

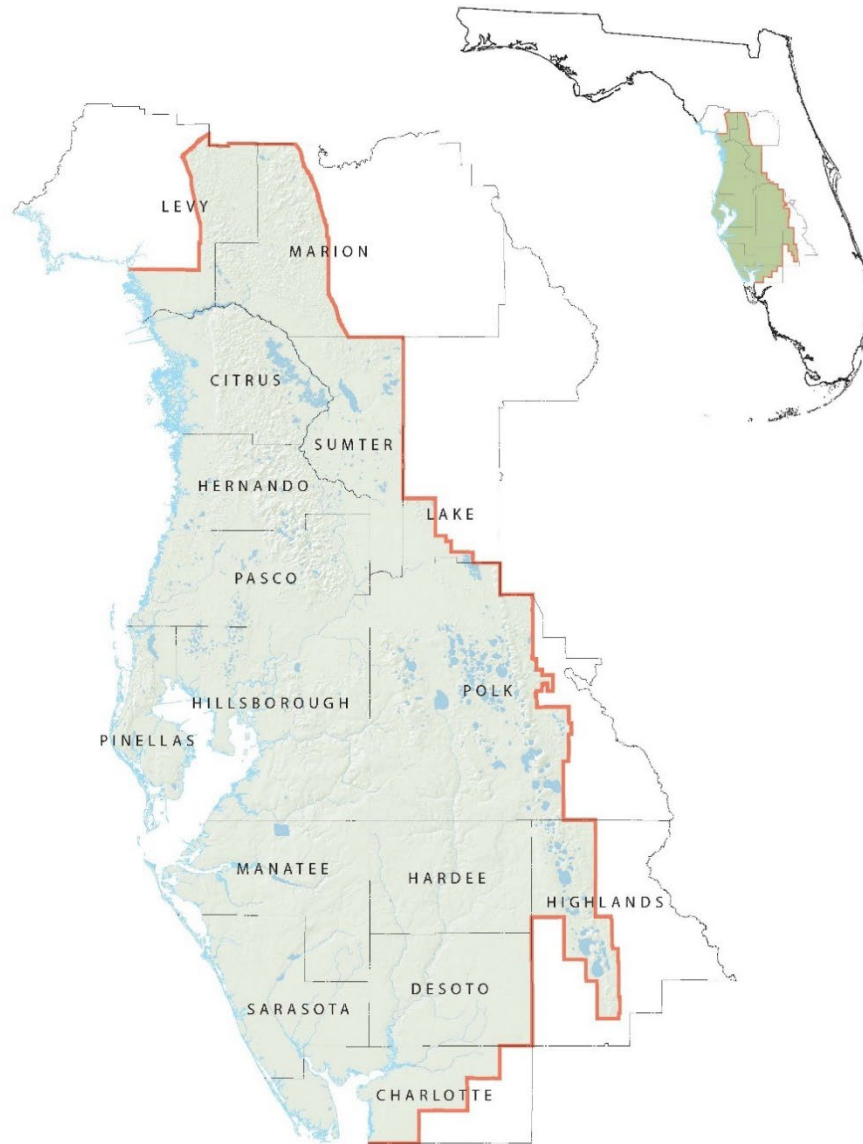
# **Draft Land Management Plan**

## **Edward W. Chance Reserve Gilley Creek and Coker Prairie Tracts**

**Land Resources Bureau  
Southwest Florida Water Management District  
July 26, 2022**

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



WATERMATTERS.ORG · 1-800-423-1476

*The Southwest Florida Water Management District (District) does not discriminate on the basis of disability. This nondiscrimination policy involves every aspect of the District's functions, including access to and participation in the District's programs, services and activities. Anyone requiring reasonable accommodation, or who would like information as to the existence and location of accessible services, activities, and facilities, as provided for in the Americans with Disabilities Act, should contact the Human Resources Office Chief, at 2379 Broad St., Brooksville, FL 34604-6899; telephone (352) 796-7211 or 1-800-423-1476 (FL only), ext. 4747; or email [ADACoordinator@WaterMatters.org](mailto: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](http://WaterMatters.org/ADA).*

## Executive Summary

**Acres:** 7,931

**Acquisition Dates:** 1991, 1999, and 2000

**Plan Term:** 10 Years (2023–2032)

**Primary Basins:** Manatee and Myakka Rivers

**Secondary Basin:** Gilley Creek, Webb Branch, Coker Creek

**Location:** Manatee County

**Funding Sources:** Water Management Lands Trust Fund (Save Our Rivers) and Preservation 2000 (P2000)

**Natural Systems:** The District uses natural communities as defined by the Florida Natural Areas Inventory (FNAI) to describe habitats of the Edward W. Chance Reserve (Reserve). Sixteen natural communities were identified by FNAI; 6,615 acres (83.4%) are uplands. Of those uplands, mesic flatwoods comprise more than 3,100 acres; pastures total more than 2,200 acres; and scrub and scrubby flatwoods communities comprise almost 575 acres. Basin marsh (422 acres), baygall (281 acres), and depression marsh (177 acres) are the predominant wetland communities.

**Water Resources:** Water resource benefits provided by the Reserve include flood protection, water quality enhancement, protection of the water supply, and natural system protection. The Reserve protects the quantity and quality of runoff, and reduces groundwater pumped for industrial and agricultural purposes upstream of the Lake Manatee Reservoir (Reservoir). The Reserve provides attenuation of floodwaters to both the Manatee and Myakka Rivers. Forested tributaries associated with Gilley Creek and the wetlands associated with Coker Creek provide natural flood conveyance and floodplain storage. Protection and management of wetland communities on the Reserve enhance water quality functions by sequestering nitrogen and removing phosphorus from urban runoff before ultimately discharging to the Manatee and Myakka Rivers.

**Land Management:** Management activities on the Reserve include prescribed fire, habitat management, restoration, feral hog control, and invasive species management. The District aims to apply fire to all fire-dependent natural communities based on natural fire return intervals defined by the Florida Natural Areas Inventory. A network of firelines and natural firebreaks throughout the property allows for successful fire management and limits the potential for wildfires.

**Cultural and Historical Resources:** According to the Florida Master Site File, there was one area designated as a cultural resource which was the ditch system on the old Rutland Ranch, and archaeological sites along the southern extent of Gilley Creek. Several archaeological sites were found near the confluence of Gilley Creek and the Reservoir, and portions of two of these sites occur on the Reserve.

**Recreation:** The recreational activities permitted at the Reserve are hiking, equestrian trail riding, and cycling. Approximately 10 miles of hiking-only trails are available on the Coker Prairie Tract and 13 miles of hiking, cycling, and equestrian trails are available on the Gilley Creek Tract.

**Special Use Authorization:** Various special uses on the Reserve 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 Reserve can be categorized as recreation, research, and law enforcement training.

**Access:** Access to the Gilley Creek North Tract is available through the parking area northeast of Rutland Road (County Road 675) about 1.5 miles north of the junction of County Road 675 (C.R. 675) with State Road (S.R. 64). Access to the Coker Prairie Tract is provided through a parking area just south of S.R. 64, about eight miles east of the entrance to the Gilley Creek.

**Real Estate:** The District will continue to consider opportunities to purchase lands adjacent to the Reserve with the goal of promoting the District's effort to protect the natural features of conservation lands for the benefit of flood protection, water quality, and water supply.

**Cooperative Agreements, Leases, and Easements:** A perpetual conservation easement is in place over an approximately 98-acre mitigation area established in an agreement with the Florida Department of Transportation to off-set wetland impacts. A lease is in place over approximately 1,809.9 acres of the Gilley Creek North and South Tracts for cattle grazing and hay production.

# Table of Contents

<b>Executive Summary .....</b>	<b>iv</b>
<b>Introduction and General Information.....</b>	<b>1</b>
Management Plan Purpose .....	1
District Strategic Plan.....	2
Management Authority .....	2
Location.....	2
Acquisition .....	6
Current Land Use .....	12
Local Government Land Use Designation .....	12
Adjacent Land Uses .....	12
Management Challenges .....	13
<b>Historical Land Use and Cultural Resources .....</b>	<b>14</b>
Historical Land Use.....	14
Cultural and Archaeological Resources .....	14
<b>Water Resources and Natural Systems.....</b>	<b>15</b>
Water Quality .....	15
Water Supply.....	17
Flood Protection .....	17
Natural Systems.....	20
Soils and Topography.....	29
<b>Land Management and Land Use .....</b>	<b>32</b>
Land Management.....	32
Recreation.....	42
Land Use Administration .....	44
Land Maintenance and Operations.....	45
<b>Goals and Objectives .....</b>	<b>47</b>
Overview .....	47
Resource Protection and Management.....	47
Administration.....	49
Significant Management Accomplishments.....	51
<b>References .....</b>	<b>52</b>

**List of Figures**

Figure 1. General Location ..... 4  
Figure 2. Aerial Overview ..... 5  
Figure 3. Acquisition Map ..... 7  
Figure 4. Regional Conservation Network ..... 9  
Figure 5. Water Resources ..... 16  
Figure 6. Floodplain Map ..... 19  
Figure 7. Natural Communities – FNAI ..... 28  
Figure 8. Soil Types ..... 30  
Figure 9. Digital Elevation Model ..... 31  
Figure 10. Management Units..... 34  
Figure 11. Recreation Trails ..... 43

**List of Tables**

Table 1. Conservation Lands within the Vicinity ..... 10  
Table 2. Natural Community Type Summary..... 20  
Table 3. Invasive Plants Known to Occur ..... 36  
Table 4. Imperiled Wildlife Species Known or Likely to Occur ..... 38

## **Introduction and General Information**

### **Management Plan Purpose**

The purpose of this Management Plan is to set forth the District's management strategy for the Reserve for the next 10 years. The creation, updating, and implementation of this Management Plan is governed by the District's Governing Board Policy titled Land Use and Management Policy (District Policy) and the District's Executive Director Procedure titled Land Use and Management Planning (District Procedure) which outlines the use and management of District-owned conservation lands. District-owned conservation lands are managed for the protection of water resources and natural systems through the application of effective and efficient land management practices. This Management Plan provides 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 on the draft Management Plan. The workshop is advertised in local newspapers, on the District's website, and via social media outlets, and it 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 includes consideration of public input is presented to the District's Governing Board for approval at a regular Governing Board meeting.

### **Public Involvement**

The District also provides the opportunity for stakeholders and the public to provide input on management and public use during the Land Management Review process. Land Management Reviews are conducted periodically as a way to both inform the public of the District's land management activities and to gauge the District's progress in implementation of the plan. This process helps ensure the District is managing the land in accordance with the Management Plan, and in a manner consistent with the purpose for which the property was acquired. The Land Management Review team is comprised of representatives of various state agencies, cooperative partners, private land managers, and other interested parties with expertise in resource



management. The reviews culminate in an evaluation report that is submitted for review and consideration by District staff and ultimately presented to the District's Governing Board.

## **District Strategic Plan**

The 2022 – 2026 Strategic Plan outlines the District's focus in each of the four planning regions over the next five-year planning cycle (SWFWMD, 2022). The Strategic Plan identifies 11 strategic initiatives as they relate to the District's core mission of water supply, water quality, natural systems, and flood protection. The goal for natural systems is to preserve, protect, and restore natural systems to support their natural hydrologic and ecologic functions (Natural Systems Goal). The Conservation and Restoration Strategic Initiative contained within the Strategic Plan supports the Natural Systems Goal, and the major components of this initiative include land acquisition and management, ecosystem monitoring and restoration, education, and regulation. Land acquisition and management are critical to the District's conservation and restoration objectives. If land acquired has been altered, that land may be restored if necessary and then managed to maintain ecological and hydrological functions. In addition, land management is identified as one of seven Core Business Processes critical to achieving the District's Strategic Initiatives and Regional Priorities as defined in the Strategic Plan.

## **Management Authority**

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

Furthermore, pursuant to Section 373.1391 of the Florida Statutes, lands titled to the District should be managed and maintained, to the extent practicable, in such a way as to ensure a balance between public access, recreation, and the restoration and protection of their natural state and condition. District Policy and District Procedure govern the use and management of these lands in accordance with Chapters 259 and 373 of the Florida Statutes.

## **Location**

The Reserve is in the central portion of Manatee County, northeast of Lake Manatee, approximately 10 miles east of Interstate 75 and the city of Bradenton (**Figure 1**). The Reserve lies between State Road 62 (S.R. 62) and S.R. 64, just northeast of Rutland Road (C.R. 675) in an area of the county comprised of agricultural lands and conservation lands in public and private ownership (**Figure 2**). The 7,931-acre Reserve is comprised of three separate parcels: Gilley Creek North, Gilley Creek South, and the Coker Prairie Tracts.

The Gilley Creek North Tract is approximately 4,700 acres, and it encompasses much of the Gilley Creek sub-basin. Gilley Creek, a major tributary of the Manatee River flows northeast to southwest across the Gilley Creek Tract, and outfalls into Lake Manatee less than a mile from the southwestern corner of the property. The Gilley Creek South Tract is approximately 1,100 acres,

and it protects a portion of the south branch of Gilley Creek. All told, the Gilley Creek Tract includes over four miles of Gilley Creek and drains an area of approximately 23 square miles (15,000 acres) and ultimately flows into the Lake Manatee Reservoir, which serves as the primary drinking water source for Manatee County (SWFWMD 1991).

The Coker Prairie Tract is located about 3.5 miles southeast of the Gilley Creek Tract and is approximately 2,150 acres in size. The Coker Prairie Tract has had much less past disturbance and remains in mostly a natural state. It is divided approximately equally between the Manatee River and Myakka River watersheds. Webb Branch forms from large wetland systems on the Coker Prairie Tract and flows north and west into the Manatee River upstream of Lake Manatee. Coker Creek forms from wetland systems in the southern portion of the Coker Prairie Tract and flows southeast into the network of tributaries of the Myakka River.

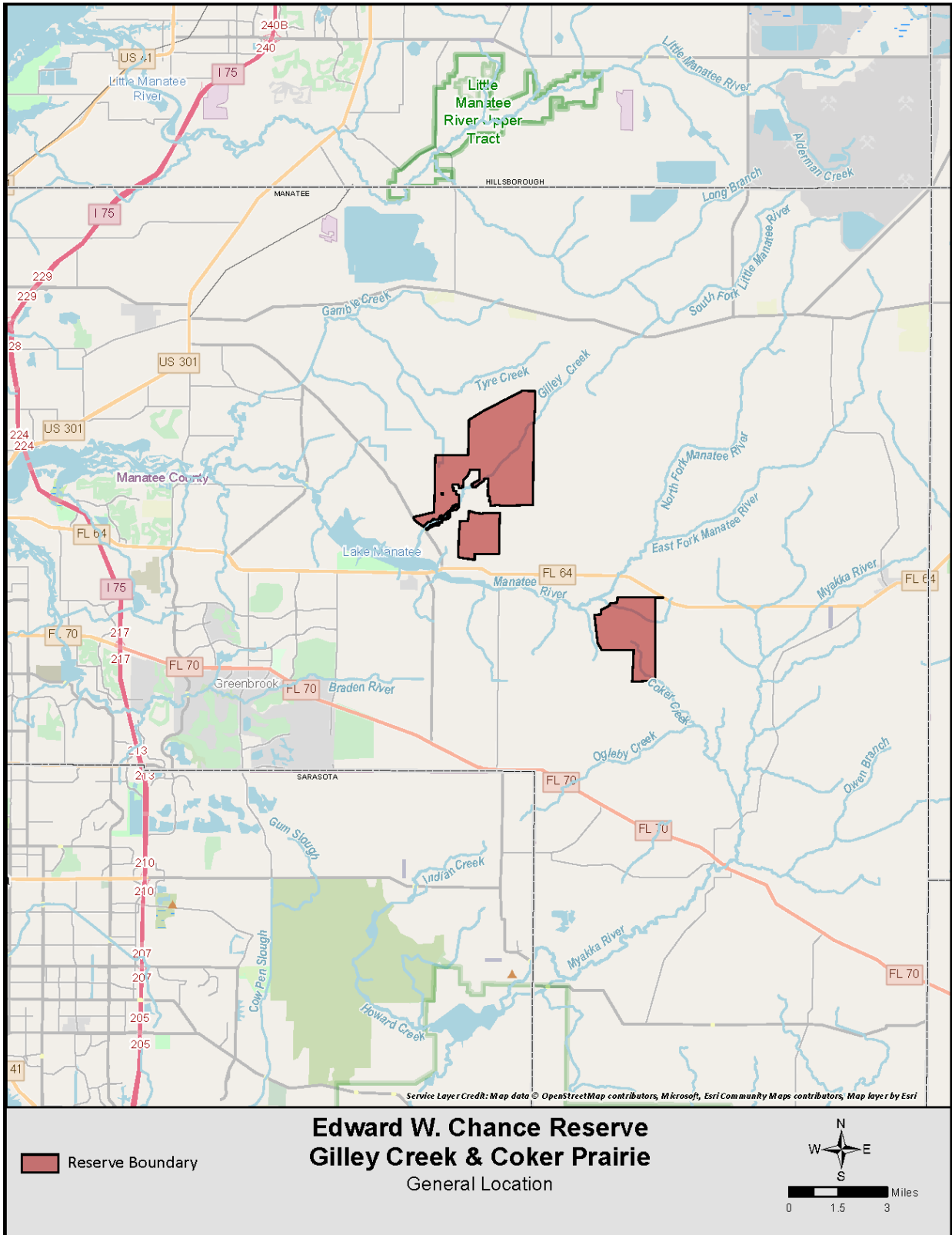


FIGURE 1. GENERAL LOCATION

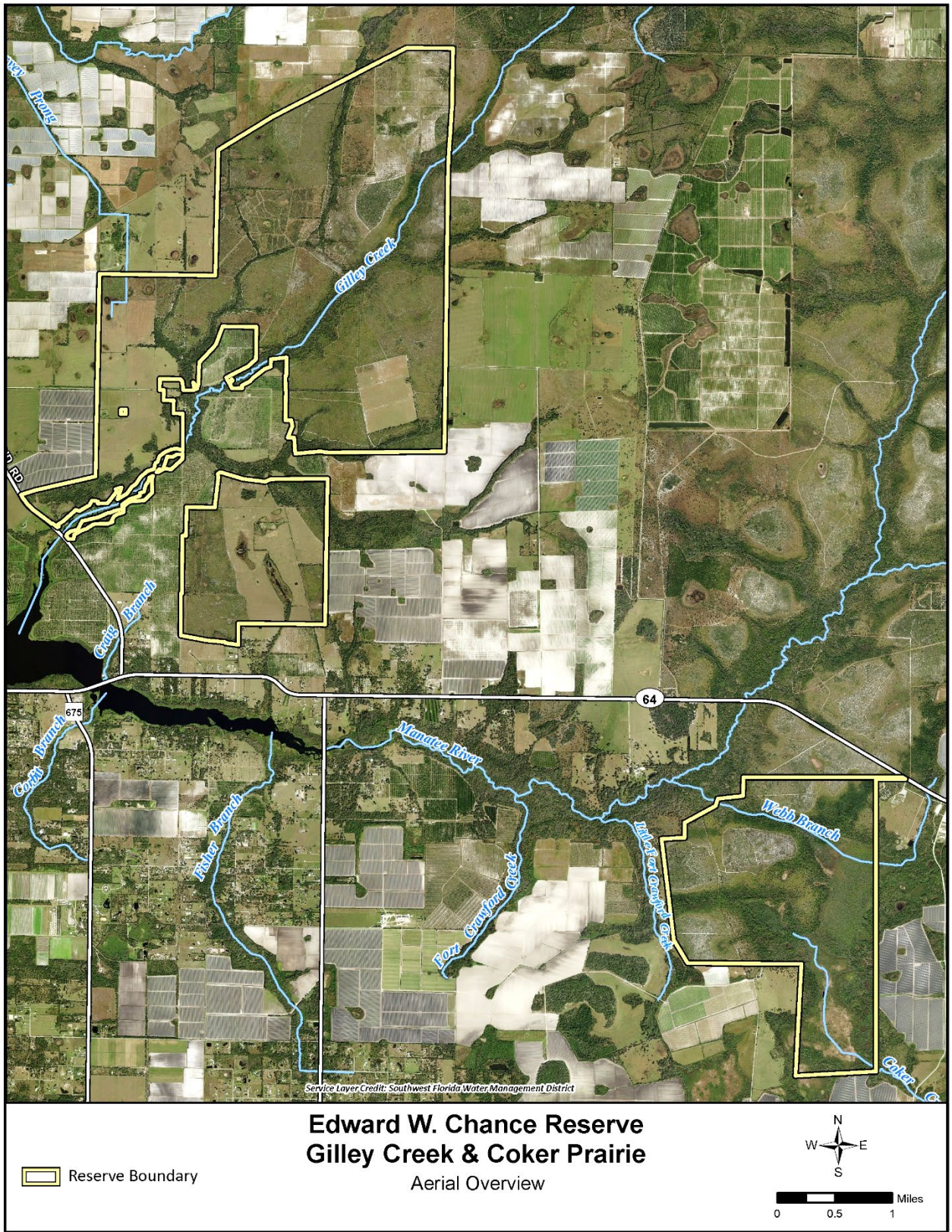


FIGURE 2. AERIAL OVERVIEW

## Acquisition

### Policy

Pursuant to Section 373.139(2), Florida Statutes, the District's Governing Board is empowered and authorized to acquire title to real property for purposes of flood control, water storage, water management, conservation and protection of water resources, aquifer recharge, water resource and water supply development, and preservation of wetlands, streams, and lakes. Lands evaluated for purchase by the District shall be evaluated based on the District's four (4) Areas of Responsibility (AORs): water supply, water quality, flood control, and natural systems. The Governing Board is primarily interested in acquiring conservation lands that meet at least two (2) of the four (4) AORs.

### History

The Reserve was purchased in fee simple through three transactions: The Coker Prairie Tract 1991 and the Gilley Creek Tract in separate transactions closed in 1999 and 2000. Funding for the acquisitions was obtained through the Water Management Lands Trust Fund (Save Our Rivers, SOR) and Preservation 2000 (P2000) programs. The two separate parent tracts, the Gilley Creek Tract (North and South) and the Coker Prairie Tract are outlined in **Figure 3** along with the portions designated for the cattle lease.

The Coker Prairie Tract (2,136 acres) was purchased on October 1, 1991, using P2000 funds. The acquisition was consistent with the District's AORs for water management, water supply, and conservation and protection of water resources. Water management benefits achieved by the acquisition include surface water storage within wetlands, water quality protection for the Manatee and Myakka River watersheds, and conservation of natural systems and wildlife habitat.

The Gilley Creek North and South Tracts (totaling 5,795 acres) were purchased on January 7, 1999, and January 14, 2000, with SOR funds. The tracts were purchased as a part of the District's Lake Manatee Lower Watershed Project (SWFWMD 1991) because they were determined to preserve natural systems, protect habitat and associated wildlife resources, protect water supply, and provide passive recreational opportunities. Previously known as the Rutland Ranch, the Gilley Creek North and South Tracts included row crops and cattle pastures, and a mix of other agricultural lands that comprised more than 40 percent of the property. Acquisition resulted in the retirement of nine agricultural wells capable of withdrawing 2,687,500 million gallons per day from the Southern Water Use Caution Area.

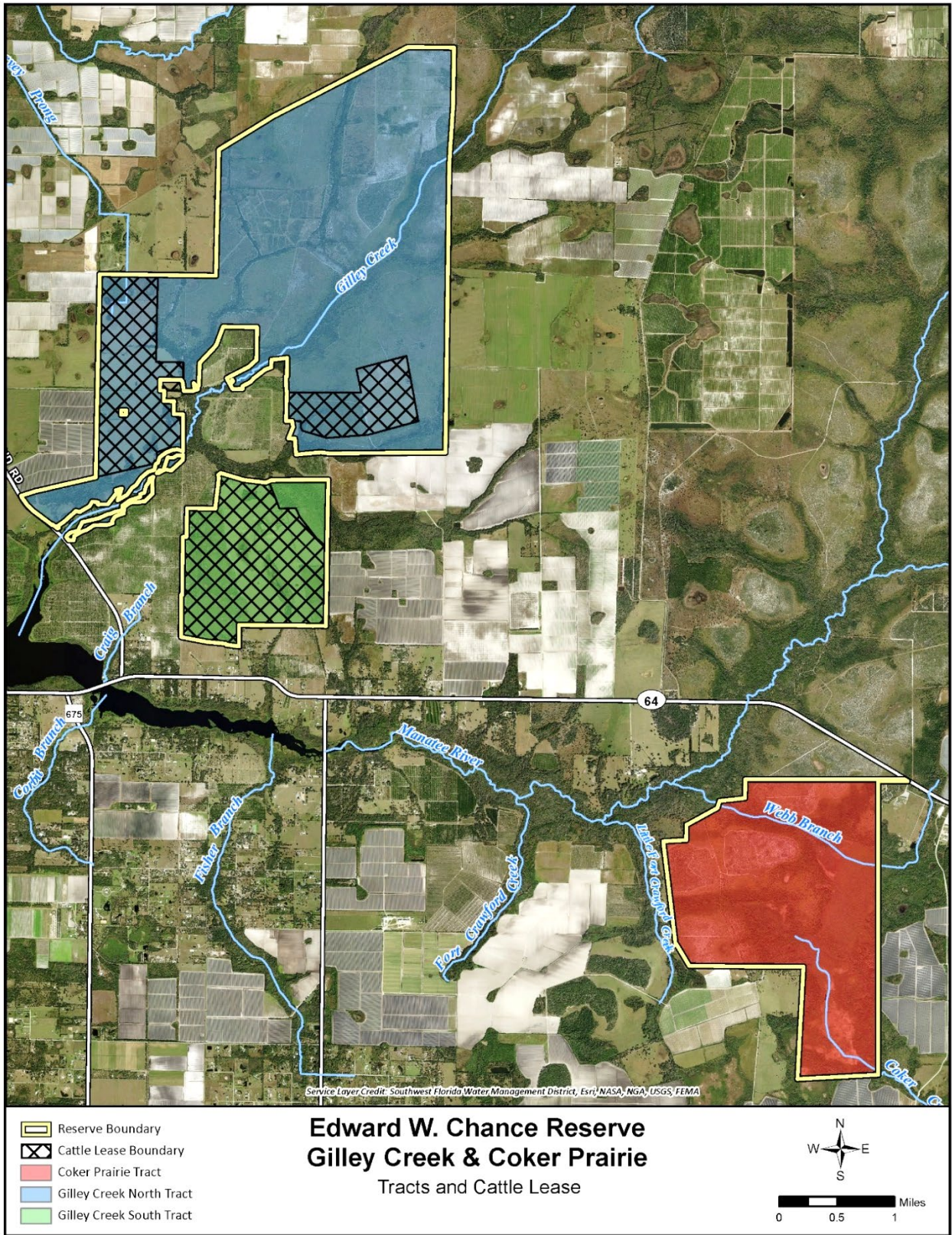


FIGURE 3. ACQUISITION MAP

## Regional Significance

The Florida Natural Areas Inventory (FNAI) maintains the Florida Forever Conservation Data Viewer (FNAI, 2021), which provides access to the organization's ranking of the resource value of natural and agricultural lands across the state. Using information from this database provides a general characterization of the regional significance of the Reserve. The FNAI ranks almost all the Reserve as Priority 1 (the highest) in the category of Significant Surface Water. This ranking reflects the importance of land acquisition to protect surface waters with good water quality on areas in a relatively natural condition. In addition, the Reserve is ranked primarily as a Priority 1, 2 and 3 Strategic Habitat Conservation Area, with high value assigned to intact mesic flatwoods, baygall, and basin marsh habitats. The Coker Prairie Tract is a Priority 3 in the Florida Ecological Greenway Network, and most of the Gilley Creek North Tract is a Priority 2. Finally, the FNAI database identifies scrub, scrubby flatwoods, and mesic flatwoods communities on the Reserve as Under-represented Natural Communities needing protection.

## Regional Conservation Network

The Reserve is part of a large group of conservation lands within an approximately 20-mile radius (**Figure 4**). Dozens of tracts in this portion of the state have been acquired or dedicated to natural resource protection through efforts of federal, state, and local governments, and private entities (**Table 1**). Conservation initiatives have successfully resulted in protection of natural lands in the regional vicinity of the project through fee simple acquisition or dedication of conservation easements.

Three major river systems have been a primary focus of these acquisitions. The Reserve protects two tributaries to the Manatee River, and other acquisitions, particularly the Duette Preserve, provide protection for the headwaters of the river. The Coker Prairie Tract includes a small portion of the headwaters of the Myakka River system, and these conservation lands, along with Myakka River State Park, Carlton Reserve, the Upper Myakka River Watershed tract, Deer Prairie Creek, the Myakka Prairie tract, and other conservation lands, provide protection for almost 100,000 acres in that river system. Finally, in the more urbanized section of Manatee and Hillsborough counties, numerous acquisitions have protected the Little Manatee River corridor. The District and the Florida Department of Environmental Protection (FDEP) have been responsible for much of the natural land conservation in this corridor, and have cooperated with Hillsborough County to protect the headwaters, and river floodplain downstream to Cockroach Bay.

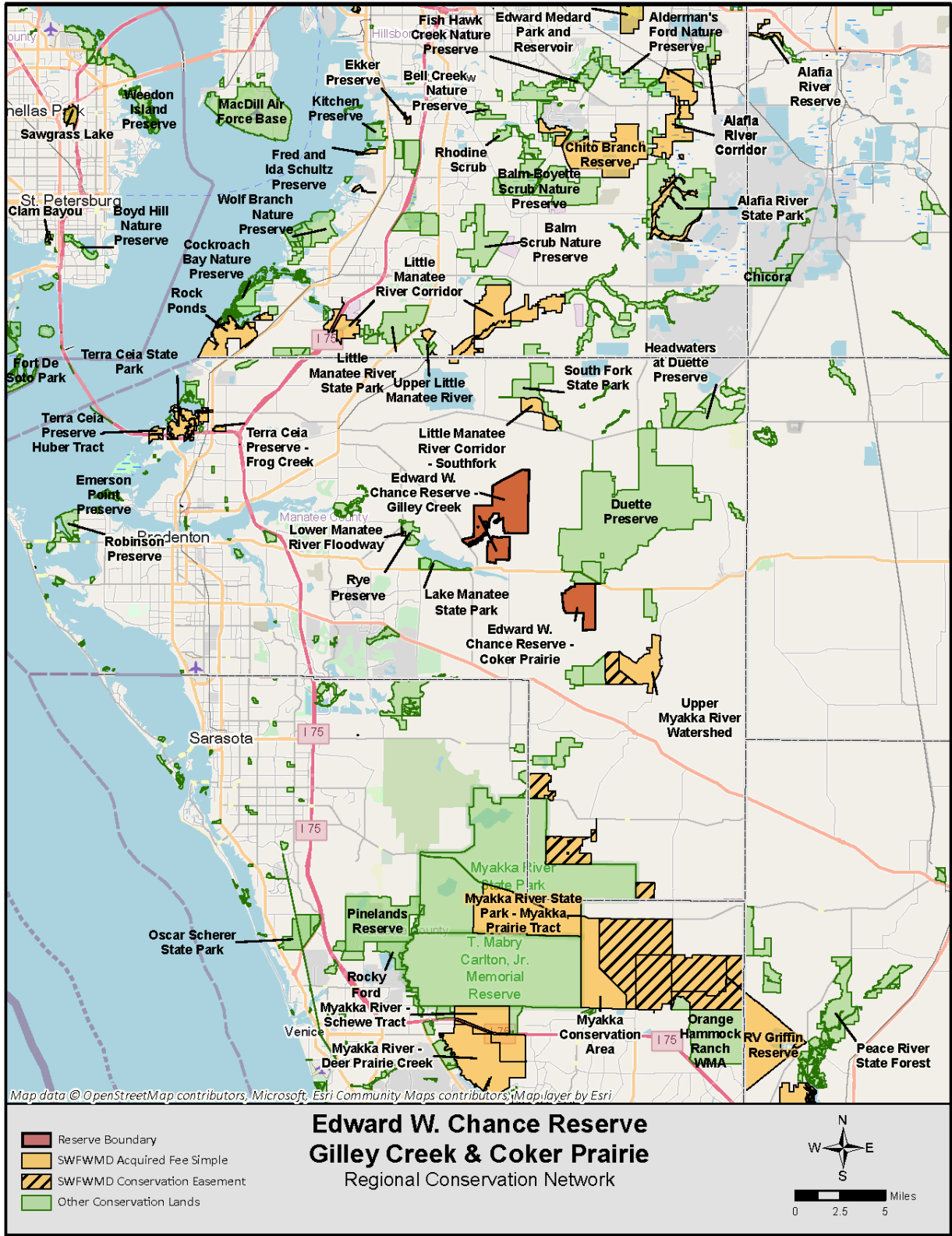


FIGURE 4. REGIONAL CONSERVATION NETWORK



**TABLE 1. CONSERVATION LANDS WITHIN THE VICINITY**

<b>PROPERTY</b>	<b>MANAGER</b>	<b>OWNER</b>	<b>ACREAGE</b>	<b>COUNTY</b>
<b>Tampa Bay Estuarine Ecosystem - Frog Creek</b>	SWFWMD	SWFWMD	120	Manatee
<b>Tampa Bay Estuarine Ecosystem - Huber Tract</b>	SWFWMD	SWFWMD	287	Manatee
<b>Little Manatee River- Southfork Tract</b>	SWFWMD	SWFWMD	971	Manatee
<b>Upper Myakka River Watershed - Flatford Swamp</b>	SWFWMD	SWFWMD	2,357	Manatee
<b>Rock Ponds - TECO Tract</b>	SWFWMD	SWFWMD	2,486	Hillsborough
<b>Chito Branch Reserve</b>	SWFWMD	SWFWMD	5,385	Hillsborough
<b>Fred and Ida Schultz Preserve</b>	Hillsborough	SWFWMD	120	Hillsborough
<b>Upper Little Manatee River</b>	Hillsborough	SWFWMD	1,379	Hillsborough
<b>Little Manatee River</b>	Hillsborough	SWFWMD	1,454	Hillsborough
<b>Little Manatee River Corridor</b>	Hillsborough	SWFWMD	4,850	Hillsborough
<b>Alafia River Corridor</b>	Hillsborough	SWFWMD	5,148	Hillsborough
<b>Lake Manatee Lower Watershed Conservation Easement</b>	SWFWMD	Private	25	Manatee
<b>Upper Myakka River Watershed - Rocking Seven Ranch CE</b>	SWFWMD	Private	1,136	Manatee
<b>Upper Myakka River Watershed - Triangle Ranch CE</b>	SWFWMD	Private	1,142	Manatee
<b>Myakka Prairie Conservation Easements</b>	SWFWMD	Private	2,906	Manatee
<b>Lewis Longino Preserve</b>	SWFWMD	Private	3,422	Sarasota
<b>Longino Ranch Conservation Easement</b>	SWFWMD	Private	3,981	Sarasota
<b>Myakkahatchee Creek Conservation Easement</b>	SWFWMD	Private	7,630	Sarasota
<b>Lake Manatee State Park</b>	FDEP	TIITF	549	Manatee
<b>Wingate Creek State Park</b>	FDEP	TIITF	614	Manatee
<b>Cockroach Bay Preserve State Park</b>	FDEP	TIITF	615	Hillsborough
<b>South Fork State Park</b>	FDEP	TIITF	1,129	Manatee
<b>Terra Ceia Preserve State Park</b>	FDEP	TIITF	1,948	Manatee
<b>Little Manatee River State Park</b>	FDEP	TIITF	2,416	Hillsborough
<b>Alafia River State Park</b>	FDEP	TIITF	7,718	Hillsborough
<b>Myakka River State Park</b>	FDEP	TIITF	37,198	Manatee, Sarasota
<b>Bullfrog Creek Wildlife and Environmental Area</b>	FWC	Hillsborough	833	Hillsborough
<b>Moody Branch Wildlife and Environmental Area</b>	FWC	Manatee	960	Manatee
<b>Walton Ranch</b>	Sarasota	Sarasota	3,760	Sarasota
<b>Carlton Ranch, Inc.</b>	Sarasota	Sarasota	4,746	Sarasota
<b>Pinelands Reserve</b>	Sarasota	Sarasota	6,151	Sarasota
<b>T. Mabry Carlton, Jr. Memorial Reserve</b>	Sarasota	Sarasota	24,565	Sarasota
<b>Rye Preserve</b>	Manatee	Manatee	531	Manatee
<b>Headwaters at Duette Preserve</b>	Manatee	Manatee	2,223	Manatee
<b>Duette Preserve</b>	Manatee	Manatee	21,907	Manatee

<b>Kitchen Preserve</b>	Hillsborough	Hillsborough	427	Hillsborough
<b>Rhodine Scrub</b>	Hillsborough	Hillsborough	479	Hillsborough
<b>Little Manatee River Corridor Addition</b>	Hillsborough	Hillsborough	493	Hillsborough
<b>Bell Creek Nature Preserve</b>	Hillsborough	Hillsborough	520	Hillsborough
<b>Cockroach Creek Greenway Nature Preserve</b>	Hillsborough	Hillsborough	550	Hillsborough
<b>Bullfrog Creek Scrub Nature Preserve</b>	Hillsborough	Hillsborough	778	Hillsborough
<b>Triple Creek Nature Preserve</b>	Hillsborough	Hillsborough	904	Hillsborough
<b>Cockroach Bay Nature Preserve</b>	Hillsborough	Hillsborough	995	Hillsborough
<b>Wolf Branch Nature Preserve</b>	Hillsborough	Hillsborough	1,127	Hillsborough
<b>Fish Hawk Creek Nature Preserve</b>	Hillsborough	Hillsborough	2,551	Hillsborough
<b>Balm Scrub Nature Preserve</b>	Hillsborough	Hillsborough	2,710	Hillsborough
<b>Golden Aster Scrub Nature Preserve</b>	Hillsborough	TIITF	1,191	Hillsborough
<b>Balm-Boyette Scrub Nature Preserve</b>	Hillsborough	TIITF	4,871	Hillsborough
<b>Total</b>			180,259	

## **Current Land Use**

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

## **Local Government Land Use Designation**

Per Section 163, Florida Statutes, local governments are required to create, adopt, and maintain a Comprehensive Plan that addresses where residential and nonresidential uses occur in the area. The Gilley Creek South Tract and Gilley Creek North Tract are classified as Agriculture and the Coker Prairie Tract is classified as Conservation on Manatee County’s Future Land Use Map.

All the three tracts on the Reserve are currently zoned Agriculture. The Manatee County Land Development Code (LDC) states that the A zoning district is “intended to preserve agricultural lands, promote general agricultural economic activity, and allow for the co-existence of other uses generally consistent with agricultural activities.

## **Adjacent Land Uses**

Most of the adjacent lands to the north, south, east, and west of the Reserve are designated Agriculture for Future Land Use and Zoning. The Manatee County Future Land Use map shows the 21,000-acre Duette Preserve that is east of the Gilley Creek Tracts and north of the Coker Prairie Tract as Preservation. Even though the Reserve occurs east of Manatee County’s Future Development Area Boundary there is new residential development under construction immediately west of the Gilley Creek North Tract. There are also several additional residential developments planned for construction.

## **Management Challenges**

The challenges associated with the management include the proximity of the Reserve to major roadways (i.e., S.R. 64, Rutland Road), which 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. Agricultural uses adjacent to the Reserve have the potential to impact natural systems and operations on the Reserve. Portions of the Reserve are influenced by adjacent farming operations. Crop irrigation has contributed to increased surface water loading on the Gilley Creek Tract, which has impacted vehicular access since roads have often been impassable due to high water or wash outs.

Recreational opportunities on all District conservation lands are typically passive, nature-based outdoor activities. As the population in the regional vicinity of the Reserve grows, 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 expansive recreational opportunities as the District does not have the resources to manage such expanded opportunities. Prior to the District approving any cooperative agreements for expansive recreational opportunities, the District Governing Board will need to deem such opportunities as “compatible,” as outlined in the District Policy and District Procedure.

## **Historical Land Use and Cultural Resources**

### **Historical Land Use**

Aerial photography from 1950 shows that much of the Gilley Creek North and South Tracts had been converted to improved pasture. During the 1980s, much of the pasture was converted again for the cultivation of citrus and row crops. The unaltered uplands were used as native range to support cattle grazing (SWFWMD 2004). In 1998, as a part of the review of the ranch for acquisition by the District, agricultural land uses were summarized as follows: crops and pastureland, 578 acres; row crops, 160 acres; tree crops, two acres; feeding operations, eight acres; other open lands, 286 acres; shrub and brushland, 1,296 acres. Interestingly, irrigating and draining cropland associated with Rutland Ranch required an extensive network of ditches, some of which have been identified by the Bureau of Historic Preservation as cultural resources. Timber was likely harvested from the Coker Prairie Tract, and it may have been used as rangeland, but there is no evidence of a substantial conversion of the natural communities on the property.

### **Cultural and Archaeological Resources**

The Florida Division of Historical Resources (DHR) is responsible for preserving and promoting Florida's historical, archaeological, and folk culture resources. The DHR provided information on known cultural and historical resources on the Reserve. The records identified in the Florida Master Site File were cultural resources associated with the ditch system on the old Rutland Ranch, and archaeological sites along the southern extent of Gilley Creek. Small portions of two of the sites occur partially in the Gilley Creek North Tract. Both sites were subjected to major disturbance related to construction of the Reservoir and the long history of agricultural usage (SWFWMD 2004). Neither warranted additional research; however, the District will conduct future management activities and direct recreational use in a manner that will prevent any additional disturbance to these sites.

The District will utilize Best Management Practices for upholding the integrity of the historical and cultural resources that are documented within the confines of the Reserve. District staff will alert law enforcement, when necessary, as illegal activities have historically occurred at the Reserve. Management of these archaeological resources will consist primarily of preventing disturbance.

## 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: flood protection, water supply, water quality, and natural systems. The District's Mission is to protect water resources, minimize flood risks, and ensure the public's water needs are met. The District is one of five regional agencies directed by state law to protect and preserve water resources within its boundaries. Established in 1961 to operate and maintain several large flood protection projects, the District's responsibilities have since expanded to include managing water supply, protecting water quality, and protecting natural systems including rivers, lakes, wetlands, and associated uplands. **Figure 5** depicts the hydrography of Lake Manatee and the Manatee River, along with two of its tributaries, Gilley Creek and Webb Branch. Also shown is Coker Creek, which emerges from the southern extent of the large marsh system on the Coker Prairie Tract and flows south into the Myakka River watershed.

### Water Quality

The District is actively involved in maintaining and improving water quality through both regulatory and non-regulatory programs. Protecting and improving surface and groundwater quality are the two primary objectives of the Water Quality AOR (SWFWMD 2021). In a region where agricultural discharges (quantity and quality) are of concern, maintaining undeveloped lands, including wetlands, reduces the potential for increased pollutant loads to waterways (SWFWMD 2012). Agriculture is a prominent land use in the region, and conservation lands provide a buffer to the Reservoir and provide water quality treatment for runoff prior to entering water bodies (SWFWMD 2012b). Wetlands provide floodplain detention, water quality treatment, and protection for discharges that ultimately reach the Reservoir.

Water quality is influenced by agriculture around the site and in the watershed, and by activities occurring within the Reserve. Management actions and recreation activities on Reserve are not expected to negatively impact water quality on- or off-site. Protected wetlands on the Reserve sequester nitrogen through denitrification, plant uptake, and accumulation of soil organic matter and remove phosphorus through geochemical and biological processes such as plant uptake and incorporation into soil organic matter (Widney 2018). Protection and management of wetland communities will enhance their water quality functions through controlling invasive plants and animals, implementing prescribed fire to sustain biological diversity, and assuring natural flow patterns are maintained.

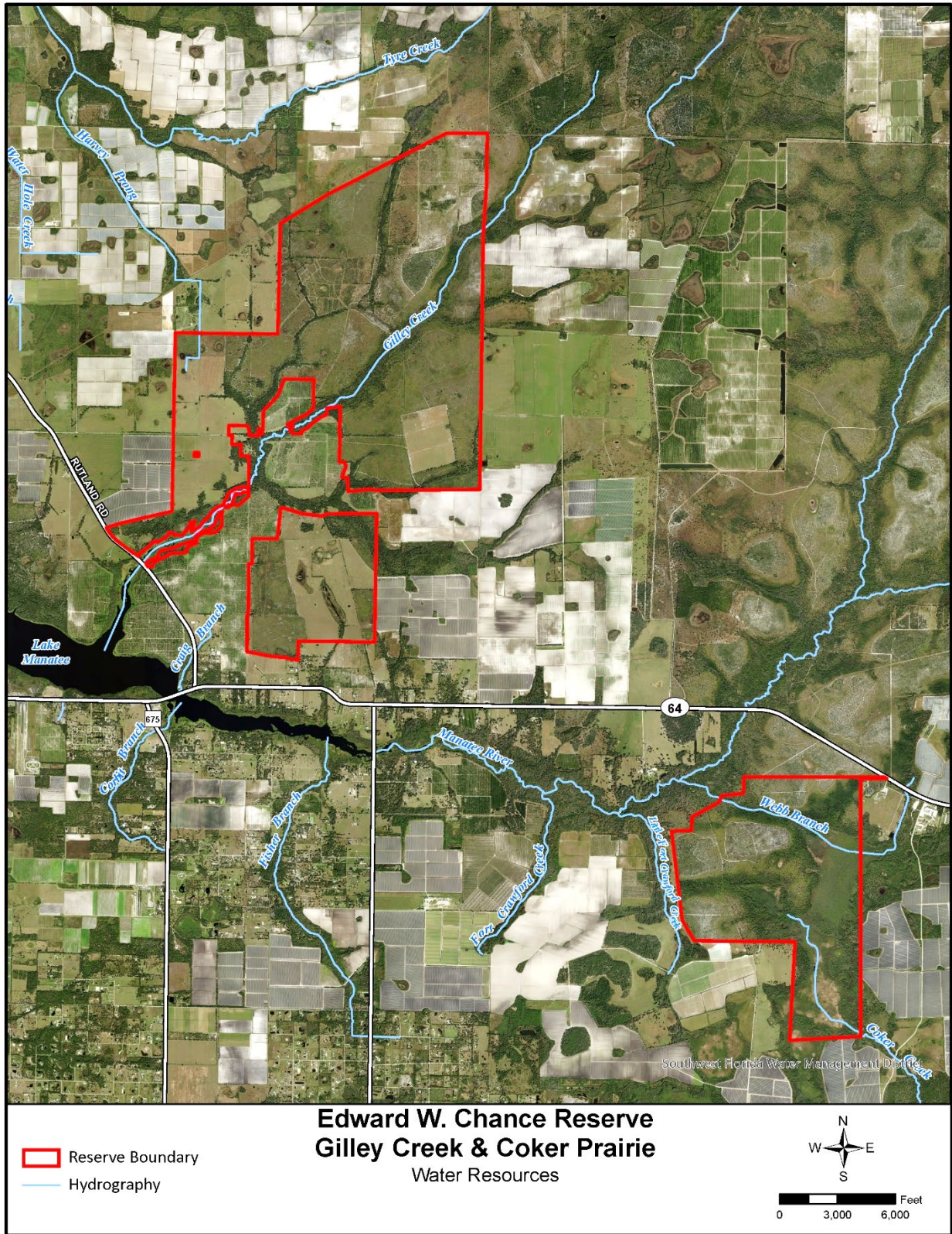


FIGURE 5. WATER RESOURCES

## Water Supply

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

The Reserve lies within the Southern Water Use Caution Area (SWUCA), established by the District's Governing Board in 1992 to address resources concerns with long-term declines in Upper Floridan aquifer water levels due to groundwater withdrawals. The lack of deep infiltration, and the associated shallow water table on the Reserve and vicinity, create above-average runoff in the watershed.

Protection of the Reserve is an important component of the strategies to address declining aquifer water levels due to groundwater use since the Reserve protects portions of headwaters upstream of the Reservoir. The Reservoir provides drinking water to Manatee County and is dependent on surface water drainage from its 128 square mile watershed, including runoff from the Reserve. District ownership and management of the Reserve protects the quantity and quality of runoff and reduces groundwater pumped for industrial and agricultural purposes, thereby yielding additional water for public supply and environmental purposes (SWFWMD 1991). Protection of the Reserve reduced the area of land available for permits to withdraw water in the SWUCA, and its acquisition provided for the retirement of numerous wells from agricultural use.

## Flood Protection

Flood protection is another important element of the District's mission. Historically, flood protection depended upon control structures to provide for the storage and "controlled" conveyance of floodwater. The current approach mimics natural processes and is a more environmentally sound and cost-effective method. The District's primary flood protection strategy depends upon identifying and preserving natural floodplains and other land that can serve as storage areas for storm-generated floodwater.

The Reserve provides attenuation of floodwaters to both the Manatee and Myakka Rivers, forested tributaries associated with Gilley Creek provide natural flood conveyance and floodplain storage. Approximately 60 percent of the Coker Prairie Tract is within the 100-year floodplain, and the expansive basin marsh, basin swamp, baygall, and wet flatwoods communities associated with the floodplain provide more than 1,000 acres of flood attenuation (**Figure 6**).

Mesic flatwoods are the dominant natural community on the Gilley Creek Tracts, particularly considering the historical extent of the community. The hydrology of mesic flatwoods is strongly influenced by flat topography, sandy soils, and seasonal precipitation. These characteristics combine to produce a landform that produces little stormwater runoff. Downward percolation is retarded by poorly drained soils and, where present, an underlying clay hardpan (USDA 1980).



These factors contribute to the presence of standing water over much of the site's flatwoods during the rainy season (Abrahamson and Hartnett 1990). Very little of that stormwater runs off, and the rest is stored in the soils until it evaporates or is transpired by pine trees during the dry season (Riekerk and Korhnak 2000, Sumner 2001). These characteristics of the expansive flatwoods on the Reserve reduce the rush of floodwaters into the floodplain during the rainy season and are a passive element of flood protection.

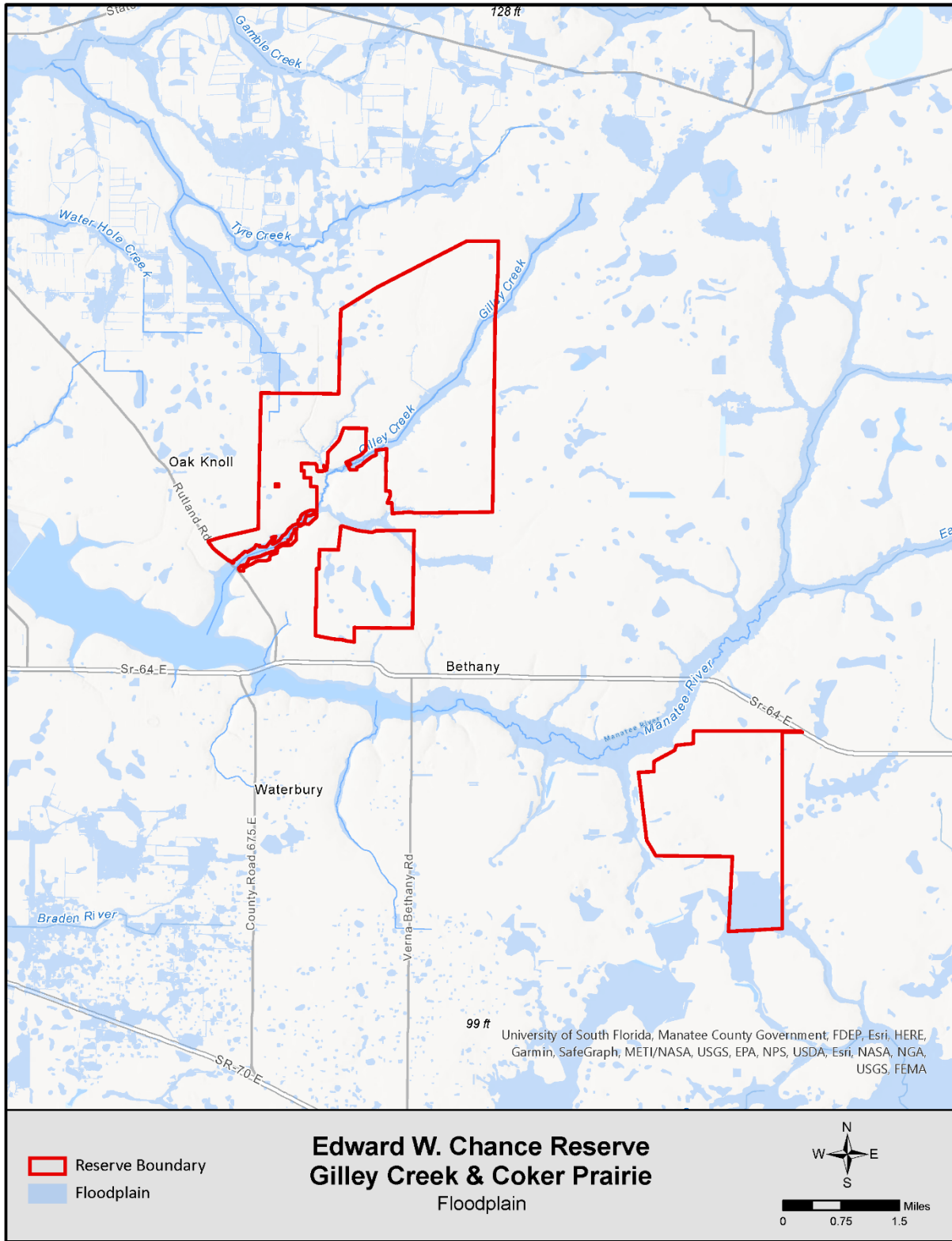


FIGURE 6. FLOODPLAIN MAP

## Natural Systems

The District uses natural communities as defined by the FNAI to describe habitats of the Reserve. (FNAI 2010). Sixteen natural communities were identified by FNAI to occur within the Reserve (Figure 7). Table 2 summarizes the acreage and percent cover of each type. The FNAI compiled an extensive database of plants observed in each natural community based on fieldwork conducted in 2006. Additional fieldwork was conducted in January 2022 as a part of this Management Plan update to verify current conditions and to evaluate the effects of land management on each natural community. An excerpt of the FNAI community descriptions and a representative group of the plants observed are provided below for each natural community. Appendix A provides a list of all plants (and their scientific names) documented by the FNAI during its field work in 2006 and by District staff.

TABLE 2. NATURAL COMMUNITY TYPE SUMMARY

FNAI Natural Community Type	Acreage	Percentage of Community Type
Basin marsh	422.3	5.3
Basin swamp	69.2	0.9
Baygall	280.6	3.5
Depression marsh	176.9	2.2
Dome swamp	1.2	0.0
Dry prairie	158.9	2.0
Hydric hammock	203.6	2.6
Mesic flatwoods	3,102.7	39.1
Mesic hammock	249.5	3.1
Pasture (improved)	2,203.6	27.8
Pasture (semi-improved)	123.3	1.6
Ruderal	204.3	2.6
Scrub	454.8	5.7
Scrubby flatwoods	118.4	1.5
Wet flatwoods	158.6	2.0
Wet prairie	3.5	0.0
<b>Total Acreage</b>	<b>7,931.4</b>	<b>100</b>

## Wetland Communities

### *Basin Marsh (422.3 acres)*

Basin marshes are freshwater herbaceous wetlands regularly inundated with water originating from localized rainfall. They exist as larger landscape features positioned within pyrogenic communities or as inclusions in infrequently burned communities. Natural seasonal and longer-term fluctuations in water level are important for maintaining the diversity of marsh vegetation in basin marshes. A normal fire interval ranging from 1 to 10 years restricts woody plant invasion. Most of the basin marshes found on the Reserve are 10–30 acres, except for the large basin marsh on the Coker Tract. This marsh is extremely disturbed and degraded. Nutrient-loving weedy species such as broadleaf cattail and the Category I invasive Peruvian primrose willow are abundant throughout this marsh, as well as wax myrtle.

Basin marshes do not have a canopy but can have trees and shrubs on the edges or scattered throughout. Red maple, loblolly bay, and common buttonbush are found in the basin marshes on the Reserve, along with peelbark St. John's wort. Herbaceous species present in the deeper waters of the marsh include pickerelweed, bulltongue arrowhead, and alligatorflag. Herbaceous species present in the shallow waters of the marsh include little blue maidencane, purple bluestem, slender flattop goldenrod, maidencane, swamp smartweed, pale meadowbeauty, Virginia chain fern, and the Category I invasive torpedograss.

### *Basin Swamp (69.2 acres)*

Basin swamps are large, irregularly shaped wetlands that are vegetated with hydrophytic trees and shrubs that can withstand an extended hydroperiod. Basin swamps may have a mature canopy dominated by bald and pond cypress, and/or swamp tupelo, red maple, or laurel oak. There are two basin swamps located on the Reserve. One is along Gilley Creek and the other is located on the southeastern portion of the Coker Tract. The hydric hammock along Gilley Creek most likely has other basin swamp inclusions. The basin swamp on the Coker Tract is altered and disturbed.

Basin swamps on the Reserve consist of a canopy of pond cypress and swamp tupelo. Red maple occurs in the subcanopy. Shrubs include common buttonbush, wax myrtle, and coastalplain willow. Herbaceous species include false nettle, giant sedge, maidencane, pickerelweed, soft rush, cinnamon fern, and narrowfruit horned beaksedge.

### *Baygall (280.6 acres)*

Baygall is a forested wetland typically at the base of sandy slopes where water seepage maintains a saturated peat substrate. Most of the historic baygalls are associated with creeks or small drains. Since baygalls rarely dry out enough to burn, the normal fire interval in these communities is probably 50–100 years or more. Fire from neighboring communities should be allowed to burn into the edges of a baygall community and extinguish naturally.

The baygalls on the Reserve consist of an open to closed canopy of loblolly bay, along with red maple, swamp bay, slash pine, laurel oak, swamp laurel oak, and water oak. When a subcanopy or layer of tall shrubs is present, the same species are also found, along with sweetbay and dahoon. Short shrubs present include blue huckleberry, gallberry, highbush blueberry, fetterbush, wax

myrtle, and deerberry. The herbaceous layer is usually dominated by ferns including cinnamon fern, toothed midsorus fern, netted chain fern, and Virginia chain fern. Other herbaceous plants include tenangle pipewort, manyhead rush, yellow milkwort, bog smartweed, yellow hatpins, sawgrass, and Carolina redroot. Vines are abundant and include Virginia creeper, laurel greenbrier, saw greenbrier, and muscadine. Epiphytes are infrequent but include southern needleleaf, Spanish moss, and golden polypody.

#### *Depression Marsh (176.9 acres)*

Depression marshes are shallow, usually rounded depressions. They are seasonally inundated communities characterized primarily by a cover of herbaceous plants. The concentric zones or bands of vegetation that are sometimes observed within depression marshes are related to hydroperiod length, depth of flooding, and fire-carrying characteristics of the marsh vegetation. An increase in woody plant cover is often attributable to fire exclusion in surrounding communities, periodic droughts, or altered hydrologic processes.

Depression marshes are abundant on the Reserve and are typically less than 10 acres. They are found in association with improved or semi-improved pasture, mesic flatwoods, and wet flatwoods. Depression marshes located in pastures are usually surrounded by a ring of mesic flatwoods. The depression marshes located in the wet flatwoods on the southeastern portion of the Coker Tract are highly disturbed and dominated by weedy species such as wax myrtle and the Category I invasive Peruvian primrosewillow.

Depression marshes on the Reserve generally lack tall shrubs except for common buttonbush, coastalplain willow, dahoon holly, and groundsel tree scattered around the edge. Short shrubs include four species of *Hypericum*. Some depression marshes have many herbaceous species, while others have a low diversity. Dominant herbaceous species on the Reserve include little blue maidencane, purple bluestem, lemon bacopa, Baldwin's spikerush, maidencane, combleaf mermaidweed, rosy camphorweed, three species of smartweed, largeflower rosegentian, southern umbrellasedge, creeping primrosewillow, pale meadowbeauty, four species of beaksedge, and yellow-eyed grasses. Some of the depression marshes have a deeper center of pickerelweed, bull tongue arrowhead, American white waterlily, and big floatingheart. Some of the depression marshes have the Category I invasive torpedograss.

#### *Dome Swamp (1.2 acres)*

Dome swamps are isolated, pond cypress or pond cypress/swamp tupelo swamps that are usually circular and typically found in a matrix of flatwoods. Dome swamps were historically exposed to fires that burned the drier exterior more frequently than the wetter interior. Without periodic fire, hardwood invasion and peat accumulation can cause the dome swamp to convert to a baygall. Currently, only one, small dome swamp occurs on the eastern portion of the Coker Prairie Tract.

#### *Hydric Hammock (203.6 acres)*

Hydric hammocks are typically evergreen hardwood and/or palm forests occurring on low, flat sites with moist soils. The density of understory plants is variable and often dominated by palms and ferns. Species composition is influenced by flooding patterns and the frequency and depth of

inundation. Hydric hammocks are inundated only for short periods following heavy rains, and hydroperiods seldom exceed 60 days.

The hydric hammocks on the Reserve are found along Gilley Creek on both parcels of the Gilley Creek Tract and along Webb Branch on the Coker Tract. They generally have a well-developed canopy of swamp laurel oak, red maple, and water oak. Other canopy species include swamp bay, loblolly bay, dahoon holly, and sweetbay. The subcanopy is usually dense and has similar species as listed in the canopy layer. The tall and short shrub layers consist of wax myrtle, common buttonbush, dahoon holly, and possumhaw. The herbaceous layer can be sparse to dense and consists of cinnamon fern, rosy camphorweed, narrowfruit horned and millet beaksedges, lizard's tail, shiny woodoats, and netted chain fern. Vines and epiphytes include muscadine, resurrection fern, ballmoss, southern needleleaf, and Spanish moss.

#### *Wet Flatwoods (158.6 acres)*

Wet flatwoods are open pine forests with a sparse or absent midstory and a dense groundcover of low shrubs, hydrophytic grasses, and herbs. Wet flatwoods on the Reserve occur in the ecotones between mesic flatwoods and basin marshes or hydric hammocks. Wet flatwoods are distinguished from mesic flatwoods by their abundance of hydrophytic herbaceous species, and the scarcity or absence of saw palmetto.

Wet flatwoods found on the Reserve have a canopy dominated by slash pine. The presence of subcanopy and tall shrubs in wet flatwoods communities is indicative of fire suppression. On the Reserve, they are sparse to moderate and include red maple, loblolly bay, sweetbay, dahoon, laurel oak and swamp laurel oak, gallberry, fetterbush, saw palmetto, and wax myrtle. Short shrubs include common buttonbush, blue huckleberry, coastalplain staggerbush, running oak, saw palmetto, and highbush blueberry.

The herbaceous layer can be sparse to dense and includes little blue maidencane, purple bluestem, broomsedge bluestem, wiregrass, toothed midsorus fern, Carolina redroot, cinnamon fern, royal fern, water cowbane, maidencane, rosy camphorweed, yellow milkwort, pale meadowbeauty, bunched and millet beaksedges, and Virginia chain fern. Vines include greenbriers, eastern poison ivy, and muscadine.

#### *Wet Prairie (3.5 acres)*

Wet prairies are nearly treeless flatlands dominated by a diverse assemblage of hydrophytic herbs with few shrubs. Historically, lightning-ignited fires swept across wet prairies every two to four years. Wet prairie naturally burns on a frequency like that of wet and mesic flatwoods and requires frequent, low-intensity ground fires to maintain groundcover. Wax myrtle quickly invades and will dominate wet prairies with longer fire intervals.

Currently, only one four-acre wet prairie is mapped on the Gilley Creek South Tract, though the FNAI projected that it historically occurred on about 50 more acres of the Reserve. The current wet prairie occurs between two depression marshes and is disturbed. Wax myrtle has invaded the wet prairie; peelbark St. John's wort is also present, but not dominant. Herbaceous species present

include wiregrass, spadeleaf, tenangle pipewort, Carolina redroot, rosy camphorweed, tall pinebarren milkwort, combleaf mermaidweed, and bunched beaksedge.

### Upland Communities

#### *Dry Prairie (158.9 acres)*

Dry Prairie is characterized as a nearly treeless plain with a dense ground cover of wiregrass, saw palmetto, and other grasses, herbs, and low shrubs. The dry prairie on the Reserve is found as an inclusion within mesic flatwoods on the Gilley Creek North Tract. The dry prairie community on the Reserve occurs on a slightly elevated ridge; open sandy areas are present, and the saw palmetto is slightly stunted. The natural fire return interval defined by FNAI (2010) for dry prairie is one to two years.

The dry prairie on the Reserve lacks a pine canopy and is similar to the surrounding mesic flatwoods (which also lack a pine canopy). Short shrubs are abundant and include stunted saw palmetto, netted pawpaw, gopher apple, pricklypear, running oak, dwarf live oak, myrtle oak, queensdelight, and shiny blueberry. Herbaceous cover is moderate and includes wiregrass, coastalplain honeycombhead, Florida alicia, scrubland goldenaster, Mohr's thoroughwort, Elliott's milkpea, narrowleaf silkgrass, tall elephantsfoot, lopsided indiagrass, and the state-listed Endangered longbristle beaksedge.

#### *Mesic Flatwoods (3,102.7 acres)*

Mesic flatwoods are fire-dependent communities characterized by an open, often sparse canopy of pines and a dense ground layer of low shrubs, grasses, and forbs. Fire is an important factor in maintaining high plant diversity, and it naturally occurs during the late spring/early summer lightning season. Mesic flatwoods are the most common natural community mapped on the Reserve, accounting for more than 3,100 acres.

Generally, the mesic flatwoods on the Reserve lack a pine canopy. When a canopy is present, it consists of longleaf pine, with slash pine more common on the edges of wetlands and wet flatwoods. The subcanopy is generally absent, though few areas have woody invasion and include loblolly bay, laurel oak, water oak, and live oak, along with tall shrubs including groundsel tree, gallberry, coastalplain staggerbush, wax myrtle, and winged sumac. The most dominant short shrub on the Reserve is saw palmetto. Other species in the short shrub layer include netted pawpaw, tarflower, dwarf and blue huckleberries, gopher apple, fetterbush, pricklypear, red chokeberry, queensdelight, highbush and shiny blueberries, and the Category I invasive caesarweed.

The herbaceous layer is usually diverse and includes purple bluestem, broomsedge bluestem, wiregrass, savannah milkweed, vanillaleaf, Florida alicia, scrubland goldenaster, tall elephantsfoot, dogtongue wild buckwheat, button rattlesnakemaster, Mohr's and roundleaf thoroughworts, slender flattop goldenrod, sensitive briar, wild pennyroyal, narrowleaf silkgrass, yellow milkwort, bracken fern, little bluestem, pinebarren goldenrod, lopsided indiagrass, and Florida dropseed.

*Mesic Hammock (249.5 acres)*

Mesic hammocks are closed-canopy forests of temperate hardwood species occurring along wetlands or as islands on slight rises within wetlands where they are sheltered from fire. Fire is rare, and when mesic hammocks burn, they may convert to the community they border. On the Reserve, two forms of mesic hammock are observed. One form, the typical mesic hammock, has a mature forest of live oak with a subcanopy of cabbage palm and an understory dominated by saw palmetto. This type is mostly associated with wetlands occurring in the fire shadows or occurring as inclusions on slight rises within hydric hammocks. The second type is a younger, short forest of young oaks with few shrubs or herbs present. This type seems to be associated with old ditches and canals and under natural conditions would likely be a mesic or scrubby flatwoods community.

Mesic hammocks on the Reserve have a closed canopy of live oak and laurel oak. The subcanopy can be relatively dense to absent. Species present include cabbage palm, sweetbay, sand live oak, swamp laurel oak, water oak, and laurel oak. Tall and short shrubs in the understory include common persimmon, tarflower, American beautyberry, wax myrtle, laurel oak, cabbage palm, and saw palmetto. The herbaceous layer is generally sparse but includes Carolina elephantsfoot, slender flattop goldenrod, American pokeweed, broomsedge bluestem, witchgrass, bahiagrass, thin paspalum, danglepod, and Virginia chain fern. Epiphytes are usually abundant and include resurrection fern, ballmoss, southern needleleaf, and Spanish moss. Invasive plants in mesic hammocks on the Reserve include Category I species camphortree, lantana, Japanese climbing fern, Peruvian primrosewillow, torpedograss, tropical soda apple, and caesarweed.

*Pasture – improved (2,203.6 acres)*

Improved pastures are unnatural communities that have been mechanically prepared for cattle grazing and no longer resemble the former natural community. Based on FNAI mapping and field work, these improved pastures were mainly mesic flatwoods prior to conversion. Improved pastures were planted in bahiagrass, and, consequently, native plants are sparse and scattered throughout. Improved pasture is the second most common community on the Reserve, accounting for more than 2,200 acres.

Plant species present in improved pasture on the Reserve include three species of bluestem, wiregrass, netted pawpaw, manyspike and green flatsedges, witchgrass, dogfennel, slender flattop goldenrod, manyflower marshpennywort, soft rush, seaside primrosewillow, wax myrtle, pricklypear, turkey tangle fogfruit, American pokeweed, pale meadowbeauty, live oak, sand live oak, saw palmetto, scrubland goldenaster, blackroot, and blackberries. Invasive plants present on improved pastures include Category I species torpedograss, tropical soda apple, and caesarweed.

*Pasture – semi-improved (123.3 acres)*

Semi-improved pastures exist where non-native forage grasses such as bahiagrass were planted within existing native communities such as mesic flatwoods. Semi-improved pastures still resemble a natural community. Native vegetation is present, but non-native forage grasses have been planted within the community. On the Reserve, most of the semi-improved pastures occur in areas that were historically mesic flatwoods.



Canopy is sparse but can include slash and longleaf pines, laurel oak, and live oak. Other trees and shrubs present include saw palmetto, netted pawpaw, dwarf live oak, wax myrtle, pricklypear, queensdelight, and shiny blueberry. Herbaceous plants include little blue maidencane, purple bluestem, broomsedge bluestem, wiregrass, coastalplain honeycombhead, witchgrass, Florida alicia, dogfennel, slender flattop goldenrod, gopher apple, creeping primrosewillow, thin paspalum, and Elliott's beaksedge.

#### *Ruderal (204.3 acres)*

Ruderal areas are communities in which the natural community has been overwhelmingly altered because of human activity. The two most common ruderal communities found on the Reserve include artificial impoundments and abandoned field. Plant species composition varies in ruderal areas depending on the type of alteration. Trees and shrubs present include live oak, water oak, cabbage palm, longleaf pine, silverling, netted pawpaw, dahoon, wax myrtle, and saw palmetto. Herbaceous plant species found in ruderal areas are generally dominated by weedy species such as spadeleaf, fringleaf tickseed, three species of flatsedge, dogfennel, slender flattop goldenrod, manyflower marshpennywort, soft rush, creeping primrosewillow, swamp smartweed, and broadleaf cattail. Invasive plant species in ruderal areas include Category I species lantana, Peruvian primrosewillow, torpedograss, Brazilian pepper, tropical soda apple, caesarweed, and smutgrass.

#### *Scrub (454.8 acres)*

Scrub is a xeric community composed of evergreen shrubs occurring on dry, infertile, sandy ridges that have sandy, somewhat poorly drained, moderately well-drained and well-drained soils (FNAI 2010). The shrub layer may be dominated by scrub oaks or by Florida rosemary and may be either dense or open; groundcover is sparse and dominated by ground lichens with infrequent herbs. Open patches of sand are common, and the natural fire return interval is variable, depending on landscape conditions and dominant vegetation. An adaptive, variable approach to fire intervals in scrub is suggested by numerous researchers, with a focus on priority species with specific habitat requirements such as the Florida scrub-jay (Main and Menges 1997, Breininger 2004, Kent and Kindell 2009).

Scrub communities found on the Reserve are dominated by scrub oaks with some sand pine in the canopy. Florida rosemary is found in one scrub community in the southwestern corner of the Coker Prairie Tract. The state-Endangered longbristle beaksedge is found on the edge of a scrub community on the northeast section of the Gilley Creek North Tract.

A sparse canopy of sand pine and sand live oak occurs in the scrub communities of the Reserve. Tall shrubs are moderate to dense and include Chapman's oak and myrtle oak. Short shrubs are moderate to dense and include tarflower, Florida rosemary, dwarf huckleberry, gopher apple, coastalplain staggerbush, fetterbush, sand live oak, saw palmetto, shiny blueberry, and hog plum. Herbaceous cover is typically sparse and includes broomsedge wiregrass, Florida milkweed, coastalplain honeycombhead, whitemouth dayflower, Elliott's milkpea, pinweed wild pennyroyal, narrowleaf silkgrass, rustweed, sandyfield beaksedge, Florida dropseed, and the Category I invasive smutgrass.

*Scrubby Flatwoods (118.4 acres)*

Scrubby flatwoods usually occur on slightly higher areas within a matrix of mesic flatwoods or in the ecotone between mesic flatwoods and scrub. Scrubby flatwoods communities generally have an open canopy of widely spaced pine trees and a low, discontinuous, shrubby understory of scrub oaks and saw palmetto, often interspersed with small areas of barren white sand. The shrub layer typically consists of one or more of the four scrub oaks, sand live oak, myrtle oak, Chapman's oak, and scrub oak, as well as shrubs characteristic of mesic flatwoods. Scrubby flatwoods typically occur on rises within mesic flatwoods and in transitional areas between scrub and mesic flatwoods. The scrubby flatwoods on the Reserve are mainly found on the Gilley Creek North Tract, with one occurrence on the Coker Prairie Tract.

The canopy and subcanopy of scrubby flatwoods on the Reserve is sparse to moderate and consists of longleaf pine, sand live oak, laurel oak, live oak, sand pine, and cabbage palm. Tall shrubs are also sparse to moderate and include American beautyberry, flatwoods plum, myrtle oak, and saw palmetto. Short shrubs are moderate to dense and include netted pawpaw, tarflower, gopher apple, flatwoods plum, dwarf live oak, shiny blueberry, and hog plum. Herbaceous cover includes broomsedge bluestem, wiregrass, coastalplain honeycombhead, coastalplain chaffhead, Florida alicia, Michaux's croton, fragrant eryngo, bahiagrass, wild pennyroyal, narrowleaf silkgrass, lopsided indiagrass, and Adam's needle.

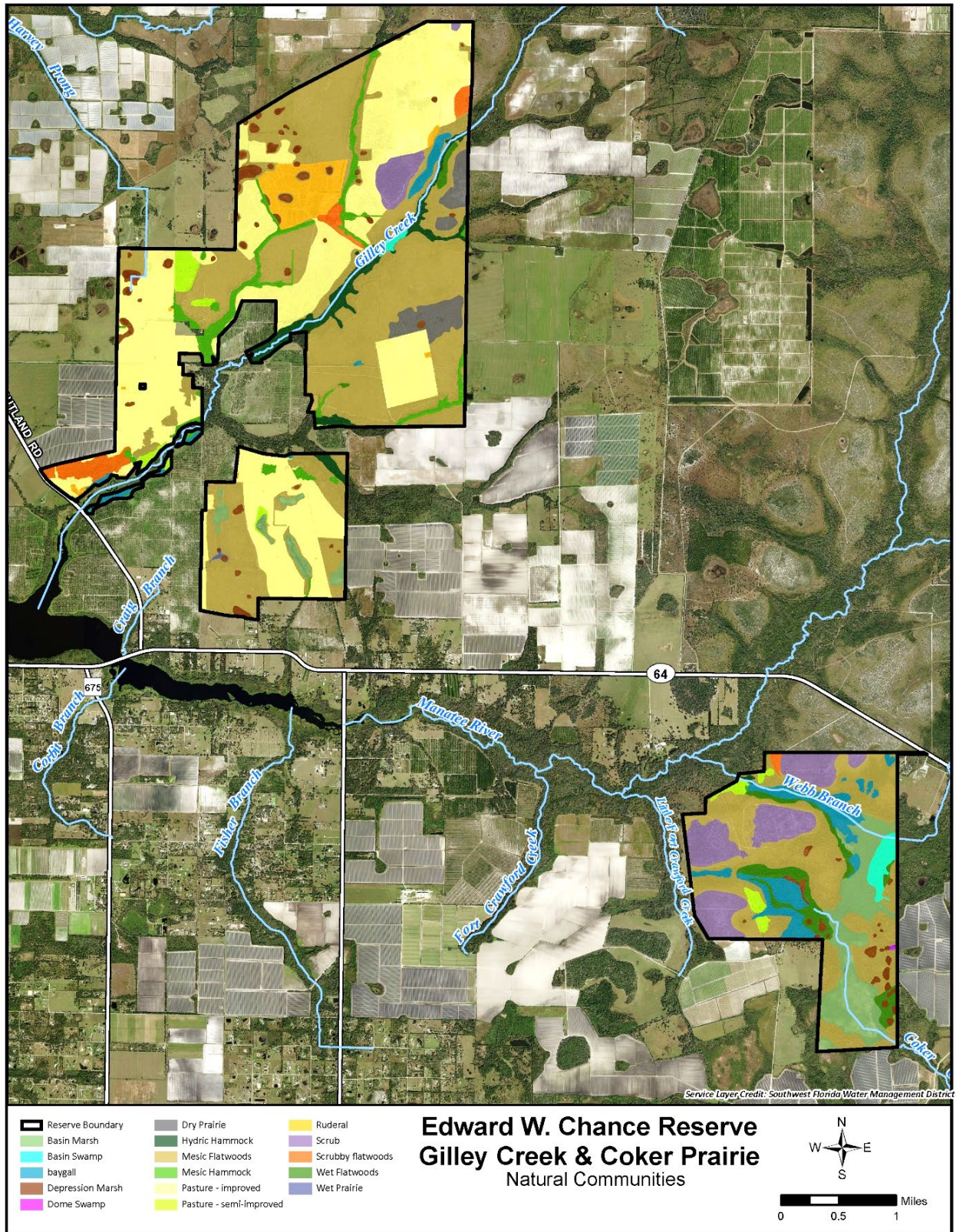


FIGURE 7. NATURAL COMMUNITIES – FNAI

## Soils and Topography

### Soils

Soils mapped by the Natural Resource Conservation Service (NRCS) are depicted in **Figure 8**. Generally, there are three distinct soil groupings based on soil moisture: xeric, mesic, and hydric. Xeric soils are located on higher and drier areas, capable of supporting scrub, sandhill, scrubby flatwoods, and xeric hammock. Mesic soils are located in areas that seasonally retain moisture and are capable of supporting pine flatwoods and mesic hammock communities. Hydric soils are located in lower, wetter areas and support wetland communities. Data on individual soil types on the Reserve were derived from the *Soil Survey of Manatee County, Florida* (USDA 1980).

Xeric soils occur on approximately 1,500 acres (19%) of the Reserve. Xeric soils include Cassia, Duette, Pomello, and Tavares fine sands. They have a depth to water table as deep as four feet during the wet season and below six feet during dry periods. Permeability is rapid, soil fertility is low. Xeric soils on the Reserve are associated with scrub and scrubby flatwoods communities.

Mesic soils occur on more than 5,010 acres (63%) of the Reserve. The predominant mesic soils include Myakka fine sand (which underlies more than a third of the site), Waveland fine sand (covering approximately 20% of the site), and St. Johns fine sand. These poorly drained soils are characterized by a water table within 10 inches of the surface for one to four months per year, but the water table may also drop below 40 inches from the surface during particularly dry seasons. Internal drainage and runoff are slow. Mesic soils on the Reserve are associated with mesic flatwoods, mesic hammock, dry prairie, pasture, and wet flatwoods communities.

Approximately 1,450 acres (18%) of the Reserve are underlain by hydric soils. Hydric soils include Canova, Anclote, and Okeelanta soils; soils of the Delray-Pomona complex; soils of the Felda-Wabassa association, frequently flooded; and soils of the Floridana-Immokalee-Okeelanta association. These soils are poorly drained, mineral, and organic soils that are ponded or have a water table near the surface for significant portions of each year. Hydric soils on the Reserve are associated with basin marsh, baygall, depression marsh, and hydric hammock communities.

### Topography

The Reserve is located within the Southern Coastal Plain Ecoregion (Sayler et al. 2016); specifically, the Southwestern Florida Flatwoods Subregion (Griffith et al. 1994), which covers parts of northern Florida and most of central Florida. The subregion includes barrier islands and peninsulas, Gulf Coastal Lowlands, and the DeSoto Plain. The Reserve is in the Coastal Lowlands natural topographic division, which is characterized by Pleistocene-epoch marine terraces along historical shelves from 25 to 100 feet above sea level (USDA 1980).

The Reserve is gently sloping with elevations ranging from the high of 122 feet in the northeastern corner to below 50 feet at the southwestern property boundary (**Figure 9**). The topographic slope generally falls toward the Manatee River, which is southwest on the Gilley Creek North and South Tracts and northwest on the portion of the Coker Prairie Tract in the Manatee River watershed. The topography in the southern portion of the Coker Prairie Tract slopes gently southeast through the basin marsh system that forms Coker Creek into the Myakka River watershed.

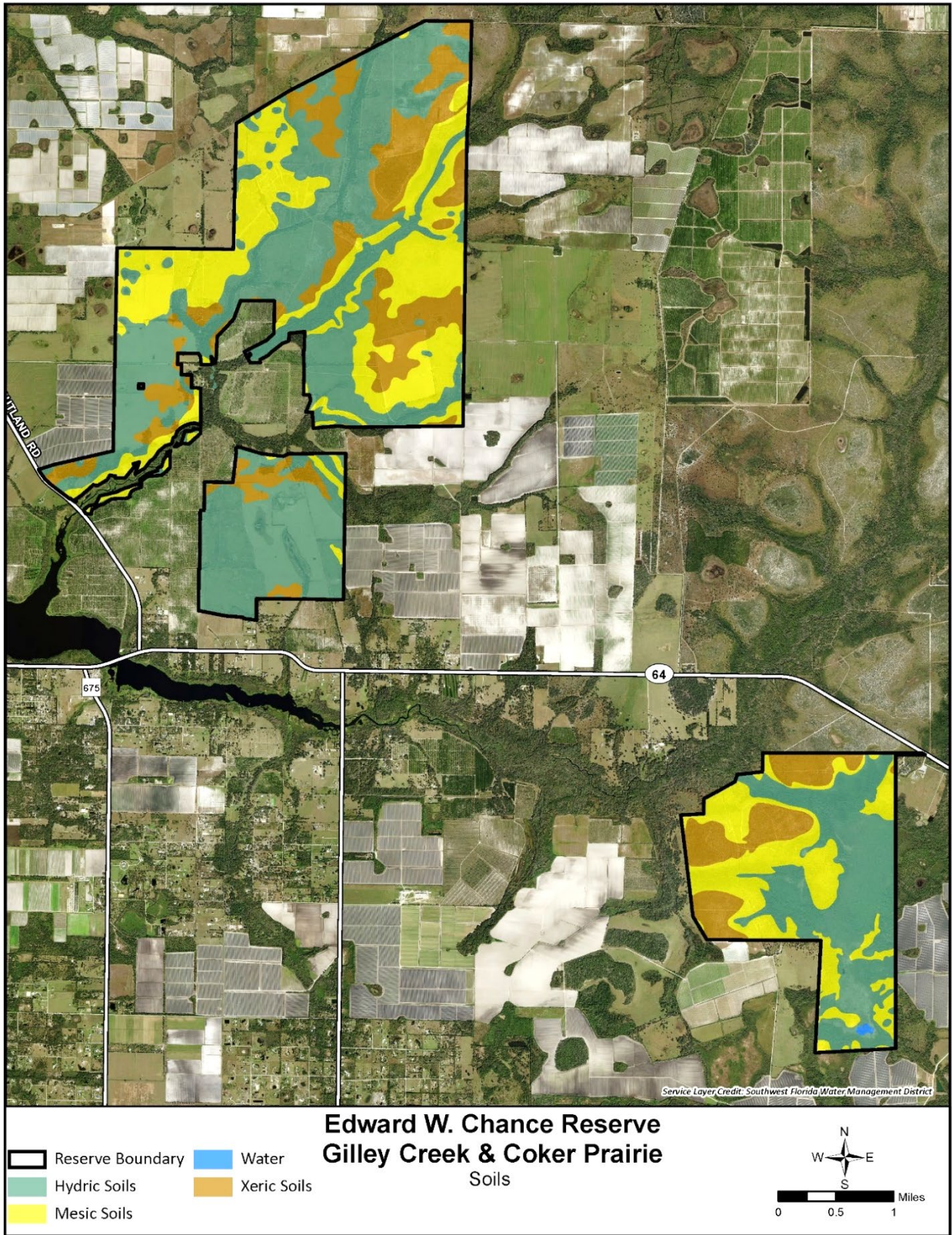


FIGURE 8. SOIL TYPES

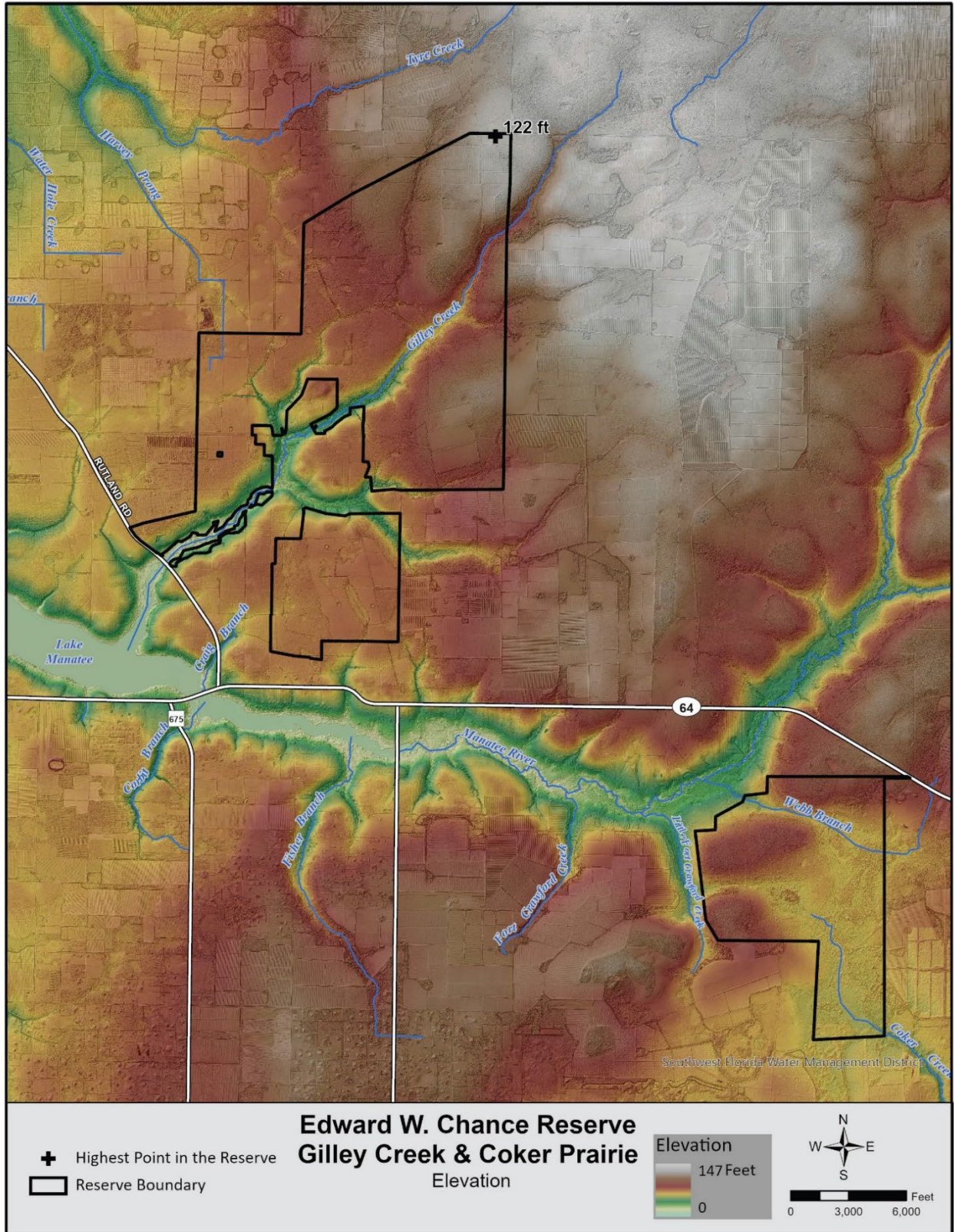


FIGURE 9. DIGITAL ELEVATION MODEL

## 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, invasive species control, and habitat maintenance. The primary land management tool that land managers utilize is the application of prescribed fire. This is the most cost-effective method to maintain the natural communities in their natural condition. Along with prescribed fire, the District uses some of the other common land management techniques referenced above to achieve specific land management objectives. The goal of the District's land management program is to maintain and restore natural systems according to their natural community descriptions outlined by the FNAI Natural Communities Guide.

### Fire Management

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

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

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

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

On the Reserve, there are 61 management units covering approximately 7,935 acres of fire-dependent natural communities. These management units are illustrated in **Figure 10**. District burn managers always take precautions to limit potential negative impacts from prescribed burns and target specific weather conditions. There is a network of firelines and natural firebreaks throughout the property that allow for successful fire management and limit the potential for wildfires.

The 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 most of the prescribed burn 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. 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.



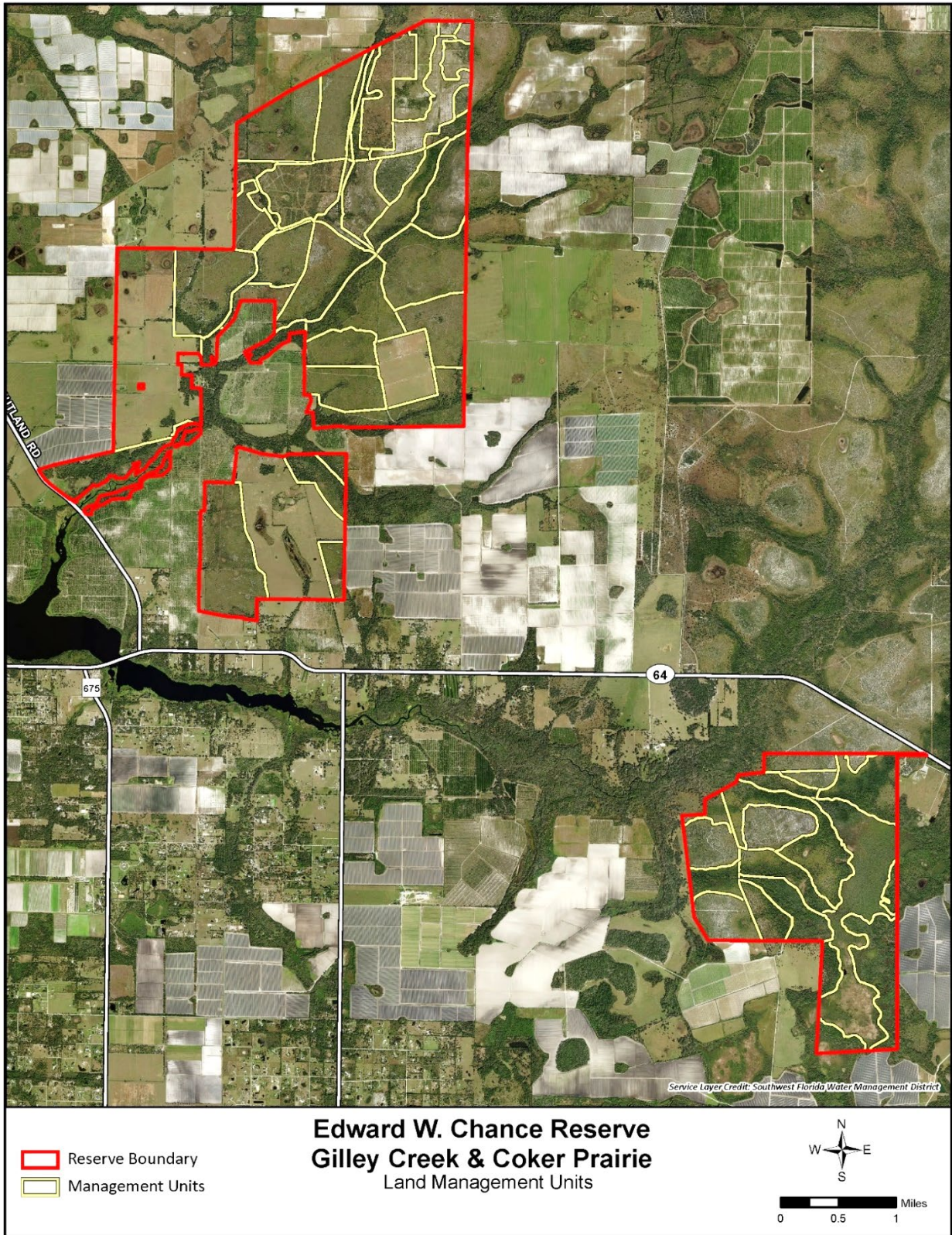


FIGURE 10. MANAGEMENT UNITS

## Forest Management

The (Reserve) does not have any Timber Management Zones (TMZ) actively managed by the District. The 430 acres planted in pine trees in the northern portion of the Reserve were originally intended to be a TMZ, but the inherently poor soils and past land uses make establishment of planted pine difficult. Other actions to restore this area are ongoing. On other District lands, plantations were created to restore the pine overstory in previously altered areas and improve habitat. 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. Forest management practices can be utilized in areas natural areas to support the land management objectives of a specific management unit.

## 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. The primary tool to restore natural communities to their historical diversity and structure is prescribed fire. Additional maintenance activities ongoing at the Reserve include control of invasive species and maintenance of roads, firebreaks, and recreational facilities.

## Invasive Species Management

Invasive 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 and animal species to be introduced into the wild and to establish successful self-propagating populations. As a result, Florida is home to many non-native plant and animal species that have become aggressive invaders severely impacting natural systems.

### Invasive Plant Management

The (Florida Invasive Species Council) FISC 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. Many species on the FISC lists also appear on the Florida Department of Agriculture and Consumer Service's Noxious Weed List.

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

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

Under this system the species that are the highest priority for control efforts receive a score of 4, while the lowest priority species receive a score of 16. This prioritization scheme ensures that the District’s resources are spent where they will have the greatest impact on the ecosystem. Six species have been identified as the highest priority for invasive plant control operations on Reserve; cogongrass, old world climbing fern, camphortree, skunkvine, Brazilian pepper and ceasarweed. Additionally, the District has implemented an Early Detection, Rapid Response (EDRR) strategy, which identifies and rapidly treats occurrences of invasive species that are not currently present or are not widespread on the property but have the potential to become invasive if they become established. The EDRR species are identified in the Invasive Plant Management Prioritization Plan for Reserve (SWFWMD 2020). **Table 3** lists the most common or problematic invasive plant species found on Reserve, their priority level for control if applicable and their FISC status.

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

**TABLE 3. INVASIVE PLANTS KNOWN TO OCCUR**

Common Name	Scientific Name	FISC Status	Priority Level for Control
<b>Brazilian pepper</b>	Schinus terebinthifolius	Category I	7
<b>Caesarweed</b>	Urena lobata	Category I	13
<b>Camphortree</b>	Cinnamomum camphora	Category I	10
<b>Cogongrass</b>	Imperata cylindrica	Category I	6
<b>Japanese climbing fern</b>	Lygodium japonica	Category I	
<b>Lantana</b>	Lantana camara	Category I	
<b>Old world climbing fern</b>	Lygodium microphyllum	Category I	7
<b>Peruvian primrosewillow</b>	Ludwigia peruviana	Category I	
<b>Purple sesbane</b>	Sesbania punicea	Category II	
<b>Rosary pea</b>	Abrus precatorius	Category I	
<b>Skunkvine</b>	Paederia foetida	Category I	12

<b>Smutgrass</b>	Sporobulus indicus	Category I	
<b>Torpedograss</b>	Panicum repens	Category I	
<b>Tropical soda apple</b>	Solanum viarum	Category I	
<b>West Indian marsh grass</b>	Hymenachne amplexicaulis	Category I	

### Invasive Wildlife Management

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

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

Recognizing the severe ecological threat posed by this exotic species, the District first developed and implemented a feral hog population control plan in 1995. Due to the adaptive nature of feral hogs, the District has since taken a multi-faceted approach to their removal. Current control methods include trapping, FWC-administered 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.

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

## Imperiled Species Management

For the purposes of this Plan, the term “Imperiled Species” refers to plant and animal species that are designated as Endangered or Threatened by the FWC or the U.S. Fish and Wildlife Service (USFWS). The diverse natural communities within the Reserve 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. A list of all known or likely to occur plant species is outlined in **Appendix A**.

### Imperiled Wildlife

The District manages the Reserve in a comprehensive fashion with an overall objective to sustain the vegetative community structure and diversity, hydrologic regime, and fire return intervals characteristic of the defined natural communities on the Reserve. This approach is believed to benefit a wide array of native plant and animal species, including those that are considered imperiled. Numerous imperiled species are known to exist on the Reserve. According to FNAI and District staff, five federal and/or state-listed wildlife species have been documented on or near the Reserve in the last 20 years (**Table 4**).

**TABLE 4. IMPERILED WILDLIFE SPECIES KNOWN OR LIKELY TO OCCUR**

Common Name	Scientific Name	Federal Status*	State Status*
<b>Eastern indigo snake</b>	<i>Drymarchon couperi</i>	FT	FT
<b>Florida scrub-jay</b>	<i>Aphelocoma coerulescens</i>	FT	FT
<b>Gopher tortoise</b>	<i>Gopherus polyphemus</i>	C	ST
<b>Florida burrowing owl</b>	<i>Athene cunicularia floridana</i>		ST
<b>Crested caracara</b>	<i>Caracara plancus</i>	FT	FT

\*FT=Federally Threatened, ST=State Threatened, C=Candidate species

### **Eastern indigo snake (*Drymarchon couperi*)**

Eastern indigo snakes occur in a variety of habitat types that are present on the Reserve, including mesic flatwoods, scrub, scrubby flatwoods, freshwater marshes, and swamps (USFWS 2018). A combination of both natural upland and wetland habitats likely provides the best matrix to support resilient populations of eastern indigo snakes (USFWS 2018). Habitat destruction, habitat degradation due to inadequate fire management, and fragmentation from paved roads are key factors influencing the viability of the eastern indigo snake (Enge et al. 2013, USFWS 2018). The *Species Status Assessment Report for the Eastern Indigo Snake* (USFWS 2018) shows the area surrounding the Reserve as one of the Conservation Focus Areas for Peninsular Florida. Assuring the protection of native habitats and implementing prescribed fire across pyrogenic communities provide the best contributions to long-term viability of the eastern indigo snake on Reserve.

### **Florida scrub-jay (*Aphelocoma coerulescens*)**

The Federally Threatened Florida scrub-jay was confirmed to occur on the Reserve during site reviews conducted in January 2022. Groups of the Florida scrub-jay were observed in a scrub

community on the Gilley Creek North Tract. Florida scrub-jay ecology and habitat requirements will continue to be a consideration of land management, particularly the use of fire, across the Reserve. The Reserve is a part of a network of habitats that is still capable of supporting viable Florida scrub-jay populations. These areas, referred to as “focal landscapes,” were developed from a comprehensive range-wide habitat mapping exercise (USFWS 2019). With guidance from the *Draft Revised Recovery Plan for the Florida Scrub-Jay* (USFWS 2019) and the body of knowledge about scrub-jays and fire (Breininger et al. 2014, Kent and Kindell 2009, Breininger 2004, Fitzpatrick et al. 1991), the District will continue to implement the FNAI-recommended fire return intervals for scrub, scrubby flatwoods, mesic flatwoods, and dry prairie communities on the Reserve.

### **Gopher tortoise (*Gopherus polyphemus*)**

Gopher tortoises and their burrows were observed in upland habitats across the Reserve. Gopher tortoises are listed as a Threatened species by the FWC. The life history and management guidelines for gopher tortoises and their commensals are well documented in the expansive *Gopher Tortoise Management Plan* published by the FWC in 2012. The FWC Management Plan provides a comprehensive statement for consideration by public entities charged with managing conservation lands with gopher tortoises:

Xeric uplands and natural communities that support the gopher tortoise will be managed to achieve/maintain vegetative parameters comparable to those found in comparable reference sites. Frequent prescribed fire is the preferred tool, but other treatments will be used when necessary. Maintaining these communities in a manner that replicates their natural form and function helps ensure they meet the needs of the gopher tortoise and the other species dependent on these communities.

Reference sites have been established by the FNAI and serve as models for vegetative parameters and fire return intervals for natural communities. These intervals are used by the District as the goals for implementing prescribed fire. Implementation of prescribed fire at frequencies recommended by FNAI for each pyrogenic community is understood to be beneficial for tortoises and their commensals, and burning to meet these return intervals will continue to be an objective on Reserve.

### **Florida burrowing owl (*Athene cunicularia floridana*)**

Based on FNAI element occurrence data and observations by District staff, Florida burrowing owls, a State-Threatened species, are known to have occurred in the active pasture on the Gilley Creek North Tract in the recent past. Historically in Florida, burrowing owls occupied native prairies, but they are now more likely to be found in cleared areas with short groundcover such as pastures, agricultural fields, golf courses, and vacant lots in residential areas (FWC, 2011). This reliance on human-altered habitats is considered a threat to the owls, since their burrows may be destroyed by construction activities, harassment, and domestic animals. Current management administered by FWC is limited to preventing the take of nests during the breeding season (FWC, 2009).

The species action plan for the Florida burrowing owl recommends several management actions for burrowing owl habitat on rural lands. These include avoiding the use of pesticides, insecticides, and/or herbicides near burrowing owl burrows, especially during the nesting season; maintaining vegetation height that is beneficial for burrowing owls through mowing, prescribed grazing, and/or prescribed burning; avoiding the use of heavy equipment near burrow entrances; employing selective cattle grazing to reduce vegetation beneficial for burrowing owls without compromising the integrity of the burrows; and avoiding the conversion of pasture and dry prairie to more intense land uses such as row crops, silviculture, and development (FWC 2013).

### **Crested caracara (*Caracara plancus*)**

The FNAI element occurrence data for the Reserve indicates that crested caracaras were regularly observed in the vicinity of the property in 2005. The crested caracara is a federally-threatened raptor that inhabits open grassland and pasture habitats in southcentral Florida, as well as Texas, Arizona, Cuba, and most of South and Central America (Morrison et al. 2009, Morrison and Humphrey 2001). Pasture occupied by cattle has been shown to be a preferred habitat, potentially because insects associated with cattle are an important food source for caracaras (Dwyer et al. 2013, Humphrey and Morrison 2000). The historical range for caracaras in Florida was likely similar to the area occupied today, but habitats have shifted from native prairie to improved and unimproved pasture (Morrison 2001, Morrison 2006). Morrison (2006) speculated that although vegetative communities differ greatly between native prairie and improved pastures, they are structurally similar, both consisting of open grasslands with scattered wetlands and patches of trees.

The FWC defines the main threat to caracaras as habitat loss from development and shifts in agricultural use. Conservation of caracara habitat should include a habitat matrix of pasture, citrus groves, and palm hammocks, with consideration of the specific requirements for nesting and non-breeding individuals (Dwyer et al. 2013, Morrison and Humphrey 2001). Morrison (2001) recommended numerous management practices to benefit caracaras in Florida that are relevant on the Reserve: retain pasture and grassland habitats, and wetlands, including man-made wetlands (ditches) within pastures; protect all trees within 300 meters of a nest tree; retain dead trees for perching and roosting within 300 meters of a nest; protect palm trees and/or plant palm trees in areas lacking potential nest trees; retain ground vegetation within 300 meters of a nest tree; and continue land management activities such as cattle grazing, burning, mowing, and roller chopping.

### **Imperiled Plants**

The only species of imperiled plants known to occur or likely to occur on the Reserve is the state-Endangered longbristle beaksedge (*Rhynchospora megaplumosa*), the scrub plum (*Prunus geniculata*), and Britton's beargrass (*Nolina brittoniana*).

The FNAI field team identified the state-Endangered longbristle beaksedge in scrub habitat on the Reserve. The common name for this species has also been referred to as large-plumed beaksedge and hairy-spikelet beakrush. The FNAI Field Guide summary for the longbristle beaksedge identifies suitable habitat as scrubby flatwoods and scrubby to mesic flatwoods transition areas. Management for longbristle beaksedge should be focused on prescribed fire to sustain sandy

openings in suitable habitat. Protection of habitat and the current focus on prescribed fire on the Reserve are consistent with the management needs of the longbristle beaksedge.

District staff have documented the federally-Endangered scrub plum was found on the Coker Prairie Tract. The FNAI field guide for scrub plum defines its habitat as sandhill and oak scrub. It is endemic to central Florida. Conservation objectives include acquisition of remaining tracts of scrub habitat. Management actions should be focused on the use of prescribed fire to create sunny openings preferred by the shrub.

Along with scrub plum, the federally-endangered Britton's beargrass was also found on the Coker Prairie Tract. The FNAI field guide for Britton's beargrass defines its habitat as scrub, sandhill, scrubby flatwoods, and xeric hammock. It is endemic to central peninsula Florida. Objectives for protection and management specify prescribed fire to stimulate flowering and eliminate competition from shrubs and trees. Acquisition of scrub sites is also identified as an important conservation objective.

#### Arthropod Management

In compliance with Section 388.4111, Florida Statutes and in Section 5E-13.042, Florida Administrative Code, land within Reserve in Manatee County has been evaluated and subsequently designated as environmentally sensitive and biologically highly productive. Such designation is appropriate and consistent with the previously documented natural resources and ecosystem values and affords the appropriate protection for these resources from arthropod control practices that could impose a potential hazard to fish, wildlife, and other natural resources existing on this property.



## Recreation

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. 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.

For some District properties, there are cooperative agreements associated with other public agencies to provide for a more expansive recreational use. Currently, there are no such partnerships on the Reserve. The recreational activities permitted at the Reserve are hiking, equestrian trail riding, and cycling (Figure 11).

### Trails

Nature trails give nature-based experiences while minimizing impacts to natural systems. The Reserve provides a total of approximately 23 miles of multi-use trails. Approximately 10 miles of hiking-only trails are available on the Coker Prairie Tract, and 13 miles of hiking, cycling, and equestrian trails are available on the Gilley Creek North Tract. White triangular signs depicting appropriate uses provide directions to the network of hiking, cycling, and equestrian experiences across the Reserve.

Access to the Gilley Creek North Tract is available through the small parking area northeast of Rutland Road (C.R. 675), north of Lake Manatee and about one and a half miles north of the junction of C.R. 675 with S.R. 64. Access to the Coker Prairie Tract is provided through a small parking area just south of S.R. 64, about eight miles east of the entrance to the Gilley Creek Tract.

### Camping

No camping is currently available at the Reserve.

### Wildlife Viewing, Hunting, Fishing, and Boating

The Reserve has a wide variety of wildlife viewing opportunities. The mosaic of habitats on the Reserve provides the opportunity for observing an abundance of bird species. The property contains many other species of wildlife such as gopher tortoise, eastern ratsnake, white-tailed deer, and bobcat. This species richness is indicative of land management practices that provide habitat for a diverse abundance of wildlife in natural communities managed for their historical vegetative structure, fire regime, and hydrology.

Currently, the Reserve is not open to hunting, except for any feral hog population management hunts administered by the District or special use authorization youth, ADA, or Operation Outdoor Freedom opportunities.

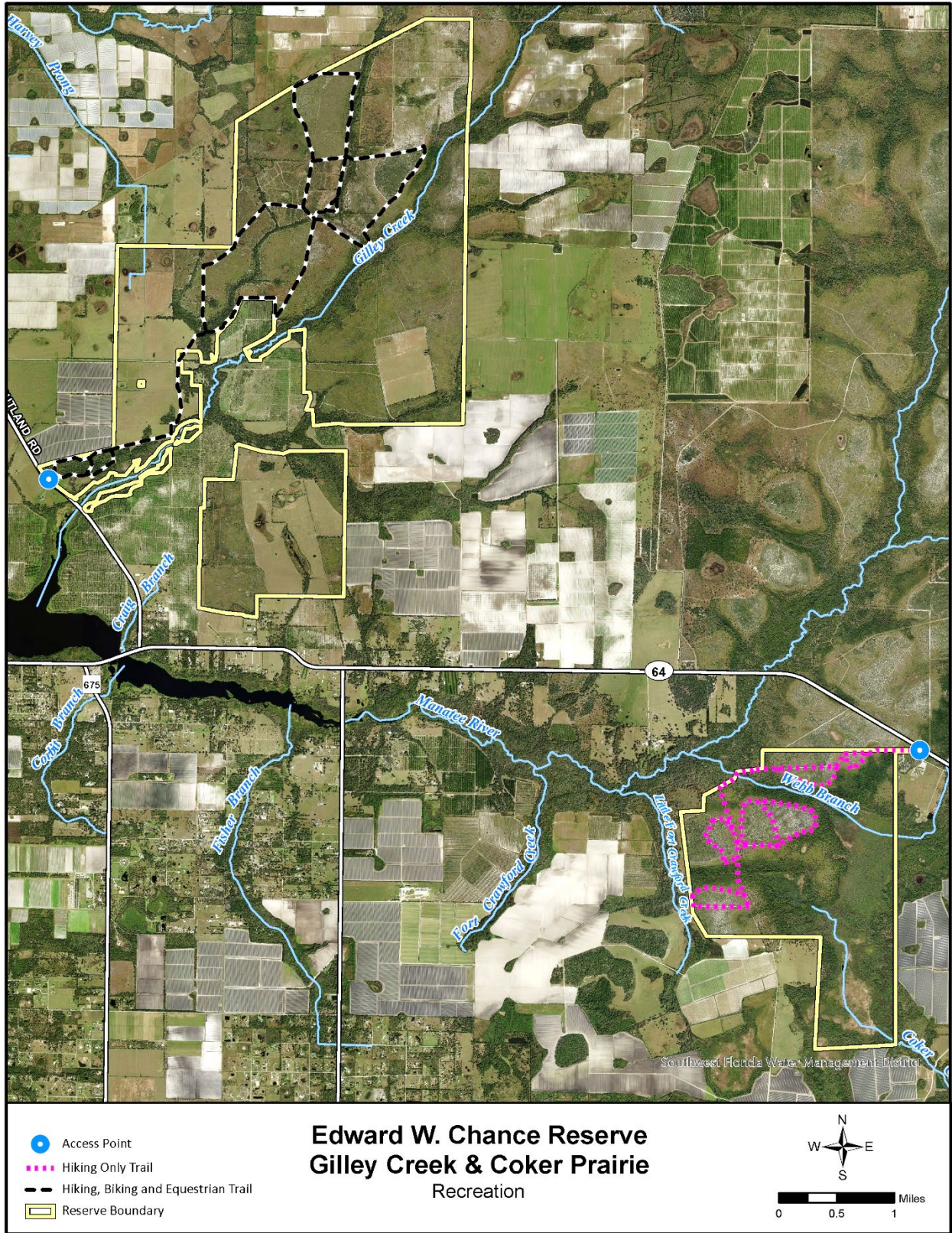


FIGURE 11. RECREATION TRAILS

## Land Use Administration

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

### Leases and Agreements

An easement is in place over the approximately 98-acre FDOT mitigation area that encompasses 12 small wetlands and an upland buffer. The FDOT mitigation requires perpetual maintenance to control invasive species. No further FDOT mitigation or restoration activities are planned on the Reserve.

A 10-year cattle lease over approximately 1,809.9 acres of the Gilley Creek North and South Tracts was established June 29, 2004. The lessee had the option to extend the lease for two, five-year periods. The first five-year extension expired on June 29, 2019; the lessee exercised the right to the second lease extension which is currently in effect. The area under the cattle lease primarily consists of bahiagrass pasture and it is only for cattle grazing and hay production. The lease carrying capacity ranges from 161 Animal Units (AU's) to a maximum of approximately 345 AU's if the pasture is in excellent condition.

### Special Use Authorizations (SUA)

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

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

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

### Future Land Conservation

The District will continue to consider the opportunity to purchase lands adjacent to the Reserve with the goal of promoting the District's efforts to protect the natural features of conservation lands for the benefits of flood protection, water quality, and water supply. It would be advantageous to seek possible opportunities for acquiring fee simple and less-than-fee properties to further promote protections of the natural systems 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 minimize erosion, sedimentation, and minimize water quality impacts. These roads also provide quick access for wildfire protection and serve as firelines for prescribed fires. Continuous observation will ensure that roads remain clear and that they are suitable for vehicles essential for management and public use.

Motorized access on the Reserve is restricted to authorized personnel only. As part of the general road maintenance, the District maintains a network of culverts and wet crossings to ensure the conveyance of water. Culverts are periodically replaced based on the results from a culvert inspection process, which identifies culverts that are damaged or are nearing the end of their expected service life. Wet 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 other suitable material to limit erosion while allowing for the natural flow of water to occur.

Properly marked and maintained boundaries of District conservation lands help to minimize disputes, encroachments, trespassing, and other unwanted impacts from adjoining properties. Well-marked boundaries also aid in proper placement of firelines for wildfire protection and prescribed fire application. Boundaries on the Reserve are identified by perimeter fencing and District boundary signs.

District staff secure the Reserve 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 several criteria, such as compatibility with the natural resource values of the property, compensation provided for the use, location of the proposed use within the Reserve, and consistency with the Management Plan. Currently, there are no facilities on the Reserve.

# Goals and Objectives

## Overview

The following represents a general overview of the goals and objectives over the next 10-year planning period for the Reserve. 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 Reserve and associated tributaries.*

- Objective 1: Continue to observe and assess water resources within the Reserve 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 the majority of prescribed burns during the growing and dormant seasons to support development of native fire-dependent species and habitat function.
- Objective 3: Update and maintain a Condition Class database to track management activities on specific management units.
- Objective 4: Maintain perimeter firelines on an annual basis and disk strategic internal management lines supporting the seasonal needs of prescribed fire program and to support wildfire protection.

### 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.

- Objective 3: Develop annual workplan to implement these restoration and enhancement projects.

*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 Reserve 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 Reserve.
- 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 Reserve at a maintenance level.*

- Objective 1: Implement the District's Invasive Plant Management Plan for the Reserve.
- Objective 2: Employ an early detection rapid response 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 Reserve.

## 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 and site security of resources and repair, as needed.

## Administration

### Land Acquisition

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

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

### Land Use and Recreation

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

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

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

- Objective 1: Maintain appropriate public access and quality compatible recreational opportunities.
- Objective 2: Evaluate requests for additional compatible public access and recreational opportunities.



## 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 looting, 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 the 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 10 years for the Reserve. This is not an exhaustive list of all the management activities that have occurred, but a brief highlight of the significant accomplishments over the last 10 years.

### Land Management

- Developed annual burn plans.
- Completed prescribed burns on approximately 9,422 acres.
- 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 691 feral hogs from Gilley Creek North and South Tracts and 50 from the Coker Prairie Tract.
- Over 5,446 acres surveyed for invasive plants and any invasives found within the surveyed area were treated.

### Recreation

- Created parking area for improved public access at the State Road 64 access point for the Coker Prairie Tract and at the County Road 475 Equestrian Area access point for the Gilley Creek North Tract.

### Administration

- Authorized eight SUAs for recreational uses, research opportunities, and training.
- Renewed the 1,812-acre cattle lease on the western side of the Gilley Creek North Tract and the Gilley Creek South Tract.
- Conducted a Land Management Review in 2015.

## References

- Abrahamson, W. G. and D. C. Hartnett. 1990. Pine flatwoods and dry prairies. In R. L. Myers and J. J. Ewel, ed. *Ecosystems of Florida*, pp.103–149. University of Central Florida Press. 765 pp.
- Breining, D. R. 2004. An adaptive approach to managing Florida scrub-jay habitat. NASA Technical Memorandum NASA/TM-2004-211532.
- Breining, D. R., E. D. Stolen, G. M. Carter, D. M. Oddy, and S. A. Legare. 2014. Quantifying how territory quality and sociobiology affect recruitment to inform fire management: Recruitment in fire-maintained ecosystems. *Animal Conservation* 17:72–79.
- Coblentz, B. E. and D.W. Baber. 1987. Biology and control of feral pigs on Isla Santiago, Galapagos, Ecuador. *J. Appl. Ecol.* 24:403–418.
- Dwyer, J. F., J. D. Fraser, and J. L. Morrison. 2013. Range sizes and habitat use of non-breeding crested caracaras in Florida. *J. Field Ornithol.* 84(3):223–233.
- Dzieciolowski, R. M., C. M. H. Clarke, and C. M. Frampton. 1992. Reproductive characteristics of feral pigs in New Zealand. *Acta Theriologica* 37:259–270.
- Enge, K. M., D. J. Stevenson, M. J. Elliott, and J. M. Bauder. 2013. The historic and current distribution of the eastern indigo snake (*Drymarchon couperi*). *Herpetological Conservation and Biology*, 8(2):288–307.
- Fitzpatrick, J. W., G. E. Woolfenden, and M. T. Kopeny. 1991. Ecology and development-related habitat requirements of the Florida scrub jay (*Aphelocoma coerulescens coerulescens*). Florida Fish and Wildlife Conservation Commission Nongame Wildlife Program Technical Report No. 8. Tallahassee, FL. 49 pp.
- Florida Fish and Wildlife Conservation Commission. 2013. A species action plan for the Florida burrowing owl. Tallahassee, FL. 25 pp.
- Florida Fish and Wildlife Conservation Commission. 2011. Biological status review for the Florida burrowing owl (*Athene cunicularia floridana*). 16 pp. [fl-burrowing-owl-bsr.pdf \(myfwc.com\)](#)
- Florida Fish and Wildlife Conservation Commission. 2009. Burrowing owl nest protection guidelines and procedures in urban areas. Florida Fish and Wildlife Conservation Commission, Tallahassee, FL <http://myfwc.com/license/wildlife/protected-wildlife/>.
- Florida Invasive Species Council (FISC). 2019. *2019 List of Invasive Plant Species*. [http://bugwoodcloud.org/CDN/fleppc/plantlists/2019/2019\\_Plant\\_List\\_ABSOLUTE\\_FINAL.pdf](http://bugwoodcloud.org/CDN/fleppc/plantlists/2019/2019_Plant_List_ABSOLUTE_FINAL.pdf)
- Florida Natural Areas Inventory (FNAI). 2010. *Guide to the Natural Communities of Florida: 2010 edition*. Florida Natural Areas Inventory, Tallahassee, FL.
- Florida Natural Areas Inventory (FNAI). 2021. Conservation Lands Database. <https://www.fnai.org/conslands/florida-forever>.

- Giuliano, W. 2016. *Wild Hogs in Florida: Ecology and Management*. UF IFAS Publication #WEC277. [UW32200.pdf \(ufl.edu\)](https://www.ufl.edu/~wec277/)
- Griffith, G., J. Omernik, C. Rohm, and S. Pierson. August 1994. *Florida Regionalization Project*. U.S. Environmental Protection Agency, Environmental Research Laboratory. Corvallis, OR.
- Humphrey, S. R., and J. L. Morrison. 2000. Habitat associations, reproduction, and foraging ecology of Audubon's crested caracara in south-central Florida. Final report for project E-1 III-1-4. University of Florida, Gainesville, FL. 159 pp.
- Iannone III, B. V., S. Carnevale, M. B. Main, J. E. Hill, J. B. McConnell, S. A. Johnson, S. F. Enloe, M. Andreu, E. C. Bell, J. P. Cuda, and S. M. Baker. 2020. Invasive Species Terminology: Standardizing for Stakeholder Education. *Journal of Extension*. 58(3) 27.
- Kent, A. and C. Kindell. 2009. *Scrub Management Guidelines for Peninsular Florida: Using the Scrub-Jay as an Umbrella Species*. Florida Fish and Wildlife Conservation Commission and Florida Natural Areas Inventory, Florida State University. 10 pp.
- Main, K. N., and E. S. Menges. 1997. Archbold Biological Station—Station Fire Management Plan. Land Management Publication 97-1, Archbold Biological Station, Lake Placid, FL.
- Morrison, J. L. 2006. The crested caracara in the changing grasslands of Florida. Land of Fire and Water: The Florida Dry Prairie Ecosystem. *Proceedings of the Florida Dry Prairie Conference*. Reed F. Noss, ed., pp. 211–215.
- Morrison, J. L. 2001. Recommended management practices and survey protocols for Audubon's crested caracara (*Caracara cheriway audubonii*) in Florida. Florida Fish and Wildlife Conservation Commission Technical Report #18. 23 pp.
- Morrison, J. L., and S. R. Humphrey. 2001. Conservation value of private lands for crested caracaras in Florida. *Conservation Biology* 15:675–684.
- Morrison, J. L., K. E. Pias, J. B. Cohen, and D. H. Caitlin. 2009. Environmental correlates of breeding in the crested caracara (*Caracara cheriway*). *The Auk* 126(4):755–764.
- Riekerk, H. and L. V. Korhnak. 2000. The hydrology of cypress wetlands in Florida pine flatwoods. *WETLANDS*, 20(3): 448–460.
- Sayler, K. L., W. Acevedo, and J. L. Taylor, eds. 2016. Status and trends of land change in the Eastern United States — 1973 to 2000: U.S. Geological Survey Professional Paper 1794–D, 195 pp.
- Singer, F. J., W. T. Swank and E. E. C. Clebsch. 1984. Effects of wild pig rooting in a deciduous forest. *J. Wildl. Manage.* 48: 464–473.
- Southwest Florida Water Management District (SWFWMD). 2021 Consolidated Annual Report. 210 pp. <https://www.swfwmd.state.fl.us/sites/default/files/medias/documents/2021-Consolidated-Annual-Report-Approved.pdf>
- Southwest Florida Water Management District (SWFWMD). 2012a. Surplus Lands Assessment (SLA), Edward W. Chance Reserve, *Coker Prairie Tract*. 3 pp.

- Southwest Florida Water Management District (SWFWMD). 2012b. Surplus Lands Assessment (SLA), Edward W. Chance Reserve, *Gilley Creek Tract*. 3 pp.
- Southwest Florida Water Management District (SWFWMD). 2004. A plan for the use and management of the Lake Manatee Reserve. 32 pp.
- Southwest Florida Water Management District (SWFWMD). 1991. Lake Manatee lower watershed resource evaluation. 87 pp.
- Sumner, D. M. 2001. Evapotranspiration from a cypress and pine forest subjected to natural fires, Volusia County, Florida, 1998–99. USGS Water-Resources Investigations Report 01-4245. 66 pp.
- U. S. Department of Agriculture Soil Conservation Service. 1980. Soil Survey of Manatee County, Florida. 161 pp.
- U.S. Fish and Wildlife Service. 2018. Species status assessment report for the eastern indigo snake (*Drymarchon couperi*). Version 1.0. November 2018. Atlanta, GA. 160 pp.
- U.S. Fish and Wildlife Service. 2019. Draft Revised Recovery Plan for the Florida Scrub-Jay (*Aphelocoma coerulescens*). U.S. Fish and Wildlife Service. Atlanta, GA. 6 pp.
- West, B. C., A. L. Cooper, and J. B. Armstrong. 2009. Managing wild pigs: A technical guide. *Human-Wildlife Interactions Monograph* 1:1–55.
- Widney, S., A. K. Klein, J. Ehman, C. Hackney, and C. Craft. 2018. The value of wetlands for water quality improvement: An example from the St. Johns River watershed, Florida. *Wetlands Ecol Manage* 26:265–276.

## Appendix A

### PLANT SPECIES KNOWN TO OCCUR OR LIKELY TO OCCUR

Common Name	Scientific Name
Adam's needle	<i>Yucca filamentosa</i>
Alligatorflag	<i>Thalia geniculata</i>
American beautyberry	<i>Callicarpa americana</i>
American pokeweed	<i>Phytolacca americana</i>
American white waterlily	<i>Nymphaea odorata</i>
Bahiagrass	<i>Paspalum notatum</i>
Bald cypress	<i>Taxodium distichum</i>
Baldwin's spikerush	<i>Eleocharis baldwinii</i>
Ballmoss	<i>Tillandsia recurvata</i>
Beaksedge	<i>Rhynchospora sp.</i>
Big floatingheart	<i>Nymphoides aquatica</i>
Blackberry	<i>Rubus spp.</i>
Blackroot	<i>Pterocaulon pycnostachyum</i>
Blue huckleberry	<i>Gaylussacia frondosa var. tomentosa</i>
Blueberry	<i>Vaccinium sp.</i>
Bluestem	<i>Andropogon sp.</i>
Bluestem	<i>Schizachyrium sp.</i>
Bog smartweed	<i>polygonum punctatum</i>
Bogbutton	<i>Lachnocaulon sp.</i>
Bottlebrush threeawn	<i>Aristida spiciformis</i>
Bracken fern	<i>Pteridium aquilinum</i>
Brazilian pepper	<i>Schinus terebinthifolius</i>
Britton's beargrass	<i>Nolina brittoniana</i>
Broadleaf cattail	<i>Typha latifolia</i>
Broomsedge bluestem	<i>Andropogon virginicus</i>
Bulltongue arrowhead	<i>Sagittaria lanceolata</i>
Bulltongue arrowhead	<i>Sagittaria lancifolia</i>
Bunched beaksedge	<i>Rhynchospora cephalantha</i>
Bushmint	<i>Hyptis sp.</i>
Bushy bluestem	<i>Andropogon glomeratus</i>
Button rattlesnakemaster	<i>Eryngium yuccifolium</i>
Cabbage palm	<i>Sabal palmetto</i>
Caesarweed	<i>Urena lobata</i>
Camphortree	<i>Cinnamomum camphora</i>
Camphorweed	<i>Pluchea camphorate</i>
Candyroot	<i>Polygala nana</i>
Carolina ash	<i>Fraxinus caroliniana</i>

Carolina elephantsfoot	<i>Elephantopus carolinianus</i>
Carolina redroot	<i>Lachnanthes caroliniana</i>
Cat greenbrier	<i>Smilax glauca</i>
Chaffhead	<i>Carphephorus sp.</i>
Chain fern	<i>Woodwardia spp.</i>
Chapman's oak	<i>Quercus chapmanii</i>
Cinnamon fern	<i>Osmunda cinnamomea</i>
Coastalplain chaffhead	<i>Carphephorus corymbosus</i>
Coastalplain honeycomb-head	<i>Balduina angustifolia</i>
Coastalplain milkwort	<i>Polygala setacea</i>
Coastalplain staggerbush	<i>Lyonia fruticosa</i>
Coastalplain willow	<i>Salix caroliniana</i>
Combleaf mermaidweed	<i>Proserpinaca pectinata</i>
Common buttonbush	<i>Cephalanthus occidentalis</i>
Common persimmon	<i>Diospyros virginiana</i>
Creeping primrosewillow	<i>Ludwigia repens</i>
Dahoon	<i>Ilex cassine</i>
Danglepod	<i>Sesbania herbacea</i>
Deerberry	<i>Vaccinium stamineum</i>
Dixie whitetop aster	<i>Sericocarpus tortifolius</i>
Dogfennel	<i>Eupatorium capillifolium</i>
Dogtongue wild buckwheat	<i>Eriogonum tomentosum</i>
Dotted smartweed	<i>Polygonum punctatum</i>
Dropseed	<i>Sporobolus sp.</i>
Dwarf huckleberry	<i>Gaylussacia dumosa</i>
Dwarf live oak	<i>Quercus minima</i>
Dwarf wax myrtle	<i>Myrica cerifera var. pumila</i>
Earleaf greenbrier	<i>Smilax auriculata</i>
Eastern poison ivy	<i>Toxicodendron radicans</i>
Elliott's beaksedge	<i>Rhynchospora elliotii</i>
Elliott's blueberry	<i>Vaccinium elliotii</i>
Elliott's milkpea	<i>Galactia elliotii</i>
Elliott's yellow-eyed grass	<i>Xyris elliotii</i>
False nettle	<i>Boehmeria cylindrica</i>
Fetterbush	<i>Lyonia lucida</i>
Fimbry	<i>Fimbristylis sp.</i>
Flatsedge	<i>Cyperus sp.</i>

<b>Flatwoods plum</b>	<i>Prunus umbellata</i>
<b>Florida alicia</b>	<i>Chapmannia floridana</i>
<b>Florida dropseed</b>	<i>Sporobolus floridanus</i>
<b>Florida milkweed</b>	<i>Asclepias feayi</i>
<b>Florida rosemary</b>	<i>Ceratiola ericoides</i>
<b>Fragrant beaksedge</b>	<i>Rhynchospora odorata</i>
<b>Fragrant eryngo</b>	<i>Eryngium aromaticum</i>
<b>Fringeleaf tickseed</b>	<i>Coreopsis integrifolia</i>
<b>Gallberry</b>	<i>Ilex glabra</i>
<b>Giant sedge</b>	<i>Carex gigantea</i>
<b>Golden polypody</b>	<i>Phlebodium aureum</i>
<b>Goldenrod</b>	<i>Solidago sp.</i>
<b>Gopher apple</b>	<i>Licania michauxii</i>
<b>Grassleaf roseling</b>	<i>Callisia graminea</i>
<b>Green flatsedge</b>	<i>Cyperus virens</i>
<b>Groundcherry</b>	<i>Physalis sp.</i>
<b>Groundnut</b>	<i>Apios americana</i>
<b>Groundsel tree</b>	<i>Baccharis halimifolia</i>
<b>Hairsedge</b>	<i>Bulbostylis sp.</i>
<b>Hairy fimbry</b>	<i>Fimbristylis puberula</i>
<b>Haspan flatsedge</b>	<i>Cyperus haspan</i>
<b>Highbush blueberry</b>	<i>Vaccinium corymbosum</i>
<b>Hoarypeas</b>	<i>Tephrosia sp.</i>
<b>Hog plum</b>	<i>Ximenia americana</i>
<b>Ironweed</b>	<i>Vernonia sp.</i>
<b>Japanese climbing fern</b>	<i>Lygodium japonica</i>
<b>Knotted spikerush</b>	<i>Eleocharis interstincta</i>
<b>Lantana</b>	<i>Lantana camara</i>
<b>Largeflower rosegiant</b>	<i>Sabatia grandiflora</i>
<b>Laurel greenbrier</b>	<i>Smilax laurifolia</i>
<b>Laurel oak</b>	<i>Quercus hemisphaerica</i>
<b>Lemon bacopa</b>	<i>Bacopa caroliniana</i>
<b>Licoriceweed</b>	<i>Scoparia dulcis</i>
<b>Little blue maidencane</b>	<i>Amphicarpum muhlenbergianum</i>
<b>Little bluestem</b>	<i>Schizachyrium scoparium</i>
<b>Live oak</b>	<i>Quercus virginiana</i>
<b>Lizard's tail</b>	<i>Saururus cernuus</i>
<b>Loblolly bay</b>	<i>Gordonia lasianthus</i>
<b>Longbristle beaksedge</b>	<i>Rhynchospora megaplumosa</i>
<b>Longleaf pine</b>	<i>Pinus palustris</i>
<b>Lopsided indiagrass</b>	<i>Sorghastrum secundum</i>
<b>Low pinebarren milkwort</b>	<i>Polygala ramosa</i>
<b>Maidencane</b>	<i>Panicum hemitomon</i>
<b>Manyflower marshpennywort</b>	<i>Hydrocotyle umbellata</i>
<b>Manyflower pennywort</b>	<i>Hydrocotyle umbellata</i>

<b>Manyhead rush</b>	<i>Juncus polycephalos</i>
<b>Manyspike flatsedge</b>	<i>Cyperus polystachyos</i>
<b>Marshpennywort</b>	<i>Hydrocotyle sp.</i>
<b>Michaux's croton</b>	<i>Croton michauxii</i>
<b>Milkpea</b>	<i>Galactia sp.</i>
<b>Millet beaksedge</b>	<i>Rhynchospora miliacea</i>
<b>Mohr's thoroughwort</b>	<i>Eupatorium mohrii</i>
<b>Muscadine</b>	<i>Vitis rotundifolia</i>
<b>Myrtle oak</b>	<i>Quercus myrtifolia</i>
<b>Myrtleleaf St. John's wort</b>	<i>Hypericum myrtifolium</i>
<b>Narrowfruit horned beaksedge</b>	<i>Rhynchospora inundata</i>
<b>Narrowleaf silkgrass</b>	<i>Pityopsis graminifolia</i>
<b>Netted chain fern</b>	<i>Woodwardia areolata</i>
<b>Netted pawpaw</b>	<i>Asimina reticulata</i>
<b>Old world climbing fern</b>	<i>Lygodium microphyllum</i>
<b>Pale meadowbeauty</b>	<i>Rhexia mariana</i>
<b>Peelbark St. John's wort</b>	<i>Hypericum fasciculatum</i>
<b>Peruvian primrosewillow</b>	<i>Ludwigia peruviana</i>
<b>Pickerelweed</b>	<i>Pontederia cordata</i>
<b>Pinebarren beaksedge</b>	<i>Rhynchospora intermedia</i>
<b>Pinebarren goldenrod</b>	<i>Solidago fistulosa</i>
<b>Pinweed</b>	<i>Lechea sp.</i>
<b>Poison ivy</b>	<i>Toxicodendron radicans</i>
<b>Pond cypress</b>	<i>Taxodium ascendens</i>
<b>Possumhaw</b>	<i>Viburnum nudum</i>
<b>Pricklypear</b>	<i>Opuntia humifusa</i>
<b>Primrosewillow</b>	<i>Ludwigia sp.</i>
<b>Purple bluestem</b>	<i>Andropogon glomeratus</i> var. <i>glaucopsis</i>
<b>Purple sesban</b>	<i>Sesbania punicea</i>
<b>Queensdelight</b>	<i>Stillingia sylvatica</i>
<b>Red chokeberry</b>	<i>Photinia pyrifolia</i>
<b>Red maple</b>	<i>Acer rubrum</i>
<b>Resurrection fern</b>	<i>Pleopeltis polypodioides</i> var. <i>michauxiana</i>
<b>Rosary pea</b>	<i>Abrus precatorius</i>
<b>Rosy camphorweed</b>	<i>Pluchea rosea</i>
<b>Rough hedgehyssop</b>	<i>Gratiola hispida</i>
<b>Roundleaf thoroughwort</b>	<i>Eupatorium rotundifolium</i>
<b>Royal fern</b>	<i>Osmunda regalis</i> var. <i>spectabilis</i>
<b>Runner oak</b>	<i>Quercus elliotii</i>

<b>Rush</b>	<i>Juncus sp.</i>
<b>Rustweed</b>	<i>Polypremum procumbens</i>
<b>Saltmarsh fingergrass</b>	<i>Eustachys glauca</i>
<b>Sand blackberry</b>	<i>Rubus cuneifolius</i>
<b>Sand live oak</b>	<i>Quercus geminata</i>
<b>Sand pine</b>	<i>Pinus clausa</i>
<b>Sandyfield beaksedge</b>	<i>Rhynchospora megalocarpa</i>
<b>Savannah milkweed</b>	<i>Asclepias pedicellata</i>
<b>Saw greenbrier</b>	<i>Smilax bona-nox</i>
<b>Saw palmetto</b>	<i>Serenoa repens</i>
<b>Sawgrass</b>	<i>Cladium jamaicense</i>
<b>Scrub plum</b>	<i>Prunus geniculata</i>
<b>Scrubland goldenaster</b>	<i>Chrysopsis subulata</i>
<b>Seaside primrosewillow</b>	<i>Ludwigia maritima</i>
<b>Sensitive briar</b>	<i>Mimosa quadrivalvis</i>
<b>Shiny blueberry</b>	<i>Vaccinium myrsinites</i>
<b>Shiny woodoats</b>	<i>Chasmanthium nitidum</i>
<b>Silverling</b>	<i>Baccharis glomeruliflora</i>
<b>Slash pine</b>	<i>Pinus elliotii</i>
<b>Slender flattop goldenrod</b>	<i>Euthamia caroliniana</i>
<b>Smooth beggarticks</b>	<i>Bidens laevis</i>
<b>Smutgrass</b>	<i>Sporobolus indicus</i>
<b>Soft rush</b>	<i>Juncus effusus subsp. solutus</i>
<b>South Florida slash pine</b>	<i>Pinus elliotii var. densa</i>
<b>Southern magnolia</b>	<i>Magnolia grandiflora</i>
<b>Southern needleleaf</b>	<i>Tillandsia setacea</i>
<b>Southern umbrellasedge</b>	<i>Fuirena scirpoidea</i>
<b>Southern watergrass</b>	<i>Luziola fluitans</i>
<b>Spanish moss</b>	<i>Tillandsia usneoides</i>
<b>Sphagnum moss</b>	<i>Sphagnum sp.</i>
<b>Spikerush</b>	<i>Eleocharis sp.</i>
<b>St. Andrew's cross</b>	<i>Hypericum hypericoides</i>
<b>St. John's wort</b>	<i>Hypericum sp.</i>
<b>St. Peter's wort</b>	<i>Hypericum crux-andreae</i>
<b>Swamp bay</b>	<i>Persea palustris</i>
<b>Swamp laurel oak</b>	<i>Quercus laurifolia</i>
<b>Swamp smartweed</b>	<i>Polygonum hydropiperoides</i>
<b>Swamp tupelo</b>	<i>Nyssa biflora</i>
<b>Sweet goldenrod</b>	<i>Solidago odora</i>

<b>Sweetbay magnolia</b>	<i>Magnolia virginiana</i>
<b>Tall elephantsfoot</b>	<i>Elephantopus elatus</i>
<b>Tall Pinebarren milkwort</b>	<i>Polygala cymosa</i>
<b>Tarflower</b>	<i>Bejaria racemosa</i>
<b>Tenangle pipewort</b>	<i>Eriocaulon decangulare</i>
<b>Thin paspalum</b>	<i>Paspalum setaceum</i>
<b>Thoroughwort</b>	<i>Eupatorium sp.</i>
<b>Threeawn</b>	<i>Aristida sp.</i>
<b>Ticktrefoil</b>	<i>Desmodium spp.</i>
<b>Toothed midsorus fern</b>	<i>Blechnum serrulatum</i>
<b>Torpedograss</b>	<i>Panicum repens</i>
<b>Tracy's beaksedge</b>	<i>Rhynchospora tracyi</i>
<b>Tropical soda apple</b>	<i>Solanum viarum</i>
<b>Turkey tangle fogfruit</b>	<i>Phyla nodiflora</i>
<b>Vanillaleaf</b>	<i>Carphephorus odoratissimus</i>
<b>Virginia buttonweed</b>	<i>Diodia virginiana</i>
<b>Virginia chain fern</b>	<i>Woodwardia virginica</i>
<b>Virginia creeper</b>	<i>Parthenocissus quinquefolia</i>
<b>Virginia marsh St. John's wort</b>	<i>Hypericum virginicum</i>
<b>Virginia willow</b>	<i>Itea virginica</i>
<b>Warty sedge</b>	<i>Carex verrucosa</i>
<b>Water cowbane</b>	<i>Oxypolis filiformis</i>
<b>Water oak</b>	<i>Quercus nigra</i>
<b>Wax myrtle</b>	<i>Myrica cerifera</i>
<b>West Indian marsh grass</b>	<i>Hymenachne amplexicaulis</i>
<b>Whitemouth dayflower</b>	<i>Commelina erecta</i>
<b>Whitetop aster</b>	<i>Oclemena reticulata</i>
<b>Wild pennyroyal</b>	<i>Piloblephis rigida</i>
<b>Wild pine</b>	<i>Tillandsia fasciculata var. densispica</i>
<b>Winged sumac</b>	<i>Rhus copallinum</i>
<b>Wiregrass</b>	<i>Aristida stricta var. beyrichiana</i>
<b>Witchgrass</b>	<i>Dichanthelium sp.</i>
<b>Yellow hatpins</b>	<i>Syngonanthus flavidulus</i>
<b>Yellow jessamine</b>	<i>Gelsemium sempervirens</i>
<b>Yellow milkwort</b>	<i>Polygala rugelii</i>
<b>Yellow pondlily</b>	<i>Nuphar advena</i>
<b>Yellow stargrass</b>	<i>Hypoxis sp.</i>
<b>Yellow-eyed grass</b>	<i>Xyris sp.</i>