Bayard Conservation Area

Land Management Plan

Clay County, Florida

St. Johns River Water Management District

2017

Bayard Conservation Area
Land Management Plan Summary

Management Area Size: 10,388 acres

Date of Acquisition: Acquisition of parcels within the Bayard Conservation Area began in 1992.

Date of Plan: October 2017
Previous Plan: December 2006
Major Basin: Lower St. Johns **Planning Basin:** South Mainstem

Location: Bayard Conservation Area (Conservation Area) is in Clay County, east of US Highway 17, south of State Road 16. The property is located approximately two miles south of the City of Green Cove Springs.

Funding Source: Preservation 2000 funds and mitigation donations were utilized in the acquisition of the parcels within the property.

Management Partners: The St. John's River Water Management District (District) serves as lead manager for the Conservation Area. A portion of the property is incorporated into a Wildlife Management Area and activities associated with hunting fall under the jurisdiction of the Florida Fish and Wildlife Conservation Commission (FWC).

Vision Statement: The primary management focus of the Conservation Area is the continued protection of the water resources of the Lower St. Johns River Basin. Management activities within the uplands of Bayard are largely focused on forest management and restoration activities to maintain or improve natural communities that support a diverse assemblage of native wildlife species. Quality recreational opportunities will continue to be maintained and improved upon in a manner consistent with the ecological needs of the property.

Key Land Use/Recreation Issues:

Resource Management Issues:

- WATER RESOURCES – Most water resource protection was accomplished through acquisition, however, at the time of acquisition, alterations to water resources include several roads, ditches, culverts, low water crossings, a bridge, and firelines. The Conservation Area protects 5½ miles of shoreline on the St. John's River and 4,266 acres of floodplain.
- FIRE MANAGEMENT – Implementation of prescribed burns occurs in accordance with annual burn plans and individual unit prescriptions.
- FOREST MANAGEMENT – Prior to public acquisition, most the upland acres within the property were managed for silviculture. Planned forest management activities include harvesting pine, prescribed fire, oak and other hardwood harvests, and pine plantings.
- WILDLIFE – Bayard provides habitat for numerous wildlife species including listed species such as the bald eagle (*Haliaeetus leucocephalus*) and gopher tortoise (*Polyphemus gopherus*).

- EXOTICS – Invasive exotic pest plant and animal species occur on the property at low to moderate levels of infestation. The District regularly monitors for the presence of invasive plants and animals and responds with appropriate control actions.
- CULTURAL and ARCHEOLOGICAL RESOURCES – The Department of State, Division of Historical Resources indicates there are two Florida Master Site locations within the boundaries of Bayard.

Land Use Management Issues:

- **Access** – Four public parking areas with trailheads are located on Bayard. It is anticipated that public access will be consolidated and relocated to facilitate the construction of the First Coast Expressway.
- **Recreation Use** – The property is open to the public for hiking, bicycling, equestrian activities, fishing, and camping. Public hunting opportunities are administered by the Florida Fish and Wildlife Conservation Commission.
- **Security** – Maintenance of fence lines, parking areas, gates, and locks is conducted. The District maintains contact with Florida Fish and Wildlife Conservation Commission (FWC), local law enforcement, and a private security firm for any potential security needs. The District also maintains an agreement with an onsite security resident.

Administration:

- **Acquisition –** The District may pursue acquisition of small parcels, surpluses, donations, or exchanges with neighbors to improve and provide additional access to Bayard or as otherwise warranted. For many years, the District has been working with the Florida Department of Transportation (FDOT) to address right of way needs for the construction of the First Coast Expressway. Additionally, through the District's land assessment process, portions of the property are identified for surplus for sale or exchange. Another area is identified for sale with an accompanying conservation easement.
- **Leases, Easements, Special Use Authorizations, and Agreements -** The District administers numerous leases, agreements, easements, special use authorizations (SUAs) and concessions.

FIGURES

TABLES

ADDENDA

VISION STATEMENT

The primary management focus for the Bayard Conservation Area is the continued protection of the water resources of the Lower St. Johns River Basin. This includes the protection of the 5½ miles of shoreline on the St. John's River and the 4,266 acres of floodplain. Management activities within the uplands of Bayard are largely focused on forest management and restoration activities to maintain or improve natural communities that support a diverse assemblage of native wildlife species. Quality recreational opportunities will continue to be maintained and improved upon in a manner consistent with the ecological needs of the property.

BAYARD CONSERVATION AREA OVERVIEW

This document provides the guidelines and goals for implementation of land management activities at Bayard Conservation Area (Conservation Area) through 2027. This is an update of the December 2006 Governing Board approved land management plan.

Location

The Conservation Area includes approximately 10,388 acres in Clay County within the South Mainstem drainage basin, a sub-basin of the Lower St. Johns River Basin. The Conservation Area is in numerous sections of Township 6 and 7 South and Ranges 26 and 27 East. Figure 1 provides an aerial view of the Conservation Area in 2015. The property is situated along portions of the western shoreline of the St. Johns River (Figure 2). The property is located east/southeast of the town of Green Cove Springs, east of US Route17 and south of SR 16. Additionally, CR 209 bisects the property.

Regional Significance

The Conservation Area encompasses approximately 5½ miles of shoreline along the St. Johns River as well as large expanses of associated floodplain wetlands. The Conservation Area is a significant acquisition in an area rich with other publicly owned lands and conservation easements. Figure 3 illustrates the regional context of the property. Public conservation lands contiguous with, or within proximity to, the property include:

Conservation Area	Land Manager
Belmore State Forest	Florida Forest Service
Jennings State Forest	Florida Forest Service
Camp Blanding Military Reservation	Florida National Guard
Black Creek Ravines Conservation Area	District
Deep Creek Conservation Area	District
Gourd Island Conservation Area	District
Julington-Durbin Preserve	District
Twelve Mile Swamp Conservation Area	District

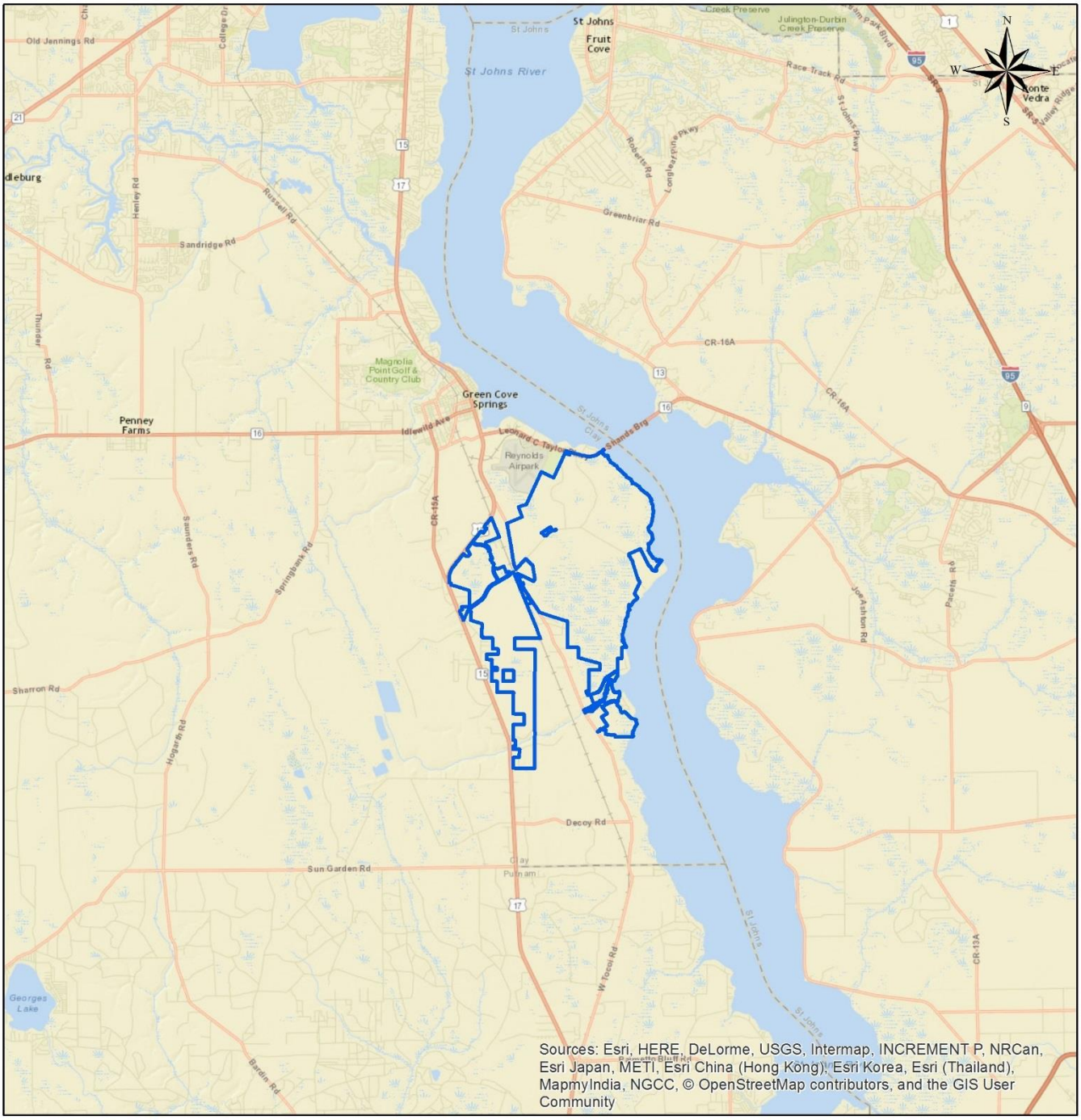
Bayard Conservation Area

Figure 1 - Aerial Imagery Map 2015

1

Miles

Bayard Conservation Area



Bayard Conservation Area

Figure 2 - General Location Map

4 Miles

Conservation Area

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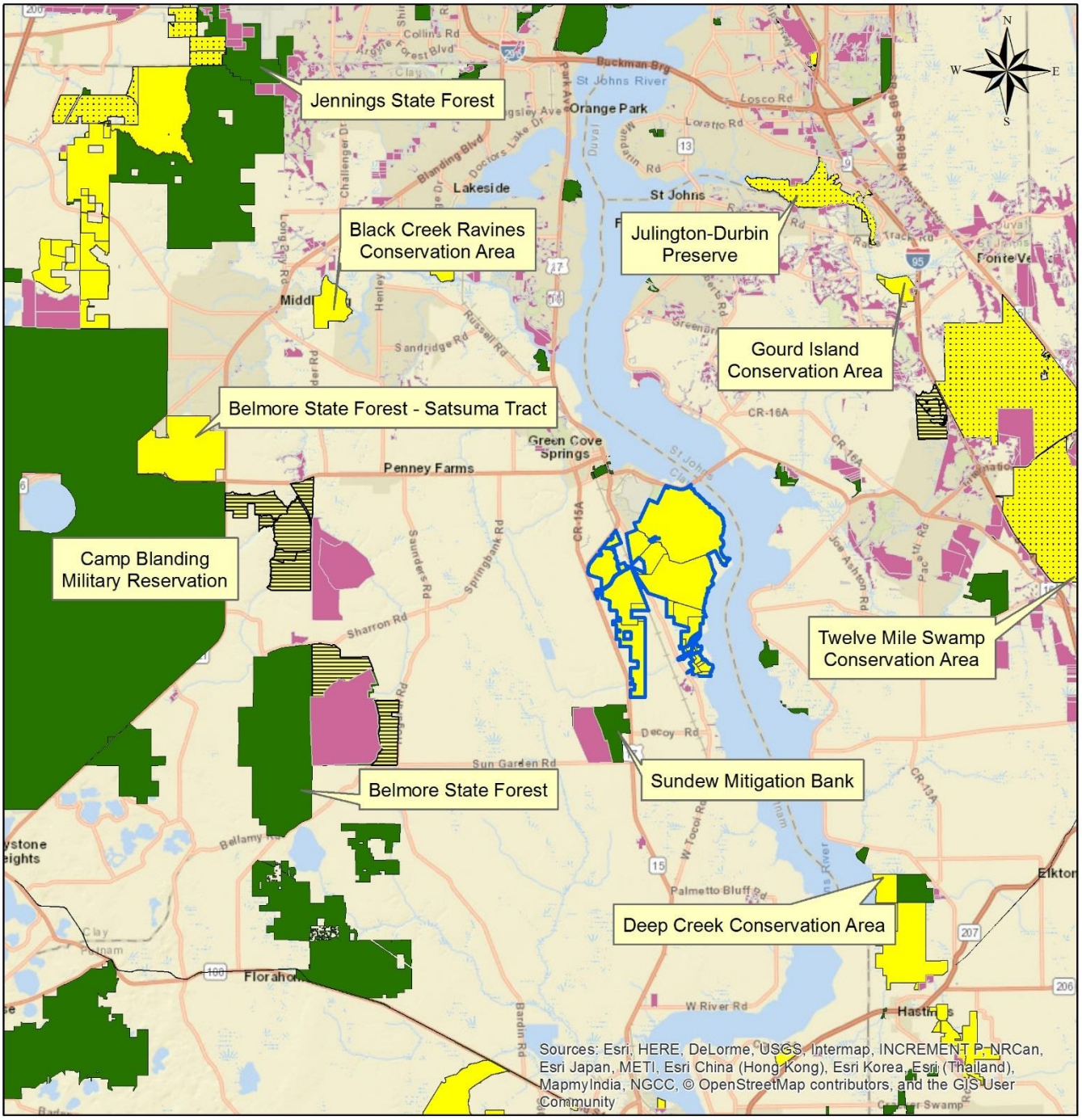

Bayard Conservation Area

Figure 3 - Regional Significance Map

6 Miles

- Regulatory Conservation Easement
- Conservation Area
- Conservation Easements

District Interest

- Full Fee
- Joint Fee
- Other Public Lands

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Acquisition History

The acquisition of the parcels that comprise the Conservation Area provides for the protection of important water resources and ecological functions. This acquisition is consistent with the goals of the Lower St. Johns River Basin projects as set forth in the District's Land Acquisition and Management Five Year Plan and the District's Water Management Plan at the time of acquisition. These goals, as they apply to the Conservation Area, include:

- Improve water quality, maintain natural hydrologic regimes, and increase flood protection by preserving important floodplain areas.
- Restore, maintain, and protect native natural communities and diversity.
- Provide opportunities for recreation where compatible with resource management needs and the above listed goals.

Acquisition of the Conservation Area began in 1992. The Conservation Area is comprised of 27 parcels. The combined acreage of all parcels incorporated into the Conservation Area totals 10,388 acres (Figure 4). Table 1 summarizes the land acquisition accomplishments within the Conservation Area. All acreage reported is derived from GIS calculations.

Also, identified in Figure 4 are areas of potential surplus, easements, and cattle lease areas. Through the District land's assessment process, two areas within the JP Hall Parcels of the Conservation Area are identified for potential surplus *2012 District Lands Assessment Implementation Plan* (SJRWMD 2012). One of these areas is identified for surplus for sale/exchange, where the District is interested in the sale or exchange of this property on the open market. Disposition of this property will be organized to ensure that any future uses will not be incompatible with the conservation values of the retained portions of District property. The other area is identified for sale with an accompanying conservation easement to ensure continued conservation. The *2012 District Lands Assessment Implementation Plan* the areas identified for surplus are fragmented from the main portion of the property by CR 226 and is bordered by US Route 17 and light industrial areas.

In 2009, the District entered a lease agreement for use of approximately 80 acres of the Union Camp parcels for cattle grazing. In lieu of lease payments, in exchange, the District received an access easement across the lessee's adjoining land. This access easement provides much needed management access to the southern reaches of the Conservation Area.

Additionally, District staff are in communication with the FDOT regarding potential surplus and/or exchange of District-owned lands within the Conservation Area. This potential surplus and/or exchange will help facilitate the implementation of the First Coast Expressway development. While the final footprint of land to be surplussed or exchanged is not yet known, it will be generally located along SR 16 in the north and northwest boundary of the property.

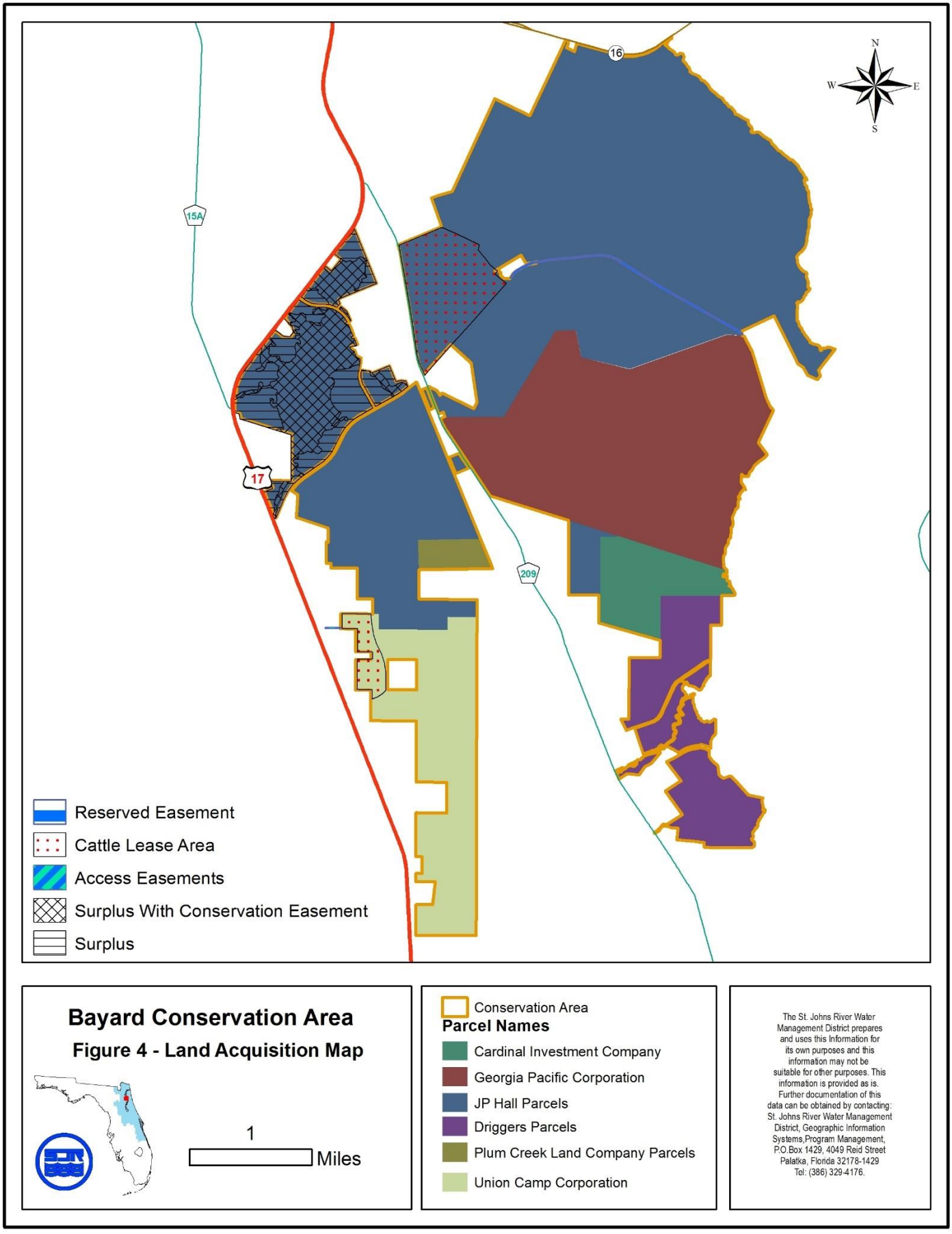
16
15A
17
209
N
W
E
S
Reserved Easement
Cattle Lease Area
Access Easements
Surplus With Conservation Easement
Surplus
Bayard Conservation Area
Figure 4 - Land Acquisition Map
1
Miles
Conservation Area
Parcel Names
Cardinal Investment Company
Georgia Pacific Corporation
JP Hall Parcels
Driggers Parcels
Plum Creek Land Company Parcels
Union Camp Corporation
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Table 1 – Land Acquisition (LA) Summary

Parcel	LA Number	GIS Acres	Total Purchase Price	District Funding Source	Transaction Dates
JP Hall-Shiloh Church	1991-063-P1	4,584	$6,500,000.00	P2000	December 30, 1992
Shiloh Church Surplus	1991-063-P1	(12)	($58,605.24)		April 13, 2000
Georgia Pacific - Bayard	1992-047-P1	2,059	$787,443.00	P2000	July 29, 1993
Cardinal Investments	1993-064-P1	345	$100,000.00	P2000	February 7, 1995
Union Camp – Bumpy Bay	1994-066-P1	959	$905,000.00	P2000	May 25, 1995
Survey Adjustments	1994-066-P1	(12)	($11,824.04)		October 1, 1998
JP Hall Additions #1	1994-067-P1	114	$169,000.50	P2000	August 14, 1995
JP Hall Additions #2	1995-087-P1	1,560	$2,503,428.20	P2000	September 19, 1997
FDOT Surplus	1995-087-P1	(13)	($44,000.00)		May 12, 2001
Plum Creek Crossings at Fleming Island	2002-004-P1	72	$0.00	Mitigation	January 29, 2002
Plum Creek Hunters Run	2002-004-P2	15	$0.00	Mitigation	March 20, 2002
William Driggers/Wells Crossing	1995-084-P1	257	$0.00	Mitigation	December 11, 1996
Williams Driggers West and East	1995-084-PA	34	$0.00	Mitigation	October 8, 1996 June 29, 1998
Williams Driggers (B1, B2, B3)	1995-084-PB	25	$0.00	Mitigation	June 29, 1998
Williams Driggers/Wells Crossing	1995-084-PC	31	$0.00	Mitigation	June 29, 1998
Williams Driggers/Wells Crossings/D	1995-084-PD	10	$0.00	Mitigation	June 29, 1998
Williams Driggers/Madeira Baptist Church	1995-084-PE	7	$0.00	Mitigation	June 29, 1998

Williams Driggers/U-store Mgmt Corp/F	1995-084-PF	.30	$0.00	Mitigation	June 29, 1998
Williams Driggers/U-store Mgmt Corp/G	1995-084-PG	1	$0.00	Mitigation	August 13, 1999
Williams Driggers/U-store Mgmt Corp/H	1995-084-PH	1	$0.00	Mitigation	August 13, 1999
Williams Driggers/U-store Mgmt Corp/I	1995-084-PI	15	$0.00	Mitigation	August 13, 1999
Williams Driggers/U-store Mgmt Corp/J	1995-084-PJ	21	$0.00	Mitigation	August 13, 1999
Williams Driggers/Goodman Co	1995-084-PK	16	$0.00	Mitigation	August 26, 1999
Williams Driggers/Crossing at Fleming Island/L	1995-084-PL	22	$0.00	Mitigation	February 4, 2002
Williams Driggers/Crossings at Fleming Island/M	1995-084-PM	16	$0.00	Mitigation	February 4, 2002
Williams Driggers/Varsity Club	1995-084-PN	50	$0.00	Mitigation	September 19, 2001
Williams Driggers/Breckenridge Commons	1995-08-PO	26	$0.00	Mitigation	July 18, 2000
Williams Driggers/Goodman Company II	1995-084-PP	77	$0.00	Mitigation	June 20, 2000
Williams Driggers/Ash	1995-084-PQ	44	$0.00	Mitigation	June 6, 2001
Williams Driggers/Crossing at Fleming Island	1995-084-PR	64	$0.00	Mitigation	November 19, 2002
TOTALS	**-----**	**10,388.30**	**$10,850,442.42**	**-----**	**-----**

Local Government Future Land Use Designations

Clay County

Per the Clay County, Florida, 2025 Comprehensive Plan, the Future Land Use designation for the property is Recreation/Preservation. This designation includes lands that are owned by public or quasi-public entities and generally include areas of public recreation, open spaces, and natural resources land management and associated activities (Clay County, 2009). Land in the immediate vicinity of the property is primarily designated Rural Reserve and Mix Use. The Rural Reserve areas are designated such due to the proximity between suburban and exurban/rural density areas. These areas may be served by central services such as water and sewer. The mixed-use areas are those areas that include a minimum of two uses, one of which is residential and the other must be non-residential.

NATURAL RESOURCES OVERVIEW

Topography and Hydrology

The Conservation Area lies within the Palatka Anomalies Subdistrict of the Eastern Flatwoods District. Historically, the Eastern Flatwood District is thought to have originated as a series of barrier island and lagoons. Elevations within these portions of the property range between 5 and 25 feet above sea level. A small potion of the property is located within the Duval Upland Subdistrict of the Seal Island District. This subdistrict is thought to have formed as ancient beach ridges accreted. Elevations are noticeably higher in this portion of the property. A small ridge reaching 70 feet above sea level runs along the western boundary. This ridge marks the beginning of the Duval Upland within the property.

The Conservation Area falls entirely within the South Mainstem Unit of the Lower St. Johns River Basin. The Lower St. Johns River Basin is the portion of the river that flows north of Welaka to the river's mouth at Mayport. The hydrologic functions within the Conservation Area are largely intact with much of the water resource protections being accomplished through acquisition. The approximate 5½ miles of shoreline of the St. Johns River and associated wetlands are significant hydrologic features, influencing natural processes that occur on the property and in the surrounding area. The portion of the St. Johns River that the property adjoins is located approximately 50 miles south of its confluence with the Atlantic Ocean. The average ocean tidal influence here is approximately two feet; the extensive floodplain wetlands that are prominent within the Conservation Area are affected daily by these tides. Additional significant hydrologic features within the property include Clarkes Creek which runs through the south end of the property, and two unnamed creeks, which run through the northern reaches of the property. One of the unnamed creeks is locally called 'Peeler Branch". Figure 7 illustrates the hydrologic features within the property and adjacent areas.

The Conservation Area surface geomorphology has been shaped by erosion and deposition by the St. Johns River and paleo-lagoonal water level fluctuations. Pleistocene to recent beach ridges are present to the west and east. Clarkes Creek to the south and Governors Creek to the north express a trellis drainage system because of these ridges. The Conservation Area is primarily within the Atlantic Coastal Complex geomorphic terrane which consists of undifferentiated Tertiary and Quaternary sediments. The western boundary borders the Duval Upland which rises in elevation to the west (Green and others, 2014). The western boundary of the Conservation Area reaches a maximum elevation of 72 feet NAVD88. A regional view of surface elevation is shown in Figure 5 and illustrates the drop in elevation from the west to a low at the St. Johns River then a more gentle rise on the east side of the river. The northern part of the property is higher than the southern portion but is generally under 25 feet. Line A-A' is included on the map to show the location of a hydrogeologic cross section presented later in this report (Figure 6).

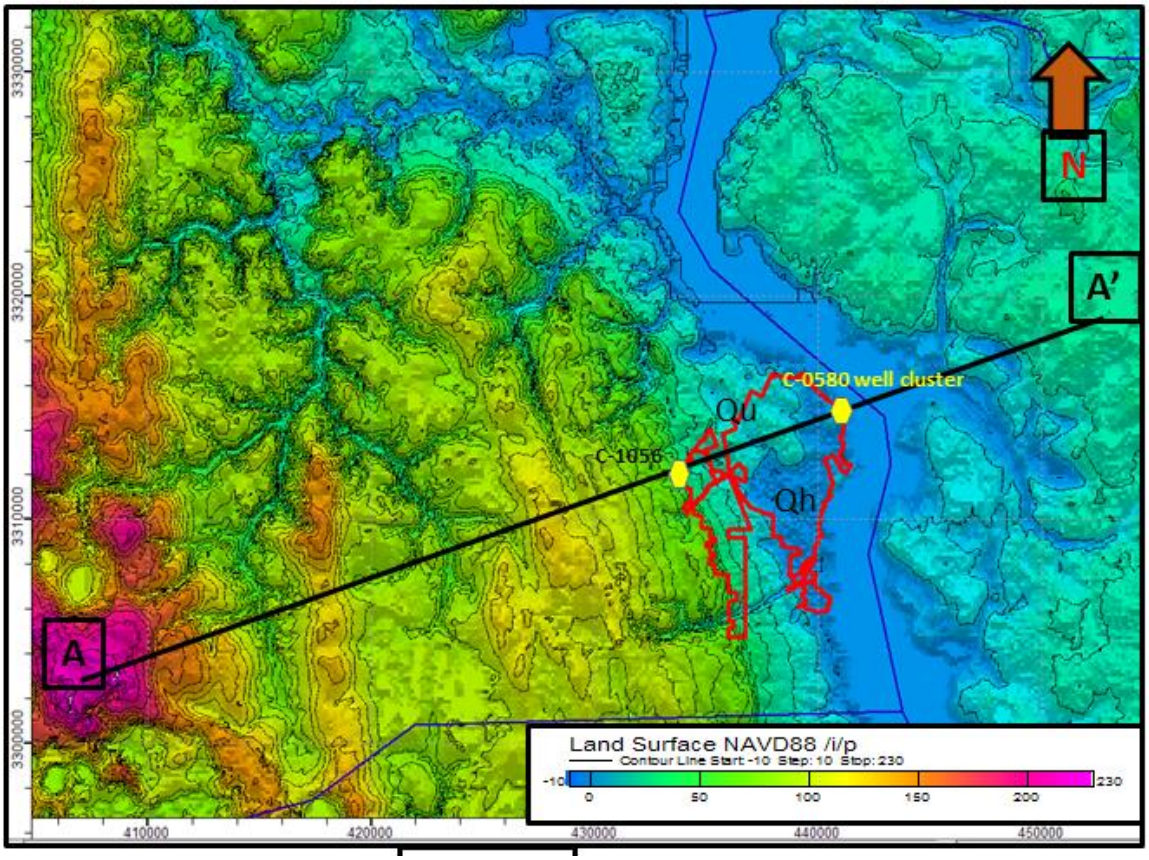


Figure 5. Land surface elevation (NAVD88) in the Bayard Conservation Area. Location of hydrogeologic cross section shown as line A-A and location of monitor-well sites.

The surface geology includes Holocene sediments in the southeastern area (Qh in Figure 5) which includes quartz sands marls, organics, humate, and minor carbonate sands (Green and others, 2014). To the north and west, (Qu in Figure 5) the sediments are mapped as undifferentiated Quaternary sediments that include sands and clays. The delineation between the Qh and Qu sediments roughly follows the dark blue and lighter blue areas within the Conservation Area in Figure 5 but the reader is referred to the Green (2014) report OFMS 106 Plate 2 for more detailed mapping. The principal aquifers and confining units encountered in the upper 700 feet below land surface include the surficial aquifer system (SAS), the intermediate confining unit (ICU), the Upper Floridan Aquifer (UFA), the middle confining unit I (MCU I), and the Lower Floridan Aquifer (LFA). Though there is variation depending on elevation at the site, the ICU is located approximately 85 below land surface (bls), the UFA is about 293 feet bls, the MCU I about 457 feet bls, and the LFA about 604 feet bls.

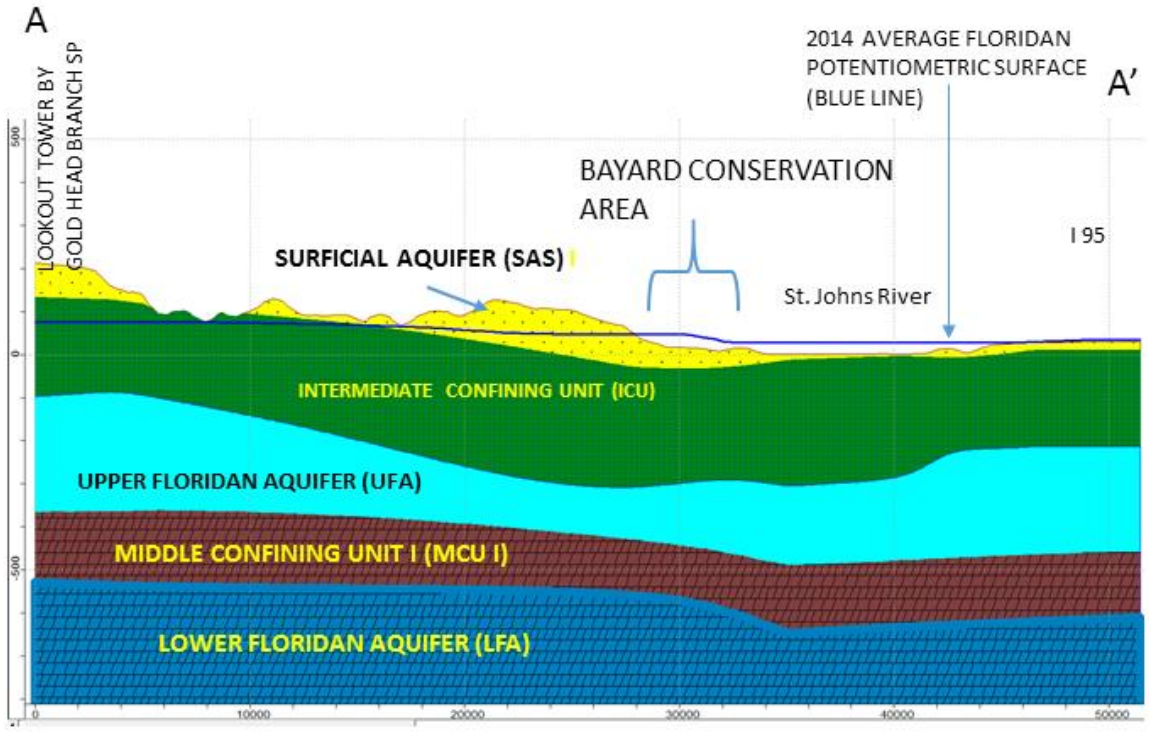


Figure 6. Regional hydrogeologic cross section through Bayard Conservation Area from west near the Gold Head Branch State Park to the east near I-95. See Figure 1 for cross section location line.

The Conservation Area is currently being used as a groundwater monitoring site. There is a well-cluster on the northeast side of the property (Figure 5) that includes two SAS wells monitoring different depths, one UFA well and one LFA well. A single, UFA well is located on the northwest side. The upper SAS well (C-577) monitors from 15'-30', the lower SAS well (C-0576) monitors from 60'-75', the UFA well monitors from 320'-655' (C-0579), and the LFA well monitors from 1,090'- 1,177'.

North of the property at Green Cove Springs, there have been multiple wells drilled. These wells were drilled to identify the source of water discharging from the spring (Munch and others 2014), so detailed water quality and age dating is available. A cross section in that report provides some evidence of structural deformation with a vertical offset of ICU beds that could possibly continue south under the property. This feature could increase the chances of surface discharge or seepage. A second spring is located north of the property in the St. Johns River and called Shands Bridge Spring due to its proximity to the bridge. With the evidence of subsurface structure and multiple springs nearby, there is a possibility that some of the marsh land could be augmented by Floridan seepage.

The 2014 average Floridan potentiometric surface is included as a blue line in the cross section of Figure 6. This line clearly indicates that a well drilled into the FAS will flow at land surface. This implies that if there are breaches in the ICU that FAS water will flow upwards through the unit. West of the property the SAS rises above this elevation and has a downward gradient to the FAS.

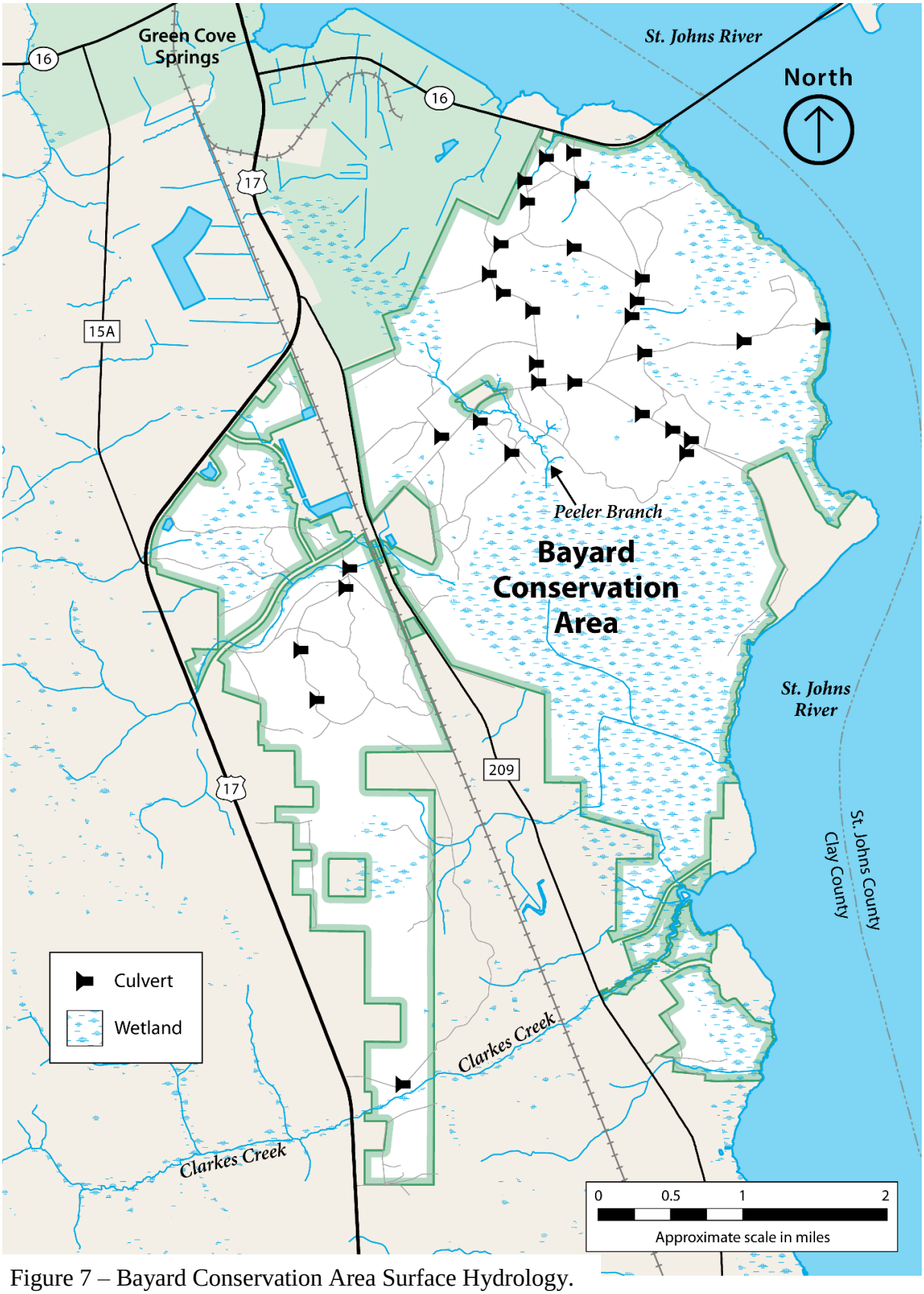
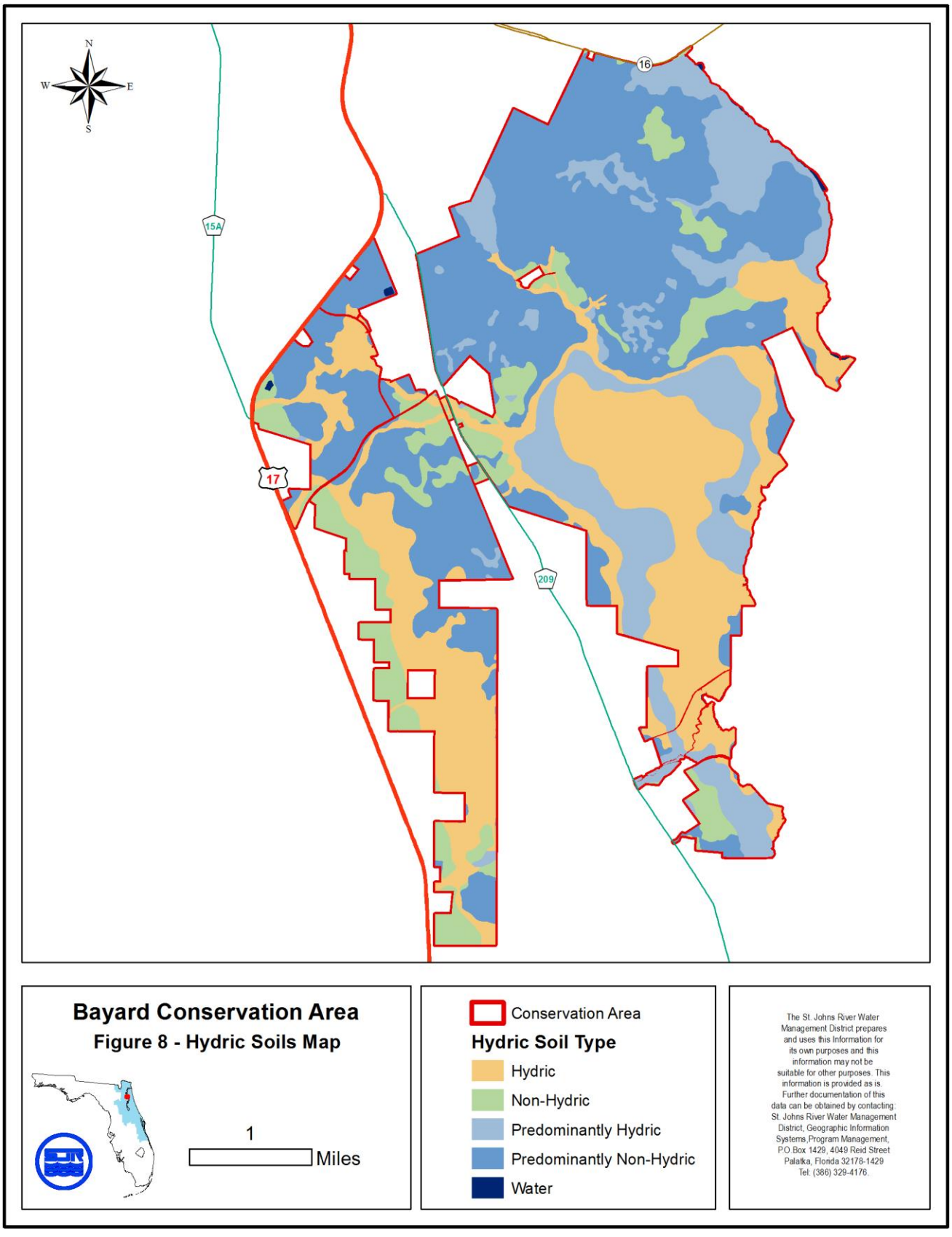


Figure 7 – Bayard Conservation Area Surface Hydrology.


N
W
E
S
16
15A
17
209
Bayard Conservation Area
Figure 8 - Hydric Soils Map
1
Miles
Conservation Area
Hydric Soil Type
Hydric
Non-Hydric
Predominantly Hydric
Predominantly Non-Hydric
Water
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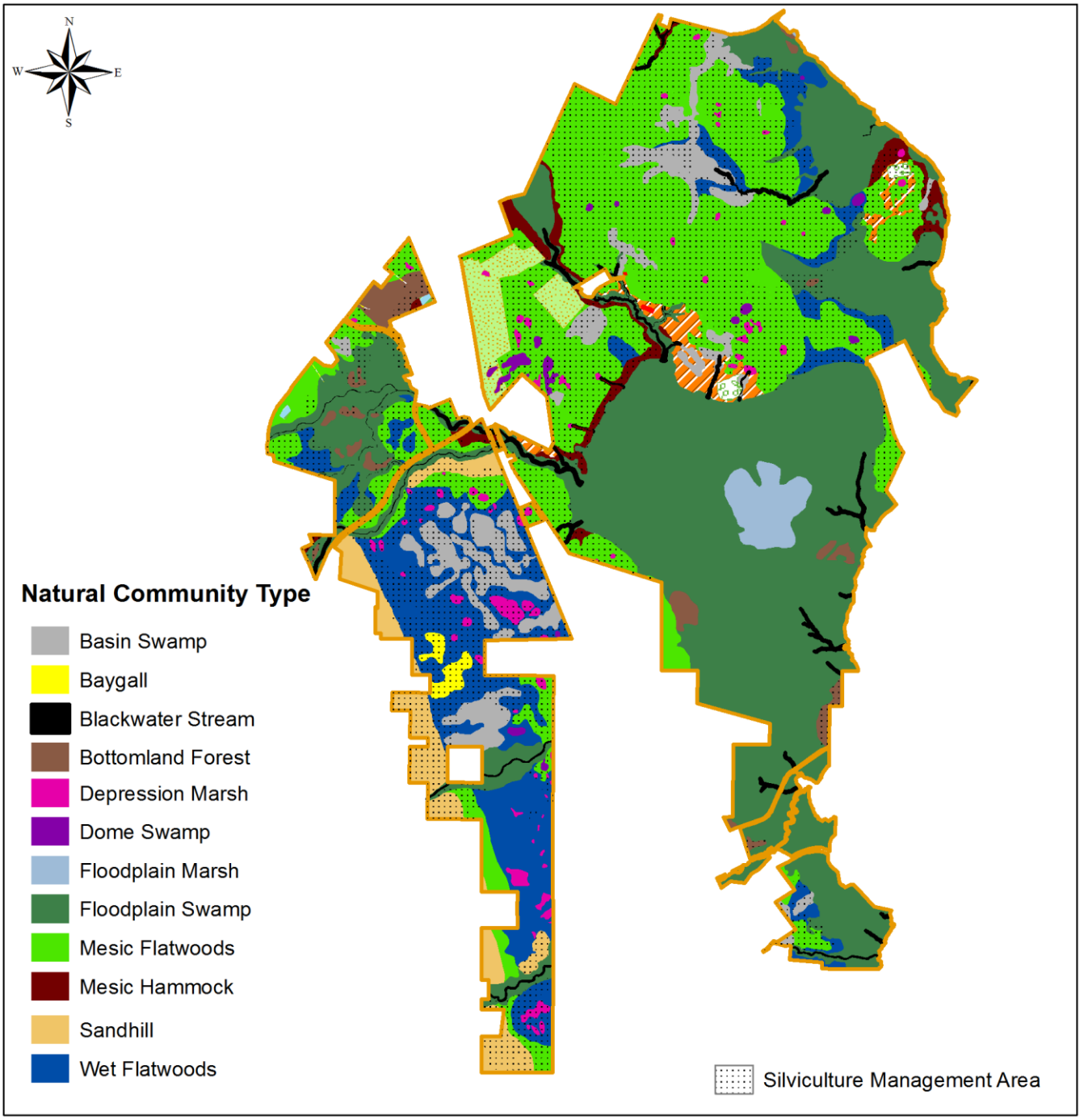


Bayard Conservation Area

Figure 9 - Natural Community Map

1 Miles

Conservation Area

Altered Land Type

- Abandoned Pasture
- Artificial Pond
- Canal/Ditch
- Clearing/Regeneration
- Developed
- Pasture - Improved

Soil

The soils within the Conservation Area include hydric, predominantly hydric, partially hydric, predominantly non-hydric, and non-hydric conditions, as well as areas of open water. Hydric soils are soils that "formed under saturated conditions during the growing season and for a duration sufficient enough to develop anaerobic conditions in the upper parts of the soil" (NRCS, 2013). Within the property, hydric soils account for 30% of the land area. Predominantly hydric soils, which include some characteristics of hydric soils, account for approximately 19% of the property (Figure 6). According to data produced by the United States Department of Agriculture, NRCS, 27 unique soil series types are present within the property. Addendum 1 includes a detailed map of the various soil series present within the Conservation Area and includes associated series descriptions.

Natural Communities

Past land use activities have resulted in alterations to the natural communities within the Conservation Area. Varying degrees of disturbance are noted within the property; however, most these natural areas remain largely intact and functional.

The 10,388 acres that comprise the Conservation Area include large areas of floodplain swamp and a diverse array of other natural communities (Figure 7). Table 2 details the percent coverage associated with each natural community documented within the property. Information relative to the natural communities within the Conservation Area is derived from several sources, including personal observations of District staff. Additionally, the general natural community descriptions are characterized using descriptions published in the Florida Natural Areas Inventory's (FNAI) *Guide to the Natural Communities of Florida.* Natural community and species ranking definitions are listed in Addendum 2.

Table 2 – Natural Community Coverages

Natural Community Type	Acreage*	Percent Coverage	FNAI Ranking	FNAI Fire Return Interval*
Mesic Flatwoods	2,870	28%	G4/S4	2-4 years
Wet Flatwoods	1,271	17%	G4/S4	1-3 years in grass dominated systems; 5-7 years in shrubbier systems
Mesic Hammock	199	2%	G3/S3	Not always fire adapted; some areas may experience occasional low-intensity ground fires
Depression Marsh	129	1%	G4/S4	This community burns in conjunction with adjacent pyric plant communities
Baygall	43	<1%	G4/S4	Infrequent; may burn with adjacent pyric plant communities
Basin Swamp	612	6%	G4/S3	This is not a fire adapted community
Dome Swamp	49	<1%	G4/S4	3-5 years along the outer edges (or as adjacent communities burn); 100-150 years interior
Floodplain Swamp	4,110	40%	G4/S4	This is not a fire adapted community
Blackwater Stream	50	<1%	G4/S3	This is not a fire adapted community
Bottomland Forest	179	2%	G4/S3	Fire is not a significant ecological factor in this community
Floodplain Marsh	156	2%	G3/S3	1-3 years in areas of pyric plants.
Sandhill	341	3%		1-3 years
Subtotal	***10,009***	-----	-----	-----
Altered Land Types		**Percent Coverage**		**Fire Return Interval**
Pasture-Improved	205	2%	-----	1-3 years or in conjunction with adjacent pyric plant communities
Abandoned Field/Abandoned Pasture	141	1%	-----	1-3 years or in conjunction with adjacent pyric plant communities
Artificial Pond	6	<1%	-----	-----
Restoration Natural Community/Regeneration	22	<1%	-----	1-3 years or as needed to accomplish restoration objectives
Canal/Ditch	2	<1%	-----	-----
Developed/Parking Area	3	<1%	-----	-----
Subtotal	***379***	-----	-----	-----
Total	**10,388**	-----	-----	-----

*All acreage reported is derived from GIS calculations

Pine Flatwoods

Flatwoods communities typically occur in low areas with little topography and may be further classified as wet, mesic, or scrubby. Wet and mesic flatwoods occur within the Conservation Area. Alterations from past management activities, hydrologic disturbances, elongated fire return intervals, and prolonged absence of fire can make distinguishing wet and mesic flatwoods difficult. Additionally, the pine dominated communities within the Conservation Area have long

been managed for silviculture. Natural community reclassification and refinement may occur as silviculture, restoration, and fire management activities progress.

Mesic Flatwoods (*2,870 acres*)
Soils that support mesic flatwoods communities are generally poorly drained, acidic, and sandy soils deposited on ancient, shallow seabeds. Many flatwoods communities have a clay or organic hardpan. Hardpan soils become saturated during the rainy season causing the accumulation of surface water. These soils are often droughty during dry periods. The presence of the hardpan translates to extreme seasonal fluctuations in the amount of water available to support plant life. These seasonal hydroperiods are essential in the maintenance of the flatwoods system.

Intact mesic flatwoods typically have a layered appearance, with a distinct, high, discontinuous canopy, low shrub layer, and diverse herbaceous layer. The canopy densities are variable and may include (depending on location) longleaf pine (*Pinus palustris*), slash pine (P. *elliottii*), loblolly pine (*P. taeda*), or pond pine (*P. serotina*). The shrub layer may include a mixture of species or be dominated by species such as saw palmetto (*Serenoa repens*), wax myrtle (*Morella cerifera*), and numerous Ericaceous plants. The herbaceous coverage may be dominated by wiregrass; however, species abundance and diversity is often dictated by the openness of both shrub and canopy layers.

The mesic flatwoods communities within the Conservation Area are disturbed, with the most significant alterations attributed to historic silvicultural activities combined with the likely use of dormant season burning prior to public ownership. Shrub layers within the mesic flatwoods are largely in good condition with some areas that are overgrown. Additionally, groundcover assemblages vary in diversity and abundance within this community type. Except for the former pasture areas on the northern end of the property, the groundcover across the property is generally intact with wiregrass and other site appropriate herbaceous species present. Pine species present within the mesic flatwoods includes longleaf, slash, and loblolly pine.

Fire is an important physical factor associated with the shaping and maintenance of this community type. The District targets natural fire frequency intervals of approximately every two to four years within the mesic flatwoods, which is consistent with the FNAI 2010 description. Fires in well-maintained mesic flatwoods tend to burn quickly and at relatively low temperatures. Areas of prolonged fire exclusion, altered hydrology, or hardwood encroachment typically have higher soil and fuel moistures and may require more extreme conditions to facilitate a fire.

Wet Flatwoods (1,271 acres)
Soils that support wet flatwoods communities are generally very poorly drained sandy soils that may have a mucky texture in upper horizons. Wet flatwoods occur as ecotonal areas between the drier mesic flatwoods and wetland areas. They may also occur in broad, low flatlands embedded within these communities.

Well-maintained wet flatwoods exhibit a relatively open-canopy forest of scattered pine trees (longleaf, loblolly, slash, or pond) or cabbage palms (*Sabal palmetto*) with either a thick shrubby understory and sparse groundcover or sparse understory with dense groundcover. Understory species of the subcanopy and shrub layers may include sweetbay (*Magnolia virginiana*), loblolly

bay (*Gordonia lasianthus*), and saw palmetto and other shrubs. The groundcover layer may include species such as wiregrass, blue maidencane (*Amphicarpum muhlenbergianum*), and numerous hydrophytic species. The variations in structure and composition may be attributed to subtle edaphic differences as well as differences in hydrologic and fire regimes.

The wet flatwoods within the Conservation Area are generally intact. Fire exclusion, primarily as a result of fire shadowing, has resulted in portions of this community within the property exhibiting suppressed groundcover assemblages and an overgrown midstory that includes a dense coverage of loblolly bay. The wet flatwoods plant community is fire dependent and the District targets return intervals ranging from one to three years, which is consistent with FNAI 2010 descriptions.

Mesic Hammock (199 acres)
Mesic hammock communities typically occur on sandy soils that are seldom flooded. These soils may include some presence of organic matter and will often include a thick accumulation of leaf litter. Mesic hammocks typically include a well-developed, closed canopy of hardwoods such as live oak and/or cabbage palms. The subcanopy may include a coverage of southern magnolia (*Magnolia grandiflora*). Pine trees and deciduous hardwoods may be present, but coverage is typically sparse. Shrub layers in mesic hammocks may be of varying heights and densities and might include saw palmetto and other commonly found shrub species. Characteristic of mesic hammocks and present within the Conservation Area is an abundant coverage of various epiphytes including orchids and bromeliads.

Sandhill (*341 acres*)
Sandhills are characterized as a forest of widely spaced pine trees with a sparse understory of deciduous oaks and a dense groundcover of grasses and herbs on rolling hills of sand. The most typical associations are dominated by longleaf pine, turkey oak (*Quercus laevis*), and wire grass.

Sandhills occur on crests and slopes of rolling hills and ridges with steep or gentle topography. Soils are deep, marine-deposited, often-yellowish sands that are will drained and largely infertile.

The sandhill plant community is a fire climax community. Fire is a dominant factor in the ecology of this community and frequent fires are necessary to reduce hardwood competition and to perpetuate pines and grasses. Fire return intervals within sandhill communities range from one to three years. In addition to fire frequency, intensity and season are important fire characteristics that greatly influence the species structure and composition within sandhills. Optimally, sandhills are maintained through frequent, low-intensity, growing season fires. The sandhills within the Conservation Area are located along the western boundary of the property. Many of these areas suffered disturbance from previous management activities, including commercial silviculture and ranching and shading because of oak encroachment from a prolonged absence of fire. Restoration and enhancement activities by the District have resulted in a more open canopy and a regenerating and diverse groundcover which includes an abundance of wiregrass in some areas.

Floodplain Swamp (4,110 acres)
Floodplain swamp communities typically occur on flooded soils along stream channels and within river floodplains. The floodplain swamp communities within the Conservation Area are

associated with the St. Johns River. Despite some disturbances, the floodplain swamp communities within the property are largely intact and functional.

Soils that support floodplain swamp communities are variable, but may include a mixture of sand, organic, and alluvial material. The most important physical factor associated with the shaping and maintenance of the floodplain swamp is the hydroperiod. Extended periods of inundation, which may last for most of the year, are common in the floodplain swamp environment. Because this community type is maintained by hydrologic regimes, it is not fire dependent; however, fires may occur during times of drought.

Depression Marsh (*129 acres*)
Depression marsh communities often occur embedded within a matrix of well-maintained pyric plant communities (FNAI, 2010). Depression marshes are typically found on flat landscapes throughout Florida. They develop when the overlying sand has slumped into a depression in the limestone underlayment. Soils are typically depressional phases of fine sands. Depression marshes are maintained against woody shrub invasion through the combined effects of seasonal water fluctuations and fire. These seasonal ponds are important habitat for numerous species of wildlife, but are particularly important for many amphibians that require breeding sites that are free of predatory fish (Moler, 1987).
There are numerous depression marshes embedded within the mesic and wet flatwoods communities of the Conservation Area. While most are intact and well-maintained through frequent applications of prescribed fire, some however; in areas with elongated fire return intervals or altered hydrologic conditions, exhibit the presence of woody species and suppressed herbaceous components.

Floodplain Marsh (156 acres)
Floodplain marshes occur within river floodplains, often extending from just below the headwaters to the tidally influenced portions of river mouths. Soils are often sand with some organics over sand and may be saturated throughout the year. The maintenance of these systems is directly influenced by flooding. The relatively flat topography and subsequent slow drainage results in extended hydroperiods, with most areas inundated for between 120-350 days each year.

Floodplain marsh communities are typically herbaceous communities that may include vegetational changes into woody or shrub species that coincide with transitions from high to low marsh. Fire is another important factor in the shaping and maintenance of the floodplain marsh systems. Frequent fires limit shrub invasion while the characteristic sand cordgrass re-sprouts readily post-fire.

A large example of the floodplain marsh community with the Conservation Area is located within an expansive area of floodplain swamp on the eastern portion of the property. District staff have effectively reversed successional changes associated with historic absence of fire through frequent introductions of prescribed fire since the time of acquisition. Like many floodplain marsh systems, this area is dominated by sawgrass.

Dome Swamp (49 acres)
Dome swamp communities typically occur embedded within well-maintained pyric plant communities such as flatwoods (FNAI, 2010). The dome swamp communities within the Conservation Area occur primarily within the mesic flatwoods.

Dome swamps are typically found on flat terraces, where they develop when the overlying sand has slumped into a depression in the limestone underlayment. Soils that support dome swamp communities are variable, but may include a layer of peat that thickens towards the center. The peat layer is typically underlain with acidic sands or marl and then limestone or a clay lens. An important physical factor associated with the shaping and maintenance of the dome swamp is the hydroperiod. Water levels in dome swamps fluctuate seasonally with rainfall changes. Normal dome swamp hydroperiods are from 180–270 days per year (FNAI, 2010).

Typical of the dome swamp system, many of the examples of this community type within the Conservation Area include a dome-shaped profile created by the presence of smaller trees growing in the shallow waters of the outer edge with the large trees growing in the deeper center. The canopy of hydrophytic trees is dominated by cypress.

Without frequent fire, cypress may become less dominant, being replaced by hardwood or bay species, and may exhibit an increase in peat accumulation. Fire frequency within these communities is greatest around the edges. The longer hydroperiods within the center of most dome swamps will restrict the advance of most fires under normal conditions. Thus, the fire return interval for dome swamps may range from 3 to 5 years along the edges and may be as great as 100 to 150 years in the center (FNAI, 2010).

Basin Swamp (612 acres)
Basin swamps are large irregularly shaped basins that are thought to have developed in oxbows of former rivers or in ancient coastal swales and lagoons that existed during higher sea levels. Soils that support basin swamp communities are acidic, nutrient-poor peats often overlying a clay lens or other impervious layer. This clay lens or impervious layer may cause a perched water table above that of the adjacent uplands, causing standing water for most of the year. While basin swamps are not associated with rivers, they may contain streams and sloughs that flow during periods of high water.

Most basin swamps within the Conservation Area are in the northern and western portions of the property. Basin swamps have a typical hydroperiod of approximately 200-300 days and though infrequent, fire is essential for the maintenance of these natural communities. Fire return intervals in basin swamps are variable, but necessary to restrict peat accumulation and the expansion of hardwoods into adjacent communities. The edges of basin swamps may be exposed to frequent fire, often burning in concert with surrounding natural communities.

Baygall (43 acres)
Baygall is an evergreen, forested wetland of bay species situated at the base of a slope or in a depression. Baygalls have organic/peat soils, are acidic, and are typically dominated by a dense overstory of bay trees. This natural community does not burn often, as the peat soils stay

relatively wet. When soils dry out, baygalls will readily burn. Within the Conservation Area, two areas of baygall natural communities occur in the westernmost portions of the property.

Blackwater Stream (50 acres)
Blackwater streams are intermittent waterways that originate in sandy lowlands where extensive wetlands with organic soils serve as reservoirs. These reservoirs collect rainfall that is slowly released to the stream. Water within blackwater streams is often tea-colored from the presence of tannins and particulate and dissolved organic matter. These streams are generally acidic depending on flow. While the dark color of the water reduces light penetration and inhibits submerged aquatic plant growth, emergent and floating vegetation may occur along shorelines, and in more shallow and slower moving areas. Several examples of blackwater streams occur within the property and are typically associated with floodplain swamp communities.

Bottomland Forest (179 acres)
Bottomland forests are found throughout Florida, may be associated with blackwater floodplains, and may be located between the swamps and uplands communities. The bottomland forest communities within the Conservation Area are scattered throughout the property and are associated with the floodplain swamp communities.

Where this community occurs, soils are intermediate and may include a mixture of sands, clay, and organic materials. Some examples of bottomland forests, like many of those within the Conservation Area, occupy areas between the floodplain swamps and uplands. The most important physical factor associated with the shaping and maintenance of the bottomland forest is the hydroperiod. The water table in these areas is high; however, inundation in these areas is generally restricted to periods of high flooding. Since this community type is maintained by hydrologic regimes, it is not fire dependent.

Altered Land Types (379 acres)
The Conservation Area includes several variants of altered land types as described by FNAI. These land types include abandoned pasture, improved pasture, artificial pond, canal/ditch, clearing/regeneration, and developed areas. The areas identified as clearing/regeneration are former dove fields that were dominated by bahiagrass (*Paspalum notatum var. saurae*) and Bermudagrass (*Cynodon dactylon*). In these areas, District staff have implemented several iterations of site preparation and restoration activities to enhances native groundcover components.

PAST MANAGEMENT SUMMARY

This section describes the management strategies outlined in 2006 and provides the status for each item. The summaries are consistent with the previous plan's implementation schedule.

Water Resources 2006 Plan

Strategy	Status
Regularly monitor roads, bridges, crossing, and trails for erosion problems.	The District's Bureau of Land Resources regularly monitor roads and water resource structures for erosion and repair needs and coordinates with District Operations to remedy.

Fire Management 2006 Plan

Strategy	Status
Develop and implement comprehensive long-term prescribed fire management plan.	The Conservation Area Fire Management Plan is revised with each iteration of the land management plan. Since 2006, District staff have implemented prescribed fire activities on 7,875 acres within the property. Several burn units have received multiple iterations of fire.
Introduce prescribed burns to thinned pine areas.	Burns were conducted in areas of thinned pine to accomplish land management goals.
Introduce dormant season burns in areas with high fuel loads and areas where fire has been excluded.	Several dormant season burns were conducted to reintroduce fire in areas of high fuel loads and areas with elongated fire return intervals. Additionally, to provide added protection for pine overstories, several night burns were conducted.

Forest Management 2006 Plan

Strategy	Status
Conduct thinning in pine stands when appropriate.	Since 2006, the District has conducted thinning operations on 1,883 acres within the property.
Utilize prescribed fire as a forest management tool.	The District coordinates the use of prescribed fire with other forest management activities to achieve management goals.
Monitor forested areas for drought, disease, or insect infestations.	District staff regularly monitor forested areas for signs of disease and insect infestations.
Evaluate any clearcut areas and implement appropriate restoration techniques.	Since 2006, the District has implemented a clearcut operation on 39 acres.

Complete site preparation burns or chemical applications in appropriate areas prior to replanting.	Since 2006, District staff have conducted reforestation activities on 32 acres. Appropriate site preparation is conducted as needed prior to any plantings.

Invasive Species 2006 Plan

Strategy	Status
Continue to monitor for invasive plant species and treat as necessary.	District Invasive Plant Management and Land Management staff monitor for the presence of invasive and exotic vegetation and implement appropriate treatments. District staff treated 284 acres of invasive and exotic plants since 2006.
Continue to grant special use authorization to local hog trapper to assist with feral hog management during non-hunt seasons.	Since 2006, using feral hog removal agents, 177 hogs have been removed from the Conservation Area. This number does not reflect any hogs that may have been harvested from the Wildlife Management Area (WMA).

Cultural Resources 2006 Plan

Strategy	Status
Protect existing cultural sites.	District staff tailor land management activities to ensure protection of cultural and historical sites.
Document and report and new sites to the Division of Historical Resources.	Any newly discovered cultural or historical site is documented and reported to the Division of Historical Resources.
Modify land management activities to eliminate potential disturbance to known sites.	If necessary to provide protection and ensure sites are not disturbed, land management activities are modified.

Access 2006 Plan

Strategy	Status
Maintain roads, crossings, and trails.	Roads, water crossings, and trails within the property are maintained. In 2012, District staff conducted maintenance on roads on the south end of the property off CR 226. This work included re-ditching and crowning.
Maintain necessary fencing, gates, boundary markers, and signage within the Conservation Area.	Fencing, gates, boundary markers, and signage are regularly maintained. During the scope of this plan, board fencing around the parking areas off SR 16 was installed.
Maintain parking and walk-through areas.	Parking areas and recreational walk-throughs are maintained.

Recreation 2006 Plan

Strategy	Status
Maintain roads and marked trails.	The trail system and marking is maintained regularly.
Update trail guide.	The District trail guide and associated maps are updated as needed.
Maintain kiosk and entrance signs.	Kiosk and other signage is cleaned and maintained regularly.
Maintain camping and picnic areas, benches, and fire rings.	Day use and camping infrastructure is maintained as needed.
Maintain restroom facility and outdoor classroom near Water Oak Branch.	Restroom facilities are regularly maintained. The infrastructure associated with the Legacy Outdoor classroom is no longer used, is dilapidated, and is expected to be removed.
Maintain observation tower within the Conservation Area.	The observation tower is maintained.
Maintain hunt check station/inclement weather shelter.	The hunt check station was removed.

Security 2006 Plan

Strategy	Status
Maintain contract with private security firm.	The District maintains a contract with a private security firm that is utilized when necessary to augment other security strategies.
Continue coordination with FWC.	District staff coordinate regularly with FWC to ensure adequate security of the Conservation Area and the Wildlife Management Area within the property.
Continue to coordinate with on-site security resident.	District staff coordinate security as needed with the onsite security resident.

Acquisition 2006 Plan

Strategy	Status
Pursue acquisition of additional lands adjacent to the Conservation Area.	The District's Bureau of Real Estate Services evaluates all potential acquisitions that may lend to improved access for management.
Pursue land exchange with neighbors when appropriate.	The District's Bureau of Real Estate Services evaluates all potential exchanges that may lend to improved access for management.

Cooperative Agreements 2006 Plan

Strategy	Status
Maintain interagency agreement with FWC designating Conservation Area as a WMA.	The interagency agreement with FWC regarding the Conservation Area Wildlife Management Area designation is current.

IMPLEMENTATION

The following sections outline land management strategies for resource protection, land use, and administration on the Conservation Area for the next ten years.

RESOURCE PROTECTION AND MANAGEMENT

Water Resource Protection and Management

While most water resource protection was accomplished through acquisition, portions of the wetlands and surface water within the Conservation Area are disturbed. Hydrologic disturbances within the Conservation Area include roads, ditches, bridges, culverts, borrow pits, canals, and silvicultural bedding.

Roads and associated ditches are located on all parcels within the Conservation Area and provide access for land management activities and recreational opportunities. The District has made improvements to, and conducted maintenance on, many of these roads and ditches helping to reduce the potential for erosion. Figure 7 above depicts the location of bridges, culverts, and low water crossings. Table 3 provides detail regarding maintenance needs for those structures within the property. District staff will continue to inspect roads, trails, low-water crossings, bridges, and culverts for erosion problems and maintenance and repair needs.

Water Resource Strategies

General Maintenance Activities

- Conduct maintenance and incidental or emergency repair of water resource structures as necessary.
- Maintain water resource structures database and incorporate maintenance, repair, and any new structures.

Specific Strategies

Recurrent

- Visually inspect roads, trails, firelines, culverts, and low-water crossings for erosion problems and maintenance and repair needs.
- Visually inspect the bridge for maintenance and repair needs.

Short-term planning horizon (1-5 years)

- Conduct repairs and replacements to road structures as deemed necessary to bring deficient structures into functional condition.

Table 3 – Road Structures Maintenance Needs

Structure ID	Type	Size/Material	Condition
78	Culvert	22x30”/Metal	Good
79	Culvert	22x30”/Metal	Poor/Heavy Sediment
80	Culvert	15x10”/Other	Fair
81	Culvert	20x15”/Other	Fair
82	Culvert	15x15”/Other	Fair
83	Culvert	24x25”/Metal	Fair
84	Culvert	24x25”/Metal	Poor/Partial Collapse
85	Culvert	Unknown/Metal	Poor/Collapsed
86	Culvert	15x40”/Other	Good
87	Culvert	15x40”/Other	Good
88	Culvert	18x30”/Metal	Good
89	Culvert	18x30”/Metal	Fair/Heavy Sediment
90	Culvert	18x30”/Metal	Fair
91	Culvert	18x30”/Metal	Good
92	Culvert	18x30”/Metal	Good
93	Culvert	18x30”/Metal	Good
94	Culvert	18x30”/Metal	Excellent
95	Culvert	18x30”/Metal	Good
96	Culvert	20x25”/Metal	Good
97	Culvert	22x25”/Metal	Good
98	Culvert	20x25”/Metal	Fair
99	Culvert	20x30”/Metal	Good
100	Culvert	22x30”/Metal	Excellent
101	Culvert	34x30”/Metal	34x30”/Good/Double Culvert
102	Culvert	20x50”/Metal	Good
103	Culvert	20x30”/Metal	Fair
104	Culvert	Unknown/Metal	Poor/Heavy Sediment
105	Culvert	18x30”/Metal	Fair
106	Culvert	24x30”/Metal	Good
107	Culvert	16x20”/Metal	Fair
108	Culvert	18x30”/Metal	Good
109	Other	15x100”/Other	Good
110	Culvert	30x30”/Metal	Fair
111	Culvert	20x80”/Other	Good
112	Culvert	20x60”/Other	Good
113	Culvert	15x30”/Other	Good
114	Culvert	15x20”/Other	Good
115	Culvert	15x75”/Other	Good
116	Low Water Crossing	15x80”/Other	Good/Double Crossings
117	Culvert	24x25”/Metal	Good
118	Culvert	18x30”/Metal	Good
119	Culvert	24x30”/Metal	Good/Double Culvert
120	Culvert	36x26”/Metal	Good
121	Culvert	24x30”/Metal	Fair/Double Culvert
122	Culvert	18x25”/Metal	Good

Flora and Fauna

Native Species
The Conservation Area has a diverse assemblage of natural communities providing significant habitat for a variety of floral and faunal species.

Flora

Bartram's Ixia
Bartram's ixia (*Calydorea coelestina*), a Florida endangered plant, is endemic to northeast Florida and occurs in wet and mesic flatwoods and is documented within the Conservation Area. There are approximately 60 known populations of Bartram's ixia, though most have not been observed in recent years and few of those recently documented populations occur on conservation land (FNAI 2001.) Bartram's ixia typically flowers in the spring-summer following a fire, or other disturbance such as mowing. District staff have observed profuse flowering of Bartram's ixia in response to prescribed fire activity.

Canby's Wild Indigo
Canby's wild indigo (*Baptisia calycosa var. calycosa*), a Florida endangered plant is endemic to NE Florida is documented within the Conservation Area. This species is typically found on sandy soils of flatwoods and sandhills where canopy coverages are relatively open.

Pineland scurfpea
Pineland scurfpea (*Orbexilum virgatum*), a Florida endangered plant is found in NE Florida and parts of Georgia. This species, documented within the Conservation Area is typically found within flatwoods and sandhill communities. This rare plant flowers during May and June and is cryptic among other pineland groundcover when not in fruit or flower.

The District may seek the assistance of local Native Plant Society and other volunteers to further develop the knowledge of plant species within the Conservation Area.

Fauna

Florida Black Bear
The Florida black bear, while not commonly observed is documented within the Conservation Area and road-killed and nuisance bears are recorded in areas of proximity to the property. In addition to habitat loss and fragmentation and a host of diseases and parasites, threats to the bear include human caused mortality and incompatible habitat management. The Conservation Area lies within the primary range for the Ocala population of the black bear (Draft Black Bear Management Plan for Florida - *Ursus americanus floridanus*). To the extent that issues relate to District managed lands, District staff will coordinate as necessary with the FWC, FDOT, and any other relevant parties regarding the management of bear habitat and the facilitation of movement across the landscape.

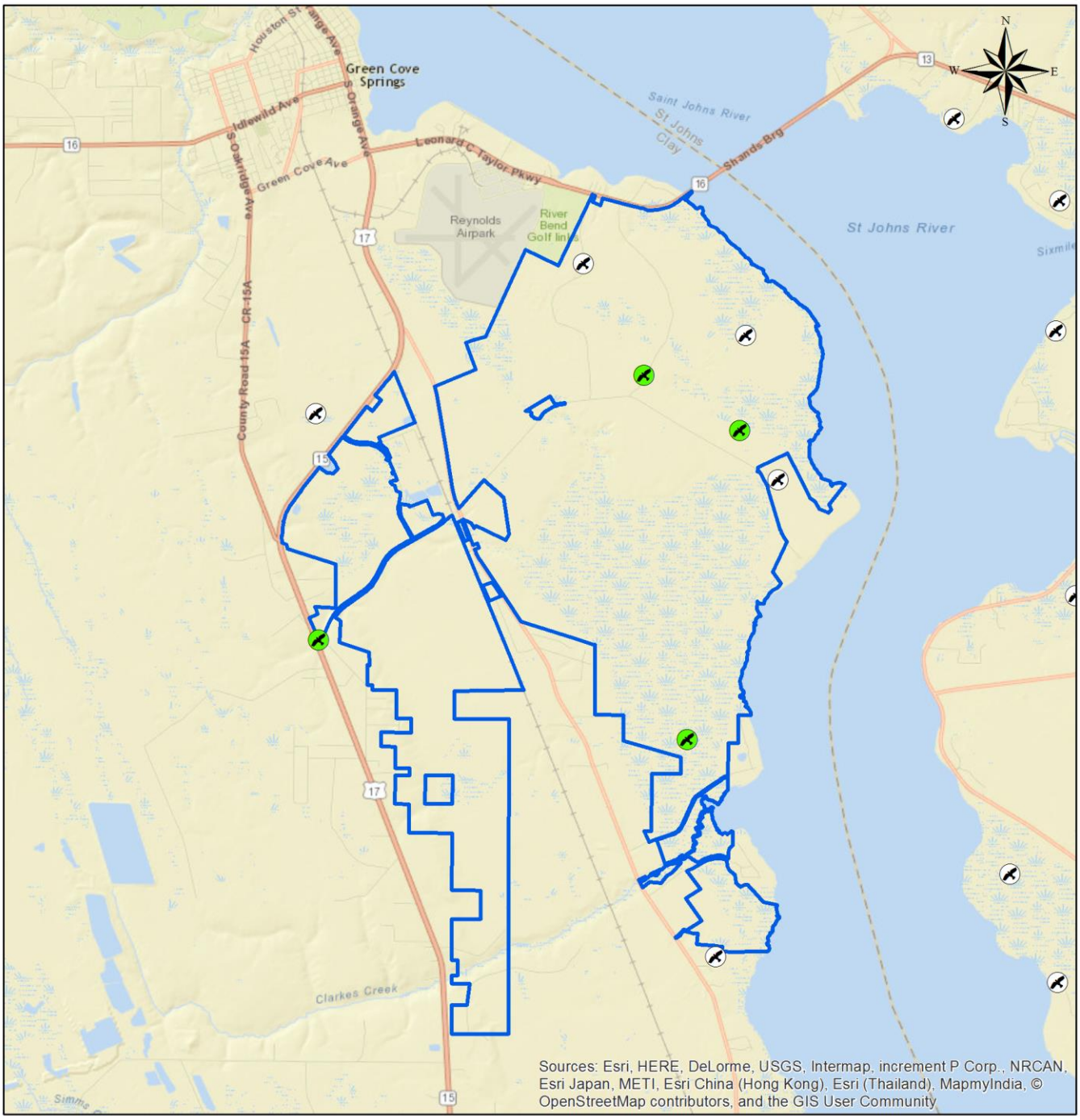
Bald Eagle
The Conservation Area is a significant bald eagle (*Haliaeetus leucocephalus*) nesting site. As of spring 2016, there were 5 documented bald eagle nesting sites within the Conservation Area, 3 of which included observed activity (Figure 8). Additionally, there are numerous nesting sites near the property. The District will adhere to the guidelines established in the May 2007 U.S. Fish and Wildlife Service (FWS) *National Bald Eagle Management Guidelines*. This document is effective following the delisting of the species from the Endangered Species list. The bald eagle continues to receive protection through the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. The District will consult with the FWC and/or the FWS, prior to conducting management activities within the established management zones that may impact bald eagle nesting between the dates of October 1 to May 15. Additionally, the District will confirm activity status at known nesting sites each year. Should new nest sites be identified, GPS locations will be recorded and incorporated into the District bald eagle database.

Gopher Tortoise
The gopher tortoise (*Gopherus polyphemus*), a state threatened species, occurs within the Conservation Area. In 2001, in the eastern portions of it's range (Florida, Georgia, and South Carolina), the gopher tortoise was included on FWS register as a candidate for listing. District staff are developing baseline population estimates within the sandhill communities of the Conservation Area. This data will be utilized to determine restoration needs and as a measure of success of the District's management activities.

Squaremouth Amnicola Snail
Upon finding historical FNAI records of this observation, District staff contacted FWC Freshwater Invertebrate Assessment and Research Unit staff for additional information on this obscure species. According to communication from FWC, the squaremouth amnicola snail (*Amnicola rhombostoma*) type specimens were collected from Peters Creek, in or near the Conservation Area by Fred Thompson in 1963. Subsequent surveys and collection efforts through the early 2000s have yielded no additional observations of this species, leading investigators to believe this species to be extinct (Warren, 2016). FWC staff have expressed an interest in resampling waters within the Conservation Area for this species.

Exotic and Invasive Species
Several exotic pest plants occur within the Conservation Area, including:

- Japanese climbing fern (*Lygodium japonicum*)
- Cogongrass (*Imperata cylindrica*)
- Camphor tree (*Cinnamomum camphora*)
- Chinese tallow tree (*Sapium sebiferum*)
- Alligator weed (*Alternathera philoxeroides*)
- Bahiagrass
- Bermudagrass
- Torpedograss (*Panicum repens*)



Bayard Conservation Area

Figure 10 - Bald Eagle Nest Location Map

1 Miles

Conservation Area

Bald Eagle Nest Activity Status

- Active
- Unknown

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.

The property is part of the District's Invasive Plant Management Program. Exotic species control is necessary to inhibit the continued proliferation of invasive and exotic plants and is integral in the maintenance and restoration of natural plant communities. The Invasive Plant Management Program applies various herbicides per label rates using the most appropriate method of application for the target species.

The District will strive to maintain or achieve maintenance control of the targeted species during the scope of this plan. Exotic pest plant infestations are light to moderate across the property, and the property is regularly monitored and treated as necessary. Since 2006, District staff have treated 284 acres of exotic vegetation within the property.

Feral Hogs
Exotic wildlife species including feral hogs (*Sus scrofa*) occur within the Conservation Area. The District currently utilizes feral hog removal agents through a Special Use Authorization (SUA) process to assist in the control of feral hogs. Through this process, since 2006, feral hog removal agents have removed 177 hogs from the property. This number does not reflect any feral hogs that may have been removed as part of public hunting opportunities on the WMA.

On other District-managed properties, the District has coordinated via contract with the United States Department of Agriculture (USDA) to assist in the removal of feral hogs. If necessary, the District may utilize the USDA to address specific population reduction initiatives.

Flora and Fauna Strategies

General Maintenance and Management Strategies

- Collect species occurrence data and incorporate into the District biological database.
- Conduct management activities in a manner consistent with relative rules, regulations, guidelines, and species management plans and in a manner that provides maximum protection for listed, rare, sensitive, or otherwise desirable species.
- Conduct feral hog removal activities as need is indicated.
- Continue appropriate treatment of invasive and exotic vegetation.

Specific Strategies

Recurrent

- Conduct biennial gopher tortoise burrow monitoring within sandhill natural communities.
- Conduct activity status inspection of bald eagle nests as necessary to accomplish land management objectives.

Short-term Planning Horizon (1-5 years)

- Cooperate with FWC to conduct sampling efforts to locate squaremouth amnicola.

Natural Community Management

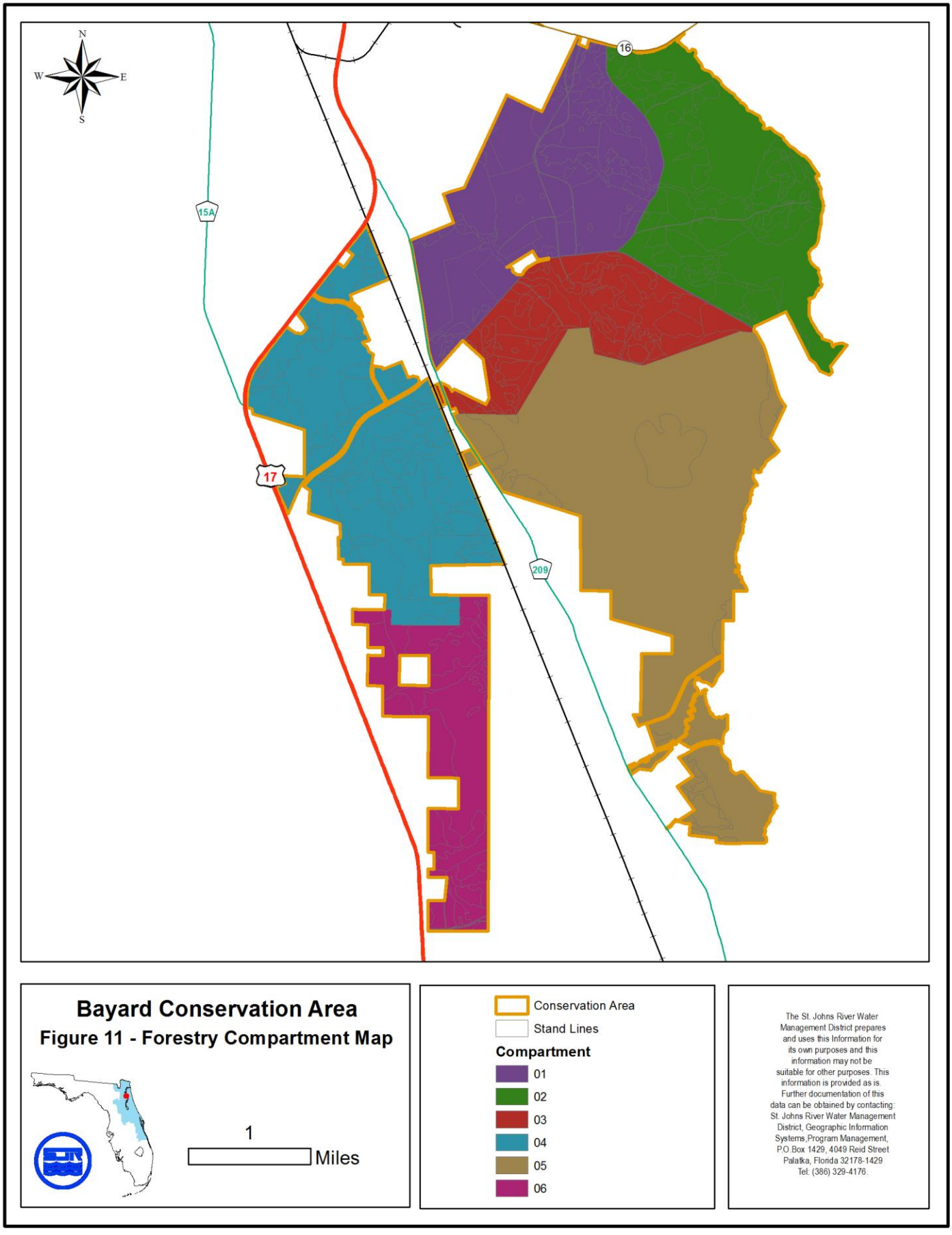
Forest Management

Chapter 253.036, *Florida Statutes* requires the lead agency of state lands to prepare a forest resource analysis, "…which shall contain a component or section…which assesses the feasibility of managing timber resources on the parcel for resource conservation and revenue generation purposes through a stewardship ethic that embraces sustainable forest management practices if the lead management agency determines that the timber resource management is not in conflict with the primary management objectives of the parcel." The management objectives of this property require pine harvesting and may additionally include the harvesting of hardwoods.

The Conservation Area is partitioned into forest management compartments and each compartment is further divided into stands. Figure 9 illustrates the compartments and stands within the property and Figure 10 illustrates the dominant pine species within each stand. On properties like the Conservation Area, where silvicultural management is an intrinsic component of the overall management of the upland portions of the property, timber inventory values are collected. These values are verified and incorporated into the District's forest management database. Changes that may occur over time within the compartments and stands resulting from growth, harvests, natural disturbances, and reforestation activities are also recorded in the database. This information is used to help land management staff forecast forest management needs.

While tailored to meet silvicultural management goals, the primary objectives of the harvesting on the Conservation Area are restorative in nature and are designed to aid in the amelioration of species diversity and the overall natural community health and vigor. The District applies all revenue generated through these forest management activities toward the District's land management budget to offset management costs for District properties.

Since the writing of the last plan, forest management activities within the Conservation Area generated approximately $960,248 (Table 3). Table 4 provides information relative to forest management techniques (and associated acreages) employed within the Conservation Area since 2006 and Figure 13 illustrates the location of the accomplished harvest and reforestation activities.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209
Bayard Conservation Area
Figure 11 - Forestry Compartment Map
1
Miles
Conservation Area
Stand Lines
Compartment
01
02
03
04
05
06
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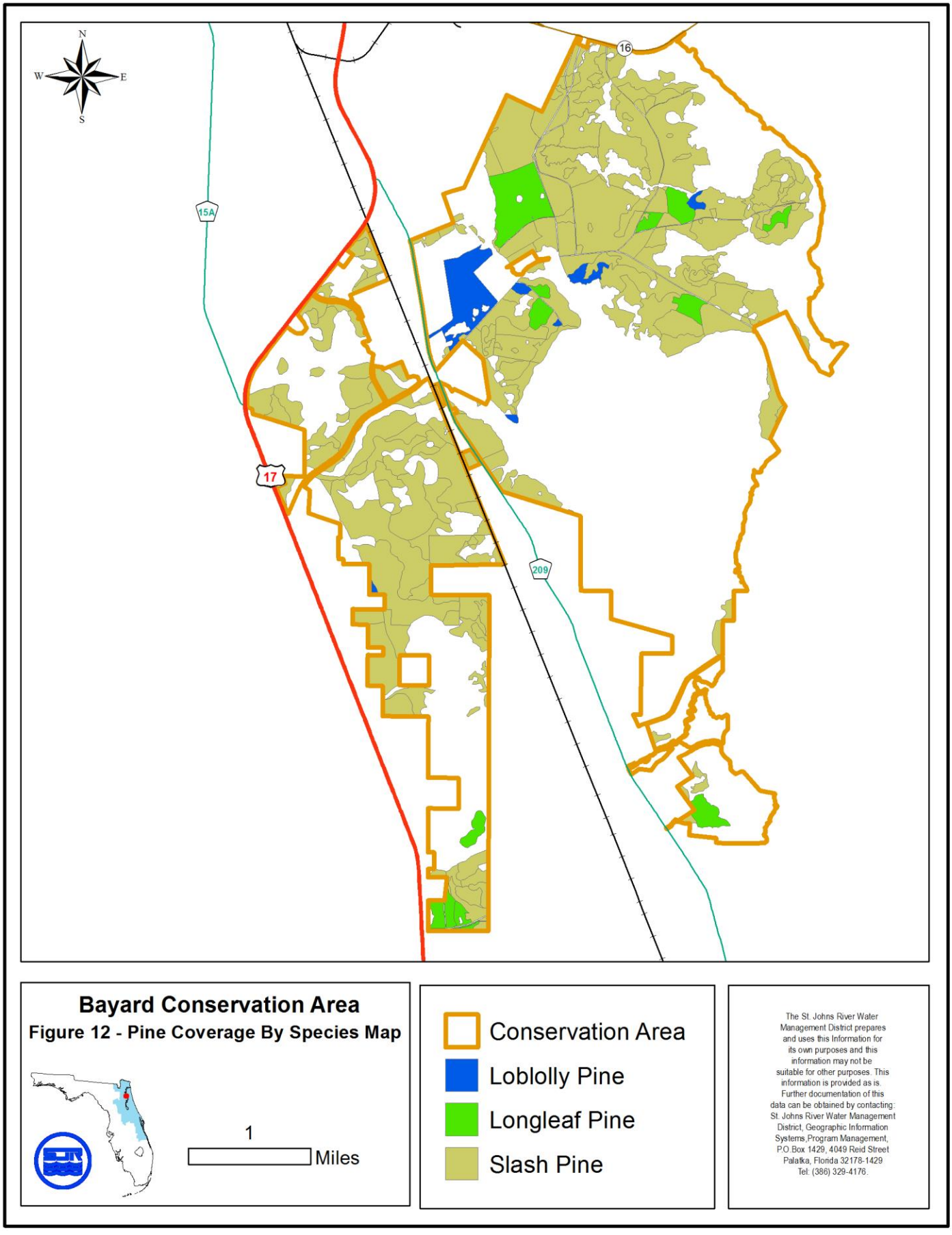
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Bayard Conservation Area
Figure 12 - Pine Coverage By Species Map
1
Miles
Conservation Area
Loblolly Pine
Longleaf Pine
Slash Pine
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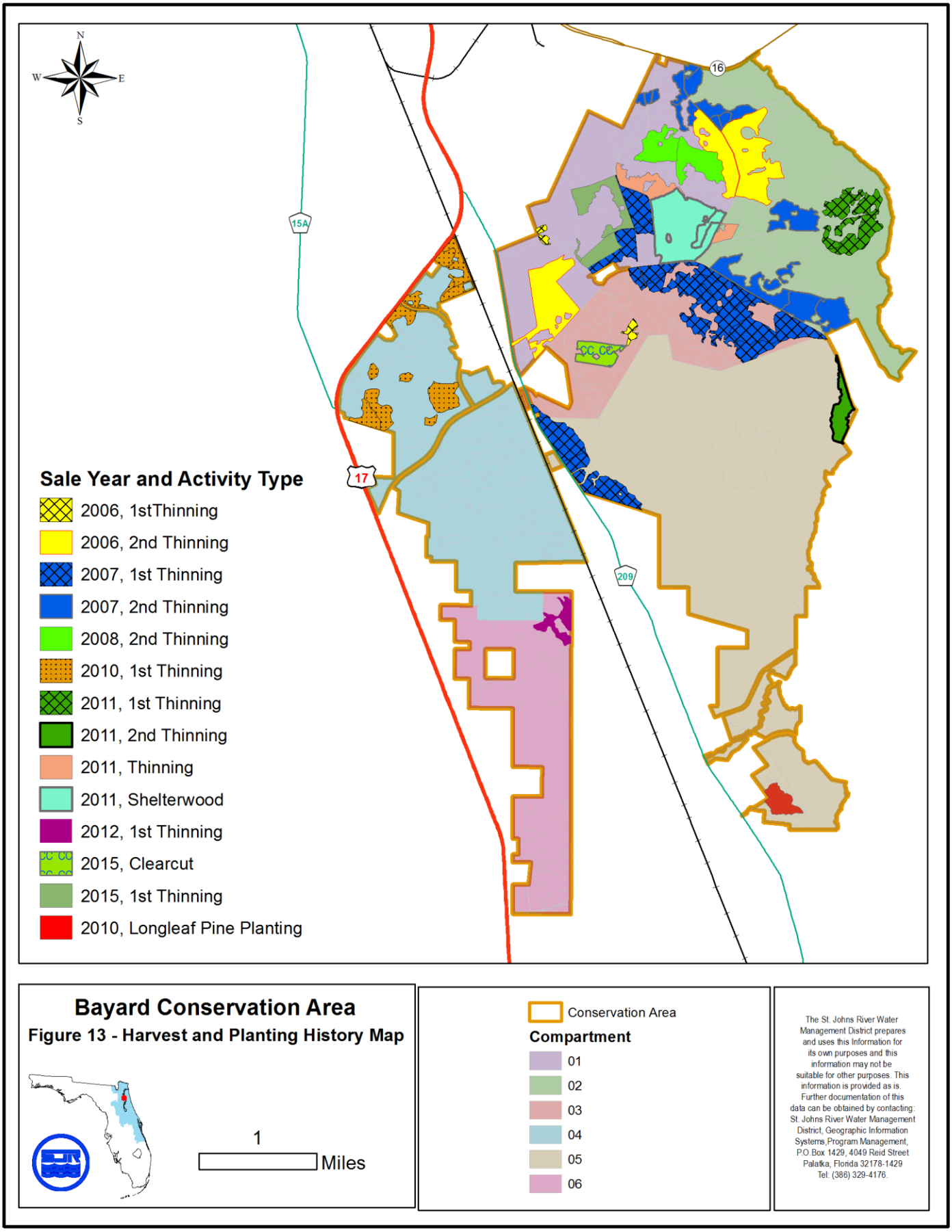
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Sale Year and Activity Type
2006, 1stThinning
2006, 2nd Thinning
2007, 1st Thinning
2007, 2nd Thinning
2008, 2nd Thinning
2010, 1st Thinning
2011, 1st Thinning
2011, 2nd Thinning
2011, Thinning
2011, Shelterwood
2012, 1st Thinning
2015, Clearcut
2015, 1st Thinning
2010, Longleaf Pine Planting
Bayard Conservation Area
Figure 13 - Harvest and Planting History Map
1
Miles
Conservation Area
Compartment
01
02
03
04
05
06
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Table 4: Costs and Revenue 2006-2016

GENERAL MAINTENANCE OVER PREVIOUS 10-YEAR PERIOD			
Activity	No. of Units	Units	Total Cost
Invasive Plant Control	388	Acres	$75,358
Prescribed Fire	8,427	Acres	$213,147
Wildfire Suppression	350	Acres	$32,660
Security	1,440	Hours	$69,512
Road Maintenance	47.7	Miles	$30,000
Mowing (roads, trails, parking areas)	630	Acres	$163,679
Trail and Camp Site Maintenance	10.2	Miles	$22,440
Fence Maintenance	4	Miles	$36,420
Forest Inventory	2,000	Plots	$64,000
Total			$643,216
PROJECTS			
Activity	No. of Units	Units	Total Cost
Timber Marking	1,010	Acres	$48,981
Tree Planting	40	Acres	$5,580
Total			$54,561
REVENUE			
Activity	No. of Units	Units	Total Cost
Timber Sale	49,964	Tons	$914,248
Cattle Lease	369	Acres	$46,000
Total Revenue Over 10-Year Period			$960,248

Table 5 – Forest Management Accomplishments

Year	Forest Management Activity	Acres	Planting Species*
2006	1st Thinning	15	-----
2006	2nd Thinning	322	-----
2007	1st Thinning	510	-----
2007	2nd Thinning	278	-----
2008	2nd Thinning	107	-----
2010	1st Thinning	162	-----
2010	Reforestation	32	Longleaf Pine
2011	1st Thinning	105	-----
2011	2nd Thinning	38	-----
2011	3rd Thinning	55	-----
2011	Shelterwood	173	-----
2012	1st Thinning	34	-----
2015	Clearcut	39	-----
2015	1st Thinning	84	-----

*All plantings were conducted at a rate of 605 stems per acre.

Forest management activities anticipated during the scope of this plan include forest inventory evaluations, reforestation, and pine thinning operations. Seedling survival monitoring is also conducted to assess the need for replanting an area through the determination of the number of target trees per acre. Reforestation projects may be preceded by various site preparation techniques including mechanical treatments such as harrowing and disking to remove silvicultural bedding, roller chopping and mowing, herbicide applications, and prescribed fire. These techniques may be used singularly or in combination as site conditions warrant. First thinning operations typically occur between the 18th and 22nd year and second thinning operations are conducted, on average, 15 years after the first. Third thinning operations generally fall 15-20 years following the second. These times are largely dependent on ecological factors that affect tree growth and basal area. In addition, the District uses thinning methods such as shelterwood cuts and clearcuts. Within the Conservation Area, shelterwood cutting is implemented to achieve an uneven-age structure within the pine canopy. Clearcuts are typically utilized by the District in areas where a species conversion is the management objective. Within the Conservation Area, clearcuts are used to convert slash pine-dominated areas to longleaf pine.

Figure 14 depicts the planned forest management activities through the year 2027 and Table 5 details that information. Estimated revenue for forest management activities through the scope of this plan is approximately $913,104.

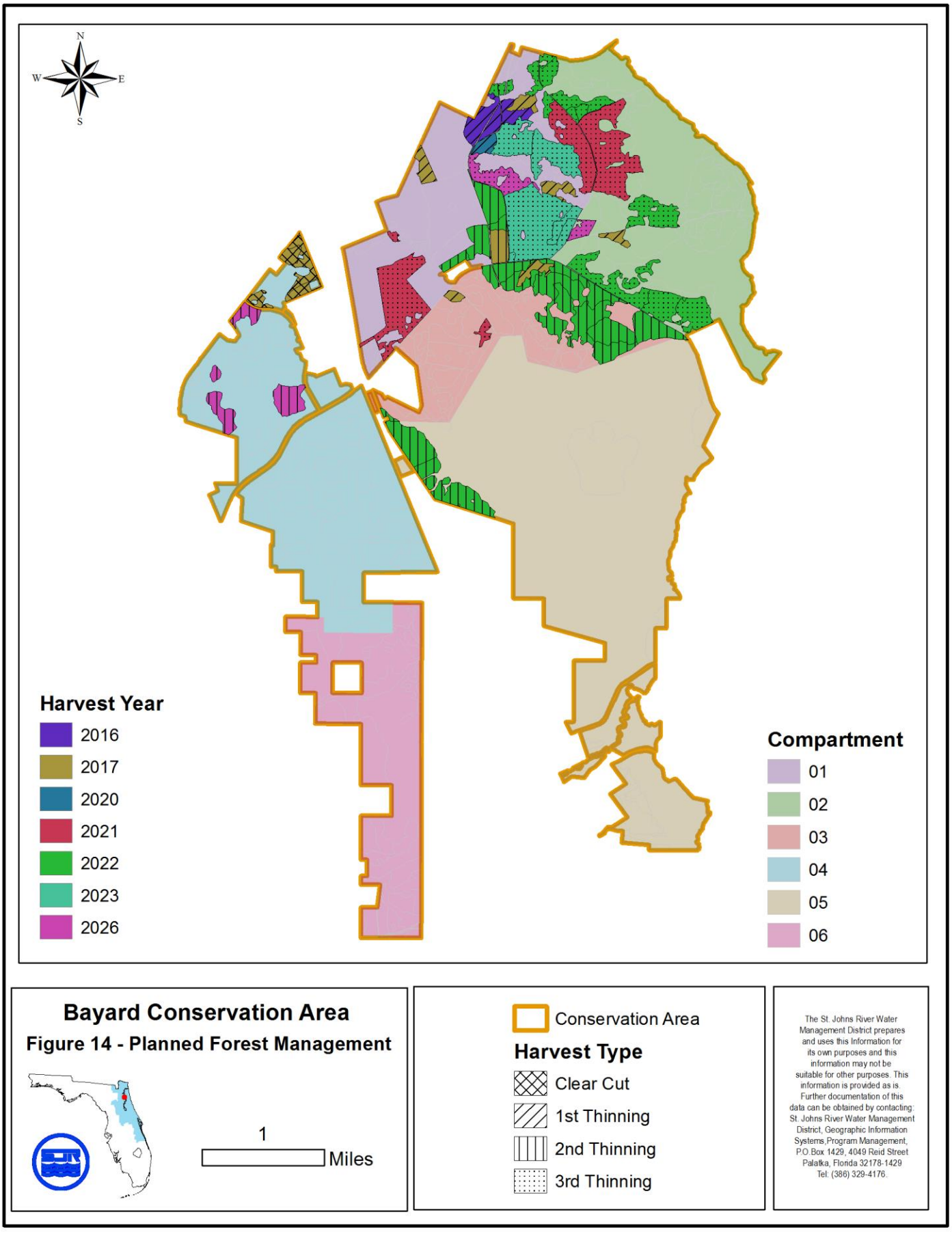
N
W
E
S
Harvest Year
2016
2017
2020
2021
2022
2023
2026
Compartment
01
02
03
04
05
06
Bayard Conservation Area
Figure 14 - Planned Forest Management
1
Miles
Conservation Area
Harvest Type
Clear Cut
1st Thinning
2nd Thinning
3rd Thinning
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Table 6 – Planned Forest Management Strategies

Year	Forest Management Activity	Acres
2016	1st Thinning	63
2017	Clear Cut	56
2017	1st Thinning	80
2017	2nd Thinning	25
2020	1st Thinning	14
2021	3rd Thinning	333
2022	2nd Thinning	510
2022	3rd Thinning	266
2023	3rd Thinning	281
2026	2nd Thinning	80
2026	3rd Thinning	56

Forest Management Strategies

General Maintenance Activities

- Implement forest management activities in accordance with the District's Forest Management Plan.
- Populate and maintain forest management database.

Specific Strategies

Recurrent

- Conduct visual inspections of forested areas for indications of disease and insect infestations.
- Conduct seedling survival monitoring.
- Conduct forest inventory audits.

Short-term planning horizon (1-5 years)

- Conduct pine harvest operations as detailed (through 2022) in Table 5 and Addendum 4.

Long-term planning horizon (6-10 years)

- Conduct pine harvest operations as detailed (2022-2026) in Table 5 and Addendum 4.

Fire Management

Fire is a vital factor in managing the character and composition of vegetation in many of the natural communities in Florida. The District's primary use of fire is to mimic natural fire regimes to encourage the amelioration of native pyric plant communities and dependent wildlife. Additionally, the application of fire aids in the reduction of fuels and minimizes the potential for catastrophic and damaging wildfires. Most of the upland natural communities within the Conservation Area are fire adapted, making prescribed fire an important tool for use in the

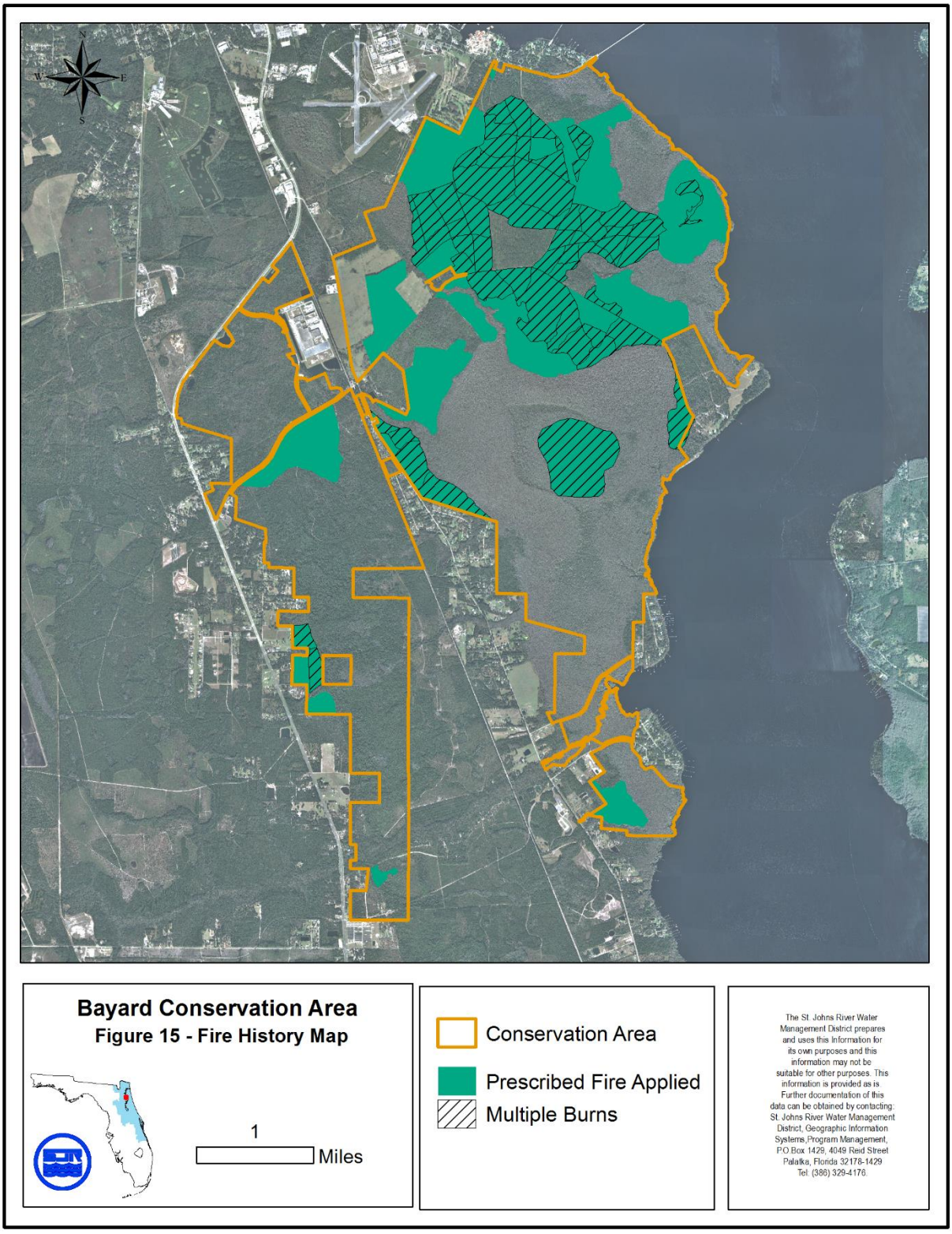
restoration and maintenance of plant communities within the property. Forest and fire management activities within the Conservation Area are linked. The coordinated implementation of forest and fire management activities is necessary to achieve management objectives. Since 2006, District staff implemented prescribed fire on 7,875 acres within the property. Since 2006, many fire management units within the conservation have received prescribed fire and many have received multiple iterations of fire as illustrated in Figure 15.

Historically, most fires occurring on what is now the Conservation Area would have been ignited by lightning during the growing season. In more recent history, previous landowners shifted the fire regime to include primarily dormant season burning, which often inhibits the natural regeneration of pine within the property. The District, since acquisition, has made significant strides in returning regular growing season burns to the property. The District will continue to implement growing season fires where possible, understanding that constraints in some areas such as young pine, high fuel loading, organic soils, and proximity to smoke sensitive areas may predicate the use of dormant season burning.

In addition to the presence of organic soils and other site specific limitations present on portions of the property, other limiting factors narrowing the window of opportunity for the application of prescribed fire on the Conservation Area is the property's proximity to critical smoke sensitive areas including US 17, CR 209, SR 16, and numerous local streets and residential areas, as well as the down drainage effects of the St. Johns River and other creeks and branches. The Reynolds Airport is located immediately adjacent to the northwestern boundary of the property. Additionally, Haller Airpark, a smaller airfield, is located less than one mile to the west of the property. Smoke management is a primary consideration and all burns will be conducted to minimize off-site impacts by maneuvering smoke plumes away from smoke sensitive areas and by ensuring adequate smoke dispersal.

While prescribed fire is the preferred tool for management, restoration, enhancement, and maintenance of natural communities within the Conservation Area, it will be necessary, at times, to implement alternative methods. The District may utilize management techniques such as selective herbicide treatments, silvicultural thinning, mowing, and roller chopping in combination with fire as part of an integrated approach to restoring, creating, and maintaining desired conditions within the property.

A system of Fire Regime Condition Class measures was originally developed by the Nature Conservancy and the USDA Forest Service in 2003 as an effort to assess ecosystem health. It is based on a relative measure describing the degree of departure from the historical natural fire regime of a given system. This departure results in changes to one or more of the following ecological components: species composition, structural stages, stand age, canopy closure, or mosaic pattern. The District adapted the system in 2008 to establish a reference for ecosystem health and land management effectiveness. While fire is the preferred disturbance that maintains most natural communities in Florida, other disturbances, though not an ecological surrogate, may serve to accomplish or aid in the accomplishment of management objectives. Annually, each burn zone is assigned a Condition Class score based upon the most


Bayard Conservation Area
Figure 15 - Fire History Map
1
Miles
Conservation Area
Prescribed Fire Applied
Multiple Burns
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recent disturbance and the fire frequency recommended for that plant community by FNAI. If FNAI recommends a fire return interval of 3-5 years, a plant community that has benefited from disturbance in the past 5 years is in condition class one. If it has been more than 5 years but less than 15 years, or three cycles, the zone is in Condition Class 2. If it has been more than three times the fire return interval, but can still be recovered by fire, it would fall in to condition class 3. If the plant community has gone without disturbance so long that fire alone can no longer restore the area, it is in condition class 4.

District staff will make annual condition class assessments and incorporate them into annual burn planning and work planning processes. The overall condition class distribution of the Conservation Area's habitat's is 47% Condition Class 1; 16% Condition Class 2; 16% Condition Class 3, and 21% Condition Class 4 (Figure 17).

All implementation of prescribed fire within the property will be conducted in accordance with the District's Draft Fire Management Plan, the Conservation Area Fire Management Plan (Addendum 3), and the annual burn plan for the property.

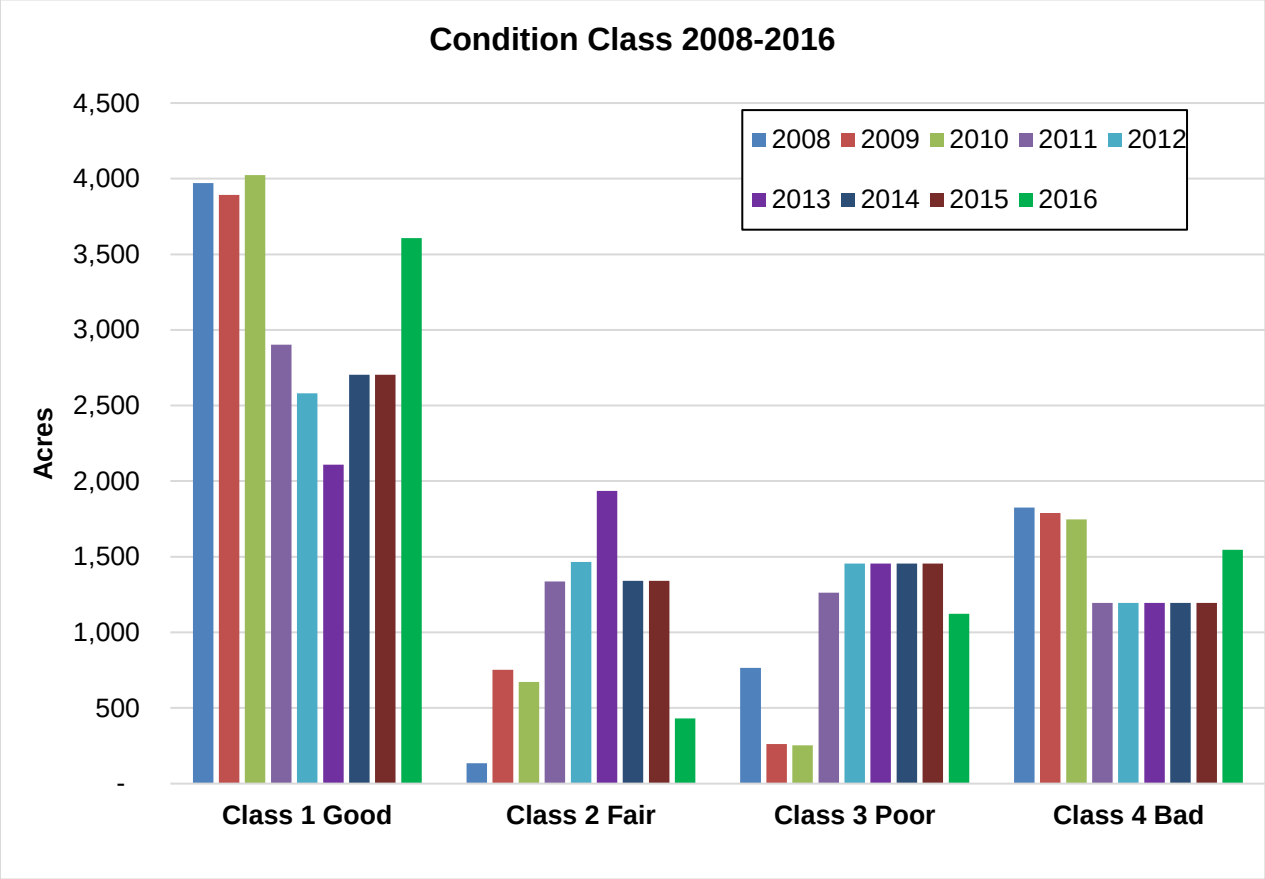


Figure 16: Bayard Conservation Area condition classes from 2008 to 2016.

Fire Management Strategies

General Maintenance Activities

- Implement prescribed burning as described in the District's Fire Management. Plan and the Conservation Area Fire Management Plan.

Specific Strategies

Recurrent

- Develop annual burn plans.
- Populate and maintain the fire management database.
- Conduct fireline maintenance.
- Conduct mechanical and herbicide treatments to aid in the restoration of natural communities and to facilitate prescribed fire activities.

Cultural Resources

A review of the Department of State, Division of Historical Resources (DHR) indicates two known Florida Master Site File cultural sites within the property. Both sites are burial mounds that were completely excavated in the early 1890s by Clarence B. Moore.

The District will conduct land management activities in a manner that will provide protection for these sites and serve to reduce the potential for adverse impacts. If District staff discovers any additional sites, staff will document and report those sites to the DHR. Additionally, detrimental activities discovered on these sites will also be reported to the DHR and appropriate law enforcement agencies. Due to District and state policy, the location of the sites is not identified on public maps.

Cultural Resource Protection Strategies

General Maintenance and Management Strategies

- Identify and report any new sites.

LAND USE MANAGEMENT

Access

Four public parking areas are available on the Conservation Area – two, located on the north end of the property off SR 16 are available year-round. The easternmost parking area is well-suited for equestrian users and includes a pitcher pump. The smaller western parking area also includes a pitcher pump. Two additional parking areas are available off CR 226. The parking areas are fenced and include walkthroughs providing for recreational access. An informational kiosk is located near the parking area trailheads.

It is anticipated that the construction of the First Coast Expressway will affect parking areas located along SR 16 and reconfiguration and consolidation of access is expected.

It is expected during this planning period that DOT will move forward with construction of the Outer Beltway around Jacksonville. As a part of that project DOT will be acquiring land for the right-of-way. In exchange, DOT will be transferring that portion of the Catfish Creek Golf Course that is adjacent to Bayard and will be south of the Beltway. DOT has committed to providing funding for the restoration of that golf course. Restoration costs are estimated to be $53,000.

While there is no public boat launch available within the Conservation Area, there are several located nearby that provide access from the St. Johns River.

There are currently 42 gates that provide management access to and across the property. These gates are monitored regularly for maintenance and/or repair needs from normal wear and tear and vandalism. To expedite emergency responses and to assist law enforcement and fire rescue in locating individuals in the event of an emergency, nine 911 addresses have been issued at certain parking areas and access points to the property. Table 6 includes the 911 addresses for the Conservation Area.

Approximately 48 miles of interior management roads traverse the property, some of which incorporate the multiuse trail system. These roads are not open to the public for vehicular access. To manage road maintenance, the District utilizes a roads classification system. This system includes the following classifications:

A. Paved Road – Any road that is paved.
B. Primary Road – Any road that requires routine maintenance of any kind.
C. Secondary Road – Any road that does not require routine maintenance; only periodic or no maintenance.

Table 7 – 911 Addresses

911 Address	Description/Usage
665 Bayard Road	Main Access Gate
4754 JP Hall Road	Occasional Access
649-1 CR 226	No gate – address only at this location old game check location
276 Bayard Road	Occasional Access
4707 US 17	Occasional Access
770 Crowl Road	Occasional Access
665-1 Bayard Road	Pole Barn Access
485 SR 16	Main Access Gate
4754 JP Hall Blvd	Seldom
649 CR 226	Main Access Gate
497 SR 16	Main Access Gate
369 Bayard Road	Main Access Gate
620 Bayard Road	Main Access Gate
563 SR 16	Seldom
5699 CR 209S	Main Access Gate
548 Bayard Road	Main Access Gate
563 SR 16	Main Access Gate
734 CR 226	Seldom
615 Bayard Road	Occasional Access
939 Bayard Road	Office
1015 CR 226	Main Access Gate

District staff will update the roads database to reflect changes to the road network within the property area as necessary. Roads will be regularly inspected and receive maintenance and repair as necessary and may be subject to closure during these times. Additionally, activities such as prescribed fire, wildfires, timber harvesting, and other mechanical activities may result in temporary road closures. Figure 15 depicts the location of the parking areas, roads, and gates on the property.

Access Strategies

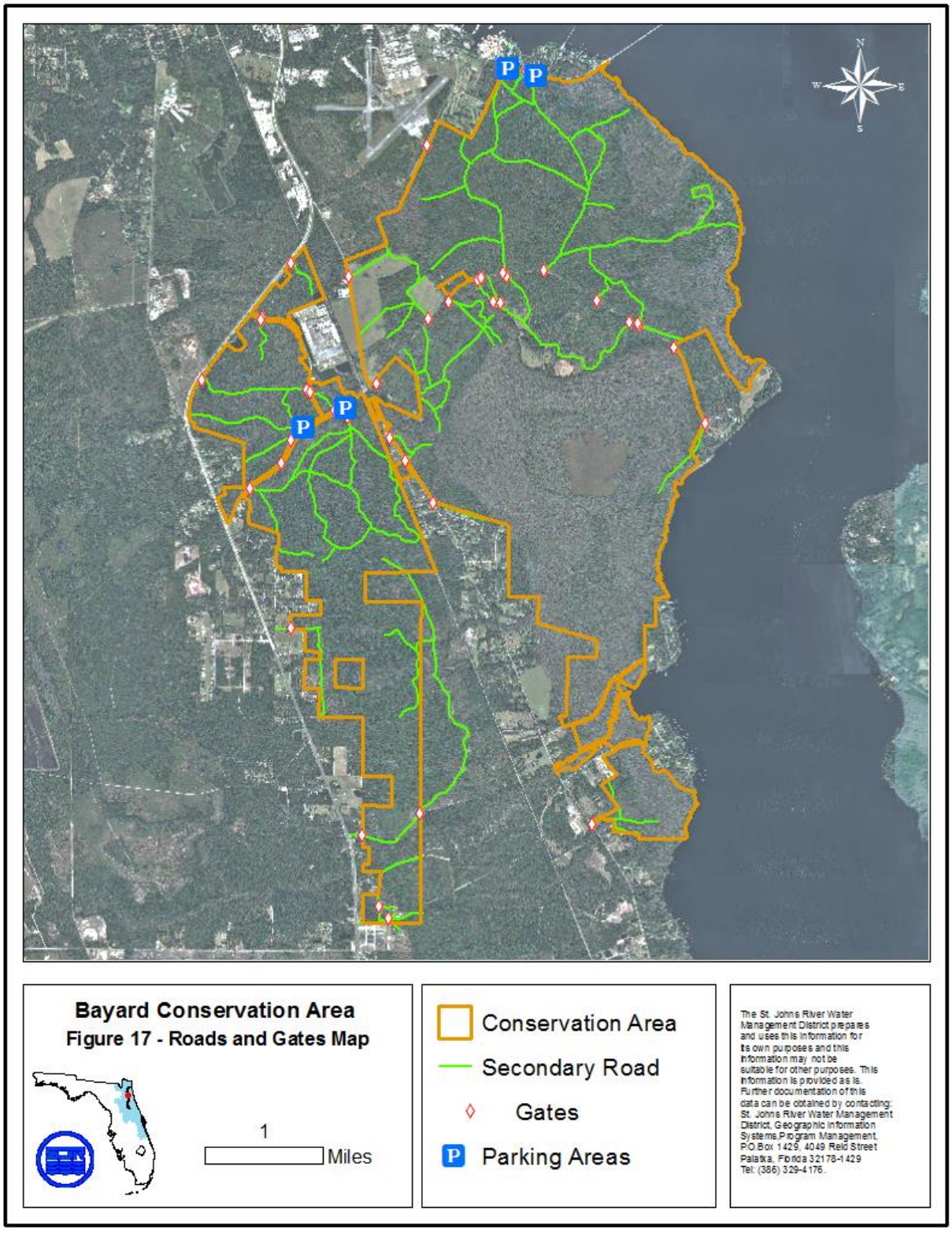
General Maintenance and Management Strategies

- Maintain parking areas, signs, gates, road, and trail.

Specific Strategies

Recurrent

- Update roads, gates, and firelines in the land management database as maintenance, repair, or creation of new roads or trails occurs.


Bayard Conservation Area
Figure 17 - Roads and Gates Map
1
Miles
Conservation Area
Secondary Road
Gates
Parking Areas
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Recreation

The primary objective of the Recreation Management Program is to facilitate resource-based recreational activities on District lands. An aspect in developing the District Recreation Program is not to compete with other local recreational opportunities, but rather complement what they may already have in place by filling an outdoor recreation niche through dispersed recreation opportunities. Dispersed recreation activities generally require large tracts of land with some level of isolation. This type of recreation blends well with District conservation areas, providing numerous opportunities for passive recreation, which also provides solitude and challenge.

Currently, recreational opportunities within the Conservation Area are dispersed resource-based activities. Recreation amenities include designated parking areas with trailheads. The trailheads include an entrance sign and an informational kiosk, pitcher pumps, and access to the property by trails routed using interior roads and firelines that also serve and are maintained for access and land management purposes.

The trail system is predominantly for hiking, off-road bicycling, horseback riding, and camping. While the property does include significant frontage along the St. Johns River, boating access is not available within the property.

Recreational improvements and considerations for the Conservation Area include (Figure 18):

- **Camping –** Two primitive campsites area available within the property. Camping is restricted to tent camping only; no RVs, travel trailers, or campers are allowed. One site is reservation only (on the District's website) and the second is on a first come first serve basis. The campsites include picnic tables and fire rings.
- **Trails –** Approximately 15 miles of blazed trails are available for hiking, biking, and equestrian use. The District may close trails or portions of trails to accomplish land management activities or when conditions pose a public safety concern.
- **Picnic Areas** – A day use picnic area is located near the Water Oak Branch Crossing.
- **Kiosks** – Informational kiosks are located at public access point and provide information including maps, trail guides, and displays. A kiosk is also located near the day use picnic area at Water Oak Branch Crossing.
- **Restroom** - A restroom facility is located near the Water Oak Branch Crossing.
- **Wildlife Management Area –** Portions of the property are incorporated into the Bayard Wildlife Management Area. Public hunting opportunities area available and are managed under the jurisdiction of the Florida Fish and Wildlife Conservation Commission.
- **Observation Tower** – An observation tower is located along the white trail in the norther portion of the property. This tower gives visitors a unique view across forested portions of the property.

The targeted maintenance schedule for trails and campsites includes:

- Mowing grassy trails and road edges four times yearly.
- Trail blazing, trimming of overhanging branches, and tree removal along trails as needed.
- Monthly trailhead and campsite maintenance.

Any changes to the recreational infrastructure will be updated on the District's recreation section on the website, which can be viewed online at http://www.sjrwmd.com/recreation/.

Recreation Strategies

General Maintenance and Management Strategies

- Maintain parking areas, camp sites, picnic area, restroom, kiosks, and trails.
- Maintain current information in recreation guide, trail guides, kiosk, and District website.

Specific Strategies

Recurrent

- Mow recreational trails four times each year.
- Mow/maintain parking areas.
- Mow/maintain campsite.
- Conduct trail blazing and trimming maintenance.
- Maintain contract for weekly restroom facility maintenance.

Security

Security concerns within the Conservation Area include illegal motorized vehicle access, dumping, vandalism of gates, fences, and conservation signage, and poaching. Large portions of the Conservation Area boundaries lie within wetlands. In many of these areas, boundary fencing is not feasible, and as such, only portions of the Conservation Area are fenced. Signage is installed on all boundaries of the Conservation Area. The District utilizes a contract security firm as well as coordination with FWC and local law enforcement to administer security within the property. Additionally, the District maintains an onsite security residence to help discourage and prevent illegal activities.

Security Strategies

General Maintenance and Management Strategies

- Coordinate with local law enforcement and FWC for security needs.
- Maintain contract with private security firm.
- Maintain security residence agreement.

Specific Strategies

Recurrent

- Develop monthly, prioritized security needs and provide to contracted security firm.
- Conduct boundary line posting as needed.

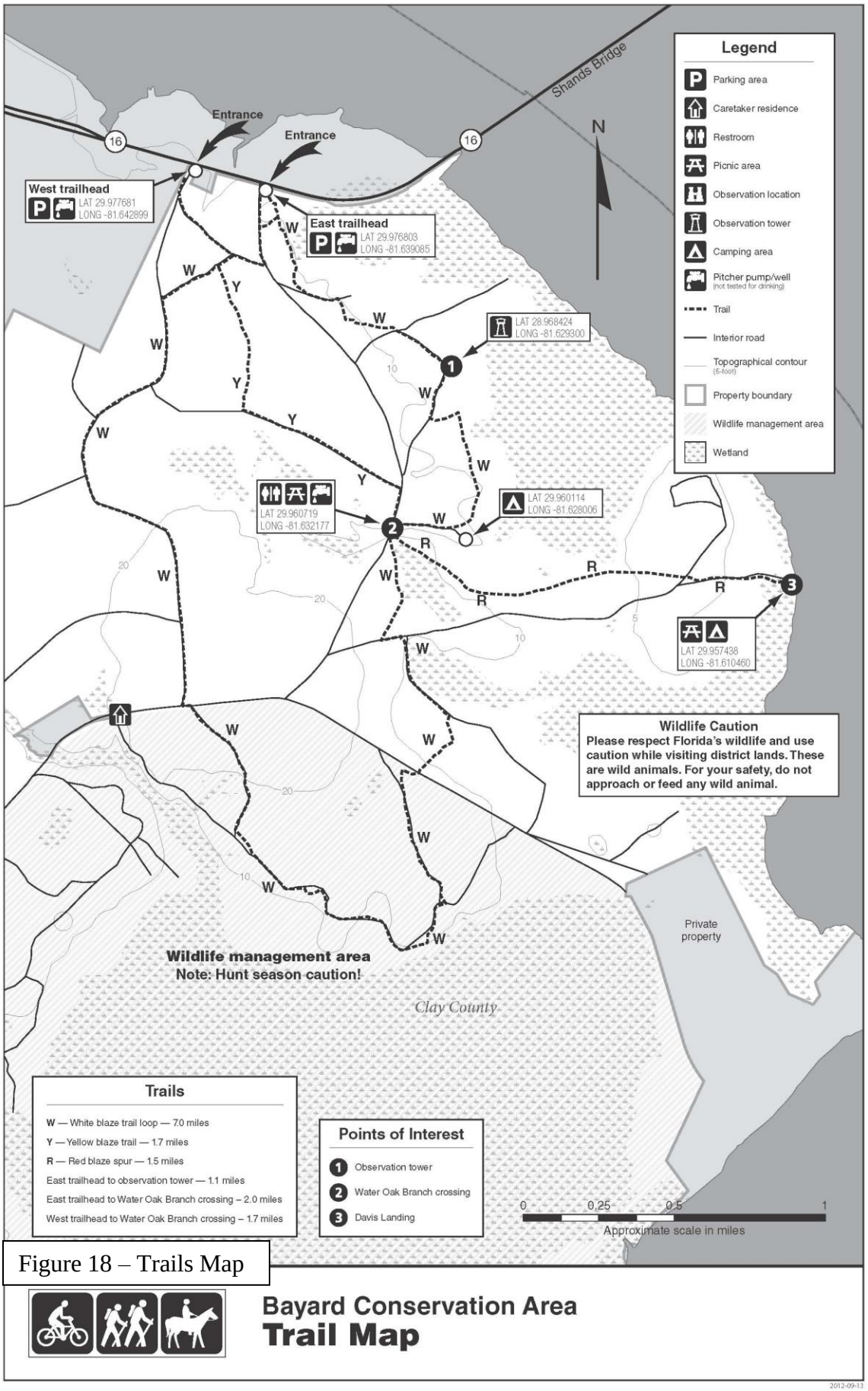

Figure 18 – Trails Map

ADMINISTRATION

Real Estate Administration

There are no anticipated acquisitions associated with the Conservation Area in the next 10 years. The District may pursue acquisition of small parcels or easements that may improve access for management purposes.

Through the District land's assessment process, two areas within the J.P. Hall parcels of Conservation Area are identified for potential surplus. One of these areas is identified for surplus for sale/exchange, where the District is interested in the sale or exchange of this property on the open market. Disposition of this property will be organized in such a way as to ensure that any future uses will not be incompatible with the conservation values of the retained portions of District property. The other area is identified for sale with an accompanying conservation easement to ensure continued conservation. According to the *2012 District Lands Assessment Implementation Plan*, the areas identified for surplus is fragmented from the main portion of the property by C.R. 226 and is bordered by U.S. 17 and light industrial areas.

Additionally, District staff are in communication with the FDOT regarding potential surplus and/or exchange of District-owned lands within the Conservation Area. This potential surplus and/or exchange will help facilitate the implementation of the First Coast Expressway project. While the final footprint of land to be surplussed or exchanged is not yet known, it will be generally located along SR 16 in the north and northwest boundary of the property.

<u>Real Estate Administration Strategies</u>

General Maintenance and Management Strategies

- Evaluate adjacent properties for potential acquisition.
- Continue coordination with FDOT regarding real estate transactions associated with the construction of the First Coast Expressway.

Short-term Planning Horizon (1-5 years)

- Evaluate portions of J.P. Hall parcels for potential surplus associated with the land's assessment process.
- Refine boundary and parcel data information and map layers.

Cooperative Agreements, Leases, Easements, and Special Use Authorization
In accordance with District Policy #90-16, the District promotes entering agreements with other agencies and private parties for cooperation and coordination of 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. Table 7 details the agreements and SUAs in effect during the writing of this plan. Revenue projections associated with leases are detailed in Table 9.

Cooperative Agreements, Leases, Easements, and Special Use Authorizations Strategies
General Maintenance and Management Strategies

- Administer easements, agreements, leases, and SUAs.

Table 8 – Agreements, Easements, and SUA Table

Agreement Number	Type/Purpose	Agreement Name	Term
1295	SUA/Surveys	Clary & Associates	May 1, 2018
1008	Intergovernmental/WMA	FWC – WMA	2034
178	Lease/Cattle	Farley	Sept 2017
1008	Lease/Apiary	Sutton	Jan 2018
906	SUA/Astronomy Activities	Cook	May 2018
962	SUA/Vehicle Access	Clay Development Authority	Dec 2018
634	Easement	Smith	Perpetual
633	Lease/Cattle (Acquisition related)	Smith	2034
1294	SUA/Geotech	Terracon	May 2018
1228	Residence	Marzella	Feb 2018 with annual renewal

Table 9 – Estimated Costs and Revenue 2017-2027

OPERATING COSTS				
Year	Activity	No. of Units	Units	Annual Cost
Annual	Invasive plant control	60	Acres	$6,911
Annual	Prescribed fire	1493	Acres	$49,269
Annual	Security	106	Hours	$4,452
Annual	Road maintenance	47.7	Miles	$ 9,540
Annual	Mowing (roads, trails, parking areas)	630	Acres	$20,200
Annual	Trail and camp site maintenance	10.2	Miles	$2,091
Annual	Fence maintenance	1	Miles	$11,000
Annual	Forest inventory	200	plots	$4,000
Annual	Total			$107,463
Total	Cost over 10 years			$1,074,630
PROJECT EXPENSES DURING PLAN				
Year	Activity	No. of Units	Units	Total Cost
2020	Restore Golf Course as Mitigation	50	Acres	$53,000
2017	Timber Marking	25	Acres	$1,500
2021	Timber Marking	333	Acres	$19,980
2022	Timber Marking	776	Acres	$46,560
2026	Timber Marking	136	Acres	$8,160
2027	Timber Marking	47	Acres	$2,820
Total	Cost over 10 years			$132,020
REVENUE				
Year	Activity	No. of Units	Units	Total Revenue
2017	Timber sale	4,887	Tons	$102,167
2020	Timber sale	298	Tons	$5,663
2021	Timber sale	6,999	Tons	$173,517
2022	Timber sale	16,400	Tons	$406,579
2023	Timber sale	5,731	Tons	$159,727
2026	Timber sale	2,454	Tons	$48,593
2027	Timber sale	851	Tons	$16,858
Annual	Cattle lease	369	Acres	$30,999.50
SUMMARY OF EXPENSES AND REVENUE DURING 10-YEAR PLANNING PERIOD				
Grand total revenue over planning period				$1,223,100
Grand total expenses over planning period				$1,162,330

IMPLEMENTATION CHART

Bayard Conservation Area – Management Implementation Chart
(All activities will be contingent on the availability of sufficient staff and financial resources.)

TASK	RECURRENT	1-5 YEARS	5-10 YEARS	LEAD (COOPERATOR)
RESOURCE PROTECTION AND MANAGEMENT				
Water Resources				
General Maintenance				
Conduct maintenance and incidental or emergency repair of water resource structures as necessary.	---	---	---	BLR
Maintain water resource structures database and incorporate maintenance, repair, and any new structures.	-----	-----	-----	BOM
Recurrent				
Visually inspect roads, trails, low water crossings, bridges, and culverts for erosion problems and maintenance and repair needs.	Annually	-----	-----	BLR, BOM
Visually inspect bridge for maintenance and repair needs.	Annually	-----	-----	BLR, BOM
Short-term Planning Horizon				
Conduct repairs and replacements to road structures as deemed necessary to bring deficient structures into functional conditions. Structures in poor condition will be addressed first.	-----	2021	-----	BLR, BOM
Floral and Faunal				
General Maintenance				
Collect species occurrence data and incorporate into the land management biological database.	---	---	---	BLR, BRS
Conduct management activities in a manner consistent with relative rules, regulations, guidelines, and	---	---	---	BLR

TASK	RECURRENT	1-5 YEARS	5-10 YEARS	LEAD (COOPERATOR)
species management plans and in a manner that provides maximum protection for listed, rare, sensitive, or otherwise desirable species.				
Conduct feral hog removal activities as needed.	-----	-----	-----	BLR, BRS
Continue appropriate treatment of invasive and exotic vegetation,	-----	-----	-----	BLR
Recurrent				
Conduct gopher tortoise burrow monitoring within sandhill natural communities at a minimum interval of once every five years.	2021, 2026	-----	-----	BLR, BRS
Conduct activity status inspection of bald eagle nests as necessary to accomplish land management objectives.	Annually or as needed.	-----	-----	BLR, BRS
Short term Planning Horizon				
Cooperate with FWC to conduct sampling efforts to locate squaremouth amnicola.	-----	2017	-----	BLR, BRS
Forest Management				
General Maintenance				
Implement forest management activities in accordance with the District's Forest Management Plan	---	---	---	BLR
Populate and maintain forest management database.	-----	-----	-----	BLR
Recurrent				
Conduct visual inspections of forested areas for indications of disease and insect infestations.	Annually	-----	----	BLR
Conduct seedling survival monitoring.	Annually or as required by	-----	-----	BLR, BRS

TASK	RECURRENT	1-5 YEARS	5-10 YEARS	LEAD (COOPERATOR)
	planting schedule			
Conduct forest inventory audits.	As necessary to support database and forest management activities.	-----	-----	BLR
Short-term Planning Horizon				
Conduct pine harvest operations as detailed in Table 5 and addendum 4.	-----	2022	-----	BLR
Long-term Planning Horizon				
Conduct pine harvest operations as detailed in Table 5 and addendum 4.	-----	-----	2026	BLR
Fire Management				
General Maintenance				
Implement prescribed burning as described in the District's Fire Management Plan and the Bayard Conservation Area Fire Management Plan.	-----	-----	-----	BLR
Recurrent				
Develop annual burn plans.	Annually	-----	-----	BLR
Populate and maintain the fire management database.	Annually or as needed.	-----	-----	BLR
Conduct fireline maintenance.	Biannually or as needed.	-----	-----	BLR
Conduct mechanical and herbicide treatments to aid in the restoration of natural communities and to facilitate prescribed fire activities.	As needed	-----	-----	BLR
Cultural Resource Protection				
General Maintenance				
Identify and report any new sites.	---	---	---	BLR, BOM, BRS (DHR)
Access				
General Maintenance				
Maintain parking areas, signs, gates, roads, and trails.	---	---	---	BLR, BOM

TASK	RECURRENT	1-5 YEARS	5-10 YEARS	LEAD (COOPERATOR)
Recurrent				
Update roads, gates, and firelines in the land management database as maintenance, repair, or creation of new roads or trails occurs	Annually by September 30	-----	----	BLR (BRS)
Recreation				
General Maintenance				
Maintain parking areas, kiosks, and trails.	---	---	---	BLR
Maintain current information in recreation guide, trail guides, kiosk, and District website.	---	---	---	BLR (FWC, BRS, OC)
Recurrent				
Mow recreational trails.	Quarterly			BLR
Mow/maintain parking areas.	Bimonthly	-----	-----	BLR
Mow/maintain campsite.	Monthly	-----	-----	BLR
Conduct trail blazing and trimming maintenance.	Annually by December 31	-----	------	BLR
Maintain contract for restroom maintenance.	Annually	-----	-----	BLR
Security				
General Maintenance				
Coordinate with local law enforcement and FWC for security needs.	---	---	---	BLR FWC, County
Maintain contract with private security firm.	---	---	---	BLR, BRS
Maintain security residence.	-----	-----	-----	BLR, BRS
Recurrent				
Develop monthly, prioritized security needs and provide to contracted security firm.	Monthly	-----	-----	BLR
Conduct boundary posting maintenance.	As needed	-----	-----	BLR
Real Estate Administration				
General Maintenance				
Evaluate adjacent properties for potential acquisition.	---	---	---	BRS, BLR
Continue coordination with FDOT regarding real estate	-----	-----	-----	BRS, BLR

TASK	RECURRENT	1-5 YEARS	5-10 YEARS	LEAD (COOPERATOR)
transactions associated with construction of the First Coast Expressway.				
Refine Boundary and parcel data information and map layers.	-----	-----	-----	BRS
Short-term Planning Horizon				
Evaluate portions of J.P. Hall parcels for potential surplus associated with the land's assessment process.	-----	2022	-----	BRS
Cooperative Agreements, Leases, Easements, and Special Use Authorizations				
General Maintenance				
Administer easements, agreements, leases, and SUAs	-----	-----	-----	BLR, BRS

IMPLEMENTATION CHART KEY
BLM – Bureau of Land Resources
BOM – Bureau of Operations and Maintenance
BRS – Bureau of Real Estate Services
DHR – Division of Historical Resources
FWC – Florida Fish and Wildlife Conservation Commission
OC – Office of Communications
County – Clay County

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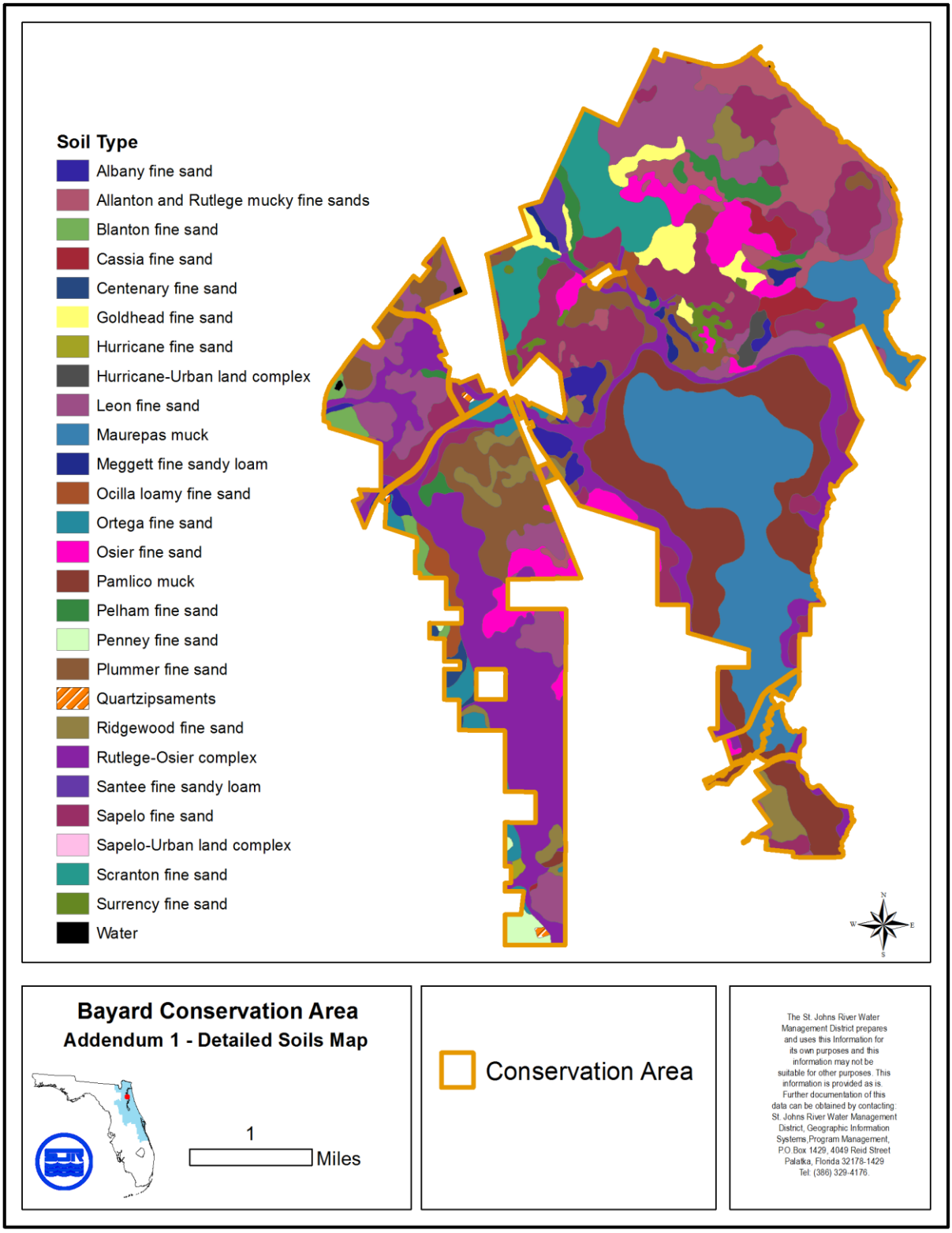
ADDENDA

ADDENDUM 1 – SOILS



ADDENDUM 2 – PLANT, ANIMAL, AND IMPERILED SPECIES LIST

Genus species	Common Name
PLANTS	
Acer rubrum	Red Maple
Aletris lutea	Yellow Colicroot
Aletris obovata	Southern Colicroot
Alnus serrulata	Hazel Alder
Alternathera philoxeroides	Alligatorweed (Exotic)
Ambrosia artemisiifolia	Common Ragweed
Amphicarpum muhlenbergianum	Blue Maidencane
Andropogon glomeratus	Bushy Bluestem
Andropogon glomeratus var. glaucopsis	Purple Bluestem
Andropogon virginicus	Broomsedge Bluestem
Andropogon virginicus var. glaucus	Chalky Bluestem
Aristida stricta	Wiregrass
Aristolochia serpentaria	Virginia Snakeroot
Aronia arbutifolia	Red Chokeberry
Arundinaria gigantea	Switchcane
Asclepias cinerea	Carolina Milkweed
Asclepias humistrata	Pinewoods Milkweed
Asclepias perennis	Swamp Milkweed
Asclepias tuberosa	Butterflyweed
Asimina incana	Wooly Pawpaw
Asimina pygmaea	Dwarf Pawpaw
Axonopus furcatus	Big Carpetgrass
Balduina uniflora	Oneflower Honeycombhead
Baptisia calycosa	Florida Wild Indigo
Baptisia lecontei	Pineland Wild Indigo
Bejaria racemosa	Tarflower
Berlandiera pumila	Soft Greeneyes
Berlandiera subacaulis	Florida Green Eyes
Bigelowia nudata	Pineland Rayless Goldenrod
Bulbostylis ciliatifolia	Capillary Hairsedge
Bulbostylis stenophylla	Sandyfield Hairsedge
Calopogon tuberosus	Tuberous Grasspink
Callicarpa americana	American Beautyberry
Calydorea coelestina	Bartram's Ixia
Campsis radicans	Trumpet Creeper
Carex glaucescens	Clustered Sedge
Carex lupulina	Hop Sedge
Carex verrucosa	Warty Sedge

Carya aquatica	Water Hickory
Carya glabra	Pignut Hickory
Cassia fasiculata	Partridge Pea
Ceanothus microphyllus	Littleleaf Buckbrush
Centella asiatica	Spadeleaf
Cephalanthus occidentalis	Common Buttonbush
Chamaecrista fasciculata	Partridge Pea
Chamaecrista nictitans	Sensistive Pea
Chasmanthium laxum	Slender Woodoats
Cicuta maculata	Spotted Water Hemlock
Cirsium horridulum	Purple Thistle
Cirsium nuttallii	Nuttall's Thistle
Cinnamomum camphora	Camphor Tree (Exotic)
Cleistesiopsis divaricata	Rosebud Orchid
Clematis crispa	Swamp Leather-Flower
Clerodendrum bungei	Rose Glorybower (Exotic)
Clitoria mariana	Atlantic Pigeonwings
Cnidoscolus stimulosus	Tread-Softly
Coleataenia anceps	Beaked Panicum
Coleataenia rigidula	Redtop Panicum
Coreopsis basalis	Goldenmane Tickseed
Coreopsis gladiata	Coastalplain Tickseed
Crotalaria rotundifolia	Rabbitbells
Cynodon dactylon	Bermudagrass (Exotic)
Cyrilla racemiflora	Titi
Dalea pinnata	Summer Farewell
Dichanthelium aciculare	Needleleaf Witchgrass
Dichanthelium acuminatum	Tapered Witchgrass
Dichanthelium commutatum	Variable Witchgrass
Dichanthelium dichotomum	Cypress Witchgrass
Dichanthelium ensifolium	Cypress Witchgrass
Dichanthelium laxiflorum	Openflower Witchgrass
Dichanthelium portoricense	Hemlock Witchgrass
Dichanthelium scabriusculum	Wooly Witchgrass
Dichanthelium strigosum	Roughhair Witchgrass
Diodia teres	Poor Joe
Diospyros virginiana	Common Persimmon
Drosera capillaris	Pink Sundew
Dychoriste oblongifolia	Oblongleaf Twinflower
Eichhornia crassipes	Water Hyacinth (Exotic)
Elephantopus elatus	Tall Elephantsfoot
Erechtites hieracifolius	American Burnweed
Erigeron strigosus	Prairie Fleabane

Erigeron vernus	Early Whitetop Fleabane
Eriocaulon decangulare	Tenangle Pipewort
Eriogonum tomentosum	Dogtongue Wild Buckwheat
Eryngium aromaticum	Fragrant Eryngo
Eryngium yuccifolium	Button Rattlesnake Master
Eupatorium capillifolium	Dogfennel
Eupatorium compositifolium	Yankeeweed
Eupatorium mohrii	Mohr's Thoroughwort
Eupatorium pilosum	Rough Boneset
Eupatorium rotundifolium	Roundleaf Throughwort
Euphorbia inudata	Florida Pineland Spurge
Euthamia caroliniana	Slender Flattop Goldenrod
Fraxinus pennsylvanica	Green Ash
Fuirena pumila	Dwarf Umbrellasedge
Fuirena scirpoidea	Southern Umbrellasedge
Galactia elliottii	Elliott's Milkpea
Galactia floridana	Florida Milkpea
Galium aparine	Goosegrass
Galium pilosum	Hairy Bedstraw
Gamochaeta antillana	Caribbean Purple Everlasting
Gamochaeta purpurea	Spoonleaf Purple Everlasting
Gaylussacia dumosa	Dwarf Huckleberry
Gaylussacia frondosa	Blue Huckleberry
Gelsemium sempervirens	Yellow Jessamine
Geobalanus oblongifolius	Gopher Apple
Gordonia lasianthus	Loblolly Bay
Hamamelis virginiana	American Witchhazel
Hartwrightia floridana	Hartwrightia
Helenium pinnatifidum	Southeastern Sneezeweed
Helianthemum caroliniana	Carolina Frostweed
Houstonia procumbens	Innocence
Hydrocotyle umbellata	Manyflower Marshpennywort
Hypericum cistifolium	Roundpod St. John's-Wort
Hypericum fasciculatum	Sandweed
Hypericum hypericoides	St. Andrews-Cross
Hypericum myrtifolium	Myrtleleave St. John's-Wort
Hypericum suffruticosum	Pineland St. John's-Wort
Hypericum tetrapetalum	Fourpetal St. John's-Wort
Hypoxis juncea	Fringed Yellow Stargrass
Ilex cassine	Dahoon
Ilex coriacea	Large Gallberry
Ilex glabra	Gallberry
Ilex opaca	American Holly

Imperata cylindrica	Cogongrass (Exotic)
Iris hexagona	Carolina Iris
Itea virginica	Virginia Willow
Juncus marginatus	Shore Rush
Juniperus virginiana	Red Cedar
Kalmia hirsuta	Wicky
Kellochloa verrucosum	Warty Panicgrass
Lachnanthes caroliniana	Carolina Redroot
Lachnocaulon anceps	Whitehead Bogbutton
Leersia virginica	Whitegrass
Liatris gracilis	Slender Gayfeather
Liatris spicata	Dense Gayfeather
Liatris tenuifolia	Shortleaf Gayfeather
Linaria canadensis	Canadian Toadflax
Linum medium var. texanum	Stiff Yellow Flax
Liquidambar styraciflua	Sweetgum
Lobelia glandulosa	Glade Lobelia
Lonicera sempervirens	Coral Honeysuckle
Lugwigia maritima	Seaside primrosewillow
Ludwigia virgata	Savannah primrosewillow
Lycopodiella alopecuroides	Foxtail Club-moss
Lycopodiella appressa	Southern Club-moss
Lygodesmia aphylla	Roserush
Lygodium japonicum	Japanese Climbing Fern (Exotic)
Lyonia fruticosa	Coastalplain Staggerbush
Lyonia lucida	Fetterbush
Magnolia grandiflora	Southern Magnolia
Magnolia virginiana	Sweetbay
Marshallia graminifolia	Grassleaf Barbara's Buttons
Melica mutica	Twoflower Melicgrass
Mitchella repens	Partridgeberry
Monarda punctata	Spotted Beebalm
Morella cerifera	Wax Myrtle
Morella caroliniensis	Evergreen Bayberry
Morella inodora	Odorless Bayberry
Nyssa sylvatica var.biflora	Swamp Tupelo
Oclemena reticulata	Whitetop Aster
Oenothera laciniata	Cutleaf Eveningprimrose
Oenothera simulans	Southern Beeblossom
Oldenlandia boscii	Bosc's Mille Graines
Opuntia humifusa	Pricklypear
Orbexilum virgatum	Pineland Leatherroot
Osmunda cinnamomea	Cinnamon Fern

Osmunda regalis var. spectabilis	Royal Fern
Palafoxia integrifolia	Coastalplain palafox
Panicum hemitomon	Maidencane
Panicum repens	Torpedograss (Exotic)
Paspalum floridanum	Florida Paspalum
Paspalum notatum var. saurae	Bahiagrass (Exotic)
Paspalum setaceum	Thin Paspalum
Passiflora incarnata	Purple Passionflower
Persea borbonia	Red Bay
Persea palustris	Swamp Bay
Persicaria hydropiperoides	Mild Waterpepper
Phanopyrum gymnocarpon	Savannah Panicum
Phoradendron leucarpum	Oak Mistletoe
Phlox nivalis	Trailing Phlox
Physostegia purpurea	Eastern False Dragonhead
Phytolacca americana	American Pokeweed
Pinguicula caerulea	Blueflower Butterwort
Pinus elliottii	Slash Pine
Pinus palustris	Longleaf Pine
Pinus taeda	Loblolly Pine
Piriqueta cistoides subsp. caroliniana	Pitted Stripeseed
Pityopsis graminifolia	Narrowleaf Silkgrass
Platanthera cristata	Crested Fringed Orchid
Pleopeltis michauxiana	Resurrection Fern
Pluchea baccharis	Rosy Camphorweed
Pluchea odorata	Stinking Camphorweed
Pogonia ophioglossoides	Rose Pogonia
Polygala cruciata	Drumheads
Polygala incarnata	Procession Flower
Polygala leptostachys	Georgia Milkwort
Polygala lutea	Orange Milkwort
Polygala nana	Candyroot
Polygala ramosa	Low Pinebarren Milkwort
Polygala setacea	Coastalplain Milkwort
Polypremum procumbens	Rustweed
Pontederia cordata	Pickerelweed
Prunus caroliniana	Carolina Laurelcherry
Prunus serotina	Black Cherry
Prunus umbellata	Hog Plum
Pteridium aquilinum var. pseudocaudatum	Tailed Bracken
Pterocaulon pycnostachyum	Blackroot
Ptilimnium capillaceum	Mock Bishopsweed
Pyrrhopappus carolinianus	Carolina Desertchicory

Quercus chapmanii	Chapman’s Oak
Quercus geminata	Sand Live Oak
Quercus incana	Bluejack Oak
Quercus laevis	Turkey Oak
Quercus laurifolia	Laurel Oak
Quercus margarettae	Sand Post Oak
Quercus minima	Dwarf Live Oak
Quercus myrtifolia	Myrtle Oak
Quercus nigra	Water Oak
Quercus pumila	Running Oak
Quercus virginicus	Live Oak
Rhexia alifanus	Savannah Meadowbeauty
Rhexia lutea	Yellow Meadowbeauty
Rhexia mariana	Pale Meadowbeauty
Rhexia nashii	Maid Marian
Rhexia nuttallii	Nuttall’s Meadowbeauty
Rhexia petiolata	Fringed Meadowbeauty
Rhododendron viscosum	Swamp Azalea
Rhynchosia reniformis	Dollarleaf
Rhus copallinum	Winged Sumac
Rhynchospora ciliaris	Fringed Beaksedge
Rhynchospora colorata	Starrush Whitetop
Rhynchospora fasicularis	Fascicled Beaksedge
Rhynchospora microcephala	Bunched Beaksedge
Rosa palustris	Swamp Rose
Rubus cuneifolius	Sand Blackberry
Rubus pensilvanicus	Sawtooth Blackberry
Rudbeckia hirta	Blackeyed Susan
Ruellia ciliosa	Ciliate Wild Petunia
Rumex verticilliatus	Swamp Dock
Sabal minor	Dwarf Palmetto
Sabal palmetto	Cabbage Palm
Sabatia macrophylla	Largeleaf Rosegentian
Saccharum giganteum	Sugarcane Plumegrass
Sacciolepis striata	American Cupscale
Sagittaria graminea	Grassy Arrowhead
Salvia lyrata	Lyreleaf Sage
Salvinia minima	Water Spangles
Samolus valerandi subsp. Parviflorus	Pineland Pimpernel
Sapium sebiferum	Chinese Tallowtree (Exotic)
Sarracenia minor	Hooded Pitcherplant
Sassafrass albidum	Sassafrass
Saururus cernuus	Lizard's Tail

Schizachyrium tenerum	Slender Bluestem
Schoenocaulon dubium	Florida Feathershank
Schoenoplectus californicus	Giant Bulrush
Schoenoplectus etuberculatus	Canby's Bulrush
Scleria reticularis	Netted Nutrush
Scleria triglomerata	Tall Nutgrass
Scoparia dulcis	Sweetbroom
Scutellaria integrifolia	Helmet Skullcap
Senna obtusifolia	Coffeeweed
Serenoa repens	Saw Palmetto
Sesbania vesecaria	Bladderpod
Setaria pumila	Yellow Bristlegrass (Exotic)
Silphium compositum	Kidneyleaf Rosinweed
Smilax auriculata	Earleaf Greenbriar
Smilax bona-nox	Saw Greenbriar
Smilax glauca	Cat Greenbriar
Smilax laurifolia	Laurel Greenbriar
Solidago fistulosa	Pinebarren Goldenrod
Solidago odora	Anisescented Goldenrod
Solidago stricta	Wand Goldenrod
Sophronanthe hispida	Rough Hedgehyssop
Sophronanthe pilosa	Shaggy Hedgehyssop
Sorghastrum secundum	Lopsided Indiangrass
Spiranthes vernalis	Spring Ladiestresses
Sporobolus floridanus	Florida Dropseed
Sporobolus junceus	Pineywoods Dropseed
Stillingia sylvatica	Queensdelight
Stenotaphrum secundatum	St. Augustinegrass
Symphyotrichum carolinianum	Climbing Aster
Syngonanthus flavidulus	Yellow Hatpins
Taxodium ascendens	Pond-Cypress
Taxodium distichum	Bald-Cypress
Tephrosia florida	Florida Hoarypea
Tiedemannia filiformis	Water Cowbane
Tillandsia bartramii	Bartram's Airplant
Tillandsia recurvata	Ballmoss
Tillandsia usneoides	Spanish Moss
Toxicodendron radicans	Eastern Poison Ivy
Toxicodendron vernix	Poison Sumac
Tragia urens	Wavyleaf Noseburn
Trichostema dichotomum	Forked Bluecurls
Tridens flavus	Tall Redtop
Typha domingensis	Southern Cattail

Ulmus americana	American Elm
Vaccinium arboreum	Sparkleberry
Vaccinium corymbosum	Highbush Blueberry
Vaccinium myrsinites	Shiny Blueberry
Vaccinium stamineum	Deerberry
Verbena carnea	Carolina False Vervain
Vicia floridana	Florida Vetch
Viola palmata	Early Blue Violet
Vitis rotundifolia	Muscadine
Wahlenbergia marginata	Southern Rockbell (Exotic)
Woodwardia areolata	Netted Chain Fern
Woodwardia virginica	Virginia Chain Fern
Xyris ambigua	Coastalplain Yelloweyed Grass
Xyris elliottii	Elliott's Yelloweyed Grass
Xyris jupicai	Richard's Yelloweyed Grass
Yucca filamentosa	Adam's Needle

BUTTERFLIES & MOTHS

Agraulis vanillae	Gulf Fritillary
Atalopedes campestris	Sachem
Atrytone logan	Delaware skipper
Battus philenor	Pipevine swallowtail
Danaus plexippus	Monarch
Erynnis horatius	Horace's Duskywing
Erynnis zarocco	Zarucco Duskywing
Euptoieta claudia	Variegated Fritillary
Eurema daira	Barred Yellow
Eurema lisa	Little Yellow
Eurema nicippe	Sleepy Orange
Eurytides marcellus	zebra swallowtail
Hermeuptychia sosybius	Carolina Satyr
Hylephila phyleus	Fiery Skipper
Junonia coenia	Common Buckeye
Limenitis archippus	Viceroy
Megisto violae	Viola's Wood-Satyr
Nastra lherminier	Swarthy Skipper
Oligoria maculata	Twin-spot Skipper
Papilio cresphontes	Giant Swallowtail
Papilio glaucus	Eastern Tiger Swallowtail
Papilio palamedes	Palamedes Swallowtail
Papilio polyxenes	Black Swallowtail
Papilio troilus	Spicebush Swallowtail

Phoebis sennae	Cloudless Sulphur
Phyciodes phaon	Phaon Crescent
Phyciodes tharos	Pearl Crescent
Pieris rapae	Cabbage White
Polites vibex	Whirlabout
Strymon melinus	Gray Hairstreak
Thorybes bathyllus	Southern Cloudywing
Thorybes pylades	Northern Cloudywing
Urbanus proteus	Long-tailed Skipper
Vanessa atalanta	Red Admiral
Vanessa virginiensis	American Lady

AMPHIBIANS

Acris gryllus	Southern Cricket Frog
Amphiuma means	Two-toed Amphiuma
Anaxyrus quercicus	Oak Toad
Anaxyrus terrestris	Southern Toad
Gastrophryne carolinensis	Eastern Narrow-mouthed Toad
Hyla cinerea	Green Treefrog
Hyla femoralis	Pine Woods Treefrog
Hyla gratiosa	Barking Treefrog
Hyla squirella	Squirrel Treefrog
Lithobates clamitans	Bronze Frog
Lithobates grylio	Pig Frog
Lithobates sphenocephalus	Southern Leopard Frog
Pseudacris ocularis	Little Grass Frog
Scaphiopus holbrookii	Eastern Spadefoot
Siren lacertina	Greater Siren

REPTILES

Agkistrodon piscivorus	Cottonmouth
Alligator mississippiensis	American Alligator
Anolis carolinensis	Green Anole
Anolis sagrei	Brown Anole (Exotic)
Apalone ferox	Florida Softshell
Chelydra serpentina	Snapping Turtle
Coluber constrictor priapus	Southern Black Racer
Crotalus adamanteus	Eastern Diamond-backed Rattlesnake
Gopherus polyphemus	Gopher Tortoise
Micrurus fulvius	Harlequin Coralsnake
Nerodia fasciata fasciata	Banded Watersnake
Opheodrys aestivus	Rough Green Snake

Ophisaurus compressus	Island Glass Lizard
Ophisaurus ventralis	Eastern Glass Lizard
Pantherophis alleghaniensis	Eastern Ratsnake
Pantherophis guttatus	Red Cornsnake
Plestiodon inexpectatus	Southeastern Five-lined Skink
Plestiodon laticeps	Broadhead Skink
Pseudemys nelsoni	Florida Red-bellied Cooter
Pseudemys peninsularis	Peninsula Cooter
Sceloporus undulatus	Eastern Fence Lizard
Scincella lateralis	Little Brown Skink
Sistrurus miliarius	Pygmy Rattlesnake
Terrapene carolina	Eastern Box Turtle

Common Name	Genus species
BIRDS	
Waterfowl	
Canada Goose	*Branta canadensis*
Wood Duck	*Aix sponsa*
Ring-necked Duck	*Aythya collaris*
Lesser Scaup	*Aythya affinis*
Hooded Merganser	*Lophodytes cucullatus*
Ruddy Duck	*Oxyura jamaicensis*
Grouse, Quail, and Allies	
Northern Bobwhite	*Colinus virginianus*
Wild Turkey	*Meleagris gallopavo*
Loons and Grebes	
Common Loon	*Gavia immer*
Pied-billed Grebe	*Podilymbus podiceps*
Storks	
Wood Stork	*Mycteria americana*
Cormorants and Anhingas	
Double-crested Cormorant	*Phalacrocorax auritus*
Anhinga	*Anhinga anhinga*
Pelicans	
Brown Pelican	*Pelecanus occidentalis*
Herons, Ibis, and Allies	
Least Bittern	*Ixobrychus exilis*

Great Blue Heron	*Ardea herodias*
Great Egret	*Ardea alba*
Little Blue Heron	*Egretta caerulea*
Snowy Egret	*Egretta thula*
Tricolored Heron	*Egretta tricolor*
Cattle Egret	*Bubulcus ibis*
Green Heron	*Butorides virescens*
Black-crowned Night-Heron	*Nycticorax nycticorax*
Yellow-crowned Night-Heron	*Nyctanassa violacea*
White Ibis	*Eudocimus albus*
Vultures, Hawks, and Allies	
Black Vulture	*Coragyps atratus*
Turkey Vulture	*Cathartes aura*
Osprey	*Pandion haliaetus*
Swallow-tailed Kite	*Elanoides forficatus*
Sharp-shinned Hawk	*Accipiter striatus*
Cooper's Hawk	*Accipiter cooperii*
Bald Eagle	*Haliaeetus leucocephalus*
Red-shouldered Hawk	*Buteo lineatus*
Short-tailed Hawk	*Buteo brachyurus*
Red-tailed Hawk	*Buteo jamaicensis*
Falcons and Caracaras	
American Kestrel	*Falco sparverius*
Rails, Gallinules, and Allies	
Common Gallinule	*Gallinula galeata*
American Coot	*Fulica americana*
Cranes	
Sandhill Crane	*Grus canadensis*
Shorebirds	
Killdeer	*Charadrius vociferus*
Gulls, Terns, and Skimmers	
Laughing Gull	*Leucophaeus atricilla*
Ring-billed Gull	*Larus delawarensis*
Forster's Tern	*Sterna forsteri*
Royal Tern	*Thalasseus maxima*
Pigeons and Doves	
Rock Pigeon (Exotic)	*Columba livia*

Eurasian Collared-Dove (Exotic)	*Streptopelia decaocto*
Common Ground-Dove	*Columbina passerina*
White-winged Dove	*Zenaida asiatica*
Mourning Dove	*Zenaida macroura*
Cuckoos	
Yellow-billed Cuckoo	*Coccyzus americanus*
Owls	
Eastern Screech-Owl	*Megascops asio*
Great Horned Owl	*Bubo virginianus*
Barred Owl	*Strix varia*
Nightjars	
Common Nighthawk	*Chordeiles minor*
Chuck-will's-widow	*Caprimulgus carolinensis*
Eastern Whip-poor-will	*Caprimulgus vociferus*
Swifts	
Chimney Swift	*Chaetura pelagica*
Hummingbirds	
Ruby-throated Hummingbird	*Archilochus colubris*
Kingfishers	
Belted Kingfisher	*Megaceryle alcyon*
Woodpeckers	
Red-headed Woodpecker	*Melanerpes erythrocephalus*
Red-bellied Woodpecker	*Melanerpes carolinus*
Yellow-bellied Sapsucker	*Sphyrapicus varius*
Downy Woodpecker	*Picoides pubescens*
Hairy Woodpecker	*Picoides villosus*
Northern Flicker	*Colaptes auratus*
Pileated Woodpecker	*Dryocopus pileatus*
Tyrant Flycatchers: Pewees, Kingbirds, and Allies	
Eastern Wood-Pewee	*Contopus virens*
Acadian Flycatcher	*Empidonax virescens*
Eastern Phoebe	*Sayornis phoebe*
Great Crested Flycatcher	*Myiarchus crinitus*
Eastern Kingbird	*Tyrannus tyrannus*

Shrikes	
Loggerhead Shrike	*Lanius ludovicianus*
Vireos	
White-eyed Vireo	*Vireo griseus*
Yellow-throated Vireo	*Vireo flavifrons*
Blue-headed Vireo	*Vireo solitarius*
Red-eyed Vireo	*Vireo olivaceus*
Jays, Magpies, Crows, and Ravens	
Blue Jay	*Cyanocitta cristata*
American Crow	*Corvus brachyrhynchos*
Fish Crow	*Corvus ossifragus*
Martins and Swallows	
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*
Purple Martin	*Progne subis*
Tree Swallow	*Tachycineta bicolor*
Barn Swallow	*Riparia riparia*
Tits, Chickadees, and Titmice	
Carolina Chickadee	*Poecile carolinensis*
Tufted Titmouse	*Baeolophus bicolor*
Nuthatches	
Brown-headed Nuthatch	*Sitta pusilla*
Wrens	
House Wren	*Troglodytes aedon*
Sedge Wren	*Cistothorus platensis*
Carolina Wren	*Thryothorus ludovicianus*
Gnatcatchers	
Blue-gray Gnatcatcher	*Polioptila caerulea*
Kinglets	
Golden-crowned Kinglet	*Regulus satrapa*
Ruby-crowned Kinglet	*Regulus calendula*
Thrushes	
Eastern Bluebird	*Sialia sialis*
Veery	*Catharus fuscescens*

Swainson's Thrush	*Catharus ustulatus*
Hermit Thrush	*Catharus guttatus*
American Robin	*Turdus migratorius*
Catbirds, Mockingbirds, and Thrashers	
Gray Catbird	*Dumetella carolinensis*
Brown Thrasher	*Toxostoma rufum*
Northern Mockingbird	*Mimus polyglottos*
Starlings and Mynas	
European Starling (Exotic)	*Sturnus vulgaris*
Waxwings	
Cedar Waxwing	*Bombycilla cedrorum*
Wood-Warblers	
Ovenbird	*Seiurus aurocapilla*
Worm-eating Warbler	*Helmitheros vermivorum*
Louisiana Waterthrush	*Parkesia motacilla*
Northern Waterthrush	*Parkesia noveboracenis*
Blue-winged Warbler	*Vermivora cyanoptera*
Black-and-white Warbler	*Mniotilta varia*
Prothonotary Warbler	*Protonotaria citrea*
Orange-crowned Warbler	*Oreothlypis celata*
Common Yellowthroat	*Geothlypis trichas*
Hooded Warbler	*Setophaga citrina*
American Redstart	*Setophaga ruticilla*
Cape May Warbler	*Setophaga tigrina*
Northern Parula	*Setophaga americana*
Yellow Warbler	*Setophaga petechia*
Palm Warbler	*Setophaga palmarum*
Pine Warbler	*Setophaga pinus*
Yellow-rumped Warbler	*Setophaga coronata*
Yellow-throated Warbler	*Setophaga dominica*
Prairie Warbler	*Setophaga discolor*
New World Sparrows	
Bachman's Sparrow	*Peucaea aestivalis*
Grasshopper Sparrow	*Ammodramus savannarum*
Chipping Sparrow	*Spizella passerina*
White-throated Sparrow	*Zonotrichia albicollis*
Vesper Sparrow	*Pooecetes gramineus*
Savannah Sparrow	*Passerculus sandwichensis*

Song Sparrow	*Melospiza melodia*
Swamp Sparrow	*Melospiza georgiana*
Eastern Towhee	*Pipilo erythrophthalmus*
Cardinals, Grosbeaks, and Allies	
Summer Tanager	*Piranga rubra*
Scarlet Tanager	*Piranga olivacea*
Northern Cardinal	*Cardinalis cardinalis*
Rose-breasted Grosbeak	*Pheucticus ludovicianus*
Blue Grosbeak	*Guiraca caerulea*
Indigo Bunting	*Passerina cyanea*
Dickcissel	*Spiza americana*
Blackbirds	
Eastern Meadowlark	*Sturnella magna*
Baltimore Oriole	*Icterus galbula*
Red-winged Blackbird	*Agelaius phoeniceus*
Brown-headed Cowbird	*Molothrus ater*
Common Grackle	*Quiscalus quiscula*
Boat-tailed Grackle	*Quiscalus major*
Finches, Euphonias, and Allies	
House Finch (Exotic)	*Carpodacus mexicanus*
Pine Siskin	*Spinus pinus*
American Goldfinch	*Spinus tristis*

MAMMALS

Coyote (Exotic)	*Canis latrans*
Nine-Banded Armadillo	*Dasypus novemcinctus*
Virginia Opossum	*Didelphis virginiana*
River Otter	*Lontra canadensis*
Bobcat	*Lynx rufus*
White-Tailed Deer	*Odocoileus virginianus*
Raccoon	*Procyon lotor*
Eastern gray squirrel	*Sciurus carolinensis*
Southeastern Fox Squirrel	*Sciurus niger niger*
Hispid cotton rat	*Sigmodon hispidus*
Wild Boar (Exotic)	*Sus scrofa*
Eastern Cottontail	*Sylvilagus floridanus*
Marsh Rabbit	*Sylvilagus palustris*
Florida black bear	*Ursus americanus floridanus*

Rare and Imperiled Plant and Animal Species		
COMMON NAME	GENUS SPECIES	STATUS
PLANTS		
Florida Wild Indigo	*Baptisia calycosa*	SE, S1
Bartram's Ixia	*Calydorea coelestina*	SE, S2S3
Rosebud Orchid	*Cleistesiopsis divaricata*	SE, S1
Pineland Leatherroot	*Orbexilum virgatum*	SE, S1
REPTILES		
American Alligator	*Alligator mississippiensis*	FT S/A, S4
Eastern Diamond-backed Rattlesnake	*Crotalus adamanteus*	S3
Gopher Tortoise	*Gopherus polyphemus*	ST, S3
BIRDS		
Wood Stork	*Mycteria americana*	FT, ST, S2
Little Blue Heron	*Egretta caerulea*	ST, S4
Snowy Egret	*Egretta thula*	S3
Tricolored Heron	*Egretta tricolor*	ST, S4
Black-crowned Night-Heron	*Nycticorax nycticorax*	S3
Yellow-crowned Night-Heron	*Nyctanassa violacea*	S3
White Ibis	*Eudocimus albus*	S4
Osprey	*Pandion haliaetus*	SSC, S3S4
Swallow-tailed Kite	*Elanoides forficatus*	S2
Bald Eagle	*Haliaeetus leucocephalus*	S3
Short-tailed Hawk	*Buteo brachyurus*	S1
Royal Tern	*Thalasseus maxima*	S3
Hairy Woodpecker	*Picoides villosus*	S3
Louisiana Waterthrush	*Parkesia motacilla*	S2
American Redstart	*Setophaga ruticilla*	S2
MAMMALS		
Southeastern Fox Squirrel	*Sciurus niger niger*	S3
Florida black bear	*Ursus americanus floridanus*	S2

STATUS DESCRIPTIONS

ACRONYM	STATUS
FE	Federally-designated Endangered
FT	Federally-designated Threatened
FT(S/A)	Federally-designated Threatened species due to similarity of appearance
SE	State-designated Endangered
ST	State-designated Threatened
SSC	State Species of Special Concern

FNAI STATE RANKING
S1 = Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
S2 = Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
S3 = Either very rare and local in Florida (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.
S4 = Apparently secure in Florida (may be rare in parts of range).
S5 = Demonstrably secure in Florida.

ADDENDUM 3 – FIRE MANAGEMENT PLAN

Bayard Conservation Area

FIRE MANAGEMENT PLAN

PREPARED BY

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

Bayard Conservation Area
Fire Management Plan
Clay County, Florida

The District Fire Management Plan provides general fire management information relative to policy, procedure, and reporting. This document provides the guidelines for the implementation of prescribed fire activities on the Bayard Conservation Area (Conservation Area).

Introduction and Objectives

The Conservation Area is approximately 10,371 acres located in Clay County along portions of the St. Johns River and includes several associated branches. The property is located east of U.S. Highway 17, just south of State Road 16 in Clay County. C.R. 209 runs north-south through the Conservation Area, while C.R. 226 runs east-west through the Conservation Area. The portion of C.R. 226 that lies east of C.R. 209 is known locally as Bayard Road. These roads effectively divide the property into four smaller management tracts often used for fire management discussions. The northeastern tract is called Area 1; the southeastern tract is referred to as Area 2; the southwestern tract is called Area 3; and the northwestern tract is called Area 4. Smoke management considerations for the Conservation Area include the above-mentioned roads, the suburban areas surrounding the property, and the down drainage affects of waterways within and near the property, including the St. Johns River, Clarke's Creek, and Peeler Branch.

Historically, fires have played a vital role in the shaping and maintenance of many of the natural communities in Florida. As such, most vegetative communities and associated wildlife are fire adapted and in many instances, fire dependent. Conversely, the exclusion of fire from an area allows for successional changes within the natural community. Fire exclusion leads to the excessive accumulation of fuel loads, which increase the risk for catastrophic wildfires. Fire management objectives within the Conservation Area include:

- Reduction of heavy fuel loads through the application of dormant season burns to decrease potential risk of damaging wildfires and smoke management concerns
- Continuation of growing season burns to encourage the amelioration of native fire adapted flora such as Bartram's ixia and wiregrass
- Promotion of diversity between natural communities, especially ecotonal areas
- Mitigation of smoke management issues

The achievement of these goals requires that the property be partitioned into manageable burn units prior to the application of prescribed fire within those units. The following sections summarize the considerations necessary for the safe and effective use of prescribed fire as a land management tool within the Conservation Area.

Fire Return Interval

The general frequency to which fire returns to a community type is termed its' fire return interval. Some communities require frequent pyric perturbations to perpetuate themselves while others are not fire adapted and subsequently do not require fire to maintain their characteristics. The following table (Table 1.) and discussion of native plant communities occurring on the

property and optimal fire return intervals was characterized in part using information from the Florida Natural Areas Inventory's *Guide to the Natural Communities of Florida*.

Table 1.

Natural Community Type	FNAI Fire Return Interval
Mesic Flatwoods	2-4 years
Wet Flatwoods	1-3 years in grass dominated systems; 5-7 years in shrubbier systems
Mesic Hammock	Not always fire adapted; some areas may experience occasional low-intensity ground fires.
Depression Marsh	This community burns in conjunction with adjacent pyric natural communities
Baygall	Infrequent; may burn with adjacent pyric natural communities
Basin Swamp	This is not a fire-adapted community
Dome Swamp	3-5 years along the outer edges (or as adjacent communities burn); 100-150 years interior
Floodplain Swamp	This is not a fire-adapted community
Blackwater Stream	This is not a fire-adapted community
Bottomland Forest	Fire is not a significant ecological factor in this community
Floodplain Marsh	1-3 years in areas of pyric plants
Sandhill	1-3 years
Altered Land Types	**Fire Return Interval**
Pasture-Improved	1-3 years or in conjunction with adjacent pyric natural communities
Abandoned Field/Abandoned Pasture	1-3 years or in conjunction with adjacent pyric natural communities
Artificial Pond	-----
Restoration Natural Community/Regeneration	1-3 years or in conjunction with adjacent pyric natural communities
Canal/Ditch	-----
Developed/Parking Area	-----

The above referenced fire return intervals relate to high quality natural communities. The fire return interval within degraded systems is variable, often elongated. Prescribed fire will be applied as necessary to achieve management and enhancement goals.

Mesic flatwoods are the most prevalent fire adapted natural community type found within the property. Prior to public acquisition, most these areas were managed as pine plantations. The mesic flatwoods and wet flatwoods natural communities within the Conservation Area, while disturbed are well maintained with fire and contain a diverse and abundant groundcover.

Fire management within the remaining natural communities will be in conjunction with the associated dominant pyric natural community within each fire management unit (FMU). These natural communities will burn as site conditions permit during the implementation of prescribed burns in adjacent natural communities. Additionally, these areas will not be excluded from fire activities unless warranted by safety or smoke management issues.

Depression marsh is a fire-adapted community. Though fire may not carry entirely through each marsh on every burn, it is an important factor in the maintenance and serves to restrict encroachment of woody plant species. Natural fire regime coincides with that of the adjacent habitat. Numerous depression marshes are embedded in the flatwoods areas at the Conservation Area. The dominant species within these marshes is often maidencane. Many of these marshes are small, but occupy an important niche in providing habitat for numerous species of wildlife. Fire will be applied to these marshes as surrounding natural communities are burned.

Dome swamps are scattered throughout the flatwoods at the Conservation Area. Many of these domes have been altered to some extent by past management activities, yet many retain the characteristic "bands" of vegetation normally found in the shallow outer edges of the domes. Fire will be applied to dome swamps as the adjacent communities are burned.

Several small areas within Conservation Area could best be described as mesic hammock and bottomland forest. These areas normally have little to no groundcover, and burn very infrequently. These communities are often transitional areas between pine flatwoods and floodplain swamps within the Conservation Area. Fire will be allowed to burn into these areas as adjacent pyric plant communities are burned. It is not likely that these areas will burn completely with each burn, rather, fire, under normal prescribed fire conditions, will burn through areas where pine litter is present and will self-extinguish once it enters the wetter interior areas.

Though large baygalls are not generally targeted specifically for fire management, pockets of bay trees will begin to move into adjacent mesic and wet flatwoods natural communities over time. District staff utilize prescribed fire to reduce bay encroachment in adjacent natural communities.

Except for depression marsh, the above-listed communities make excellent natural firebreaks during normal or wet conditions. Whenever possible, the ecotonal areas between these communities and adjacent fire adapted communities will be included in burns.

Seasonality and Type of Fire

Historically, most fires in Florida occurred in what is commonly referred to as the "growing season." The growing season usually spans from mid-March through September. Fires during the spring and early summer months generally have significant ecological benefits as most fire-adapted flora is perpetuated by fire. Mimicking lightning ignited natural fires by implementing prescribed fire during the growing season provides benefits to natural systems by controlling shrub layers and encouraging diversity in groundcover species.

Dormant season burns, conducted from late November through the mid-March, help to reduce fuel loads in overgrown areas or in areas of newly planted pines. Cooler conditions associated with dormant season burning are a consideration in areas of high fuel loads and where only minimal pine mortality is acceptable. Additionally, dormant season burning may result in fewer safety and smoke management issues due to higher fuel moisture and more consistent winds. District staff will continue to work to maintain fire return frequencies that are consistent with those identified by FNAI for the various communities within the property.

In many cases, fire management units with similar fire management needs will be burned simultaneously, either with crews igniting the areas by hand from the ground, or with the aid of aircraft. Because the Conservation Area is large with an ample smoke shed, the property is a

candidate for implementing prescribed fire with the aid of a helicopter. Aerial ignition allows District staff to ignite fire management units quickly, which results in faster burnout and reduces smoke management concerns. Additionally, convection produced by igniting an area rapidly can help move the smoke up and away more quickly. Aerial ignition also allows staff to introduce fire into areas that may be inaccessible from the ground, ensuring that prescribed fire is introduced into even the most remote areas within the fire management units. Aerial ignition allows staff to burn more acres in a shorter period of time, which in time will aid District staff in maintaining optimal fire return frequencies. An aerial burn safety plan (Exhibit 1) will accompany the individual burn prescriptions and be onsite and on the ground the day of any aerial burn.

Wildfire Policy

In the event of a wildfire, if conditions permit, suppression strategies will utilize existing fuel breaks to contain the wildfire. These fuel breaks may include previously burned areas, existing roads, trails, and firelines, and wetlands and other water bodies. This is only possible, with the agreement of local fire rescue, Florida Forest Service, District staff, and when all of the following conditions are met:

1) Fuels within the area have been managed
2) No extreme weather conditions are present or expected
3) There are no other wildfires that may require action
4) There are sufficient resources available to manage the fire to containment
5) The fire and the resulting smoke will not impact neighbors or smoke sensitive areas

If any of these conditions are not met, direct suppression action will be taken.

As soon as possible following a fire in which firelines are plowed, a plan for fireline rehabilitation shall be developed and implemented.

Persons discovering arson or wildfires on the Conservation Area should report them to the Florida Department of Agriculture and Consumer Services, Florida Forest Service, the St. Johns River Water Management District, or by dialing 911.

Post Burn Reports

Burn reports must be completed after each prescribed burn or wildfire. These reports include detailed information regarding the acreage, fuel models, staff and equipment hours, cooperator hours, contractor hours, weather (forecasted and observed) and fire behavior. The timely completion of these reports is necessary for the compilation of information relative to the entire District burn program. Additionally, these reports provide a documented account of site specific conditions which are helpful in the planning of future burns.

Smoke Management

A significant challenge to the implementation of any prescribed burn program is smoke management. Since the writing of the last plan in 2006, prescribed burns totaling 7,875 acres have occurred. In fact, many fire management units within the property have been burned multiple times since 2006.

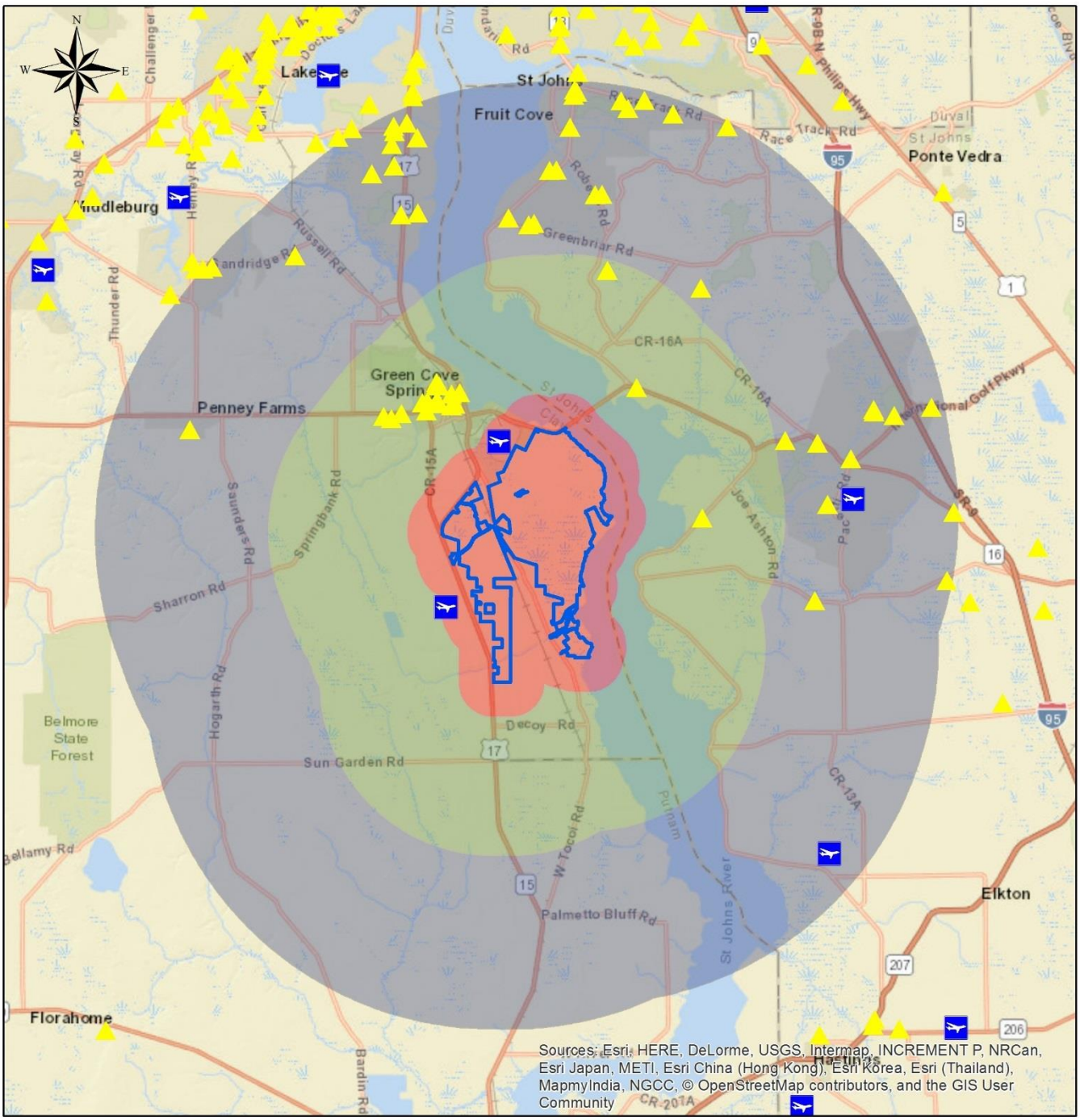
Fuel loads across the property are moderate to high. Accumulated fuels have the potential to produce a tremendous amount of smoke as areas are burned. As the surrounding areas become increasingly urbanized, smoke management concerns will increase in magnitude, as there become fewer acceptable places to maneuver a smoke column from a prescribed fire.

Though most fire management units within the Conservation Area have an adequate smoke shed in which to place a smoke column from a prescribed fire, smoke management is a limiting factor in the application of prescribed fire. Smoke management considerations include S.R. 16, S.R. 17, C.R. 209 C.R. 226, and Reynolds Air Park, several surface streets, and residential areas. Figure 1 illustrates smoke sensitive areas in relation the property. As development increases in the area, fire management will become more difficult. Increasing daily traffic on local roads will further impair the District's ability to implement prescribed burns at the appropriate fire return intervals within the Conservation Area.

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. When possible, the smoke plume from burns should be directed back through the property or out into the river, when possible. Smoke can then mix and loft into the atmosphere over uninhabited or rural land adequately enough to minimize off-site impacts.

Complicating fire and smoke management within the Conservation Area is the property's close proximity to the St. Johns River. As a result, the property can experience significant and sudden changes in wind speed and wind. Numerous factors affect the way that smoke moves during and after a prescribed burn. An effect of burning in wetter, low-lying areas is an increased potential for smoke settling. The proximity to the St. Johns River can result in smoke settling in the general vicinity of the Conservation Area. To mitigate the potential for problematic smoke impacts, a smoke screening process will be completed with each prescription and prior to an authorization being obtained from the Florida Forest Service.

On burn day, the ability of smoke to mix and disperse into the atmosphere should be good. Dispersion indices should be above 30. Dispersions of greater than 75 will not be utilized unless other weather conditions mitigate expected fire behavior. Forecast mixing heights should be above 1,700 ft. Transport winds should be at least 9 mph to effectively minimize residual smoke. Lower transport wind speeds can be utilized if dispersion index and mixing heights are above average. Burns will be conducted with a carefully plotted wind direction to limit and/or eliminate negative impacts from smoke to neighbors and urbanized areas.



Bayard Conservation Area

Figure 1 - Fire Management Map

5 Miles

- Conservation Area
- Airports
- Schools and Healthcare Facilities

Smoke Impact Distance

- 1 mile
- 5 miles
- 10 miles

Mechanical and Chemical Treatments

Short and long-term weather conditions and a fire management unit's proximity to urban areas become increasingly important when implementing a prescribed fire program. Should drought conditions become severe, or if smoke management becomes an insurmountable problem, the District may use mechanical methods, such as mowing or roller-chopping, as alternatives to prescribed fire.

Uplands at the Conservation Area are dominated by natural and planted stands of pine. Many of the stands have been thinned in recent years; with additional thinnings planned. The site conditions at the Conservation Area support tremendous regeneration of slash pine. As a result, the edges of several fire management units (especially those in Area 1) include areas of virtually impenetrable small slash pine along the edges. These areas may be burned prior to thinning to facilitate the timber marking process. After the stands have been thinned, staff will again begin to implement prescribed burns.

Hazards

Common hazards include heat stress, venomous snakes, holes, and unsound or dead trees close to the fireline. Individual prescriptions address the hazards to consider when burning each unit and are discussed during the pre-burn briefing.

In addition to common hazards, several power lines can be found at the Conservation Area. Power lines can pose problems when associated with large amounts of smoke. Particulate matter in smoke can cause electrical lines to arc. This situation can often be avoided by decreasing the fuel loads under or near power lines prior to ignition.

Several sections of canal traverse the property. District staff should be aware of this while conducting a prescribed burn, as the canals are not passable in a brush trucks, complicating access portions of fire management units. Alternate access points will be discussed at pre-burn briefings prior to ignition of affected fire management units.

County Roads 209 and 226 are public roads that bisect the Conservation Area and support moderate amounts of local traffic. Prescribed fire staff should be aware of this, as parking or igniting near these roads could become dangerous in smoky situations.

The Conservation Area's close proximity to the St. Johns River can cause some uncertainty in relation to wind speed and direction. District prescribed fire staff are aware that wind speed and direction can change dramatically with little warning.

Legal Considerations

Only burn managers certified by Florida Forest Service will approve the unit prescriptions and must be on site while the burn is being conducted. Certified burn managers adhering to the requirements of State Statute 590.026 are protected from liability for damage or injury caused by fire or resulting smoke, unless gross negligence is proven.

Wildlife

Bald eagles are a common sight at the Conservation Area. Portions of several fire management units are located within 1 mile of bald eagle nests known to be active as recently as 2004. The District will act in accordance with the guidelines set forth in the *National Bald Eagle Management Guidelines*

2007. The District will avoid management activities that could disrupt bald eagle breeding and nesting season, which is generally between October and May.

Fire Management Units

Fire management units (FMUs) have been delineated on the property. Where logical, the District used existing roads and landscape features to delineate fire management units. Occasionally, multiple fire management units with similar fire needs will be burned simultaneously and roads and natural landscape features provide a break in fuels so that staff may burn smaller areas than initially planned if needed.

Ideally, District staff would thoroughly address and describe each fire management unit in terms of its fire management needs. All fire management units are categorized into one of several fuel model (FM) descriptions. The 13 standard fuel models (as described in Hal E. Anderson's *Aids to Determining Fuel Models for Estimating Fire Behavior*) were used as a basis for this categorization. The factors considered in determining each FM are: amount, composition and arrangement of available fuels within units, predicted fire behavior within each unit (under conditions acceptable to implement a prescribed burn), and resources necessary to regain management of a fire in extenuating circumstances. District staff anticipates the change of vegetative assemblages over time due to growth and/or restoration and understand that fuel characteristics, models, and resulting fire behavior will also change.

Exhibit 1 **MEDICAL PLAN**	1. Incident Name	2. Date Prepared	3. Time Prepared	4. Operational Period

5. Incident Medical Aid Station

Medical Aid Stations	Location	Paramedics Yes	Paramedics No
Clay County Fire Rescue – Station #24	5105 Sweat Rd, Green Cove Springs, FL 32043	X	
Clay County Fire Rescue – Station #20	303 S Oakridge Ave, Green Cove Springs, FL 32043	X	

6. Transportation

A. Ambulance Services

Name	Address	Phone	Paramedics Yes	Paramedics No
Clay County Fire Rescue – Station #20	303 S Oakridge Ave, Green Cove Springs, FL 32043	(904) 284-7703	X	

B. Incident Ambulances

Name	Location	Paramedics Yes	Paramedics No

7. Hospitals

Name	Address	Travel Time Air	Travel Time Ground	Phone	Helipad Yes	Helipad No	Burn Center Yes	Burn Center No
Baptist Medical Center South	14550 Old St Augustine Rd, Jacksonville, FL 32258	5 min.	19 min.	(904) 271-6000	X			X
Orange Park Medical Center	2001 Kingsley Ave, Orange Park, FL 32073	5 min.	18 min.	(904) 639-8500	X			X
Flagler Hospital	400 Health Park Blvd, St Augustine, FL 32086	10 min.	40 min.	(904) 819-5155	X			X
Baptist Medical Center - Jacksonville	800 Prudential Dr., Jacksonville, FL 32207	7-8 min.	35 min.	(904) 202-2000	X			X

8. Medical Emergency Procedures

CRASH RESCUE PLAN

In the even of an accident involving the helicopter the following procedures will be followed.

INCIDENT COMMANDER or BURN BOSS

Notify Clay County Fire Rescue 904-284-7703, Clay County Sheriff 904 264-6512, or 911

1. Assume responsibility of the Rescue Operation.
2. Notify NTSB (305-957-4610 OR 404-462-1666)
3. Delegate fire control to the second in command or the most qualified.

SECOND IN COMMAND

1. Assume responsibility of the burn.
2. Assist the IC or Burn Boss with resource and personnel needs for the rescue operation.
3. If the IC is in the helicopter, second in command will assume rescue operation responsibilities and assign the most qualified to fire control.