominated forests on old dune ridges near the Gulf coast. Maritime hammocks on the Preserve often grade into the coastal variant of hydric hammock, but are on drier, sandier soils. Red cedar, cabbage palm, and hickory are common in the canopy levels along with live oak. Southern magnolia and slash pine are often present. Shrubs include yaupon holly, sparkleberry, wild olive, saw palmetto, American beauty-berry, rusty staggerbush, tallow wood, and wax-myrtle. Herbs are typically sparse and include sandy field beaksedge, bracken fern, and maiden fern. Sarsaparilla vine is commonly found, along with Spanish moss.

Mesic Flatwoods (775.4 acres)

Mesic flatwoods are open-canopy forests of widely spaced pine trees with little or no subcanopy but a dense ground cover of herbs and shrubs. The community structure of mesic flatwoods is maintained by frequent (every two to three years), low-intensity, growing season fires. Most mesic flatwoods on the Preserve need prescribed fire to decrease shrub abundance and increase herbaceous abundance and diversity. Slash pine is the dominant canopy tree. Longleaf pine and sweetgum are infrequently found in the canopy. Historically, longleaf pine would have been the dominant canopy tree, though slash pine would have been more common on the small, mesic flatwoods islands in the salt marsh and the mesic flatwoods closer to the coast. Subcanopy species include sweetgum, slash pine, red maple, dahoon, swamp bay, cabbage palm, live oak, and loblolly bay. Common shrubs include young canopy species, with saw palmetto, wax-myrtle, gallberry, fetterbush, coastal plain staggerbush, and winged sumac. Herbs include wiregrass, bracken fern, broomsedges, whitetop aster, anise-scented goldenrod, whitetassels, fringed nutrush, tall nutgrass, and witchgrasses. Epiphytes are infrequent; vines are occasional and include earleaf greenbrier and saw greenbrier.

Several islands in the tidal marshes along the Gulf of Mexico coastline are classified as mesic flatwoods. These communities have cabbage palm, yaupon holly, red cedar and saw palmetto in the understory. These are similar in general composition to islands of hydric hammock vegetation, but have a slash pine canopy, drier, sandier soils, abundant saw palmetto, and sometimes sand live oak in the understory.

Mesic Hammock (13.9 acres)

Mesic hammocks are forests of broadleaved evergreen trees that become established in areas that are naturally protected from fire. Fires occur rarely in mesic hammocks due to the combination of incombustible fuels, relatively high humidity, and the presence of natural firebreaks. Mesic hammocks are not common in the Preserve and typically occur as small patches of oaks on slopes adjacent to hydric hammock, sandhill, and shrub and brushland communities. The canopy in these hammocks consists primarily of live oak and laurel oak. Other tree species can include southern magnolia, sand live oak, and water oak. Occasional slash pine, longleaf pine, and cabbage palm may also be present. Shrubs are usually sparse and include American beautyberry, fetterbush, wax myrtle, saw palmetto, and persimmon. Epiphytes can be common, including ballmoss, and Spanish moss. The density and diversity of herbaceous species varies depending on the degree of shading

by trees and shrubs, but it typically includes low panic grasses, dogfennel, bracken fern, netted chain fern, and Carolina yelloweyed grass.

Oak Scrub (444.3 acres)

Oak scrub a xeric community occurring on old sand ridges that have white, well-drained, deep sandy soils with a dense yet patchy shrub layer, few to no herbs, and many ground lichens. Oak scrub is essentially a fire-maintained community with hot, fast burning fires occurring once every 20-80 years. Most of the oak scrub found on the Preserve is the result of sand pine removal from former sand pine scrub. While the reversion of sand pine scrub to oak scrub may increase habitat for the Florida scrub jay, it is noteworthy to mention that sand pine scrub is a natural community type which occurs on coastal sand ridges along both coasts of Florida. Oak scrub on the Preserve rarely has an overstory above 30 feet tall; however, in some instances, sand pine and slash pine reached heights above this. Typically a low canopy of scrub oaks, namely Chapman's oak, sand live oak, and myrtle oak occur. The shrubs layer is dominated by young scrub oaks, as well as rusty lyonia, saw palmetto, wax-myrtle, tar flower, turkey oak, shiny blueberry, wild olive, winged sumac, and garberia. A few herbs are present such as sandyfield beaksedge, wiregrass, bracken fern, capillary hairsedge, dog-fennel, skyblue lupine, and soft milk pea.

Ruderal (1,078.2 acres)

Ruderal areas are anthropogenic, disturbed land usually having a high percentage of weedy species, occurring on a variety of historic communities. Most of the ruderal communities are classified as clearings, though impoundment/artificial waterway, and roads are also distinguished. Clearings make up the largest amount of acreage due to the limerock mining area on the east side of Shoaline Boulevard near Hernando Beach, which also included impoundment/artificial waterway and spoil area. The disturbed lands surrounding the artificially created reclamation lakes support very little native vegetation. The substrate consists of exposed limerock or a thin veneer of depauperate soil overlying limerock. Portions of the Aripeka Sandhills are also classified as ruderal. In these areas, disturbed sites have been taken over by saw palmetto and a wide variety of other woody scrub plant species as well as various types of short herbs and grasses.

Sand Pine Scrub (364.6 acres)

Sand pine scrub a xeric community occurring on old sand ridges that have white, well drained, deep sandy soils. Sand pine scrub is dominated by a moderately closed canopy of sand pine; a dense, yet patchy shrub layer of scrub oaks and other shrub species; and few to no herbs. Sand pine is the most common and dominant canopy species, with occasional longleaf pine and sand live oak. The shrub layer is dominated by young scrub oaks, as well as rusty lyonia, saw palmetto, wax-myrtle, tar flower, turkey oak, shiny blueberry, wild olive, gopher apple, and dwarf huckleberry. A few herbs are present such as sandyfield beaksedge, wiregrass, bracken fern, and pigeonwings.

Sandhill (26.6 acres)

Sandhill vegetation at the Preserve is restricted to high, well-drained, sandy ridges within the Aripeka Sandhills. Sandhill is 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. Sandhill

occurs on crests and slopes of rolling hills and ridges with steep or gentle topography. Soils are deep, well-drained and relatively infertile. Sandhill is one of the most pyrogenic natural communities in Florida, and natural fire return intervals are as frequent as every two to three years. The native plants found in sandhill thrive under frequent fire, and extended periods of fire exclusion often cause a decline in the overall plant diversity and wildlife values of sandhill. Common species include longleaf pine, slash pine, and wiregrass.

Scrubby Flatwoods (695.6 acres)

Scrubby flatwoods are open, pine canopy forests with scattered clumps of scrub oaks and many areas of bare white sand. Fire is less frequent than in mesic flatwoods but more frequent than scrub, occurring every eight to 25 years. Soils typically have a deeper sand layer and are more xeric than that in mesic flatwoods. Vegetation composition is similar to that of both mesic flatwoods and scrub as scrubby flatwoods often occupy broad transitions between these two communities. On the Preserve, fire suppression of scrubby flatwoods communities has caused a predominance of shrubs and few, if any areas of bare soil. Slash pine and longleaf pine are the common canopy species, though sand pine can be found as well. Scrub oaks, turkey oak, and young pines are the most common species found in the subcanopy, with live oak, sweetgum, and cabbage palm infrequent. The dominant shrub species include the scrub oaks, rusty staggerbush, saw palmetto, tar flower, fetterbush, coastalplain staggerbush, shiny blueberry, garberia, false pennyroyal, gopher apple, gallberry, and winged sumac. Herbs include wiregrass, sandyfield beaksedge, bracken fern, piedmont pinweed, soft milkpea, and broomsedges. Epiphytes are infrequent but include southern needleleaf and Spanish moss. Vines are infrequent and can include earleaf greenbrier and muscadine.

Upland Hardwood Forest (30.3 acres)

Upland hardwood forests are well-developed, closed-canopy forested areas dominated by deciduous hardwood trees on mesic soils in areas sheltered from fire. These areas have a diverse assemblage of deciduous and evergreen tree species in the canopy and midstory, shade-tolerant shrubs, and a sparse groundcover. Characteristic canopy trees include southern magnolia, pignut hickory, sweetgum, live oak, laurel oak, and slash pine. This community is mainly present in the northern portion of Preserve and is bordered by hydric hammock and basin swamp communities.

Xeric Hammock (26.0 acres)

Xeric hammocks are oak-dominated forests on dry sandy soils, typically in former scrub that has not burned for many years, though naturally occurring in fire protected areas. Xeric hammock develops on sites that have not burned for at least 30 years. When a fire occurs, it is usually catastrophic. On the Preserve, xeric hammocks typically have an emergent, sparse canopy of slash pine with a dense subcanopy of sand live oak, Chapmans oak, and rusty staggerbush. Shrubs include younger subcanopy species as well as saw palmetto, wax myrtle, winged sumac, shiny blueberry, American beauty berry, and false pennyroyal. Herbs are sparse but include bracken fern, sandyfield beaksedge, anise-scented goldenrod, fringed nutrush, and witchgrass. Epiphytes are infrequent and consist of Spanish moss. Vines are occasional and include earleaf greenbrier, muscadine, and Virginia creeper.

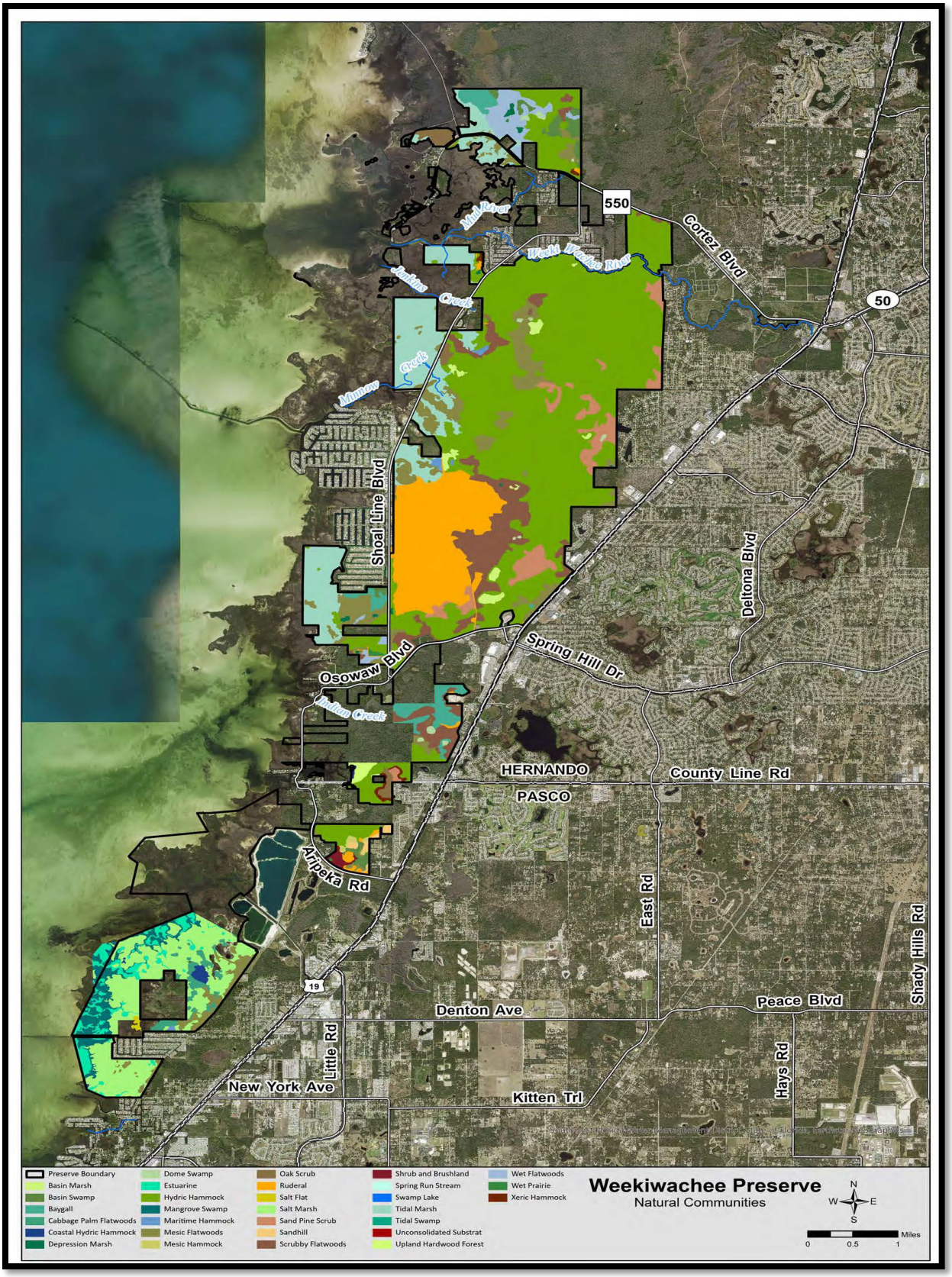

FIGURE 6. NATURAL COMMUNITIES – FNAI

Soils and Topography

Soils

Soils mapped by the Natural Resource Conservation Service (NRCS) are depicted in **Figure 7**. Additional information on soil types on the Preserve was derived from the Soil Surveys of Hernando County (USDA, 1977) and Pasco County (USDA, 1982). 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. They are typically sandy with rapid permeability, and the water table is typically well below the surface. Xeric soils occur on approximately 820 acres (6%) of the Preserve. Xeric soils include: Astatula, Paola, Jonesville, Pomello, Pompano, and Tavares 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 1,949 acres (15%) of the Preserve, and are mainly associated with the mesic flatwoods, mesic hammock, and maritime hammock communities on the Preserve. Mesic soils include Adamsville, Immokalee, Eugallie, Wabasso, and Williston fine sands.

Hydric soils are poorly drained and are located in lower, wetter areas and support the Weeki Wachee River floodplain and associated wetlands. Approximately 9,281 acres (69%) of the Preserve is underlain by hydric soils or water. These areas 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, including basin marsh, basin swamp, baygall, cabbage palm flatwoods, coastal hydric hammock, depression marsh, dome swamp, estuarine, hydric hammock, mangrove swamp, salt flat, salt marsh, spring run stream, tidal marsh, wet flatwoods, and wet prairie. The predominant hydric soils include Okeelanta-Terra Ceia association, Homosassa mucky fine sandy loam, Aripeka-Okeelanta-Lauderhill association, Myakka-Myakka wet fine sand, Arikepa fine sand, and Lacoochee fine sandy loam. Multiple other hydric soils occur in small quantities. The vast majority of open water consists of water-filled mine pits, which are remnants of commercial limerock mining conducted prior to the District's acquisition of the Preserve.

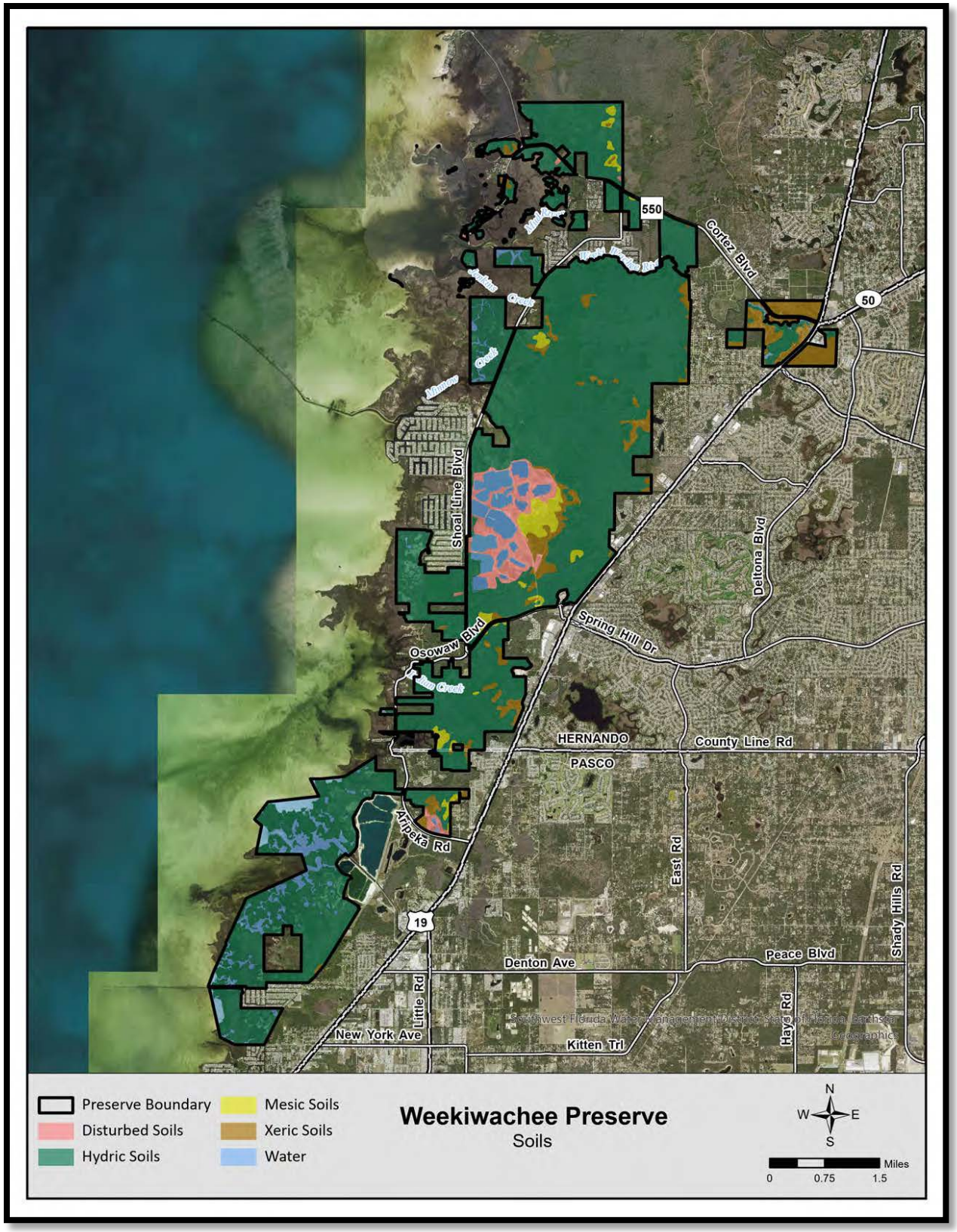

FIGURE 7. SOIL TYPES

Topography

Elevations range from sea level along the salt marsh coastal areas to a high point of 57 feet (NAVD88) in the center of the Preserve near the reclaimed lakes (**Figure 8**). The majority of the Preserve is relatively flat with elevations 10 feet above sea level or lower. The hydrology of the Preserve is strongly influenced by this flat topography and slow permeability of underlying soils. The entire Preserve is within the Upper Coastal Drainage basin. Groundwater in the aquifer generally flows northwesterly toward Weeki Wachee Springs from a potentiometric high southwest of Dade City.

The Preserve is within the Southern Coastal Plain ecoregion; specifically, the Gulf Coast Flatwoods and Big Bend Coastal Marsh subregions. Gulf Coast Flatwoods subregion stretches from eastern Louisiana, across southern Mississippi and Alabama, and up Florida's gulf coast from the western edge of Pasco County to Apalachicola. This Gulf Coast Flatwoods Subregion includes low, flat, forested areas just inland from the coast. The Big Bend Coastal Marsh subregion spans from the southern coastline of Pasco County up Florida's gulf coast to Levy County. This subregion includes seagrass meadows and salt marshes along the shallow coastal shelf.

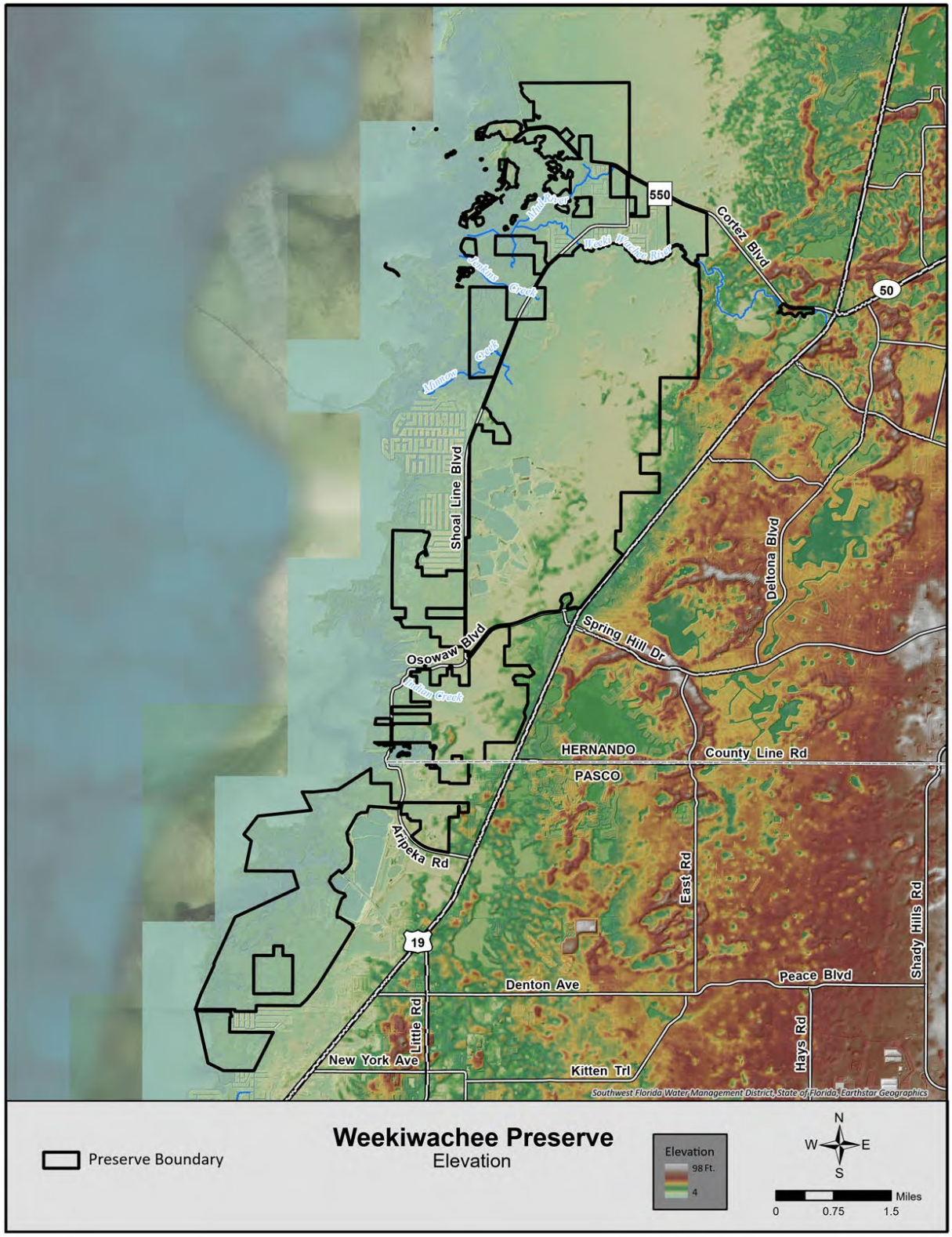

FIGURE 8. DIGITAL ELEVATION MODEL

Land Management and Land Use

Land Management

As owner 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 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 136 distinct management units covering approximately 2,745 acres of fire-dependent natural communities (24% of the Preserve). These management units are illustrated in **Figure 9**. 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. The District has also utilized resources from the Florida Forest Service through the Prescribed Fire Enhancement Program which facilitates the implementation of prescribed fire in Florida. The District has used this program to facilitate management of hazardous fuels in the Wildland Urban Interface to mitigate the impacts from wildfires.

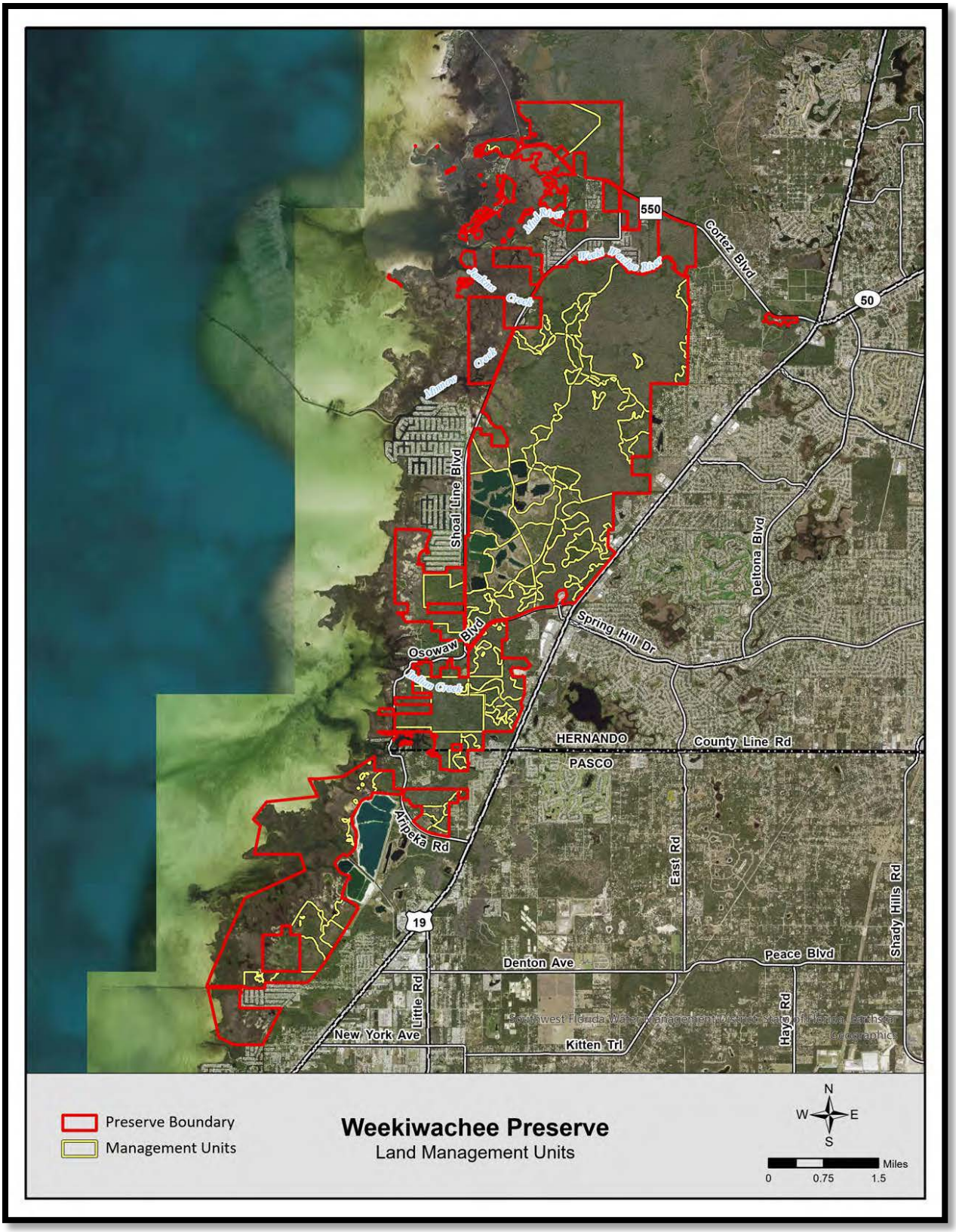

FIGURE 9. MANAGEMENT UNITS

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 10** 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. CURRENT CONDITION CLASS SUMMARY

Condition Class	Description	Acres	Overall Composition	Fire Maintained (Class 1-4)
1	Less than 1 Fire Return Interval	1,249	9%	38%
2	Less than 2 Fire Return Intervals	253	2%	8%
3	More than 2 Fire Return Intervals	1,656	12%	51%
4	Requires restoration or mechanical treatment	113	1%	3%
5	System not maintained by fire	9,466	71%	
6	Timber Management Zone	n/a	n/a	
7	Cattle Lease	n/a	n/a	
8	Recreation	n/a	n/a	
9	Special Use	562	4%	
Grand Total		**13,300**	100%	100%

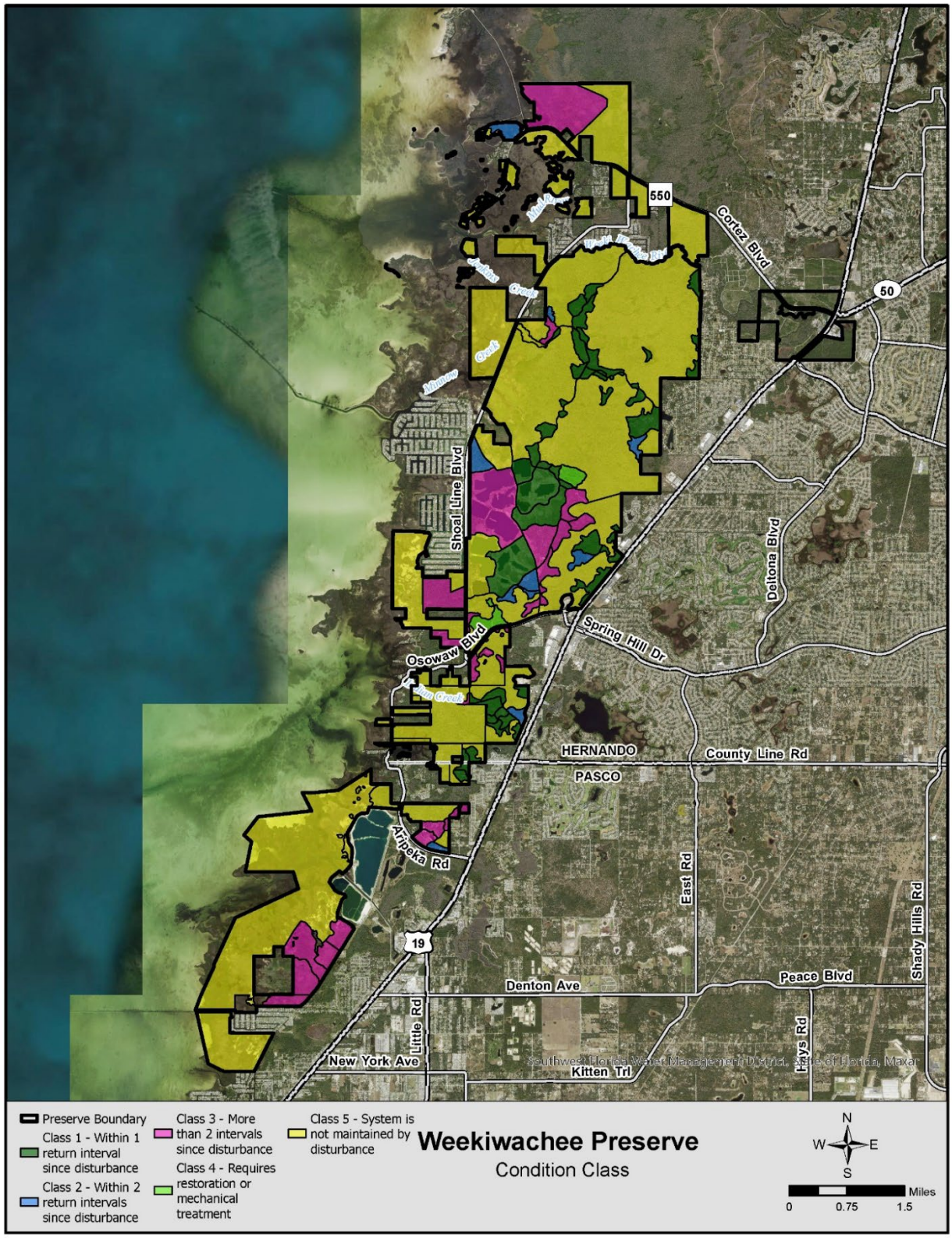

FIGURE 10. FISCAL YEAR 2023 CONDITION CLASS MAP

Forest Management

The Preserve does not have any timber management zones actively managed by the District. Historically, pine plantation comprised approximately 54 acres of the Preserve. Approximately 125 acres of planted slash pine was also installed along the upland perimeters of some of the mining pits and along road frontages. The strands were heavily thinned prior to District acquisition, and overtime they regenerated into a more typical pine flatwoods community. On other District lands, plantations were created to restore the pine overstory in previously altered areas and improve habitat. The goal of timber management zones is to manage these areas using standard silvicultural practices to maintain forest health, provide habitat, support local economies, and generate revenue to offset the cost to manage these properties. Forest management practices can be utilized in natural areas to support the land management objectives of a specific management unit. Within the Preserve there are no appropriate sites for timber management. Altered lands from mining are present but have been reclaimed for other uses including recreation.

Habitat Restoration

The primary tool used to restore fire-dependent natural communities to their historical structure and function is the repeated application of prescribed fire. However, conservation lands that have been heavily altered from their original habitat or those that have been fire suppressed for long periods of time often require supplementary habitat management activities before a maintenance fire regime can be reached. This is especially true in fire-dependent communities that are no longer able to safely carry prescribed fire due to changes in fuel structure and loading. At Weekiwachee preserve, fire suppression and heavy fuel loads in the urban interface have led land managers to prescribe mechanical fuel reduction treatments in advance or in lieu of prescribed fire application. These fuel reduction treatments include hydro-axing and mechanical thinning of overgrown upland communities, and hazardous fuel reduction in areas alongside homes, commercial buildings or roads. These mechanical treatments create finer fuels while bringing fuels closer to the ground, allowing prescribed fire to be reintroduced to the area at a much lower intensity while reducing the risk of wildfire.

The former limerock mine site is the most severely altered area on the Preserve and has undergone restoration efforts. The historical mining operation resulted in habitat destruction and major ground disturbances, leaving behind a series of deep, water filled pits surrounded by an exposed limerock surface. It is currently not feasible nor desirable to restore the area to its historic condition. However, the area has undergone some limited restoration efforts which have improved its ecological functioning. Prior to District acquisition, reclamation was performed to establish littoral zones in the ponds, vegetate slopes, seed native grasses and wildflowers onto the limerock surface, redirect water flow, and recontour spoil. Also, a berm running parallel to Shoal Line Road was breached in five locations to allow water flow during hypothetical storm events. Today, the area has significant ecological value and supports a wide array of native plant and animal species including a variety of wading birds. The mine surface is mainly vegetated by native grasses and is able to carry prescribed fire on a regular burn rotation.

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, non-native plant species in the state, compiles species lists, and categorizes these species based on their impact on 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 four (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 Weekiwachee Invasive Plant Management Prioritization Plan was 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. The species that rank as the highest priority level for control are Chinese tallow, cogon grass, Brazilian pepper, and coral ardesia. 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 Preserve include old world climbing fern, coral ardisia, and tropical soda apple. **Table 4** lists the most common or problematic invasive

plant species found on the Preserve, 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 4. INVASIVE PLANTS KNOWN TO OCCUR

Common Name	Scientific Name	FISC Status	Priority Level for Control
Air potato	*Dioscorea bulbifera*	Category I	7a
Arrowhead vine (EDRR) (never found)	*Syngonium podophyllum*	Category I	5
Brazilian peppertree	*Schinus terebinthifolia*	Category I	5
Caesarweed	*Urena lobata*	Category I	15
Camphor tree	*Cinnamomum camphora*	Category I	6
Chinese tallow	*Triadica sebifera*	Category I	4
Cogongrass	*Imperata cylindrica*	Category I	5
Coral ardisia (EDRR)	*Ardisia crenata*	Category I	4
Guineagrass (EDRR)	*Urochloa maxima*	Category II	8
Kudzu (EDRR) (never found)	*Pueraria montana* var. *lobata*	Category I	4
Lead tree	*Leucaena leucocephala*	Category II	4
Natal grass	*Melinis repens*	Category I	10
Old World climbing fern (EDRR)	*Lygodium microphyllum*	Category I	4
Septic weed	*Senna occidentalis*	N/A	5
Showy rattlebox	*Crotalaria spectabilis*	N/A	4
Skunk vine	*Paederia foetida*	Category I	7
Torpedograss	*Panicum repens*	Category I	13
Tropical soda apple (EDRR)	*Solanum viarum*	Category I	4

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 on District lands include trapping, FWC-administered Wildlife Management Area hog hunts, special District administered hog hunts, and on select properties, aerial operations conducted by the United States Department of Agriculture (USDA) – Wildlife Services program. The use of electronically controlled hog traps in targeted areas has also proven highly effective. Within the the Preserve, feral hog control efforts occur throughout the Preserve on an ongoing basis.

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 or the U.S. Fish and Wildlife Service (USFWS). The diverse natural communities within the Preserve provide significant habitat for a variety of imperiled and locally important species. The 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.

A large 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. 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 5** lists 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. Although the bald eagle was removed from listing under the Endangered Species Act in 2007 and is not included in the table below, it is currently federally protected under the Bald and Golden Eagle Protection Act. Multiple bald eagle nests have also been documented within the Preserve.

TABLE 5. IMPERILED WILDLIFE SPECIES KNOWN OR LIKELY TO OCCUR

Common Name	Scientific Name	Federal Status*	State Status*	Management Recommendations
American alligator	*Alligator mississippiensis*	FT(S/A)	FT(S/A)	Protect from illegal take; manage wetlands.
American oystercatcher	*Haematopus palliates*		ST	Maintain and protect nesting habitats (sandbars, salt marsh).
Eastern black rail	*Laterallus jamaicensis* ssp. *jamaicensis*	FT	FT	Maintain suitable habitat and hydrology (salt, brackish, and freshwater marsh habitats).
Eastern indigo snake	*Drymarchon couperi*	FT	FT	Manage habitats holistically; maintain appropriate fire-return frequencies in pyrogenic communities.
Florida manatee	*Trichechus manatus latirostris*	FT	FT	Manage habitats holistically; protect habitats (Weeki Wachee River and coastline).
Florida sandhill crane	*Antigone canadensis pratensis*		ST	Maintain nesting habitats (marsh); periodically burn marsh habitat to discourage encroachment of woody species.

Florida scrub-jay	*Aphelocoma coerulescens*	FT	FT	Maintain scrub areas with oak height between 1-3 meters. Eliminate any trees (predator perches).
Gopher tortoise	*Gopherus polyphemus*		ST	Manage areas with tortoise populations and/or xeric soils by maintaining <40% canopy using fire or mechanical thinning.
Least tern	*Sternula antillarum*		ST	Protect nesting habitat (estuaries, bays, salt flats).
Little blue heron	*Egretta caerulea*		ST	Protect rookeries and manage foraging and nesting sites (salt marshes).
Marian's marsh wren	*Cistohorus palustris marianae*		ST	Protect and manage foraging sites; maintain natural hydroperiods.
Scott's seaside sparrow	*Ammodramus maritimus*		ST	Protect rookeries and manage foraging and nesting sites (salt marshes), discourage encroachment of woody vegetation.
Short-tailed snake	*Lampropeltis extenuate*		ST	Minimize barriers in sandhill/scrub soils. Resource protection.
Southeastern American kestrel	*Falco sparverius paulus*		ST	Prescribed fire; maintain snags and tree cavities.
Tricolored heron	*Egretta tricolor*		ST	Protect rookeries and manage foraging sites.
Wood stork	*Mycteria americana*	FT	FT	Protect rookeries and maintain hydrology.

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

Imperiled Plants

Table 6 lists 15 imperiled plant species that are known 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 6. IMPERILED PLANT SPECIES KNOWN OR LIKELY TO OCCUR

Common Name	Scientific Name	Listing Status*	Habitat	Management Recommendations
Blueflower butterwort	*Pinguicula caerulea*	ST	Wet flatwoods	Burn in rotation.
Cardinal flower	*Lobelia cardinalis*	ST	Forested creek and river edges	Sustain riparian habitats. Often pollenated by hummingbirds.
Curtiss' milkweed	*Asclepias curtissii*	SE	Scrub	Prescribed fire application.
Florida spiny pod	*Matelea floridana*	SE	Scrubby flatwoods and mesic hammock	Burn in rotation.
Garberia	*Garberia heterophylla*	ST	Sand pine scrub	Manage areas with garberia with habitat appropriate burn regimes.
Giant air plant	*Tillandsia utriculata*	SE	Cypress swamps and hammocks	Wetland protection.

Golden leather fern	*Acrostichum aureum*	ST	Mangrove swamps, salt marshes, low hammocks.	Wetland protection.
Little ladies-tresses	*Spiranthes tuberosa*	ST	Sandhill, mesic flatwoods.	Protection and proper management of habitat with appropriate burn regime.
Narrowleaf naiad	*Najas filifolia*	ST	Lakes and ponds.	Invasive plant control.
Nodding pinweed	*Lechea ceruna*	ST	Scrub or scrubby flatwoods	Maintain fire regime.
Piedmont jointgrass	*Mnesithea tuberculosa*	ST	Ephemeral ponds, upland lakes, depressional marshes	Avoid soil disturbance and maintain hydrology.
Pine lily	*Lilium catesbaei*	ST	Pine flatwoods, savannas, and bogs.	Use of prescribed fire to increase flowering and reproduction.
Rain lily	*Zephyranthes atamasca*	ST	Floodplains, low pastures.	Maintain hydrology quality and quantity.
Rose pogonia	*Pogonia ophioglossoides*	ST	Moist meadows, wet prairie, sphagnous seeps, roadside ditches.	Maintain hydrology quality and quantity.
Wright's pineland fern	*Anemia wrighti*	SE	Limestone pinnacles, pine rocklands, rockland hammocks.	Maintain fire regime and control exotics.

*SE=State Endangered, ST=State Threatened

Florida Black Bear

A small number of Florida black bears are known to occur on the Preserve. Although Florida black bears are no longer considered a threatened or endangered species, they remain a species of management concern at the Preserve due to their local scarcity and the potential for human-bear conflict in the urban interface.

Florida black bears found on the Preserve are part of the Chassahowitzka subpopulation of the species (as defined by the FWC) which includes lands west of U.S. Highway 19, from the Aripeka Sandhills tract of the Preserve to the Homosassa Tract of the Withlacoochee State Forest. The subpopulation is located in the southern portion of FWC's Big Bend Bear Management Unit (BMU). The Chassahowitzka subpopulation is the smallest in the state and is considered genetically isolated from other populations (FWC, 2022).

The District will continue to coordinate with the FWC as they implement management of the Big Bend BMU as outlined in the current version of the FWC Florida Black Bear Management Plan (FWC, 2019). The District will also continue to comply with best management practices for reducing human-bear conflicts in the area.

Arthropod Management

In compliance with Section 388.4111, Florida Statutes and in Section 5E-13.042, Florida Administrative Code, land within the Preserve in Hernando and Pasco 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 a variety of important benefits to the water related resources within west-central Florida and offer a variety of recreational opportunities. Resource-based recreational opportunities allow for an enjoyable outdoor experience while making sure the land is protected. Part of the District Policy governs 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, while public access points are minimal and only allow for passive recreational activities. 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, but the recreational amenities at these locations are managed in partnership with other entities. This partnership allows the District to protect water resources, while our partners develop 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.

The Preserve allows birding, hunting, hiking, canoeing-paddling, picnicking, bicycling, and fishing, while the Aripeka Sandhills portion of the Preserve offers birding, fishing, and hiking (**Figure 11**). On the second and fourth weekend of each month, vehicle access is allowed in the Preserve through the Osowaw Boulevard entrance. Vehicle access is permitted from the gate to the restroom and small parking area. The Preserve does not offer camping or equestrian opportunities due to the compatibility of these uses.

Cooperatively Managed Properties

Located to the north of the Preserve's main entrance is the Bayport Tract, which is cooperatively managed by Hernando County. The Bayport Tract was originally developed in the 1950s with boat launch facilities and a fishing pier. Recreational opportunities at the Bayport Tract include a boardwalk along the coastline, nature trails, shelters, a pavilion, and boat ramp.

Another cooperatively managed part of the Preserve is Weeki Wachee Springs State Park, which offers a higher level of recreational opportunities. The 928-acre park features a first-magnitude spring and a 400-seat submerged theater to view the live mermaid show. Buccaneer Bay offers a unique opportunity for all ages.

The most recent addition to the Preserve's cooperatively managed projects includes a lease agreement with Hernando County. The agreement covers a portion of the Preserve to include additional passive recreation opportunities such as restroom facilities, a kayak launch, and a boardwalk to provide increased accessibility. More details can be found in the Partnerships and Cooperative Management section of this plan.

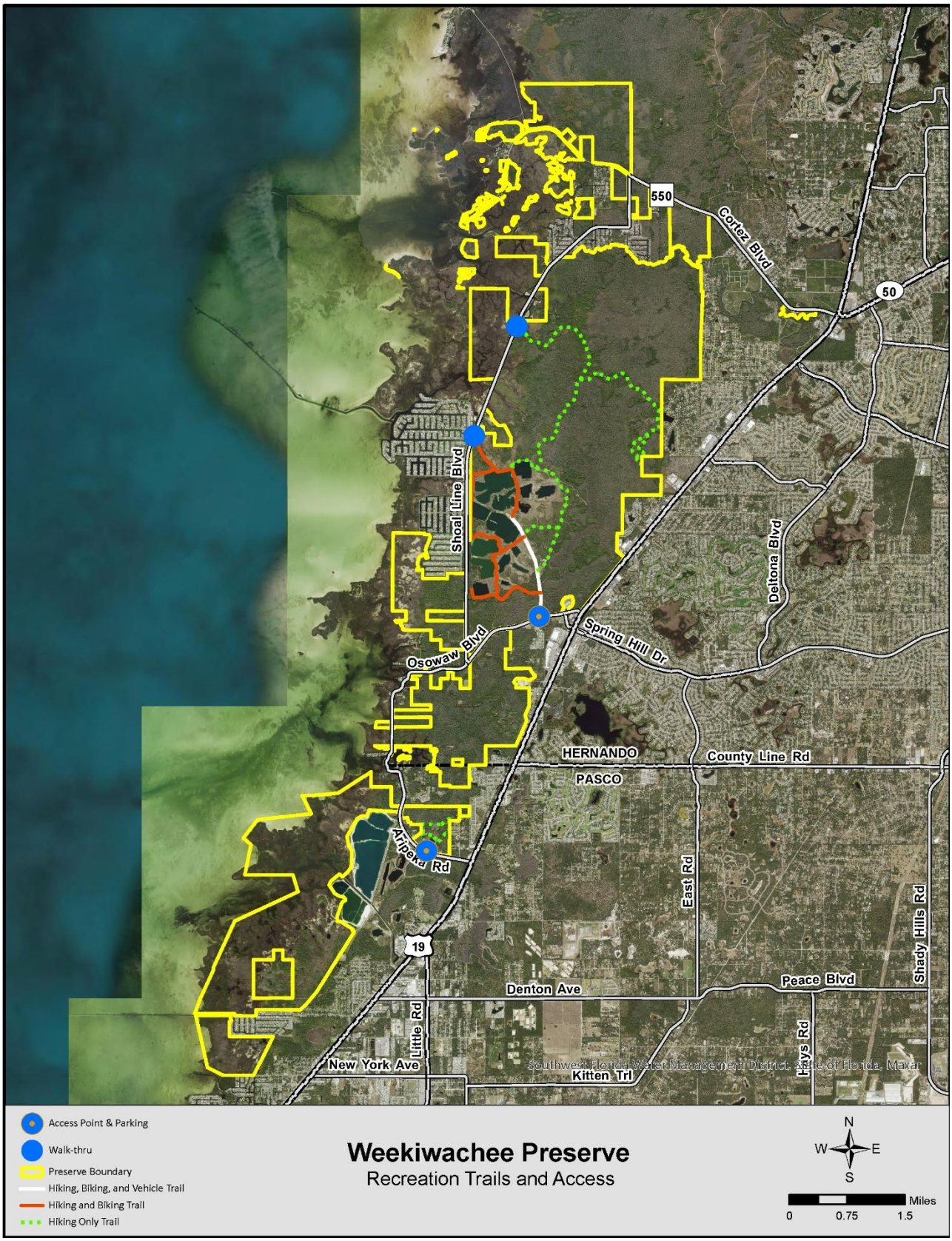

FIGURE 11. RECREATION AND PUBLIC ACCESS

Trails

Nature trails give nature-based experiences while minimizing impacts to natural systems. The Preserve provides approximately 17 miles of multi-use trails. Approximately seven miles of trails support hiking and biking on paved and unpaved trails, while approximately 10 miles are hiking-only trails. Within the Aripeka Sandhills portion of the Preserve, all trails are hiking only. Signs depicting appropriate uses provide directions to a network of hiking and biking experiences across the Preserve.

Access to the Preserve is provided at one main location along the eastern property boundary off Osowaw Boulevard in Spring Hill. On the second and fourth Saturday of each month, visitors may drive into the Preserve through the Osowaw Boulevard entrance and park at the end of paved road. Two additional walk-thru points are present on the western boundary of the Preserve off of Shoal Line Boulevard. The Aripeka Sandhills portion of the Preserve also provides parking and an access point on Aripeka Road, west of U.S. Highway 19.

Wildlife Viewing, Hunting, Fishing, Boating

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 species including both freshwater and saltwater dependent species. The Preserve is located on the west section of the Great Florida Birding and Wildlife Trail. 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.

In the Preserve, electric trolling motors are allowed, and there are fishing opportunities on the numerous lakes on the Preserve that are inhabited by both freshwater and saltwater species. Contact the FWC for license requirements.

Sections of the Preserve are available to limited hunting opportunities, which is administered by the FWC through an agreement. With this agreement the FWC maintains two separate Wildlife Management Areas (WMAs): the Weekiwachee WMA which is 2,845 acres and the Chassahowitzka WMA which includes 678 acres of the Preserve. The Weekiwachee WMA is encompassed entirely within the Preserve and provides hunting opportunities for a variety of species through five separate archery hunts. The smaller portion in the Chassahowitzka WMA is entirely north of Cortez Boulevard and included with the larger FWC managed section of the Chassahowitzka WMA, which allows for a variety of additional hunting opportunities. Hunting is not an allowable use in the Aripeka Sandhills portion of the Preserve. FWC rules and regulations must be observed throughout the year.

Environmental Education

The Springs Coast Environmental Center is located within the Preserve and is a partnership between Hernando County Schools and the District, funded by the District's Coastal Rivers Basin Board. The center has four classrooms, a meeting room, an office, and restrooms. The center is located next to the Weeki Wachee River and provides a place where students of Hernando County

can experience, study, and enjoy nature in a setting that promotes opportunities for students to understand Florida's ecosystems.

Land Use Administration

The land uses administered on District conservation lands are governed by both District Policy and the 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 preservation lands. **Figure 12** depicts the various cooperative agreements within the Preserve.

The largest is a cooperative agreement between the District and the FWC for the management of the Weekiwachee Wildlife Management Area (WMA) that covers a 2,845-acre area on the northern portion of the Preserve. A second agreement between the District and the FWC is in place for an additional 678 acres of the Preserve falling within the Chassahowitzka WMA north of Cortez Boulevard. The two agreements covering the Weekiwachee WMA and the Chassahowitzka WMA both have a 20-year term.

Aripeka Sandhills was acquired as part of the Preserve in November 2007. It was purchased originally by the Pasco County Environmental Lands Division, and then the District reimbursed the County for 50 percent using Florida Forever Funds, becoming co-owners in fee. The District assumed management responsibility in partnership with the County which is memorialized in a cooperative agreement

The District entered into an agreement with Hernando County in 2000 authorizing Hernando County to manage the Bayport Tract. Adjacent to the District's parcel, Hernando County maintains a separate park that includes a boat ramp, dock, and other facilities. The current agreement was made in October 2020 and runs for 25 years subject to annual reporting and monitoring.

More recently, the District and Hernando County entered into a lease agreement for cooperative management to establish a park and allow the County to provide additional passive recreational

opportunities on a portion of the Preserve. The term of the lease is for twenty years for approximately 353 acres and outlines recreation activities that are both permitted and restricted at the Preserve. The lease includes a Park Plan and an Education and Recreation Management Plan that are still being developed that will further outline the passive recreational activities that will be permitted at the Preserve as well as those activities that will be prohibited.

In 2001, the District purchased the property surrounding the first-magnitude Weeki Wachee Spring. In November 2008, the District entered into a lease agreement with the FDEP, Division of Recreation and Parks, to manage the property as a state park. This lease agreement runs for 50 years.

In 2002, the District entered into an agreement with the Hernando County School Board to construct, operate, and maintain the Springs Coast Environmental Center, which is located within the Preserve boundary on Cortez Boulevard. This agreement is viable for 50 years which includes recurring 10-year renewal terms. Along with funding, the District provided a no-cost lease of the approximately 23-acre property for the center, which is located along the Weeki Wachee River. The Hernando County School Board continues to operate and maintain the center.

Four utility easement agreements occur within the Preserve, including two with Hernando County for a wastewater transmission pipeline and two with Withlacoochee River Electric Cooperative for electric distribution lines.

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.

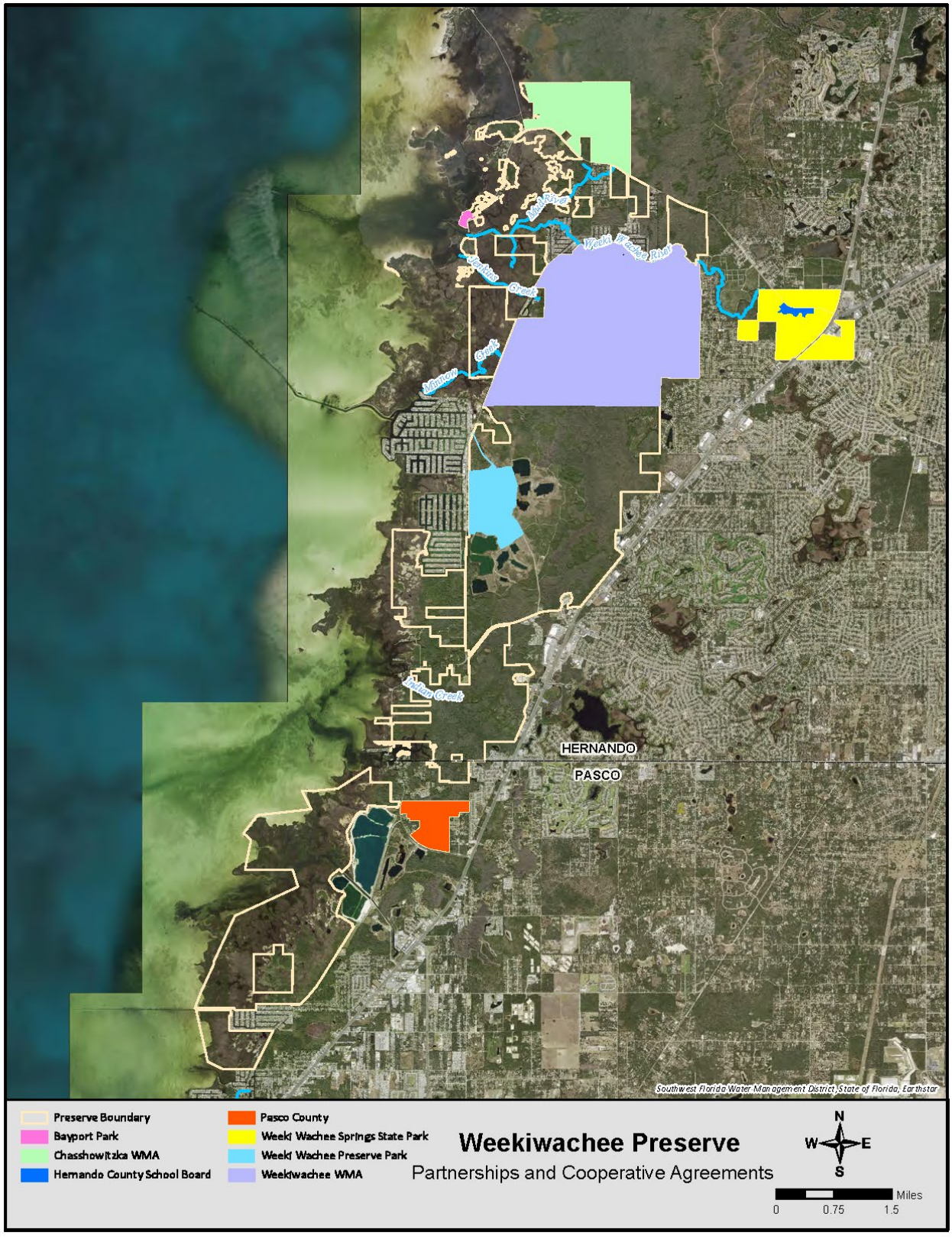

FIGURE 12. PARTNERSHIP AND COOPERATIVE AGREEMENTS

License Agreements

There are four license agreements in place on the Preserve. One intergovernmental license agreement is in place with the Florida National Guard for aerial wildfire suppression training, one license agreement allows temporary access to a contractor, and the other two license agreements are for apiaries.

Governing Board Policy allows apiaries to be established on District-owned lands provided there will not be any long-term impacts. Two 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, public use, and emergency situations. 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 and only exists along the main access road off Osowaw Boulevard. 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. The District maintains an agreement with FWC Division of Law Enforcement for security on the Preserve. Additional security is provided by the Hernando County and Pasco County Sheriff's Office.

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 facilities, 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 only facilities on the Preserve are those associated with cooperatively managed areas, including the Bayport Park managed by Hernando County, the Springs Coast Environmental Center managed by the Hernando County School Board, and the WeekiWachee Springs State Park managed by the FDEP, Division of Recreation and Parks. The Preserve also supports utilities including a Hernando County wastewater transmission pipeline and two Withlacoochee River Electric Cooperative electric distribution lines.

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 and develop restoration 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: Conduct prescribed burns during the appropriate seasons to meet burn objectives and 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.
- Objective 5: Decrease wildfire risk in wildland urban interface areas with heavy fuel buildup by using a combination of mechanical fuel reduction treatments and prescribed fire application.

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 strategies 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 and/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 at a maintenance level.

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 ensure 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.

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 cooperation with Pasco and Hernando Counties to provide compatible multi-use recreational opportunities on the Preserve including the development of a new Hernando County park located on the main tract of the Preserve.
- Objective 4: Continue to partner with FWC to provide quality public hunting opportunities on Weekiwachee WMA.

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: 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 10 years.

Land Management

- Developed annual work plans, which include burn goals, habitat restoration projects, timber management, mowing, culvert and road maintenance, and recreation goals.
- The Preserve averaged 130 prescribed burn acres annually over the last 10 years totaling 1,300 acres and is outlined in the table below.

Weekiwachee Preserve - 10-year Prescribed Burn History (acres)	
Fiscal Year	**Annual Total**
2015	152
2016	52
2017	0
2018	331
2019	0
2020	0
2021	172
2022	203
2023	390
2024	0
Total	**1,300**

- Treated over 335 acres of invasive plant species including Brazilian Pepper tree, cogon grass and Chinese tallow.

Weekiwachee Preserve Invasive Plant Treatment History	
Fiscal Year	**Annual Total (acres)**
2015	73.5
2016	33.1
2017	22.1
2018	38.0
2019	29.3
2020	22.0
2021	7.5
2022	48.0
2023	62.0
Total	335.4

- Annually maintained perimeter and annual burn plan firelines for prescribed fire and wildfire mitigation.

- Performed annual maintenance of eight miles of primary roads, and 22 miles of secondary roads. This included filling in potholes, replacing culverts, and grading when necessary.
- Mowed twice annually 21 miles of roads and trails equaling 76 acres.
- Conducted routine feral hog monitoring and removal efforts as needed.
- Over the past ten-year period, conducted 570 acres of mechanical hazard fuel reduction treatments (hydro-axing) on the Preserve.

Water Resources

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

Recreation

- Over the past 10 years, volunteers have spent approximately 141 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 $4,722 in contributions to work on the Preserve.
- Redesigned main entrance sign to include new District conservation land logo. The associated kiosk map was also redesigned to align with the new entrance sign and include confidence markers on the trail map.
- Provided vehicle access on the second and fourth Saturday of each month to allow for increased recreational access.

Acquisition

- There have been three land acquisitions within the Preserve over the last 10 years. This included the fee purchase of approximately 824 acres. There was also the purchase of a perpetual easement for access that was approximately two acres.
- In 2017, two small parcels totaling approximately 2.5 acres along the western boundary of the Preserve were sold as part of the Biennial Surplus Lands Assessment.

Administration

- Authorized 31 SUAs for access, special events, research and education, and training.
- Maintained license agreements for two apiary sites located on the Preserve in Pasco County.

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Appendix A- Plant list

Plant Species Known to Occur or Likely to Occur

Common Name	*Scientific Name*
Air potato	*Dioscorea bulbifera*
American beauty-berry	*Callicarpa americana*
American elm	*Ulmus americana*
Anise-scented goldenrod	*Solidago odora*
Arrowheads	*Sagittaria* spp.
Bastard indigo-bush	*Amorpha fruticosa*
Beaksedges	*Rhynchospora* spp.
Bigleaf sumpweed	*Iva frutescens*
Black gum	*Nyssa sylvatica*
Black mangrove	*Avicennia germinans*
Black needle rush	*Juncus roemerianus*
Black sedge	*Schoenus nigricans*
Bladderworts	*Utricularia* spp.
Blueflower butterwort	*Pinguicula caerulea*
Bracken fern	*Pteridium aquilinum*
Brazilian pepper	*Schinus terebinthifolia*
Broomsedges	*Andropogon virginicus, Andropogon glomeratus*
Bushy seaside oxeye	*Borrichia frutescens*
Butterfly orchid	*Encyclia tampensis*
Buttonbush	*Cephalanthus occidentalis*
Buttonwood	*Conocarpus erectus*
Cabbage palm	*Sabal palmetto*
Caesarweed	*Urena lobata*
Camphor tree	*Cinnamomum camphora*
Camphorweed	*Pluchea rosea*
Capillary hairsedge	*Bulbostylis ciliatifolia*
Cardinalflower	*Lobelia cardinalis*
Carolina ash	*Fraxinus caroliniana*
Carolina willow	*Salix caroliniana*
Cat greenbrier	*Smilax glauca*
Cattails	*Typha domingensis*
Chapman's oak	*Quercus chapmannii*
Chinese tallow	*Triadica sebifera*
Cinnamon fern	*Osmunda cinnamomea*
Clustered bushmint	*Hyptis alata*

Coastal plain staggerbush	*Lyonia fruticosa*
Cogongrass	*Imperata cylindrica*
Coral ardisia	*Ardisia crenata*
Corkwood	*Stillingia aquatica*
Curtiss' milkweed	*Asclepias curtissii*
Dahoon holly	*Ilex cassine*
Dog-fennel	*Eupatorium* spp.
Duckweed	*Lemna* spp.
Dwarf huckleberry	*Gaylussacia dumosa*
Earleaf greenbrier	*Smilax auriculata*
False pennyroyal	*Piloblephis rigida*
Fetterbush	*Lyonia lucida*
Florida spiny pod	*Matelea floridana*
Fringed nutrush	*Scleria ciliaris*
Gallberry	*Ilex glabra*
Garberia	*Garberia heterophylla*
Giant leather fern	*Acrostichum danaeifolium*
Glassworts	*Salicornia* spp.
Golden leather fern	*Acrostichum aureum*
Gopher apple	*Licania michauxii*
Green ash	*Fraxinus pennsylvanicus*
Groundsel tree	*Baccharis halimifolia*
Guineagrass	*Urochloa maxima*
Hairawn muhly	*Muhlenbergia capillaris*
Hickory	*Carya glabra*
Jack-in-the-pulpit	*Arisaema triphyllum*
Japanese climbing fern	*Lygodium japonicum*
Laurel greenbrier	*Smilax laurifolia*
Laurel oak	*Quercus laurifolia*
Lead tree	*Leucaena leucocephala*
Little ladies-tresses	*Spiranthes tuberosa*
Live oak	*Quercus virginiana*
Lizard's tail	*Saururus cernuus*
Loblolly bay	*Gordonia lasianthus*
Longleaf pine	*Pinus palustris*
Maiden fern	*Thelypteris* spp.
Maidencane	*Panicum hemitomon*
Marsh fern	*Thelypteris palustris*
Marsh fimbry	*Fimbristylis spadicea*
Marshgentian	*Eustoma exaltata*

Marshhay cordgrass	*Spartina patens*
Millet beaksedge	*Rhynchospora miliacea*
Mulberry	*Morus rubra*
Muscadine	*Vitis rotundifolia*
Myrtle oak	*Quercus myrtifolia*
Narrowleaf naiad	*Najas filifolia*
Natal grass	*Melinis repens*
Old World climbing fern	*Lygodium microphyllum*
Partridgeberry	*Mitchella repens*
Peelback St. John's wort	*Hypericum fasciculatum*
Persimmon	*Diospyros virginiana*
Pickerelweed	*Pontederia cordata*
Piedmont pinweed	*Lechea torreyi*
Pigeonwings	*Clitoria mariana*
Pine lily	*Lilium catesbaei*
Poison ivy	*Toxicodendron radicans*
Pond cypress	*Taxodium ascendens*
Queen's delight	*Stillingia sylvatica*
Rainlily	*Zephyranthes atamasca*
Rattan vine	*Berchemia scandens*
Red cedar	*Juniperus virginiana*
Red mangrove	*Rhizophora mangle*
Red maple	*Acer rubrum*
Redroot	*Lachnanthes caroliniana*
Rose pogonia	Pogonia ophioglossoides
Royal fern	*Osmunda regalis*
Rusty staggerbush	*Lyonia ferruginea*
Salt marsh cordgrass	*Spartina alterniflora*
Saltwort	*Batis maritima*
Sand live oak	*Quercus geminata*
Sand pine	*Pinus clausa*
Sandy field beaksedge	*Rhynchospora megalocarpa*
Sarsaparilla vine	*Smilax pumila*
Saw greenbrier	*Smilax bona-nox*
Saw palmetto	*Serenoa repens*
Sawgrass	*Cladium jamaicense*
Septic weed	*Senna occidentalis*
Shiny blueberry	*Vaccinium myrsinites*
Shoregrass	*Monanthochloe littoralis*

Showy rattlebox	*Crotalaria spectabilis*
Skunk vine	*Paederia foetida*
Skyblue lupine	*Lupinus diffusus*
Slash pine	*Pinus elliottii*
Soft milk pea	*Galactia mollis*
Southern magnolia	*Magnolia grandiflora*
Southern needleleaf	*Tillandsia setacea*
Spanish bayonet	*Yucca aloifolia*
Spanish moss	*Tillandsia usneoides*
Sparkleberry	*Vaccinium arboretum*
String lily	*Crinum americanum*
Swamp bay	*Persea palustris*
Swamp dogwood	*Cornus foemina*
Swamp milkweed	*Asclepias perennis*
Swamp tupelo	*Nyssa biflora*
Sweetbay magnolia	*Magnolia virginiana*
Sweetgum	*Liquidambar styraciflua*
Tall nutgrass	*Scleria triglomerata*
Tallow wood	*Ximenia americana*
Tar flower	*Bejaria racemosa*
Threesquare bulrush	*Scirpus pungens*
Toothpetal false reinorchid	*Habenaria floribunda*
Torpedo grass	*Panicum repens*
Tropical soda apple	*Solanum viarum*
Turkey oak	*Quercus laevis*
Virginia chain fern	*Woodwardia virginica*
Virginia creeper	*Parthenocissus quinquenervia*
Virginia willow	*Itea virginica*
Wand loosestrife	*Lythrum lineare*
Water cowbane	*Oxypolis filiformis*
Water pimpernel	*Samolus ebracteatus*
Wax myrtle	*Myrica cerifera*
Whitetassels	*Dalea carnea var. carnea*
Whitetop aster	*Aster reticularis*
White-top beaksedge	*Rhynchospora colorata*
Wild coffee	*Psychotria nervosa*
Wild olive	*Osmanthus americana*
Winged sumac	*Rhus copallinum*
Wiregrass	*Aristida stricta*
Witchgrasses	*Dichanthelium* spp.

Wood oats	*Chasmanthium* spp.
Woodsgrass	*Oplismenus hirtellus*
Wright's pineland fern	*Anemia wrighti*
Yaupon holly	*Ilex vomitoria*
Yellow-eyed grasses	*Xyris* spp.