



LAND MANAGEMENT PLAN

UPPER HILLSBOROUGH PRESERVE

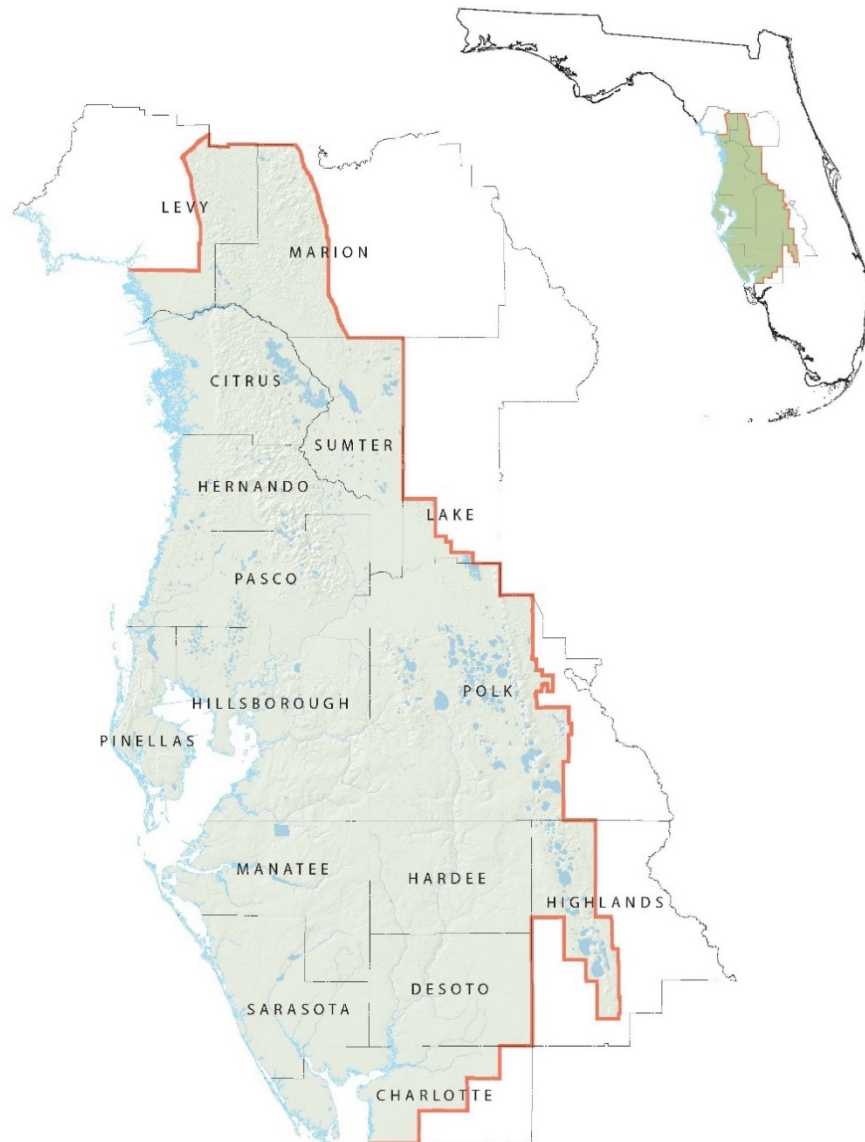
SEPT. 28, 2021

Southwest Florida
Water Management District



The Southwest Florida Water Management District (District) is a science-based organization responsible for managing and protecting water resources in west-central Florida. The District's job is to ensure 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. It 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 a total population estimated to be 5.4 million in 2020.



Southwest Florida Water Management District



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Executive Summary

Acres: 9,961

Acquisition Dates: 1969, 1990, 1994, 1997

Plan Term: 10 Years (2022-2031)

Primary Basin: Hillsborough River

Location: Pasco County, Polk County

Funding Source: Water Management Lands Trust Fund, Preservation 2000, Florida Forever

Partnerships: Florida Fish and Wildlife Conservation Commission (FWC)

Natural Systems: The Upper Hillsborough Preserve (Preserve) is primarily made up of riverine swamp and other forested and non-forested wetlands associated with the Hillsborough River. Uplands flank the river swamp and are predominantly pine flatwoods, mesic hammock, and improved pasture occurring on former flatwoods.

Water Resources: Water management benefits associated with the property include water supply, non-structural flood protection, water quality enhancement, and assistance in maintaining the Hillsborough River's value as a potable water supply source for the City of Tampa.

Land Management: The District's land management practices applied on the Preserve result in healthy, natural systems. Management activities on the Preserve include a prescribed burn program, restoration efforts of pasture lands and woody encroachment, forest management of silvicultural zones, feral hog control, and control of several invasive, exotic (non-native) plant species.

Cultural and Historical Resources: Evidence of human activity within the Preserve dates back 10,000 years, with aboriginal inhabitants spending time along the Hillsborough River corridor seasonally. More recently, prior to the District obtaining this property in the 1960s, the land was used for cattle grazing, timber, and other agricultural practices.

Recreation: The types of recreation offered at the Preserve provide for passive, resource-based recreation and expansive recreation opportunities dependent upon the area of the Preserve. The Preserve has two areas within its boundaries that provide for recreational opportunities: the Upper Hillsborough Tract and the Alston Tract. The Upper Hillsborough Tract is the larger of the two Tracts and is situated to the north. It is a Wildlife Management Area with public hunts administered by the FWC. The Alston Tract is situated to the south and is not included in the Wildlife Management Area (WMA). The combined recreational uses at the Preserve include bicycling, camping, horseback riding, birding, fishing, hunting, and hiking. A two-mile spur of the Florida Trail is also located in the Preserve.

Special Use Authorization: There are various special uses on the Preserve which require Special Use Authorization (SUA) approval from the District as set forth in Florida Administrative Code

§40D-9. The typical special use types occurring on the Preserve can be categorized as recreation, research, hunting events, and training.

Access: Public access to the property is provided at five locations. There are four access points at the Upper Hillsborough Tract and there is one access point at the Alston Tract that allows the public to partake in the available outdoor recreation opportunities at the Preserve.

Real Estate: The Preserve consists of three tracts: The Upper Hillsborough Tract, the Alston Tract and the Mahoney Tract. The District will continue to consider opportunities to purchase lands adjacent to the Preserve with the goal of promoting the District's Mission of protecting the natural features of conservation lands for the benefit of flood attenuation, water quality, and water supply.

Cooperative Agreements, Leases, and Easements: The District is party to agreements with the FWC and an apiary farmer. Furthermore, there are multiple easements granted to utility companies, such as Duke Energy, Progress Energy Florida, and Withlacoochee River Electric.

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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. The creation, updating, and implementation of this Management Plan is governed by the District's Governing Board Land Use and Management Policy (District Policy) and the District's Executive Director Procedure titled Land Use and Management Planning (Procedure), which outlines the use and management of District-owned conservation lands. District 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 an overview of the property, a summary of past achievements, and an outline of goals and objectives for the next 10-year planning period.

District Planning Philosophy

The District's planning philosophy is intended to identify the method in which 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 as to the draft Management Plan. The workshop is advertised in local newspapers, on the District's website, and via social media outlets and is held in the region the property is located. 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 considers public input received is prepared, and ultimately presented to the District's Governing Board for approval at a regular Governing Board meeting.

Public Involvement

In addition to the input solicited through public workshops during the development of the Management Plan, the District also provides the opportunity for stakeholders to provide input during the Land Management Review process. This process occurs every five years as a way to inform the public and hold the District accountable for the management of the property. This process assures the District is managing the land in accordance with the Management Plan and is consistent with purpose for which the property was acquired. The Land Management Review team is comprised of team members from various state agencies, cooperative partners, private land managers, and other entities involved in land management. The focus is on management activities

and includes a thorough review of the property followed by an evaluation which is reviewed by the District.

Management Authority

The Preserve is considered by the District as conservation land which signifies 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 Procedure governs the use and management of these lands in accordance with Chapters 259 and 373 of the Florida Statutes.

Location

The Preserve is located in southeastern Pasco County and northwestern Polk County. The Preserve is adjacent to the city of Zephyrhills to the west, and approximately six miles southeast of Dade City. Major highways that intersect the property include US Highway 98, which forms the northeastern boundary of the property, and County Road 54, which bisects the preserve (Figure 1). The majority of the property is within the Hillsborough River Basin.

The Preserve exists within Sections 27-29, and 32-34, Township 25 South, Range 22 East; Sections 3-5, 7-10, 16-23, 26-29, and 32-36, Township 25 South, Range 22 East; and Sections 1, 2, 4, and 5, Township 27 South, Range 22 East. Figure 2 provides an aerial overview of the property.



Acquisition

The District purchases land for the purposes of protecting and conserving water supply, flood protection, water quality, and natural systems. These purposes are referred to as the Areas of Responsibility (AORs) of the District. 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, natural flood control and water detention, and to provide natural resource-based public recreational opportunities within the region. The specific resource management is discussed further in the proceeding sections.

History

Acquisition of parcels in Upper Hillsborough began in the 1960s as part of the Four River Basins, Florida Project (FRB). This project was intended to provide flood protection to communities downstream in the lower portion of the Hillsborough River, including the city of Tampa. Later, as part of land acquisitions under programs like Preservation 2000 and Florida Forever, additional bordering properties were purchased for their water management and corridor benefits. In conjunction with these acquisitions, the District also has over 8,000 acres of less-than-fee ownership in the form of conservation easements associated with the Preserve. This approach provides an effective strategy for natural resource protection while allowing the land to remain under private ownership and management.

- Upper Hillsborough Preserve- *5,673 acres*. The acquisition of lands that now comprise the Preserve began in 1963. Property was purchased in phases to support construction of the FRB Project, which was a regional flood control initiative developed by the Army Corps of Engineers in response to flooding in the Tampa Bay region during 1959-1960.
- Alston Tract- *2,983 acres*. Purchased from the Alston family in 1994 with several subsequent purchases of small inholdings through the 1990s. This acquisition provided further protection of the Hillsborough River and connected the original Upper Hillsborough tract with the Lower Green Swamp Nature Preserve owned by Hillsborough County.
- Mahoney Tract- *1,305 acres*. A portion of this tract was purchased in 1970, with the following parcels added later in 1990, completing protection of the Hillsborough River between County Road 54 and US Highway 98. This acquisition also connected the majority of the Upper Hillsborough parcels with the Withlacoochee River Corridor acquisitions, which are now part of the Green Swamp Wilderness Preserve.
- Other- *267 acres*. This includes various small acquisitions from a number of different sources including Ad Valorem, exchanges, and other funding sources.

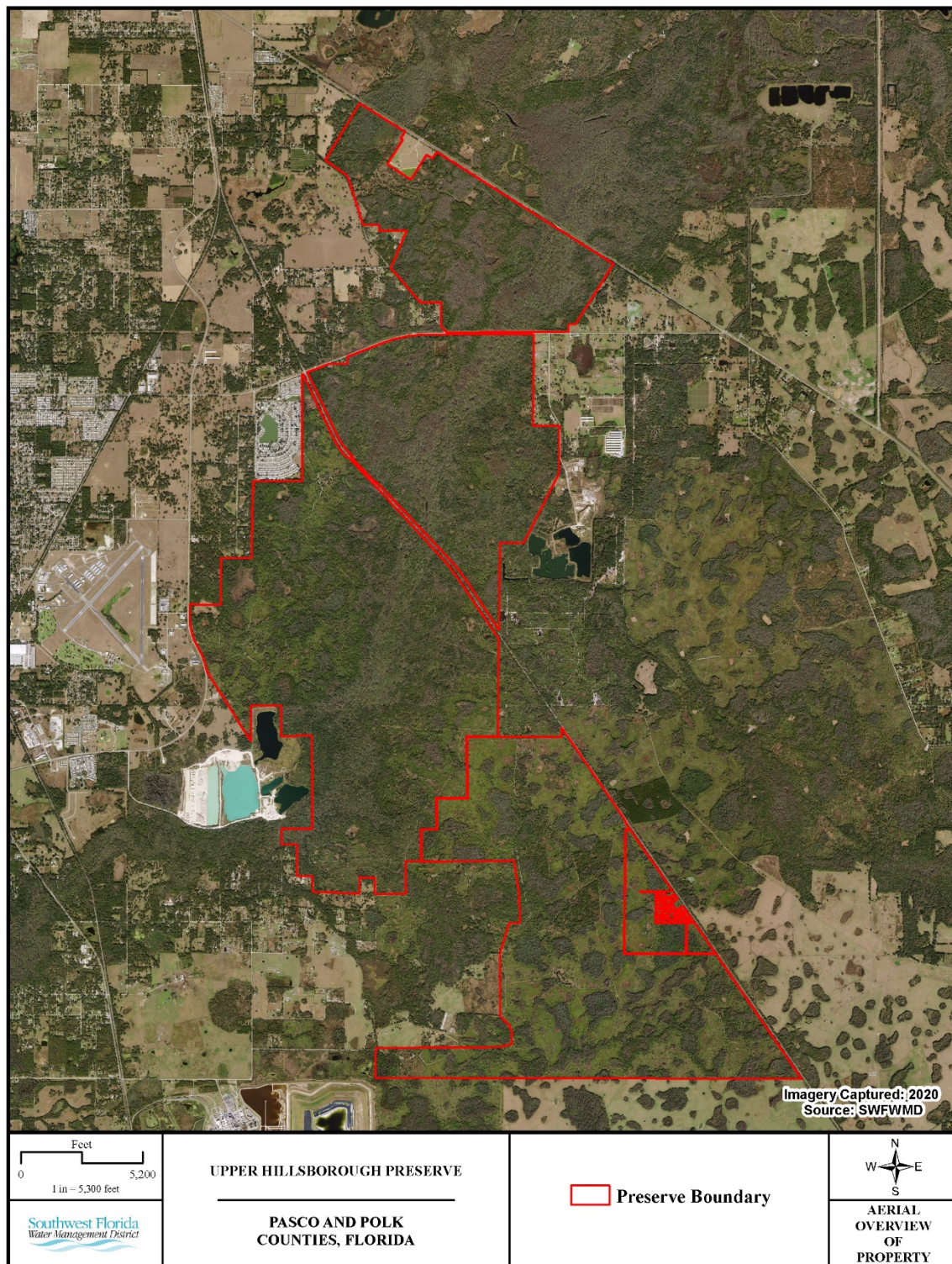


FIGURE 2. AERIAL OVERVIEW

Regional Significance

As the name implies, the Hillsborough River is a major natural feature of the Preserve, which encompasses a large portion of the headwaters region. The River is listed as part of the Special Outstanding Florida Waters for its significant water resource value. The remainder of the property consists primarily of riverine floodplain, natural upland communities, and scattered isolated wetlands. The headwater origin of the Hillsborough River is a natural overflow feature that diverts a portion of flow from the Withlacoochee River into the Hillsborough River during high flow events. The Hillsborough River floodplain in the Preserve is distinguished as an area of especially high habitat value. The value of these lands for resource-based recreational use also enhances the overall natural significance of the property. The District's ownership of this property takes a non-structural approach to flood protection by retaining and protecting the natural floodplains occurring within the Preserve. The floodplains not only provide natural storage of floodwaters, but they also act as a filtration system for runoff. The natural character of the property supports a variety of water management benefits, including non-structural flood protection, water quality enhancement, and assisting in maintaining the Hillsborough River's value as a potable water supply source for the City of Tampa. The Preserve also serves as an important link in protecting the wildlife habitat in the Hillsborough River greenway corridor.

Regional Conservation Network

The Preserve is an integral component of a larger network of protected public conservation and recreation lands that protect a vast natural area of statewide significance (Figure 3). The Preserve adds 9,961 acres to the network of protected conservation land in the region. Conservation lands surrounding the Preserve include the Hillsborough River Corridor to the west, Blackwater Creek Preserve to the southwest, Lower Green Swamp Preserve to the south, Upper Hillsborough Conservation Easement to the east, and Green Swamp to the northeast. Together, these publicly owned lands are an integral component to protecting the regions water quality, supply, and storage, while providing habitat for native flora and fauna as well. The network of conservation lands described above protects a large portion of the Green Swamp, which serves as the headwater origin for five major rivers, including both the Hillsborough and Withlacoochee Rivers. These lands provide vital expanses of core wildlife habitat and natural areas to provide important strategic ecological networks. The network of conservation lands within 20 miles of the Preserve are summarized in Table 1 below.

TABLE 1. CONSERVATION LANDS WITHIN 20 MILES OF THE PROPERTY

Name	Manager	Owner	County	Acreage
Conner Preserve	SWFWMD	SWFWMD	Pasco	3,488
Cypress Creek Preserve	SWFWMD	SWFWMD	Pasco	7,475
Green Swamp Wilderness Preserve	SWFWMD	SWFWMD	Lake/Pasco/Polk/Sumter	104,275
Lake Hancock	SWFWMD	SWFWMD	Polk	762
Lake Thonotosassa	SWFWMD	SWFWMD	Hillsborough	144
Lower Hillsborough Wilderness Preserve	SWFWMD	SWFWMD	Hillsborough	16,063
Upper Hillsborough Presrve	SWFWMD	SWFWMD	Pasco/Polk	9,440
Alafia River Corridor	Hillsborough	SWFWMD/Hillsborough	Hillsborough	5,148
Alafia Reserve	SWFWMD	SWFWMD/Polk	Polk	334
Hillsborough River Corridor	SWFWMD	SWFWMD/Private	Hillsborough	356
Hilochee Wildlife Management Area	FWC	TIITF	Lake/Polk	258
Hilochee WMA Osprey Unit	FWC	TIITF	Polk	3,319
Lake Louisa State Park	FDEP DRP	TIITF	Lake	4,595
Lake Wales Ridge WEA	FWC	TIITF	Highland/Polk	5,757
Little Gator Creek WEA	FWC	TIITF	Pasco	566
Tenoroc Fish Management Area	FWC	TIITF	Polk	8,380
Withlacoochee State Trail	FDEP DRP	TIITF	Citrus/Hernando/Pasco	762
Hillsborough River State Park	FDEP DRP	TIITF/Hillsborough	Hillsborough	3,319
Colt Creek State Park	FDEP DRP	TIITF/SWFWMD	Polk	5,067
Withlacoochee State Forest	FDACS/FFS	TIITF/SWFWMD	Hernando	160,042
Alderman's Ford Park	Hillsborough	Hillsborough	Hillsborough	597
Blackwater Creek Nature Preserve	Hillsborough	Hillsborough	Hillsborough	2,026
Boy Scout	Hillsborough	Hillsborough	Hillsborough	602
Cypress Creek Nature Preserve	Hillsborough	Hillsborough	Pasco	2,684
Lettuce Lake Regional Park	Hillsborough	Hillsborough	Hillsborough	240
Lower Green Swamp Preserve	Hillsborough	Hillsborough	Hillsborough	12,800
Sydney Dover Conservation Park	Hillsborough	Hillsborough	Hillsborough	697
Violet Cury Nature Preserve	Hillsborough	Hillsborough	Hillsborough	160
Gator Creek Reserve	Polk County	Polk County	Polk	2,708
Lakeland Highlands Scrub	Polk County	Polk County	Polk	602
Saddle Creek County Park	Polk County	Polk County	Polk	8,380
Circle B Bar Reserve	Polk County	Polk County/SWFWMD	Polk	144
Upper Saddle Creek/Schaller Tract	Polk County	Polk County/SWFWMD	Polk	823
Cypress Creek Conservation Easement (Pasco County)	Pasco	Private	Pasco	119
Cypress Creek Conservation Easement (SWFWMD)	SWFWMD	Private	Pasco	789
FDEP Green Swamp Conservation Easements	FDEP DSL	Private	Lake/Pasco/Polk/Sumter	8,372
Green Swamp Land Authority Land Protection Agreements	FDEP DSL	Private	Lake/Pasco/Polk/Sumter	29,149
Green Swamp/Bass Conservation Easement	FDEP DSL	Private	Lake/Pasco/Polk/Sumter	3,505
Hawk Ranch Conservation Easement	Pasco	Private	Pasco	466
Hillsborough River Phase 2 Mitigation Bank	Private	Private	Hillsborough	315
Hilochee Mitigation Bank	Private	Private	Polk	166
North Tampa Mitigation Bank	Private	Private	Hillsborough	166

Polk County Conservation Easement	SWFWMD	Private	Polk	9,084
Scott Lake Conservation Easement	TNC	Private	Polk	2,708
SWFWMD Green Swamp Conservation Easements	SWFWMD	Private	Lake/Pasco/Polk/Sumter	9,084
The Jahna Ranch Conservation Easement	FDEP DRP	Private	Polk	261
Two Rivers Ranch Mitigation Bank	Private	Private	Hillsborough	1,461
Upper Hillsborough Conservation Easement	SWFWMD	Private	Pasco/Polk	7,915
Total				445,760

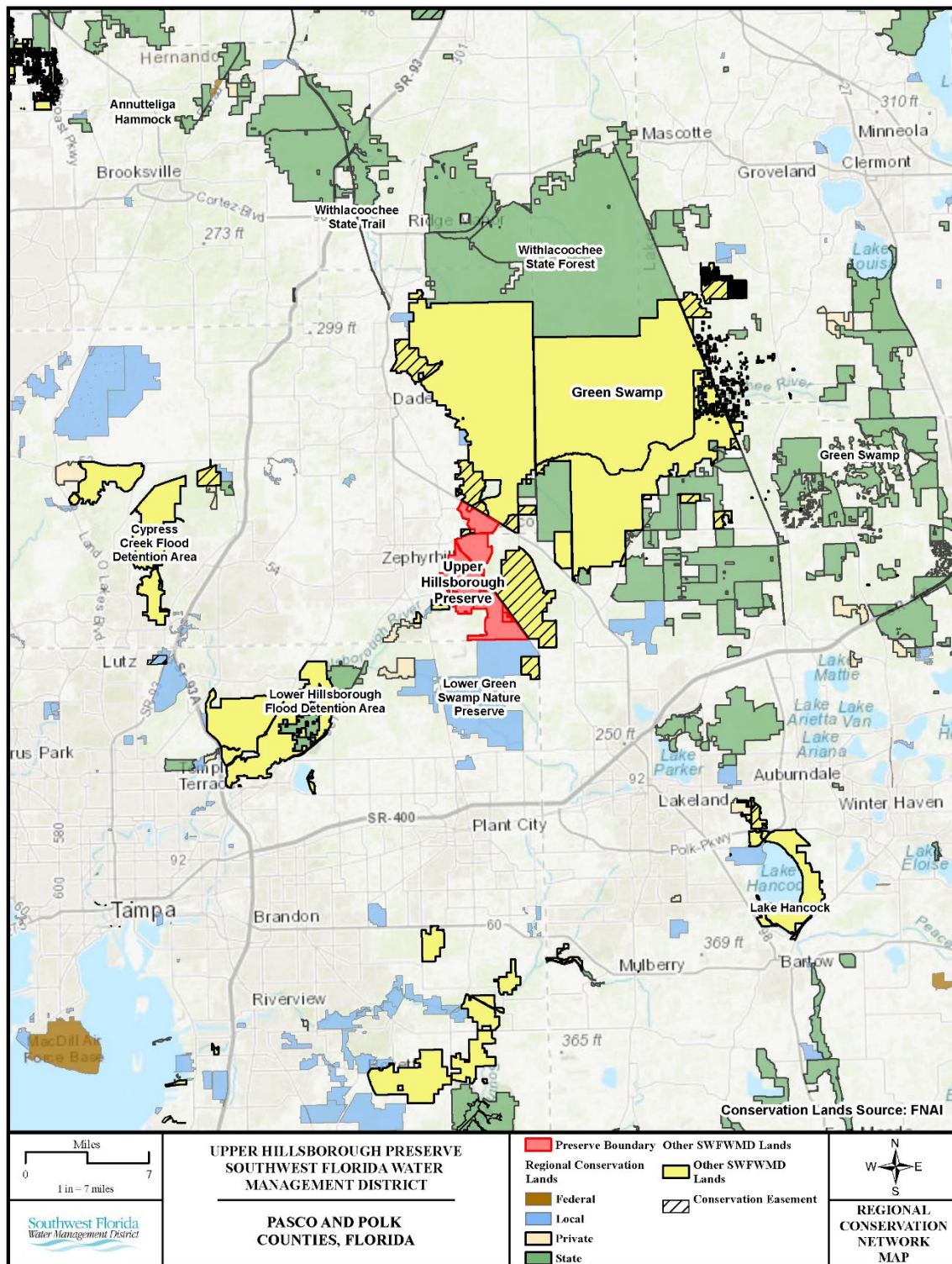


FIGURE 3. REGIONAL CONSERVATION NETWORK

Current Land Use

The Preserve is managed for the conservation and protection of its water resources and natural resources. In addition, the Preserve offers recreational resources and opportunities to visitors. The Preserve will continue to support a multiple-use concept for environmental conservation, public water supply, and recreational access. It is the policy of the District that appropriate public recreational usage of District lands be permitted, provided that usage 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 plant life, including many federal and state listed species. Various recreational opportunities which are open to the public are outlined later in this plan.

Local Government Land Use Designation

Per Section 163 of the Florida Statutes, local governments are required to create, adopt, and maintain a Comprehensive Plan that addresses where residential and non-residential uses are located in the area. These comprehensive plans rely upon a foundation for future planning that will maintain community quality, preserve key ecosystems, and focus on quality-of-life issues and sustaining the livability of the community.

Within Pasco County, the Preserve is currently zoned as Agricultural District (AC) according to the Land Development Code. As per the Pasco County Comprehensive Land Use Plan, the 2025 Future Land Use designation for the Preserve is Conservation Lands. According to Pasco County, the intent of the Conservation Lands classification is to recognize public or private lands held for conservation. A portion of the eastern boundary of the Preserve is also within Polk County. According to the Polk County Land Development Code, the Preserve is currently designated as a Rural Development Area (RDA). According to the Polk County Comprehensive Plan, the Future Land Use designation for the Preserve is Preservation. The purpose of preservation land use district for Polk County is to provide for the preservation of public or privately owned preservation areas, either obtained for long-term protective purposes, containing sensitive and unique vegetative or animal habitats, or publicly accessible property intended for long-term open space purposes.

Adjacent Land Uses

The Preserve is surrounded by the City of Zephyrhills residential development, the Zephyrhills Municipal Airport, aggregate mines to the west and east, residential lands and the Green Swamp to the north, residential, undeveloped lands, and the Upper Hillsborough Conservation Easement to the east, and residential, undeveloped and Hillsborough County owned conservation lands to the south. The network of roadways that border the property (US Highway 98 and County Road 54), along with the active CSX railway that traverses the property, greatly influence the Preserve’s character.

Management Challenges

The challenges associated with the management of this parcel are primarily due to the location of the parcel within an increasing area of development. This additional development has potential to put pressure on the natural systems and could increase flood control needs in the area. In addition, the abundance of Wildland Urban Interface (WUI) and major highways along the boundary of the Preserve increase the complexities of land management activities, like prescribed fire operations. This results in an increased amount of planning to mitigate and limit impacts to smoke sensitive features.

Recreational opportunities on all District conservation lands are passive and nature based. As the WUI becomes more prevalent near the Preserve, there is the possible challenge to the District to manage requests for more expansive recreational opportunities. In similar past situations, the District has approved cooperative agreements with other local governing agencies to manage expanded recreational opportunities, as the District does not have the ability to manage such opportunities. Prior to the District approving any cooperative agreements for expanded recreational opportunities, the District Governing Board will need to deem such opportunities as “compatible,” as outlined in the District Policy.

Water Resources and Natural Systems

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 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.

Water Quality

Wetland vegetation has a natural ability to filter suspended sediments from the water column and to assimilate certain waterborne pollutants. The wetlands of the Preserve, especially the forested wetlands of the floodplain, may substantially improve the quality of surface waters that enter the property from adjoining or nearby upgradient areas (Figure 4). This, in turn, helps to assure that water exiting the property through the Hillsborough River is of good quality. Existing land use within the region surrounding the property consists primarily of pasturelands and other agricultural uses, but there is a rapid conversion to urban development taking place. Surface water quality conditions in the upper Hillsborough River, including the stretch within the Preserve, are showing signs of degradation. The Florida Department of Environmental Protection (FDEP) monitors water quality in rivers throughout the state, and currently ranks water quality conditions in the upper reaches of the Hillsborough River as "fair" (FDEP, 1996).

The portion of the River extending upstream from Fletcher Avenue (S.R. 582A) in Hillsborough County to the Withlacoochee River overflow in Pasco County, which includes the entire on-site stretch of the river, was designated an Outstanding Florida Water (OFW) by the Florida Department of Environmental Protection (FDEP) in 1995. Waters with this designation are afforded the highest level of protection by the state based on exceptional recreational or ecological significance. The OFW designation prohibits point source discharges that would result in any diminution of water quality and requires a higher level of treatment for stormwaters that drain to the system. This designation will help to ensure that water quality within the Preserve will not be degraded by off-site drainage into the property. Drainage originating from within the natural uplands of the property should not diminish water quality in the river, provided that natural land cover is maintained in order to prevent sedimentation.

The large, on-site expanse of unaltered floodplain vegetation will continue to provide the property's most significant contribution to water quality enhancement. The natural plant communities associated with the riverine floodplain will assimilate some of the pollutants generated by land uses in the upper watershed, thereby enhancing water quality in both the channel of the Hillsborough River and in the downstream Tampa Bay estuary.

Some wetland alterations occurred on the lands of the Preserve prior to District acquisition. These consist primarily of ditching that linked isolated wetland systems with the channel of the Hillsborough River in order to enhance the drainage of adjoining uplands and more effectively accommodate surrounding agricultural uses. In one case, off-site drainage from a chicken farm was discharged into the Preserve during periods of high rainfall and ultimately drained into the Hillsborough River. While improving the drainage of surrounding uplands, these ditching activities: 1) reduced the hydroperiods of affected wetlands; 2) compromised the ability of the property to protect downstream areas from flooding by effectively reducing the volume of water that could be stored or detained by the affected wetlands; and 3) reduced the ability of the ditched wetlands to intercept overland flow and thereby provide natural water quality treatment and enhancement. Ongoing restoration efforts are aimed at plugging or backfilling these ditch systems to redress these negative impacts. Completing restoration of these altered wetlands will be an important land management priority.

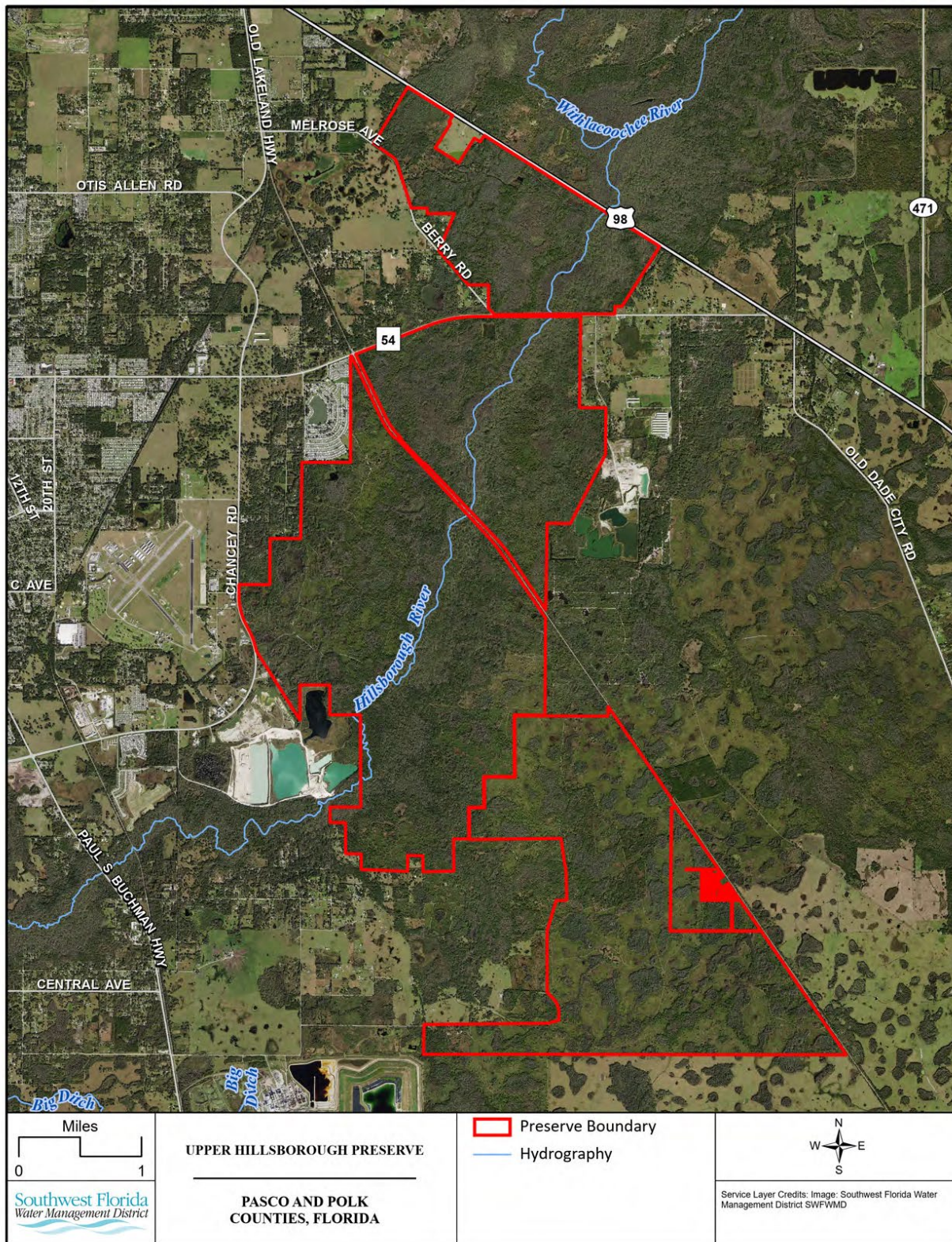


FIGURE 4. WATER RESOURCES AT UPPER HILLSBOROUGH WILDERNESS PRESERVE

Water Supply

The Preserve does not serve as a potable water supply source, nor is it projected to serve as one in the future. However, the Hillsborough River itself is the primary water supply source for the City of Tampa. The downstream withdrawals of water that service the people of Tampa are directly dependent on maintaining upstream contributions to the River's flow. In this respect, protection of the Preserve assists in maintenance of both the quality and quantity of an important water supply source. Previous impacts to groundwater levels and wetland vegetation within the Preserve and the Northern Tampa Bay region were a result of historic regional groundwater withdrawals.

In 2000, the first phase of the District's Northern Tampa Bay Water Use Caution Area (NTBWUCA) Recovery Strategy was adopted to address NTBWUCA lake and wetland MFLs and an MFL for the Lower Hillsborough River that were not being met. The strategy called for a phased reduction in groundwater pumping from 160 mgd to 90 mgd at TBW's regional wellfields and development of alternative water supply projects.

A second phase of the recovery strategy, adopted in 2010, included a comprehensive plan that addressed continued monitoring, evaluation of environmental mitigation for withdrawal impacts, and continued water conservation activities. In support of the recovery strategy, over 85 mgd of new regional alternative sources of public supply have been developed. A number of other projects providing ancillary recovery benefits, including reuse and water conservation, have also been implemented within the region.

An assessment completed in 2020 identified substantial recovery of hydrologic and ecological conditions associated with strategy implementation and rainfall conditions. MFLs within the NTBWUCA for all but one lake, one wetland and the Lower Hillsborough River were found to be met, and aquifer levels in the region were near their peak elevations observed during the past 40 to 60 years. Based on these findings, the District's Governing Board in March 2021 approved initiation of rulemaking and approved rule language to repeal the NTBWUCA Recovery Strategy.

Flood Protection

Flood protection has historically depended upon a structural approach to protect lives and property in flood-prone areas. Unfortunately, such protection has often been achieved at the expense of natural lands. It has also proven to be very expensive. As noted in a preceding discussion of the history of the Preserve, much of the property was originally purchased to accommodate construction of a series of levees and water control structures that would have converted the site into a large, artificial impoundment for the storage of flood waters.

The need to provide flood protection through alternative means that would reduce impacts to natural areas was recognized prior to construction of the planned facilities. A non-structural approach to flood protection has been adopted as a more environmentally benign, cost-effective method in areas where such an approach is feasible. The District's primary flood protection strategy depends on identifying and preserving natural floodplains and other lands that can serve as storage areas for storm-generated flood waters. The benefits of this approach include reduced cost borne

by the public in the construction and maintenance of flood control structures; increased public safety achieved by eliminating breach or failure concerns inherent in those structures; and the preservation of natural lands that would otherwise be lost or altered through the implementation of structural flood control measures.

The Hillsborough River originates just north of the Preserve as natural overflow from the Withlacoochee River, just northeast of US 98. When the Withlacoochee River reaches a stage of 77.6 NGVD (National Geodetic Vertical Datum) at the overflow point, part of its flow spills over into the Hillsborough River. The overflow results in a natural diversion of flood waters which is very important to the flow characteristics of both rivers. For example, during the extreme flooding of 1960, about 2,000 cfs (cubic feet per second) overflowed from the Green Swamp to the Hillsborough River during peak flows. During high water conditions, nearly a quarter of the flow in the Upper Withlacoochee River can naturally overflow into the Upper Hillsborough River here. About 65 percent of the time, no flow occurs to the Hillsborough River from the Green Swamp because water levels are lower than the natural wetlands in this area.

In addition to the flood protection the Hillsborough River provides by diverting a portion of high flows from the upper Withlacoochee River, the storage capacity of the Hillsborough River floodplain also provides important flood protection benefits within the Hillsborough watershed by detaining flood waters. This detention of flood waters within the floodplain reduces the peak flows of the river and allows flood waters to be released over a longer period of time. It also reduces the peak flood elevation downstream, which could reduce or possibly eliminate damage to private property within the floodplain. Approximately 55 percent of the Preserve lies within the 100-year floodplain (Figure 5) or is otherwise considered to be flood prone. Preservation of the property will ensure that the flood storage capabilities of the property will be maintained.

Preservation of the natural flood protection benefits associated with the Hillsborough riverine floodplain will also depend upon maintaining normal surface flows and hydroperiods within the entire system. Structural improvements in the floodplain will be limited to boardwalks and other minor structures considered necessary to facilitate land management activities or accommodate approved, compatible recreational uses. Any structures placed in the floodplain shall be designed such that they will not alter hydroperiods or flood storage capabilities or impede surface flows. Exceptions to this general management guideline include structures designed to restore altered hydrology or assist in environmentally appropriate management of critical wildlife habitat areas.

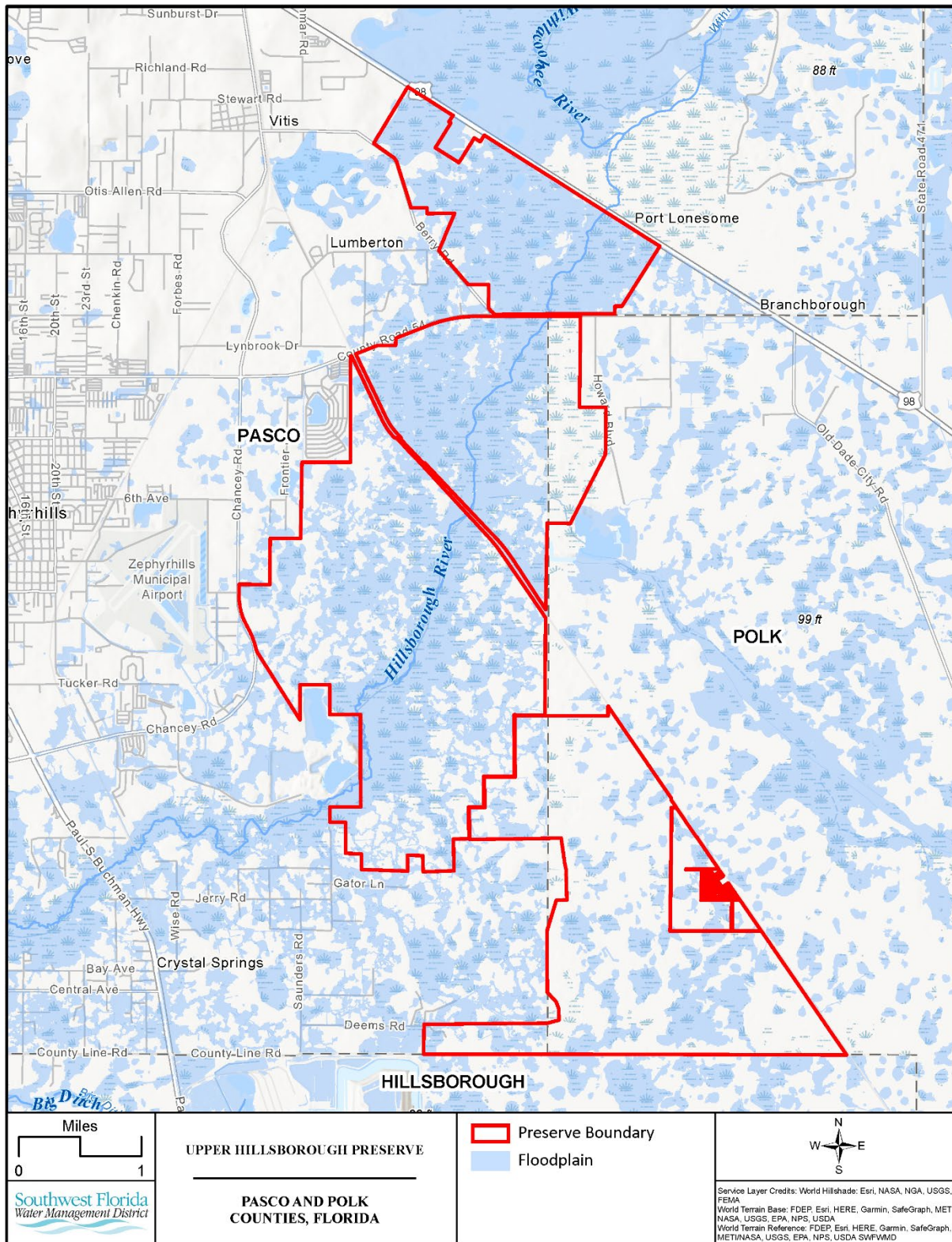


FIGURE 5. FLOODPLAIN MAP

Natural Systems

Thirteen natural communities and four altered communities occur on the Preserve, as defined by the Florida Natural Areas Inventory (FNAI) depicted in Figure 4. The dominant natural community within the Preserve is mesic flatwoods, accounting for 44 percent of the Preserve, with subdominant natural communities including hydric hammock, basin swamp, floodplain swamp, dome swamp, and mesic hammock. Altered lands within the Preserve consist of pine plantation, improved and semi-improved pasture, and ruderal lands. These altered lands only account for approximately 5 percent of the Preserve, however. The natural communities and land cover types are summarized below in Table 2.

TABLE 2. NATURAL COMMUNITY TYPE SUMMARY

FNAI Communities	Acreage	Percent Cover
Mesic Flatwoods	4,166	44%
Hydric Hammock	1,319	14%
Basin Swamp	963	10%
Floodplain Swamp	771	8%
Dome Swamp	679	7%
Mesic Hammock	561	6%
Depression Marsh	179	2%
Pine Plantation	161	2%
Wet Flatwoods	157	2%
Pasture - Improved	138	1%
Pasture Semi- Improved	111	1%
Basin Marsh	63	1%
Ruderal	53	1%
Xeric Hammock	45	0.50%
Scrub	19	0.20%
Scrubby Flatwoods	8	0.10%
Wet Prairie	4	0.04%
Total	9,397	100%

Basin Marsh (63 acres)

This natural community is described as a basin that is seasonally inundated, with occasional fire. Within the Preserve, basin marshes make up less than 1 percent of the landscape. This marsh system typically has a long hydroperiod. These systems are largely herbaceous and include species such as maidencane, sawgrass, bulltongue arrowhead, pickerelweed, cordgrass, and white water lily.

Basin Swamp (963 acres)

Basin swamps account for approximately 10 percent of the total land use within the Preserve. These systems are typically large basin wetlands with peat substrate that is seasonally inundated

with still water or with water output. Within these systems, fire is rare or occasional. The forested system is made up of species that can withstand long periods of standing water, including cypress, tupelo, and mixed hardwoods.

Depression Marsh (179 acres)

Depression marshes are small, isolated, and often rounded depressions. This land use only accounts for 2 percent of the Preserve. Depression marshes typically have a long hydroperiod and are often surrounded by fire-maintained communities. Depression marshes are seasonally inundated with still water. They are largely herbaceous with and include species such as maidencane, sawgrass, pickerelweed, longleaf threeawn, sand cordgrass, and peelbark St. John's wort.

Dome Swamp (679 acres)

This natural community makes up approximately 7 percent of the land use within the Preserve, and includes small or large, shallow isolated depressions. The Preserve's dome swamps receive most of their water as overland flow from surrounding uplands. They occur within a fire-maintained community and area seasonally inundated with still water. These forested systems often have the tallest canopy in the center and gets its distinctive shape by the smaller trees growing in the shallower waters along the edges, with the taller trees in the deeper center parts of the wetland. Dome swamps are dominated by cypress and swamp tupelo. The greatest diversity of vegetation is found within the outer wet meadow edges of these wetlands, which support a wide variety of wetland grasses, sedges, and rushes.

Floodplain Swamp (71 acres)

This land type occurs along or near rivers and streams and is usually inundated. Fire is rare in these systems. The canopy is often closed and dominated by tree species tolerant of frequent flooding, such as cypress, tupelo, American elm, water ash, water hickory, and black gum. Floodplain swamps make up approximately 8 percent of the Preserve.

Hydric Hammock (1,319 acres)

Hydric hammocks are lowlands in mesic-hydric areas. This natural community comprises approximately 14 percent of the Preserve. Species often include live oak, cabbage palm, red cedar, and mixed hardwoods. Fire is occasional to rare.

Mesic Flatwoods (4,166 acres)

This is the most dominant natural community within the Preserve and encompasses approximately 44 percent of the landscape. Mesic Flatwoods are flatlands with mesic soils. In these communities, fire is frequent. This habitat contains species that can withstand periods of soil inundation and periods of dry conditions. The canopy is dominated by sparse open pine, with a layer of low shrubs and herbs. Canopy can be either longleaf pine and/or slash pine, with a shrub layer of saw palmetto, gallberry, swarf live oak, and wiregrass.

Mesic Hammock (561 acres)

Mesic hammocks are flatlands with mesic soils, with occasional or rare fire. This land use describes approximately 6 percent of the Preserve. There is a closed evergreen canopy made up of live oak, cabbage palm, southern magnolia, and pignut hickory with a shrub layer of saw palmetto.

Pasture – Improved (138 acres)

Improved pastures are an altered community, as they have been cleared of their native vegetation. This land use occurs infrequently on the Preserve and accounts for approximately 1 percent of the landscape. Herbaceous cover is dominated by planted non-native or domesticated native forage species, including bahiagrass, bermudagrass, or pangolagrass. Weedy native species are common, and include dogfennel, carpetgrasses, and flatsedges.

Pasture – Semi-Improved (111 acres)

Pasture – Semi-Improved is an altered land use that comprises approximately 1 percent of the Preserve. Semi-improved pastures are dominated by a mix of planted non-native or domesticated native forage species and native groundcover due to an incomplete conversion to pasture, not regeneration. Semi-improved pastures have been cleared of a significant percentage of their native vegetation, but still retain scattered patches of native vegetation. Planted areas are commonly dominated by bahiagrass.

Pine Plantation (161 acres)

Pine plantations are areas altered by silvicultural activities. Pine plantations in Florida are often dominated by even-aged slash pine. The understory is typically sparse to absent herbaceous vegetation as a result of shading or deep pine needle duff. This altered community constitutes a very small portion of the Preserve, less than 2 percent.

Ruderal (53 acres)

Ruderal areas are characterized as anthropogenically altered lands, primarily due to the historic conversion of these areas to pasture land or agricultural lands. This altered land use describes less than 1 percent of the habitat within the Preserve. These ruderal areas are mixed grasslands with a variety of native and non-native grasses. Much of this land use still functions as cattle pasture today.

Scrub (19 acres)

This natural community describes less than 1 percent of the Preserve and is an upland land use with deep sand substrate and xeric soils. Fire is occasional or rare, and the habitat is open or dense shrubs with or without a pine canopy, sand pine, or scrub oaks. Florida rosemary is a common herbaceous species observed in scrub.

Scrubby Flatwoods (7.9 acres)

Scrubby Flatwoods are flatlands with xeric to mesic soils. This land use occurs very rarely, and accounts for a less than 1 percent of the Preserve. Fire in this natural community is occasional. The habitat often includes widely scattered pine with an understory of saw palmetto and scrub oaks. Longleaf pine, sand live oak, myrtle oak, Chapman's oak, saw palmetto, and wiregrass are all commonly observed species in scrubby flatwoods.

Wet Flatwoods (157 acres)

This native community occurs on approximately 2 percent of the Preserve. Wet flatwoods are flatlands with sand substrate and are seasonally inundated. Fire is frequent. The canopy is dominated by pine, with grassy or shrubby understory. Common species include slash pine, gallberry, fetterbush, sweetbay, cabbage palm, and wiregrass.

Wet Prairie (4 acres)

Wet prairies occur infrequently on the Preserve and comprise less than 1 percent of the land use onsite. They are flatlands that are usually saturated but only occasionally inundated. Fire is frequent. These systems are treeless with dense herbaceous cover and few shrubs. Species commonly include wiregrass, blue maidencane, cutthroat grass, beaksedges, pipeworts, and yellow-eyed grass.

Xeric Hammock (45 acres)

Xeric hammocks are uplands with deep sand substrate and xeric soils, where fire is very rare. Within the Preserve, this natural community is less than 1 percent of the total land use onsite. The canopy is often closed with a mixture of evergreen hardwoods, sand live oak, and a shrub layer of saw palmetto.

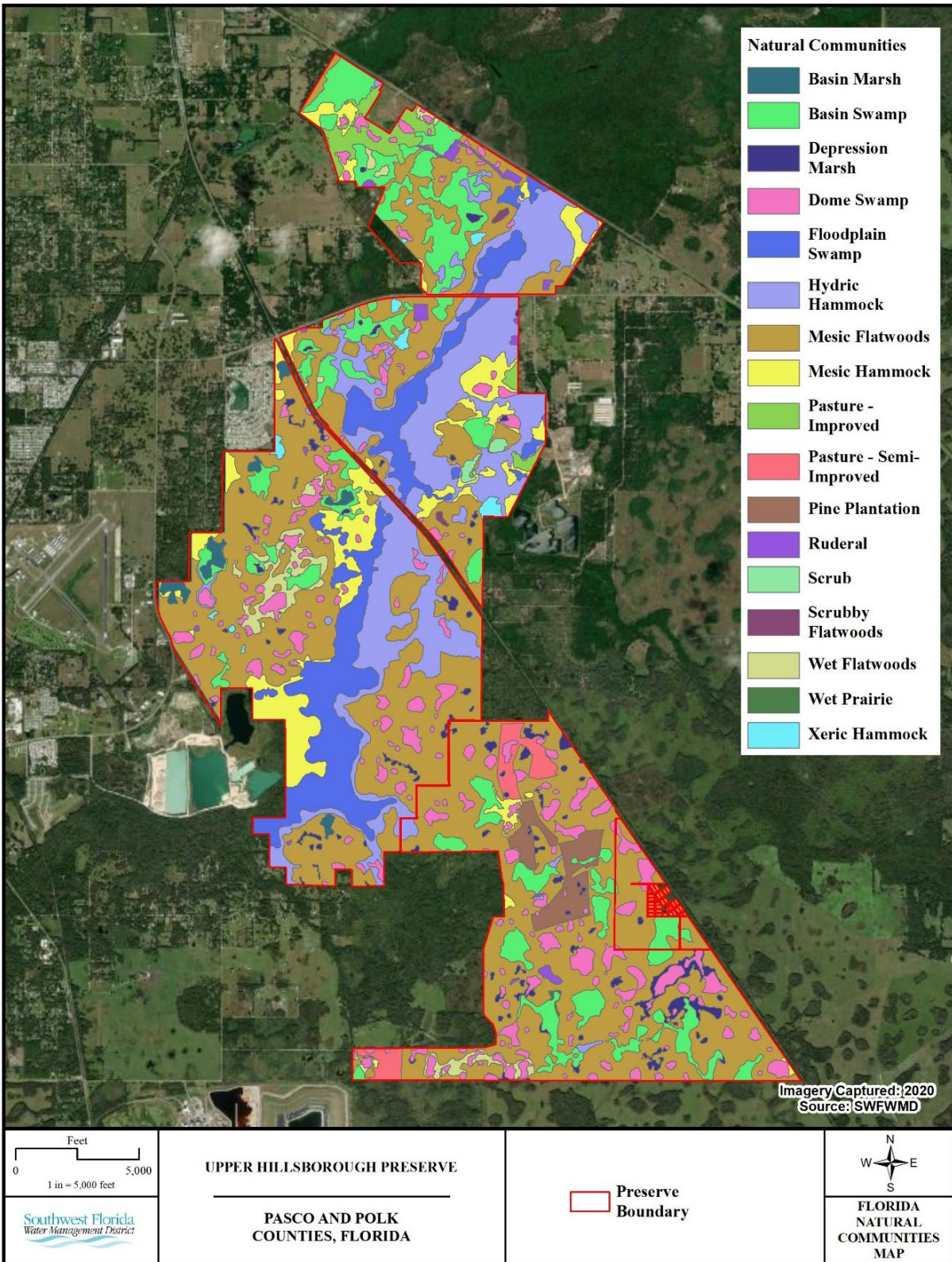


FIGURE 6. NATURAL COMMUNITIES- FNAI

Soils and Topography

The Preserve is relatively flat with elevations ranging from approximately 105 feet National Geodetic Vertical Datum (NGVD) in the southeastern portion of the property, to 65 feet along the Hillsborough River on the western boundary of the Preserve (Figure 8). Much of the property is between 75 and 100 feet NGVD. Based on the United States Department of Agriculture (USDA)/Natural Resources Conservation Service (NRCS) Soil Survey for Pasco County (1982), Hillsborough County (1989) and Polk County (1990), 39 soil types are mapped within the Preserve as depicted on Figure 7. Of these soil types, 20 are considered hydric according to the Hydric Soils of Florida Handbook, accounting for approximately 51 percent of the Preserve. Hydric soils typically occur in low-lying areas, and all wetlands have hydric soils. Mesic soils typically occur in flat areas that are at higher elevations relative to hydric soils. Within the Preserve, 16 soils are classified as mesic, and are often associated with pine flatwoods and mesic hammock. Pomona fine sand, a mesic soil, is the dominant soil on the property, accounting for approximately 30 percent of the soils on the Preserve, while Chobee soils, frequently flooded, a hydric soil, is subdominant and accounts for approximately 24 percent of the soils. Xeric soils are at the highest relative elevation. They are typically sandy, and the water table is typically well below the surface. The only xeric soil occurring on the Preserve is Tavares fine sand, which only occurs in very small patches throughout otherwise mesic flatwoods and improved pasture.

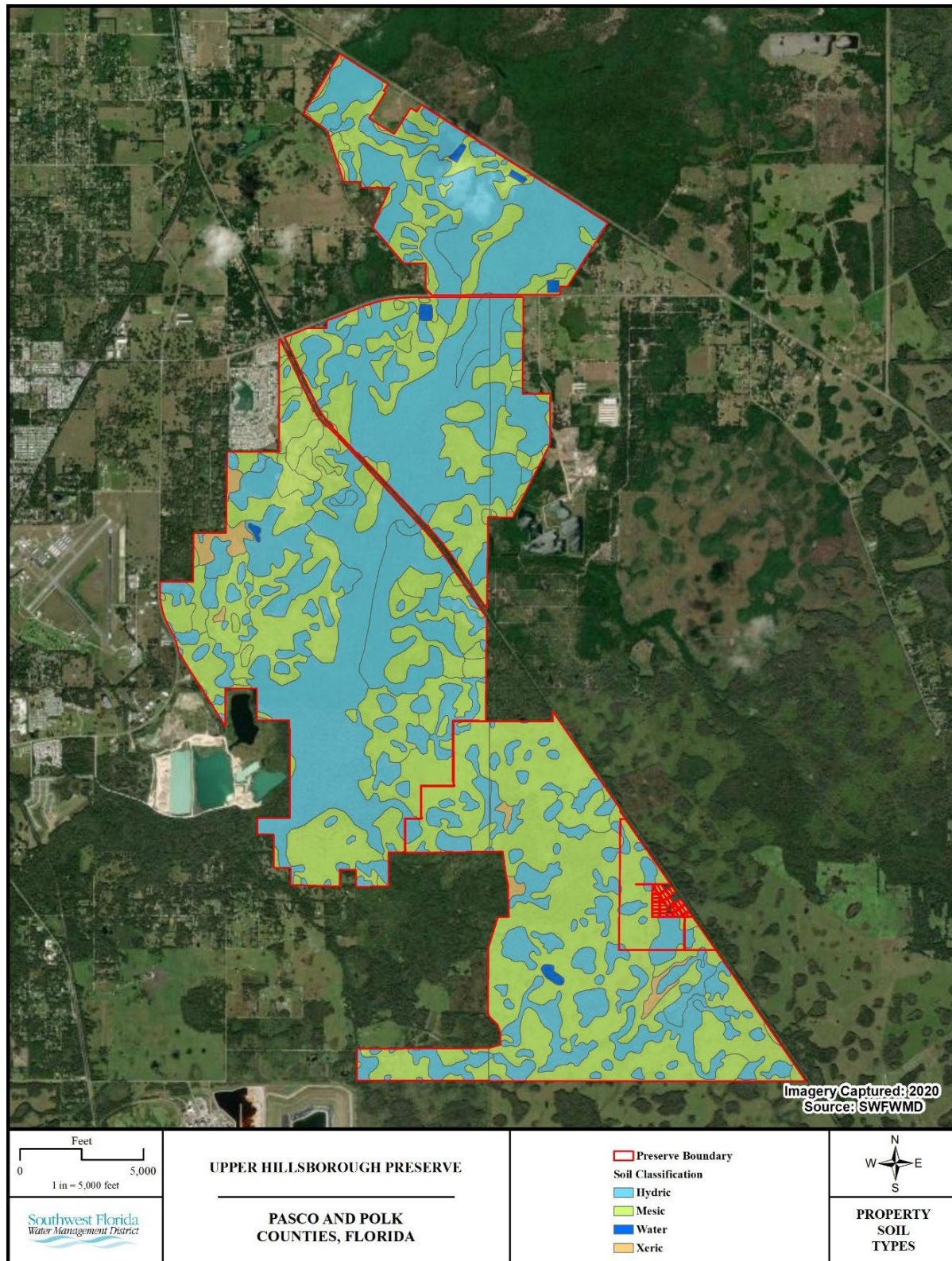


FIGURE 7. SOIL TYPES AT UPPER HILLSBOROUGH WILDERNESS PRESERVE

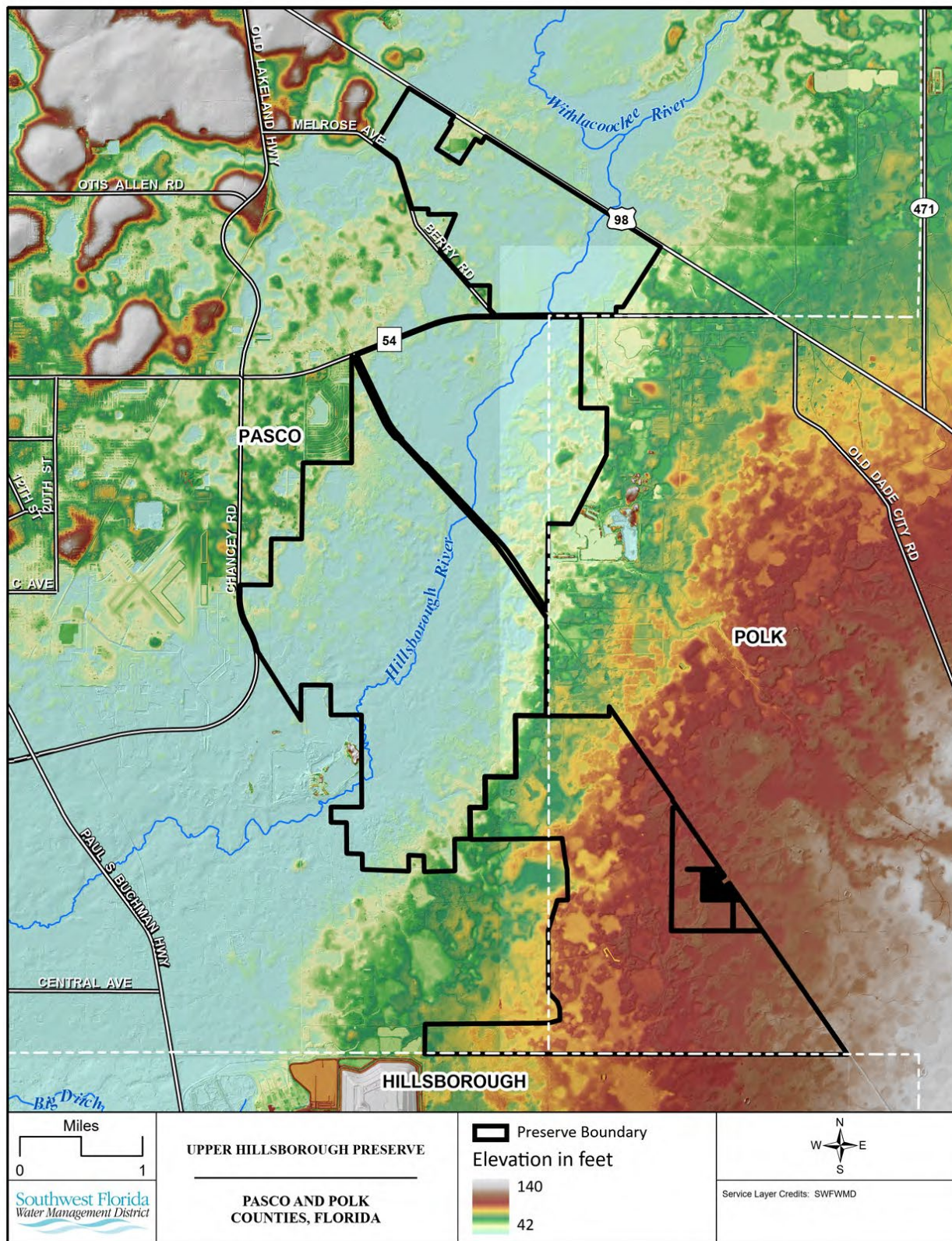


FIGURE 8. DIGITAL ELEVATION MODEL OF UPPER HILLSBOROUGH WILDERNESS PRESERVE

Historical Land Use and Cultural Resources

Historical Land Use

The initial acquisition of lands within the Preserve boundary began in the early 1960s in association with the District's sponsorship of the FRB project. The FRB project was a massive regional flood control initiative under the direction of the US Army Corps of Engineers as a response to flooding in the Tampa Bay region during 1959-1960. A large portion of the Preserve was proposed for the construction of a series of levees and water control structures that would have converted the site into a large artificial impoundment for the storage of flood waters. Although these components of the FRB project were never constructed, the lands purchased served as the nucleus for the current day Preserve.

Cultural and Archaeological Resources

In the 1960s when the initial portions of the Preserve were purchased to accommodate construction of the FRB project, surveys were also conducted to identify sites of archaeological or historical significance prior to the large-scale disturbance that was proposed for the flood control facilities. The surveys discovered 33 sites located within the Preserve, and two of these have been described as significant cultural resources. It has been estimated that the sites range in age from approximately 10,000 years to 500 years old. Generally, the sites correspond with seasonal visitation by aboriginal inhabitants that resided along the coast. The Preserve, in addition to the Green Swamp to the north, served as seasonal hunting grounds and were an important source of rocky chert outcrops. Chert was used by aboriginal inhabitants as a material for the manufacture of various tools. These archaeological sites have been protected from land management activities, the construction of recreational improvements, and any other activities that could result in physical disturbance.

Land Management and Land Use

Land Management

As part of the ownership of conservation lands, the District is responsible for the 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 managers utilize is the application of prescribed fire. This is the most cost-effective method to maintain the natural communities in their natural condition. Along with prescribed fire, the District uses other common land management techniques 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 in the FNAI.

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 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 the FNAI (Guide to the Natural Communities of Florida, 2010 edition).

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.

On the Preserve, there are 43 management units with approximately 5,800 acres of fire-dependent-natural communities. District burn managers always take precautions to limit to 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. These management units are outlined in Figure 9.

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. 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 cost-prohibitive measures. Condition Class 5 was developed to represent systems that are not regularly fire-maintained, such as hydric hammock. Condition Classes 1-5 represent the majority of the program aside from special circumstances that have been identified and treated separately for a variety of reasons.

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, and 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.

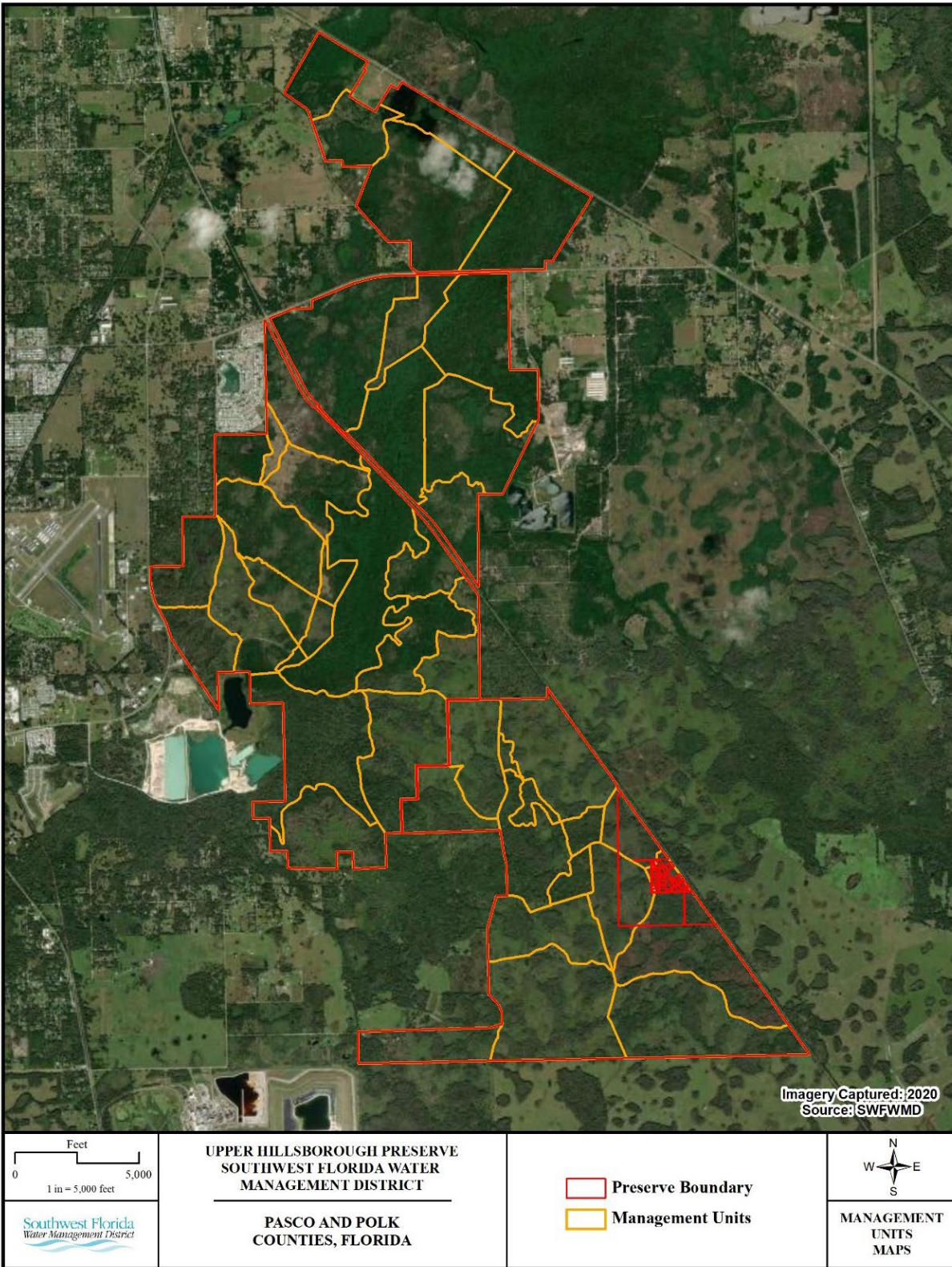


FIGURE 9. MANAGEMENT UNITS AT UPPER HILLSBOROUGH WILDERNESS PRESERVE

Forest Management

The Preserve contains four Timber Management Zones (TMZ) located in the central portion of the Preserve. These plantations were created to restore the pine overstory in previously altered areas or areas that were over-harvested prior to the District's ownership. The goal 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. The District uses planted pine and timber harvesting as a tool for land management, forest health, restoration, and to salvage timber lost to fire, insects, or disease.

Within the Preserve, the four established TMZs encompass approximately 608 acres (Figure 10). Three of these sites were planted between 1988 and 1992, as part of a habitat restoration project to restore longleaf pine in an area that was cutover. The fourth TMZ was planted across a series of interconnected pastures in 2000 with forest source longleaf to recover the overstory on the altered areas. These TMZs have since been thinned and the understory has mechanically treated and burned to stimulate understory development.

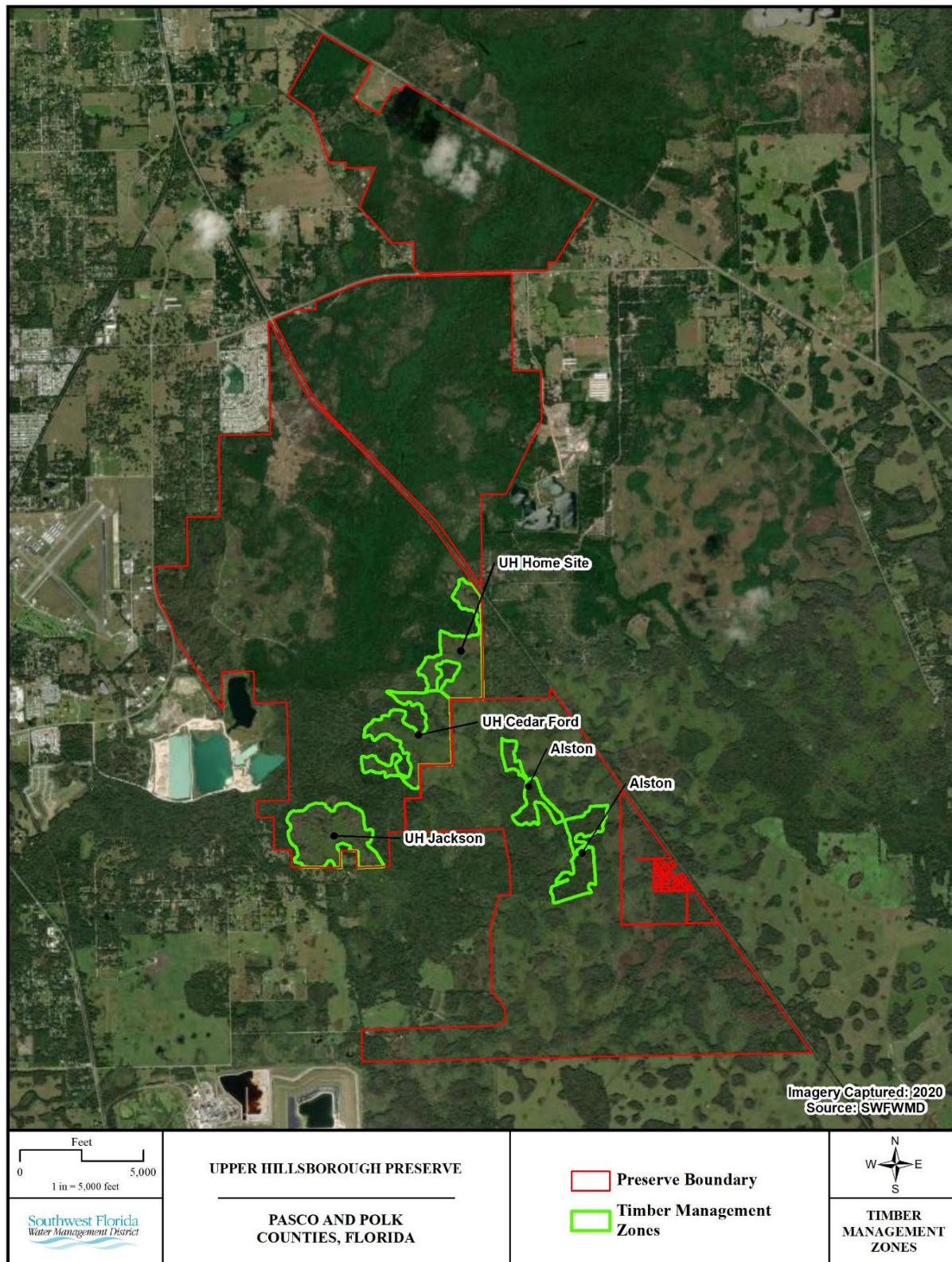


FIGURE 10. TIMBER MANAGEMENT ZONES AT UPPER HILLSBOROUGH WILDERNESS PRESERVE

Restoration and Maintenance

Managing altered lands on conservation tracts often necessitates additional management activity, especially if fire dependent communities can no longer carry fire at the necessary time (seasonality) or intensity. Several enhancement projects have been conducted to facilitate the recovery of pine flatwoods from the woody encroachment of the Hillsborough River swamp. Between 2011 and 2021, mechanical treatments totaling 962 acres were implemented to reduce sweet gum, red maple, water oak, and wax myrtle encroachment across the Preserve. Several of these treatments were cost-share projects in coordination with the National Wild Turkey Federation (NWTf).

Altered sites at the Preserve are primarily a result of historic ditch excavations, which served to increase hydrologic connections between isolated wetland systems. This was in order to connect wetlands to the Hillsborough River and accelerate drainage of associated uplands used in the past for cattle grazing. Many of these excavated ditches have been restored in past restoration projects, to compensate for impacts associated with roadway improvements via the Florida Department of Transportation mitigation program.

Exotic and Invasive Species

The invasion of native communities and ecosystems by non-native and exotic species of plants and wildlife is one of the primary threats to the integrity of Florida's remaining natural areas. Non-native species, growing in an environment free of the population controls typically imposed by their natural predators and pathogens, can often displace native species and greatly diminish habitat value of the affected areas. The District utilizes multiple methods and has formal procedures to address the control of exotic species within the Preserve to minimize encroachment into natural systems.

Invasive Plant Management

Invasive, non-native 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 once there. As a result, Florida is home to many non-native plant species that have become aggressive invaders that severely impact natural systems.

The Florida Exotic Pest Plant Council (FLEPPC) tracks non-native plant species in the state, compiles species lists, and categorizes these species based on their impact to natural systems. Category I species are the most aggressive and can impact natural communities by displacing native species, changing community structure or ecological functions, or by hybridizing with native species. Category II species are those that are increasing in abundance but have not yet altered Florida plant communities to the extent shown by Category I species (FLEPPC, 2019). Many species on the FLEPPC 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 exotic 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 that spearhead control efforts by surveying, prioritizing, and treating invasive exotic plant populations on District conservation lands. The District focuses management efforts on invasive exotic plant species which the FLEPPC has deemed Category I or II plants as discussed 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 exotic 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.
4. the difficulty controlling the species.

This prioritization scheme ensures that the District's resources are spent where they will have the greatest impact on the ecosystem. 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 get established.

The most problematic invasive plant species found at the Preserve are listed in Table 3 along with their priority level for control, with lower numbers indicating a higher priority and vice versa. The species of primary concern on the Preserve include Old World Climbing Fern (*Lygodium microphyllum*), coral ardisia (*Ardisia crenata*), Chinese tallow-tree (*Triadica sebifera*), cogon grass (*Imperata cylindrica*), and air potato (*Dioscorea bulbifera*). Infestations of invasive exotic plant species at the Preserve are most commonly found in historically disturbed sites such as pastures and old home sites, and adjacent to roadways and housing developments.

The District employs a variety of measures to control invasive exotic 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 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. Treatments utilizing herbicides comply with instructions found on the herbicide label and employ the Best Management Practices for their application.

TABLE 3. INVASIVE PLANTS AT UPPER HILLSBOROUGH WILDERNESS PRESERVE

Common Name	Scientific Name	FLEPPC Category	Priority Level for Control
Old world climbing fern	<i>Lygodium microphyllum</i>	1	4
Coral ardesia	<i>Ardisia crenata</i>	1	4
Chinese tallow-tree	<i>Triadica sebifera</i>	1	4
Cogongrass	<i>Imperata cylindrica</i>	1	6
Air potato	<i>Dioscorea bulbifera</i>	1	6
Brazilian pepper	<i>Schinus terebinthifolia</i>	1	7
Skunk vine	<i>Paederia foetida</i>	1	7
Japanese climbing fern	<i>Lygodium japonicum</i>	1	7
Tropical soda apple	<i>Solanum viarum</i>	1	7
Wedelia	<i>Sphagneticola trilobata</i>	2	10
Camphor-tree	<i>Cinnamomum camphora</i>	1	11
Sword fern	<i>Nephrolepis cordifolia</i>	1	11

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 any invasive wildlife removal practices on District-owned properties.

The Preserve is host to several invasive wildlife species. The primary invasive wildlife species that the District focuses eradication 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, Cooper and Armstrong, 2009).

Feral hogs cause millions of dollars in damages to lawns, ponds, natural areas, flood control structures and rights-of-way each year (Giuliano, 2016). Feral hogs are capable of carrying 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, Caesar's weed. Furthermore, feral hogs also compete with native species for forage and have been documented preying on native species themselves, specifically ground-nesting birds.

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 wild hogs, the District has since taken a multi-faceted approach to their removal. Current control methods 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 – Wildlife Services program. The use of electronically controlled hog traps in targeted areas has also proven highly effective.

Imperiled Species

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.

Wildlife

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. The District manages the Preserve in a holistic fashion and according to Best Management Practices which benefit a wide array of native plant and animal species, including those that are considered imperiled. It is known that numerous imperiled species exist on the Preserve.

The FNAI Biodiversity Matrix Map Server is a screening tool which provides site specific lists of the rare species that are known to occur or are likely to occur on a given parcel of land. According to the FNAI Biodiversity Matrix Report for the Preserve, 8 federal and/or state listed wildlife species are likely to occur or have the potential to occur on the property (Table 4). Additionally, numerous federal and state listed plant species are likely to occur or have the potential to occur there as well and are listed in Appendix A.

TABLE 4. IMPERILED WILDLIFE SPECIES THAT ARE KNOWN TO OR LIKELY TO OCCUR AT THE PRESERVE

Common Name	Scientific Name	Federal Status	State Listing
American alligator	<i>Alligator mississippiensis</i>	SA	SA
Florida sandhill crane	<i>Antigone canadensis pratensis</i>	N	ST
Eastern indigo snake	<i>Drymarchon couperi</i>	LT	FT
Little blue heron	<i>Egretta caerulea</i>	N	ST
Tricolored heron	<i>Egretta tricolor</i>	N	ST
Southeastern American kestrel	<i>Falco sparverius paulus</i>	N	ST
Gopher tortoise	<i>Gopherus polyphemus</i>	LC	ST
Wood stork	<i>Mycteria americana</i>	LT	FT

Arthropod Management

In compliance with Section 388.4111, Florida Statutes and in Section 5E-13.042, Florida Administrative Code, all lands in the Upper Hillsborough Preserve in Pasco County have been evaluated and subsequently designated as environmentally sensitive and biologically highly productive. Such designation is appropriate and consistent with the previously documented natural resources and ecosystem values and affords the appropriate protection for these resources from

arthropod control practices that could impose a potential hazard to fish, wildlife, and other natural resources existing on this property.

Recreation

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 walkthrough foot traffic. Nevertheless, 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.

The recreational activities permitted at the Preserve include bicycling, inline skating, camping, horseback riding, fishing, birding, and hiking (Figure 11). Public access to the property is provided by five walkthrough access points. An access to the northern portion of the Preserve is provided by a gate and parking area off of County Road 54, midway between Chancey Road and US Highway 98. A second access point for the northern portion of the property is also provided by a gate and parking area east of the main entrance and east of the CSX railroad. A third access point is provided by a gate and parking area at the west side of the property on Chancey Road. A fourth access point is provided by a gate and parking area at the end of Deems Road. This gate and parking area is the main entrance to the Alston Tract and is accessed off County Road 39 by taking County Line Road to Deems Road. There are informational kiosks located at the north, west and south public access points which contain a large trail map of the property and trail map brochures. Motorized access on the property is restricted to authorized personnel directly affiliated with the District, and any other non-affiliated personnel authorized pursuant to a cooperative agreement with the District.

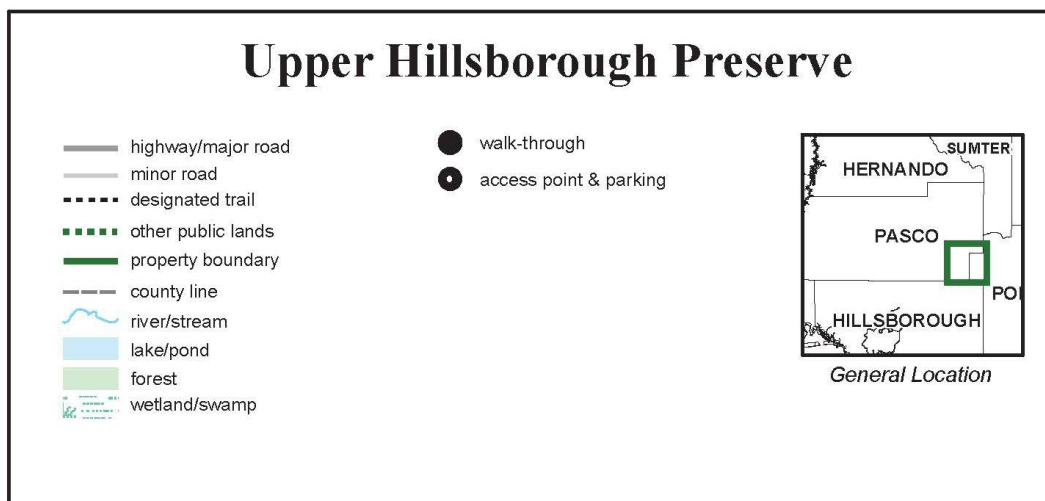
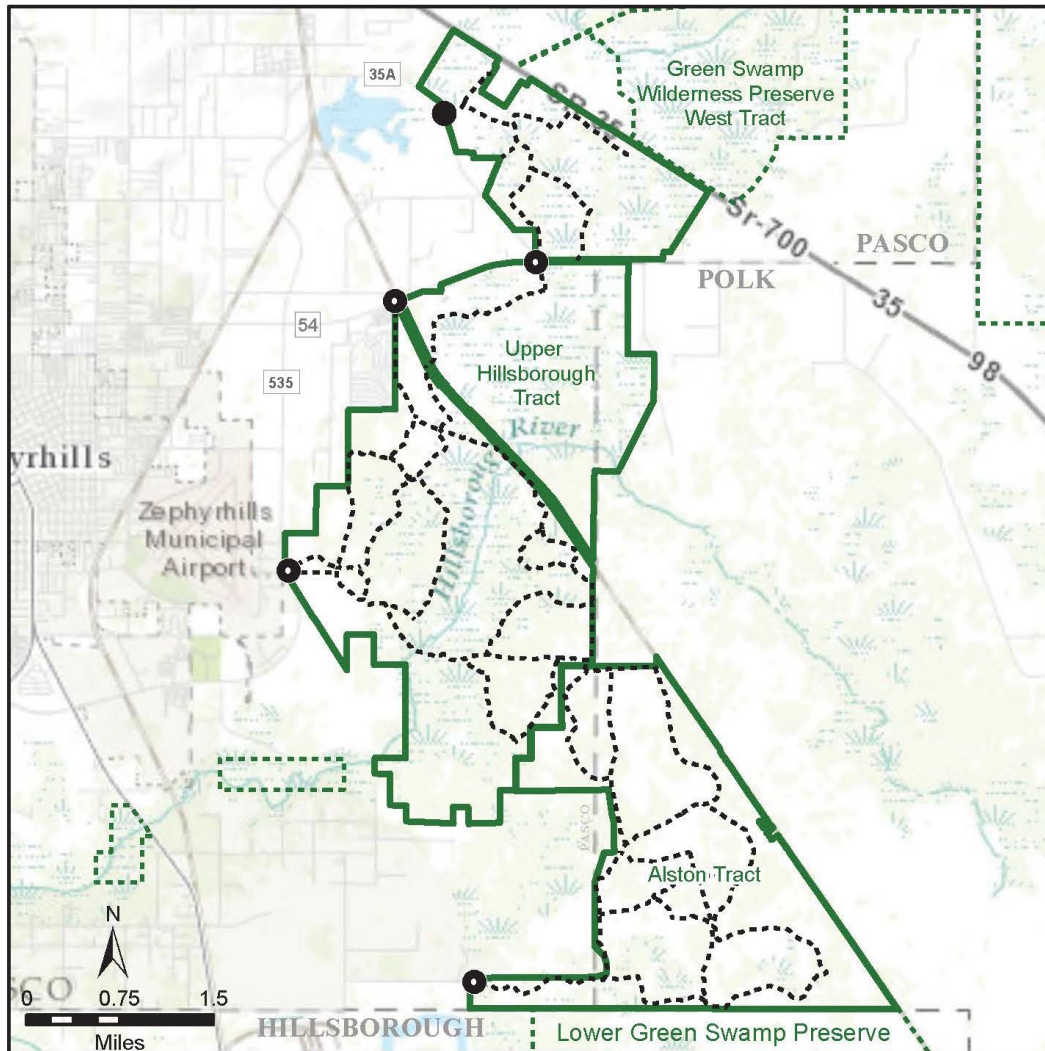


FIGURE 11. RECREATION TRAILS AT UPPER HILLSBOROUGH WILDERNESS PRESERVE

Trails

There are approximately 39 miles of designated multi-use trails traversing the entire Preserve. Furthermore, portions of the trails are designated as part of the Florida Greenways and Trails network. The hiking trails give nature-based experiences while minimizing impacts to the lands and natural systems. The trails are accessible from five access points. The primary access point to the Upper Hillsborough Tract is located on County Road 54 approximately three miles east of Zephyrhills. There are three additional access points on County Road 54, County Road 35A, and County Road 535. The primary access point to the Alston Tract is on Deems Road off State Road 39. The Trail markers identify the type of recreational use and the arrows indicate the direction of the trail. The main trail intersections are numbered, which coincide with the trail map brochure.

Of the 39 miles of multi-use trails, there are approximately 30 miles of the trails that are also designated for bicycling and equestrian use. It is required that each equestrian must carry proof of their horse's current negative Coggins test results.

Camping

The Preserve provides primitive camping, backcountry tent camping, and equestrian camping opportunities through an SUA. These opportunities are accessible from the primary access points. Each of the sites are equipped with picnic tables and fire rings. Potable water is not provided on the property. Camping at the Preserve is available at no cost to the user, but a free reservation must be made through the WaterMatters.org/Reservation website prior to camping at a site.

Wildlife Viewing, Hunting, Fishing, and Boating

The Preserve has a wide variety of wildlife viewing opportunities. The Hillsborough River flows through the property and provides opportunity for observing an abundance of bird species, as well as a variety of terrestrial habitats containing a wide range of wildlife species such as deer, gopher tortoises, turkeys, sandhill cranes, and bald eagles. This positive species richness is indicative of proper land management practices which have created flourishing natural habitats throughout the Preserve.

Currently, there is a land use agreement with FWC for hunting opportunities on the Preserve; however, hunting is only allowed within the portion of the Upper Hillsborough Tract that lies south of County Road 54 and north of the Alston Tract.

Fishing is typically open along the river and is accessible by foot only. Fishing is regulated by the FWC and a license may be required.

Although the Hillsborough River may appear to be suitable for canoeing or kayaking, there is no designated launch site, and the waterway is not maintained for boating recreation. Currently, boating is not a designated recreational use on the Preserve.

Americans with Disabilities Act

The 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), ext. 4747; 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.

Environmental Education

There are no formal environmental educational facilities at the Preserve. However, there are scientific research studies that are conducted by environmental consultants, state agencies, and universities. These additional types of activities require an SUA.

Land Use Administration

The land uses administered on District conservation lands are governed by the District Policy. 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 hold 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. 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 holds a variety of agreements with private entities and various agencies 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 partnered with the FWC to create hunting opportunities through a wildlife management area within a portion the Upper Hillsborough Tract lying between County Road 54 and the Alston Tract. This agreement provides for hunting opportunities on the Preserve. There is a license agreement with an apiary farmer for the private production of honey. The District has also granted multiple easements to utility companies, such as Duke Energy, Progress Energy Florida, and Withlacoochee River Electric.

Research Opportunities

District properties provide for a variety of research opportunities for the benefit of natural resource conservation and preservation efforts and advancements. The Preserve has been a frequent location for wetland studies, feral hog research, and plant and soil identification studies. Overall, District

properties provide an abundance of research opportunities due to their proper management of healthy ecosystems.

Special Use Authorizations (SUAs)

For any requests for undesignated uses on District property, it is required to apply for an SUA from the District's Land Resources Bureau. The SUA application will be reviewed by the District to determine the compatibility of the requested use on District conservation lands.

The types of approved SUAs on the Preserve can be categorized under recreational uses, research opportunities, and training. As previously mentioned, the approval for obtaining access to the designated trails for a mobility disabled person is also completed through the SUA process. Recreational uses have typically included, but are not limited to, disability hunt outings, bicycle races, equestrian events, and charity events. As mentioned in the previous section, the specific research opportunities have included, but are not limited to, wetland studies, feral hog research, and plant and soil identification studies.

Future Land Conservation

The District will continue to consider the opportunities of purchasing lands adjacent to the Preserve with the goal of promoting the District's Mission of protecting the natural features of conservation lands for the benefit of flood attenuation, water quality, and water supply. With the Preserve becoming pressured by urban sprawl, it would be advantageous to seek possible opportunities for acquiring fee simple and less-than-fee properties to further promote protections of the natural features within the region.

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 will 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 vehicle worthy for management and public use.

Motorized access on the Preserve is restricted to authorized personnel only. Several management roads are utilized as service roads to support management activities and regional hydrological data collection. Since the acquisition of the Preserve, most of the unnecessary roads have been closed and are being allowed to revegetate naturally.

As part of the general road maintenance, the District maintains a network of culverts and low water crossings to ensure the conveyance of water. Culverts are periodically replaced based on the results from the culvert inspection process which identifies culverts that are damaged or are nearing the end of their expected service life. Low water crossings are utilized, where feasible, to mimic the natural conveyance of water and to provide limited disturbance in wet areas. These low water crossings are typically at ground level and are improved with rock or some other material to limit erosion while allowing for the natural flow of water.

Properly marked and maintained boundaries 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 property 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 also contracts with FWC law enforcement for site security.

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 a number of criteria, such as: the use must be compatible with the natural resource values of the property, reasonable compensation must be provided to the titleholder of said lands, the proposed use must be located appropriately on the

lands with due consideration given to use of other lands, and the proposed use must not be inconsistent with the management plan for the property.

The District provides public access in the most efficient, cost-effective manner with minimal impact on the natural resources. Development and construction of recreational facilities on the Preserve will be kept to the minimum required to provide access for resource based recreational activities and to administer and manage the Preserve. There are currently no improved recreation facilities located on the Preserve.

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 and associated tributaries.

- 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 majority of prescribed burns during the growing season to support development of native fire-dependent species and habitat function.
- Objective 3: Update and maintain a condition class database to track management activities on specific management units.
- Objective 4: Maintain perimeter firelines on an annual basis and establish strategic internal management lines supporting the seasonal needs of prescribed fire program.

Restoration and Natural System Maintenance

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

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

Goal: Maintain and enhance natural system structure and function.

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

Forest Management

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

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

Imperiled Species Management

Goal: Manage and maintain natural systems to support development of 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 EDRR methodology on new infestations identified in the Invasive Plant Management Plan.
- Objective 3: Implement the feral hog control plan and manage the feral hog population on the Preserve.

Infrastructure and Maintenance

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

- Objective 1: Annually inspect and maintain roads and trails according to their designated maintenance schedule.
- Objective 2: Monitor and maintain culverts, bridges, and low water crossings to prevent adverse impacts on hydrology.
- Objective 3: Periodically inspect boundary fencing and gates to assure adequate protection of District 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 in parcels within the District's optimal boundary and Florida Forever work plan.
- Objective 3: Pursue acquisition of less-than-fee interests through strategic conservation easements that complement the District's existing network of fee interests 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 SUAs for uses that are consistent with the District policies.
- Objective 3: Maintain cooperative relationships with state, local, and other governmental entities as well as 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.

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 on known sites. Continue to monitor, protect, and preserve as necessary any identified sites.
- Objective 2: Take precautions to protect these sites from potential impacts resulting from management or maintenance activities.
- Objective 3: Maintain qualified staff as an Archaeological Site Monitor.

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.

Significant Management Accomplishments

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

Land Management

- Developed annual burn plans.
- Completed prescribed burns on approximately 13,065 acres.
- Completed approximately 155 acres of mechanical treatment for hazardous fuel reduction and maintenance.
- Approximately 367 acres of mechanical treatment and 329 acres of roller chopping were completed with the National Wild Turkey Federation (NWTF) Cost Share Program habitat maintenance program. This is a co-funded program in which the District and the NWTF, Florida Fish and Wildlife Conservation Commission and Florida Forest Service split the costs on habitat restoration projects in Wildlife Management Areas.
- Maintained perimeter firelines on an annual basis for prescribed fire and wildfire mitigation.
- Performed maintenance of internal roads and trails along with mowing twice per year on primary and secondary roads.
- Removed 886 feral hogs.
- Over 7,300 acres surveyed for invasive exotic plants and all invasive exotics found within the surveyed area were treated.

Recreation

- 441 volunteer hours were logged to help with trail maintenance.
- Created new parking area at the Alston Tract entrance.
- Over 1,238 camping reservations were made at the Upper Hillsborough and Alston campgrounds.
- In coordination with FWC, 12,992 total hunter days were provided over the ten-year period. (These are FWC hunts only).
- 12 youth and disability hunts were provided on the Alston Tract.

Acquisition

- Approximately 112 isolated acres north of CR 54 were sold to increase management efficiencies.

Administration

- Authorized 17 SUAs for recreational uses, research opportunities, and training.
- The District currently has an agreement with an apiary farmer on the Mahoney Tract.

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Appendix A

Imperiled Plant Species known to occur or could occur at Upper Hillsborough

Scientific Name	Common Name	Federal Status	State Listing
<i>Andropogon arcatus</i>	Pinewoods bluestem	N	ST
<i>Asclepias curtissii</i>	Curtiss's milkweed	N	SE
<i>Asplenium auritum</i>	Auricled spleenwort	N	SE
<i>Asplenium verecundum</i>	Delicate spleenwort	N	SE
<i>Bonamia grandiflora</i>	Florida bonamia	LT	FT
<i>Calopogon multiflorus</i>	Many-flowered grass pink	N	ST
<i>Campanula robinsiae</i>	Brooksville bellflower	LE	FE
<i>Carex chapmannii</i>	Chapman's sedge	N	ST
<i>Centrosema arenicola</i>	Pineland butterfly pea	N	SE
<i>Chionanthus pygmaeus</i>	Pygmy fringe-tree	LE	FE
<i>Chrysopsis floridana</i>	Florida golden aster	LE	FE
<i>Clitoria fragrans</i>	Pigeon wings	LT	FT
<i>Coelorachis tuberculosa</i>	Piedmont joint grass	N	ST
<i>Conradina brevifolia</i>	Short-leaved Rosemary	LE	FE
<i>Crotalaria avonensis</i>	Avon Park harebells	LE	FE
<i>Dicerandra frutescens</i>	Scrub Mint	LE	FE
<i>Encyclia tampensis</i>	Florida butterfly orchid	N	CE
<i>Epidendrum conopseum</i>	Green-fly orchid	N	CE
<i>Eriogonum longifolium</i> var. <i>gnaphalifolium</i>	Scrub Buckwheat	LT	FT
<i>Eulophia ecristata</i>	Non-crested eulophia	N	ST
<i>Forestiera godfreyi</i>	Godfrey's swamp-privet	N	SE
<i>Garberia heterophylla</i>	Garberia	N	ST
<i>Gossypium hirsutum</i>	Wild cotton	N	ST
<i>Harrisella porrecta</i>	Threadroot orchid	N	ST
<i>Hexalectris spicata</i>	Crested coral-root	N	SE
<i>Justicia cooleyi</i>	Cooley's Water-willow	LE	FE
<i>Lechea cernua</i>	Scrub pinweed	N	ST
<i>Liatris ohlingerae</i>	Scrub Blazingstar	LE	FE
<i>Lilium catesbaei</i>	Catesby's lily	N	ST
<i>Lobelia cardinalis</i>	Cardinal flower	N	ST
<i>Lupinus aridorum</i>	Scrub Lupine	LE	FE
<i>Matelea pubiflora</i>	Sandhill spiny-pod	N	SE
<i>Nolina brittoniana</i>	Britton's Beargrass	LE	FE
<i>Osmunda cinnamomea</i>	Cinnamon fern	N	CE
<i>Osmunda regalis</i>	Royal fern	N	CE
<i>Paronychia chartacea</i>	Papery Whitlow-wort	LT	FT
<i>Peperomia humilis</i>	Low peperomia	N	SE
<i>Pinguicula caerulea</i>	Blue-flowered butterwort	N	ST
<i>Pinguicula lutea</i>	Yellow-flowered butterwort	N	ST

<i>Platanthera blephariglottis</i> var. <i>conspicua</i>	White-fringed orchid	N	ST
<i>Platanthera ciliaris</i>	Yellow-fringed orchid	N	ST
<i>Platanthera flava</i>	Southern tubercled orchid	N	ST
<i>Platanthera nivea</i>	Snowy orchid	N	ST
<i>Pogonia ophioglossoides</i>	Rose pogonia	N	ST
<i>Polygala lewtonii</i>	Lewton's Polygala	LE	FE
<i>Polygonella basiramia</i>	Wireweed	LE	FE
<i>Polygonella myriophylla</i>	Sandlace	LE	FE
<i>Polypodium dispersum</i>	Widespread polypody	N	SE
<i>Polypodium plumula</i>	Plume polypody	N	SE
<i>Polypodium ptilodon</i>	Swamp plume polypody	N	SE
<i>Prunus geniculata</i>	Scrub Plum	LE	FE
<i>Sacoila lanceolata</i> var. <i>lanceolata</i>	Leafless beaked orchid	N	ST
<i>Sarracenia minor</i>	Hooded pitcherplant	N	ST
<i>Spigelia loganioides</i>	Levy pinkroot	N	SE
<i>Spiranthes laciniata</i>	Lacelip ladiestresses	N	ST
<i>Spiranthes longilabris</i>	Longlip ladiestresses	N	ST
<i>Spiranthes ovalis</i>	Lesser ladiestresses	N	SE
<i>Spiranthes tuberosa</i>	Little ladiestresses	N	ST
<i>Tillandsia fasciculata</i>	Cardinal airplant	N	SE
<i>Tillandsia utriculata</i>	Giant airplant	N	SE
<i>Trichomanes punctatum</i>	Florida bristle fern	N	SE
<i>Triphora craigheadii</i>	Craighead's orchid	N	SE
<i>Warea amplexifolia</i>	Wide-leaf Warea	LE	FE
<i>Warea carteri</i>	Carter's Mustard	LE	FE
<i>Zamia pumila</i>	Coontie	N	CE
<i>Zephyranthes atamasca</i> var. <i>treatiae</i>	Treat's zephyrlily	N	ST
<i>Zephyranthes simpsonii</i>	Simpson's zephyrlily	N	ST
<i>Ziziphus celata</i>	Florida Ziziphus	LE	FE