Three Forks Conservation Area
Land Management Plan
2007

St. Johns River
Water Management District

Three Forks Conservation Area
Land Management Plan

Upper St. Johns River Basin
Brevard County

Approved by St. Johns River Water Management District Governing Board August 2007

Three Forks Conservation Area

Land Management Plan Summary

Management Area Size: 47,529
Date of Acquisition: Acquisition began in 1977 by acquiring 22,422 acres in a transfer from the Central and Southern Florida Flood Control District. Acquisition is ongoing.

Date of Plan: 8/2007 **Basin Planning Unit:** Upper Basin

Location: Brevard County

Funding Sources: Central and Southern Florida Flood Control District Transfer, Save Our Rivers Bond 85 and Bond 89, ad valorem, land sales, Preservation 2000, exchanges, and Environmental Resources Permitting mitigation.

Management Partners:

- The District is lead manager of Three Forks Conservation Area (TFCA).
- The Florida Fish and Wildlife Conservation Commission (FWC) manages the Upper St. Johns River Marsh Wildlife Management Area (USJRWMA), which includes the majority of TFCA.

Key Resource Issues:

- **WATER RESOURCES** – Pollutant Load Reduction Goals as well as Total Maximum Daily Loads have been established for the District Upper Basin Lakes. Water quality and dissolved oxygen content are monitored.
- **FIRE MANAGEMENT** – Prescription fire has been utilized since 1990. A Comprehensive Fire Management Plan for the area has been created and implemented.
- **INVASIVE**– Exotic plant species include water hyacinth (*Eichhornia crassipes*), hydrilla (*Hydrilla verticillata*), Brazilian pepper (*Schinus terebinthifolius*), lygodium (*Lygodium microphyllum*), waterlettuce (*Pistia stratiotes*). Invasive species include Cattail (*Typha latifolia, Typha domingensis*) and Carolina willow (*Salix caroliniana*). Woody species such as Carolina willow have become invasive in areas where hydrologic disruption and fire suppression have occurred. Monitoring and treatment of exotic and invasive plant species is an on-going process. Exotic animal species include feral hogs. Hog trapping agents have been contracted for this property. Also, as this is a Wildlife Management Area, feral hogs are hunted seasonally.
- **RESTORATION** – The Upper St. Johns River Basin Project (USJRBP) currently includes two main projects that will prevent freshwater from being released into the Indian River Lagoon as well as filter runoff from agriculture and development from the east before entering the St. Johns Marsh Conservation Area: Three Forks Marsh Conservation Area and C-1 Rediversion Area. Additional restoration includes the chopping, mowing, or herbicide treatment of woody vegetation within the Conservation Area in order to recolonize herbaceous vegetation.

- **WILDLIFE AND PLANTS** – The property provides important habitat for fish and wildlife populations, including rare and endangered species. Staff will continue to inventory and monitor for threatened and endangered species.
- **CULTURAL AND ARCHAEOLOGICAL RESOURCES** – There are a total of five known cultural resource sites in the Conservation Area. Special measures are being made to ensure that management activities are consistent with the long-term protection of these resources.

Key Land Use/Recreation Issues:

- **ACCESS** – TFCA has four access points within the north, middle, and southern areas of the property. Two were developed through a cooperative cost-share agreement between the District and the U.S. Army Corps of Engineers (USACOE).
- **RECREATION USE** – The property is open to the public for boating, canoeing, fishing, hiking, primitive camping, biking, wildlife viewing, air boating and seasonal hunting. The Conservation Area is included in the USJRWMA.
- **SECURITY** – A private contractor, Plantation Security, provides routine security services for the property as needed. Additional assistance is provided by local law enforcement and FWC. A security residence has also been established at the west end of Malabar Road.
- **LAND ACQUISITION** – In the C-1 Project Area, the District may acquire parcels below the 18-foot contour line. The District may consider surplussing parcels above the 18-foot contour line in exchange for parcels below the line to aid restoration. The District has a contract to exchange property within TFCA with Deseret Ranch.
- **COOPERATIVE AGREEMENTS** – A cooperative agreement exists between the District and the USACOE for the development of recreation sites throughout the Upper St. Johns River Basin. The District also has an agreement with FWC to coordinate management of the hunting programs. The District has an agreement with the Florida Department of Environmental Protection (FDEP) to provide funding for exotic plant control while the District is contracted to treat invasives and exotics in the lakes at TFCA. The District holds a mowing contract for levee maintenance. There is also an agreement between the District, Brevard County, Indian River County, and Osceola County to equally share in the maintenance costs of Fellsmere Grade from its junction with US 441 to its terminus at TFCA and Kenansville Lake.
- **LEASES, EASMENTS, SPECIAL USE AUTHORIZATIONS, AND CONCESSIONS** - TFCA has six active cattle grazing agreements and will add an additional cattle-grazing agreement.

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INTRODUCTION

This management plan provides guidelines for land management activities to be implemented within the Three Forks Conservation Area over the next five years. This is a revision of the Land Management Plan approved in October of 2000.

Three Forks Conservation Area encompasses approximately 51,464 acres within the St. Johns River Upper Basin (Figure 1). The property extends south from US 192 to the C-54 canal (a.k.a. L-74W, Fellsmere Grade/Kenansville Road), just north of the Brevard/Indian River County line in Brevard County. Areas of the property are part of the Upper St. Johns River Marsh Wildlife Management Area (USJRMWMA) managed by the Florida Fish and Wildlife Conservation Commission (FWC).

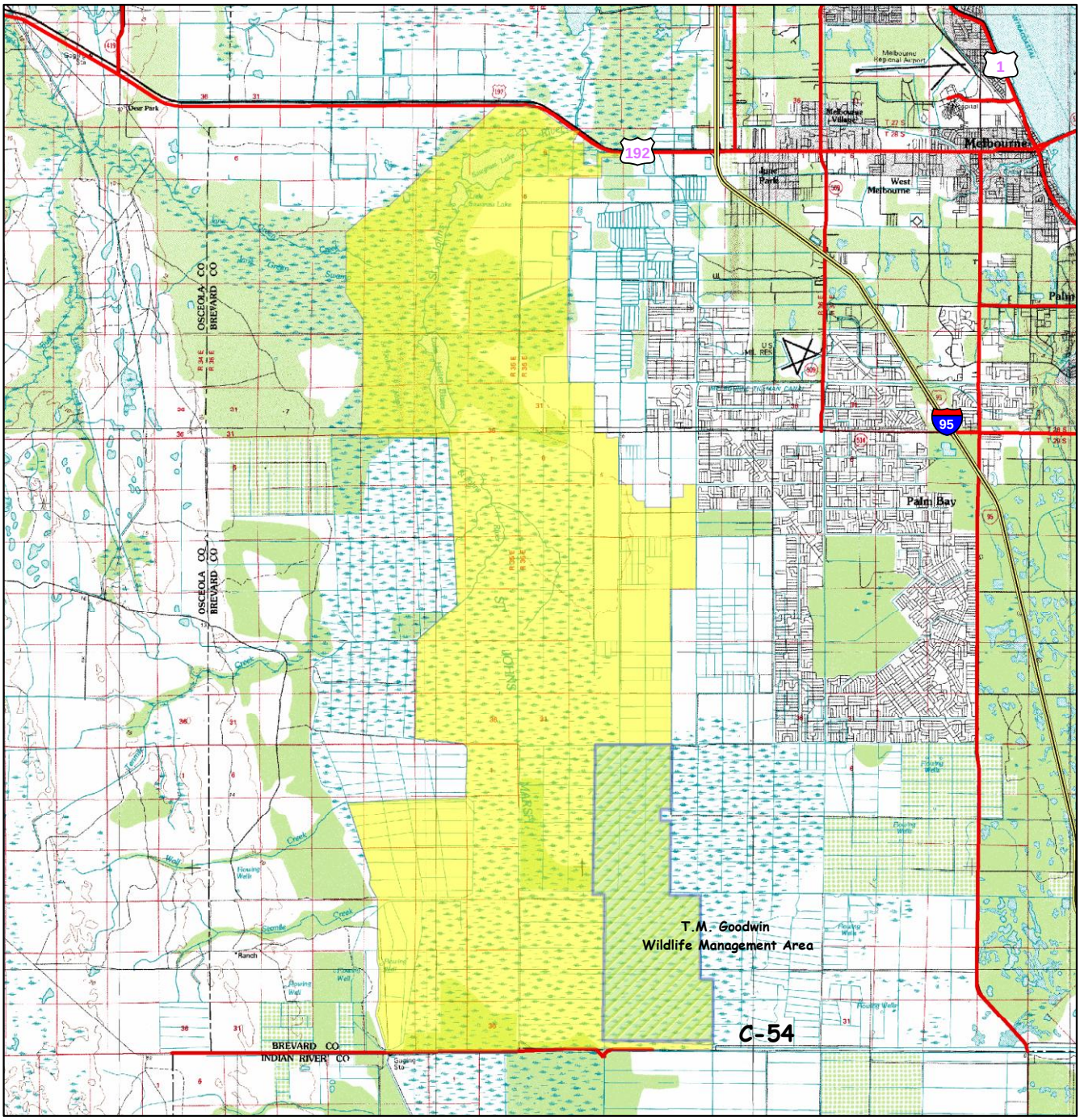
The conservation area has four access points. From I-95, use the Melbourne exit at U.S. 192 and go west to a District public boat ramp with limited parking. This entrance provides access into the property via boat only. To access the Thomas O. Lawton Recreation Area take the County Road (CR) 514 exit from I-95 (Malabar Road) and head west on Malabar Road. To access the Fellsmere Grade Recreation Area, head west on Malabar Road from I-95 and south on Babcock and west on Fellsmere Grade. Lastly, the southwestern point of the Conservation Area is accessible from Kenansville Road located east of SR 441.

TFCA includes restoration projects known as water management areas and marsh conservation areas (Figure 2). Sawgrass Lake Water Management Area (SLWMA) will be a treatment wetland, which will gravity flow stormwater into the St. Johns Marsh Conservation Area (SJMCA). Three Forks Marsh Conservation Area will be engineered into a water storage and filter area that will treat water before it flows into St. Johns Marsh Conservation Area. The C-1 Retention Area will be a large reservoir used for stormwater storage.

Tributaries, notably Six Mile, Ten Mile, and Jane Green creeks, flow east from the western drainage slope into the Conservation Area. Water from Blue Cypress Lake and more southern headwater areas flow north into the Conservation Area. The first discernible channels of the St. Johns River arise within the TFCA marsh south of Lake Hell'n Blazes. Also, the C-40 canal runs north south through the Conservation Area. C-1 canal, which runs east west, terminates within the Conservation Area at canal C-40.

TFCA was acquired by the District to protect water resources, ecological functions, and to restore the headwaters of the St. Johns River under the purview of the U.S. Army

Corps of Engineers (USACOE) and District Upper St. Johns River Basin Project (USJRBP).



Source: USGS Digital Rastor Graphic

Figure 1.
Three Forks
Conservation Area
Location Map

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Legend

Three Forks Conservation Area

TM Goodwin Waterfowl Management Area

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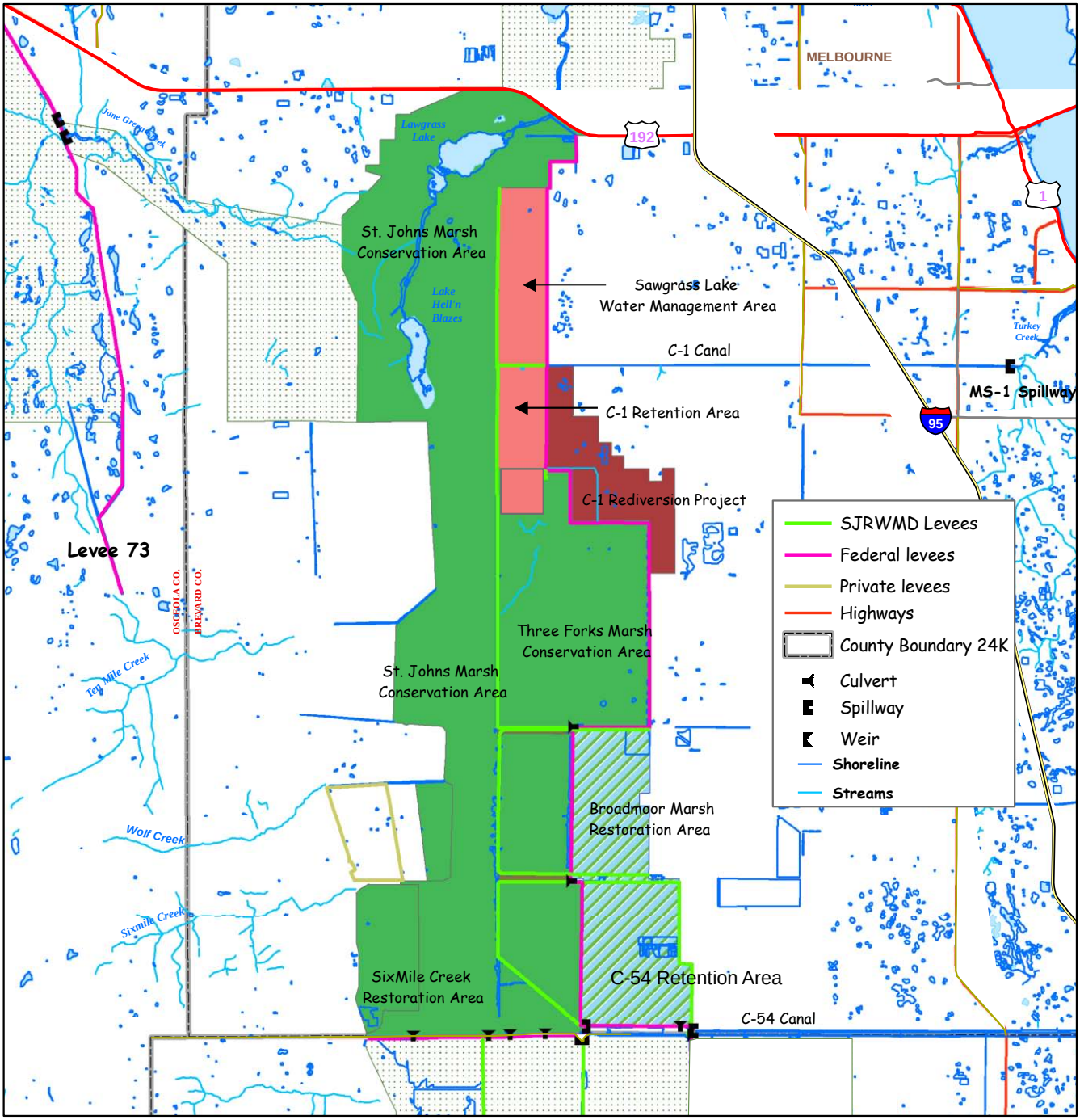

Figure 2.
Three Forks Conservation Area
Water Resources Projects

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Legend

- Water Management Areas
- Marsh Conservation Areas
- Other Project Areas
- C-1 Detention Area
- TM Goodwin
- Waterfowl Management Area
- Hydrology

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Author:cbasci, Source:G:\MGMT PLANS\Three Forks Marsh\2007\Three Forks Maps\9_12_2006\Figure 2. ES Groups.mxd, Time:2/13/2007 3:07:50 PM

LAND MANAGEMENT GOALS

TFCA is classified as a Conservation Area as named by the Division of Land Management according to state and federal law. A Conservation Area is designed for water resource conservation, plant community and hydrologic restoration where feasible, and natural resource management and protection. Environmental goals include reestablishment of the natural hydrologic and fire regime, preservation of rare plants and animals, restoration of marsh ecosystems and water quality improvements. Brief summaries of these goals as they apply to TFCA are found below:

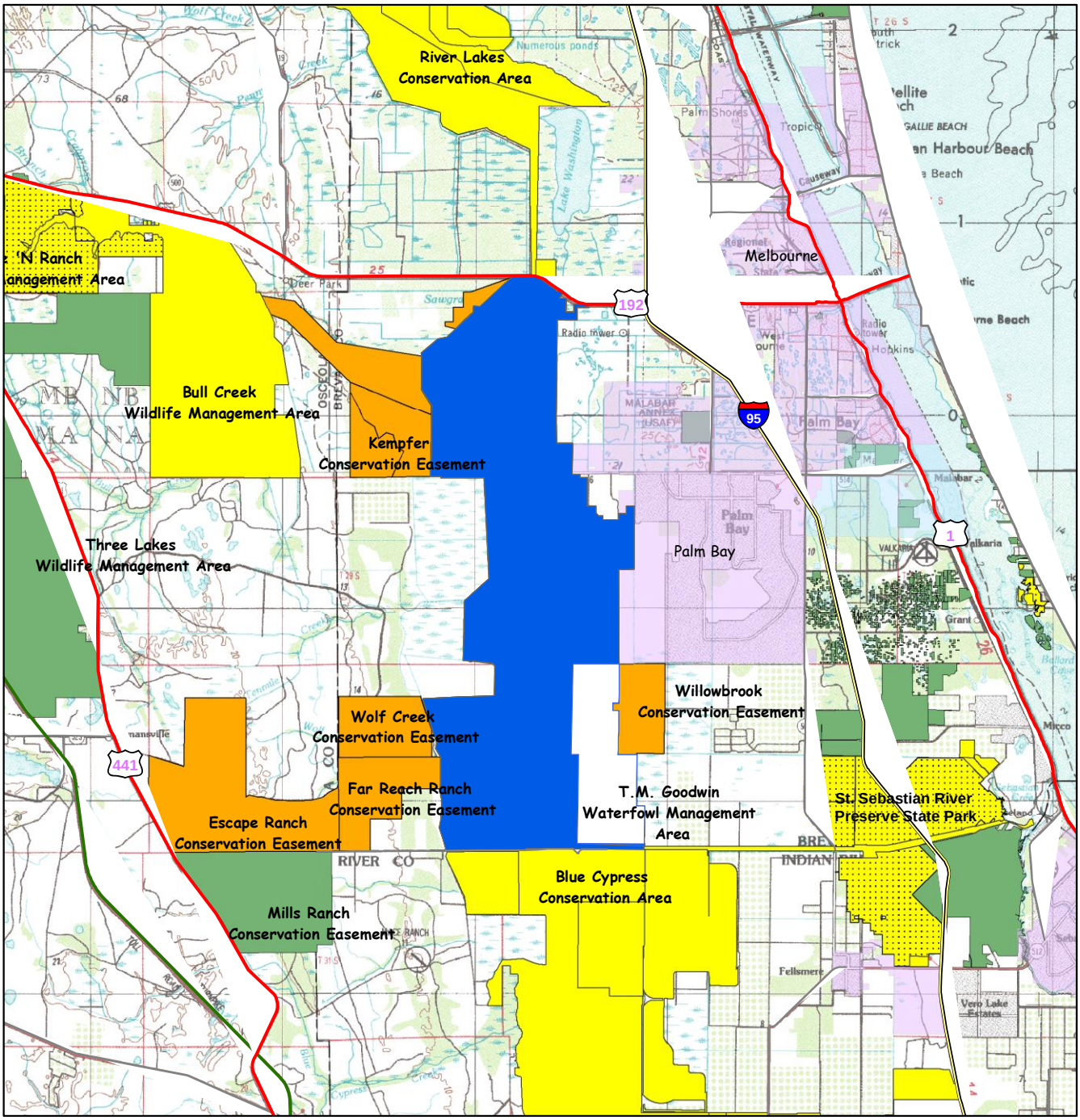
1. Promote semi-structural flood protection.
2. Restore and maintain natural hydrologic regimes and water quality.
3. Restore, maintain, and protect native vegetation, fish and wildlife communities, and their diversity.
4. Protect archaeological and cultural resources.
5. Provide opportunities for public recreation where compatible with the goals listed above.

CONSERVATION AREA OVERVIEW

Regional Significance

The Upper St. Johns River Basin is an ecosystem of statewide and national significance. Despite the extensive loss of floodplain to development, it remains the largest freshwater marsh in the region and among the largest in the state. The USJRBP is one of the largest wetland restoration projects in the world that includes more than 150,000 acres of restored freshwater marshes.

TFCA is part of a regional network of public natural areas and conservation easements acquired in order to conserve land, restore wetland functions, and for purposes of flood control (Figure 3). Thousands of acres have been purchased creating a conservation corridor designated for preservation and restoration. Combined, these natural areas encompass approximately 152,565 acres and include River Lakes Conservation Area, Blue Cypress Conservation Area, Fort Drum Marsh Conservation Area, St. Sebastian River Preserve State Park managed by the Florida Park Service, and Triple N Ranch Wildlife Management Area and Bull Creek Wildlife Management Area both managed by the Florida Fish and Wildlife Conservation Commission (FWC). Conservation easements include Far Reach Ranch, Wolf Creek Ranch, Escape Ranch, Kempfer, Willowbrook, all District held, and Mills Ranch (easement owned by Trustees). The conservation easements consist of approximately 39,967 acres of private lands protected from development. In total, over 192,502 acres in this region have been set aside for conservation.



Source: Florida Natural Areas Inventory 2006, SJRWMD 2006

Figure 3.
Three Forks
Conservation Area
Regional Significance Map

3 1.5 0 3 Miles

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Legend

- Three Forks Conservation Area
- T.M. Goodwin Boundary
- District - Full Fee
- District - Less than fee
- District - Joint ownership
- Other Public Land
- City

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Acquisition History

TFCA is comprised of 38 acquisition parcels, some with multiple transactions, and one transfer parcel (Figures 4a, 4b). Parcels within TFCA began to be acquired in 1977 with the transfer of a large parcel from the Central and Southern Florida Flood Control District (Table 1). Funding sources include Save Our Rivers Bond 85 and Bond 89, ad valorem tax dollars, and Preservation 2000 (P2000). Land sales, exchanges, and Environmental Resources Permitting mitigation also produced funding or agreements that added land to the project. The District holds 100% fee title of the property.

The purchase of these properties is consistent with the goals and objectives set for the USJRBP and the District's Five Year Plan. The objectives for acquisition in this basin are (1) Flood control, (2) restoration and enhancement of wetland habitat, (3) water quality improvement, (4) decreased interbasin diversions, and (5) improved public access and recreational opportunities.

The lands acquired for the USJRBP are also identified within the General Design Memorandum approved by the United States Army Corps of Engineers (USACOE) in August 1986. The District Governing Board authorized acquisition of several additional parcels contiguous to the lands identified by USACOE, which will aid in the achievement of project objectives.

The following is a list of parcels acquired by the District and incorporated into the management area:

(LA# 1977-0003) – Transfer from C&SFFCD
This transfer parcel consists of 22,422 acres and was acquired from the Central and Southern Florida Flood Control District in 1977.

(LA# 1983-020)- Ida Hooker
This parcel consists of 10 acres and was purchased for $20,596.80 with Save our Rivers funding. This outparcel was purchased from within the Fellsmere Joint Venture property on June 22, 1984.

(LA# 1985-001)- Everett
This parcel consists of 10 acres and was purchased for $10,000 with Save our Rivers Bond 85 funding. This outparcel was within General Development Corp. was purchased on 9/16/1985.

(LA# 1983-008)- Sartori East CDE
This 2,803 parcel was purchased for $8,409,900 with Save Our Rivers Bond 85 funding on 9/26/1985. The Sartori parcels were originally river floodplain that were converted to agriculture fields and diked.

(LA# 1983-002)- Fellsmere Joint Venture
Fellsmere Joint Venture consists of 2,533 acres and was purchased for $7,289,276.51 with Save Our Rivers funding. This parcel was purchased on 11/25/1985.

(LA# 1986-004)- Gilbert Tucker
This 2,087-acre parcel was purchased for $3,653,736.21 with Save Our Rivers Bond 85 funding. This parcel was purchased on 12/23/1986.

(LA# 1983-010)- Cross Triangle A
Cross Triangle A consists of 3,211 acres and was purchased for $5,859,852.35 utilizing ad valorem taxes. This parcel was purchased on 9/13/1988.

(LA# 1983-010)- Cross Triangle B
Cross Triangle B consists of 2,611 acres and was purchased for $4,960,853.64 utilizing Save Our Rivers funding. This transaction was completed on 6/15/1989.

(LA# 1983-011)- General Development Corp.
This parcel consists of 3,273 acres and was purchased for $3,386,650.02 and was purchased with funding coming from District general land sales. The General Development Corp. parcel was purchased on 6/27/1989.

(LA# 1988-016) – Gould
The Gould parcel consists of 268 acres and was purchased for $196,905.11 on 9/1/1990. The property was purchased with Save Our Rivers funding through Bond 89. The property was acquired through eminent domain, however through a condemnation settlement, 9.92 acres of the original 277 acres was returned to the landowner.

(LA#1990-079) – Daley
This parcel consists of 0.40 acres and was purchased for $35,788 on 9/1/1990. The property was purchased with Save Our Rivers funding through Bond 89. The property was acquired through eminent domain, however through a condemnation settlement, 4.84 acres of the original 5.24 acres was returned to the landowner.

(LA#1990-078) – Cox
The Daley parcel consists of 1.55 acres and was purchased for $20,715 on 10/1/1990. The property was purchased with Save Our Rivers funding through Bond 89. The property was acquired through eminent domain, however through a condemnation settlement, 3.60 acres of the original 5.15 acres was returned to the landowner.

(LA# 1990-083)- Willard Palmer #1
This parcel consists of 536 acres and was purchased for $1,760,000 with Save Our Rivers Bond 89 funding. The parcel was purchased on 7/17/1991.

(LA# 1990-082)- General Development Corp. Additions a & b

These additional General Develop Corp. parcels consist of 2,319 acres and were purchased for $4,150,051.81 utilizing Preservation 2000-90 funds. These transactions took place on 12/30/1991.

(LA# 1983-012)- Carlyle Platt
The Carlyle Platt parcel consists of 2,484 acres that were purchased for $4,574,770.70 utilizing Save Our Rivers Bond 89 funding. This parcel was purchased on 8/28/1991.

(LA# 1990-046)- Clarence Engle
The Clarence Engle parcels consist of 42.18 acres for $368,701.70 utilizing ad valorem taxes as well as $18,701.70 in external funding. These parcels were purchased 9/29/1992, 3/28/1995 and 2/6/2001.

(LA# 1983-014)- Frank Platt
This parcel consists of 326.26 acres and was purchased for $619,884.50 acres funded by P2000. This parcel was purchased on 1/17/1992.

(LA# 1990-087)- Inskip
This property was a 10-acre outparcel that was purchased for $19,019 with ad valorem taxes. The parcel was purchased on 11/4/1992.

(LA# 1990-045)- Bagby
The Bagby parcel consists of 9.40 acres purchased for $17,854.30 funded by ad valorem taxes. This parcel was purchased on 11/12/1992.

(LA# 1990-049) – Eleanor McCann
The McCann parcel consists of 10 acres purchased for $14,000 funded by ad valorem taxes. The parcel was purchased on 2/25/1993.

(LA# 1990-047)- Lylette Woods
The Lylette Woods parcel consists of 10.19 acres that was purchased for $27,665 funded by ad valorem taxes through eminent domain to complete the USJRBP. This parcel was purchased on 3/11/1994.

(LA# 1990-044)- Tomlinson
The Tomlinson parcel consists of 30 acres purchased for $147,272.89 funded by ad valorem taxes. This parcel was acquired via eminent domain to complete the USJRBP. The parcel was purchased on 5/27/1994.

(LA# 1990-085)- V. Seng
This 20-acre parcel was purchased for $36,662.40 funded by ad valorem taxes. The property closed on 6/16/1994.

(LA# 1983-009c)- Sartori (West Addition)
The Sartori west addition consists of 1,305 acres purchased for $2,268,696.92 funded by ad valorem taxes. This parcel closed on 1/18/1995.

(LA# 1983-009a)- Sartori (west) Parcel A
This 748-acre parcel was purchased for $1,422,777 funded by Save Our Rivers Bond 85. This parcel was purchased on 1/18/1995.

(LA# 1983-009b)- Sartori (west) Parcel B
The Sartori West Parcel B consists of 649 acres and purchased for $1,299,660 utilizing Save our Rivers Bond 85 funding. This parcel was purchased on 1/18/1995.

(LA# 1986-011)- Meehan
This 18-acre parcel was purchased for $49,000 and funded by ad valorem taxes. The parcel was acquired through eminent domain and closed on 3/20/1995.

(LA# 1990-048a)- Williamson-Platt
This parcel consists of 20 acres purchased with ad valorem taxes for $187,551.21. The parcel was acquired through eminent domain and closed on 3/20/1995.

(LA# 1986-002) Everett
This 2.87 parcel was purchased for $36,000 with ad valorem tax dollars. The parcel went through a condemnation settlement on 12/16/1995.

(LA# 1996-062)- Farm Credit
The Farm Credit parcel consists of 160 acres and was purchased for $306,150 utilizing Save Our Rivers Bond 95 funds. This parcel closed on 12/13/1996.

(LA# 1996-034A)- Paul and Tena Platt South
This parcel consists of 103 acres purchased for $440,820 via Save Our Rivers Bond 95 funding. The parcel was purchased on 12/31/1996.

(LA# 1996-034B)- Paul and Tena Platt North
This 118-acre parcel was purchased for $503,325 utilizing ad valorem taxes. The parcel closed on 4/1/1997.

(LA# 1996-075)- Willard Palmer #2
This parcel consists of 200 acres and was purchased for $879,984 utilizing Save Our Rivers Bond 95 funding. The parcel closed on 5/22/1997.

(LA# 1996-073)- George Billie
This parcel consists of 11 acres and was purchased for $28,500 utilizing Save Our Rivers Bond 95 funding. This parcel was purchased on 5/28/1997.

(LA# 1996-066)- N. Tsamoutales
This parcel consists of 19 acres and was purchased for $57,000 utilizing Save Our Rivers Bond 95 funding. The parcel was purchased on 5/28/1997.

(LA# 1996-072)- Frank Platt
This parcel consists of 946 acres and was purchased for $2,139,053.11 utilizing Preservation 2000 funding. Mitigation funding provided $139,438 of the funds needed. This parcel was purchased on 9/19/1997.

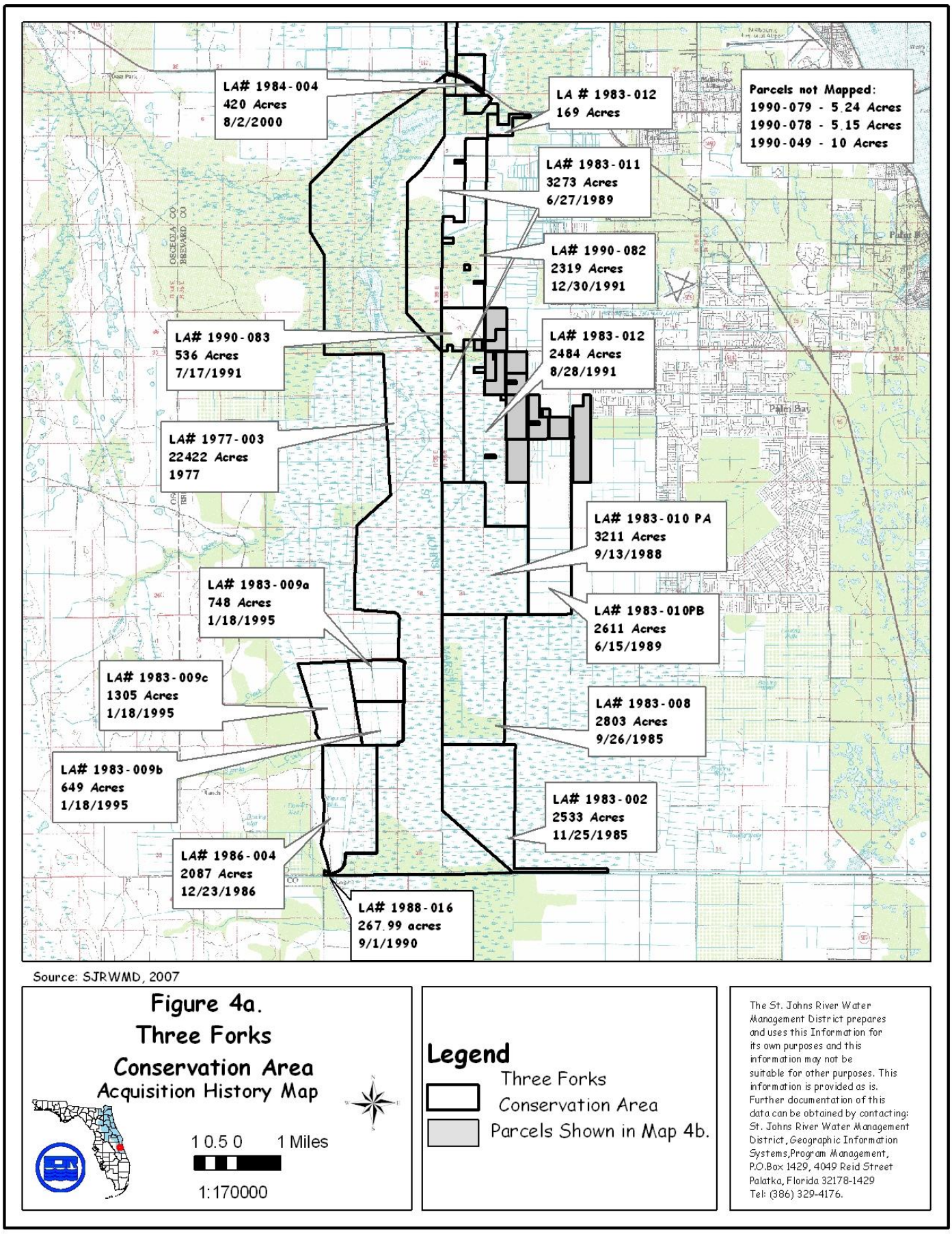
(LA# 1996-071)- F. Carlyle Platt
This parcel consists of 576 acres and was purchased for $1,440,225 utilizing Preservation 2000 funding. This parcel was purchased on 11/06/1998.

(LA# 1996-041)- Ubaldo Diaz
This parcel consists of 10 acres that were acquired through an exchange that funded the $33,000 transaction. This parcel was purchased on 12/31/1998.

(LA# 1996-067)- Montgomery-Lapidus
This parcel consists of 10 acres that were purchased for $25,000 utilizing funding from ad valorem taxes as well as environmental resource permitting mitigation funds. This property was purchased on 2/7/2000.

(LA# 1984-004) – Driggers
This parcel consists of 420 acres purchased for $156,450 with Preservation 2000 funding. This parcel was purchased on August 2, 2000.

(LA# 1996-074)- W. Derby
This parcel consists of 10 acres that were acquired by mitigation for a permitted project. The parcel was acquired on 6/5/2001.



Source: SJRWMD, 2007

Figure 4a.
Three Forks
Conservation Area
Acquisition History Map

1 0.5 0 1 Miles

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Legend

Three Forks Conservation Area

Parcels Shown in Map 4b.

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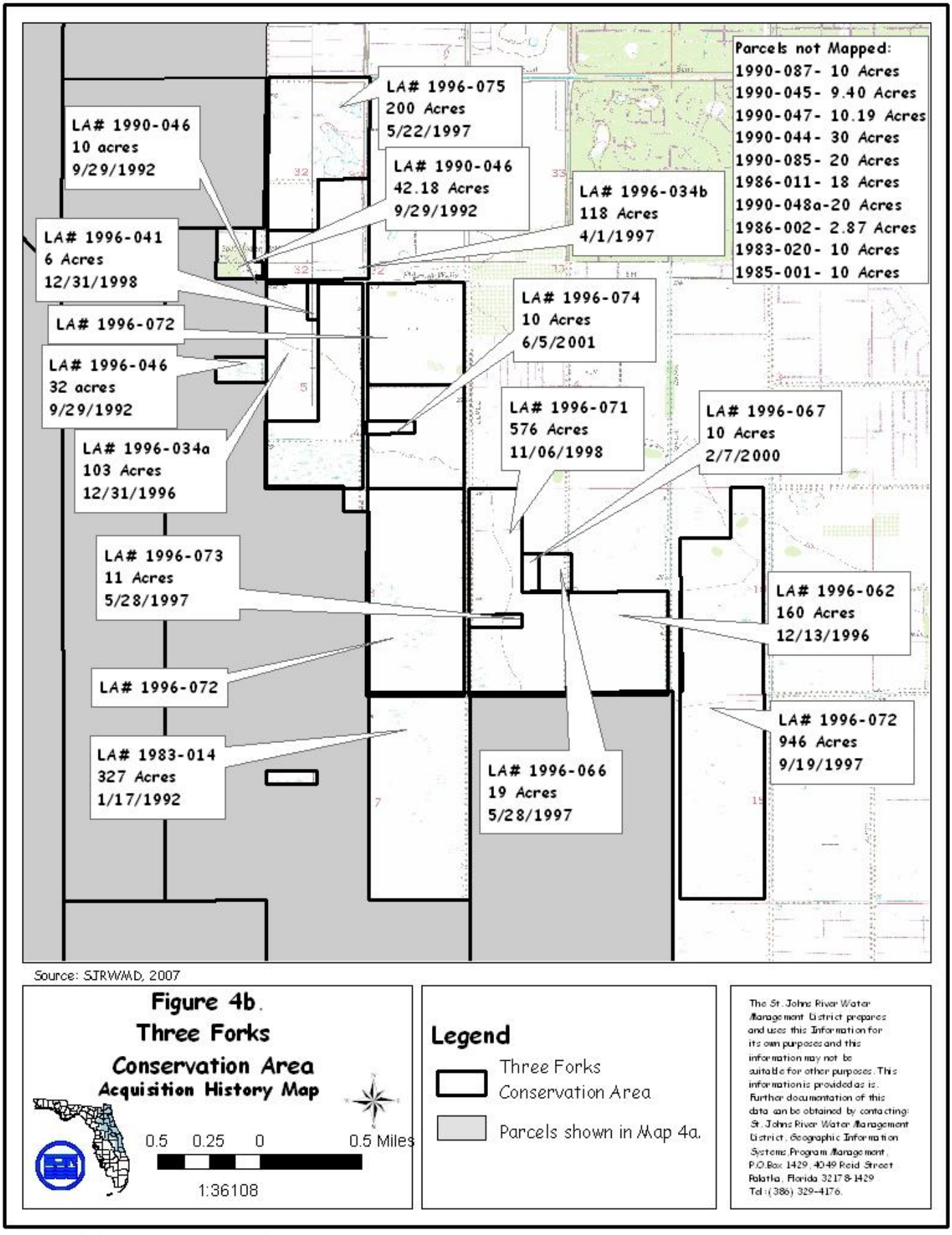

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Table 1. Three Forks Marsh Conservation Area Acquisition History

Acquired	Parcel #	Parcel Name	Acreage	Total Price	SJRWMD Price	Funding Source	Comments
1977	1977-0030P1	Transfer from C&SFFCD	22,422	$0	$0	C&SFFCD	
6/22/1984	1983-020	Ida Hooker	10	$20,596.80	$20,596.80	SOR	Outparcel within Fellsmere Joint Venture Property
9/16/1985	1985-001	Everett	10	$10,000	$10,000	SOR-Bond 85	Outparcel within General Development Corp
9/26/1985	1983-008	Sartori (east) CDE	2803	$8,409,900	$8,409,900	SOR-Bond 85	
11/25/1985	1983-002	Fellsmere Joint Venture	2533	$7,289,276.51	$7,289,276.51	SOR-Bond 85	
12/23/1986	1986-004	Gilbert Tucker	2087	$3,653,736.21	$3,653,736.21	SOR-Bond 85	
9/13/1988	1983-010	Cross Triangle A	3,211	$5,859,852.35	$5,859,852.35	ad valorem	
6/15/1989	1983-010	Cross Triangle B	2,611	$4,960,853.64	$4,960,853.64	SOR	
6/27/1989	1983-011	General Development Corp.	3273	$3,386,650.02	$3,386,650.02	Land Sales	
9/1/1990	1988-016	Gould	268	$196,905.11	$196,905.11	SOR-Bond 85, 89	Acquired through eminent domain. Originally consisted of 277.61 acres, returned 9.92 to landowner through condemnation settlement.
9/1/1990	1990-079	Daley	0.40	$35,788	$35,788	SOR-Bond 89	Acquired through eminent domain. Originally consisted of 5.24 acres, returned 4.84 acres to landowner through condemnation settlement.
10/1/1990	1990-078	Cox	1.55	$20, 715	$20, 715	SOR-Bond 89	Acquired through eminent domain. Originally consisted of 5.15 acres, returned 3.60 acres to landowner through condemnation settlement.
7/17/1991	1990-083	Willard Palmer #1	536	$1,760,000	$1,760,000	Bond 89	
12/30/1991	1990-082	General Development Corp. Additions a & b	2,319	$4,150,051.81	$4,150,051.81	P2000-90	
8/28/1991	1983-012	Carlyle Platt	2484	$4,574,770.70	$4,574,770.70	Bond 89	
9/29/1992, 3/28/1995, 2/6/2001	1990-046	Clarence Engle	42.18	$368,701.70	$350,000	ad valorem, other	External funding for $18, 701.70
1/17/1992	1983-014	Frank Platt	326.26	$619,884.50	$619,884.50	P2000	

Acquired	Parcel #	Parcel Name	Acreage	Total Price	SJRWMD Price	Funding Source	Comments
11/4/1992	1990-087	Inskip	10	$19,019	$19,019	ad valorem	
11/12/1992	1990-045	Bagby	9.40	$17,854.30	$17,854.30	ad valorem	
2/25/1993	1990-049	McCann	10	$14,000	$14,000	ad valorem	
3/11/1994	1990-047	Lylette Woods	10.19	$27,665	$27,665	ad valorem	Acquired through eminent domain.
5/27/1994	1990-044	Tomlinson	30	$147,272.89	$147,272.89	ad valorem	Acquired through eminent domain.
6/16/1994	1990-085	V. Seng	20	$36,662.40	$36,662.40	ad valorem	
1/18/1995	1983-009c	Sartori (west addition)	1305	$2,268,696.92	$2,268,696.92	ad valorem	
1/18/1995	1983-009a	Sartori (west) Parcel A	748	$1,422,777	$1,422,777	SOR-Bond 85	
1/18/1995	1983-009b	Sartori (west) Parcel B	649	$1,299,660	$1,299,660	SOR-Bond 85	
3/20/1995	1986-011	Meehan	18	$49,000	$49,000	ad valorem	Acquired through eminent domain.
3/20/1995	1990-048a	Williamson-Platt	20	$187,551.21	$187,551.21	ad valorem	Acquired through eminent domain.
8/17/1995	1986-002	Everett	2.87	$36,600	$36,600	ad valorem	Condemnation settlement 11/16/1995.
12/13/1996	1996-062	Farm Credit	160	$306,150	$306,150	SOR-Bond 95	
12/31/1996	1996-034B	Paul and Tena Platt South	103	$440,820	$440,820	SOR-Bond 95	
4/1/1997	1996-034A	Paul and Tena Platt North	118	$503,325	$503,325	ad valorem	
5/22/1997	1996-075	Willard Palmer #2	200	$879,984	$879,984	SOR-Bond 95	
5/28/1997	1996-073	George Billie	11	$28,500	$28,500	SOR-Bond 95	
5/28/1997	1996-066	N. Tsamoutales	19	$57,000	$57,000	SOR-Bond 95	
9/19/1997	1996-072	Frank Platt	946	$2,139,053.11	$1,999,615.11	P2000	$139,438 mitigation funding
11/06/1998	1996-071	F. Carlyle Platt	576	$1,440,225	$1,440,225	P2000	
12/31/1998	1996-041	Ubaldo Diaz	6	$33,000	$33,000	exchange	
2/7/2000	1996-067	Montgomery-Lapidus	10	$25,000	$25,000	ad valorem/ERP mitigation	
8/2/2000	1984-004	Driggers	420	$156,450	$156,450	P2000	
6/5/2001	1996-074	W. Derby	10	$0	$0	mitigation	

Zoning

TFCA is designated as Public Conservation in the Brevard County Comprehensive Plan. According to the plan, this designation includes lands under the ownership of Brevard County, the St. Johns River Water Management District, or other local governments and agencies. The designation is for the purpose of environmental protection of publicly owned lands within the Environmental Area zoning classification, or publicly owned areas in which it is demonstrated that the preservation of environmentally sensitive resources will provide an overriding public benefit. Development activities within lands designated as Public Conservation are consistent with the specific policies in the Brevard County Comprehensive Plan Conservation Element related to natural resources, and should be consistent with the intent of the Comprehensive Plan. Residential densities for Public Conservation lands should not exceed one dwelling unit per fifty acres. Dwelling units on publicly held lands, including those zoned Environmental Area, which are in public ownership, are limited to accommodating park rangers or other authorized personnel as deemed appropriate in order to manage or protect such Public Conservation lands.

History

Extensive freshwater shellfish middens and other sites give evidence of large pre-Columbian human populations and post-Archaic St. Johns cultures in the marshes of the St. Johns River. The original inhabitants were the Ais Indians who later joined other bands to become the Seminole Indians.

The area is rich in military history that began with the development of military routes and forts during the Seminole wars. In the 1830s and 1840s, the area became important for agricultural production and the region began to be developed for farming and cattle ranching.

In the early 1900s, dikes and ditches were constructed in the St. Johns River headwaters to drain the marshes for agricultural pursuits. Canal systems currently run throughout the property resulting from historical efforts to create agriculture land and provide flood control. Channeling the river's headwaters and eliminating thousands of acres of marshes caused a loss of storage areas for floodwaters from hurricanes, loss of habitat for wading birds, fish and other wildlife, and loss of marsh plants that filtered pollutants. The privately constructed dikes and canals proved inadequate during 1910 through 1950 when several hurricanes resulted in flood waters overtopping dikes causing significant damage to homes and businesses in the USJRB. Due to the failure of local efforts to sustain the dikes and canals, the federal government became involved with the project.

The U.S. Army Corps of Engineers began planning a flood control project in the 1950s. This original Upper Basin Project included flood storage reservoirs and a network of canals, including canal C-54, to divert excess floodwaters from the upper St. Johns to the Indian River Lagoon (IRL). Due to an Environmental Impact Statement reporting

negative impacts on the environment, President Richard Nixon halted the project in 1973. The study suggested negative impacts to wildlife as well as a reduction of the population of shellfish in the IRL due to the large diversion of freshwater to the saltier lagoon.

The USJRBP was delegated to the District in 1977 and redesigned in the 1980s to address environmental concerns and the role of C-54. Today the District is looking to balance water management issues with habitat quality in the USJRB. Flood protection is accomplished by restoring former floodplains where floodwaters can be stored. The project is divided into water management areas, which provide flood storage and water quality improvement to agricultural discharges, and marsh conservation areas, which are more pristine areas (Figure 2). The project is designed to store floodwaters and gradually release water to the St. Johns River after flood events, reducing the peak rate of flow in the river. The project also provides habitat for wildlife and a more natural regulation of water levels for sensitive species.

NATURAL RESOURCES OVERVIEW

Topography and Hydrology

According to the *Guide to the Physiographic Divisions of Florida*, TFCA lies in the boundary of the Eastern Flatwoods District within the St. Johns Marsh. This physiographic division is similar to St. Johns Wet Prairie. Organic soils are common and there are no karst features. The conservation area lies on an ancient marine terrace created during the Pleistocene period due to fluctuating sea levels.

TFCA lies within the Upper Basin of the St. Johns River. This basin, extending from the headwaters of the St. Johns River in Indian River and Okeechobee counties to the confluence of the St. Johns and Econlockhatchee rivers in Seminole County, originally contained over 400,000 acres of floodplain marsh. With 62 percent of the Upper Basin marshes being drained for agriculture and flood control, the U.S. Army Corps of Engineers and the District have co-sponsored the USJRBP to restore the marshland and offer a more natural form of flood control.

The Upper Basin Project is a semistructural system of water management areas and marsh conservation areas covering approximately 166,500 acres in Indian River and Brevard counties (Figure 5). The system is designed to reduce damage from floods, improve water quality, reduce freshwater discharges to the IRL, provide water supplies, and restore or enhance wetland habitat.

Within the system, three main canals still exist within TFCA. These include the C-54 Canal running west to east to the IRL along the southern border of the conservation area, C-1 Canal running west to east to the IRL at the northern section of the Conservation Area, and C-40 Canal which runs north-south, bisecting TFCA. Plans to redivert C-1 from the IRL to retention areas will allow freshwater to remain within the headwater

system. These plans have many benefits including improving IRL water quality, decreasing sediments and nutrients draining into Turkey Creek, St. Sebastian River, and the IRL, enhancing flood protection, protecting valuable commercial hard clam industry, providing an opportunity to supplement Palm Bay's water supply, and providing recreational opportunities.

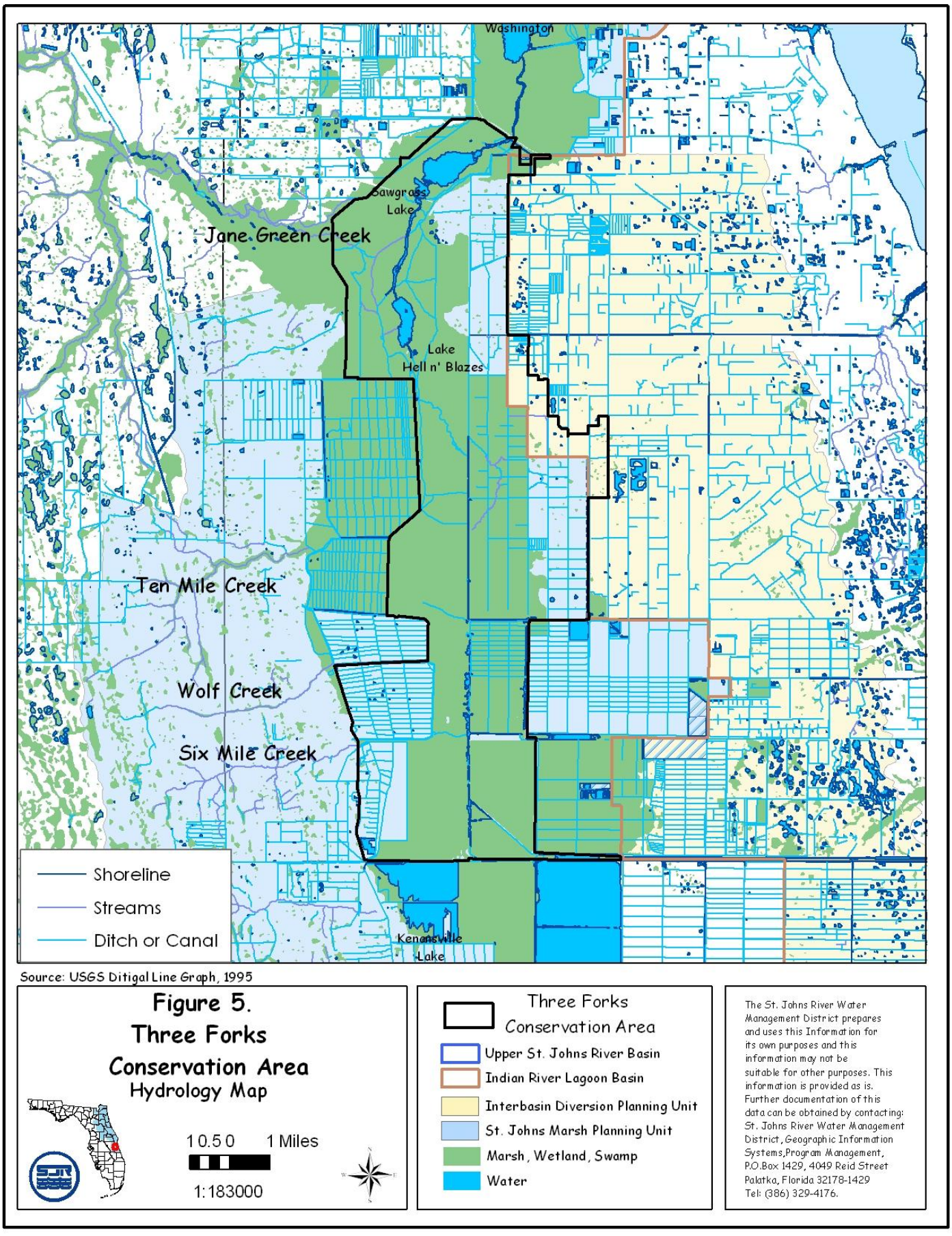
The headwaters of the St. Johns River are a vast expanse of wetlands through which water sheetflows north for nearly 30 miles before forming a distinct river channel. The marshes of the Upper Basin constitute one of the largest natural marshes in the state, outside of the Everglades, and the largest in the central part of the state. The wetlands comprise a diverse ecosystem containing a variety of habitat types including freshwater marsh, shallow lake, cypress and hardwood swamp, and river channel.

Water flows into TFCA via a network of interconnecting creeks west of the property as well as from drainage south of the property from Blue Cypress Conservation Area and east of the property accepting agricultural drainage through canals (Figure 5). South of TFCA lies Blue Cypress Conservation Area and more of the St. Johns River headwaters. From here water flows north from Blue Cypress Lake as well as from Blue Cypress Water Management Area and the St. Johns Water Management Area (SJWMA). Water flows through water control structures from Blue Cypress Lake and SJWMA to the St. Johns Marsh Conservation Area in TFCA.

South and west of the Conservation Area, Ten Mile Creek, Wolf Creek, and Six Mile Creek each run into St. Johns Marshes. Conservation easements directly west of TFCA and just north of the Fellsmere Grade and the C-54 canal include Escape Ranch, Far Reach Ranch, and Wolf Creek Ranch. These easements restrict development, which protect these creeks and properties while also buffering the conservation area.

In the north at Triple N' Ranch Wildlife Management Area, West Branch Crabgrass Creek flows into Crabgrass Creek, which is found in Bull Creek Wildlife Management Area. Bull Creek, also in Bull Creek Wildlife Management Area runs north to meet with Crabgrass Creek. These creeks then flow into Jane Green Creek, which flows into Jane Green Swamp on private property. The District holds a flowage easement and a conservation easement in the Jane Green Creek and swamp areas. Jane Green Swamp then flows into St. Johns Marsh Conservation Area in TFCA. St. Johns Marsh Conservation Area surrounds the three river forks, Lake Hell n' Blazes, the St. Johns River, and Sawgrass Lake.

TFCA elevations range from 24 feet NGVD in St. Johns Marsh Conservation Area just north of the Fellsmere grade to 7 feet NGVD within Lake Hell n' Blazes or 13 feet NGVD in the marsh adjacent to the lakes (Figure 6). The land slopes down as the river flows north along the river channel. The eastern-most of the three river forks stands at 11 feet. Levees are found on various parcels within the property, which top out at 25 feet. On the east side of the property, a levee trail extends from Thomas O. Lawton Recreation Area south to the inside border of Broadmoor Marsh to the outside border of the T.M. Goodwin property and terminates at C-54 Canal.


Washington
Sawgrass Lake
Jane Green Creek
Lake Hell n' Blazes
Ten Mile Creek
Wolf Creek
Six Mile Creek
Kenansville Lake
Shoreline
Streams
Ditch or Canal
Source: USGS Ditigal Line Graph, 1995
Figure 5.
Three Forks Conservation Area
Hydrology Map
1 0.5 0 1 Miles
1:183000
Three Forks Conservation Area
Upper St. Johns River Basin
Indian River Lagoon Basin
Interbasin Diversion Planning Unit
St. Johns Marsh Planning Unit
Marsh, Wetland, Swamp
Water
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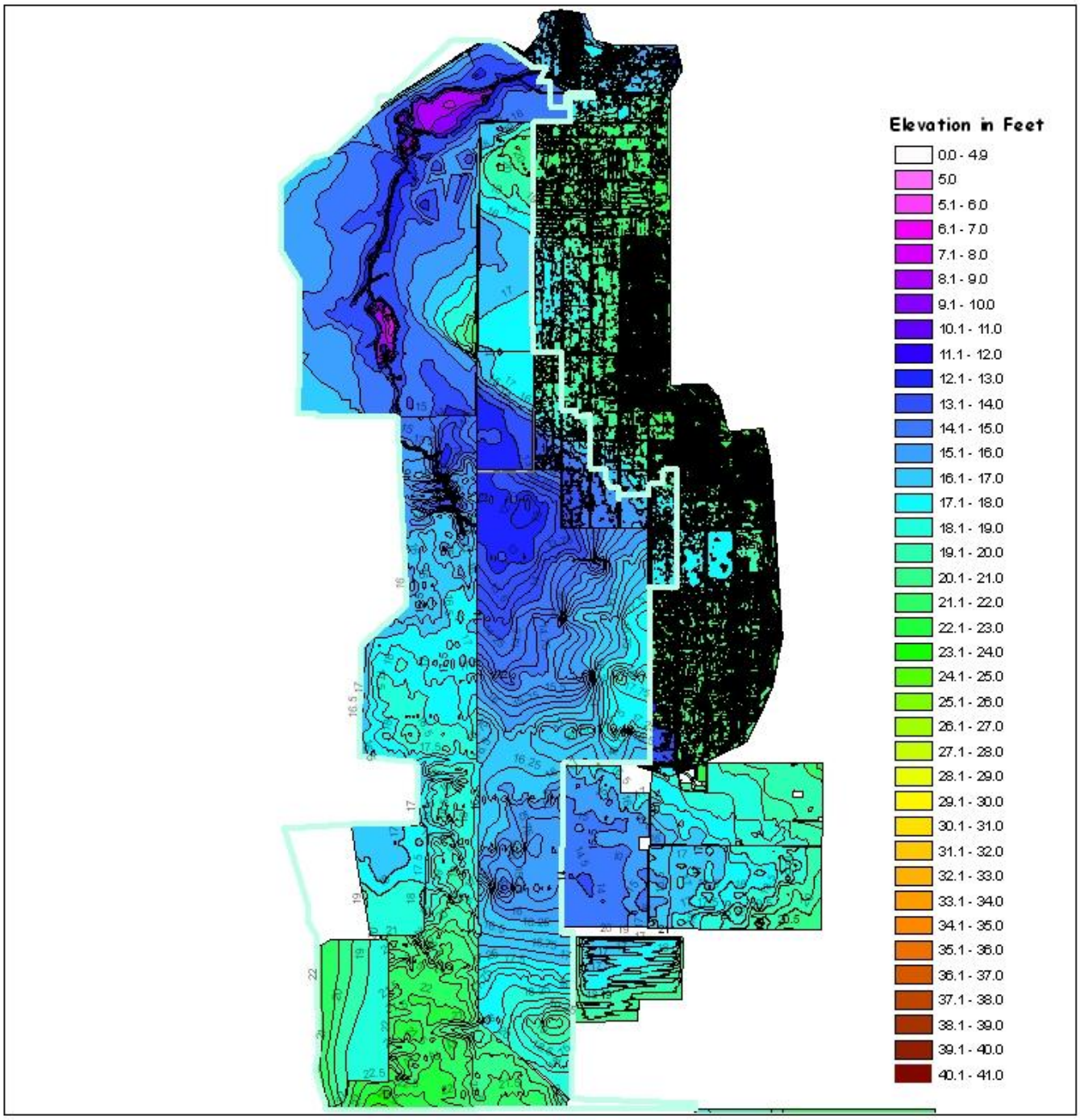

Figure 6.
Three Forks
Conservation Area
Elevation Map

1 0.5 0 1 Miles

1:150000

Legend

Three Forks Conservation Area

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Wildlife

TFCA provides important habitat for both fish and wildlife, including Federally and state endangered species such as the snail kite and wood stork, the threatened bald eagle and crested caracara, state threatened American kestrel and Florida sandhill crane, and the Federal experimental population and Florida Species of Special Concern whooping crane. Species lists are fairly comprehensive for TFCA (Appendix A). Vertebrate species observed include alligator, green anole, pig frog, green tree frog, raccoon, softshell turtle, round-tailed muskrat, Virginia opossum, white tailed deer, feral hog, bobcat, river otter, marsh rabbit, cotton rat, cotton mouse, great blue heron, little blue heron, tricolored heron, green heron, great egret, snowy egret, willet, white and glossy ibis, and osprey, among others. Numerous species of fish are associated with Florida river systems and are likely to occur within the Conservation Area. These species include largemouth bass, warmouth, bluegill, spotted sunfish, redear sunfish, redbreast sunfish, and bluespotted sunfish. A species list is included in Appendix A.

Soils

According to data produced from the county soil survey, soil types found in TFCA are dominated by Everglades and Micco (Figure 7). The mean annual precipitation in areas where these soils are found is known to be around 55 inches. The United States Department of Agriculture, Soil Conservation Service, was used to gather soil information about the soil types and produce the following descriptions of the dominant soil types found on the property.

Anclote – Found in very deep, very poorly drained, rapidly permeable soils in depressions, poorly defined drainage ways, and floodplains. Formed in thick beds of sandy marine sediments. Slopes range from 0-1%. Used mainly for range and woodland. Native vegetation consists of cypress, bay, pop ash, pond pine, cabbage palm, red maple, and juncus species.

Basinger – Very deep, very poorly drained, rapidly permeable soils in depressions, poorly defined drainage ways, and floodplains. Formed in thick beds of sandy marine sediments. Slopes range from 0-2%. Natural vegetation consists of wax myrtle, St. Johns wart, maidencane, pineland threeawn, cypress, slash pine, longleaf pine, pond pine, and other water tolerant plants.

Canova – Consists of very deep, very poorly drained moderately slowly permeable soils in depressions, freshwater swamps, and marshes. Formed in loamy marine sediments. Most areas are in their natural state and are used for wildlife habitat. Vegetation dominated by reeds, sedges, saw grass, lilies, scattered cypress, maple, gum, bay, and myrtle.

Chobee – Very deep, very poorly drained, slowly to very slowly permeable soils in depressions, flats, and occasionally on river floodplains in the Lower Coastal Plain.

Formed in thick beds of loamy marine sediments. Drained areas are used for citrus, pasture, and range. Most of the soils remain in their natural state and have vegetation consisting of pickerelweed, lilies, sawgrass, and scattered swamp maples in treeless areas. Some areas have a growth of ash, gum, maple and cypress.

Eaugallie – Deep or very deep, poorly or very poorly drained, slowly permeable soils in flats, sloughs, and depressional areas. They formed in sandy and loamy marine sediments in peninsular Florida. Slopes range from 0-2%. Natural vegetation consists of longleaf pine, south Florida slash pine, and saw palmetto. The understory vegetation consists of inkberry, southern bayberry, and pineland threeawn.

Everglades – Very deep, very poorly drained, rapid to very rapidly permeable organic soils in freshwater swamps and marshes that flood for very long periods. They formed in deposits of hydrophytic plant remains. Slopes are less than 1%. Natural vegetation includes Carolina willow, sawgrass, reeds, lilies, and other aquatic fibrous, nonwoody plants and hardwood trees.

Floridana – Very deep, very poorly drained, slowly to very slowly permeable soils on low, broad flats, flood plains, and in depressional areas. They formed in thick beds of sandy and loamy marine sediments. Slopes in areas where this soil is found ranges from 0-1%. Natural vegetation consists of sand cordgrass, cabbage palmetto, myrtle, and pineland threeawn. In depressional areas, most of the soil has a sparse to dense cover of cypress. In floodplains, the vegetation is mostly sweetgum, black gum, red maple, and cypress.

Gator – Very poorly drained organic soils that formed in moderately thick beds of hydrophytic plant remains overlying beds of loamy and sandy marine sediments. They are in depressions and on floodplains with slopes less than 1%. Almost all areas are in marsh or swamp wetlands used for wildlife and water storage. Native vegetation is mostly cordgrass or Jamaica sawgrass, maidencane, coastal palmetto, redosier dogwood, or swamp vegetation including bald cypress, sweetgum, red maple, and American hornbeam.

Holopaw – Deep and very deep, poorly and very poorly drained soils formed in sandy marine sediments. Slopes range from 0-2% and are found on low-lying flats, in poorly defined drainages or depressional areas. Native vegetation is scattered slash and pond pine, cabbage and saw palmettos, scattered cypress, myrtle, sand cordgrass, and pineland threeawn.

Malabar – Very deep, poorly to very poorly drained soils in sloughs, shallow depressions, and along flood plains. Formed in sandy and loamy marine sediments. Slopes in areas where these soils are found range from 0-2%. Native vegetation consists of scattered slash pine, cypress, wax myrtle, cabbage palm, pineland threeawn, and maidencane. In depressions, the vegetation is dominantly St. Johns wort or maidencane.

Micco – Deep, very poorly drained soils that formed in herbaceous organic material and sandy and loamy mineral material. These soils are on flood plains, freshwater marshes, and depressions. Slopes in areas where these soils are found are less than 2%. Most areas are in natural vegetation of sawgrass, lilies, sedges, cypress, bay, maple, and blackgum used for range, wildlife habitat, or water storage areas.

Myakka – Deep and very deep, poorly to very poorly drained soils formed in sandy marine deposits. These soils are on flatwoods, high tidal areas, flood plains, depressions, and gently sloping to barrier islands. Slopes in areas where these soils are found range from 0-8%. Native vegetation includes longleaf and slash pines with an undergrowth of saw palmetto, running oak, inkberry, wax myrtle, huckleberry, chalky bluestem, pineland threeawn, and scattered fetterbush.

Pineda – Deep and very deep, poorly and very poorly drained, very slowly permeable soils in depressions, low hammocks, poorly defined drainageways, broad low flats, and floodplains. Formed in thick beds of sandy and loamy marine sediments on the lower coastal plain. Slopes in areas where these soils are found range from 0-2%. Native vegetation consists of slash pine, cypress, myrtle, cabbage palm, blue maidencane, chalky bluestem, blue point panicum, sedges, pineland threeawn, and sand cordgrass.

Riviera – Very deep, poorly drained, very slowly permeable soils on broad, low flats and in depressions in the lower coastal plain. They formed in stratified sandy and loamy marine sediments on the lower coastal plain. Slopes in areas where these soils are found range from 0-2%. Native vegetation consists of slash pine, cabbage, and saw palmetto, scattered cypress, maidencane, and pineland threeawn.

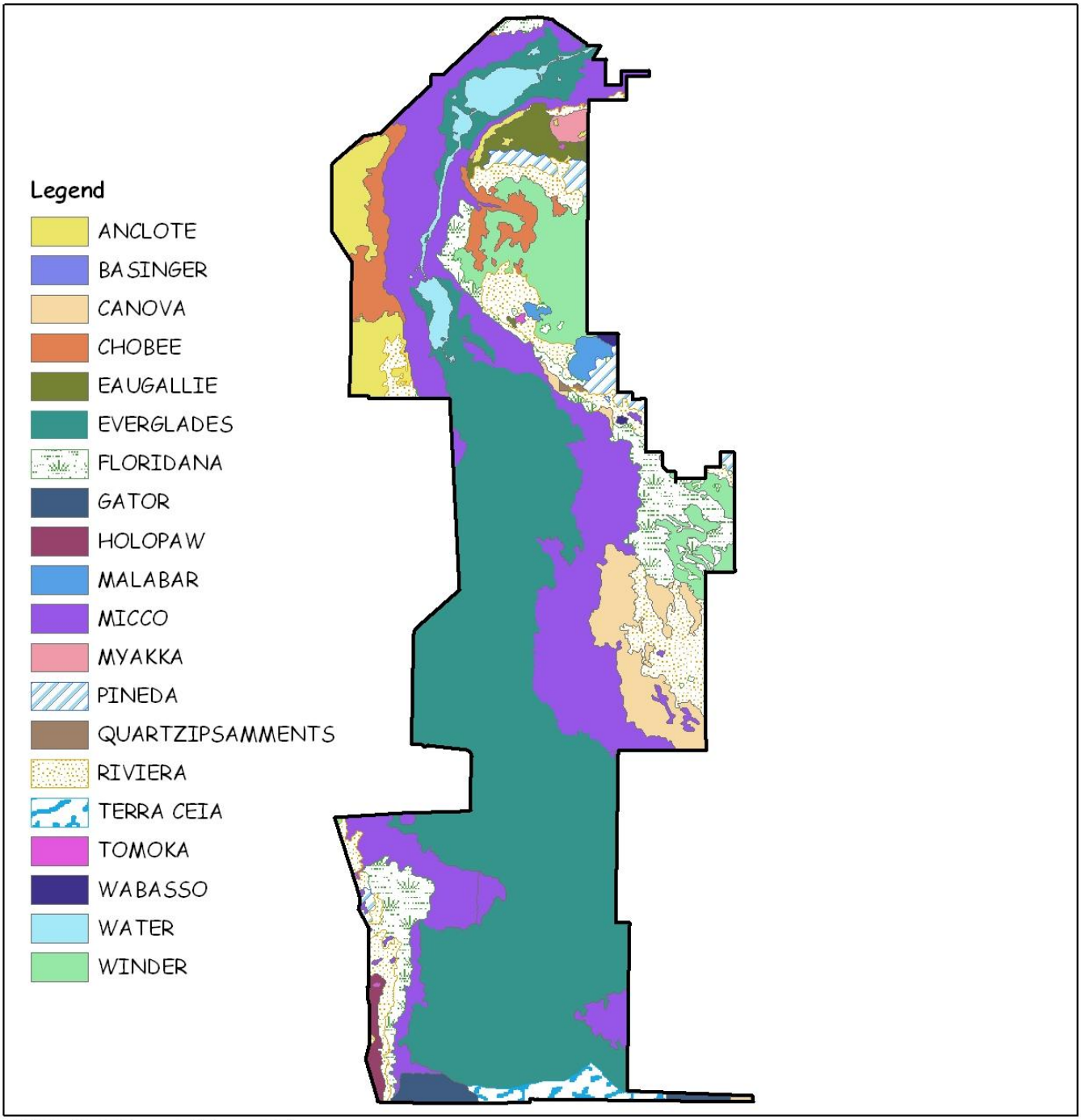
Terra Ceia – Very deep, very poorly drained organic soils that formed from nonwoody fibrous hydrophytic plant remains. They occur mostly in nearly level freshwater marshes and occasionally on river floodplains and in tidal swamps or flats. Natural vegetation includes sawgrass, lilies, sedges, reeds, maidencane, and other aquatic plants. Wooded areas include cypress, black gum, cabbage palm, Carolina ash, loblolly bay, red maple, sweet bay, and pond pine. Large undeveloped areas are used for wildlife habitat and water storage.

Tomoka – Deep, very poorly drained, moderately permeable soils that formed in decomposed dark reddish brown and black organic material about 22 inches thick over sand and loamy mineral material. Slopes range from 0-2% where these soils are found. Uncleared areas are used for water storage and as wildlife habitat. Native vegetation found in these soils includes sawgrass, lilies, reeds, sedges, myrtle, and other aquatic plants. Cypress, red and white bay, maple, and pond pine are common trees.

Wabasso – Deep or very deep, very poorly drained, very slowly and slowly permeable soils on flatwoods, floodplains, and depressions in Peninsular Florida. They formed in sandy and loamy marine sediments. Slopes range from 0-2% in areas where these soils are found. Natural vegetation consists of longleaf pine, slash pine, cabbage

palm, and live oak with an understory of sawpalmetto, laurel oak, wax myrtle, chalky bluestem, and pineland threeawn.

Winder – Very deep, poorly drained, slowly to very slowly permeable soils on broad, low flats, and depressional areas. Formed in loamy marine sediments on the lower coastal plain. Slopes in areas where these soils are found range from 0-2%. Most areas are native vegetation and used for wildlife habitat. Natural vegetation consists of cordgrass, maidencane, cabbage palmetto, saw palmetto, and pineland threeawn.



SJWMD, NRCS County Soil Survey 2001

Figure 7.
Three Forks Conservation Area
Soils Map

1 0.5 0 1 Miles

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Legend

Three Forks Conservation Area

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Natural Communities

The 51,464 acres that comprise TFCA consist predominantly of wetland communities including wet prairie, floodplain marsh, floodplain swamp, hydric hammock and floodplain forest. The area is a component of the headwaters of the St. Johns River with alterations from drainage mostly from agricultural pursuits.

According to a 1998 District analysis, the primary communities within the restoration area in the 1920s were shallow marsh with sawgrass as well as wet prairie and scattered depressional ponds. In the 1920's, Sawgrass Lake, Little Sawgrass Lake, and Lake Hell n' Blazes included islands vegetated by wax myrtle and elderberry species.

By the 1940s, the area still included herbaceous wetland communities, shallow marsh, wet prairie, swamp shrub and unique mosaics of deep sloughs intermixed with shallow marsh. Most areas continued to be dominated by sawgrass. All three lakes were covered with deep and shallow marsh plant species and floating islands with very little open water. The building of C-40 levee is evident on 1943 aerial photos and the beginning of agricultural development occurs; however the aerials reflect the still relatively unchanged nature of the area at this time.

On 1995 aerials, northern areas formerly consisting of wet prairie have been largely converted to semi-improved pasture. The western sites are approximately 80% agriculture. In the southeast, where shallow marsh once dominated, free-floating and open water communities account for 20% of the remaining area. The shallow and deep marsh species in the lakes are virtually non-existent with hydrilla covering 75% of Sawgrass Lake.

Today the area is in the process of being restored to marsh habitat with areas of open water. TFCA is typically dominated by one or more emergent species such as sand cordgrass (*Spartina bakeri*), pickerelweed (*Pontederia cordata*), water-primrose (*Ludwigia* sp.), smartweed (*Polygonum spp.*), arrowhead (*Sagittaria* spp.), maidencane (*Panicum hemitomon*) and scattered areas of sawgrass (*Cladium jamaicense*). Dense stands of wetland shrubs are contiguous along the river channel and portions of lake shorelines (especially in areas where there has been significant ground disturbance). The expansion of wetland shrub habitats in this area is probably a result of the loss of natural hydrologic and fire regimes, and possibly an increase in soil nutrients over the past 60 years.

The forested wetlands at TFMCA are found as fringe communities in the northwest section of TFCA. Mixed wetland hardwood forests, cypress complexes and cabbage palm/live oak hammocks are the main types of forest communities in this area.

Alterations to hydrology, fire regime and the amount of nutrients entering the floodplain system are due to past land conversion practices and have adversely impacted the quality

of many areas. Typically this is evidenced by a change from herbaceous wetland species to more woody vegetation and dense stands of cattail. These alterations have resulted in wetland systems that have changed from predominantly freshwater marsh to shrub swamp.

Within and surrounding the marshes are occasional hardwood communities such as bay swamps, cabbage palm and live oak hammocks, various mixed hardwood swamps, and cypress communities. The wetland plant communities constitute over 75 percent of the land cover at TFCA.

Descriptions of natural communities at TFCA are found below (Figures 8, 9). They have been characterized using descriptions published by the Florida Natural Areas Inventory, *Guide to the Natural Communities of Florida*.

Basin Marsh (17,140 acres, 35%)
Basin marsh is the predominant natural community within TFCA. Basin marsh is characterized as an herbaceous or shrubby wetland situated in a relatively large and irregular shaped basin. Typical vegetation consists of sawgrass, pickerelweed, common reed, panicum, maidencane, cutgrass, southern watergrass, pennywort, southern needle leaf, redroot, soft rush, primrose, arrowhead, elderberry, spikerush, and buttonbush. Fire maintains this open, herbaceous community by restricting shrub invasion. Marsh burn intervals should be every 1-3 years. Areas that are currently basin marsh will have a longer burn interval; areas that are succeeding to basin swamp will have shorter burn intervals.

Basin Swamp (13,900 acres, 28.4%)
Basin swamp is found throughout TFCA. Portions of this community were formerly basin marsh that has succeeded to shrubbier species due to fire suppression and shorter hydroperiod. Basin swamp is typically characterized as a relatively large and irregularly shaped basin that is not associated with rivers, but is vegetated with hydrophytic trees and shrubs that can withstand an extended hydroperiod. Much of this community at TFMCA is dominated by Carolina willow. The portions of these areas that have succeeded from basin marsh will be encouraged to return to that community through chopping, prescribed fire, or herbicide.

Wet Prairie (9,845 acres, 20%)
Wet prairie is found bordering and typically grades into the basin marsh areas of TFCA. Characterized as a treeless plain with sparse to dense groundcover of grasses and herbs including maidencane, spikerush, and other herbaceous vegetation. Fire intervals are every 2-4 years.

Floodplain Swamp (1,025 acres, 2%)
Floodplain swamp at TFCA occurs on the northwest border of the property at the Jane Green Swamp. Trees are dominated by bald cypress. Floodplain swamp occurs on flooded soils along stream channels and in low spots in oxbows within river floodplains and is flooded for most of the year.

Upland Mixed Forest (96 acres, 0.2%)
Upland mixed hardwoods are found in trace quantities in the northeast areas of TFCA near levees at higher elevations. These forests are typically comprised of live oak, sweetgum, red cedar, cabbage palm, and slash pine.

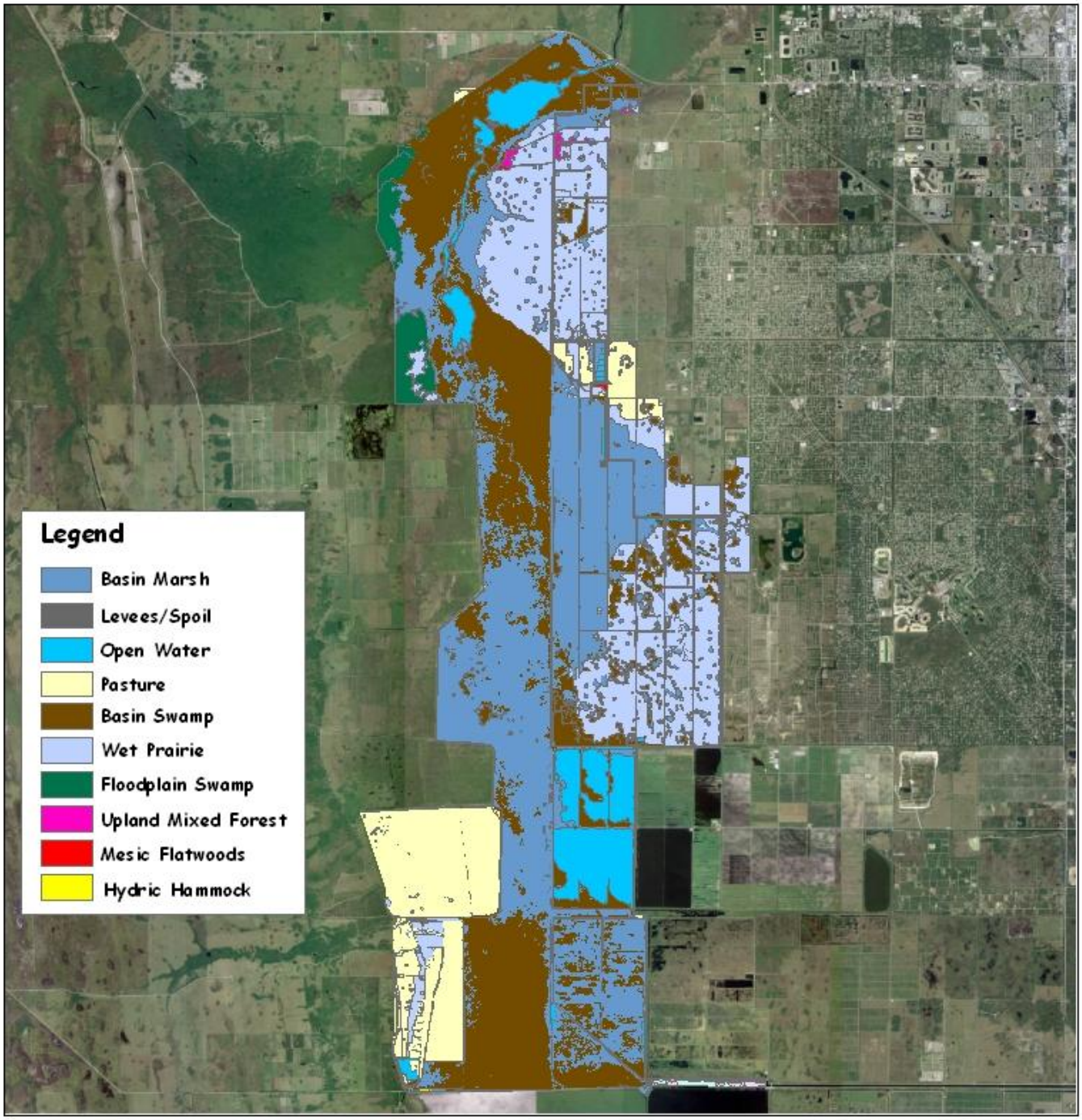
Mesic Flatwoods (12 acres)
Mesic flatwoods at TFCA are a superficial community that are present in small areas in the northeast area of the property due to drainage and fire suppression. Mesic flatwoods are typically an open canopy forest of widely spaced trees with little or no understory, but a diverse ground cover of grasses, sedges, herbs and shrubs.

Hydric Hammock (15 acres, 0.02%)
Hydric hammock is found in a trace quantity in the southwest portion of the Conservation Area south of the Tucker borrow pit. Hydric hammock typically consists of hardwoods and cabbage palm and grades into basin swamp.

Pasture (2,800 acres, 5.7%)
Pasture and areas of levees and spoil banks are also found in the Conservation Area. Pasture is found in the northeast areas and southwest areas of TFCA where cattle leases are currently being managed.

The lakes at TFCA historically supported a diversity of submerged aquatic plants such as eelgrass (*Vallisneria americana*) and pondweed (*Potomogeton* spp.). However, hydrilla, an extremely invasive, exotic aquatic plant, has infested the lakes. There is ongoing invasive exotic plant management run by the District's Invasive Plant Management program. The project has been successful in achieving maintenance control levels of exotic and invasive plant species. The property is regularly monitored, and chemical treatments are applied as necessary in order to keep the populations from spreading.

Fire plays an important role in maintaining species diversity in these floodplain and associated upland communities. Historically, most fires had been naturally caused lightning fires. The District has developed a prescribed burn program at TFCA to mimic the natural fire regime under a more controlled setting.



Source: SJRWMD ES, 2001

Figure 8.
Three Forks Conservation Area
Natural Communities Map

1 0.5 0 1 Miles

1:152000

Three Forks Conservation Area

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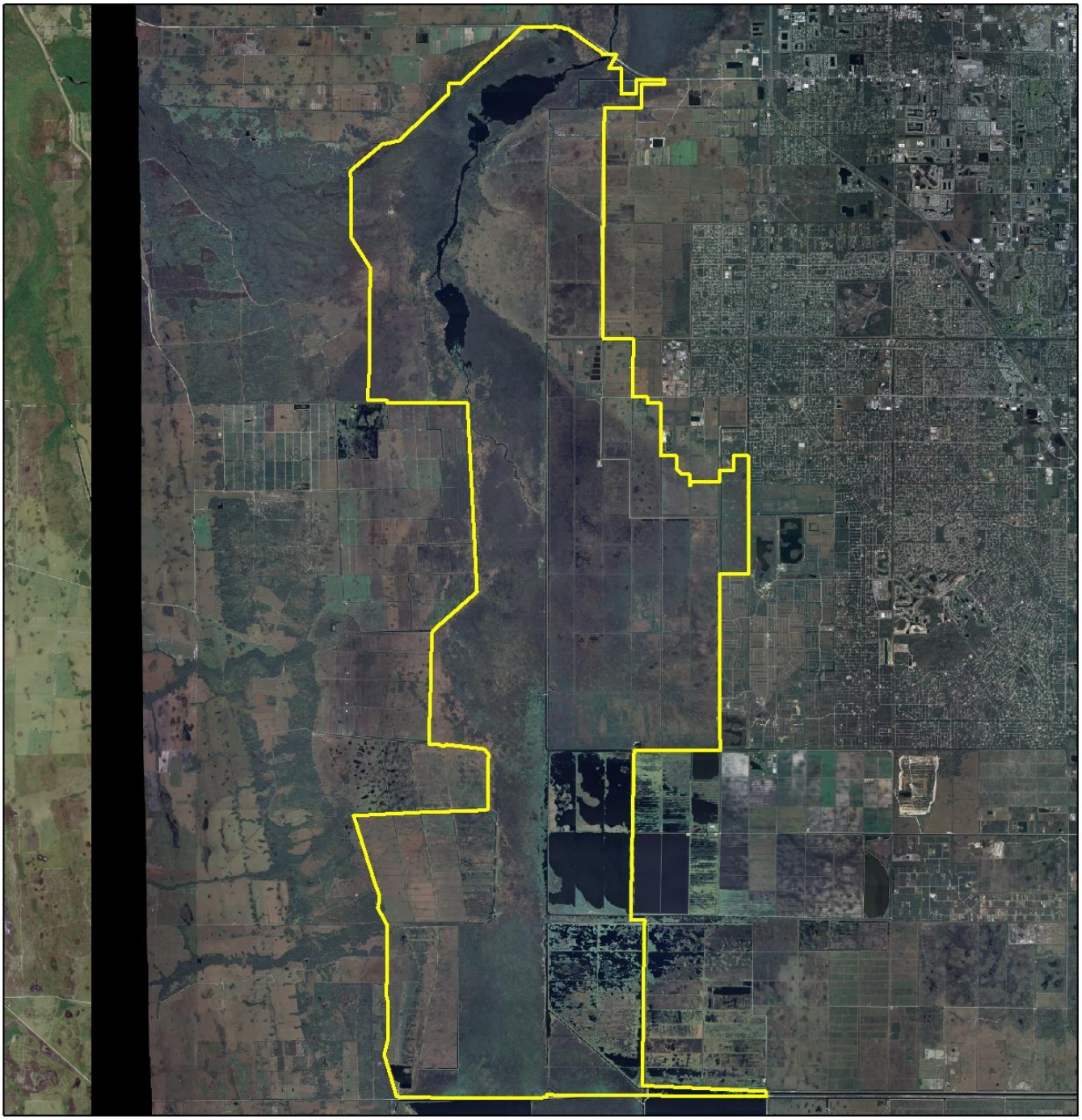

Source: Brevard County Aerial Imagery, 2005

Figure 9.
Three Forks Conservation Area
2005 Aerial Imagery

1 0.5 0 1 Miles

1:150000

Legend

Three Forks Conservation Area

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PAST MANAGEMENT SUMMARY

This section outlines all strategies in previous plans and summarizes management progress.

Security

2000 Plan Strategy: Maintain signage, fences, and gates.
Status: Signage, fences, and gates have been maintained.
2000 Plan Strategy: Continue coordinating with local law enforcement and contracted security.
Status: The District continues to coordinate law enforcement with Plantation Security, Brevard County Sheriffs Office, and FWC.
2000 Plan Strategy: Establish security residence at TFCA.
Status: Security residence has been established at TFCA at the western end of Malabar Road. Part of the responsibility of the resident is daily operation of the Tom Lawton Recreation Area.
2000 Plan Strategy: Coordinate with FWC to establish and enforce WMA rules.
Status: The District continues to coordinate with FWC to establish and enforce WMA rules.

Restoration

2000 Plan Strategy: Sixmile Creek Restoration Project
Status: The construction of this project has been completed and the area is currently functioning as planned. In the first phase, a pump was installed to control water levels during construction. In the second phase, marsh vegetation was allowed to recolonize through shallow flooding. In the third phase, levees were breached in strategic areas in order to reconnect the area to the St. Johns Marsh Conservation Area.
2000 Plan Strategy: Broadmoor Marsh Restoration Area Project
Status: Originally this area was part of the TFCA and included in the plan. This project has been completed and is now managed by FWC. Reservoirs were created in order to create habitat for a waterfowl management area. The area is now part of T.M. Goodwin Waterfowl Management Area.
2000 Plan Strategy: Three Forks Marsh Conservation Area Project
Status: The parcels together known as Three Forks Marsh Conservation Area (Figure 2) had a revised restoration plan created in 1999 as a result of a significant change in the project footprint from the original USACOE plan for the Upper Basin. This change prompted the need for a Supplemental Environmental Impact Statement (SEIS).
The SEIS evaluated the proposed impacts to habitat and the corresponding effects on endangered species. The SEIS found no potential harmful effects to the endangered species found at TFCA. Though the project has been approved to move forward, federal funding issues have delayed construction. Currently, USACOE funding has been secured to begin construction of the project in summer 2007. Further details may be found in the Implementation section under the Restoration component of this plan.
2000 Plan Strategy: Continue Vegetation Mapping of Upper Basin

Status: District Environmental Science staff completed a new land cover/land use GIS layer based on 2001conditions that was finalized in 2003.

Fire Management
2000 Plan: Continue to develop and implement the Annual Prescribed Fire Management Plan. This plan should include burn prescriptions, smoke management plans, maps, and a list of people to notify including Florida Division of Forestry (DOF) for authorization and possibly assistance, city/county officials, local fire and police departments, and neighbors.
Status: Yearly prescribed fire plans are created and have been followed. Prescribed burns were conducted in 2000, 2003, 2004, 2005, and 2006 in accordance with the Annual Prescribed Fire Management Plans. Wildfires occurred and were suppressed in 2001, 2004, and 2006.
2000 Plan: Develop a Comprehensive Fire Management Plan for the conservation area by 2001.
Status: A Comprehensive Fire Management Plan has been created and is found in Appendix B.

Water Resources
2000 Plan Strategy: Continue to evaluate and acquire additional lands deemed important for water quality improvements.
Status: The District has identified properties to acquire as part of the Five Year Land Acquisition and Management Plan. The District is in the process of acquiring property to facilitate the rediversion of canal C-1.
2000 Plan Strategy: Continue monitoring water quality in the conservation area.
Status: Water quality monitoring is conducted to detect trends, assess the effects of management actions, and to calculate pollutant loading. Dissolved oxygen is also being monitored. Total Maximum Daily Loads have been developed by the District in order to achieve the Pollutant Load Reduction Goal for the lakes as accepted by DEP.

Listed Species
2000 Plan Strategy: Continue surveying wading birds.
Status: Wading bird population surveying continues at TFCA. Lead division at the District is the Division of Environmental Sciences with cooperation by Division of Land Management.
2000 Plan Strategy: Identify special protection measures and management strategies for listed species and communities.
Status: Special protection measures and management strategies for listed species are completed when necessary.
2000 Plan Strategy: Begin survey to identify presence/absence of listed species.
Status: The District records staff observations of listed species.

Exotic Species
2000 Plan Strategy: Monitor and continue to treat exotic vegetation.
Status: The District's Invasive Plant Management Program treats exotics as an ongoing basis at TFCA. Species treated include hydrilla (*Hydrilla verticillata*), water hyacinth

(*Eichornia crassipes*), water lettuce (*Pistia stratiotes*), Brazilian pepper (*Schinus terebinthifolius*), cogon grass (*Imperata cylindrica*), Melaleuca (*Melaleuca quinquenervia*), air potato (*Dioscorea bulbifera*), Lygodium (*Lygodium microphyllum*), and tropical soda apple (*Solanum viarum*).

During 2005-2006 District staff treated 107.5 acres of Brazilian pepper at TFCA. Areas treated include the toes of levees, road rights of way, ditch banks, fences and fire lines. Areas of special concern that were treated include hardwood hammocks, cypress heads and wildlife islands. Treatment areas include those with endangered species and as well as those with new outbreaks of invasive species.

During 2005-2006 around 400 acres of lygodium were treated with aerial applications of Escort herbicide. The largest concentration of lygodium is found on the south central border of the property (Figures 1 and 2, Appendix D). The other known areas of lygodium were treated with Rodeo (Glyphosate) or AquMix (Triclopyr) with a basil penetrating oil.

2000 Plan Strategy: Continue agreement with DEP for the treatment of exotic/invasive species in the Upper St. Johns River and associated lakes.

Status: The contract with DEP is ongoing. The Florida Department of Environmental Protection (DEP) provides funding and the District is contracted to treat water hyacinth, water lettuce and hydrilla from Blue Cypress Lake north to Lake Washington, ending at the Lake Washington weir.

Access

2000 Plan Strategy: Continue regular maintenance on access areas.

Status: Access areas have been maintained.

2000 Plan Strategy: Maintain signs and kiosks within the area.

Status: Signs and kiosks within the area have been maintained.

Recreation

2000 Plan Strategy: Continue coordinating with USACOE and local governments to lower the cost of development of recreation sites while adhering to the Local Cooperation Agreement.

Status: The District has coordinated with local governments to develop recreation sites. Thomas O. Lawton Recreation Area and Fellsmere Grade Recreation Area each within TFCA were developed as part of the cost-share project.

Cultural Resources

2000 Plan Strategy: Monitor sites for any disturbance.

Status: Five historic archaeological sites exist at TFCA according to the Master Site File. Any construction or restoration projects that may impact these resources are evaluated and modified to minimize impacts.

2000 Plan Strategy: Coordinate with the Florida Division of Historical Resources and take action to reduce any potential disturbance of any sites identified.

Status: Upon any potential disturbance to historical sites, the District coordinates with Florida Division of Historical Resources to reduce any potential disturbance of identified sites.

Environmental Education
2000 Plan Strategy: Evaluate potential for developing environmental education opportunities on the property.
Status: The District offers many environmental education programs that are provided in the form of workshops, online information and materials, or by requesting speakers or specific programs.

Cooperative Agreements
2000 Plan Strategy: Maintain agreements to assist with the management and maintenance of the conservation area.
Status: District agreements have been monitored and are maintained to continue implementing distribution of responsibility as well as providing services to the public utilizing the conservation area.

IMPLEMENTATION

The following sections outline land management strategies for resource protection, land use, and administration for the next five years.

RESOURCE PROTECTION AND MANAGEMENT

Restoration

Most of the restoration projects within the Upper Basin mentioned in the 2000 TFCA Land Management Plan have been completed. Federal funding shortfalls have delayed the construction of the Three Forks Marsh Conservation Area, which is within TFCA. Another restoration project the District anticipates completing within the next three years is the C-1 Rediversion Project.

Engineering Projects

Three Forks Marsh Conservation Area – This project will divert runoff from eastern development that currently flows through canals directly into the St. Johns Marsh Conservation Area. The canals currently flowing east west into the St. Johns Marsh Conservation Area will be plugged and some levees associated with the canals will be degraded. Interior canals flowing north south will be installed to help the flow of water through the marsh, creating a filtering system. This construction will create one large marsh area from canal C-54 to south of the C-1 Retention/Detention Area (Figure 2). Water flowing in from the east will flow into Three Forks Marsh Conservation Area and will flow north via gravity through the area. This northward gravitational movement will cause water to flow through the marsh system allowing nutrients and sediments to be filtered. After the filtering process, water will then flow into the St. Johns Marsh Conservation Area over a weir. Additional information regarding the Three Forks Marsh Conservation Restoration Area can be found in Appendix E.

C-1 Rediversion Project – This project will redivert water currently flowing into the Indian River Lagoon from the C-1 canal (Figure 2). Water that would normally be allowed to run into the Indian River Lagoon will flow into the C-1 Retention Area. Water will be pumped into Sawgrass Lakes Water Management Area (SLWMA) through a conveyance canal. Here it will be filtered by a marsh system. The water will then flow into St. Johns Marsh Conservation Area through a culvert. In periods of high water levels, water will be temporarily stored in the C-1 Detention Area. When water levels downstream allow, water from the C-1 Detention Area will flow into the C-1 Retention Area and through SLWMA to the river in SJMCA. Soil from an area of no more than 2 acres will be excavated within Sawgrass Lakes Wildlife Management Area to fill existing internal farm ditches and the gaps in the adjacent levee along the C-40 canal. At least 1200 acre-feet of soil will be removed from the C-1 Retention Area to provide additional water storage capability in this area.

During restoration construction, conservation areas may periodically be closed to public access for recreation, hunting, and other uses. The District will notice the public at Recreational Public Meetings, onsite, and on hunt brochures.

Natural Community Project

Some areas of the marsh have converted from an open herbaceous condition to a closed woody condition (Figure 8). This is likely a result of past impacts to the natural hydrologic and/or fire regimes. In an effort to reverse this conversion the District is treating areas of shrub-dominated marsh with herbicide and/or chopping or mowing. Approximately 1,000 to 2,000 acres will be treated annually. Due to the anticipated need for re-treatment, and the variability of weather, it is anticipated that a total of 5,000 acres will be treated during the planning period of this document.

Herbicides will be applied aerially to shrub dominated areas in hopes that remnant herbaceous vegetation can re-colonize the site and fire can again become the tool controlling species composition. In locations where soil conditions will support the use of drum chopping or mowing, these tools will be used to achieve a similar result. The Division of Environmental Sciences shall cooperatively develop a list of priority sites and shall monitor the progress and accomplishments.

<u>Restoration Strategies</u>

- Complete Three Forks Marsh Conservation Area restoration project.
- Complete the C-1 Rediversion Project.
- Begin to treat woody vegetation at TFCA.

<u>Water Resource Protection</u>

Water quality monitoring continues in Three Forks Conservation Area. This monitoring is used to detect trends and assess the effects of management actions, as well as to calculate pollutant loading. The District has initiated a dissolved oxygen-monitoring

project, which will aid in our understanding of the timing and possible causes of low dissolved oxygen levels in this area.

A Pollutant Load Reduction Goal (PLRG) for phosphorous was developed by the District for Upper Basin Lakes, including those in TFCA. The concentration determined to achieve the PLRG is 0.09-mg/l total phosphorus (TP). This PLRG was accepted by DEP and is the basis for the phosphorus Total Maximum Daily Load (TMDL) that was established in 2006. TMDL's have been established for Lake Hell n' Blazes, and the river above Sawgrass Lake. TMDLs for the other water bodies are scheduled for 2009.

Four water bodies in Three Forks Conservation Area have been designated as impaired by DEP including Sawgrass Lake, the St. Johns River above Sawgrass Lake, Lake Hell n' Blazes and the stream channel south of Lake Hell n' Blazes. Parameters determining impairment include dissolved oxygen and nutrients. Additionally, Sawgrass Lake is impaired due to mercury levels found in fish.

Hydrology is monitored in the Upper Basin in order to assess how well flood protection requirements and environmental criteria are being met through the regulation of water levels. Typical water level regulation schedules in other areas are designed to maximize stormwater storage during the wet season and store water for irrigation water supply during the dry season. This is contrary to the natural hydrologic regime. The water level regulation schedule for the Three Forks Marsh Conservation Area, within the TFCA, was developed to accommodate discharges from upstream areas and address environmental considerations including downstream water quality, wetland habitat and prevention of soil oxidation.

Water Resource Protection Strategies

- Continue water quality and dissolved oxygen monitoring.
- Contribute to DEP-led effort to develop a basin management plan to achieve established TMDLs.

Fire Management

Fire is a significant factor controlling the character of vegetation in Florida. The primary use of fire in the Upper Basin is to mimic the effects of the natural fire regime in order to maintain and manage vegetation patterns and succession. The use of fire is essential for managing plant communities and wildlife, managing and restoring ecosystems, and controlling fuel levels. Fire at TFCA is conducted predominately through the use of aerial burning. Should prescribed burning not be feasible, chemical or mechanical methods may be used in order to mimic the effects of prescribed fire and to provide fuels management. Firebreaks may be constructed as needed.

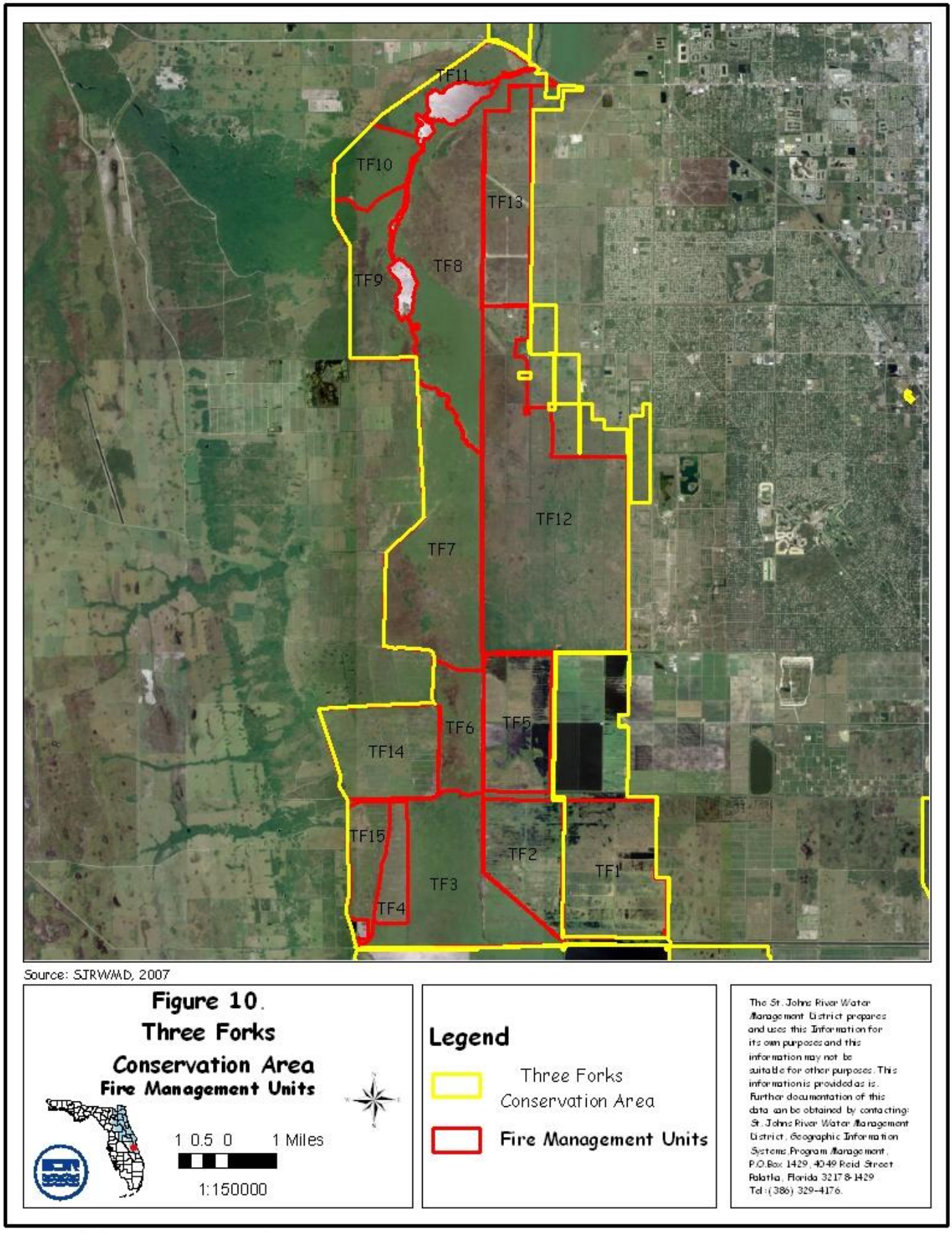
A Comprehensive Fire Management Plan for the conservation area has been created and will be implemented.

Table 2: Fire Management Activities 2000-2006

Type of Fire	Zone	Plant Community	Date	Acres Applied	Acres Burned Estimate
Prescribed Burn	TF 8	Marsh	2/22/2000	5,800	3,700
Prescribed Burn	TF 12 Partial	Sawgrass Marsh	2/18/2003	600	600
Prescribed Burn	TF 12 Partial	Sawgrass Marsh	3/7/2003	300	259
Prescribed Burn	TF 8, 10	Marsh	3/11/2004	7,147	3,900
Prescribed Burn	TF 3	Marsh	3/24/2004	4,100	92
Wildfire, Prescribed Burn	TF 6	Marsh	3/24/2004	1739	300, 500
Wildfire	TF 7	Marsh	3/24-31/2004	1,012	1,357
Prescribed Burn	TF 13	Marsh	5/3/2005	2,100	1624
Prescribed Burn	TF 12	Marsh	3/28/2006	8,300	8300
Wildfire, arson	TF 2 and TF 1 (T.M. Goodwin)	Marsh, Muck	2/17, 2/18/ 2001	2200, 400	2,600
Wildfire, arson	TF 6, 7	Marsh	3/19/2006	470	470
Wildfire, arson	TF 12	Marsh	3/25, 26, 27/2006	850	850
Wildfire, muck reburn	TF 12	Muck reburn, Marsh	May, June 2006	1,000	1,000
Wildfire, arson, Prescribed	TF 7	Marsh	2/25, 26/2007	1200, 800	3000

Fire Management Strategies

- Implement the Annual Prescribed Fire Management Plan. This plan should include burn prescriptions, smoke management plans, maps, and a list of entities to notify (DOF for permit and possibly assistance, city/county officials, local fire and police departments, and neighbors).
- Follow the Comprehensive Fire Management Plan.



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Wildlife

TFCA is rich with wildlife, especially wading birds. All construction activities must be coordinated with USFWS according to the Avian Protection Plan, which applies to all migratory birds. The District's Environmental Science staff monitors wading bird colonies every year. When nests are found, construction is adjusted to comply with Avian Protection Plan guidelines. Aerial surveys of wading birds were conducted from 1993-1995, 1998-2000, and from 2003-2005. Surveys are ongoing under a contract lasting from 2006-2008. Species lists for these properties are being built upon. Several listed species have been identified including the snail kite, crested caracara, woodstork, bald eagle, southeastern American kestrel, and Florida sandhill crane.

An online biological database project is being completed at the District, which will hold comprehensive species data for the Upper Basin. Future data collection will be added directly into the database with quality assurance and quality control measures taken. Current individual databases that will be imported into the online database have been utilized to create a species list for this plan. The species lists are found in Appendix A.

Wildlife and Plant Strategies

- Continue surveying wading bird populations.
- Continue to collect species data.
- Continue to implement special protection measures and management strategies for listed species and communities.

Invasive Species

Aquatic vegetation control is ongoing at TFCA. The District's Invasive Plant Program is responsible for treating invasive exotics found on the properties such as hydrilla, water hyacinth, water lettuce, Brazilian pepper, cogon grass, melaleuca, air potato, lygodium and tropical soda apple. Cattail and woody species such as Carolina willow, both native species, have become invasive in areas where hydrologic disruption and fire suppression have occurred.

The District has an annual contract with the Department of Environmental Protection (DEP) to treat water hyacinth, water lettuce and hydrilla from Blue Cypress Lake north to the Lake Washington weir. DEP provides funding and contracts with the District for this treatment. The District is responsible for vegetation control in all other areas of TFCA including the uplands. Although it is unlikely that staff will completely eradicate invasive plant populations in the conservation area, populations are being held at a "maintenance" level. At this level the property is regularly monitored, and chemical treatments are applied as necessary in order to keep the populations from spreading. Herbicides or other chemicals may be utilized to treat these species.

Feral hogs are a destructive species and are found in all types of habitats. Their effect on native plant communities has been severe, as they are opportunistic feeders and create substantial ground disturbance. While feral hogs have been observed, they are not

considered a serious problem on-site. TFCA has hog trapping agents that are focused on removing hogs from the levee system. These animals are also taken during the seasonal hunts in the marshes.

Exotic Species Strategies

- Monitor and continue to treat exotic vegetation.
- Continue agreement with DEP for funding to contract the District to treat exotic/invasive species in the Upper St. Johns River and associated lakes.
- Continue hog trapping agents and seasonal hunts to manage feral hog population.

Cultural Resources Protection

There are five cultural sites documented within TFCA. In 1984 the USACOE hired a consultant to conduct cultural resources surveys of areas within the Upper St. Johns River Flood Control Project. The surveys focused on presumed high probability areas situated within the flood control project that were defined in consultation with the Florida Division of Archives History and Records Management. The results are on file with the Division of Historical Resources in the Master Site File.

Two sites are referred to as mounds. The Platt Mound contains prehistoric artifacts such as aboriginal ceramics, lithics and animal bones, which were recovered from a small test dig. The artifacts included fire-tempered ceramics, as well as St. Johns, Glades and Belle Glades ceramics. The Elder Mound contains prehistoric artifacts such as aboriginal ceramics, animal bones and shell food remains, which were recovered from a small test dig. The artifacts included Orange, St. Johns, Glades and Belle Glades pottery. A variety of materials were found at different levels of excavation, indicating intensive utilization during prehistoric periods. Any construction or restoration projects that may impact these resources will be evaluated and modified to minimize impacts. Appropriate protection of identified or suspected sites is being implemented.

Two sites are referred to as fields. The Middle Indian Field was found to have European material from the Orange II period and Malabar period. The site included surface nails, porcelain fragments, cartridge cases, deer bones, fish bones, shells and other European material. The South Indian Field was found to have materials from the Orange and Malabar periods including ceramica, lithics, shell and bone. This site is significant due to the cultural resources present and the integrity of the site. These mounds, although Indian in title, have not currently been found to contain prehistoric evidence.

One site was found while digging a borrow pit. Digging was abruptly halted and excavation of this site found 1000 prehistoric vertebrate and invertebrate fossils and at least fifty species including four species of sharks, an eagle ray, a sawfish, ten species of bony fish, a frog, a siren, nine species of turtles, an alligator, at least three species of snakes, four species of birds and fifteen mammals. The site has been dated to the Middle Pleistocene due to the presence of mammoth fossils. The vertebrate fossils identify many extinct species including the giant land tortoise, dwarf land tortoise, giant box turtle, beautiful armadillo, giant armadillo, giant ground sloth, Harland's ground sloth, giant beaver, two extinct small and large horse species, a giant tapir, long limbed and short

limbed llama, Cuvier's gomphothere, American mastodon, and Hay's mammoth. The presence of many of these species indicates a high energy, near shore, marine environment or the presence of a river that washed these specimens to the site.

Cultural Resources Protection Strategies

- Monitor sites for disturbance.
- Coordinate with the Florida Division of Historical Resources and take action to reduce any potential disturbance of any sites identified.

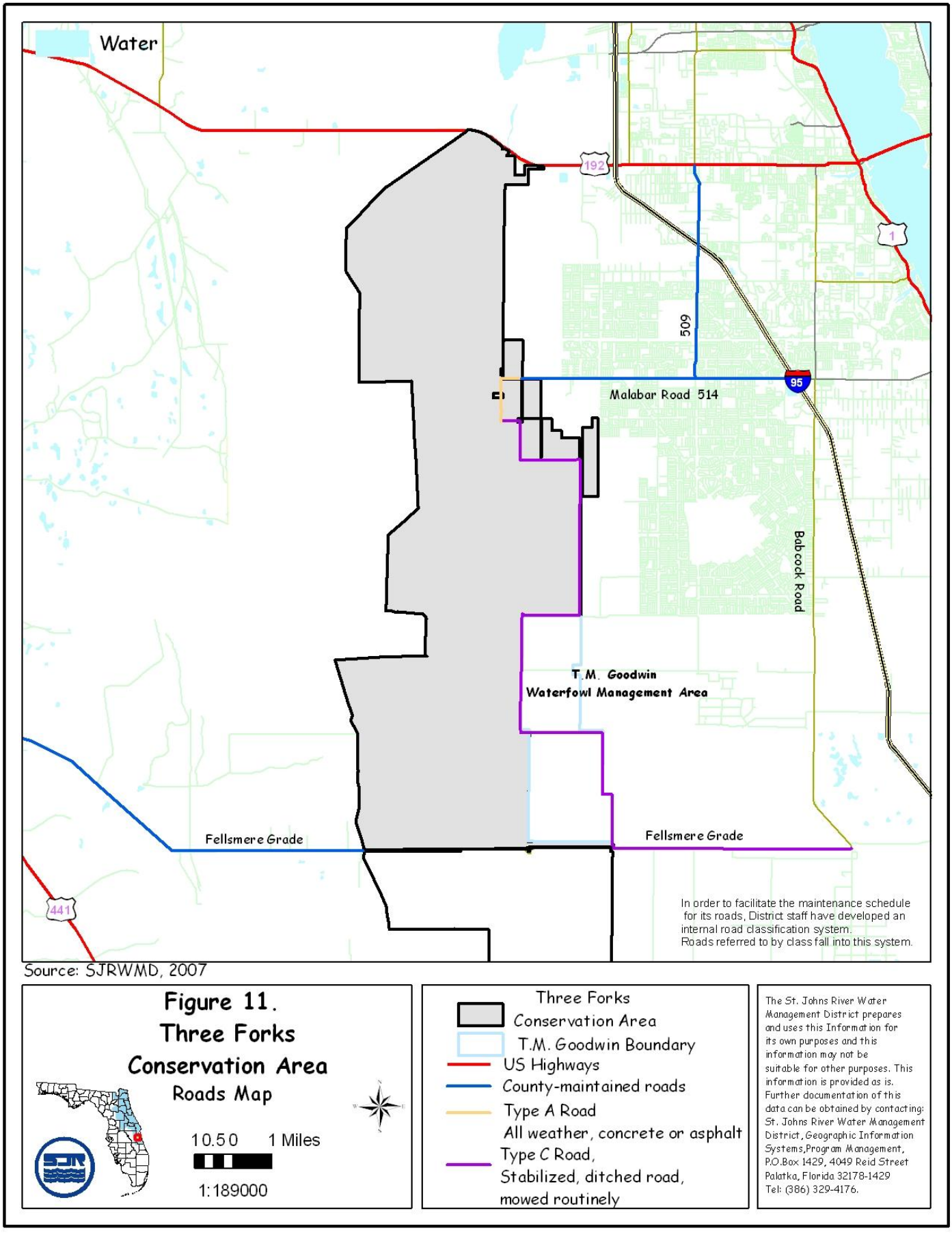
LAND USE MANAGEMENT

Access

The conservation area has four access points. The northern entrance is found off of SR 192, west from I-95 and the City of Melbourne. It includes a District public boat ramp south of SR 192 with limited parking open to the public. This entrance is utilized for boat access only. The Thomas O. Lawton Recreation area is found by taking the CR 514 exit from I-95 (Malabar Road) and heading west on Malabar Road. This access offers parking, restrooms, and picnic tables, and a hiking trail along the levees. A boat ramp has been constructed here for future use when water is introduced to this system. The Fellsmere Grade Recreation Area is found by heading east on Malabar Road, south on Babcock and west on Fellsmere Grade. This recreation area offers parking, disabled access, restrooms, picnic tables and a boat ramp. Lastly, the southwestern point of the conservation area is accessible from Kenansville Road located off of SR 441 where the public has access to parking, picnic tables, and a boat ramp. A roads map is found in Figure 11. Roads will be repaired as necessary.

Access Strategies

- Continue regular maintenance on trail system and interior road system.
- Maintain trailhead-parking areas, which include entrance signs and kiosks within the area.



Author:tmashour, Source:G:\MGMT PLANS\Three Forks Marsh\2007\Three Forks Maps\9_12_2006\Figure 9. Roads Map.mxd, Time:1/12/2007 2:48:37 PM

Recreation

The District is legislatively directed to evaluate a number of resource-based activities on District lands for possible implementation. The District may restrict use of District owned lands as necessary for flood control, water supply, and protection of natural resources to avoid conflicting uses or to provide alternative hunting and other recreational opportunities.

TFCA is currently open to the public for hiking, biking, and bank fishing on the levees, seasonal hunting, fishing, primitive camping at designated sites, airboating, boating, canoeing and wildlife viewing (Figure 12). Several shelters are located on the marsh. The shelters are for day-use only and can be utilized for picnicking or protection from the weather. The primitive camping sites at TFCA include, from north to south, East Union Cypress, North Indian Field, Spade Island, Bulldozer, and Great Egret. AIS group camp is also available by permit by calling the Land Management Division of the St. Johns River Water Management District.

Off road vehicles (including motorcycles and all-terrain or track vehicles) are not allowed on the property. Special protection areas include water control structures, levees, and rookeries for wading birds. Public access is also restricted in certain areas under construction or restoration, as posted.

TFCA is part of the USJRMWMA that is managed by FWC. Rules and regulations designated by FWC are updated yearly. Hunting on District property is subject to District rules and regulations.

A bridge is being considered to cross C-1 canal within the management area. The bridge will provide a means to travel north to south across the canal.

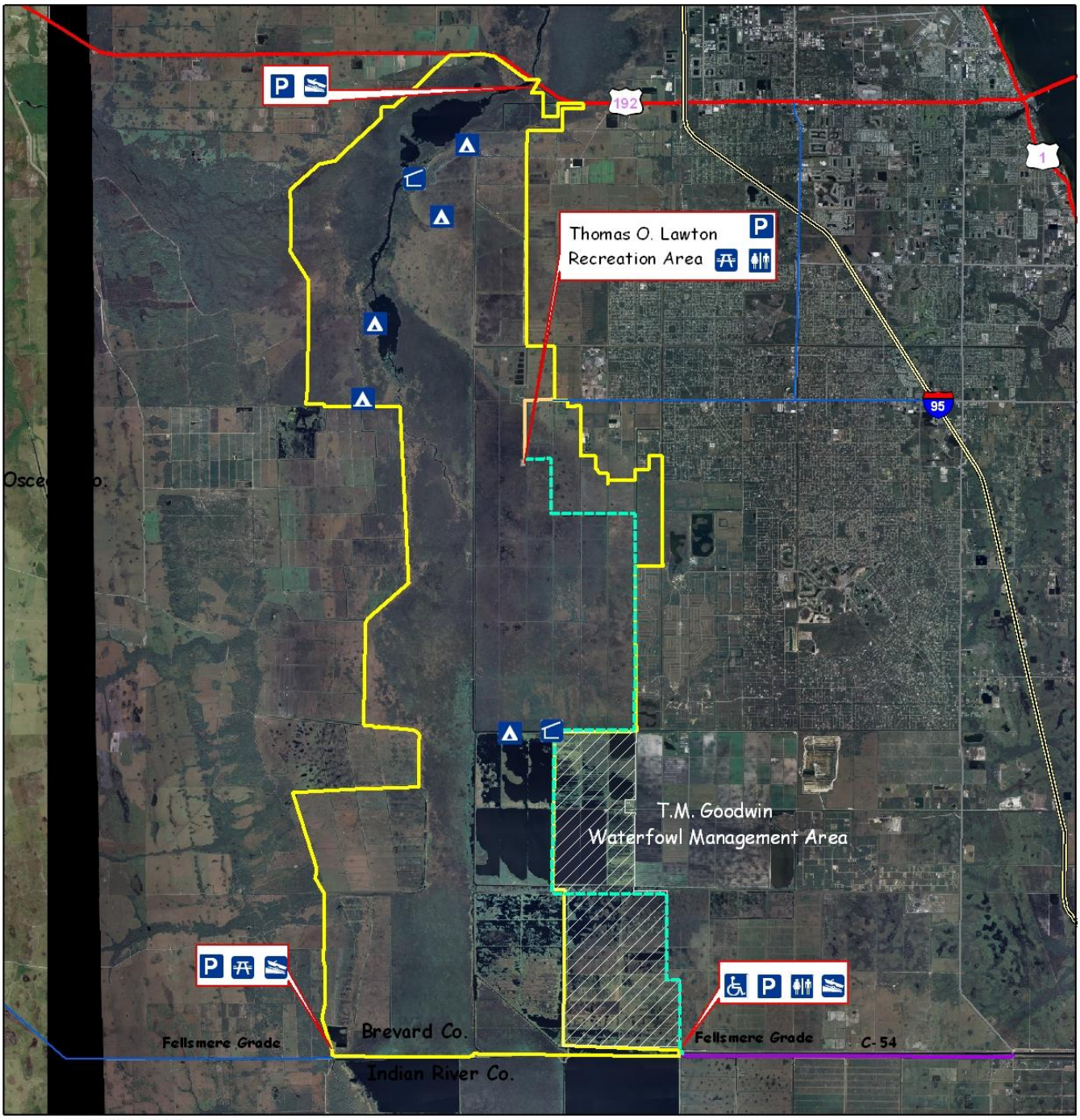
In 1987, the District and the USACOE entered into a Local Cooperation Agreement in which one of the provisions was to share the cost (50/50) of developing recreation sites within the Upper St. Johns River Basin Project. In 1991, the District's Governing Board approved a Recreation Master Plan that was developed by the USACOE and the District. Two of the recreation sites at TFCA were developed as part of the project including Thomas O. Lawton Recreation Area and Fellsmere Grade Recreation Area.

The District holds Recreational Public Meetings in the Southern Region as a means to convey information to the public as well as to create opportunities for the public to voice concerns. These meetings are offered at least twice a year and are advertised in Florida Administrative Weekly and displayed on the District's website. In addition, approximately 150 mailings and 63 emails are sent out prior to each meeting.

During restoration construction, conservation areas may periodically be closed to public access for recreation, hunting, and other uses. The District will notice the public at Recreational Public Meetings, onsite, and on hunt brochures.

Recreation Strategies

- Continue regular maintenance on trails, campsites, and shelter.
- Continue coordinating with USACOE to share the cost of developing recreation sites while adhering to the USACOE and District Local Cooperation Agreement.
- Continue coordinating with FWC for Upper Basin hunting management.



Source: SJRWMD, 2007

Figure 12.
Three Forks
Conservation Area
Recreation Map

1 0.5 0 1 Miles

1:160000

Legend

- Three Forks Conservation Area
- Boatramp
- Camp
- Handicap Access
- Parking
- Picnic
- Restroom
- Shelter
- Three Forks Trail
- County Road
- District Type A Road
- District Type C Road

The St. Johns River Water Management District prepares and uses this Information for its own purposes and this information may not be suitable for other purposes. This information is provided as is. Further documentation of this data can be obtained by contacting: St. Johns River Water Management District, Geographic Information Systems, Program Management, P.O.Box 1429, 4049 Reid Street Palatka, Florida 32178-1429 Tel: (386) 329-4176.

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Environmental Education

The District offers many environmental education programs in the form of workshops, online materials, or by requesting speakers or specific programs. New programs include the Great Water Odyssey and Project Wet Workshops. The Great Water Odyssey is an interactive, multidisciplinary educational experience available free of charge to educators in the District. Project Wet is a program designed to teach educators about water resources and is based on Florida Comprehensive Assessment Test standards. Project Wet Workshops are offered at various times during the year in many counties, including Brevard County. Currently, there are no plans to establish a Legacy Program, the District's environmental education program for middle and high school students. Implementing a Legacy Program for this conservation area will be re-evaluated in the future.

Environmental Education Strategies

- Continue to offer environmental education programs for educators and students within the District.
- Continue to evaluate offering a legacy program at TFCA.

Security

The properties are posted just after acquisition is completed. Fencing has been erected where possible (some areas are inaccessible) and gates are located at key access sites. Maintenance of the fence lines and replacement of boundary signs is ongoing. Occasionally, Plantation Security, a private security contractor hired by the District, also provides security and assists the public. The Ranch and Grove Agricultural Police also patrol the area for violations. The District has established a security residence at the west end of Malabar Road.

Security Strategies

- Maintain signage, fences, and gates.
- Continue coordinating with local law enforcement and contracted security.
- Coordinate with FWC to establish, revise as needed and enforce WMA rules.

ADMINISTRATION

Acquisition

According to the District's 5 Year Land Acquisition Plan, the District aims to acquire 6,376 acres adjacent to the western extent of TFCA and directly north of the Sartori west parcel (Figure 13). This parcel is under contract with Deseret Ranch and the purchase will be exchanged for the Sartori west parcel and portions of the Sartori A and B parcels. The District is also looking to acquire a 132-acre parcel at the north end of TFCA east of Sawgrass Lake and bisected by US 192. Additionally, the District plans to exchange 345.18 acres of TFCA that are considered surplus lands above the 18-foot contour line not needed for the USJRBP. These lands are in pasture and are likely to be annexed to

Palm Bay. In return, the District will receive 340 acres of Harold Platt property, which is almost entirely below the 18-foot contour line. The property will be utilized for water storage in the canal C-1 rediversion project. Areas of the newly acquired 340-acre parcel may be utilized in the future by Palm Bay for the Palm Bay Parkway.

As restoration proceeds, the District will consider a surplus of properties above the 18-foot contour line that are not necessary for the USJRBP as well as actively pursue those relevant parcels below the 18-foot contour line.

Acquisition Strategies

- Continue to pursue current acquisitions under contract.
- Continue to pursue those areas that will aid in the USJRBP.

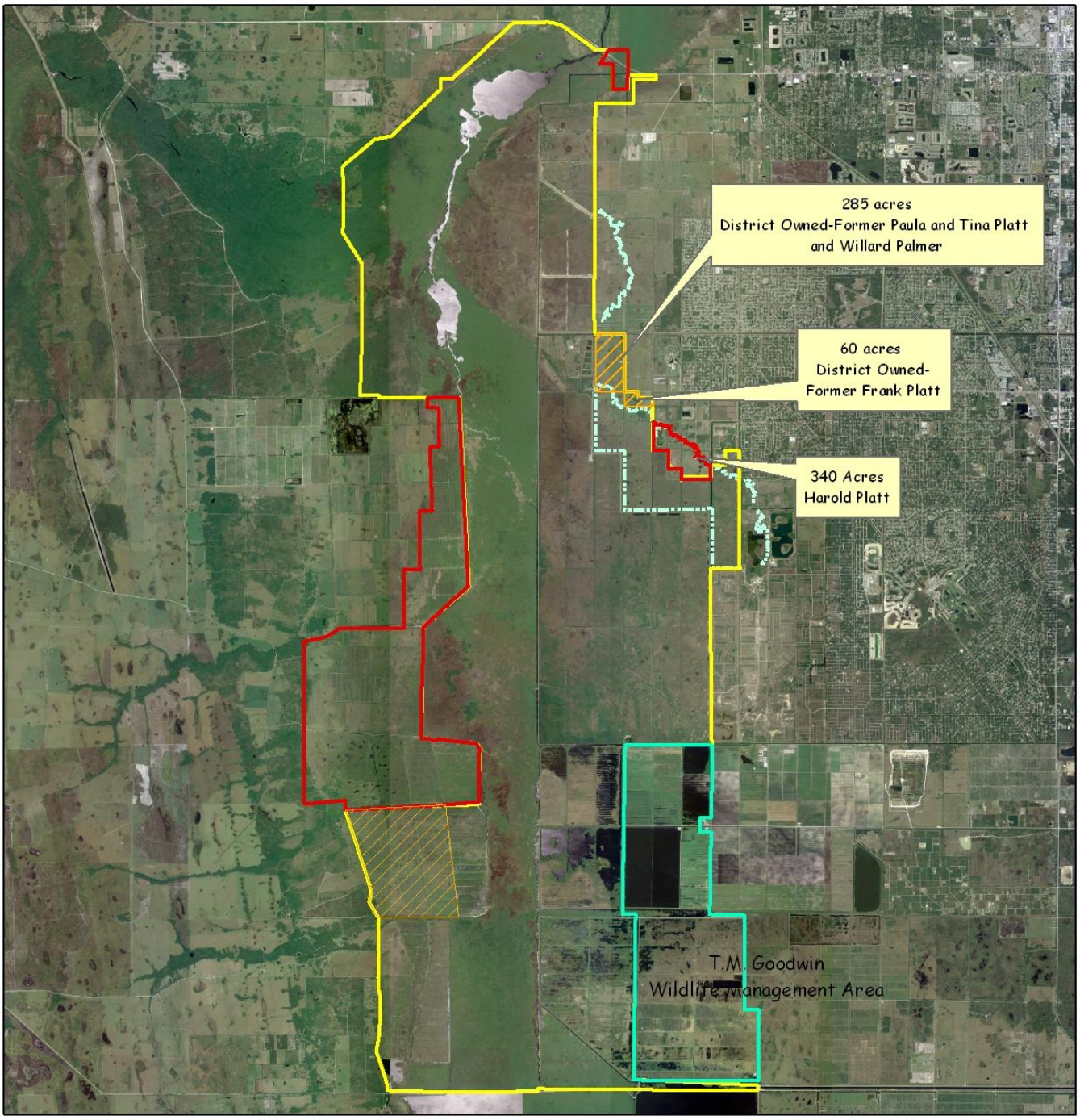

Figure 13.
Three Forks Conservation Area
Potential Acquisition Map

1 0.5 0 1 Miles

1:150000

Legend

Three Forks Conservation Area

Potential Acquisition

Potential Surplus

18 ft Contour Line

The St. Johns River Water Management District prepares and uses this Information for its own purposes and this information may not be suitable for other purposes. This information is provided as is. Further documentation of this data can be obtained by contacting: St. Johns River Water Management District, Geographic Information Systems, Program Management, P.O.Box 1429, 4049 Reid Street Palatka, Florida 32178-1429 Tel: (386) 329-4176.

Author:tmashour, Source:G:\MGMT PLANS\Three Forks Marsh\2007\Three Forks Maps\9_12_2006\Figure 13. Acquisition Map.mxd, Time:2/22/2007 11:55:21 AM

Cooperative Agreements

In accordance with District Policy #90-16, the District promotes entering into agreements with other agencies and private parties for cooperation and coordination of the management of the District's lands. These cooperative agreements serve to protect the District's water management interests and to enhance the management and public value of the land. The District is working with many entities establishing cooperative agreements at TFCA. These are briefly described below:

The District has an intergovernmental agreement with FWC (#322) designating TFCA as part of the Upper St. Johns River Marsh Wildlife Management Area. The District also has an agreement with Osceola County, Indian River County, and Brevard County (#355) to cost share the maintenance of the Fellsmere Grade from the US 441 junction to TFCA and Kenansville Lake. The District coordinates with DEP for invasive and exotic plant removal within the St. Johns River and adjoining lakes. DEP provides funding and the District is contracted to treat exotics in these areas. This contract is renewed annually. The District has a Local Cooperative Agreement with USACOE (#303) for recreation cost sharing in the Upper Basin that expires in 2037. The District also has a contract for levee mowing. This is an annually renewed contract for 103 acres.

Cooperative Agreements Strategies

- Maintain Intergovernmental Agreement with FWC designating TFMCA a Wildlife Management Area
- Maintain agreement with counties to maintain Fellsmere Grade
- Maintain Agreement with DEP providing funding for the District to treat invasive plants
- Maintain agreement with USACOE for recreation cost sharing in the Upper Basin

Table 3. Summary of Cooperative Agreements

Agreement	Agency/Individual	Begin	Term	Acres	Expires
Intergovernmental WMA #322	FWC	7/2/1981	Cancel within 60 day written notice	Upper Basin Areas	Upon written notice
Intergovernmental #355	Indian River County, Osceola County, Brevard County	2/17/2003	Annually renewed	Fellsmere Grade	September 30, yearly
Invasive/ Exotic Aquatic Plant Removal Contract	DEP		Automatically renewed	St. Johns River	September 30, yearly
Local Cooperative Agreement #303	USACOE	12/17/1987	50 years	Upper Basin	2037
Levee Mowing Contract	Agricultural Service		Annually renewed		September 30, yearly

Leases, Easements, Special Use Authorizations and Concessions

Several leases and Special Use Authorizations (SUA) have been issued with regards to TFCA. Cattle leases typically allow the opportunity for payment and/or services in lieu of rent. Services include mowing and chopping, prescribed burning, installing fencing, or others. Many of these services function as interim management tools for the District to prevent encroachment of wax myrtle and other shrubby species. The lessees also provide additional surveillance for the property checking gates and fences, and reporting law violations, crimes, and vandalism. In addition, the lessees will take precautions against the spreading of the invasive tropical soda apple and will trap feral hogs.

The District has entered into a cattle lease with Far Reach Ranch (#193) on 561 acres of the TFCA (Figure 14). The lease began March 31, 2003 and will last until February 28, 2007 and will begin a term of automatic renewals on a four-year basis.

The District has entered into a Special Use Agreement (SUA) with F. Carlyle Platt Limited Partnership (#228) for cattle grazing on 316 acres that was initiated in 2006 and expires in November of 2008.

An acquisition related cattle grazing agreement and an SUA cattle-grazing agreement with Willard Palmer (#235 and #234) are also found on the property. Agreement #234 terminated in 1999 and automatically renews yearly unless it is terminated due to the parcel possibly being surplussed in November 2008. Agreement #235 lasts until 2012 or until the property the lease is utilizing is surplussed, which may be November 2008. Due to the current contract to surplus these parcels in 2008, cattle lease #299 with Willard Palmer has been executed to replace #234 and #235 to satisfy the terms of the original agreements. Cattle lease #299 will ask Mr. Palmer to move off his current leased parcels in 2008 when the parcels are surplussed, but allows Mr. Palmer to add four new areas to his lease, he will also lease the property currently leased by F. Carlyle Platt beginning November of 2008, and he will additionally lease the new property acquired by the District in the exchange. In the event the property is not exchanged, Mr. Palmer will continue his current leases (#234 and #235) until they expire and will continue to lease the four new areas and the former F. Carlyle Platt lease. He will also have an option to purchase the parcels he is currently leasing (#234 and #235). The four new parcels and the F. Carlyle Platt former lease will have a lease term until 2011 and will automatically renew for three (3) five (5) year terms at the Lessee's option until 2026. The option of the Lessee to renew lease #299 is subject to termination based on a water quality/nutrient reevaluation study on the leased area where the District has the option to reduce the stocking rates.

The District has and SUA with Deseret Ranch (# 111) for cattle grazing on 1,886 acres that expires in December 2009.

As of 2007, the District is planning an additional cattle lease with Mr. Billy Kempfer on the northwest corner of TFMCA. The terms and conditions are currently being negotiated.

Leases, Easements, Special Use Authorizations and Concessions Strategies

- Continue to evaluate leases, easements and special use authorizations at TFCA

Table 4. Summary of Leases, Easements, and Special Use Authorizations

Agreement	**Agency Individual**	**Begin**	**Term**	**Acres**	**Expires**
Lease # 193 Cattle	Far Reach Ranch	3/31/2003	Terminate 2/28/2007, renew annually	561	Renewable Yearly
Acquisition Related #235, Cattle	Willard Palmer	5/27/1997	Original Termination 2012, possible termination November 2008	162	2012, possible termination November 2008
SUA #234, Cattle	Willard Palmer	11/1/1998	Original Termination 10/31/1999 with automatic yearly renewal, possible termination November 2008	112	Renewable Yearly, Possible Termination November 2008
Lease #299, Cattle	Willard Palmer	4/1/2006	3/31/2011	829	Automatic renewal for three (3) five (5) year terms until 2026
SUA #111, Cattle	Deseret Ranch	12/4/1998	Automatic 1 year renewals through 12/31/2009	1,886	12/31/09
SUA #228, Cattle	F. Carlyle Platt Limited Family Partnership	4/1/2006	Terminates November 2008	316	November 2008
	Mr. Billy Kempfer	2007	Terms are being negotiated		

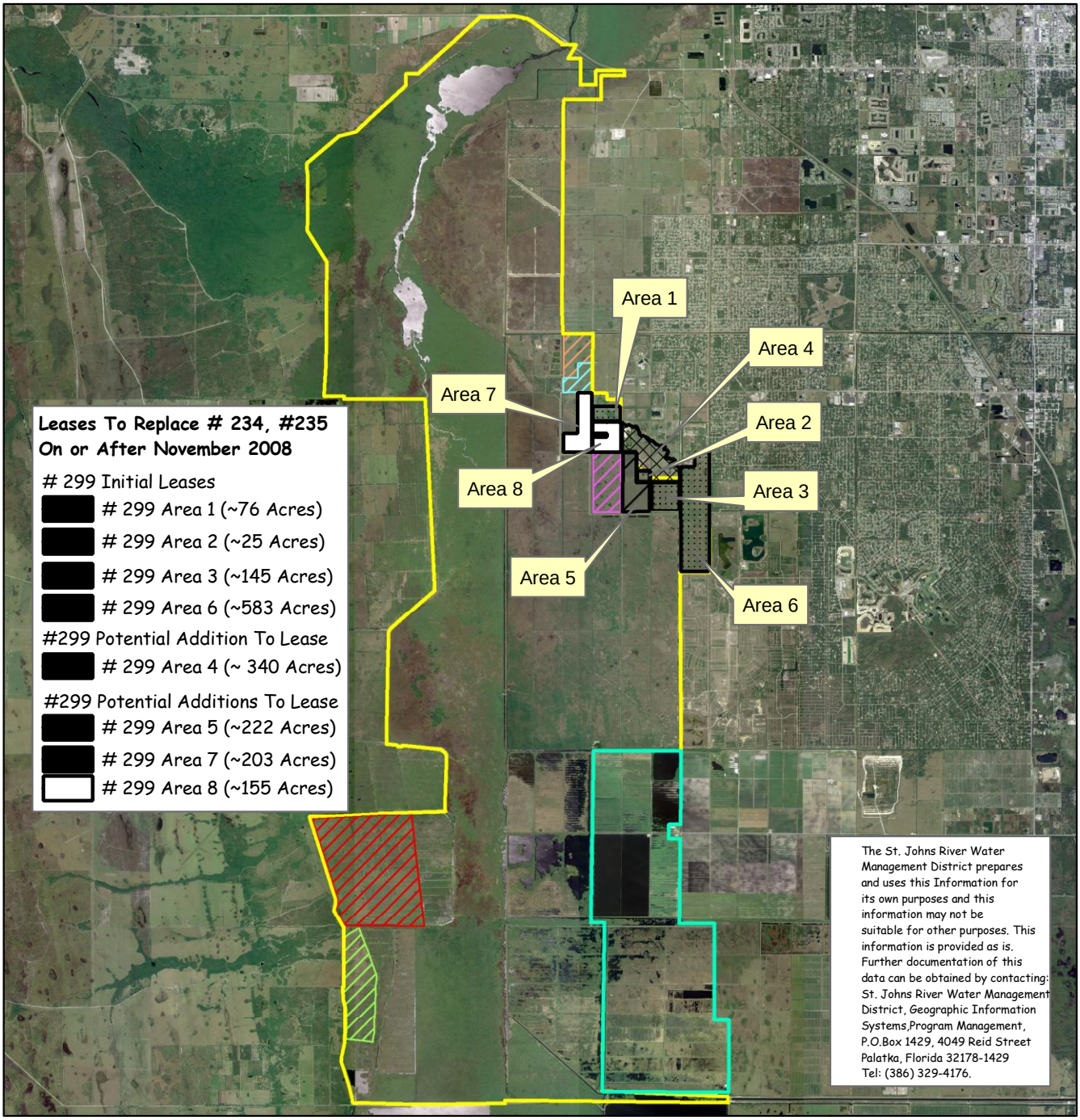

Figure 14.

Three Forks Conservation Area

Cattle Leases and Cattle SUAs

1 0.5 0 1 Miles

1:148000

Legend

- Three Forks Conservation Area
- T.M. Goodwin Boundary
- # 228 F. Carlyle Platt
- # 234 (to be terminated Nov. 2008) Willard Palmer
- # 235 (to be terminated Nov. 2008) Willard Palmer
- #111 Deseret Ranch
- #193 Tucker

Author:tmashour, Source:G:\MGMT PLANS\Three Forks Marsh\2007\Three Forks Maps\9_12_2006\Figure 13. Cattle Leases.mxd, Time:2/27/2007 4:04:20 PM

IMPLEMENTATION CHART

Table 5. Three Forks Conservation Area Management Implementation Chart

TASK	RESPONSIBLE LEAD	DUE DATE	COOPERATORS
RESOURCE PROTECTION AND MANAGEMENT			
Restoration			
Complete Three Forks Conservation Area restoration project.	ES	Ongoing	DLM
Complete the C-1 Canal rediversion project.	ES	Ongoing	DLM
Begin to treat woody vegetation at TFMCA	ES	Ongoing	DLM
Water Resources			
Continue water quality and dissolved oxygen monitoring.	ES	Ongoing	
Contribute to DEP-led effort to develop basin management plan to achieve established TMDLs.	ES	Ongoing	
Fire Management			
Implement the Annual Prescribed Fire Management Plan. This plan should include burn prescriptions, smoke management plans/maps, and a list of entities to notify (DOF for permit and possibly assistance, city/county officials, local fire and police departments, and neighbors).	DLM	Annually	DOF
Follow the Comprehensive Fire Management Plan.	DLM	Annually	DOF
Wildlife and Plant Species			
Continue surveying wading birds populations.	ES	Ongoing	DLM
Continue to collect species data.	ES	Ongoing	DLM
Continue to implement special protection measures and management strategies for listed species and communities.	DLM	As needed	ES
Exotic Species			
Monitor and continue to treat exotic vegetation.	DLM	Ongoing	FWC
Continue agreement with DEP for funding to contract the District to treat exotic/invasive species in the Upper St. Johns River and associated lakes.	DLM	Ongoing	DEP
Continue hog trapping agents and seasonal hunts to manage feral hog population.	DLM	Ongoing	FWC
Cultural Resources			
Monitor sites for disturbance.	DLM	Ongoing	ES
Coordinate with the Florida Division of Historical Resources and take action to reduce any potential	DLM	Ongoing	FDHR

TASK	RESPONSIBLE LEAD	DUE DATE	COOPERATORS
disturbance of any sites identified.			
LAND USE MANAGEMENT			
Access			
Continue regular maintenance on trail system and interior road system.	DLM	Ongoing	
Maintain trailhead-parking areas, which include entrance signs and kiosks within the area.	DLM	Ongoing	
Recreation			
Continue to regular maintenance on trails, campsites, and shelter.	DLM	Ongoing	
Continue coordinating with USACOE and local governments to lower the cost of developing recreation sites while adhering to the USACOE and District Local Cooperation Agreement.	DPW/DLM	Ongoing	USACOE, local governments
Continue coordinating with FWC for Upper Basin hunting management.	DLM	Ongoing	FWC
Environmental Education			
Continue to offer environmental education programs for educators and students within the District.	OC	Ongoing	DLM
Continue to evaluate offering a legacy program at TFCA.	OC	Ongoing	DLM
Security			
Maintain signage, fences, and gates.	DLM	Ongoing	Plantation Security, local law enforcement, Brevard County Ranger Grove Agricultural Police
Continue coordinating with local law enforcement and contracted security.	DLM	Ongoing	Local law enforcement, Plantation Security, Brevard County Ranch and Grove Agricultural Police
Coordinate with FWC to establish, revise as needed and enforce WMA rules.	DLM	Ongoing	FWC
ADMINISTRATION			
Acquisition			
Continue to pursue current acquisitions under contract.	DLA	Ongoing	
Continue to pursue those acres that will aid in the USJRBP.	DLA	Ongoing	
Cooperative Agreements			
Maintain all cooperative agreements.	DLM	Ongoing	FWC, Osceola

TASK	RESPONSIBLE LEAD	DUE DATE	COOPERATORS
			County, IRC, BC, DEP, USACOE
Leases, Easements, and Concessions			
Continue to evaluate leases, easements and special use authorizations at TFCA	DLM	Ongoing	

KEY

BC	Brevard County
DLA	Division of Land Acquisition
DLM	Division of Land Management
DOF	Florida Division of Forestry
DPW	Division of Public Works
ES	Division of Environmental Sciences
FDHR	Florida Division of Historical Resources
FWC	Florida Fish and Wildlife Conservation Commission
IRC	Indian River County
OC	Office of Communication
USACOE	U.S. Army Corps of Engineers

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APPENDIX A: OBSERVED SPECIES LIST

Plants

Red Maple	*Acer rubrum*
Alligator Weed	*Alternanthera philoxeroides*
Southern Water Hemp	*Amaranthus australis*
Spiny Amaranth	*Amaranthus spinosus*
Common Ragweed	*Ambrosia artemisiifolia*
Pepper Vine	*Ampelopsis arborea*
Bushy Bluestem	*Andropogon glomeratus*
Broomsedge Bluestem	*Andropogon virginicus*
Pink Swamp Milkweed	*Asclepias incarnate*
Climbing Aster	*Aster carolinianus*
Annual Saltmarsh Aster	*Aster subulatus*
Groundsel Tree	*Baccharis halimifolia*
Lemon Bacopa	*Bacopa caroliniana*
Herb-Of-Grace	*Bacopa monnieri*
Burrmarigold	*Bidens laevis*
Toothed Midsorus Fern	*Blechnum serrulatum*
False Nettle	*Boehmeria cylindrical*
Long's Sedge	*Carex longii*
Sugarberry	*Celtis laevigata*
Spadeleaf	*Centella asiatica*
Buttonbush	*Cephalanthus occidentalis*
Coontail	*Ceratophyllum demersum*
Spotted sandmat	*Chamaesyce sp.*
Wild Sensitive Plant	*Chamaecrista nictitans*
Mexican Tea	*Chenopodium ambrosioides*
Water-hemlock	*Cicuta maculate*
Nuttall's Thistle	*Cirsium nuttallii*
Sawgrass	*Cladium jamaicense*
Spreading dayflower	*Commelina diffusa*
Blue Mistflower	*Conoclinium coelestinum*
Swamp Dogwood	*Cornus foemina*
Showy Rattlebox	*Crotolaria spectabilis*
Wild Cantaloupe	*Cucumis melo*
Colombian Waxweed	*Cuphea carthagenensis*
Leafless Swallowwort	*Cynanchum scoparium*
Bermudagrass	*Cynodon dactylon*
Jointed Sedge	*Cyperus articulatus*
Baldwin's Flatsedge	*Cyperus croceus*
Fragrant Flatsedge	*Cyperus odoratus*
Manyspike Flatssedge	*Cyperus polystachyos*
Tropical Flatsedge	*Cyperus surinamensis*

Crowfootgrass	*Dactyloctenium aegyptium*
Pony-foot	*Dichondra caroliniensis*
Blanket Crabgrass	*Digitaria serotina*
Virginia Buttonweed	*Diodia virginiana*
Barnyardgrass	*Echinochloa crusgalli*
Coast Cockspur	*Echinochloa walteri*
False Daisy	*Eclipta prostrate*
Common Water-hyacinth	*Eichhornia crassipes*
Viviparous Spikerush	*Eleocharis vivipara*
Goosegrass	*Eleusine indica*
Fireweed	*Erechtites hieraciifolius*
Southern Fleabane	*Erigeron quercifolius*
Dogfennel	*Eupatorium capillifolium*
Strangler Fig	*Ficus aurea*
Stiff Marsh Bedstraw	*Galium tinctorium*
Water Locust	*Gleditsia aquatica*
Pennsylvania Cudweed	*Gnaphalium pensylvanicum*
Limpograss	*Hemarthria altissima*
Swamp Hibiscus	*Hibiscus grandiflorus*
Hydrilla	*Hydrilla verticillata*
Largeleaf Marshpennywort	*Hydrocotyle bonariensis*
Manyflower Marshpennywort	*Hydrocotyle umbellate*
St.Andrew's-Cross	*Hypericum hypericoides*
Dwarf St. John's-Wort	*Hypericum mutilum*
Musky Mint	*Hyptis alata*
Moonflower	*Ipomoea alba*
Juba's Bush	*Iresine diffusa*
Solutus Soft Rush	*Juncus effusus subsp.*
Elliott's Rush	*Juncus elliottii*
Shore Rush	*Juncus marginatus*
Saltmarsh Mallow	*Kosteletzkya virginica*
Shortleaf Spikesedge	*Kyllinga brevifolia*
Carolina Redroot	*Lachnanthes caroliana*
Southern Cutgrass	*Leersia hexandra*
Little Duckweed	*Lemna obscura*
Virginia Pepperweed	*Lepidium virginicum*
Frog's-bit	*Limnobium spongia*
Yerba de Jicotea	*Ludwigia erecta*
Hairy Primrosewillow	*Ludwigia leptocarpa*
Mexican Primrosewillow	*Ludwigia octovalvis*
Peruvian Primrosewillow	*Ludwigia peruviana*
Creeping Primrosewillow	*Ludwigia repens*
Southern Watergrass	*Luziola fluitans*
Lance-Leaved Primrose	*Lythrum alatum*
Phasey Bean	*Macroptilium lathyroides*
Creeping Cucumber	*Melothria pendula*

Climbing Hempvine	*Mikania scandens*
Wild Balsam Apple	*Momordica charantia*
Doveweed	*Murdannia nudiflora*
Wax Myrtle	*Myrica cerifera*
Spatter-Dock	*Nuphar luteum*
American White Waterlily	*Nymphaea odorata*
Royal Fern	*Osmunda regalis*
Common Yellow Woodsorrel	*Oxalis corniculata*
Fall Panicum	*Panicum dichotomiflorum*
Maidencane	*Panicum hemitomon*
Redtop Panicum	*Panicum rigidulum*
Pellitory	*Parietaria floridana*
Virginia Creeper	*Parthenocissus quinquefolia*
Egyptian Paspalidium	*Paspalidium geminatum*
Bahiagrass	*Paspalum notatum*
Water Paspalum	*Paspalum repens*
Vaseygrass	*Paspalum urvillei*
Green Arrow Arum	*Peltandra virginica*
Elephantgrass	*Pennisetum purpureum*
Swamp Bay	*Persea palustris*
Golden Polypody	*Phlebodium aureum*
Common Reed	*Phragmites australis*
Carpetweed	*Phyla nodiflora*
Husk Tomato	*Physalis pubescens*
American Pokeweed	*Phytolacca Americana*
Water-Lettuce	*Pistia stratiotes*
Camphorweed	*Pluchea camphorate*
Saltmarsh Fleabane	*Pluchea odorata*
Rosy Camphorweed	*Pluchea rosea*
Giant Smartweed	*Polygonum densiflorum*
Dotted Smartweed	*Polygonum punctatum*
Rustweed	*Polypremum procumbens*
Pickerelweed	*Pontederia cordata*
Marsh Mermaidweed	*Proserpinaca palustris*
Common Guava	*Psidium guajava*
Mock Bishop's Weed	*Ptilimnium capillaceum*
Live Oak	*Quercus virginiana*
Starrush Whitetop	*Rhynchospora colorata*
Narrowfruit Horned Beaksedge	*Rhynchospora inundata*
Giant Whitetop	*Rhynchospora latifolia*
Southern Beaksedge	*Rhynchospora microcarpa*
Rough Mexican Clover	*Richardia scabra*
Rouge Plant	*Rivina humilis*
Curly Dock	*Rumex crispus*
Cabbage Palm	*Sabal palmetto*
American Cupscale	*Sacciolepis striata*

Bulltongue Arrowhead	*Sagittaria lancifolia*
Common Arrowhead	*Sagittaria latifolia*
Carolina Willow	*Salix caroliniana*
Water Spangles	*Salvinia minima*
Elderberry	*Sambucus canadensis*
White Twinevine	*Sarcostemma clausum*
Brazilian Pepper	*Schinus terebinthifolius*
Cuban Bulrush	*Scirpus cubensis*
Sweetbroom	*Scoparia dulcis*
Butterweed	*Senecio glabellus*
Sicklepod	*Senna obtusifolia*
Christmas Senna	*Senna pendula var. glabrata*
Butterweed	*Senecio glabellus*
Danglepod	*Sesbania herbacea*
Giant Bristlegrass	*Setaria magna*
Knotroot Foxtail	*Setaria parviflora*
Common Wireweed	*Sida acuta*
Indian Hemp	*Sida rhombifolia*
Florida Bully	*Sideroxylon reclinatum subsp. reclinatum*
Saw Greenbrier	*Smilax bona-nox*
Seaside Goldenrod	*Solidago sempervirens*
Black Nightshade	*Solanum americanum*
Soda Apple	*Solanum capsicoides*
Twoleaf nightshade	*Solanum diphyllum*
Tropical Soda Apple	*Solanum viarum*
Giant Goldenrod	*Solidago gigantean*
Wand Goldenrod	*Solidago stricta*
Johnsongrass	*Sorghum halepense*
Sand Cordgrass	*Spartina bakeri*
Prostrate False Buttonweed	*Spermacoce prostrate*
Prairie Wedgescale	*Sphenopholis obtusata*
Smutgrass	*Sporobolus indicus var. indicus*
Pond Cypress	*Taxodium ascendens*
Bald-Cypress	*Taxodium distichum*
Wood Sage	*Teucrium canadensis*
Alligatorflag	*Thalia geniculata*
Hottentot Fern	*Thelypteris interrupta*
Marsh Fern	*Thelypteris palustris*
Stiff-Leaved Wild Pine	*Tillandsia fasciculate*
Ballmoss	*Tillandsia recurvata*
Southern Needleleaf	*Tillandsia setacea*
Spanish Moss	*Tillandsia usneoides*
Giant Wild Pine	*Tillandsia utriculata*
Eastern Poison Ivy	*Toxicodendron radicans*
White Clover	*Trifolium repens*
Southern Cattail	*Typha domingensis*

Broadleaf Cattail	*Typha latifolia*
Caesar-weed	*Urena lobata*
Paragrass	*Urochloa mutica*
Purpletop Vervain	*Verbena bonariensis*
Brazilian Vervain	*Verbena brasiliensis*
Sandpaper Vervain	*Verbena scabra*
Hairypod Cowpea	*Vigna luteola*
Calloosa Grape	*Vitis shuttleworthii*
Algal Bulrush	*Websteria confervoides*
Florida Mudmidget	*Wolfiella gladiata*
Virginia Chain Fern	*Woodwardia virginica*
Oriental False Hawksbeard	*Youngia japonica*

Invertebrates

Fresh water shrimp	*Palaemonetes paludosus*
Florida apple snail	*Pomacea paludosa*
Crayfish	*Procambarus alleni*

Reptiles and Amphibians

Florida cricket frog	*Acris gryllus*
Florida cottonmouth	*Agkistrodon piscivorous*
American alligator	*Alligator mississippiensis*
Green anole	*Anolis carolinensis*
Snapping turtle	*Chelydra serpentine*
Peninsula Cooter	*Pseudemys floridana*
Southern black racer	*Coluber constrictor*
Eastern diamondback rattlesnake	*Crotalus adamanteus*
Southern ringneck snake	*Diadophis punctatus*
Eastern indigo snake	*Drymarchon couperi*
Everglades rat snake	*Elaphe obsoleta*
Eastern narrow-mouthed toad	*Gastrophryne carolinensis*
Green tree frog	*Hyla cinerea*
Squirrel tree frog	*Hyla squirela*
Striped mud turtle	*Kinosternon bauri*
Green water snake	*Nerodia floridana*
Florida water snake	*Nerodia fasciata*
Dwarf siren	*Pseudobranchus striatus*
Pig frog	*Rana grylio*
Southern leopard frog	*Rana sphenocephla*
Striped crayfish snake	*Regina alleni*
Greater siren	*Siren lacertina*
Pygmy rattlesnake	*Sistrurus barbouri*
Florida softshell turtle	*Apalone ferox*

Fish

Bowfin	*Amia calva*
American Eel	*Anguilla rostrata*
Pirate perch	*Aphredoderus sayanus*
Warmouth	*Lepomis gulosus*
Gizzard shad	*Dorosoma cepedianum*
Threadfin shad	*Dorosoma pretense*
Everglades pygmy sunfish	*Elassoma evergladei*
Bluespotted sunfish	*Enneacanthus gloriosus*
Lake Chubsucker	*Erymizon sucetta*
Swamp darter	*Etheostoma fusiforme*
Cypress Darter	*Etheostoma proeliare*
Chain pickerel	*Esox niger*
Golden topminnow	*Fundulus chrysotus*
Seminole killifish	*Fundulus seminolus*
Mosquitofish	*Gambusia affinis*
Mosquitofish	*Gambusia holbrooki*
Least killifish	*Heterandria formosa*
White Catfish	*Ictalurus catus*
Yellow bullhead	*Ictalurus natalist*
Brown bullhead	*Ictalurus nebulosus*
Channel Catfish	*Ictalurus punctatus*
Flagfish	*Jordanella floridae*
Brook silverside	*Labidesthes sicculus*
Long-nosed Gar	*Lepisostenus osseus*
Florida gar	*Lepisosteus platyrhincus*
Red-breasted Sunfish	*Lepomis auritus*
Bluegill	*Lepomis machrochirus*
Dollar sunfish	*Lepomis marginatus*
Redear sunfish	*Lepomis microlophus*
Spotted sunfish	*Lepomis punctatus*
Bluefin killifish	*Lucania goodei*
Tidewater Silverside	*Menidia beryllina*
Largemouth bass	*Micropterus salmoides*
Striped Mullet	*Mugil cephalus*
Tailight shiner	*Notropis maculatus*
Golden Shiner	*Notemigonus crysoleucas*
Tadpole madtom	*Noturus gyrinus*
Pugnose Minnow	*Opsopoeodus emiliae*
Sailfin molly	*Poecilia latipinna*
Black crappie	*Pomoxis nigromaculatus*
Tilapia	*Tilapia aureus*

Birds

Anatidae – Ducks, Geese, Swans

Fulvous whistling duck	(*Dendrocygna bicolor*)
Mottled duck	(*Ana fulvigula*)
Blue-winged teal	(*Anas discor*)
Ringed-necked duck	(*Aythya collaris*)
Ruddy duck	(*Oxyura jamaicensis*)

Podicipedidae – Grebes

Pied-billed grebe	(*Podilymbus podiceps*)

Phalacrocoracidae – Cormorants

Double-crested cormorant	(*Phalacrocorax auritas*)

Anhingidae – Darters

Anhinga	(*Anhinga anhinga*)

Ardidae – Herons, Bitterns & Allies

Least bittern	(*Ixobrychus exilis*)
Great blue heron	(*Ardea herodias*)
Great egret	(*Casmerodius albus*)
Black-crowned night heron	(*Nycticorax nycticorax*)
Cattle egret	(*Bulbulcus ibis*)
Green-backed heron	(*Butorides striatus*)
Little blue heron	(*Egretta caerulea*)
Snowy egret	(*Egretta thula*)
Tricolored heron	(*Egretta tricolor*)
Yellow-crowned night heron	(*Nyctanassa violacea*)

Threskiornithidae – Ibises & Spoonbills

Glossy ibis	(*Plegadis falcinellus*)
White ibis	(*Eudocimus albus*)

Ciconiidae - Storks

Wood stork	(*Mycteria americana*)

Cathartidae – New World Vultures

Turkey vulture	(*Cathartes aura*)
Black vulture	(*Coragyps atratus*)

Accipitridae – Hawks, Kites & Eagles

Bald eagle	(*Haliaeetus leucocephalus*)
Osprey	(*Pandion haliaetus*)
Red-shouldered hawk	(*Buteo lineatus*)
Snail kite	(*Rostrhamus sociabilis plumbeus*)
American swallow-tailed kite	(*Elanoides forficatus*)
Northern harrier	(*Circus cyaneus*)

Falconidae – Caracaras & Falcons

American kestrel (*Falco sparverius*)
Crested caracara (*Polyborus plancus*)
Peregrine falcon (*Falco peregrinus*)

Rallidae – Rails, Gallinules & Coots
King rail (*Rallus elagans*)
Sora rail (*Porzana carolina*)
Common moorhen (*Gallinula chloropus*)
Purple gallinule (*Porphyrula martinica*)
American coot (*Fulica americana*)

Aramidae – Limpkins
Limpkin (*Aramus guarauna*)

Gruidae – Cranes
Sandhill crane (*Grus canadensis*)

Charadriidae – Lapwings & Plovers
Killdeer (*Charadrius vociferus*)

Recurvirostridae – Stilts and Avocets
Black-necked stilt (*Himantopus mexicanus*)

Scolopacidae – Sandpipers, Phalaropes & Allies
Dunlin (*Calidris alpina*)
Greater yellowlegs (*Tringa melanoleuca*)
Lesser yellowlegs (*Tringa flavipes*)
Least sandpiper (*Calidris minulilla*)
Stilt sandpiper (*Calidris himantopus*)

Laridae – Gulls and Terns
Black tern (*Chlidonias niger*)

Apodidae- Swifts
Chimney swift (*Chaetura pelagica*)

Alcedinidae – Kingfishers
Belted kingfisher (*Ceryle alcyon*)

Tyrannidae – Tyrant Flycatchers
Eastern phoebe (*Sayornis phoebe*)

Vireonidae – Vireos
White-eyed vireo (*Vireo griseus*)

Corvidae – Crows and Jays

Fish crow	(*Corvus ossifragus*)

Hirundinidae – Swallows

Barn swallow	(*Hirundo rustica*)
Tree swallow	(*Tachycineta bicolor*)

Troglodytidae – Werns

Carolina wren	(*Thryothorus ludovicianus*)
Marsh wren	(*Cistothorus palustris*)
Sedge wren	(*Cistothorus platensis*)

Sylvidae – Gnatcatchers

Blue-gray gnatcatcher	(*Polioptila caerulea*)

Parulidae – Wood Warblers

Palm warbler	(*Dendroica palmarum*)
Yellow-rumped warbler	(*Dendroica coronata*)
Common yellowthroat	(*Geothlypis trichas*)

Emberizidae – Emberizids

Savannah sparrow	(*Passerculus sandwichensis*)
Swamp sparrow	(*Melospiza georgiana*)

Cardinalidae – Cardinals and Allies

Northern cardinal	(*Cardinalis cardinalis*)

Icteridae – Blackbirds

Boat-tailed grackle	(*Quiscalus major*)
Eastern meadowlark	(*Sturnella magna*)
Red-winged blackbird	(*Agelaius phoeniceus*

Mammals

Least shrew	*Cryptotis parva*
Nine-banded armadillo	*Dasypus novemcinctus*
Opossum	*Didelphis marsupialis*
Seminole bat	*Lasiurus borealis*
Northern yellow bat	*Lasiurus intermedius*
River otter	*Lutra canadensis*
Bobcat	*Lynx rufus*
Striped skunk	*Mephitis mephitis*
Long-tailed weasel	*Mustela frenata*
Nutria	*Myocastor coypus*
Round-tailed muskrat	*Neofiber alleni*
Evening bat	*Nycticeius humeralis*
White-tailed deer	*Odocoileus virginianus*
Marsh rice rat	*Oryzomys palustris*

Cotton mouse	*Peromyscus gossypinus*
Eastern pipistrelle	*Pipistrellus subflavus*
Raccoon	*Procyon lotor*
Eastern mole	*Scalopus aquaticus*
Hispid cotton rat	*Sigmodon hispidus*
Marsh rabbit	*Sylvilagus palustris*
Wild boar	*Sus scrofa*
Gray fox	*Urocyon cinereoargenteus*

APPENDIX B: DESIGNATED SPECIES LIST

Global Rank/State Rank/Federal Status/State Status

PLANTS

Sand-dune spurge
Chamaesyce cumulicola G2 /S2/N/LE

Chaff seed
Schwalbea Americana G2/S1/LE/LE

AMPHIBIANS AND REPTILES

American alligator
Alligator mississippiensis G5/S3/N/N

BIRDS

Limpkin
Aramus guarauna G5/S3/N/LS

Little blue heron
Egretta caerulea G5/S4/N/LS

Snowy egret
Egretta thula G5/S3/N/LS

Tricolored heron
Egretta tricolor G5/S4/N/LS

Swallow-tailed kite
Elanoides forficatus G5/S2/N/N

White ibis
Eudocimus albus G5/S4/N/LS

Peregrine falcon
Falco peregrinus G4/S2/N/CE

Southeastern American kestrel *Falco sparverius*	G5, T4/S3/N/LT
Whooping crane *Grus americanus*	G1/SNR/XN/LS
Florida Sandhill crane *Grus canadensis pratensis*	G5,T2,T3/S2,S3/N/LT
Bald eagle *Haliaeetus leucocephalus*	G5/S3/LT, PDL/LT
Least bittern *Ixobrychus exilis*	G5/S4/N/N
Wood stork *Mycteria Americana*	G4/S2/LE/LE
Black-crowned night heron *Nycticorax nycticorax*	G5/S3/N/N
Yellow-crowned night heron *Nyctanasa violacea*	G5/S3/N/N
Glossy ibis *Plegadis falcinellus*	G5/S3/N/N
Osprey *Pandion haliaetus*	G5/S3, S4/N/LS
Crested caracara *Caracara cheriway*	G5/S2/LT/LT
Snail kite *Rostrhamus sociabilis plumbeus*	G5, G5, T3Q/S2/LE/LE

Designated Species List Legend

FNAI Global Rank

G1-Critically imperiled globally
G2-Imperiled globally
G3-Either very rare and local throughout its range or found locally in a restricted range or vulnerable to extinction from other factors
G4-Apparently secure globally
G5-Demonstrably secure globally
G#G# - Range of rank; insufficient data to assign specific global rank.
G#T#-Rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above.
G#T#Q - Same as above, but validity as subspecies or variety is questioned.

FNAI State Rank

S1-Critically imperiled in Florida
S2-Imperiled in Florida
S3-Either very rare and local in Florida or found locally in a restricted range or vulnerable to extinction from other factors
S4-Apparently secure in Florida
S5-Demonstrably secure in Florida
SNR-Element not yet ranked

Federal Legal Status

LE-Endangered
LT-Threatened
LT, PDL-Threatened, proposed for delisting
SAT-Treated as threatened
N-Not currently listed
PE-Proposed for endangered
PT-Proposed for threatened
XN-Nonessential experimental population

State Legal Status

LS-Species of special concern
LE-Listed as endangered
LT-Listed as threatened
PE-Proposed endangered
PT-Proposed as threatened
PS-Proposed species of special concern
N-Not currently listed

According to Florida Natural Areas Inventory, 2007.

APPENDIX C: COMPREHENSIVE FIRE MANAGEMENT PLAN

Fire Management Plan
Three Forks Conservation Area

DRAFT

INTRODUCTION

The Three Forks Conservation Area lies within the Upper St. Johns River Basin. The majority of this management area falls within the 10-year floodplain of the river. The lands within the conservation area were purchased to support the Upper Basin project via non-structural flood protection and water quality improvement. Since the turn of the century, the property has gone extensive alterations to the river system. By the early 1970's 62 percent of the 100-year flood plain and 42 percent of the annual flood plain has been diked, drained, and converted to agricultural production. These alterations resulted in changes in the hydroperiod. The wetland conversions south of the US 192 have greatly affected the hydroperiod and water quality with in these management units. Some of these same changes have affected how fire behaves. The fire regime has also been impacted by the construction of highways and development near the conservation area. Since marshes are maintained by a combination of hydrology and fire these alterations have impacted the environmental quality of the marshes within the conservation area.

Since fire is limited from playing the role it naturally played, prescribed fire is used to mimic the natural role of fire. With more strict regulations regarding smoke management and because of urbanization in proximity to the area, the window of opportunity for prescribed burning has decreased dramatically. This plan will outline the roles, responsibilities, opportunities, and obligations for managing fire within the Three Forks Conservation Area

The Three Forks Conservation Area is approximately 53,112 acres of floodplain marsh (non-forested wetlands). The conservation area is located approximately 30 miles east of Holopaw, 1 mile west of Palm Bay in Brevard County. SR 192, the River Lakes Marsh Conservation Area, lie to the north of Three Forks Conservation area. The Blue Cypress Conservation Area lies to the south. The St. Johns River flows north through the property. The Conservation Area begins at just south of SR 500(US192) and extends contiguously south to the Fellsmere Grade.

PURPOSE

The objectives for using prescribed burning are to create those conditions, which are most natural for a particular community, and to maintain ecological diversity within the unit's natural communities. To accomplish this effect the property has been divided into 15 burn units ranging from 682 acres to 12,000 acres. Only Florida certified burners may perform prescribed burns on District owned lands. All prescribed burns will be conducted under authorization from the Florida Department of Agriculture and Consumer Services, Division of Forestry (FDOF).

An intertwined cycle of fire and hydrology played a major role in shaping Florida ecosystems. In this predominantly freshwater marsh system, periodic fire and fluctuating hydroperiods naturally regulated the encroachment of woody species in the marsh. Much of the marsh is succeeding to a shrub overstory. Invasion of shrubs such as willow greatly alter the plant community and habitat structure as they shade out much of the understory vegetation. This herbaceous understory vegetation is essential to a variety of wildlife species and necessary to generate a fuel bed, that when burned, will restore an open marsh like appearance. It is not our purpose to eliminate shrubs, but to maintain a predominantly open marsh with a shrub island mosaic. Also, it is not the intent to let the marsh succeed into large expanses of willow monocultures. Since the influence from hydroperiodicity may be less effectual then historically, fire will be the main ecological force used to achieve management objectives.

Through prescribed burning, we can maintain wildlife habitat, perpetuate fire dependent communities, promote species diversity, and reduce the accumulation of hazardous fuel loads and associated wildfire risks. We can also minimize, or at least exercise some control over the timing of, or exclude smoke impacts to adjoining or nearby urbanization, roads, and highways. The goal is to maintain a healthy floodplain marsh and fire adaptive community. This can be achieved by applying appropriate weather parameters, burn rotations, and seasonality to each burn unit.

In addition to prescribed fire, many areas in several of the units will require mechanical restoration. As mentioned earlier, shrub thickets are becoming so dense and tall that reintroduction of fire alone will not achieve management objectives. Mechanical means, such as drum chopping, mowing, and herbicide treatments will be necessary to reduce the shrub overstory and encourage the herb layer (fine fuels) before fire can be effective.

SEASON AND ROTATION

The fire season coincides with the lightning season, which is generally from May to July. Before the influx of settlers, lightning fires would burn unimpeded through fire adaptive communities and landscapes until extinguished via changes in weather and/or fuel characteristics. Also, Native Americans would burn at various times of the year to attract wild game and to keep the landscape open for easy travel.

Prescribed burns in the marsh should take place primarily during the growing season, as many plant species respond favorably to fire during this time. However, different desired effects can be achieved during different seasons and should be considered when planning burn rotations for each unit. Some units will need to be burned at different time due to smoke management issues. For example, spring burns may help to control the spread of woody species.

The Guide to Natural Communities of Florida recommends that the natural interfere interval is 1-5 years under natural conditions in the floodplain marsh community type. Other experts suggest a three to five year burn rotation for the floodplain marsh. It has been found that marshes may not accumulate enough dead matter to carry a significant

fire until three years after a burn. Although there has been no definitive answer to the natural fire rotations in herbaceous marshes; fire managers throughout the state commonly accept a 3-5 year rotation. It is felt that drier areas burned at the short end of the range and deeper water areas, or areas near the river channel itself, burned with a 5-8 year interfire interval[i].

FUEL MODEL

The dominant vegetation within the conservation area is marsh grasses. The matrix of marsh grasses include *Spartina bakeri* (sand cordgrass, switchgrass), Saw grass (*Cladium jamaicense*), and maidencane (Panicum hemitomon. Spartina grows to an average of 3 to 4 feet tall but can grow to 6 feet. It is densely tufted and accumulates considerable dead matter. Saw grass typically grows in dense stands that exceed 3 feet in height within three years post fire. Both Spartina and sawgrass are chemically volatile and can be burned at high humidities. Maiden cane typically grows to 2-3 feet in height and takes longer after a fire to reach its prefire height and density. Maiden cane is less volatile than the other grasses and is more reliant upon dead thatch to carry a fire. These marsh grasses are well described by fuel model 3, the tall grass group within the 13 fuel models used by the Behave Fire Behavior Prediction System.

WEATHER PARAMETERS

A burn prescription should be carefully planned indicating weather parameters, seasonality, burn purpose and desired effects, site description, smoke management concerns, and contingency plans also to ensure a safe and effective burn. When conditions get too dry, chances for completing a safe burn become less and chances of causing undesirable and potentially dangerous muck fires increase. However, with differing weather conditions come differing fire behavior and effects, enabling various fire management objectives to be achieved. Recording and monitoring of these parameters allows the fire manager to become familiar with subsequent fire behavior, and resultant fire effects, thus improving upon the efficacy of the burn program.

In the summer, effects from the Bermuda High and the sea breeze are at their maximum as the Atlantic Ocean waters are cooler than land. The Bermuda high brings southerly winds to the eastern U.S. The sea breeze effect can influence wind directions by late morning to afternoon causing winds to be from the east. Sea breezes can push 20-30 miles inland in Florida. A combination of both effects tends to bring winds out of the southeast throughout most of the summer. Frontal storms tend to track to the north of Florida during summer, as they are too weak to overcome the Bermuda High. However, during winter and spring the Bermuda high weakens due to warmer ocean waters. Advances in the Jet Stream improve conditions for passage of cold fronts. Northerly winds prevail through late fall, winter and early spring in central Florida due to the passage of cold fronts.

Temperature- Since this is a non-forested wetland we are not concerned with scorching, charring, or killing trees except for units where there is Cypress. It is possible to attempt a burn at a higher temperature in order to keep woody invaders in check. Temperatures

of 85*-90*F are preferred in summer burns as caution must given to burning under hotter temperatures because of increased potential for heat stress to burn crews.

Relative Humidity- Fine fuels may reach their moisture of extinction levels when relative humidity is greater than 65%, causing fuel ignition to be low. Relative humidity of 35% or lower may increase spotting potential, cause erratic fire behavior, and increase control problems. Relative humidity of 40-65% may provide optimal burning conditions and minimize control problems.

Midflame Wind Speed- the wind speeds may be from 3 to 15 miles/hour. Winds of less speed may cause smoke management problems and may also cause control problems as fire-generated winds can overcome weak prevailing winds. Wind speeds of greater than 15 mph can increase spotting potential and other control problems.

Transport Wind Speed- The preferred transport wind speeds is from 9 mph to 20 mph. Winds of less than 9 mph may cause smoke management problems. Winds of greater than 20 mph indicates the potential for erratic fire behavior, and can cause control problems. Lower speeds may be sufficient to transport smoke if dispersion index and mixing height are above average

Wind Direction- Prescribed burns will be conducted when winds will direct smoke plumes away from or cause minimal impact to developed areas, residences, roads, and highways. Most units will require a northerly and/or an easterly component to the wind due to proximity to US192, Interstate 95, and the city of Pam Bay. See smoke management.

Fine Fuel Moisture (1 hour)- Preferred one-hour fuel moisture is from 10-20%. Fuel moistures of less than 10% may cause control problems. Fuel moisture of greater than 20% may cause ignition problems. A value on the lower end of the range may aid in achieving goals of reducing shrub encroachment.

Dispersion Index- Preferred values will range from 40 to 69. Indices of less than 40 indicate potential smoke management problems while indices higher than 69 indicate potential control problems and erratic fire behavior. DI's of greater than 69 may be utilized when other weather conditions permit i.e., higher relative humidity, recent significant rain, and fine fuel moisture on the higher side. However, careful planning should take place so that burn objectives are met.

Mixing Height- Mixing heights for prescribed burns will range between 1,650- 6,500 feet. Altitudes lower than 1,650 feet will cause smoke management problems. Heights of greater than 6,500 feet may indicate potential fire control problems and increased possibility of erratic fire behavior. Heights of 3,500-5,500 feet may allow the fire manager to successfully meet objectives of the burn, provide for good smoke dispersion, and conduct a safe burn.

SMOKE MANAGEMENT

There are smoke sensitive areas that surround the property and effect the smoke management of each burn unit according to their location and distance from each unit. Before a permit is obtained from the FDOF, a fire weather forecast is obtained and evaluated for suitable burning conditions and smoke management objectives. A wind direction is chosen that will transport smoke away from urbanized areas and/or impact these smoke sensitive areas in the least possible way.

A smoke screening process will be completed with each prescription to plot the direction of the smoke plume, to allow for horizontal dispersion and wind shifts, and to identify critical smoke sensitive areas[ii]. A critical area is a smoke sensitive area within one mile downwind of the burn unit. If a critical smoke sensitive area is downwind from the projected smoke plume, then the burn should not be conducted. A more suitable wind direction should be plotted.

Burn prescriptions should also take into account the atmospheres ability to ventilate smoke. The dispersion index, which is a numerical index that estimates the atmospheres capacity to disperse smoke should not be lower than 40. The mixing height, defined as the height at which thorough mixing of the atmosphere occurs, should not be less than 1,650 ft[iii]. Transport winds should be at least nine mph to effectively minimize residual smoke. Lower transport wind speeds can be utilized if dispersion index and mixing heights are above average.

The smoke sensitive areas near the Three Forks Conservation Area include: U.S. 192, I-95, the Cities of Melbourne, and Palm Bay.

VEGETATION AND WILDLIFE

The FNAI community type that is most prevalent in the surrounding area is floodplain marsh, dominated by *Spartina bakeri.* However, due to lack of fire and altered hydrology throughout the property, there was a succession from marsh to a shrub-dominated system via random woody encroachment. Plants include cabbage palm, wax myrtle, willow, Maple, salt bush, cat-tail, glasswort, marsh pink, marsh mallow, bulrushes, spikerush, etc. Brazilian pepper occurs in several of the units near to or along levees.

Typical animals include leopard frog, pig frog, cricket frog, American alligator, eastern mud snake, banded water snake, herons, sandhill crane, sparrow sp., wren sp., warbler sp., river otter, black rail, round tail muskrat, white tailed deer, marsh rabbit, etc. Wild pigs are also quite common on this property.

FIRE MANAGEMENT UNIT DESCRIPTIONS

TF-1

This unit is 3,593 acres. This zone is part of the T.M Goodwin Waterfowl Management Area. This is managed by FWC as prime duck hunting area. FWC uses cattle, herbicides, chopping, and fire to manage this area. It is mentioned in the plan to explain the numbering system of the burn zones.

TF-2

This unit is 2,231 acres. In February of 2001, a wildfire started in this burn zone. The suppression action was to apply more fire and burn out the entire area. The area was previously drawn down to facilitate a prescribed burn plans. The initial fire started a ground fire. This is commonly called a muck fire. This muck fire burned for several weeks. This muck fire was beneficial in killing a large amount of willow that had dominated the system. This fire burned off several inches of organic material and created a large amount open water habitat. This area was reconnected to the river in 2004 to allow more stormwater storage.

The dominant habitat type is shallow marsh and wet shrub.

Firebreaks around this unit include: The east fire line is a levee (15 feet wide), the western fire line is a levee and the C-40 canal, the south line is C-40 canal, and the north line is the 255 flow way.

This zone will be included in a plan to complete the Upper Basin project. This zone will be connected to TF-12 and TF-6. Future fire management will be evaluated as the project hydrology affects the zone.

TF-3

This unit totals 4,109 acres and was last burned by the SJRWMD in Marsh 2004. The area burned was less than 20 percent of the area. This is due to changes in the vegetation. The dominant habitat type is shallow marsh, wet shrub, with areas large areas of aggressive willow and hardwood encroachment. This area will need mechanical and possibly herbicide treatments to release the finer fuels. After these treatments, fire will be applied to push back the hardwoods and willow.

Firebreaks include: the north line is an airboat trail, the west line is canal, the east line is the C-40 canal, and the south line is the Fellsmere grade.

This unit can be burned using any wind due lack of proximity to any smoke sensitive areas.

TF-4

This unit is 799 acres and has not been burned since District ownership. This zone was reconnected to the river in 2001 by breaching the farm levees. Habitat type is shallow marsh, deep marsh, and wet shrub.

Firebreaks include a small canal on the south, a canal to the west, and a canal to the east. The north line consists of a flow way.

This zone can be burned on most any wind. Efforts will be made to conduct mid-growing season burn on this zone.

TF-5

This unit is 2,459 acres and has never been burned by SJRWMD.
The dominant habitat type is deep marsh, shallow marsh, and wet shrub. Willow and Primrose willow occur throughout the zone. This woody shrub coverage has spread acreage and height from years of fire exclusion and hydrologic alterations.

The zone is managed to stimulate wetland species. This zone is a closed wetland system. The area is regulated by rainfall and evaporation. This area is one of the final components of the Upper Basin project. This zone will be connected to TF-2 and TF-12 in the next three years. After the completion of the project, the zone will be reevaluated for fire management.

The firebreaks include: a levee on the west side, the east line is L-74. The south line is 256 flow way, the north line is 255 flow way.

This unit has no smoke sensitive issues.

TF-6

This unit is 1,739 acres and was burned by the SJRWMD in March of 2004.
The dominant habitat type is shallow marsh.

This zone is has a few burnable species. The area that typically burns is the panicums on the edges. The area is also experiencing hardwood encroachment from the south. This zone will be considered for herbicide treatment to control and open this area to finer fuels.

Firebreaks include: An airboat trail to the south and north, the C-40 canal on the east, and the Mormon canal on the west. This zone has no smoke sensitive issues. It can be burned on any wind to meet he objectives of the zone.

TF-7

This unit is 5,010 acres. It was burned by arson in January 2007. The arson fire burned approximately 2,500 acres. The SJRWMD with FDOF conducted a burnout operation to compete the zone.

The dominant habitat type is shallow marsh (spartina), maidencane and other panicums. Other vegetation includes: Willow, cattail, sawgrass & other grasses, red maple, Sagittaria, Hydrocotyle. This zone is experiencing succession and increasing dominance of woody species, particularly in the northern half. Burning is needed to shift dominance to herbaceous species, reduce encroachment of woody species, and restore an open vegetative structure.

Firebreaks include: the C-40 canal on the east, the Mormon canal on the west, the south line is an airboat trail, the north line is the Three Forks Run (river).

This unit will need to be burned with an easterly component in order to minimize smoke impacts to the city of Palm Bay. The unit does have some smaller areas that can burn with different winds to reach different goals. Fire will be applied to reduce willow encroachment in the north end. This process will be happening in the next five years. At the nearest point, this unit is about three miles east of Palm Bay.

TF-8

The zone is 5,857 ac. This zone was prescribed burned by SJRWMD in February 2007. The dominant habitat type is spartina marsh to the north and wet shrub to the south (willow). The dominant fuel is spartina and sawgrass (*Cladium jamaicense*) with willow along the river and southern portion of the zone.

The Platt family burned this zone every other year since the 1930's until the District purchased the land. The well-maintained portion of marsh is approximately 1,920 acres in the center of the zone, and will burn only during dry conditions. Wax myrtle invasion is a problem at the north end of the zone, and succession to willows is a problem at the south end. The wax myrtle was mowed in 2002 using the MMIII. The willow at the southern end received a roller chopping of 100 acres. The willow may need to have a herbicide treatment to open the area to allow for more grasses.

Firebreaks include: the east line is a levee and the C-40 canal, the south line is the Three Forks Run, and the river is the west and north line.

The largest hazard is U.S. 192. The burn will cause traffic to slow and some vehicles will pull off the highway to observe.
This zone is usually burned with a northeast or east wind. This is due to U.S. 192 and the population on the coast. The dispersion for this burn needs to be at least 47. This is due to the size of the zone. The area that burns consistently is approximately 3,400 acres. This zone needs to have contingency plans if the initial firing operation fails. The zone will need to be completed if the ignition has begun. This zone should be burned as quickly as possible. It is very important to have the zone done before the rush hour begins. Safety of the public and the crew is of the utmost importance. The fire weather for the next day needs to be considered due to smoke issues on the highway.

TF-9

The unit is 2,274 acres. This unit was burned in February of 2004. The burn was marginally successful. The dominant vegetation and carrier of the fire is spartina. This zone is experiencing an influx of shrubs such as willow and buttonbush. This zone needs to burn late winter or early growing season. This is due to water levels of the river and dryness of fuels. If this zone is to be burned on an east wind, the Kempfer Ranch will need to burn their property as well. This is due to the difficulty of controlling the line. The Kempfer Ranch tries to apply fire to their marsh at every year possible. The Kempfer Ranch is willing to burn with the District on this zone. This zone can be burned with a north or northwest wind.

Firebreaks include: the east line is the river, north line is airboat trail and willow line, south line is the bulldozer canal, the west line is an airboat trail.

TF-10

This unit is 1,317 acres and a burn was attempted in 2004. This zone needs to burn in late winter or the early growing season. This is due to water levels of the river and dryness of fuels. If this zone is to be burned on an east wind, the same issues apply with the Kempfer ranch as TF-9. The former owners applied fire at least once a year or as often as the river levels allowed.

The primary fuel is spartina and other marsh grasses. Some areas of this zone are river swamp. The area has some issues with willow encroachment. A properly timed fire will be able to slow this conversion. The Jane Green Creek connects to the river in the middle of this zone.

This zone should be burned at the same time as TF-9.

Firebreaks include: the river on the east, swamp and airboat trail on west side, the north line is an airboat trail, the south line is a combination of willow an old airboat trail.

The smoke sensitive areas for this unit are I-95 and U.S. 192.

TF-11

This zone is 1,050 ac. This zone has not seen fire in 10 yeas. This zone has been overrun by willow and is not conducsive to burning. This area will need mechanical treatment or herbicide treatment to bring to a state where fire will be able to be an effect tool to maintain the zone. The fuels for this zone include: Sawgrass, saltbush, cypress, Spartina, and willows 6-16' tall.
The fire breaks for this zone include: the north line is U.S. 192 and Old SR 500, the west line is the river, the east line is ditch.

The smoke sensitive areas include: U.S.192 and Camp Holly are on the north line, the city of Palm Bay approximately 3.5 miles to the southeast, Melbourne is 4 miles to the east, and I-95 approximately 4 miles to the east.

TF-12

This zone is 9,912 ac. Sawgrass is the dominant fuel throughout the zone, with wax myrtle, and grasses. The zone has large area of improved pasture. Pasture grasses typically only burn when there is sufficient dead thatch to carry fire. The need for thatch, and the lack of volatility, typically means these areas burn poorly during the active growing season. The zone was not burned in a natural rotation due to future needs of the restoration of this area. This zone was burned April of 2006. Arson fire was lit in the zone and the fire was extinguished two days later. The 2006 season was very dry and fires were burning all round this area. A decision was made to burnout the rest the zone in hope of not having another wildfire. 8,300 acres were burned in a prescribed fire. The burn was very successful reducing the wildfire risk for the city of Palm Bay. This burn also resulted in a several area of muck to catch fire. This muck fire burned several weeks.

Fire breaks include: C-40 canal on the west, by a ACOE levee w/ grass and/or a wide dirt road on the east, C-1 canal on the north, and by smaller canals and levees on the south.

The smoke sensitive areas include: The City of Palm Bay approximately .5 miles to the east, and I-95 approximately 7 miles to the east. This zone size is so large smoke considerations must evaluated down wind.

This zone is the major component of the Three Forks Marsh Conservation Area. This zone will be connected the two the southern zones TF-5 and TF-2. This project will give the river a larger basin. The reconnection will be complete by 2009. After hydrology is restored to the zone, it will be evaluated for fire management.

TF-13

This zone is 2,257 acres. This zone burned in 2003. This area is to become the Sawgrass Lakes Water Management Area. This area will receive water from the C-1 canal. The area will be covered with 18–24 inches of water. At this time, no future prescribed fires are planned. The area will be monitored to see if prescribed fire will be a tool for the management of the zone.

TF-14

This zone is 2,360 ac. This zone has not burned since District ownership. The zone is under a Cattle SUA. The SUA is held by the Desert Ranches of Florida. No fires are planned for this zone.

TF-15

This zone is 1,110 ac. This zone has not burn since District ownership. This zone was under a restoration plan and the decision was made to allow wetland plants to remerge after the property was reconnected to the river. This management decision excluded fire. A portion of this zone is under a cattle lease. The lessee only uses mowing to manage the pastures.

No prescribed fires are planned in the cattle area. The other areas will be evaluated. Smoke sensitive areas do not occur near this zone. Smoke will not be an issue when determining the use and timing of fire.

EQUIPMENT AND PERSONNEL NEEDS

This should list equipment and personnel required for the completion of a safe and effective burn. For example it should list how many engines are needed, the need for a helicopter, bulldozer, and staffing needs.

It is recommended that a helicopter with PREMO Mark III be used to ignite all units. At least one dozer crew or a marsh accessible vehicle should standby on site or at least be accessible for all burns. Two to three engines with crews of two should be on site for most units. Airboats may be needed for several zones. The airboats would notify the public, light the lines, and check for spot overs. At least one portable pump should be set up to fill engines. An ATV should be on-site for patrolling perimeter.

FIRING PLAN

The firing plan should describe exactly where and how to begin firing the unit and how to complete firing throughout the unit. It should be described according to the wind directions that the prescription dictates. Generally, a backfire is ignited on the downwind side (holding line) of the unit. When the holding line is lit completely and is secure then

fire can be grid into the unit with the helicopter, or by other means, progressing from the holding line, into the wind and through the unit. Spacing of the grid can be manipulated according to intensity of fire needed to achieve objectives and current and expected fire behavior. A widely spaced grid pattern will increase fire intensity and burn "hotter" because it increases the ratio of the fuel bed that spots will consume before burning out. Tight grids enable spots to burn together more rapidly, decreasing intensity with a resultant "cooler" burn.

MAP

The prescription should contain a map of the unit that shows fire lines, staging areas, special concern areas, escape routes and safety units.

CREW BRIEFING

During the briefing, the burn boss should explain the objectives of the burn. Maps should be distributed to the burn crew to discuss the burn area, crew assignments, identify areas of special concern, to show safety units and escape routes, and to explain the firing plan. The forecasted weather should be given to the crew during the briefing. The contingency plan should be discussed at this time.

NOTIFICATION

This section includes cooperating agencies, residents/homeowners associations, adjacent landowners, and other relevant agencies that should receive a courtesy call on the day of burn. A simple courtesy call can aid tremendously in mitigating concerns, questions and complaints from the public, the press and local agencies. The local entities to be given notice of any burns on TFCA include: the Florida Highway Patrol (Brevard Office), the Brevard County Sheriff's Office, Florida Wildlife and Fish Commission, Desert Ranch, Palm Bay Fire Department, and Brevard County Fire Department. Since the phone numbers on the call out list tend to change over the years, the current numbers will be listed and updated on the burn prescription.

The District Office of Communications should be informed of potential burn dates and of essential information regarding the burn. The Regional Communications Specialist should be given as much notice as possible prior to burn.

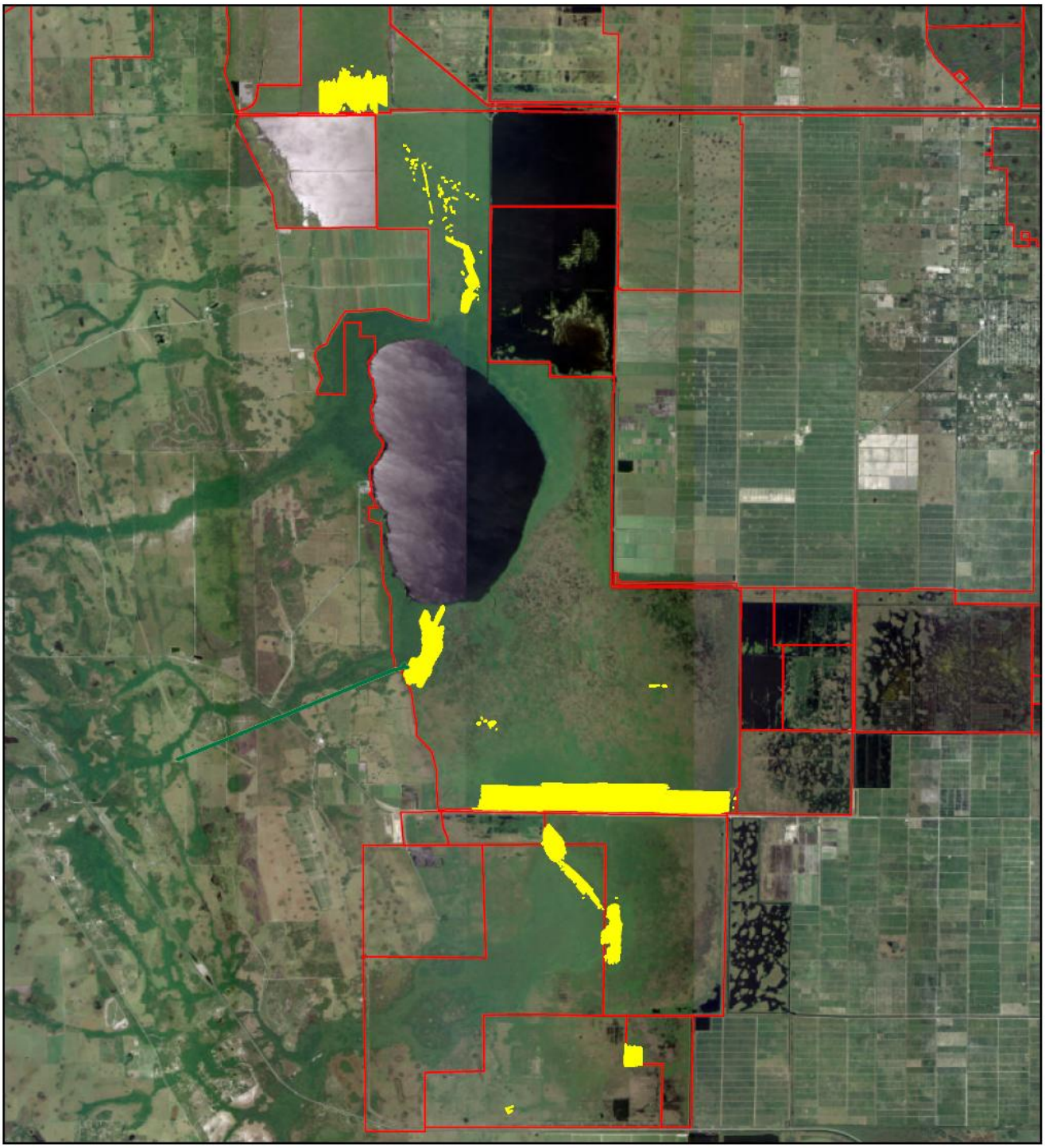
EXTRAS

The size of the unit cause concern on how much particulates matter that will be released. The public will be better served if the smoke is lofted over a nonurbanized area. This unit will most likely be burned during the winter months when northerly winds are most prevalent, however efforts will be made to conduct mid growing season burns. High dispersion levels will be needed. Also, the area will need to be burned before the water level rises in the summer

This will minimize smoke impacts to Babcock, and Micco. Due to the size of this unit and distance to urbanized areas, smoke impacts could be an issue. This unit will most likely have to be burned during the mid growing season when southeasterly winds are most prevalent and dependable. Also, the area will need to be burned before the water level rises in the summer.

Hazards for this zone include the city of micco, Palm Bay and Babcock St.
This unit should be burned using a wind with and easterly and/or southerly component

APPENDIX D: LYGODIUM TREATMENT MAPS



USJRB Lygodium Treatment

January 2005

1 0.5 0 1 Miles

1:159000

The St. Johns River Water Management District prepares and uses this Information for its own purposes and this information may not be suitable for other purposes. This information is provided as is. Further documentation of this data can be obtained by contacting: St. Johns River Water Management District, Geographic Information Systems,Program Management, P.O.Box 1429, 4049 Reid Street Palatka, Florida 32178-1429 Tel: (386) 329-4176.

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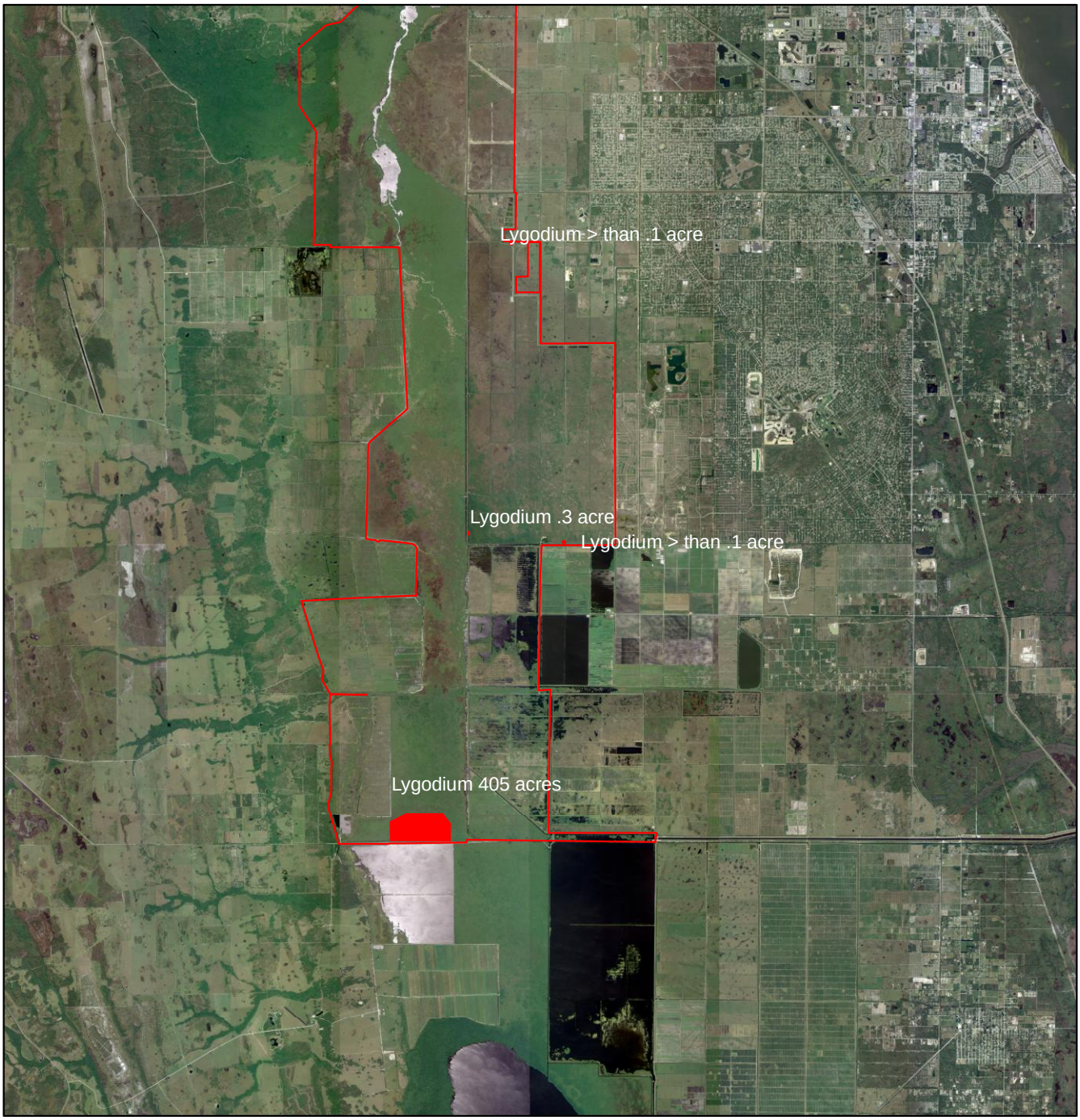
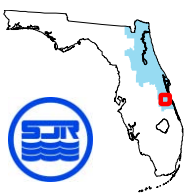


Three Forks Lygodium

2006



10.5 0 1 Miles

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Legend

- Three Forks Conservation Area
- Lygodium Treatment Area

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Board Approved
August 2007

APPENDIX E:
THREE FORKS MARSH CONSERVATION AREA
RESTORATION PLANNING

An Environmental Impact Statement was completed regarding the Three Forks Marsh Conservation Area Restoration project. Plant communities were predicted under three restoration alternatives. The Preferred Alternative was chosen (Figure 1, Appendix E). Under the Preferred Alternative, TFMCA will be converted to a large, shallow lake with littoral wetlands. Hydrologic modeling indicates that a majority (68%) of TFMCA will be inundated greater than 95% of the time with an average annual depth of 2.25 ft. or greater. Approximately 45% of TFMCA will experience an average annual depth of 3.0 ft. or greater. Considering these hydrologic conditions, it is predicted that open water / aquatic bed communities will occur on 51% of the area. This is concomitant with the loss of sawgrass and maidencane habitat in the downstream portion of TFMCA. Hydrilla is expected to be abundant. The upper reaches will be converted to a littoral zone with sloughs, emergent wetlands and transitional wetlands and will be dominated, initially, by cattail, primrose willow and Carolina willow. Overall, 6,687 acres of wetlands will be created in TFMCA. A majority of the peripheral pasturelands will be converted to wetlands, while a small portion of pastureland will become part of the lake. There will be no uplands. Only a small proportion of TFMCA (3.9%) will be exposed greater than 40% of the time with even a smaller proportion (1.5%) subject to soil oxidation. There will be no excavation of soil in the Three Forks Marsh Conservation Area. Most of the soil from levees along the S-255 and S-256 canals within TFMCA will be removed from the levees and used to fill the adjacent canals and to fill the gaps that currently exist in the levee adjacent to the C-40 canal. Some areas of the S-256 levee may be left as "habitat islands".

Table 1. Predicted Plant Communities for Three Forks Marsh Conservation Area Restoration

ENVIRONMENTAL FACTOR	PREFERRED ALTERNATIVE (SPLIT DISCHARGES; 21.0 –FT NGVD WEIR CREST; S-257 DISCHARGE TO 18.5-FT NGVD)
FLOOD CONTROL AND CONVEYANCE IMPACTS	Both S96-C and S-96B can discharge simultaneously to meet flood control schedules.
VEGETATION	Preservation of existing wetland vegetation community in SJMCA. SJMCA protected from adverse impacts of continued discharge of high nutrient waters. Conversion of downstream and middle reaches of TFMCA to open water habitat including loss of sawgrass habitat. Approximately 1,800 acres of sawgrass will be lost. Upper reaches of TFMCA converted to herbaceous wetlands dominated initially by cattail, primrose willow and Carolina willow. Overall, 5,987 acres of wetlands and 7,047 acres of deep- water habitat created. Approximately 1,850 acres of peripheral pasture habitats will be converted to wetlands. Reduction in nutrients discharged to wetlands in both TFMCA and SJMCA may allow long-term recovery to historic community types. Hydrilla may proliferate in deep-water areas.
IMPACTS TO THE INDIAN RIVER LAGOON	Meets GDM targets for probability of stormwater discharges to Indian River Lagoon.
FISH AND WILDLIFE RESOURCES	Habitat values of the SJMCA will be maintained. Increased habitat in TFMCA for wading birds, waterfowl and other wetland dependant species. Deep-water areas of the TFMCA will support development of sport fisheries. Lowest risk of extreme drying events that may cause fish kills. Loss of terrestrial habitats for species such as whitetail deer. Hydrologic connectivity will enhance habitat value
PROTECTED SPECIES	Enhanced habitat for wood storks, limpkins, other wading birds, waterfowl and snail kites. Potential loss of crested caracara habitat.

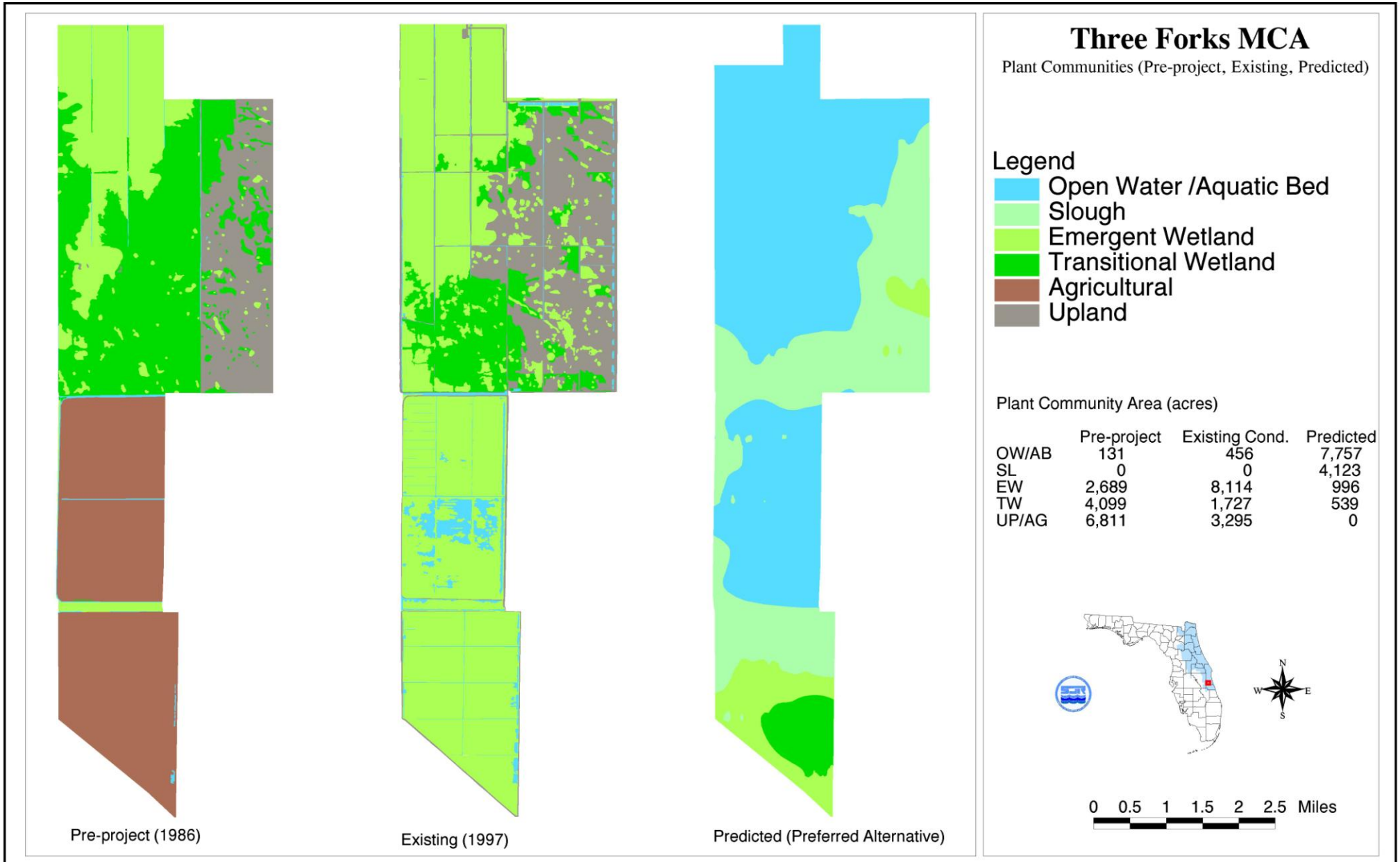

Figure 13. Comparison of plant communities for pre-project (1986), existing (1997) and predicted (preferred alternative) conditions.