Hal Scott Regional Preserve and Park

Land Management Plan

Orange County, Florida

St. Johns River Water Management District
Governing Board Approved

December 10, 2013

Hal Scott Regional Preserve and Park
Land Management Plan Summary

Management Area Size: 8,832 acres

Date of Acquisition: Acquisition of parcels within the Hal Scott Regional Preserve and Park (Hal Scott) began in 1992.

Date of Plan: November 2013
Previous Plan: October 2007
Major Basin: Middle St. Johns River Basin **Planning Basin:** Econlockhatchee River

Location: Hal Scott Regional Preserve and Park (Hal Scott) is located in Orange County, east of the City of Orlando. More specifically, the property is located immediately north of State Road 528 and west of State Road 520, along Dallas Boulevard.

Funding Source: Save Our Rivers-BOND 95, ad valorem, Orlando Beltway mitigation, Preservation 2000, and Orange County funds were utilized in the acquisition of the parcels within the property.

Management Partners: Through an intergovernmental management agreement between the St. Johns River Water Management District (District) and Orange County, the District serves as lead manager for the entire property.

Vision Statement: The primary management focus of the Hal Scott Regional Preserve and Park is the continued protection of the water resources of the Econlockhatchee River and the greater Middle St. Johns River Basin. Management activities within the uplands of Hal Scott are largely focused on improving natural communities that support of suite of native wildlife species including the federally endangered Red-cockaded Woodpecker. 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 Ranger Drainage District canals, ditches, culverts, low water crossings, a bridge, several roads, firelines, and recreational trails.
- FIRE MANAGEMENT – Implementation of prescribed burns occurs in accordance with annual burn plans and individual unit prescriptions.
- FOREST MANAGEMENT – Prior to public acquisition, the majority of the upland acres within the property were managed for cattle grazing and as such, many of the upland areas exhibit exceedingly open pine canopies. Planned forest management activities include changes to seasonality of fire regimes to encourage regeneration of longleaf pine.

- WILDLIFE – Hal Scott provides habitat for numerous wildlife species including many listed species such as the Red-cockaded Woodpecker (*Picoides borealis*) 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 & ARCHEOLOGICAL RESOURCES – A review of the Department of State, Division of Historical Resources indicates there are eight Florida master site locations within the boundaries of Hal Scott.

Land Use Management Issues:

- **Access** – One permanent public parking area with a trailhead is located on Hal Scott. Access is also available through connectivity of trails developed by Orange County on the County managed Pine Lily Preserve and Long Branch Park.
- **Recreation Use** – The property is open to the public for hiking, bicycling, equestrian activities, primitive and group camping.
- **Security** – Maintenance of fence lines, parking areas, gates, and locks is conducted. The District maintains contact with FWC, local law enforcement, and a private security firm for any potential security needs. The property includes a site for a security residence that is currently vacant. A security resident with law enforcement capabilities is being sought.

Administration:

- **Acquisition –** The District may pursue acquisition of small parcels, surpluses, donations, or exchanges with neighbors to improve and provide additional access to Hal Scott or as otherwise warranted. Through the District's land assessment process, an approximately 115-acre portion of the Flag North parcel, which is located east of SR 520, is identified for surplus. It is anticipated that this parcel will be conveyed to Orange County with a conservation easement.
- **Leases, Easements, Special Use Authorizations, and Agreements -** The District administers numerous leases, agreements, easements, special use authorizations (SUAs) and concessions.

VISION STATEMENT

The primary management focus of the Hal Scott Regional Preserve and Park is the continued protection of the water resources of the Econlockhatchee River and the greater Middle St. Johns River Basin. Management activities within the uplands of Hal Scott are largely focused on improving natural communities that support of suite of native wildlife species including the federally endangered Red-cockaded Woodpecker. Quality recreational opportunities will continue to be maintained and improved upon in a manner consistent with the ecological needs of the property.

HAL SCOTT REGIONAL PRESERVE AND PARK OVERVIEW

This document provides the guidelines and goals for implementation of land management activities at Hal Scott Regional Preserve and Park (Hal Scott) through 2023. This is a revision of the October 2007 Governing Board approved land management plan.

The area that is now the Hal Scott Regional Preserve and Park has a long land use history that has likely consisted primarily of cattle ranching. Analysis of historical aerial photography combined with forest inventory data indicates that by the 1940s, harvest of overstory pine, likely accomplished to facilitate cattle ranching, had occurred across the majority of the property.

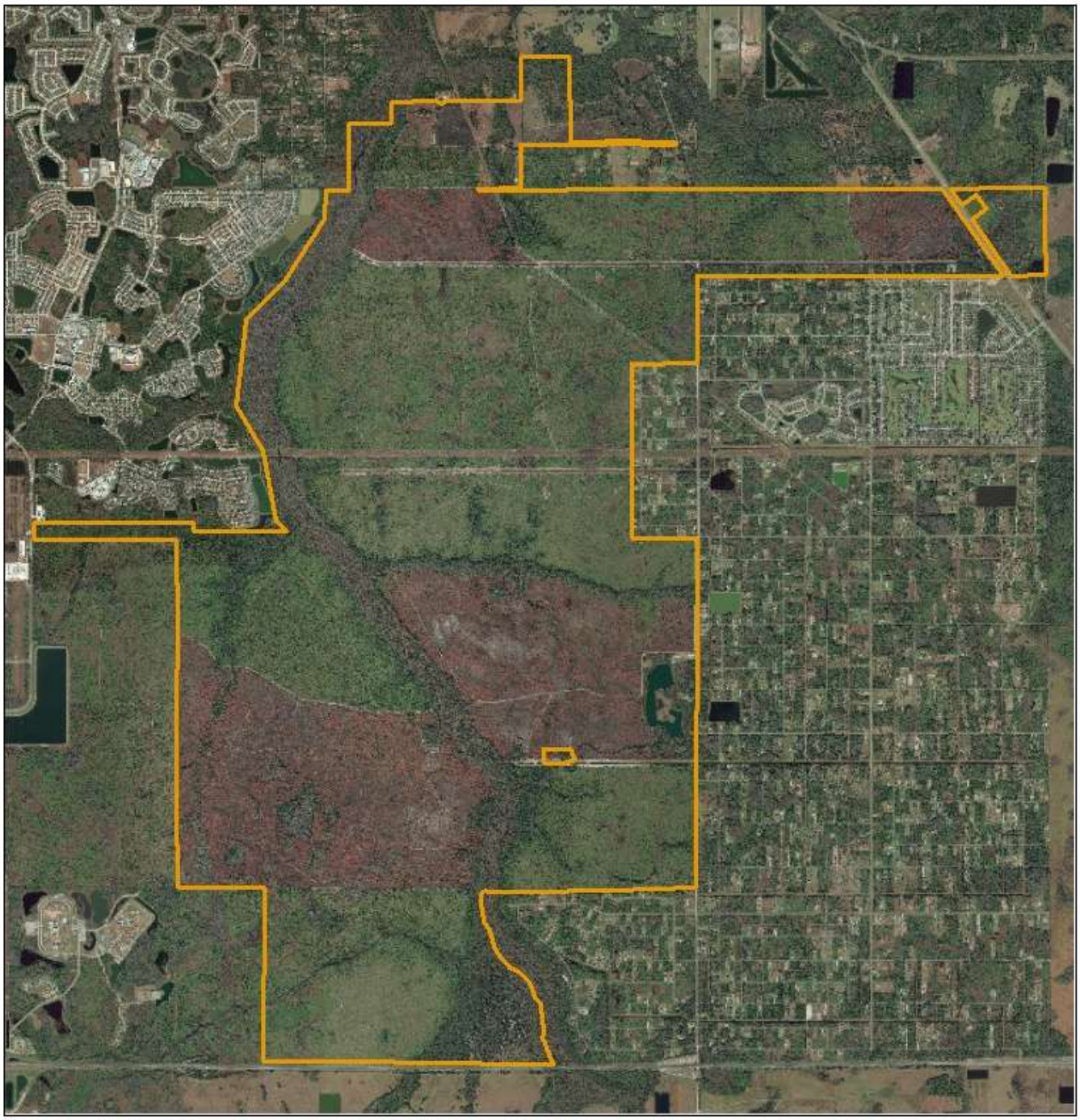
Location

Hal Scott includes 8,832 acres in Orange County within the Econlockhatchee River drainage basin, a sub-basin of the Middle St. Johns River Basin. Hal Scott is located in numerous sections of Township 22 and 23 South and Range 32 East. Figure 1 provides an aerial view of Hal Scott in 2012. The property is located (Figure 2) along portions of the Econlockhatchee River and includes several associated branches. The property is located east of Orlando, west of SR 520 and north of SR 528. Dallas Boulevard and the Wedgefield subdivision are located along portions of the eastern boundary. The Avalon Park development is located to the north and west of the property. While much of the land within the northern portions of the property is contiguous, a small parcel to the east is disjunct, located across SR 520.

Regional Significance

Hal Scott encompasses approximately 5 miles of shoreline along the Econlockhatchee River and incorporates, Green Branch, Cowpen Branch, Long Branch, Turkey Creek, and an unnamed branch, as well as large expanses of associated floodplain wetlands. The Hal Scott Regional Preserve and Park 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 close proximity to the property include:

- Tosohatchee Wildlife Management Area
- Seminole Ranch Conservation Area
- Pine Lilly Preserve



2012 Orange County, FL Orthophotography, .5ft; True Color

Hal Scott Regional Preserve and Park

Figure 1 - 2012 Aerial Imagery

N

1

Miles

Boundary

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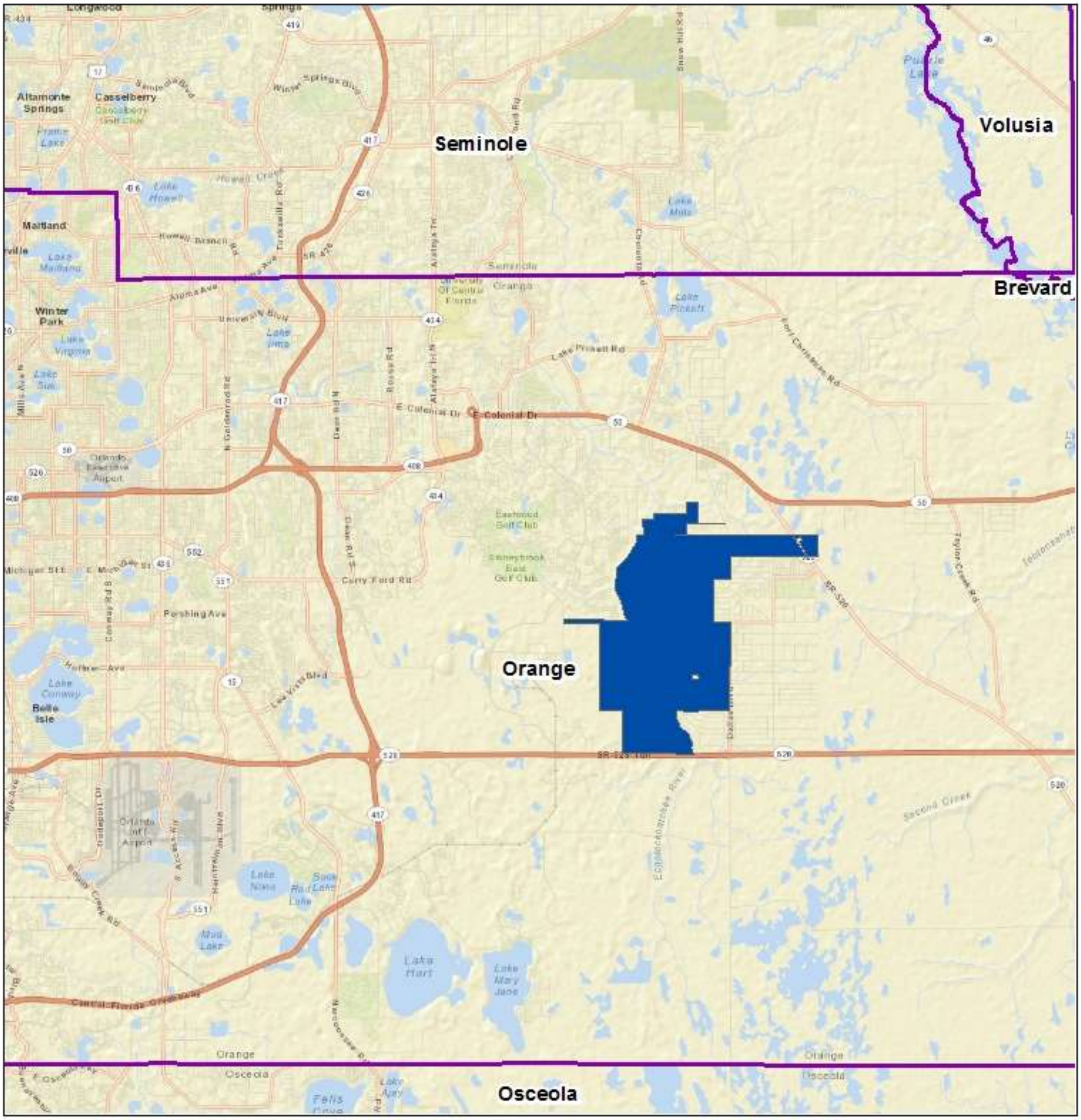

Hal Scott Regional Preserve and Park

Figure 2 - Location Map

N

4.5 Miles

County Boundaries

Boundary

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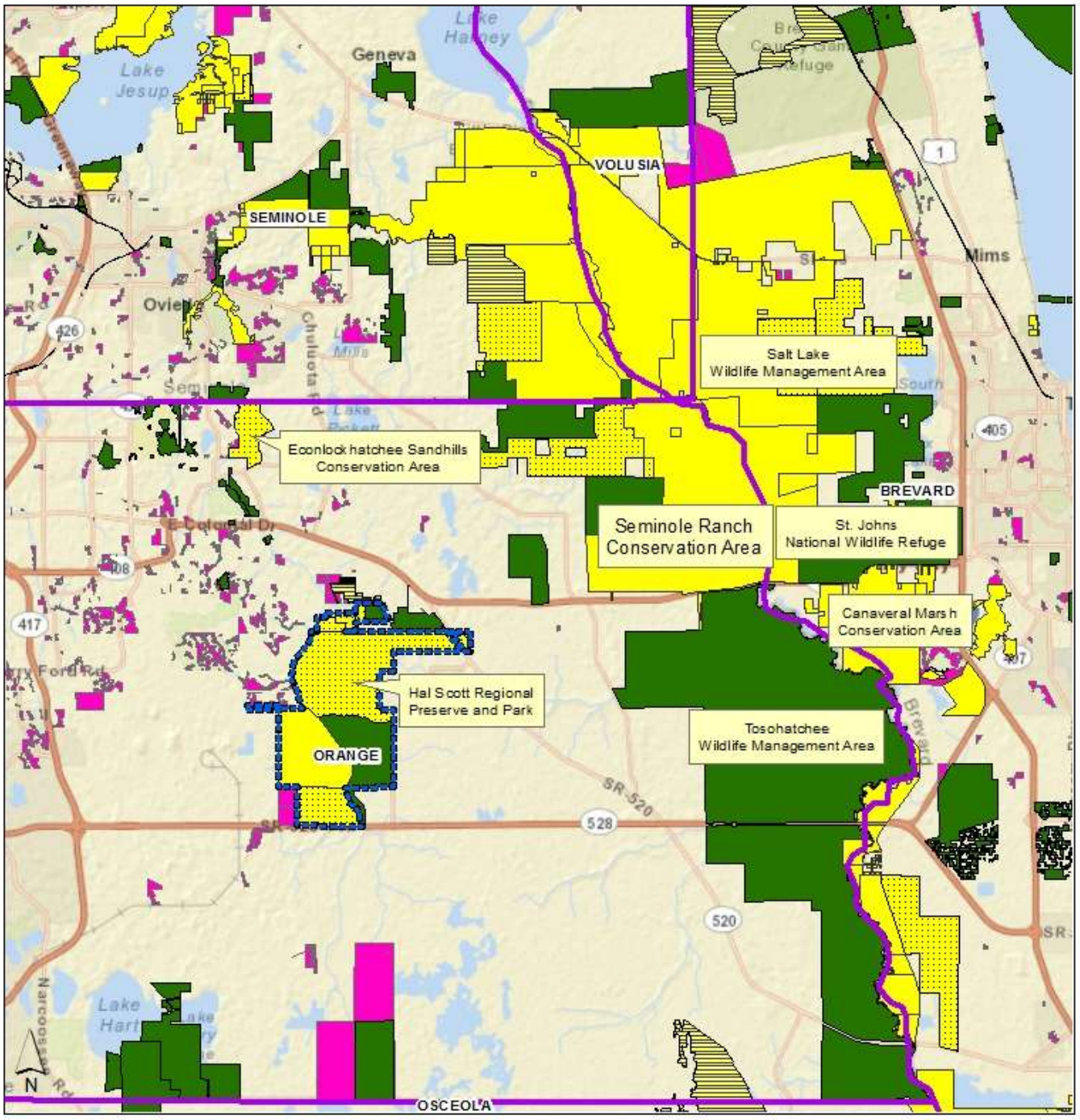

Hal Scott Regional Preserve and Park

Figure 3 - Regional Significance

5 Miles

- Boundary
- County Boundaries
- Regulatory Easement
- Other Public Lands

District Title Interest

- Full Fee
- Joint Fee
- Fee - Life Estate
- Conservation Easements (Less than fee)

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Acquisition History

The acquisition of the parcels that comprise the Hal Scott Regional Preserve and Park provides for the protection of important water resources and ecological functions. This acquisition is consistent with the goals of the Middle St. Johns River Basin. These goals, as they apply to Hal Scott Regional Preserve and Park 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 Hal Scott Regional Preserve and Park began in 1992. The Hal Scott Regional Preserve and Park is comprised of seven (7) parcel, including a parcel owned fee simple by Orange County. The combined acreage of all parcels incorporated into the Hal Scott Regional Preserve and park totals 8,832 (Figure 4). Table (1) one summarizes the land acquisition accomplishments of the District and Orange County and includes and acreage account of the Orange County fee simple property. All acreage reported is derived from GIS calculations.

Since the writing of the last plan, two Orange County owned parcels formerly incorporated into the property boundaries have been removed. In the 2007 plan, the parcels identified as the NRC parcel and the Orange County parcel B were included in the boundary per an amendment to the intergovernmental management agreement between the District and Orange County. Orange County has since assumed full lead management responsibilities for the parcels, which are now known as the Pine Lilly Preserve (NRC parcel) and the Long Branch Park (Orange County parcel). An amendment to the intergovernmental management agreement to reflect these changes in management has been submitted to Orange County. Additionally, through the District land's assessment process, a portion of the Flag North parcel (east of SR 520) is indentified for potential surplus. It is anticipated that this parcel will be conveyed to Orange County and subject to a conservation easement.

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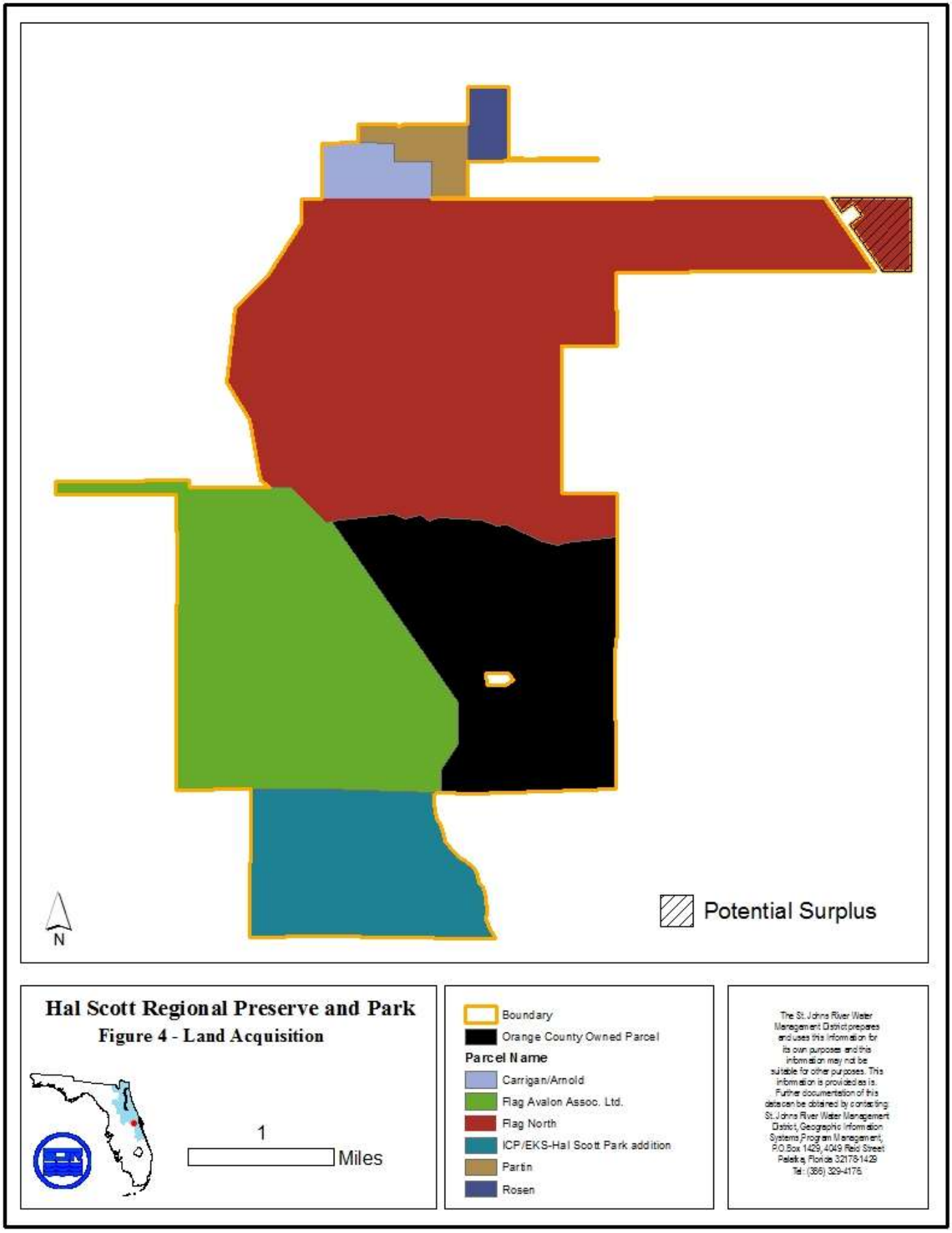
N
Potential Surplus
Hal Scott Regional Preserve and Park
Figure 4 - Land Acquisition
1
Miles
Boundary
Orange County Owned Parcel
Parcel Name
Carrigan/Arnold
Flag Avalon Assoc. Ltd.
Flag North
ICP/EKS-Hal Scott Park addition
Partin
Rosen
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- Table 1 – Land Acquisition Summary

Parcel	LA Number	Acres	Total Purchase Price	District Amount	District Funding Source	Orange County Amount	Transaction Dates
Flag Avalon Assoc. Ltd.	1991-002-P1	2,076	$10,380,000.00	$10,380,000.00	Beltway Mitigation	-----	2/18/1992
ICP/EKS – Hal Scott Park Addition	1991-001-P1	939	$3,944.640.00	$1,972,320.00	Beltway Mitigation	$1,972,320.00	12/7/1995
Partin	1993-076-P1	142	$705,700.00	$352,850.00	P2000	$352,850.00	10/18/1994 1/11/1996
Carrigan/Arnold	1993-009-P1	162	$967,200.00	$483,600.00	P2000	$483,600.00	10/18/1994 1/11/1996
Rosen	1993-078-P1	98	$400,000.00	$200,000.00	P2000	$200,000.00	10/18/1994 1/11/1996
Flag North	1996-012-P1	3,838	**$14,583,096.80**	$7,267,437.30 ($438.90) $38,000.00 ($26,900.00) **$7,278098.40**	SOR/BOND95 SOR/BOND95 SOR/BOND95 LA Funds	$7,267,437.30 (438.90) $38,000.00 0.00 **$7,304,998.40**	2/1/1996 6/21/1996 8/7/1998 11/7/2000
Orange County Parcel	-----	1,577	-----	-----	-----	-----	-----
Property Total	**-----**	**8,832**	**$30,980,636.80**	**$20,666,868.40**	**-----**	**$10,313768.40**	**-----**

*GIS Acres

Local Government Land Use Designations

Orange County

According to the Orange County, Florida, Comprehensive Plan 2010-2030 Destination 2030, the Future Land Use designations for the property are Preservation and Parks and Recreation.

The Preservation designation 'recognizes publicly or privately owned lands of significant environmental importance for the purposes of environmental protection. Very low impact recreational or educational uses that use natural amenities of the site for public benefit are allowable uses. All other uses are prohibited' (Orange County, 2010).

The Parks and Recreation Space designation 'refers to undeveloped or developed lands as passive and active parks' (Orange County, 2010).

NATURAL RESOURCES OVERVIEW

Topography and Hydrology

Hal Scott lies within the Holopaw-Indian Town Ridges and Swales Division, a physiographic subdivision of the Eastern Flatwoods District. The Holopaw-Indian Town Ridges and Swales are a spit of clastic sediments that includes some shell material. The areas include gentle slopes and fine sands that support flatwoods with cypress strands and swales (H. Brooks, Guide to the Physiographic Division of Florida). Hal Scott is nearly level with a slight slope towards the river. Most of the property is between 60 and 65 feet above sea level with the highest portion of the property at approximately 70 feet. The lowest areas are located along the Econlockhatchee River in the northeastern portion of the property with elevations near 45 feet above sea level.

The most prominent natural hydrologic feature of the property is the Econlockhatchee River; the property incorporates approximately 5 miles of shoreline. Figure 5 depicts the natural hydrologic features within portions of the Middle St. Johns River Basins and the Hal Scott Regional Preserve and Park. The Econlockhatchee River, a blackwater river, meanders northward through Osceloa, Orange, and Seminole counties in central Florida and is identified by the Florida Department of Environmental Protection as an Outstanding Florida Water. Lake Conlin, located in Osceola County is the headwaters to the Econlockhatchee River and associated floodplain swamp. The Econlockhatchee River, the second largest tributary to the St. Johns River flows north to their confluence just south of SR 46 in Seminole County. Within the property, several tributaries converge with the Econlockhatchee River. These tributaries include Turkey Creek, Green Branch, Long Branch, Cowpen Branch, and an unnamed branch. Additionally, three Ranger Drainage District canals run east/west across the property. These canals convey water from the Wedgefield subdivision located east of the property to the Econlockhatchee River.

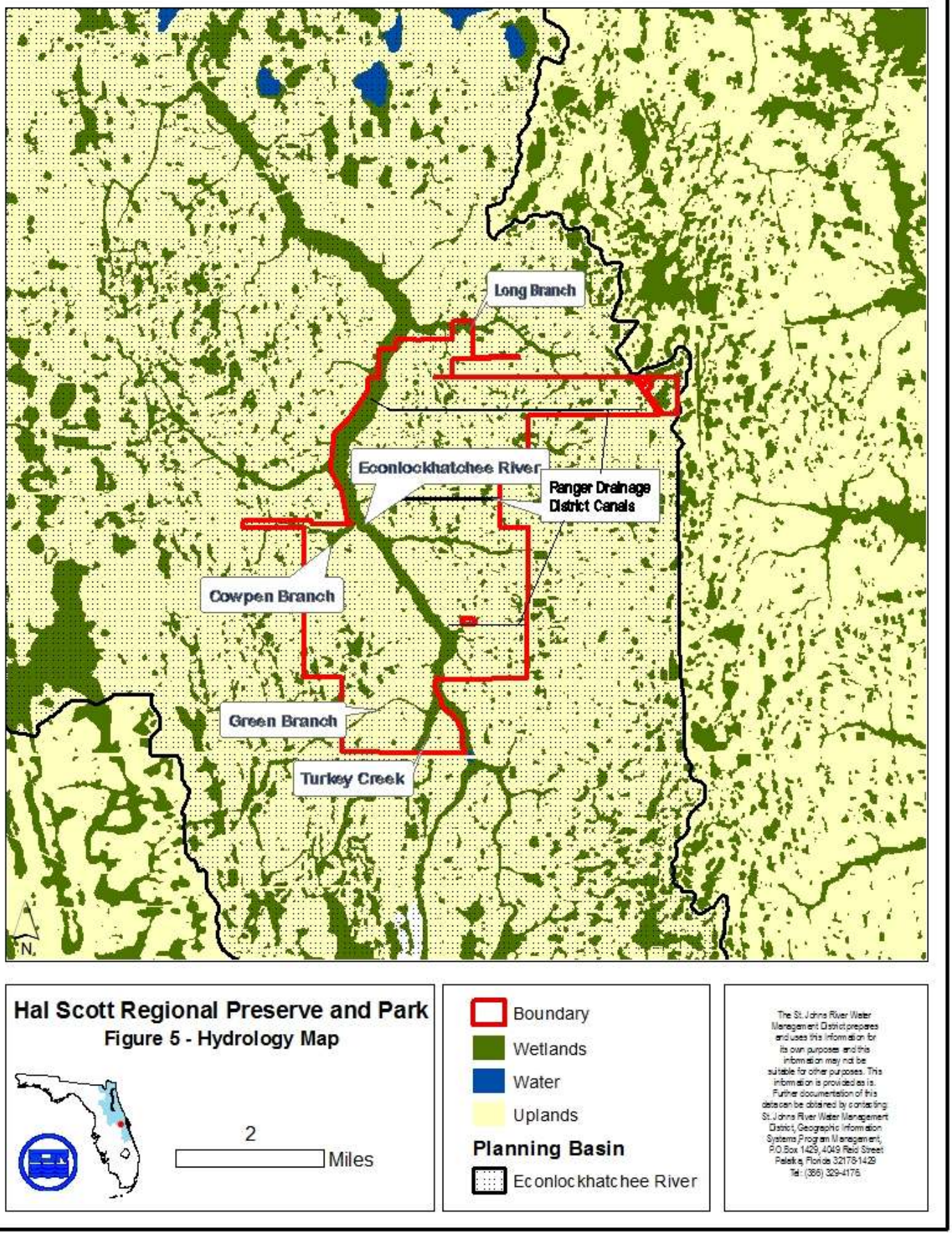
Soil

The soils within the Hal Scott Regional Preserve and Park include hydric, partially 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 17% of the land area. Partially hydric soils, which include some characteristics of hydric soils account for approximately 80% of the property (Figure 6). According to data produced by the United States Department of Agriculture, NRCS, 14 unique soil series types are present within the property. Addendum 1 includes a detailed map of the various soil series present within Hal Scott and includes associated series descriptions.

Natural Communities

Past land use activities have resulted in alterations to the natural communities within the Hal Scott Regional Preserve and Park. Varying degrees of disturbance are noted within the property; however, the majority of these natural areas remain largely intact and functional.

The 8,832 acres that comprise the Hal Scott Regional Preserve and Park consist primarily of mesic flatwoods and includes 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 Hal Scott Regional Preserve


Long Branch
Econlockhatchee River
Ranger Drainage District Canals
Cowpen Branch
Green Branch
Turkey Creek
N
Hal Scott Regional Preserve and Park
Figure 5 - Hydrology Map
2
Miles
Boundary
Wetlands
Water
Uplands
Planning Basin
Econlockhatchee River
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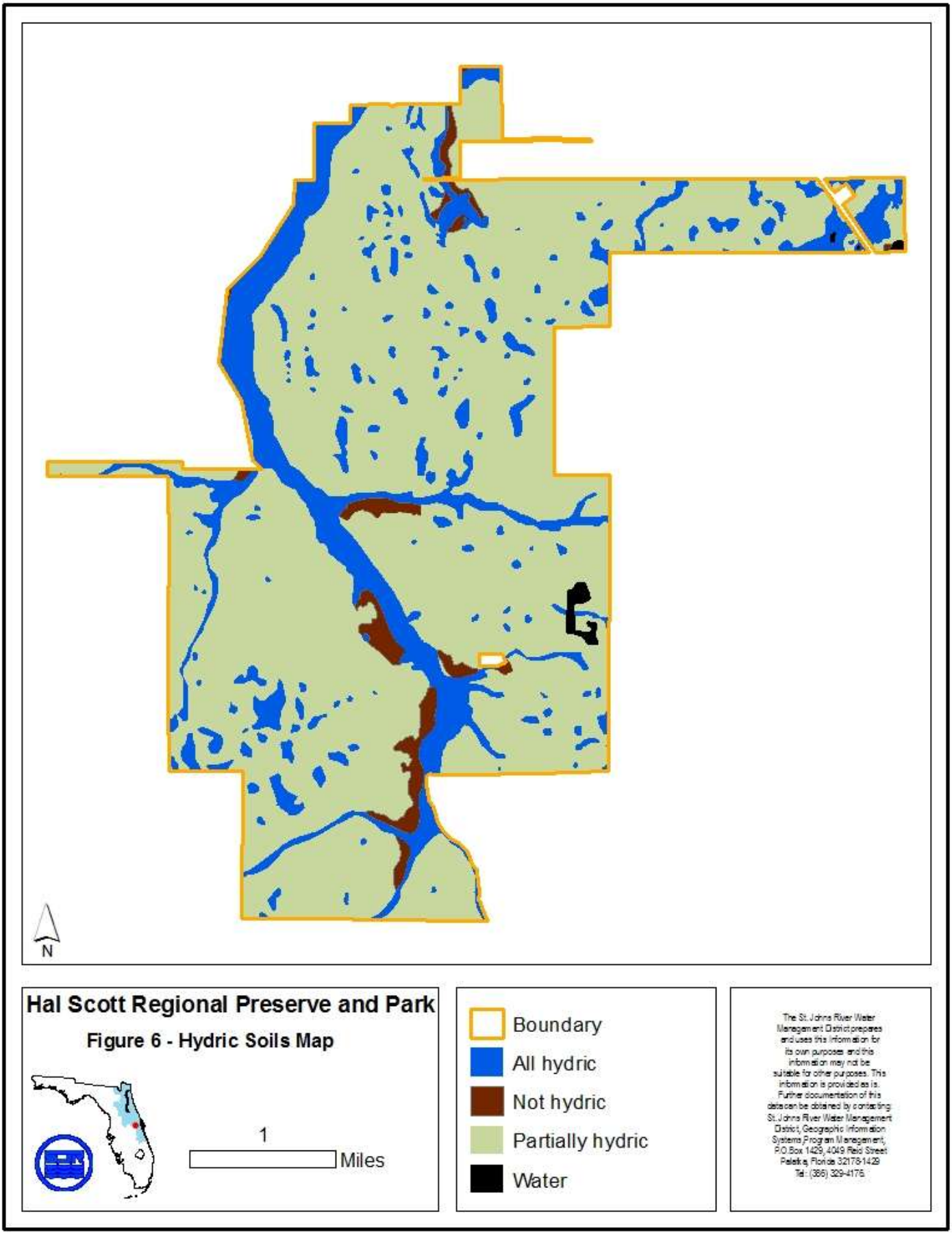
N
Hal Scott Regional Preserve and Park
Figure 6 - Hydric Soils Map
1
Miles
Boundary
All hydric
Not hydric
Partially hydric
Water
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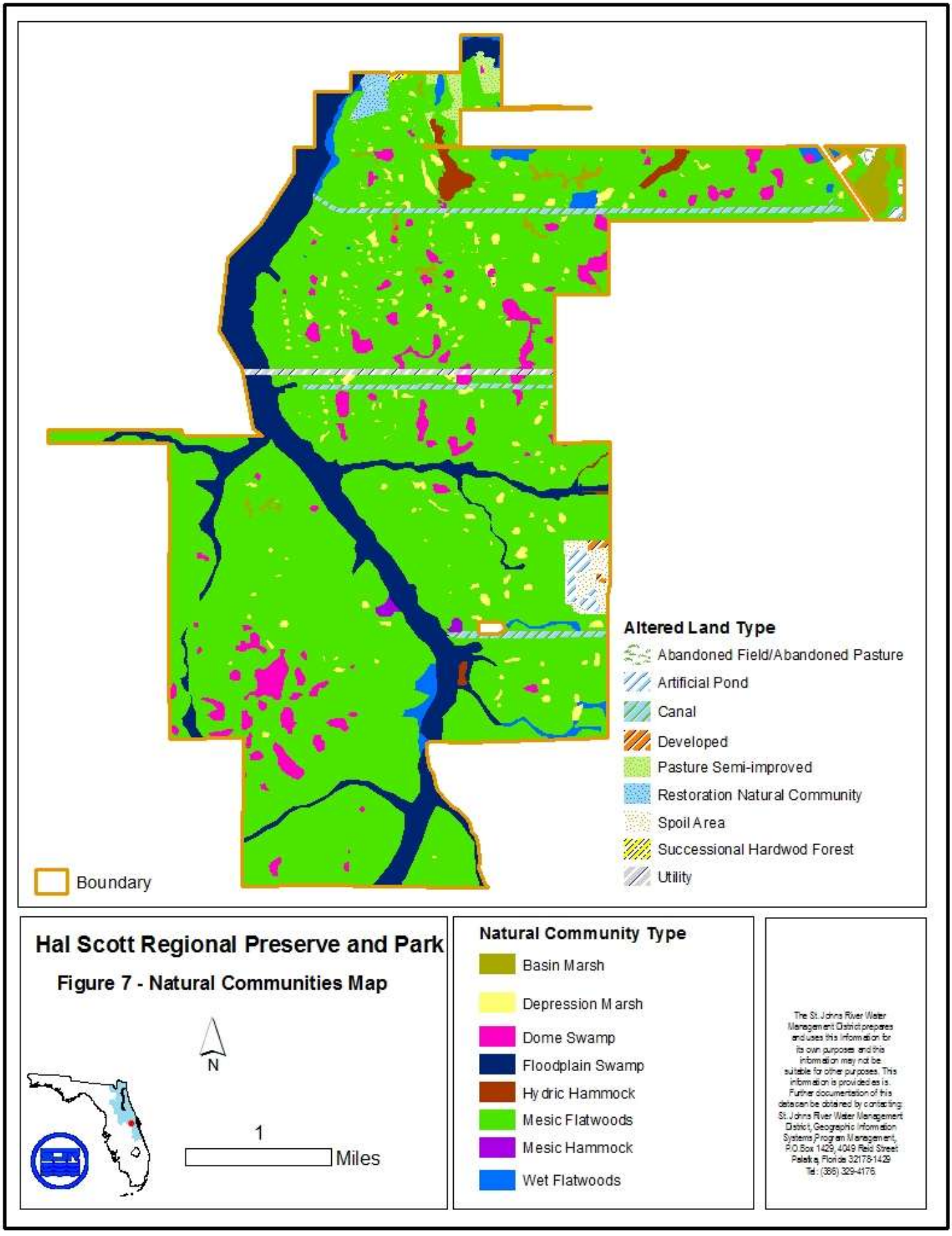
Altered Land Type
Abandoned Field/Abandoned Pasture
Artificial Pond
Canal
Developed
Pasture Semi-improved
Restoration Natural Community
Spoil Area
Successional Hardwod Forest
Utility
Boundary
Hal Scott Regional Preserve and Park
Figure 7 - Natural Communities Map
N
1
Miles
Natural Community Type
Basin Marsh
Depression Marsh
Dome Swamp
Floodplain Swamp
Hydric Hammock
Mesic Flatwoods
Mesic Hammock
Wet Flatwoods
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and Park 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	6,670	75%	G4/S4	2-4 years
Wet Flatwoods	127	1%	G4/S4	1-3 years in grass dominated systems; 5-7 years in shrubbier systems
Hydric Hammock	64	<1%	G4/S4	Rare; depending on size and adjacent community types
Mesic Hammock	13	<1%	G3/S3	Not always fire adapted; some areas may experience occasional low-intensity ground fires.
Depression Marsh	171	2%	G4/S4	This community burns in conjunction with adjacent pyric plant communities
Basin Marsh	103	1%	G4/S3	5-7 years, or in conjunction with adjacent pyric plant communities
Dome Swamp	339	4%	G4/S4	3-5 years along the outer edges (or as adjacent communities burn); 100-150 years interior
Floodplain Swamp	935	11%	G4/S4	This is not a fire adapted community
Subtotal	***8,422***	-----	-----	-----
Altered Land Types		**Percent Coverage**		**Fire Return Interval**
Pasture Semi-improved	55	<1%	-----	1-3 years or in conjunction with adjacent pyric plant communities
Abandoned Field/Abandoned Pasture	8	<1%	-----	1-3 years or in conjunction with adjacent pyric plant communities
Artificial Pond	33	<1%	-----	-----
Restoration Natural Community	35	<1%	-----	1-3 years or as needed to accomplish restoration objectives
Successional Hardwood Forest	4	<1%	-----	As needed to accomplish management and potential restoration objectives
Utility	58	<1%	-----	-----
Canal	150	2%	-----	-----
Spoil Area	61	<1%		-----
Developed/Parking Area	6	<1%	-----	-----
Subtotal	***410***	-----	-----	-----
Total	**8,832**	-----	-----	-----

*GIS Acres

Mesic Flatwoods (*6,670 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 (*Myrica 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 Hal Scott are disturbed, with the most significant alterations being the historic harvest of overstory pine combined with the likely use of dormant season burning for several decades prior to public ownership. This combination of historical management activities has resulted in a sparse canopy of pine with little regeneration. Shrub layers within the mesic flatwoods are largely in good condition with a few areas that are overgrown. Additionally, groundcover assemblages vary in diversity and abundance within this community type. With the exception of the pasture areas on the northern end of the property, the groundcover across the property is generally intact with abundant coverages of wiregrass and other herbaceous species. Pine species present within the flatwoods includes longleaf, slash, and pond 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 (127 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 Hal Scott are generally intact with only minimal evidence of disturbance. 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 dependant and the District targets return intervals ranging from one to three years, which is consistent with FNAI 2010 descriptions.

Hydric Hammock (64 acres)
Soils that support hydric hammock communities are generally poorly drained and may be acidic to slightly alkaline, with little organic matter. While hydric hammocks may often have limestone at or near the surface, no outcropping is known to occur within Hal Scott. Hydric hammocks are well-developed hardwood and/or palm forests with a variable understory. The closed canopy may include a variety of species, such as cabbage palm (*Sabal palmetto*), live oak (*Quercus* virginiana), water oak (*Q. nigra*), swamp tupelo (*Nyssa sylvatica* var. *biflora*), red cedar (*Juniperus virginiana*), and loblolly pine (*Pinus taeda*), all of which are present within the property.

The hydric hammock communities within the property area are scattered across the property and are generally located in areas of slightly higher elevations than the surrounding floodplain swamps, and are typically located along the 45-50 foot contours. These areas are largely in good condition. Fire is not a primary mechanism of disturbance; however, these communities do occasionally burn in conjunction with surrounding pyric plant communities.

Mesic Hammock (13 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 Hal Scott is an abundant coverage of various epiphytes including several orchids and bromeliads.

Floodplain Swamp (935 acres)
Floodplain swamp communities typically occur on flooded soils along stream channels and within river floodplains. The floodplain swamp communities within the Hal Scott Regional Preserve and Park are associated with the Econlockhatchee River, Green Branch, Long Branch, Cowpen Branch, and an unnamed branch. Despite past 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. Since this community type is maintained by hydrologic regimes, it is not fire dependent; however, fires may occur during times of drought.

Depression Marsh (*171 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 (P. a. Moler).

There are numerous depression marshes within the Hal Scott Regional Preserve and Park, most of which are intact and well-maintained. Some of these marshes; however, exhibit signs of disturbance as a result of management activities prior to public ownership. These alterations include a series of ditches that were installed to facilitate the drainage of the property to improved conditions for cattle ranching activities.

Basin Marsh (*103 acres*)
Basin marshes are herbaceous or shrubby freshwater wetlands in large irregularly shaped basins. These marshes typically develop in large solution depressions that were formerly shallow lakes and may be located within non-pyrogenic plant communities. Plant species compositions can be divided into submersed, floating-leaved, emergent, and grassy zones.

Seasonal hydroperiods and longer-term fluctuations are essential to the maintenance of this natural community as is frequent fire. The fire return interval for basin marshes is dependant on the hydrology of the marsh and the exposure to fire from surrounding communities.

The basin marshes within Hal Scott are relatively intact and functional. The basin marsh areas are embedded within the matrix of mesic flatwoods and depression marshes across the property.

Dome Swamp (339 acres)
Dome swamp communities typically occur embedded within well-maintained pyric plant communities such as flatwoods (FNAI, 2010). The dome swamp communities within the Hal Scott Regional Preserve and Park 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).

Altered Land Types (410 acres)
Hal Scott includes several variants of altered land types as described by FNAI. These land types include abandoned field/abandoned pasture, artificial pond, canal, developed/parking area, pasture semi-improved, restoration natural community, spoil area, successional hardwood forest, and utility areas.

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PAST MANAGEMENT SUMMARY

This section describes the management strategies outlined in 2007 and provides the status for each item. The summaries are consistent with the previous plan's implementation schedule.

Water Resources 2007 Plan Strategy	Status
Inventory and map the interconnecting ditches and swales in order to fill or plug them in the future.	This project was determined unnecessary during the scope of the previous plan due to lack of interest/need for mitigation activities in the area.

Fire Management 2007 Plan Strategy	Status
Continue to implement the Prescribed Burn Plan.	Since 2007, District staff have conducted numerous burns totaling 12,000 acres.
Determine burn zones and incorporate Orange County NRC parcels into the Prescribed Burn Plan.	The NRC piece is no longer included in the Hal Scott Regional Preserve and Park and is not under the auspices of the District's Bureau of Land Management activities.

Forest Management 2007 Plan Strategy	Status
Continue to manage forest resources for RCW habitat.	District staff have maintained the mesic flatwoods in a manner consistent with management objectives identified for the perpetuation of RCWs.
Plant longleaf seedlings as appropriate to provide future forage and nest trees.	Since 2007, approximately 1,800 acres have been planted in longleaf pine.
Continue to investigate the use of fertilizer to increase diameter growth, and if proven fruitful, use fertilizer to increase the diameter of individual trees.	Fertilizer study plots were established, fertilizer was applied, and results were documented. The study indicated that the growth of non-target shrub vegetation was greater than the documented growth of pine trees. District staff decided against further use of fertilizer.
Evaluate the potential to harvest longleaf pine cones for use in producing seedlings for planting elsewhere.	District staff accomplished a cooperative cone harvest with the FFS. Seed was grown by FFS and the District portion of the seedlings were planted on the property.

Listed Species 2007 Plan Strategy	Status
Continue to implement special protection measures and management strategies for listed species and communities.	The District actively manages the property in a manner consistent with the needs of known listed species including Red-cockaded Woodpeckers.

Exotic Species 2007 Plan Strategy	Status
Monitor and continue to treat exotic invasive vegetation.	District staff monitor and treat for exotic and invasive vegetation as needed.
Continue to monitor hog damage and respond by updating hog trapping program accordingly.	District staff control feral hogs on the property through the use of a feral hog agent.

Cultural Resources 2007 Plan Strategy	Status
Protect known cultural resources.	Known cultural resources are provided protection.
Identify and report any new sites to Florida Division of Historical Resources.	New sites are documented and reported as identified. No new sites were identified during the scope of the previous plan.
Modify land management activities to eliminate disturbance to cultural sites.	Land management activities are conducted in a manner that provides ample protection to known sites.

Access 2007 Plan Strategy	Status
Maintain roads, crossing, and trails.	Roads, crossings, and trails are maintained regularly.
Maintain gates for management staff access.	Gates are maintained to provide access for land management staff.

Recreation 2007 Plan Strategy	Status
Continue regular maintenance on interior roads, marked multi-use trails and corresponding brochures.	Roads and trail brochures are maintained as needed. Marked multi-use trails are maintained at regular intervals .
Maintain parking area.	Parking areas are maintained via mowing as needed.
Maintain entrance sign and informational kiosk.	Entrance signs and kiosks are maintained quarterly or as needed.
Maintain camping areas and trail shelters.	Camping areas and trail shelters are maintained quarterly or as needed.

Environmental Education 2007 Plan Strategy	Status
Continue to offer District environmental education programs.	Education opportunities are encouraged. District involvement is subject to staff and budget availability.
Continue to evaluate the implementation of a Legacy Program at Hal Scott Regional Preserve and Park.	While the Legacy Program no longer exists, the District continues to offer programs and educational information for teachers, students, and other interested parties.
Continue to coordinate with Orange County in planning for the education center and future environmental education activities.	While the development of an education center within Hal Scott has not occurred, the District continues to coordinate with the County to encourage environmental education opportunities.

Security 2007 Plan Strategy	Status
Maintain signage, fences, and gates.	District staff maintain boundary signs, fences, and gates as needed.
Continue coordinating with local law enforcement.	District staff coordinate with local law enforcement and FFWCC as needed. District staff coordinate monthly or as needed with a private contract security firm to address security needs.
Establish an onsite security resident.	A security residence was established along Dallas Blvd. south of the parking area; however, the site is currently vacant.

Acquisition 2007 Plan Strategy	Status
Continue to pursue those parcels that will aid in the conservation of the Econlockhatchee River subbasin.	No acquisitions were accomplished since the writing of the last plan. Additionally, since 2007, management of the NRC parcel and the Orange County owned portion of Long Branch parcel has been assumed by Orange County. The District has no management responsibilities in these parcels and has submitted an amendment to the management agreement to Orange County.

Cooperative Agreements 2007 Plan Strategy	Status
Maintain agreements to assist with the management and maintenance of the Hal Scott Regional Preserve and Park.	The intergovernmental management agreement between the District and Orange County is maintained and amended as necessary.

Leases, Easements, SUAs 2007 Plan Strategy	Status
Continue to evaluate easements and special use authorizations at Hal Scott.	The District evaluates the need for easements and issues special use authorizations as deemed appropriate.

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IMPLEMENTATION

The following sections outline land management strategies for resource protection, land use, and administration on the Hal Scott Regional Preserve and Park for the next ten years.

RESOURCE PROTECTION AND MANAGEMENT

Water Resource Protection and Management

While the majority of the wetlands within the Hal Scott Regional Preserve and Park are functional and include site appropriate species, there are numerous alterations within these systems. These alterations include several large canals, numerous ditches, culverts, bridges, low water crossings, roads, trails, and firelines. Three large canals that run from east to west across the property drain areas within the Wedgefield subdivision. These canals and associated structures are managed and maintained by the Ranger Drainage District via perpetual easements. Other significant alterations within Hal Scott include numerous drainage ditches and swales, which were constructed prior to public acquisition to drain and improve the area for cattle. The District is open to the potential to plug or fill these ditches and swales as part of potential mitigation projects that may develop within the basin.

The water resource structures within the property are detailed in Figure 8. Table 3 provides detail regarding maintenance needs for those structures within the property for which the District has maintenance and management responsibilities.

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 at the Econlockhatchee River for maintenance and repair need.

Short-term planning horizon (1-5 years)

- Conduct repairs and replacements to road structures as indicated in Table 3.

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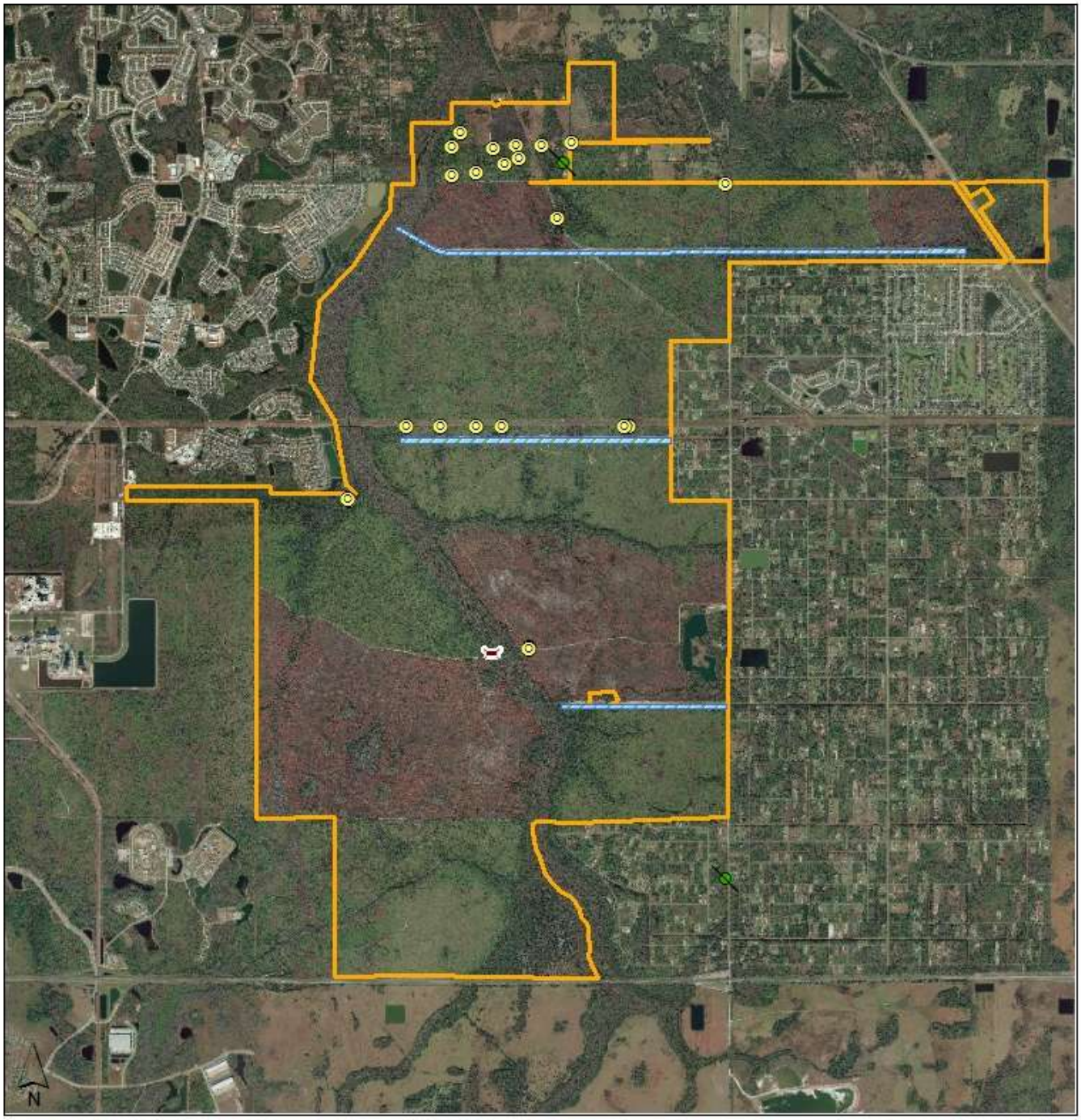

Hal Scott Regional Preserve and Park

Figure 8 - Water Resource Structures Map

1

Miles

Boundary

Ranger Drainage District Canals

Bridges

Culverts

Monitoring Wells

Well, Active

Well, Inactive

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Table 3 – Roads Structures Maintenance Needs

Structure ID	Type	Size/Material	Condition	Action Required
646	Bridge	40'X14'/Concrete and Wood	Excellent	-----
374	Culvert	Plastic	Good	-----
375	Culvert	Metal	Good	-----
376	Culvert	Concrete	Fair	-----
377	Culvert	Metal	Fair	Abandon or convert to low water crossing
378	Culvert	Metal	Fair	Abandon
379	Culvert	Plastic	Good	Abandon
380	Culvert	Metal	Fair	-----
381	Culvert	Metal	Poor	Abandon or convert to low water crossing
382	Culvert (double)	Metal	Poor/collapsed	Abandon
383	Culvert	Metal	Poor	Abandon
384	Culvert	Metal	Poor	Abandon or convert to low water crossing
385	Culvert	Metal	Fair	Coordinate with FPL for repair or replacement
386	Culvert	Metal	Good	-----
387	Culvert	Metal	Good	-----
388	Culvert	Metal	Good	-----
389	Culvert	Metal	Good	-----
390	Culvert	Metal	Poor	Coordinate with OUC for repair or replacement
391	Culvert	Metal	Poor	Coordinate with OUC for repair or replacement
392	Culvert	Metal	Good	-----
393	Culvert (double)	Metal	Good	-----
394	Culvert (double)	Metal	Good	-----
395	Culvert	Metal	Good	-----
396	Culvert	Metal	Good	-----

Flora and Fauna

Native Species

Hal Scott supports a wide range of conditions that provide important habitat for a variety of floral and faunal species, including the federally endangered Red-cockaded Woodpecker (*Picoides borealis*). During the scope of this plan, District staff will continue work to further develop the comprehensive species list for the property.

Flora

Snowy orchid (*Habenaria nivea*), Florida beargrass (*Nolina atopocarpa*), and hooded pitcher plant (*Sarracenia minor*), all state threatened species, occur on Hal Scott. These species are most often associated with open pine flatwoods and herbaceous marsh communities. The occurrence of these species and the abundance of hooded pitcher plants within the property is an indication of well-maintained habitat. Management considerations for these species are consistent with those of the mesic and wet flatwoods and will primarily include maintaining the property with the frequent application of prescribed fire.

The District may seek the assistance of local Native Plant Society and other volunteers to further develop the knowledge of plant species within the Hal Scott Regional Preserve and Park.

Fauna

Florida Black Bear
While relatively infrequent, Florida black (*Ursus americanus floridanus*) bear is documented within Hal Scott and road-killed animals have been documented in close proximity of the property. The Hal Scott Regional Preserve and Park is located between the Glades/Highlands population of Florida black bear and the southern extents of the Ocala and St. Johns populations. In addition to habitat loss and fragmentation, threats to the bear include human caused mortality such as road kill and incompatible habitat management (FFWCC, 2012). To the extent that issues relate to District managed lands, District staff will coordinate as necessary with the FFWCC and other relevant parties regarding the management of bear habitat and the facilitation of movement across the landscape.

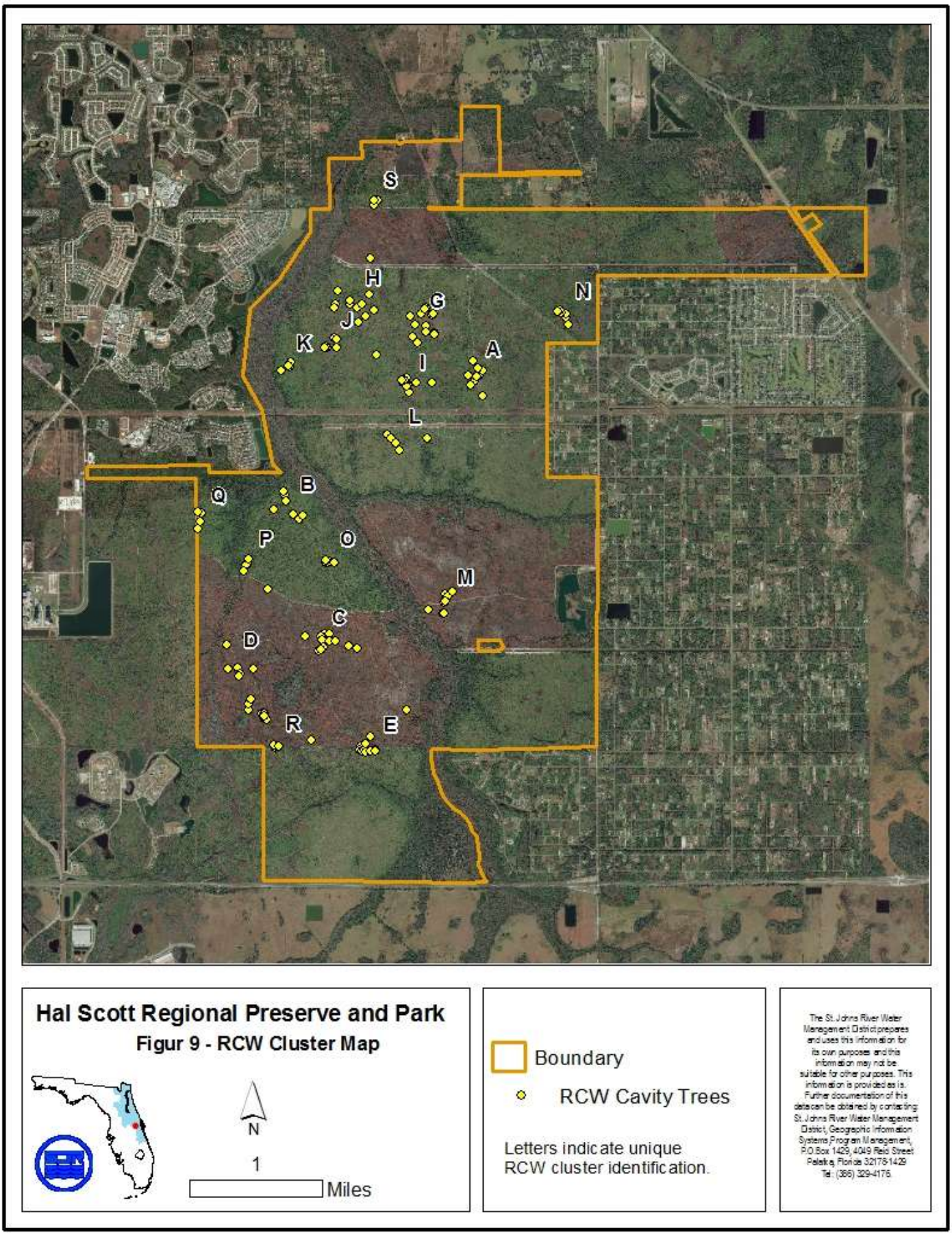
Bald Eagle
While there are currently no active Bald Eagle (*Haliaeetus leucocephalus*) nests documented within Hal Scott, there are nests within close proximity. The nearest known active nest is located approximately .25 miles from the western boundary on the southern portion of the property. Should any nests be discovered within Hal Scott, the District will document the occurrence and incorporate the data into the District's Bald Eagle database with relevant activity status. The District will adhere to the guidelines established in the May 2007 U.S. Fish and Wildlife Service (FWS) *National Bald Eagle Guidelines*, or most recent applicable document. 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 FFWCC and/or the USFWS as applicable, prior to conducting management activities within the established management zones that may affect Bald Eagle nesting between the dates of October 1 to May 15. If nests are discovered on the property, the District will confirm activity status each year.

Red-cockaded Woodpecker
The Hal Scott Regional Preserve and Park supports a small, but important population of Red-cockaded Woodpeckers, a federally endangered species. The Recovery Plan for the Red-cockaded Woodpecker (*Picoides borealis*) Second Revision (USFWS, 2003) designates Hal

Scott an essential support population in the South/Central Florida recovery unit. This federal plan establishes a property goal to be achieved by the year 2015 that includes 15 active clusters and 15 potential breeding groups. Additionally, the State of Florida Management Plan Red-cockaded Woodpecker (FWC, 2003) includes Hal Scott as part of the Big Econ Metapopulation. The metapopulation includes RCW populations on the adjacent and nearby Stanton Energy Center, the Central Florida Reception Center, and T.M. Ranch properties. The District is committed to implementing habitat and population management activities that work towards meeting established goals. These management activities include proven techniques such as translocation, banding, artificial cavity inserts, regular monitoring, and sound habitat management. In addition, District staff will work with appropriate state and federal entities to incorporate new techniques into RCW population management activities within Hal Scott.

In an effort to track population dynamics, RCWs within the property are banded. Placing leg bands on RCWs provides unique identification of individual birds. Those unique identities enable staff and cooperators to monitor emigration, immigration, social grouping, reproduction, mortality, survival rates, and population changes. All RCWs within the property, including those relocated to the property are banded. Since the writing of the last plan in 2007 and with the infusion of 17 translocated birds since then, the RCW population within Hal Scott has shown only a slight increase in the total number of birds observed. During this period, the number of active clusters has remained below the USFWS goals for the property, fluctuating between 8 and 10 active clusters. It is important to note that the District does not monitor or manage other RCW populations within other areas of the metapopulation and there is some measure of uncertainty concerning survival and dispersal of birds from Hal Scott. While the extent of movement of birds across the metapopulation is largely unknown to the District outside of Hal Scott, there is evidence of birds moving between the properties.

When considering natural population fluctuations and the introduction of translocated birds, the total number of birds and number of active clusters observed yearly indicates that the Hal Scott Regional Preserve and Park is likely at carrying capacity for RCWs given the current habitat conditions within the property. The number of available pine trees of sufficient size is well below habitat thresholds present elsewhere in central Florida. The pine basal area of suitably sized trees in Hal Scott is approximately 12ft²/acre while most other areas in central Florida range between "20-40ft²/acre" of suitably-sized pine. It is anticipated that over time and with recent habitat improvement measures that include planting of longleaf pine seedlings and the modification to season of burning to encourage natural longleaf regeneration, that numbers of pine trees in the appropriate size class will increase, thereby increasing the RCW carrying capacity. Ideal RCW habitat conditions and current conditions within Hal Scott are discussed in the Natural Community Management section of the plan. Figure 9 illustrates the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Hal Scott Regional Preserve and Park
Figur 9 - RCW Cluster Map
N
1
Miles
Boundary
RCW Cavity Trees
Letters indicate unique
RCW cluster identification.
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current location of RCW clusters within the property. District staff estimate that the RCW population within the property is at or nearing carrying capacity.

Exotic and Invasive Species

Several exotic pest plants are known to occur within the Hal Scott Regional Preserve and Park. 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 according to label rates using the most appropriate method of application for the target species. Within the property, the District has utilized the following methods for the application of herbicides:

- Basal treatments – This method of control includes mixing penetrating oil with the herbicide and applying the mixture directly to the bark of a standing tree or other wood plant. This method is focal and accomplishes treatment on individually targeted plants. Collateral damage or loss of non-targeted plants is minimal.
- Broadcast – This method of control includes the application of the liquid herbicide using a pressurized sprayer. The sprayer may be a hand-held or backpack container or ATV, tractor, or truck mounted and may be pressurized by hand pumping or motorized pump. Broadcast treatments cover larger areas and are not precise; herbicide is applied to all plants within the treatment area. Some collateral damage or loss of non-targeted plants is expected. Typically, the District utilizes this treatment method in areas where infestations of target species are dense, where presence of desirable species is low or for site preparation where clean sites are desirable. Wind drift of herbicide is a consideration when utilizing this method of application and District staff does not apply herbicides when wind speeds are excessive.
- Aerial – This method of control includes the application of herbicides over a large area using low-flying aircraft. This method is not precise and collateral loss or damage to non-target species is expected. This method is often used when treatment area is large, infestation is severe, or in areas that are largely inaccessible by other methods. Wind drift of herbicide is a significant consideration for this control method. Preventing chemical drift to neighboring properties is paramount. District staff evaluates weather conditions prior to any aerial application to minimize the potential for drift and collateral damage outside the targeted area.

While it is unlikely that the District will entirely eradicate invasive and exotic plants within the property, depending on species and level of infestation, maintaining or achieving maintenance control of such species is targeted within 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 2007, District staff have discovered and treated infestations of exotic plants including Chinese tallow (*Sapium sebiferum*), Brazilian pepper (*Schinus terebinthifolius*), and cogon grass (*Imperata cylindrica*).

Feral Hogs

Exotic wildlife species including feral hogs (*Sus scrofa*) occur within the Hal Scott Regional Preserve and Park. The District currently utilizes feral hog removal agents through a Special

Use Authorization (SUA) process to assist in the control of feral hogs. Since 2007, feral hog removal agents have removed 669 hogs from the property.

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. Due to budget reductions, the contract was not renewed at the end of FY2012. If necessary, the District will have the flexibility to enter into short term agreements with 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.
- Coordinate with USFWS, FFWCC, and other landowners regarding the management of RCWs within the property and the surrounding metapopulation.
- Conduct feral hog removal activities as need is indicated.
- Continue appropriate treatment of exotic vegetation.

Specific Strategies

Recurrent

- Conduct annual monitoring of RCWs within the property and archive all data.
- Develop RCW Annual Report for Hal Scott Regional Preserve and Park.
- Coordinate with USFWS, FFWCC, private landowners, and other involved entities in exchanging monitoring data relative to the Big Econ metapopulation of RCWs.

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." While Hal Scott is dominated by mesic flatwoods, it will require little in the way of forest management. As stated in the mesic flatwoods natural community description in previous sections of this plan, historical land use practices including timber harvests, cattle grazing, and frequent dormant season burning have created conditions that resulted in a sparse canopy of pine with little regeneration. Most of the flatwoods remain in an open canopy condition and include an abundant low-growing, diverse groundcover.

Hal Scott is partitioned into forest management compartments and each compartment is further divided into stands. Figure 10 illustrates the compartments and stands within the property and Figure 11 illustrates the dominant pine species within each stand. On properties like the Hal Scott Regional Preserve and Park, where the distance from traditional markets for forest products is great and the density of pine trees is low, traditional forest management activities are not likely for several decades. The dependence of listed species such as RCWs on forest management will dictate that the forest management effort be directed towards habitat improvement. On Hal Scott, forest inventories will be conducted periodically to assess habitat conditions for RCWs and identify management needs. These values are verified and incorporated into the District's forest management database. Since the writing of the last plan, there have been no harvest activities.

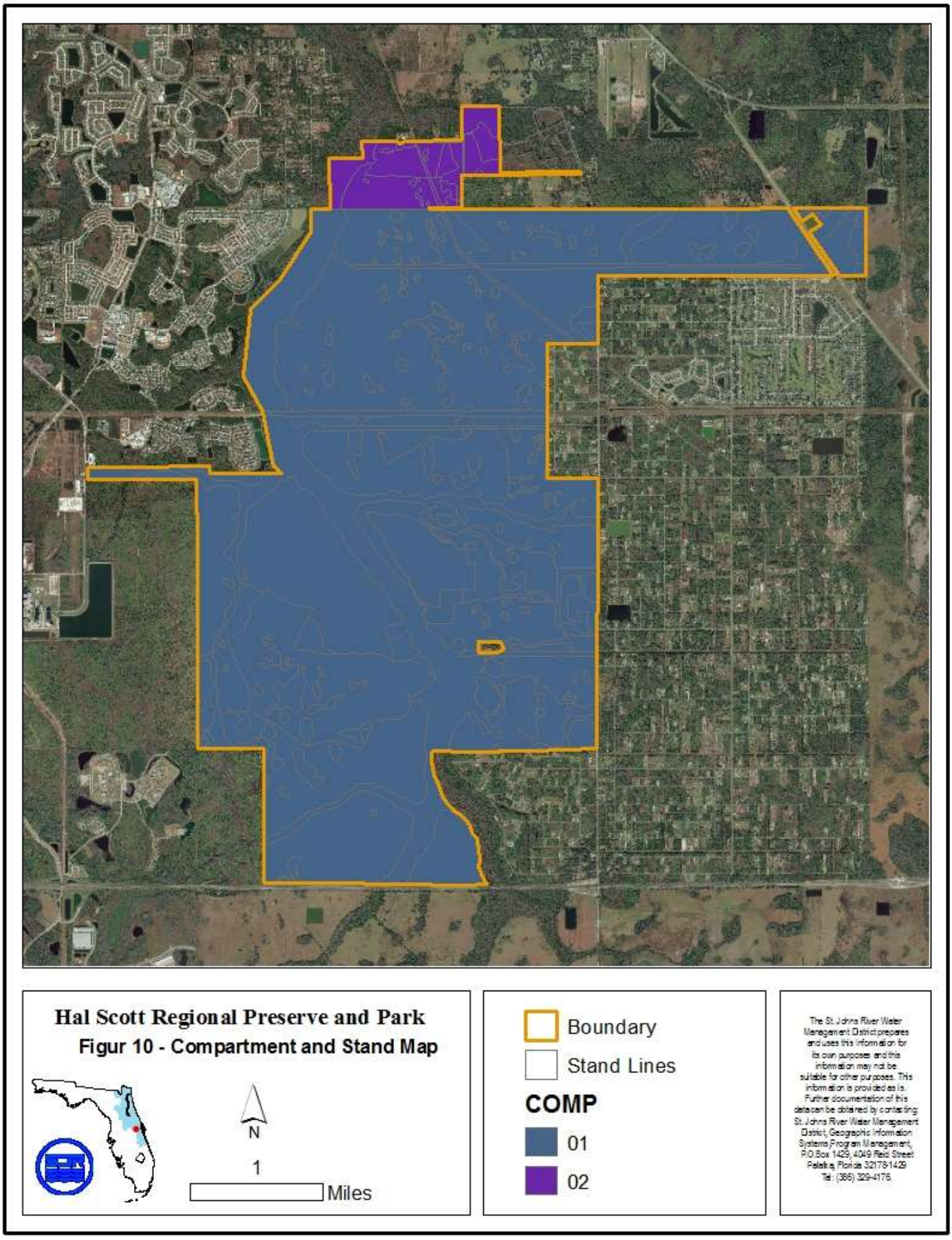
The current condition of stands within the property suggests that it is unlikely that harvests will be required during the scope of this plan and no harvests are planned. Additionally, the District may harvest trees as needed in the case of insect infestations, disease, and damage from sever weather, wildfire, or other occurrences that could jeopardize the health of natural communities. The District may also utilize other management techniques such as mowing, chopping, prescribed fire, and/or herbicide treatments to assist in forest management activities.

RCW Habitat Management/Enhancement

The majority of the upland acres within Hal Scott are identified for management as RCW habitat. These areas consist primarily of mesic flatwoods that include a sparse longleaf pine overstory with dense groundcover dominated by wiregrass. In 2006 and 2007, the District compiled data captured during a comprehensive forest inventory effort. This inventory indicated an average pine density of 111 trees/acre with an average basal area of approximatley 13ft²/acre. Variability was observed between stands; trees per acre measurements ranged between 20 and 185 across stands, while the basal areas ranged between 4.5ft²/acre to 22.7ft²/acre. This inventory also revealed gaps in age and diameter classes and suggested insufficient regeneration to replace exisitng trees.

Using growth modeling features in the District's forest management database, current (2013) estimates indicate the total trees per acre are largely unchanged at 102 stems per acre. The overall basal area has increased approximately 13ft²/acre to 31ft²/acre. Of note, is the positive trend in the basal area of trees in the ≥10" dbh and greater size classes. Table 4 compares the trees/acre at specific tree diameters in 2007 and 2013 against the optimal trees per acre for RCW habitat in central Florida. Similarly, Table 5 illustrates the basal area trend.

The District's primary focus of management at Hal Scott is on the achievement of a greater density of trees ≥10" dbh (diameter at breast height) and to improve foraging conditions through appropiate seasonal use of fire. Since 2007, the District has accomplished numerous longleaf pine plantings totaling approximately 1,800 acres. These plantings were conducted to augment natural regeneration, which is sparse, and overtime will aid in the expantion of suitable RCW habitat within the property. Some of the longleaf pine plantings were accomplished using Global Releaf and USFWS Partnership Program grant funding and other plantings were part of larger, more focused restoration activities. Figure 12 details these planting efforts.


Hal Scott Regional Preserve and Park
Figur 10 - Compartment and Stand Map
N
1
Miles
Boundary
Stand Lines
COMP
01
02
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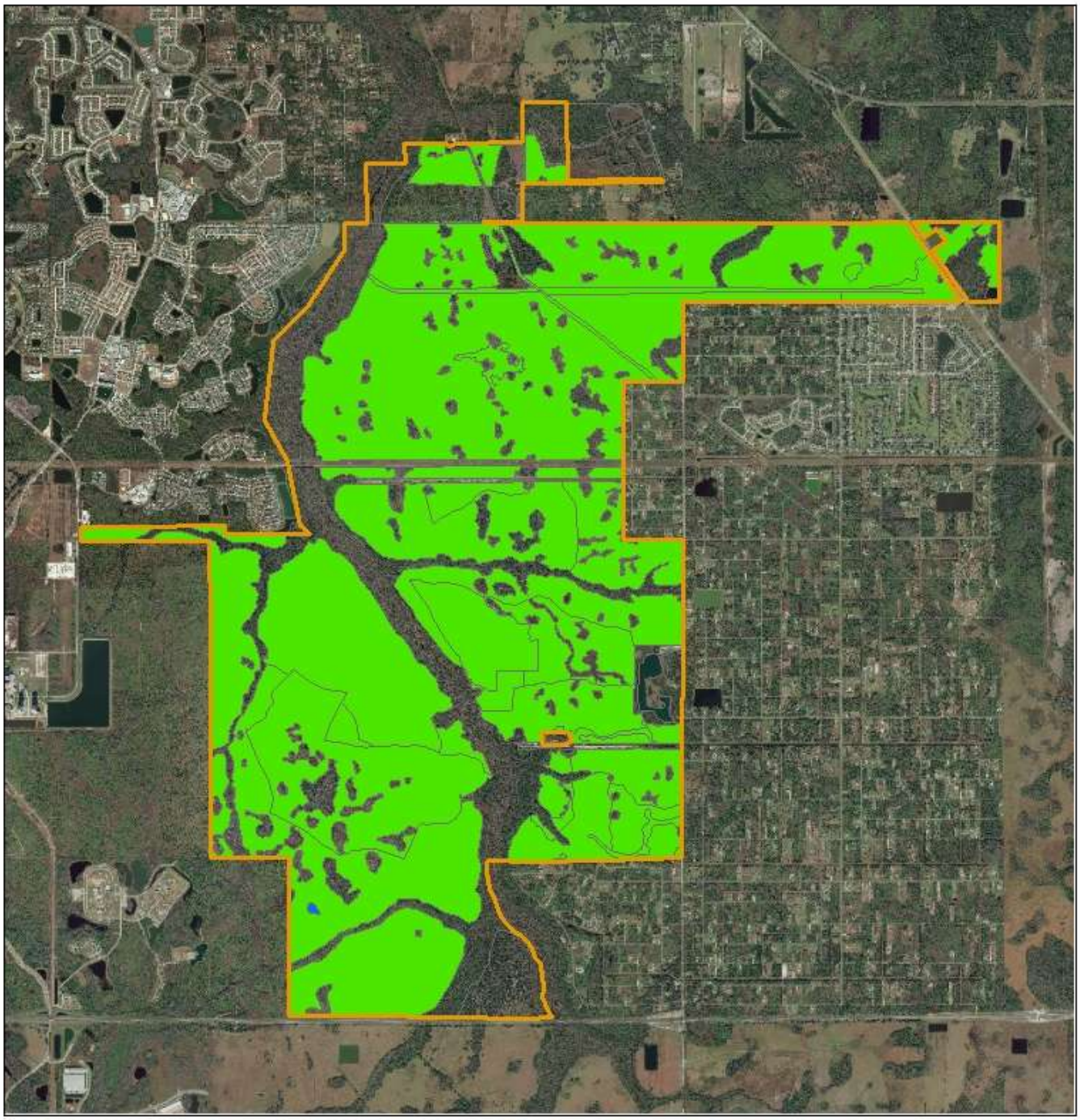

Hal Scott Regional Preserve and Park

Figure 11 - Pine By Species Map

N

1

Miles

Boundary

Stand Lines

Longleaf Pine

Slash Pine

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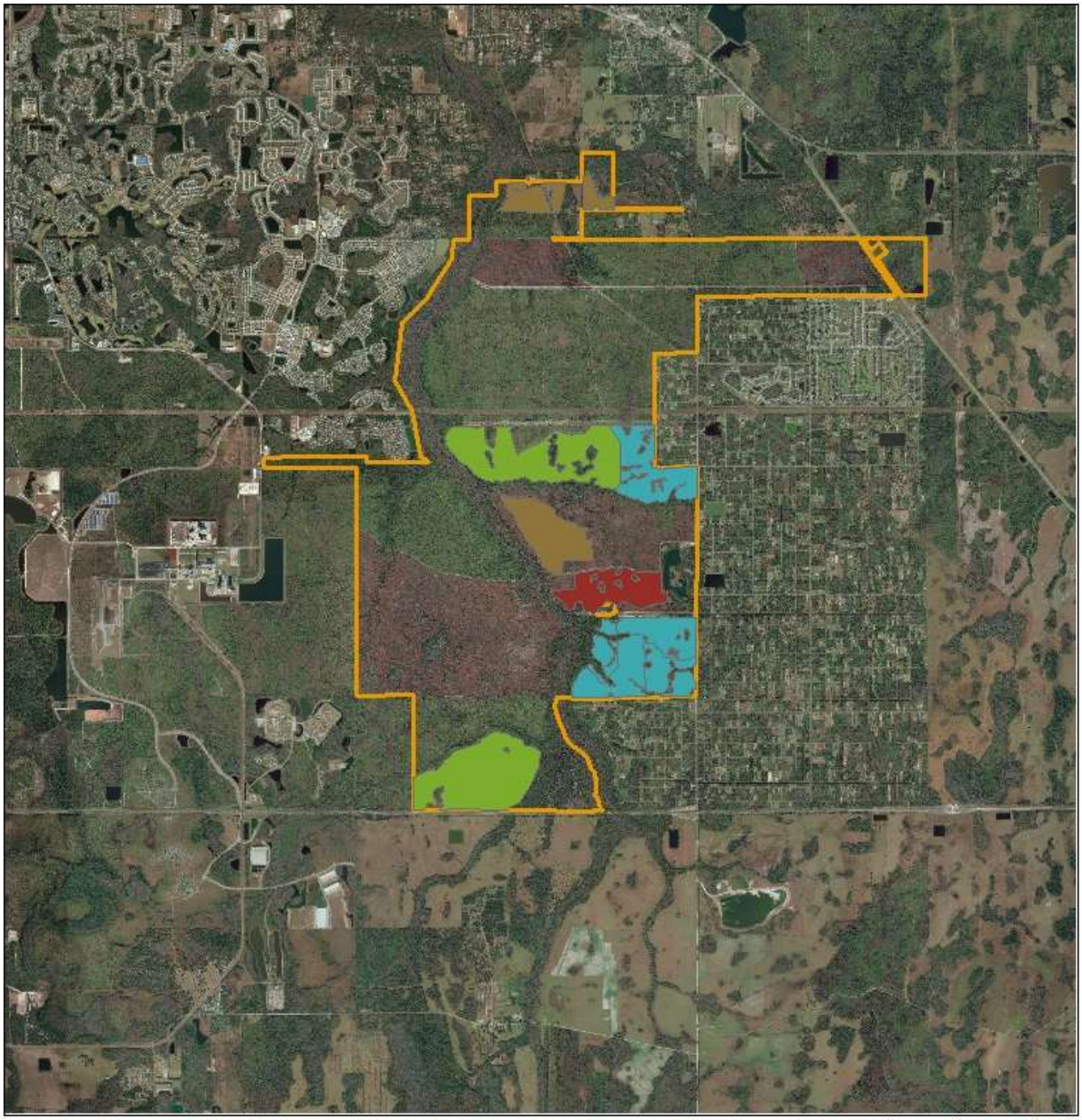

Acreage is approximate

Hal Scott Regional Preserve and Park

Figure 12 - Longleaf Pine Planting Map

N

1.5 Miles

Boundary

Year Planted

2007

2009

2010

2011

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Table 4 – Pine/Acre Trend

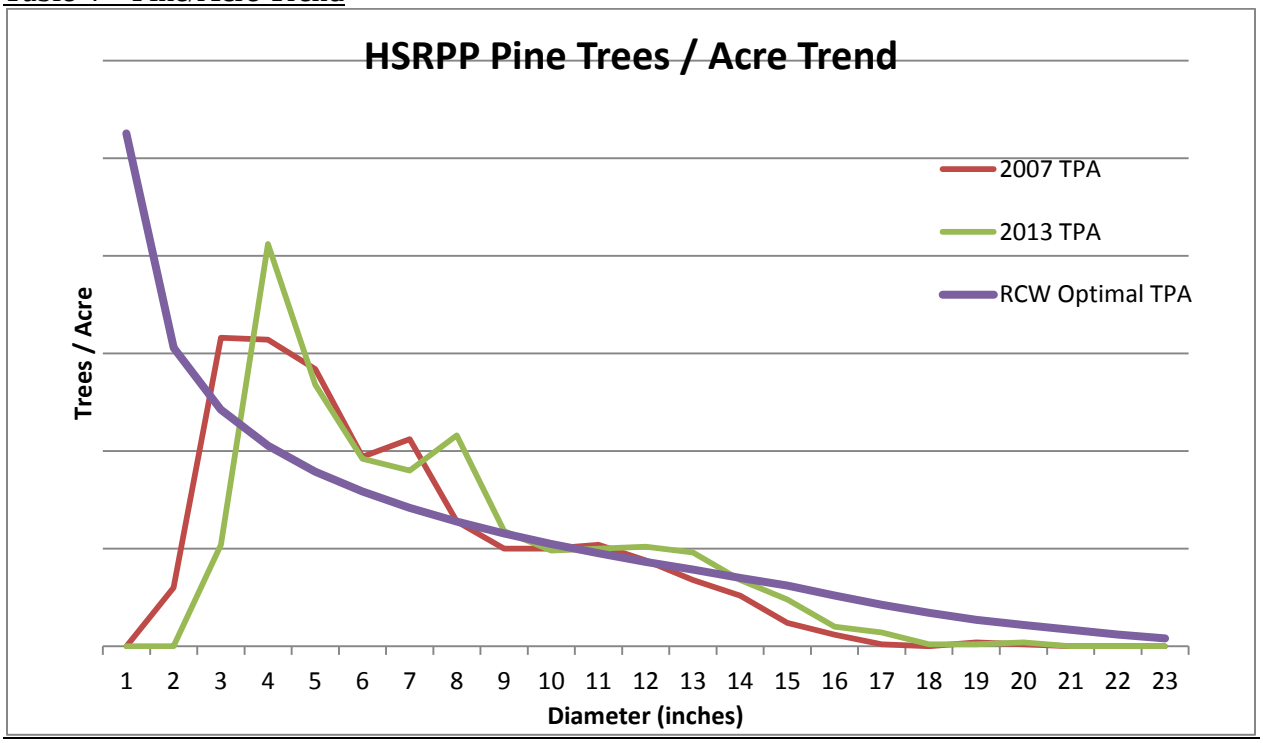
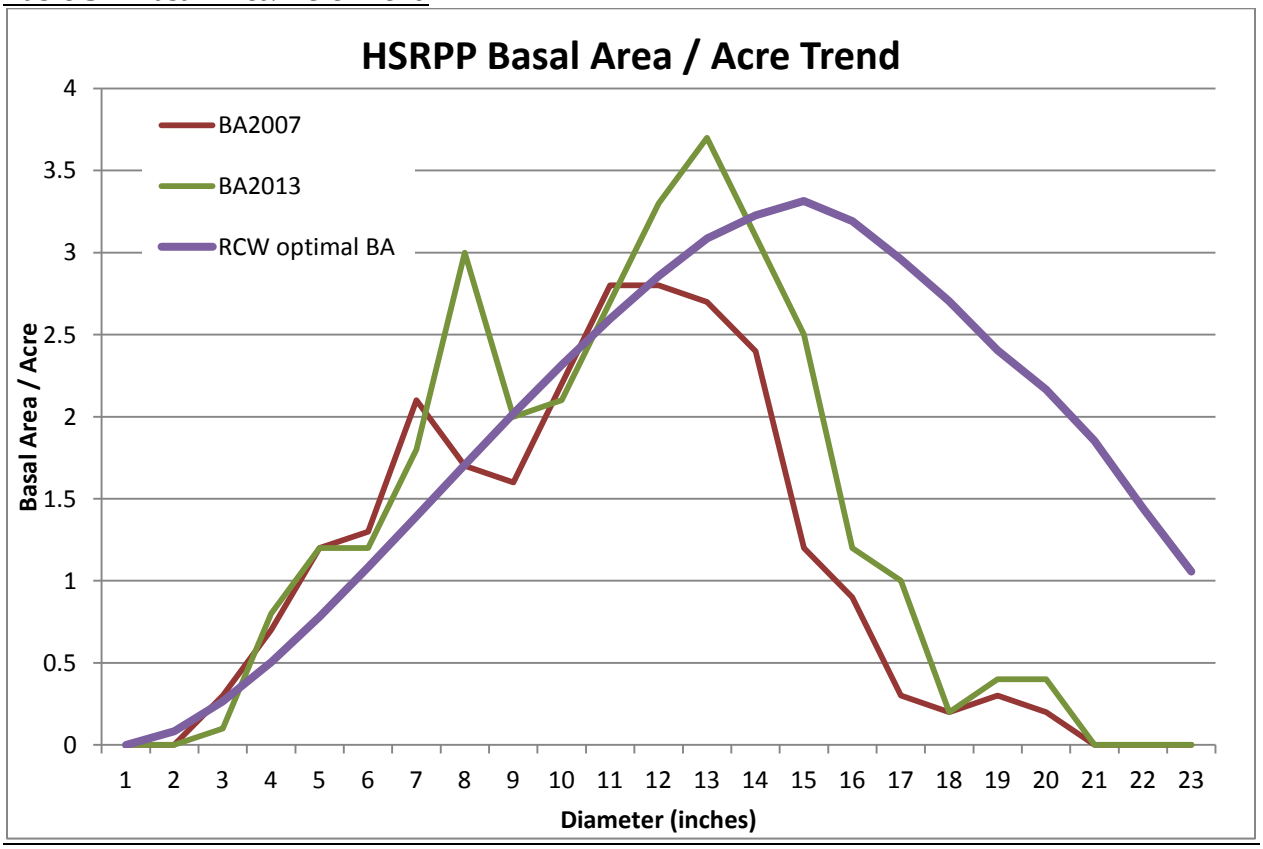


Table 5 – Basal Area/Acre Trend



In October 2008, the District condcuted a harvest of longleaf pine cones. In coordination with the Florida Forest Service (FFS) the District collected 105 bushels of cones which yeilded 53 lbs. of seed. The seed was split 50/50 between the District and FFS. The seed was prepared and grown at a FFS nursery until July 2010 when the surviving 42,000 seedlings were planted on Hal Scott in combination with seedlings from other sources. The District anticipates a similar cooperative project to continue augmentation of longleaf pine within the property. However; due to low seedling survival in the nursurey, largely attributed to overwintering in the facility, the District will likely opt to plant future seedling in the winter following harvest.

In an effort to minimize loss of RCW nest trees and improve habitat within individual RCW clusters, the District rotuinely mows the acreage within each cluster. The mowing serves to reduce the coverage of saw palmetto which provides the combined benefit of providing protection from fire and increasing abundance and diversity of insects.

Additional upland enhancement activities inlcuded groundcover restoration work conducted in 2009. Approximately 14 acres of the Long Branch Park portion of the property was prepared for groundcover restoration. The site was pasture area that included some coverage of bahia grass with a heavy coverage of wax myrte and gallberry. The shrubs were removed using a combination of mowing and root raking followed by a prescribed fire. Post burning, the area was seeded by a contractor with an upland mix harvested off site. The seed mix inlcuded wiregrass and other native fall flowering flatwoods seed. In the fall of 2012, an abundant coverage of wiregrass and other native herbaceous plants were observed within the restoration unit.

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Natural Community Management

General Maintenance Activities

- Conduct visual monitoring and forest management activities as necessary in response to disease, insect infestation, or wind damage.
- Conduct periodic inventories of overstory to track growth and populate database.

Specific Strategies

Recurrent

- Conduct other longleaf pine plantings as necessary for habitat management, RCW management, and restoration and enhancement needs.
- Mow shrub vegetation within RCW clusters to provide some measure of fire protection to RCW cavity trees and to improve foraging condition.

Short-term planning horizon (1-5 years)

- Conduct quality control inventory of pine to confirm growth model estimates within the forest management database.
- Coordinate with the FFS to harvest longleaf pine seed from Hal Scott for replanting to augment natural regeneration within the property.

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 dependant wildlife. Additionally, the application of fire aids in the reduction of fuels and minimizes the potential for catastrophic and damaging wildfires. The majority of the upland natural communities within Hal Scott are fire adapted, making prescribed fire an important tool for use in the restoration and maintenance of plant communities within the property. Since 2007, District staff implemented prescribed fire on 12,000 acres within the property. Figure 13 illustrates the prescribed fire history for the property since 2007.

Historically, the majority of fires occurring on what is now Hal Scott 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 served to restrict 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. In addition to providing conditions that are favorable for the natural regeneration of pine, growing season burning, 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.

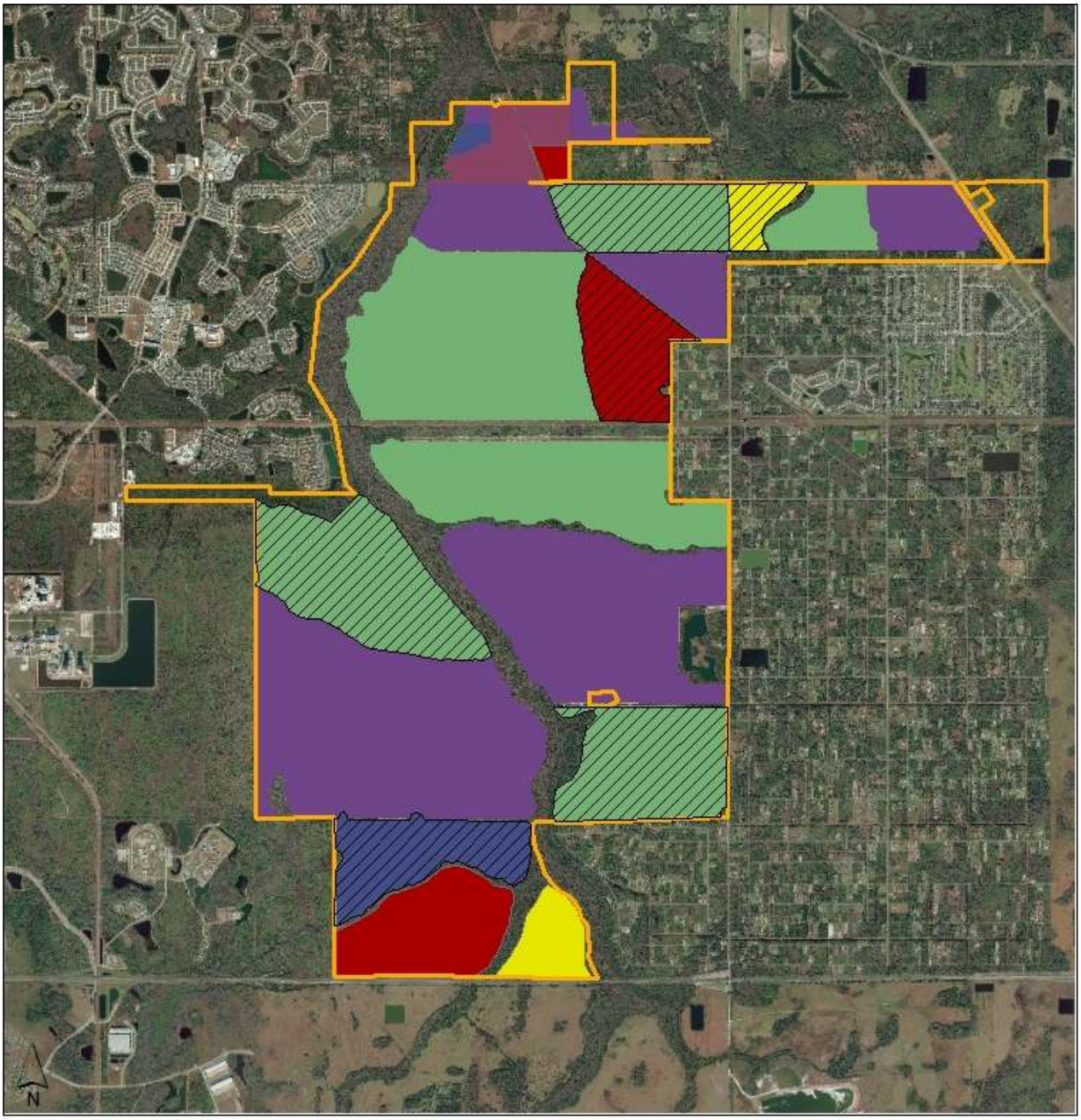
In addition to the presence of organic soils and other site specific limitations present on portions of the property, other limiting factors narrowing the window of opportunity for the application of prescribed fire on Hal Scott is the property's close proximity to critical smoke sensitive areas including SR 520, SR 528, SR 50, and numerous local surface streets and residential areas, as well as the down drainage effects of the Econlockhatchee River and associated creek branches. Additionally, the Orlando International and the Orlando Executive Airports are located 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. Smoke management concerns and smoke radii for the property are depicted in Figure 14.

The neighboring Wedgefield subdivision is one of the first Firewise communities in the nation. Firewise is a community based program sponsored by The USDA Forest Service, US Department of the Interior, and the National Association of Foresters. The primary objective of the program is to save lives and property from wildfire. This is accomplished through community outreach in a collaborative approach that connects all stakeholders that participate in wildfire education, planning, and action to reduce risk. The District supports Wedgefield in their Firewise efforts as it provides important education and information to residents. This facilitation of understanding by residents has an important and positive influence on the District's prescribed fire efforts within Hal Scott.

While prescribed fire is the preferred tool for management, restoration, enhancement, and maintenance of natural communities within Hal Scott, 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 creating and maintaining desired conditions within the property.

A system of 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 was designed as Fire Regime Condition Class (FRCC) and 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 measure ecosystem health and therefore land management effectiveness. While fire is the preferred disturbance that maintains most natural communities in Florida, other disturbances can serve as a surrogate for fire. Annually, each burn zone is assigned a condition class score based upon the most 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.



Hal Scott Regional Preserve and Park

Figure 13 - Prescribed Fire History Map

1

Miles

Boundary

Last Burn Year

2007

2008

2009

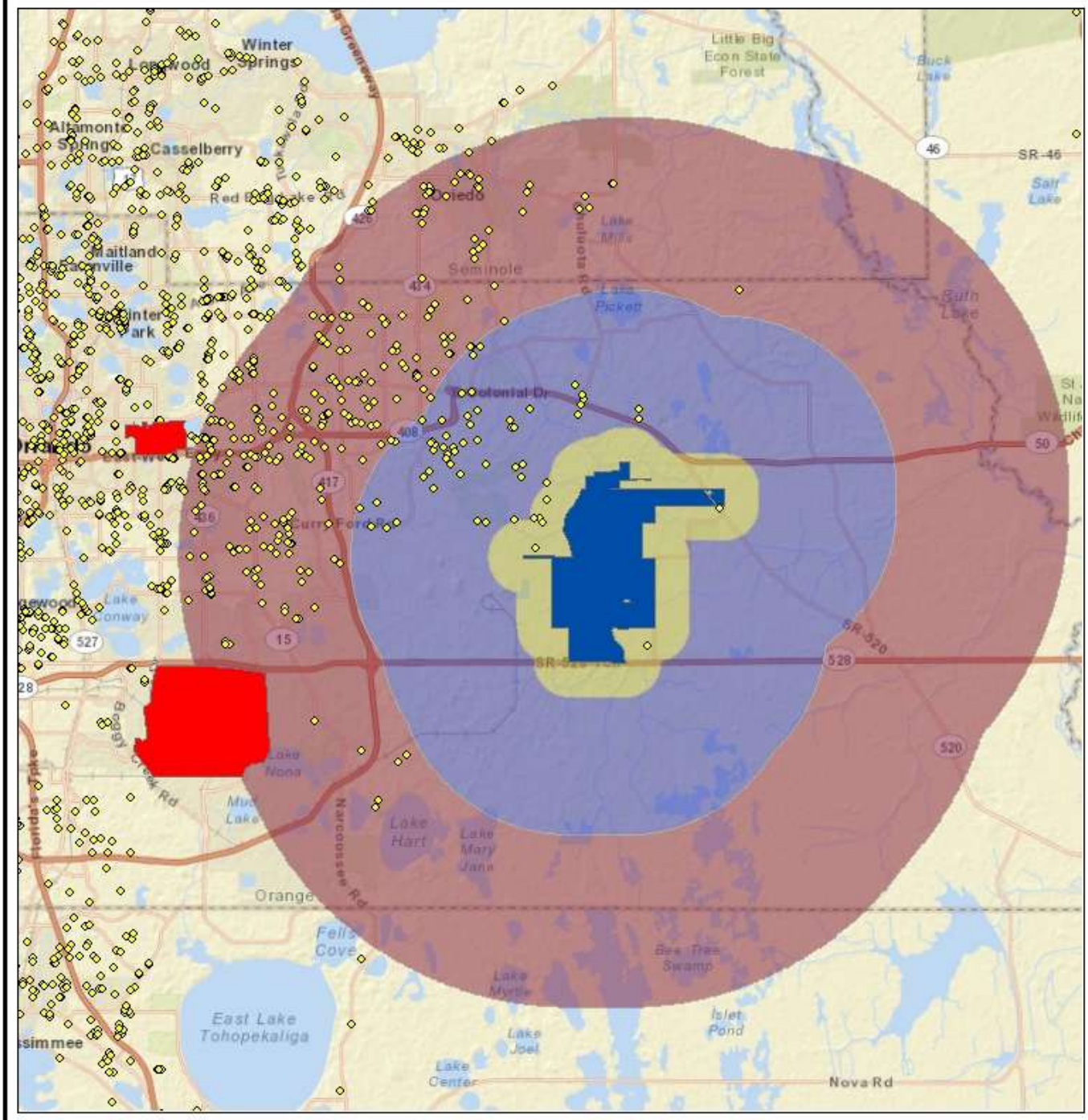
2010

2011

2012

2013

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



Hal Scott Regional Preserve and Park
Figure 14 - Smoke Management Map

N

5.5 Miles

- Boundary
- 1 mile
- 5 miles
- 10 miles
- Airports
- Schools and Healthcare Facilities

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

Fire Management Strategies

General Maintenance Activities

- Implement prescribed burning as described in the District's Fire Management Plan and the Hal Scott Regional Preserve and Park Fire Management Plan.
- Continue to support and coordinate with the Wedgefield community in their Firewise initiative.

Specific Strategies

Recurrent

- Develop annual burn plans.
- Populate and maintain the fire management database.
- Conduct fireline maintenance.

Cultural Resources

A review of the Department of State, Division of Historical Resources (DHR) indicates eight known Florida Master Site File cultural sites within the property. These sites include 4 prehistoric and 4 historic sites. 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

A public parking areas is located on the eastern side of the property, off Dallas Blvd. The parking area is fenced and has a walkthrough providing for recreational access. An informational kiosk is located near the parking area trailhead.

There are currently 28 gates providing 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. In an effort 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 Hal Scott.

Table 6 – 911 Addresses

911 Address	Location/Description
11901 E SR 528	Beeline Gate
17750 Partin Farms Road	Partin Farms/CR 13 Gate
20103 Macon Parkway	Bancroft Blvd. Gate
20392 SR 520	520 West Gate
20537 SR 520	520 East Gate
20681 Macon Parkway	Albion Avenue Gate
2212 Dallas Blvd. Gate	North Dallas Gate
2294 S. County Road 13	CR 13 Gate
4500 Dallas Boulevard	Residence Gate/Site

Approximately 31 miles of interior management roads traverse the property, some of which incorporate the multiuse trail system. In order 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 in nature.
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.

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. 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.

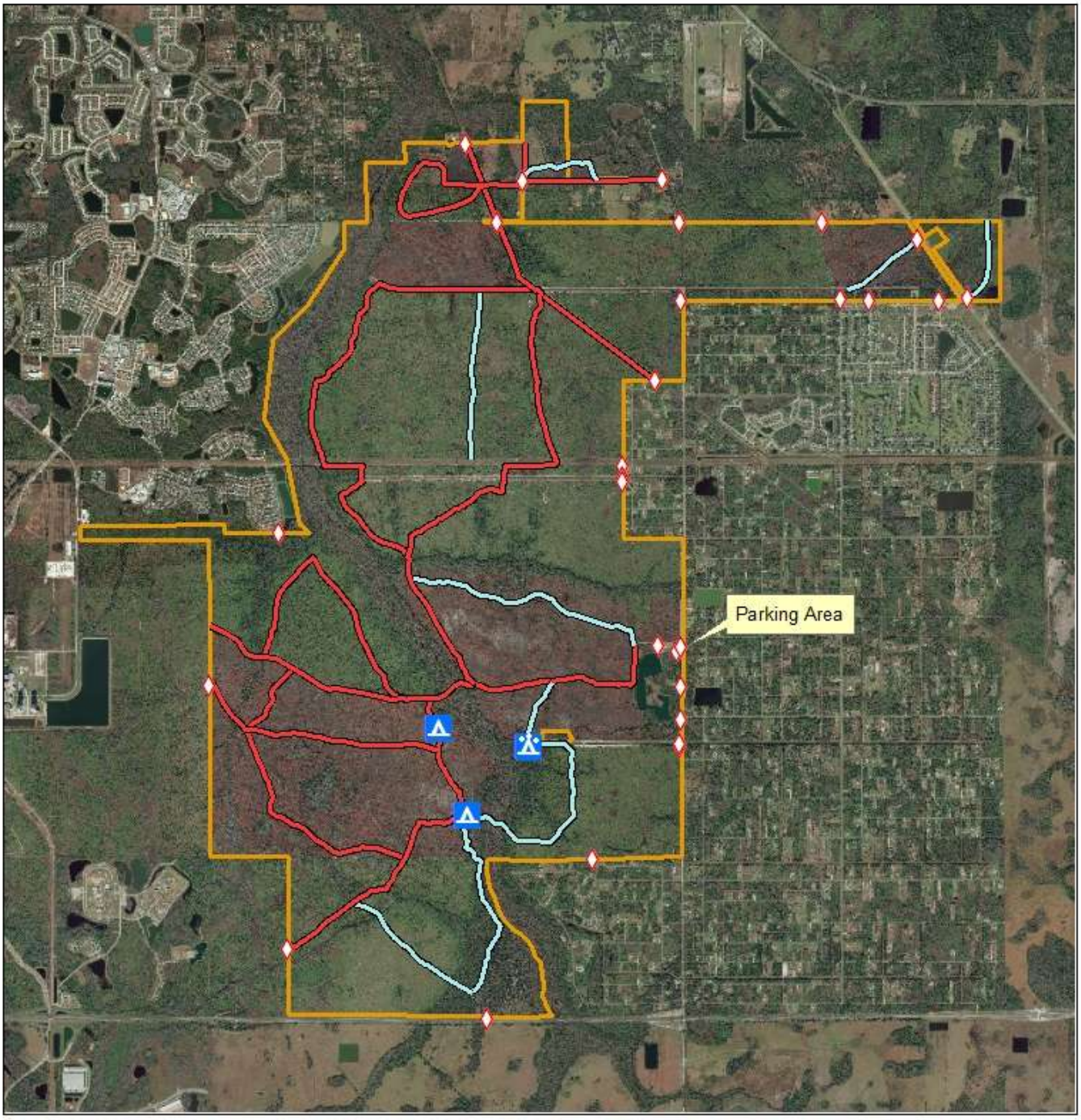
Specific Strategies

Recurrent

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

Short-term planning horizon (1-5 year)s

- Coordinate with Orange County to assign 911 addresses to the main parking area gate and other frequently used access points.



2012 Orange County, FL Orthophotography, .5ft; True Color

Hal Scott Regional Preserve and Park

Figure 15 - Roads Map

N

1

Miles

Boundary

Gates

Road Type

B

C

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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 SJRWMD 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 Hal Scott are dispersed resource-based activities. Recreation amenities include a designated parking area with trailhead. The trailhead includes an entrance sign and an information kiosk, 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. Additional pedestrian access points are located on the property.

The trail system is predominantly for hiking, off-road bicycling, horseback riding, primitive and group camping. While the property does include significant frontage along the Econlockhatchee River and several creek branches, no portion of these waterways within or adjacent to the property are accessible by boat and no boat access is provided.

Recreational improvements and considerations for the Hal Scott Regional Preserve and Park include:

- **Camping –** Group camping is available in the area near the canal southwest of the security residence. Camping is restricted to tent camping only; no RVs, travel trailers, or campers are allowed. Group camping is intended for seven or more people (but less than 24) and requires a reservation and permit. Group camping is limited to a maximum of seven days. Reservations are available via the District website. Additionally, for groups of fewer than 7 people, two primitive campsites are located west of the group camp site.
- **Trails –** Approximately 17 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.
- **Inclement Weather Shelter** – Two inclement weather shelters are provided for recreational users. They are located along the yellow and red trails.
- **Kiosks** – A Kiosk is located at the public access point and provides information, which includes maps, trail brochures, and interpretive displays.
- **Connectivity** – Trail connections between the Hal Scott Regional Preserve and Park are located on the northern reaches of the property connecting Hal Scott to the adjacent Orange County owned and managed Longbranch Park and Pine Lily Preserve.

The targeted maintenance schedule for trails and campsites includes:

- Mowing grassy trails and road edges four (4) times yearly.
- Trail blazing, trimming of overhanging branches, and tree removal along trails as needed.
- Monthly trailhead and campsite maintenance.

Current recreational amenities are included in Figure 16.

Any improvements will be incorporated into the next edition of the District's *Recreation Guide to District Lands*, which can be viewed online at floridaswater.com.

Recreation Strategies

General Maintenance and Management Strategies

- Maintain parking areas, 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.

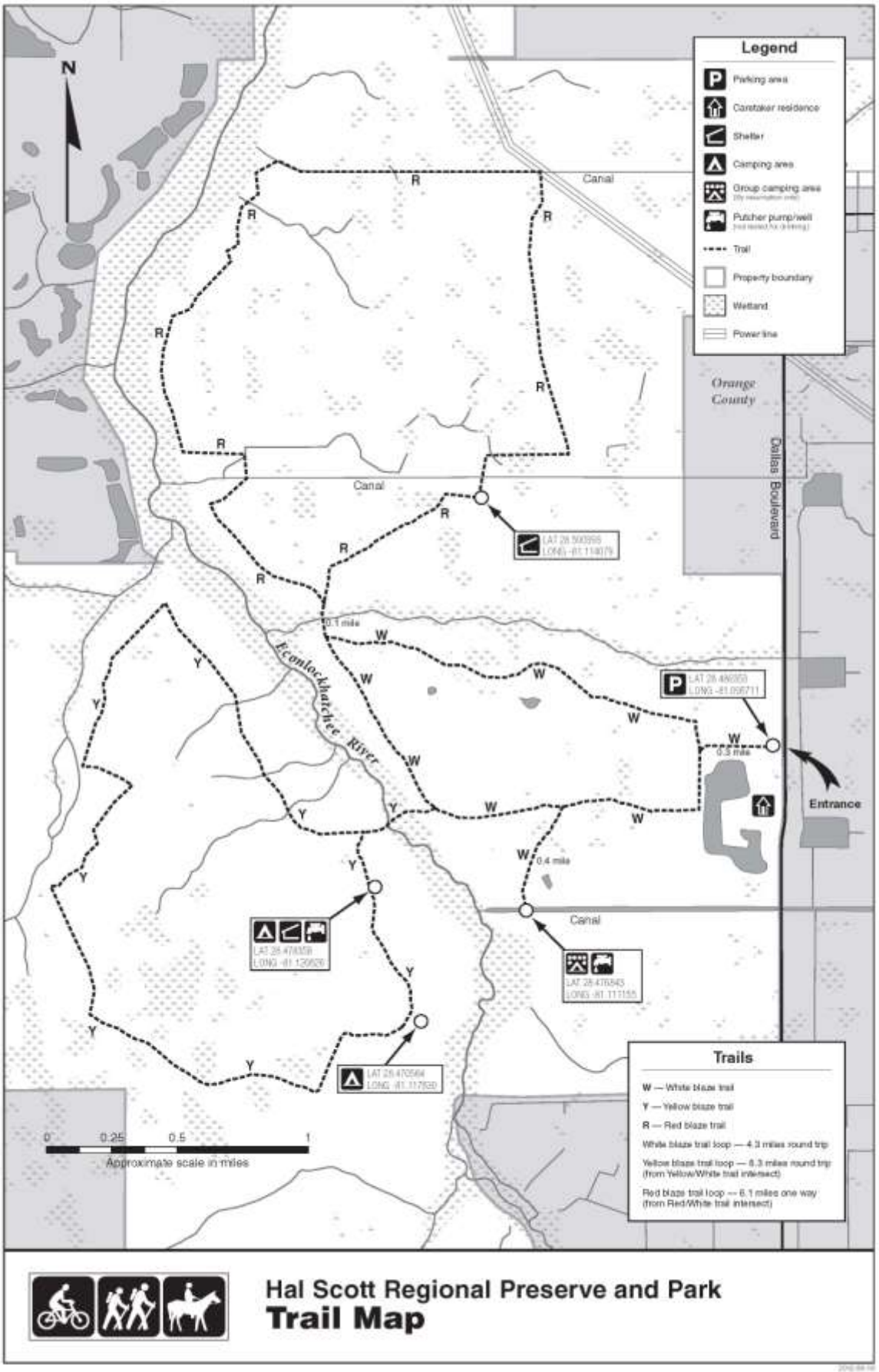
Environmental Education

The District has historically looked for opportunities to collaborate with local schools and organizations to encourage the use of District lands for environmental education. While the District remains open to such opportunities, during Fiscal Year 2011 the District funding and positions allocated for environmental education were eliminated due to budget reductions.

Environmental Education Strategies

General Maintenance Strategies

- Continue to offer environmental education opportunities subject to staff and budget availabilities.


N
Legend
Parking area
Caretaker residence
Shelter
Camping area
Group camping area
Potcher pump/well
Trail
Property boundary
Wetland
Power line
Canal
Orange County
Dallas Boulevard
Econlockhatchee River
0.1 mile
0.3 mile
0.4 mile
Entrance
Canal
Canal
Trails
W — White blaze trail
Y — Yellow blaze trail
R — Red blaze trail
White blaze trail loop — 4.3 miles round trip
Yellow blaze trail loop — 8.3 miles round trip (from Yellow/White trail intersect)
Red blaze trail loop — 6.1 miles one way (from Red/White trail intersect)
0
0.25
0.5
1
Approximate scale in miles
Hal Scott Regional Preserve and Park
Trail Map

Security

Security concerns within Hal Scott include illegal motorized vehicle access, dumping, vandalism of gates, fences, and conservation signage, and poaching. The District, primarily through a contract security firm as well as coordination with FFWCC and local law enforcement, administers security and law enforcement for the property. The current security residence site is vacant. The District is currently seeking a qualified security resident to assume the caretaker residence via a residence agreement.

Security Strategies

General Maintenance and Management Strategies

- Coordinate with local law enforcement and FFWCC for security needs.
- Maintain contract with private security firm.

Specific Strategies

Recurrent

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

Short-term planning horizon (1-5 years)

- Establish a security resident in the existing caretaker residence via a residence agreement.

ADMINISTRATION

Real Estate Administration

There are no anticipated acquisitions associated with the Hal Scott Regional Preserve and Park in the next ten years. The District may pursue acquisition of small parcels or easements that may improve access for management purposes.

Through the land assessment process, the District has identified the following parcel (see Figure 4) for potential surplus. It is expected that the District will convey this parcel to Orange County subject to a conservation easement.

- Flag North - 1996-012-P1 – Approximately 113 acres in the northeast portions of the property, located east of SR 520.

Real Estate Administration Strategies

General Maintenance and Management Strategies

- Evaluate adjacent properties for potential acquisition.
- Evaluate identified portion of the Flag North parcel for potential surplus if necessary.

Short-term Planning Horizon (1-5 years)

- 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 into 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.

Table 7 – Agreements, Easements, and SUA Table

Agreement Number	Type	Agreement Name	Term
560	SUA	Boyer, Mary K – Horse/Buggy Riding	Expires March 14, 2014
73	Management Agreement	Ranger Drainage District	
72	Management Agreement	Hal Scott Regional Preserve and Park Intergovernmental Management Agreement	
905	SUA	Danny Bales, RCW monitoring/Photography	
531	SUA	Killpatrick, John (hogs)	Expires December 2012
533	SUA	Smith, Rebecca (Horse/Buggy riding)	Expires November 2013
585	SUA	Southeastern Cooperative Wildlife Disease Study	Expires July 2014

Cooperative Agreements, Leases, Easements, and Special Use Authorizations Strategies

General Maintenance and Management Strategies

- Administer easements, agreements, leases, and SUAs.

IMPLEMENTATION CHART

Hal Scott Regional Preserve and Park – Management Implementation Chart

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.	---	---	---	BLM
Recurrent				
Visually inspect roads, trails, low water crossings, bridges, and culverts for erosion problems and maintenance and repair needs.	Annually	-----	-----	BLM, BOP
Visually inspect the bridge at the Econlockhatchee River for maintenance needs.	Annually	-----	-----	BLM, BOP
Short-term Planning Horizon				
Conduct repairs and replacements to road structures as indicated in Table 3.	-----	2015	-----	BLM, BOP
Floral and Faunal				
General Maintenance				
Collect species occurrence data and incorporate into the land management biological database.	---	---	---	BLM
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.	---	---	---	BLM
Coordinate with USFWS, FFWCC, and other landowners regarding the management of RCWs within the property and the surrounding metapopulation.	-----	-----	-----	BLM, USFWS, FFWCC
Continue appropriate treatment of exotic vegetation.	-----	-----	-----	BLM
Conduct feral hog removal activities as need is indicated.	-----	-----	-----	BLM, BRS

Recurrent				
Conduct annual monitoring of RCWs within the property and archive all data.	Annually	-----	-----	BLM
Develop RCW Annual Report for Hal Scott Regional Preserve and Park.	Annually by December 31st	-----	-----	BLM
Coordinate with USFWS, FFWCC, private landowners, and other involved entities in exchanging monitoring data relative to the Big Econ metapopulation of RCWs.	Annually or post monitoring events	-----	-----	BLM, USFWS, FFWCC
Fire Management				
General Maintenance				
Implement prescribed burning as described in the District's Fire Management Plan and the Hal Scott Regional Preserve and Park Fire Management Plan.	---	---	---	BLM
Continue to support and coordinate with the Wedgefield community in their Firewise initiative.	-----	-----	-----	BLM
Recurrent				
Develop annual burn plans.	Annually by September 30th.	-----	----	BLM
Populate and maintain fire management database.	Annually by September 30th.	-----	-----	BLM (BRS)
Conduct fireline maintenance.	Biannually Spring and Fall unless site conditions warrant otherwise	-----	-----	BLM
Natural Community Management				
General Maintenance				
Conduct visual monitoring and forest management activities as necessary in response to disease, insect infestation, or wind damage.	-----	-----	-----	BLM
Conduct periodic inventories of overstory to track growth and populate database.	-----	-----	-----	BLM

Recurrent				
Conduct other longleaf pine plantings as necessary for habitat management, RCW management, and restoration and enhancement needs.	As need is identified	-----	-----	BLM
Mow shrub vegetation within RCW clusters to provide some measure of fire protection to RCW cavity trees and to improve foraging condition.	Annually	-----	-----	BLM
Short-term planning horizon				
Conduct quality control inventory of pine to confirm growth model estimates within the forest management database.	-----	2015	-----	-----
Coordinate with the FFS to harvest longleaf pine seed from Hal Scott for replanting to augment natural regeneration within the property.	-----	2018	-----	-----
Cultural Resource Protection				
General Maintenance				
Identify and report any new sites.	---	---	---	BLM, BOP, BRS (DHR)
Access				
General Maintenance				
Maintain parking areas, signs, gates, roads, and trails.	---	---	---	BLM
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 30th	-----	----	BLM (BRS)
Short-term planning horizon				
Coordinate with Orange County to assign 911 addresses for the main parking area gate and other frequently used access points.	-----	2015	-----	BLM, County
Recreation				
General Maintenance				
Maintain parking areas, kiosks, and trails.	---	---	---	BLM
Maintain current information in recreation guide, trail guides, kiosk, and District website.	---	---	---	BLM (FWC, BRS, OC)
Recurrent				
Mow recreational trails.	Quarterly			BLM
Mow/maintain parking areas.	Bimonthly	-----	-----	BLM

Mow/maintain campsite.	Monthly	-----	-----	BLM
Conduct trail blazing and trimming maintenance.	Annually by December 31st.	-----	------	BLM
Environmental Education				
General Maintenance				
Continue to offer educational opportunities if possible and subject to staff and budget availability.	-----	-----	-----	OC (BLM, County)
Security				
General Maintenance				
Coordinate with local law enforcement and FWC for security needs.	---	---	---	BLM FWC, County
Maintain contract with private security firm.	---	---	---	BLM (BRS)
Recurrent				
Develop monthly, prioritized security needs and provide to contracted security firm.	Monthly	-----	-----	BLM
Conduct biennial boundary posting maintenance.	2014, 2016, 2018, 2021	-----	-----	BLM
Real Estate Administration				
General Maintenance				
Evaluate adjacent properties for potential acquisition.	---	---	---	BRS (BLM)
Evaluate identified portion of the Flag North parcel for potential surplus if necessary.	-----	-----	-----	BRS
Short-term Planning Horizon				
Refine boundary and parcel data information and map layers	-----	2015	-----	BRS
Cooperative Agreements, Leases, Easements, and Special Use Authorizations				
General Maintenance				
Administer easements, agreements, leases, and SUAs	-----	-----	-----	BLM (BRS)

IMPLEMENTATION CHART KEY

BLM – Bureau of Land Management
BOP – Bureau of Operations
BRS – Bureau of Real Estate Services
DHR – Division of Historical Resources
FWC – Florida Fish and Wildlife Conservation Commission
OC – Office of Communications
County – Orange County

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ADDENDUM 1 – SOILS

The following soil series descriptions are taken directly from the USDA-NRCS using the online query tool. As of the writing of this plan, the query tool may be located at https://soilseries.sc.egov.usda.gov/osdnamequery.asp.

The Basinger series consists of very deep, poorly drained and very poorly drained, rapidly permeable soils in sloughs, depressions, low flats, and poorly defined drainage ways. They formed in sandy marine sediments. The natural vegetation may consist of wax myrtle, St. Johns wort, maidencane, pineland threeawn, cypress, slash pine, longleaf pine, pond pine, and other water tolerant plants.

The Felda series consists of very deep, poorly drained and very poorly drained, moderately permeable soils in drainage ways, sloughs and depressions, and on flood plains and low flats. They formed in stratified, unconsolidated marine sands and clays. Felda soils are in depressions, poorly defined drainage ways, sloughs, flood plains, or low flat. Natural vegetation consists of cypress, wax myrtle, pond pine, slash pine, cabbage palm, pineland threeawn, and various grasses, vines, and shrubs.

The Immokalee series are deep to very deep and poorly drained to very poorly drained soils that formed in sandy marine sediments. They occur on flatwoods and in depressions of Peninsular Florida. Slopes tend to be 0 – 2%, but may range to 5%. Principle vegetation is longleaf and slash pine with undergrowth of saw palmetto, gallberry, wax myrtle, and pineland threeawn. In depressions, water tolerant plants such as cypress, loblolly bay, gorodonia, red maple, sweetbay, maidencane, bluestem, sand cordgrass, and blue joint panicum are more common. Most areas with Immokalee soils are in rangeland and forests.

The Ona series consists of poorly drained, moderately permeable soils that formed in thick sandy marine sediments. They are in the flatwoods areas of central and southern Florida. Natural vegetation is slash pine and longleaf pine, gallberry, widely spaced saw palmettos, huckleberry, and pineland threeawn.

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

The Pit series consists of very deep, poorly drained soils that formed in fine-textured alluvium weathered from extrusive and basic igneous rocks. Pit soils are on flood plains and in basins. Vegetation is hair grass, alpine timothy, Baltic rush, sedges, bluegrass, and scattered silver sagebrush in the drier locations.

The Pomello series consists of very deep, moderately well to somewhat poorly drained soils that are sandy to depths of more than 80 inches. Pomello soils formed in sandy marine sediments in

the flatwoods areas of Peninsular Florida. Native vegetation is dominated by scrub oak, dwarf live oak, saw palmetto, longleaf pine, slash pine, and wiregrass.

The Samsula series consists of very deep, very poorly drained, rapidly permeable soils that formed in moderately thick beds of hydrophytic plant remains and are underlain by sandy marine sediments. These soils are in swamps, poorly defined drainage ways, and flood plains. Slopes are less than 2%. Natural vegetation is loblolly bay, with scattered cypress, maple, gum, and trees with a ground cover of greenbriers, ferns, and other aquatic plants.

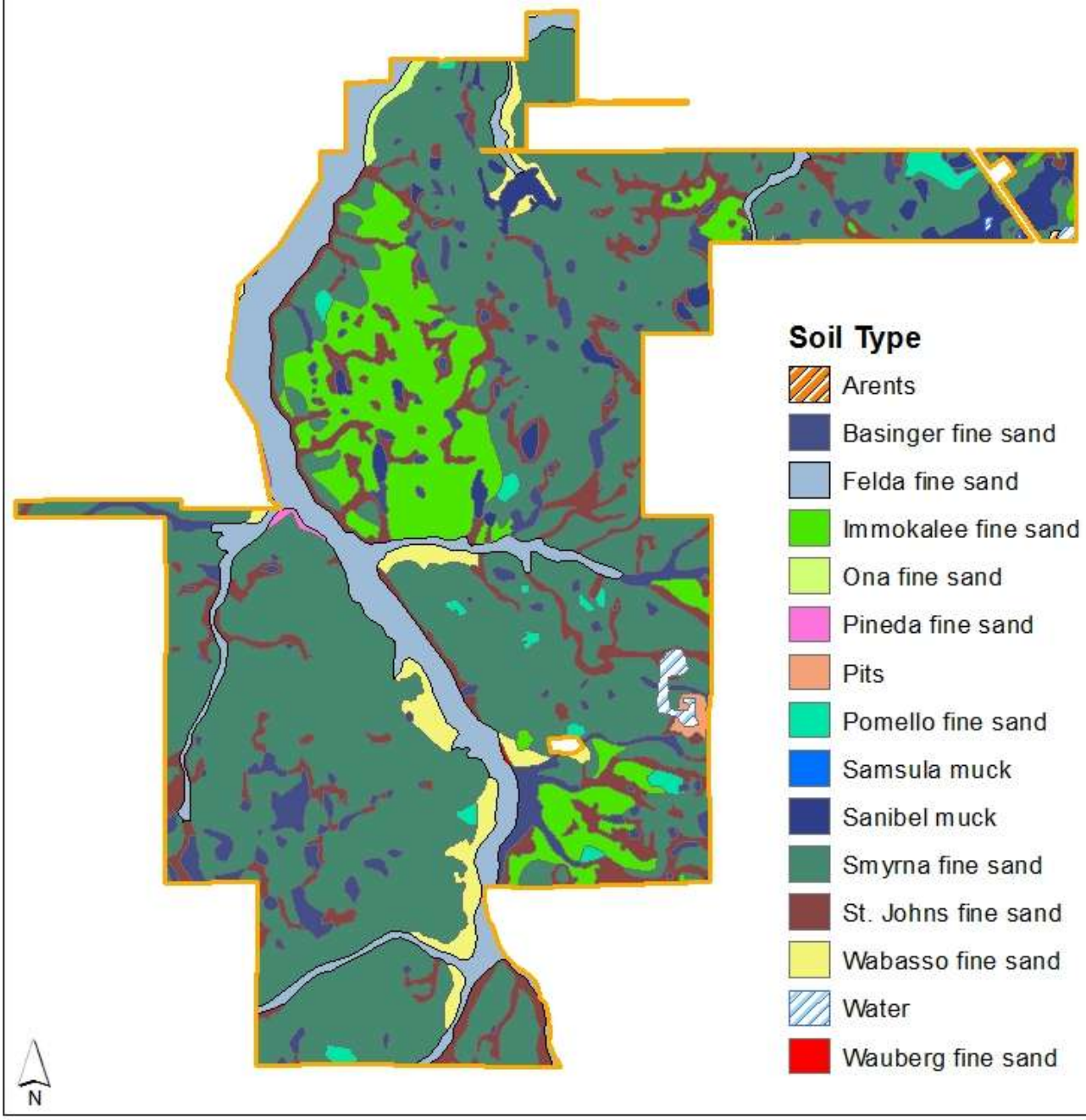
The Sanibel series consists of very poorly drained sandy soils with organic surfaces. They formed in rapidly permeable marine sediments. The soils occur on nearly level to depressional areas with slopes less than 2 percent. Sanibel soils occur on broad flats, in depressed areas and in poorly defined drainage ways. Natural vegetation consists mostly of sawgrass and wax myrtle.

The Smyrna series consists of very deep, poorly to very poorly drained soils formed in thick deposits of sandy marine materials. Natural vegetation consists of longleaf and slash pines with an undergrowth of saw palmetto, running oak, gallberry, wax myrtle, and pineland three awn.

The St. Johns series consists of very deep, very poorly or poorly drained, moderately permeable soils on broad flats and depressional areas of the lower Coastal Plain. They formed in sandy marine sediments. Principal vegetation of the forested areas is longleaf pine, slash pine, and pond pine with an undergrowth of saw palmetto, gallberry, wax myrtle, huckleberry, and pineland threeawn.

The Wabasso series consists of deep or very deep, very poorly drained, very slowly and slowly permeable soils on flatwoods, floodplains, and depressions in Peninsular Florida. They formed in sandy and loamy marine sediments. Slopes range from 0-2% in areas where these soils are found. Natural vegetation consists of longleaf pine, slash pine, cabbage palm, and live oak with an understory of saw palmetto, laurel oak, wax myrtle, chalky bluestem, and pineland threeawn.

The Wauberg series consists of poorly drained, very slowly permeable soils that formed in thick beds of loamy marine sediments within large prairie areas and low areas within the flatwoods of central and southern Florida. Native vegetation consists of low panicums, bushy beard, creeping and chalky bluestems, bulrush, cutgrass, maidencane, carpet grass, dog fennel, briars, thistle, and wax myrtle, slash and longleaf pine, sweetgum, and red maple.



Hal Scott Regional Preserve and Park

Addendum 1 - Soils Map

1 Miles

Boundary

ADDENDUM 2 – SPECIES RANKING DEFINITIONS

FNAI GLOBAL RANKING
G1 = Critically imperiled globally 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.
G2 = Imperiled globally 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.
G3 = Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.
G4 = Apparently secure globally (may be rare in parts of range).
G5 = Demonstrably secure globally.
G#T# = Rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g., G3T1).

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.

STATE LEGAL STATUS
LE Endangered: species, subspecies, or isolated population so few or depleted in number or so restricted in range that it is in imminent danger of extinction.
LT Threatened: species, subspecies, or isolated population facing a very high risk of extinction in the future.
LS Species of Special Concern is a species, subspecies, or isolated population which is facing a moderate risk of extinction in the future.
PE Proposed for listing as Endangered.
PT Proposed for listing as Threatened.
PS Proposed for listing as Species of Special Concern.
N Not currently listed, nor currently being considered for listing.

FEDERAL LEGAL STATUS
LE Endangered: species in danger of extinction throughout all or a significant portion of its range.
LT Threatened: species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range.
LT, PDL Species currently listed threatened but has been proposed for delisting.
LT,PE Species currently listed Threatened but has been proposed for listing as Endangered.
SAT Treated as threatened due to similarity of appearance to a species which is federally listed such that enforcement personnel have difficulty in attempting to differentiate between the listed and unlisted species.
PE Proposed for listing as Endangered species.
PT Proposed for listing as Threatened species.
C Candidate species for which federal listing agencies have sufficient information on biological vulnerability and threats to support proposing to list the species as Endangered or Threatened.
XN Non-essential experimental population.
SC Not currently listed, but considered a "species of concern" to USFWS.
N Not currently listed, nor currently being considered for listing as Endangered or Threatened.

FDACS
C Commercially exploited.

ADDENDUM 3 – FIRE MANAGEMENT PLAN

Hal Scott Regional Preserve and Park

FIRE MANAGEMENT PLAN

PREPARED BY

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

Hal Scott Regional Preserve and Park
Fire Management Plan
Orange County, Florida

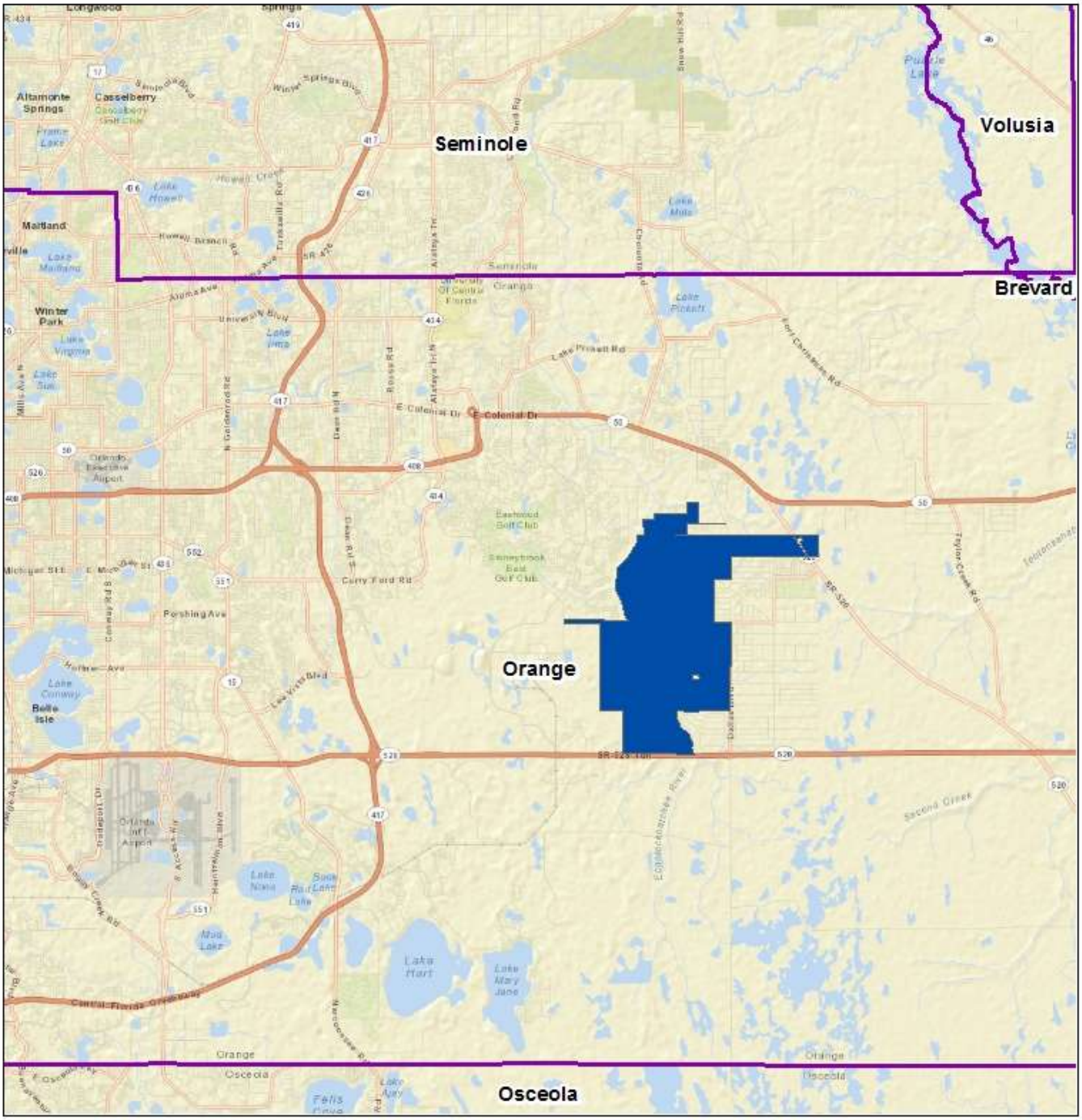
The District Fire Management Plan provides general fire management information relative to policy, procedure, and reporting. This document provides the guidelines for the implementation of prescribed fire activities on the Hal Scott Regional Preserve and Park (Hal Scott, property).

Introduction and Objectives

Hal Scott is approximately 8,832 acres located in Orange County along along portions of the Econlockhatchee River and includes several associated branches. The property is located in numerous sections of Township 22 and 23 South and Range 32 East. Further, the property is located east of Orlando, west of SR 520 and north of SR 528 (Figure 1). Dallas Boulevard and the Wedgefield subdivision are located along portions of the eastern boundary. The Avalon Park development is located to the north and west of the property. While much of the land within the northern portions of the property is contiguous, a small parcel to the east is disjunct, located across SR 520. Smoke management considerations for Hal Scott include the above mentioned roads, the suburban areas surrounding the property, and the down drainage affects of waterways within and near the property.

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 dependant. 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. A primary goal for the use of prescribed fire within the property is to achieve a range of optimal habitat for the Red-cockaded Woodpecker (RCW) and other species associated with the mesic flatwoods community by meeting certain pine basal area and midstory objectives. Specifically, this objective is to achieve good quality foraging habitat as defined in the RCW recovery plan (USFWS, 2003) of 40ft.^{2}/acre for pines ≥10in.dbh and 10ft.^{2}/acre for pines < 10in.dbh and below 20 stems/acre. The majority of the flatwoods within the property are free of hardwood encroachment that extends beyond the margins of embedded cypress domes. A burn regime that encourages appropriate pine basal areas and size classes, minimizes hardwood encroachment, and maintains the shrub layer at heights of 2-4 feet while perpetuating the abundant coverage of wiregrass is desirable. In sum, prescribed fire goals for the Hal Scott Regional Preserve and Park include:

- Reduction of fuel loads through the application of dormant season burns to decrease potential risk of damaging wildfires
- Continuation of growing season burns to encourage the amelioration of native fire adapted ground cover species
- Mitigation of smoke management issues
- Restoration and maintenance of a mosaic of natural plant communities and ecological diversity
- Maintenance and restoration of ecotonal areas



HalScottRegionalPreserve and Park

Figure 1 - Location Map

N

4.5 Miles

County Boundaries

Boundary

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
Hydric Hammock	Rare; depending on size and adjacent community types
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 plant communities
Basin Marsh	5-7 years, or in conjunction with adjacent pyric plant communities
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
Altered Land Types	**Fire Return Interval**
Pasture Semi-improved	1-3 years or in conjunction with adjacent pyric plant communities
Abandoned Field/Abandoned Pasture	1-3 years or in conjunction with adjacent pyric plant communities
Artificial Pond	-----
Restoration Natural Community	1-3 years or as needed to accomplish restoration objectives
Successional Hardwood Forest	As needed to accomplish management and potential restoration objectives
Utility	-----
Canal	-----
Spoil Area	-----
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 is the most prevalent fire adapted natural community type found within the property. Prior to public acquisition, the majority of these areas were cleared of much of the

overstory pine and utilized as native range for cattle. The mesic flatwoods and wet flatwoods plant communities within Hal Scott, while disturbed and exhibiting low pine basal area are well maintained with fire and functional. Most flatwoods areas exhibit diverse and abundant groundcover with little hardwood encroachment.

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

Depression and basin marshes are fire-adapted communities. Though fire may not carry entirely through each marsh during every burn, it is an important factor in the maintenance of the edge habitats surrounding them. These marshes are embedded within in the mesic and wet flatwoods areas at Hal Scott. In general, marsh fires are carried through the herbaceous layer. While many of these marshes have been disturbed by ditching associated with land management practices of previous landowners, most are still functional and exhibit diverse and site appropriate species compositions. These areas provide important habitat for numerous species of wildlife. Fire will be applied to these marshes any time surrounding natural communities are burned.

Dome swamps are scattered throughout the flatwoods at Hal Scott. 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.

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. Since public acquisition, prescribed fires within Hal Scott have typically occurred during the growing season. The federally endangered RCW occurs within the property and as such, seasonality of burning has been tailored for the amelioration of this species. While growing season burning is the norm, burning during other seasons for the benefit of other species or to accomplish additional management objectives may occur to the extent that it does not adversely influence RCW populations.

Dormant season burns, conducted from late November through the mid March, are less intense than growing season burns and are a desirable alternative when igniting fire in newly planted pine. Dormant season burns help to reduce fuel loads in overgrown areas. Cooler conditions associated with dormant season burning are a consideration in areas of high fuel loads and where only minimal pine mortality is acceptable. It is important to note that burns conducted during late summer through early fall may result in high pine mortality, as foliage may not recover from scorch after the last needle flush. Additionally, dormant season burning may resulting in fewer

safety and smoke management issues. Fuel loads across the property are low to moderate. The District has worked, and intends to continue to work to maintain fire return frequencies that are consistent with those identified by FNAI for the various communities within the property.

Priority as to season and rotation of burns will be given to burn units that contain RCW clusters. Target months for these units will be from March through July. Maintaining rotations from 2-4 years will be prioritized for these areas. Burns may be conducted during the nesting season as long as precautions such as mowing vegetation beneath the cavity trees are taken to ensure that scorch probability is eliminated from these trees. Fire management units not containing RCWs will have flexibility with regards to season and rotation; however, growing season burns within appropriate rotations will be the rule unless other priority burns conflict.

In many cases, fire management units with similar fire management needs may be burned simultaneously, either with crews igniting the areas by hand from the ground, or with the aid of aircraft. Aerial ignition allows District staff to ignite fire management units more quickly, resulting in a faster burnout. In an area with a large mosaic of unavailable fuels, fire can be applied easily to all portions of the unit. With ground based crews this sometimes is infeasible or impossible and may pose a safety issue. 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 controlled 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.

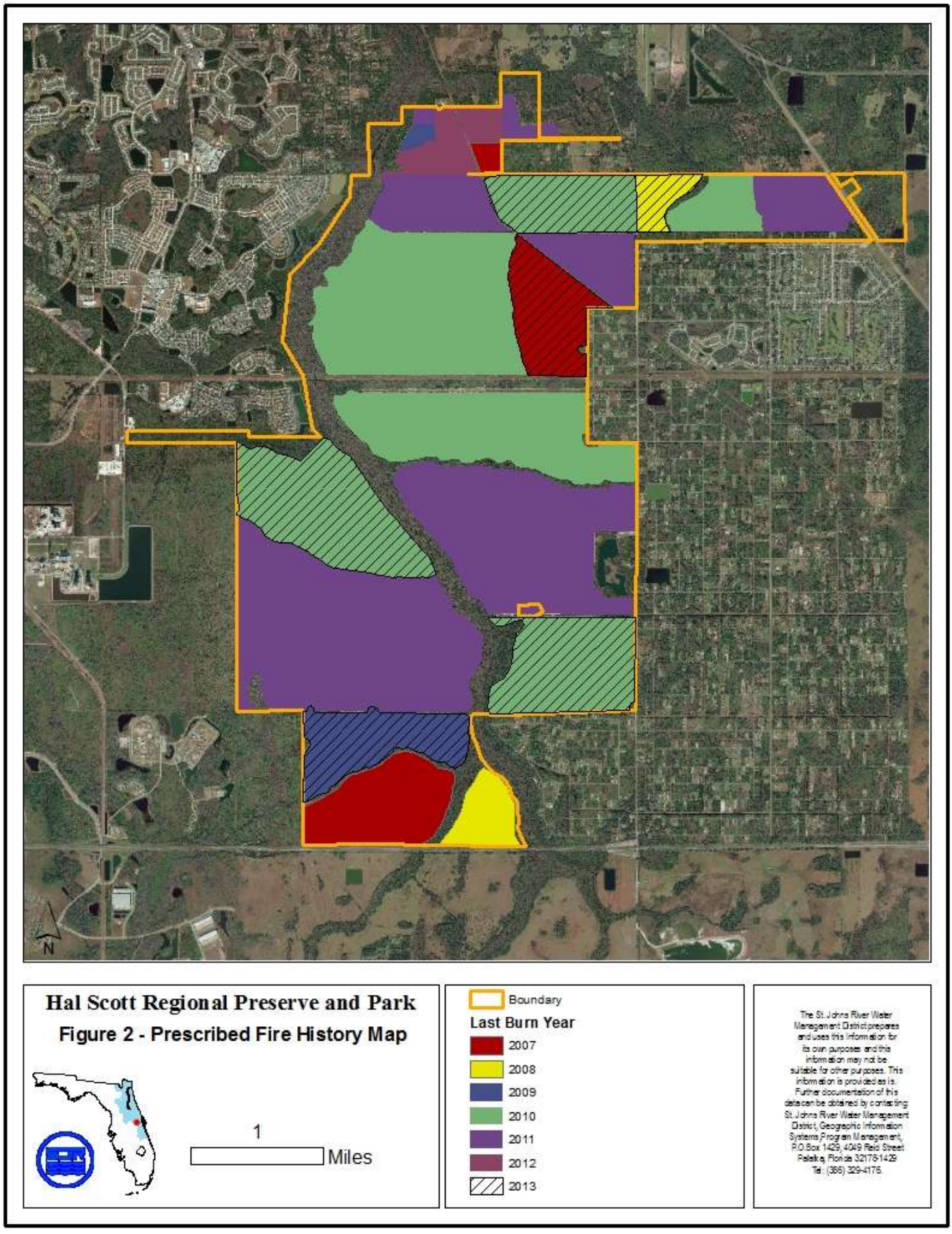
Smoke Management

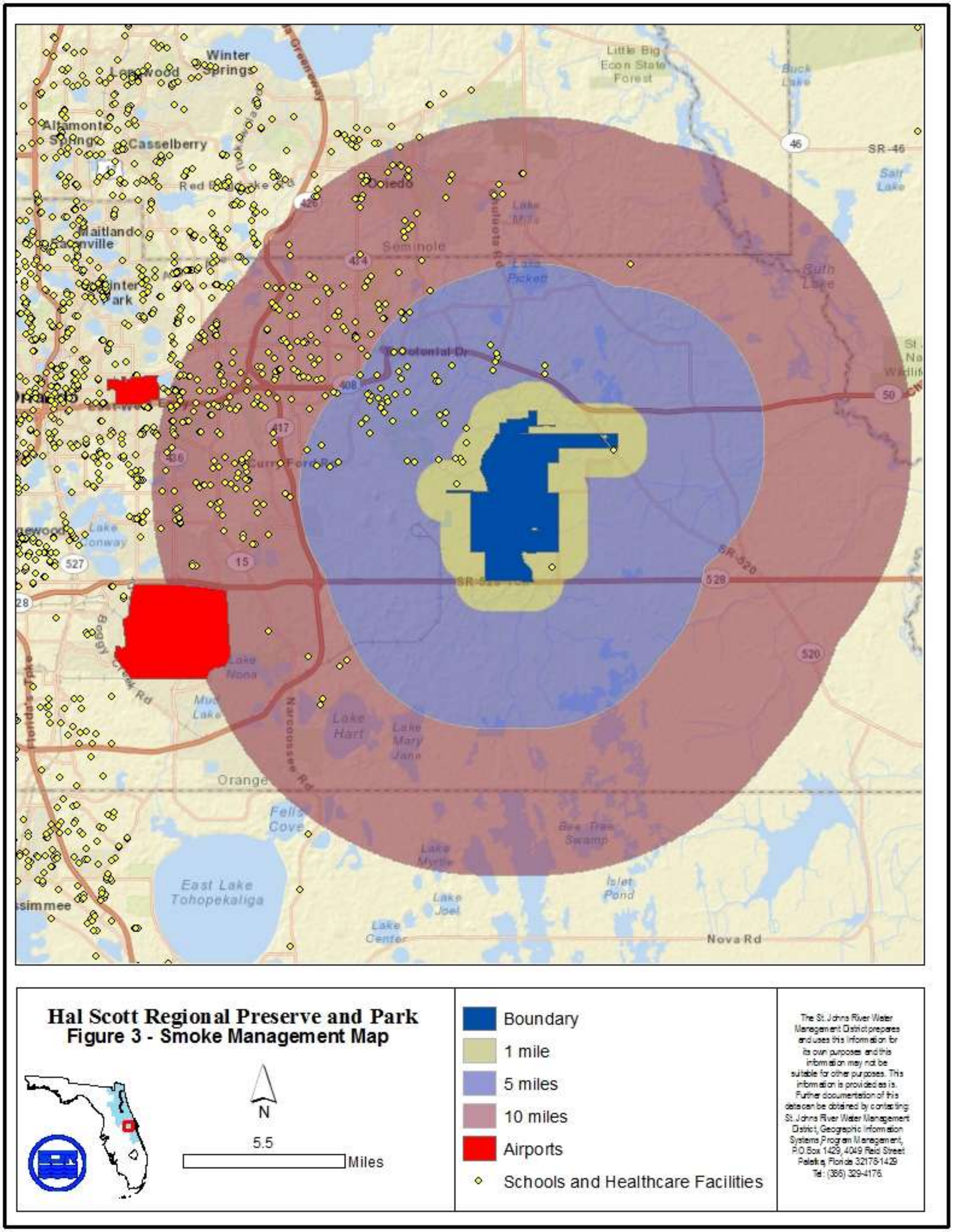
A significant challenge to the implementation of any prescribed burn program is smoke management. Since the writing of the last plan in 2007, prescribed burns totaling 12,000 acres have occurred. In fact, nearly all fire management units within the property have been burned at least once since 2007. Figure 2 illustrates the prescribed fire history since 2007. Fuel loads across the property are low to moderate. 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.

Hal Scott has a limited smoke shed in which to place a smoke column from a prescribed fire. Smoke sensitive areas occur in close proximity to the property and effect the smoke management of each burn unit. Smoke management is a limiting factor in the application of prescribed fire within Hal Scott. Smoke management considerations include SR 520, SR 528, SR 50, Dallas Blvd., several surface streets, and residential areas, Additionally, in addition to the presence of organic soils, the down drainage effects of the Econlockhatchee River and associated creek branches pose management concerns. Figure 3 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 Hal Scott.

A smoke screening process will be completed with each prescription, before an authorization is obtained from the Florida Forest Service. 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. Smoke can then mix and loft into the atmosphere over uninhabited or rural land adequately enough to minimize off-site impacts.

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 1700ft. 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


N
Hal Scott Regional Preserve and Park
Figure 2 - Prescribed Fire History Map
1
Miles
Boundary
Last Burn Year
2007
2008
2009
2010
2011
2012
2013
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.


Hal Scott Regional Preserve and Park
Figure 3 - Smoke Management Map
Boundary
1 mile
5 miles
10 miles
Airports
Schools and Healthcare Facilities
N
5.5
Miles
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.
Winter Springs
Longwood
Altamonte Springs
Casselberry
Maitland
Winter Park
Oviedo
Seminole
Little Big Econ State Forest
Lake Mills
Lake Pickett
Colonial Dr
SR-46
Orange
Lake Hart
Lake Mary Jane
East Lake Tohopekaliga
Fells Cove
Bee Tree Swamp
Islet Pond
Lake Joel
Lake Center
Nova Rd
Narcoossee Rd
Lake Nona
SR-520

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.

Mechanical and Chemical Treatments

The presence of RCWs, short and long term weather conditions, and urban interface issues are important considerations when implementing a prescribed fire program at Hal Scott. Weather conditions such as extended droughts or insurmountable smoke management issues due to increased urbanization may require the District to manage natural systems mechanically and/or chemically. A variety of methods including mowing, roller chopping, and herbicide applications may be incorporated as alternatives to prescribed fire. Additionally, to aid in the management of RCWs and to provide protection to cavity trees, mechanical treatments will often precede burning within a fire management unit that contains RCWs.

Legal Considerations

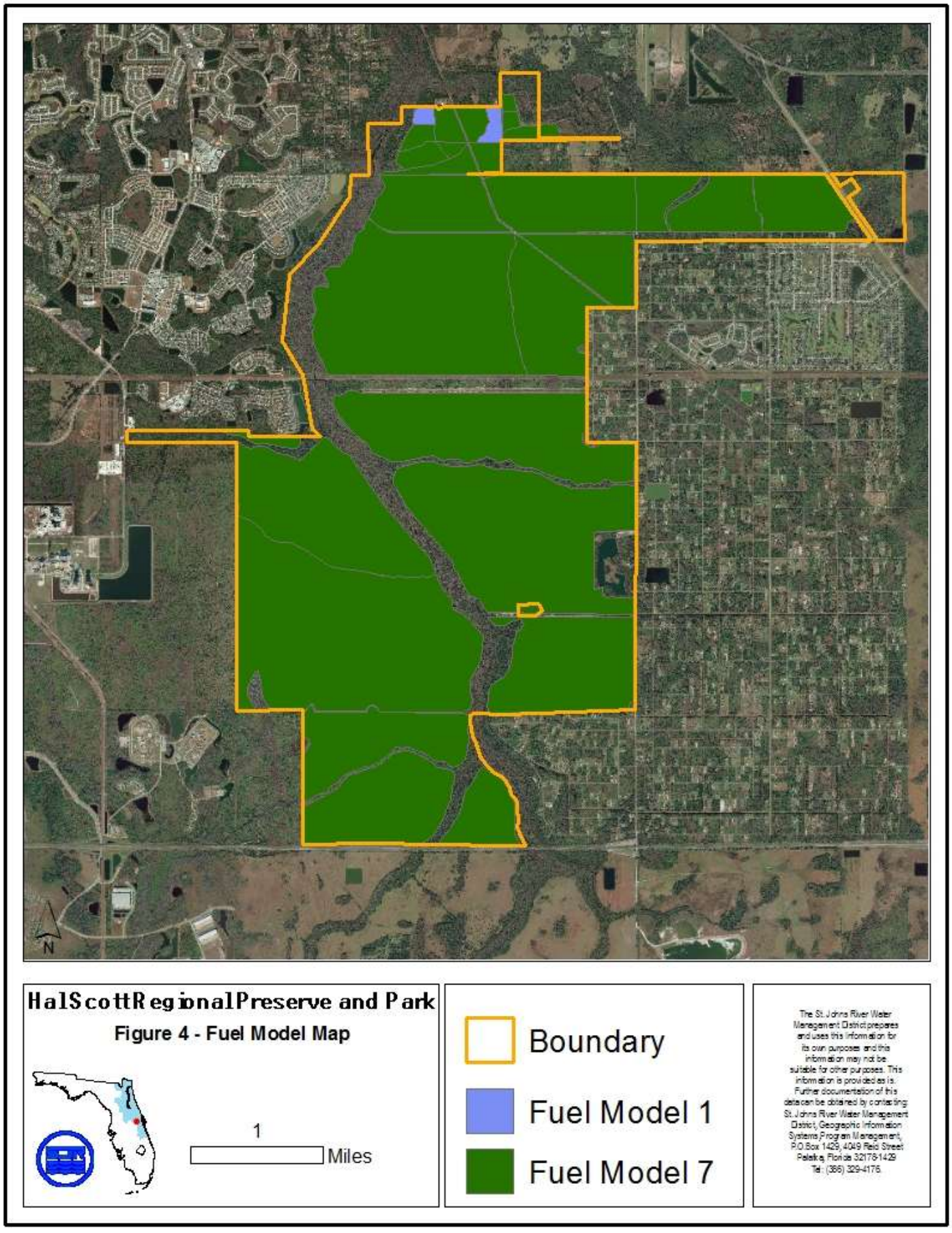
Only burn managers certified by Florida Forest Service will approve the unit prescriptions and must be on site while the burn is being conducted. Certified burn managers adhering to the requirements of State Statute 590.026 are protected from liability for damage or injury caused by fire or resulting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

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 thirteen 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.

Below is a brief description of each fuel model occurring within Hal Scott and associated natural communities. A detailed description of each individual fire management unit and its associated objectives will be included in the individual prescriptions. Some fire management units within the property contain multiple FMs. In these instances, the designated FM is dominant in coverage. Figure 4 illustrates the FM associated with individual fire management units.


N
Hal Scott Regional Preserve and Park
Figure 4 - Fuel Model Map
1
Miles
Boundary
Fuel Model 1
Fuel Model 7
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.

Fuel Models

Fuel Model 1

This fuel model includes fire management units that are best described as pasture and includes primarily those that include an adequate herbaceous groundcover, which is largely comprised of turf grasses. Fires in these fuels spread through the herbaceous. Given appropriate wind speeds and fuel moisture conditions, fire may spread rapidly. The optimal fire return interval in this fuel model is approximately every 1-3 years with growing season burns preferred.

Fuel Model 7

This category includes fire management units that are best described as flatwoods. Fire in these fuel types is spread through both the shrub and herbaceous layers. The shrub layer components present within the fire management units of this FM include saw palmetto, gallberry and other ericaceous shrubs between 3 and 6 feet tall. The herbaceous layer in most areas is abundant, nearly contiguous, and includes wiregrass. The optimal fire return interval for this FM is approximately every 2 to 4 years. Many of these areas include RCWs. Growing season burns are preferable; however, some units of this FM may require dormant season burns and/or mechanical treatments.

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	No
Orange County Fire and Rescue, Station 86	Wedgefield, 3202 Babbitt Ave.	x	

6. Transportation				
A. Ambulance Services				
Name	Address	Phone	Paramedics Yes	No
Orange County Fire and Rescue, Station 82	500 Story Partin Rd., Orlando (Bithlo)	407-568-2165	x	
OCFR, Station 84	1221 N. Fort Christmas Rd.	407-568-0720	x	
OCFR, Station 85	13801 Townsend Dr., Orlando (Avalon Park)	407-207-7577	x	

B. Incident Ambulances			
Name	Location	Paramedics Yes	No

7. Hospitals								
Name	Address	Travel Time Air	Ground	Phone	Helipad Yes	No	Burn Center Yes	No
Parrish Medical Center	951 North Washington Ave.	3’	15’	321-268-6111	x			x
Holmes Regional Trauma Center- Life Flight	Melbourne	20’	60’	321-434-7296	X			x
Orlando Regional Medical Center, Burn Unit	Orlando	30’	60’	407-237-6398	x		x	
Orlando Regional Medical Center, Air services	Orlando	30’	60’	407-843-5783	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

1. Notify Orange County Fire and Rescue (407-737-2444), Orange County Sheriff (407-737-2400), or 911.
2. Assume responsibility of the Rescue Operation.
3. Notify NTSB (305-957-4610 OR 404-462-1666)
4. 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.