Buck Lake Conservation Area
Land Management Plan Summary

Management Area Size: 9,606 acres

Date of Acquisition: Acquisition of parcels within Buck Lake Conservation Area began in March of 1993.

Date of Plan: June 2009

Basin: Upper Basin, Puzzle Lake Planning Unit; Middle Basin, Deep Creek Planning Unit.

Location: Buck Lake Conservation Area (BLCA or Conservation Area) is located in Brevard and Volusia counties northeast of Orlando with I-95 adjacent to the property on the south, SR 46 adjacent to the property on the south, and the St. Johns River adjacent to the property on the west.

Funding Sources: The acquisition funding sources for BLCA include Save Our Rivers and Preservation 2000.

Management Partners: The District is the lead manager for the property.

Resource Protection and Management:

- SECURITY – Maintenance of fence lines, parking areas, gates, and locks is conducted as necessary. The District will continue to maintain contact with local law enforcement within Volusia and Brevard counties, Florida Fish and Wildlife Conservation Commission Law Enforcement, and a contracted security firm for any potential security needs. A security resident will be maintained at the property.
- WATER RESOURCE PROTECTION – Water resources are largely undisturbed; most protection was accomplished with acquisition.
- WETLAND RESTORATION – A network of shallow ditches created prior to public ownership are found in the south central portion of the property. These ditches cause a lower water table on the property and they have been identified for a potential restoration project.
- FIRE MANAGEMENT – Implementation of prescribed burns occur in accordance with the Buck Lake Fire Management Plan and annual burn plans.
- FOREST MANAGEMENT –
    - Mesic and Wet Flatwoods Natural Communities – The Buck Lake parcel was logged to 9 trees per acre, or approximately 7 square feet of basal area per acre, prior to public acquisition and the density was further reduced following the 1998 wildfires. The District aims to increase pine density to 50 square feet of basal area per acre through natural regeneration and prescribed fire management.

    - Scrub and Scrubby Flatwoods Natural Communities – Threatened Florida scrub-jay and other scrub-dependent species are found in these areas. The District will manage scrub and scrubby flatwoods through the use of prescribed burning and mechanical treatment such as drum-chopping and/or mowing as necessary to reach District-desired conditions of vegetation heights between 1-3 m, greater than 50% scrub oak species coverage, a maximum pine density of no greater than 9 stems per acre, and 20% to 50% open bare sandy ground and/or groundcover components. Vegetation transects will be monitored every two years to evaluate the need for additional management.
- FLORA AND FAUNA – The Conservation Area provides habitat for a diverse array of wildlife and plant species including Florida scrub-jay, gopher tortoise, Florida gopher frog, bald eagle, woodstork, limpkin, sandhill crane, white-tailed deer, and wild turkey.
- EXOTIC SPECIES – Invasive exotic pest plant and animal species occur on the property, however the extent of exotics is relatively minimal. The District regularly monitors for the presence of invasive species and conducts appropriate control action as needed.
- CULTURAL AND ARCHAEOLOGICAL RESOURCES – A review of the Department of State, Division of Historical Resources indicates four cultural sites within the boundary of the Conservation Area. The District will report any activity detrimental to the sites to the Division of Historical Resources.

Land Use Management

Land Use Management:

- ACCESS – BLCA can be accessed from two trailhead parking areas off State Road 46.
- RECREATION AND OUTREACH –The entire Conservation Area is open to the public for opportunities for hiking, bicycling, horseback riding, wildlife viewing, primitive hike in and group camping, hunting, and fishing. The District has developed a marked trail system and provides two campsites and an observation tower. The property is a wildlife management area administered by Florida Fish and Wildlife Conservation Commission.

Administration Management:

- ACQUISITION – The District will continue to pursue parcels that aid in the conservation of the Upper and Middle St. Johns River Basins.
- COOPERATIVE AGREEMENTS, LEASES, EASEMENTS, SPECIAL USE AUTHORIZATIONS, CONCESSIONS –
    - *Special Use Authorizations*
        - Archbold Biological Station to conduct Florida scrub-jay research.
        - Florida Natural Areas Inventory butterfly surveys.
        - Revenue generating - Palm frond harvest.
        - Hurricane Island Outward Bound for camping, trail maintenance, and campsite construction and maintenance.
        - Hog removal agent.
        - Security resident.

        - Recreational event.
        - Use of the property for apiary sites.
    - *Intergovernmental Management Agreements*
        - Brevard County/District-District lead manager of Buck Lake Parcel.
        - Florida Fish and Wildlife Conservation Commission for Buck Lake Wildlife Management Area.
    - *Leases*
        - Revenue generating lease with Clear Channel Worldwide for a billboard along I-95.
        - Revenue generating lease for cattle grazing.
- REVENUE – The District has four revenue-generating leases on BLCA. These include a $1,000 billboard lease, a $500 per year cattle grazing lease, a $2,462 per year palm frond harvest special use authorization, and a $50 per site for two apiary sites. The total revenue generated yearly at this time is $4,062.

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INTRODUCTION

This Land Management Plan provides guidelines for land management activities to be implemented at Buck Lake Conservation Area (BLCA) over the next five years. This is a revision of the land management plan approved by the Governing Board in June 2002.

The BLCA comprises approximately 9,606 acres of land located in Volusia and Brevard counties, west of Mims and east of Geneva. The property is located north of State Road 46 and just west of I-95 (Figure 1). The property is the northern most reach of the Upper St. Johns River Basin within the Puzzle Lake Unit, with a small amount of acreage to the west located in the Middle St. Johns River Basin. The property is a mosaic of wetlands and wet, mesic, scrubby flatwoods and scrub, of which the latter two support the threatened Florida scrub-jay. The BLCA was acquired by the District to protect and enhance water resources, provide flood protection, and protect wildlife habitat and other ecological functions in the Upper St. Johns River Basin.

LAND MANAGEMENT GOALS

The District's purpose for acquiring property in the northern most reaches of the Upper St. Johns River Basin is related to the District's current goals of protecting important water resources and ecological functions in addition to the goals identified as a priority in the District's past Five Year Land Acquisition Plan. The objectives in purchasing these parcels are to acquire land for water resource conservation, natural resource management, and natural resource protection. The land management goals for the Upper St. Johns River Basin and BLCA are as follows:

Goals:

I. To preserve the natural floodplain for flood control and protection.

II. Restore and maintain natural hydrologic regimes and water quality.

III. Restore, maintain and protect native vegetation, fish and wildlife communities and their diversity.

IV. Protect opportunities for public recreation where compatible with the goals listed above.

V. Protect archaeological and cultural resources.

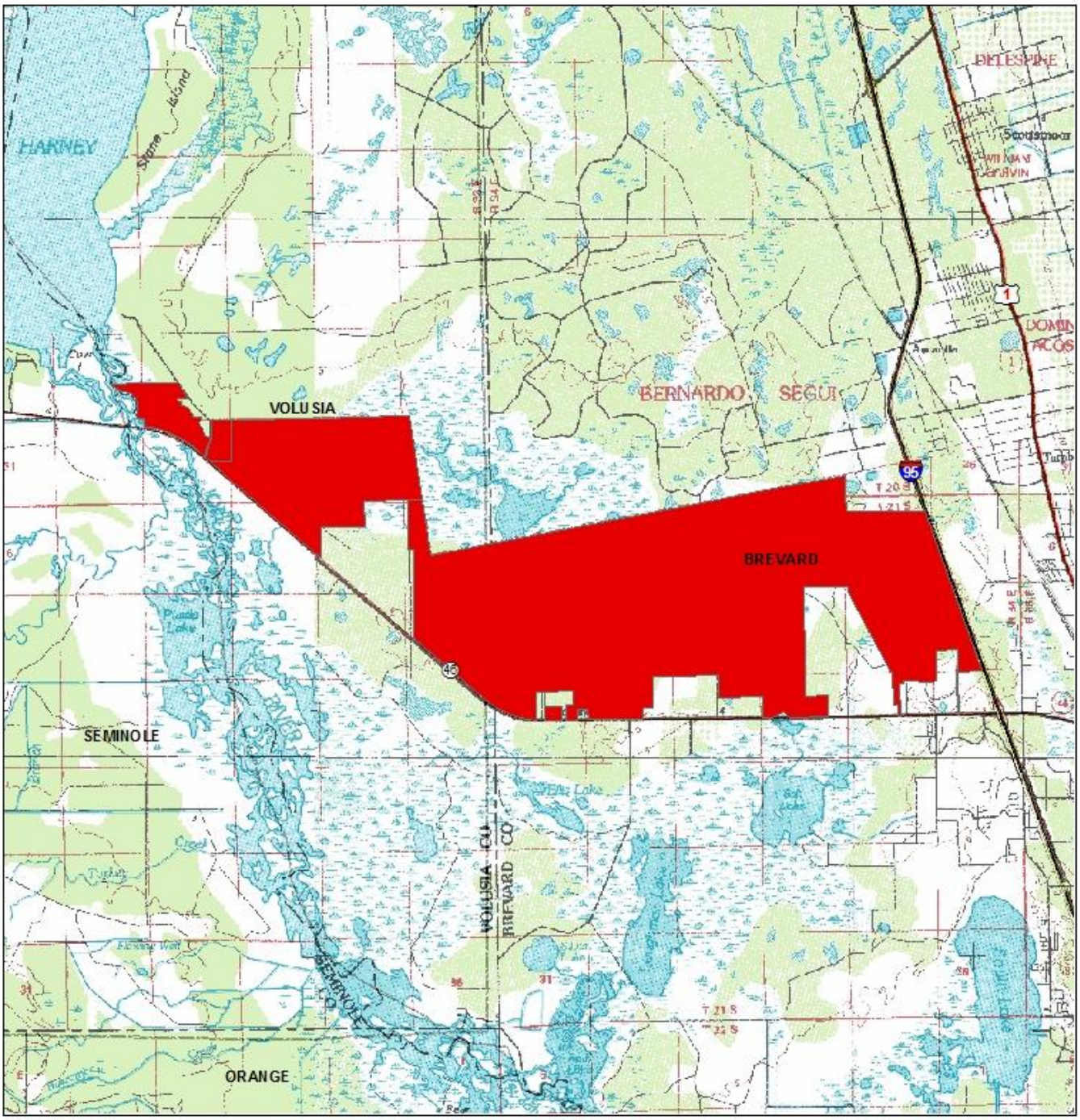

Figure 1. Location Map

Buck Lake Conservation Area

1 0.5 0 1 Miles

1:100000

Legend

- Buck Lake Conservation Area
- County Boundaries
- Hydrography 100K, Arcs
- Hydrography 100K, Shading
- Interstate HWY
- US HWY
- State HWY
- Others

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

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CONSERVATION AREA OVERVIEW

Regional Significance

The BLCA protects conservation land for a richly diverse area of east central Florida. This land has many regional benefits to the citizens of Florida including wildlife habitat, flood protection and water filtration, and recreational uses. Natural communities at BLCA range from the salt flats and floodplain marsh bordering the St. Johns River and lakes, to wet flatwoods, mesic flatwoods and the higher and drier areas of scrubby flatwoods and scrub. The scrub and scrubby flatwoods areas at BLCA are significant as they protect habitat for the Florida and Federally threatened Florida scrub-jay and state threatened gopher tortoise and eastern indigo snake, along with other scrubby dependent species. The District is managing the Florida scrub-jay habitat in the hopes of increasing the numbers of birds on the property and in the region.

The BLCA is part of a long conservation/wildlife corridor bordering the St. Johns River Upper Basin from north of SR 46 in Brevard and Volusia counties south to Indian River County (Figure 2). Properties include North Buck Lake Scrub Sanctuary, Seminole Ranch Conservation Area, Little Big Econlockhatchee State Forest, Charles H. Bronson State Forest, Salt Lake Wildlife Management Area, Canaveral Marshes Conservation Area, St. Johns National Wildlife Refuge, Tosohatchee Wildlife Management Area, River Lakes Conservation Area, Three Forks Conservation Area, Blue Cypress Conservation Area, and Fort Drum Conservation Area.

Of additional regionally significant importance is the flood protection and water filtration benefits of the conservation land. The property's flatwoods and floodplain marsh hold water and filter water before it enters the St. Johns River. This environmental benefit was evident during the 2008 Tropical Storm Fay rain event when water flooded State Road 46 and much of BLCA held water for many weeks.

Moreover, BLCA offers many outdoor recreational benefits to Orlando and the east central Florida region including hiking, biking, horseback riding, fishing, wildlife viewing, and wildlife study. The property is a wildlife management area with hunting opportunities as found at www.myfwc.com, a Florida Fish and Wildlife Conservation Commission website.

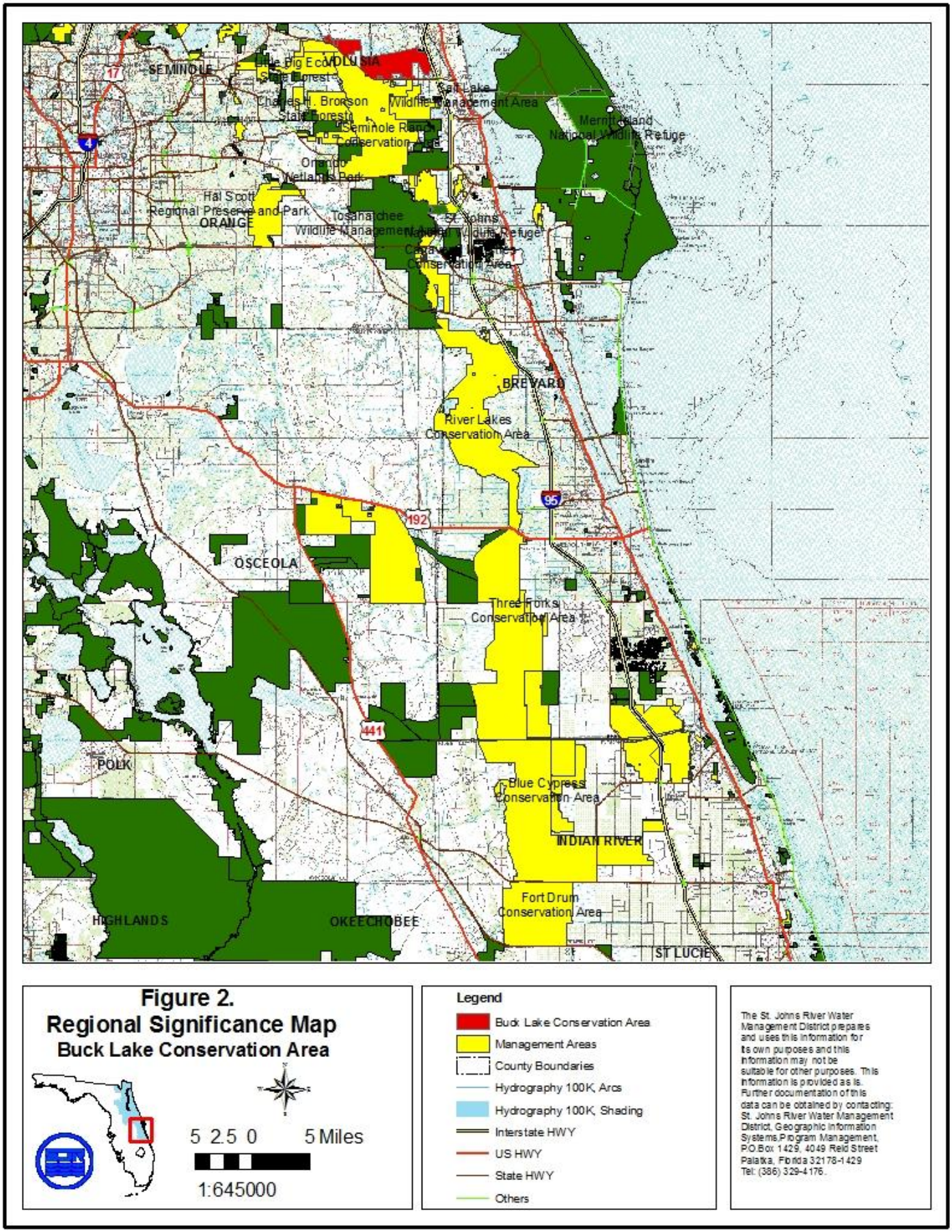

Figure 2.
Regional Significance Map
Buck Lake Conservation Area

5 2.5 0 5 Miles

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Legend

- Buck Lake Conservation Area
- Management Areas
- County Boundaries
- Hydrography 100K, Arcs
- Hydrography 100K, Shading
- Interstate HWY
- US HWY
- State HWY
- Others

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Acquisition History

The BLCA consists of 9,606 acres. The District acquired BLCA properties to protect and enhance water resources, provide flood protection and other environmental benefits, and protect habitat for wildlife. Acquisition of parcels making up BLCA began in 1993 with the purchase of the Kilbee Tract. Funding sources for these parcels consisted of Preservation 2000 and Save Our Rivers.

LA #1987-016-P2 Kilbee Tract

This 1,551-acre parcel closed on March 18, 1993 for approximately $1,121,641. Funding for this tract came from P2000-91. This acreage lies on the southern boundary of SR 46 and is managed as part of BLCA. An additional 1,966 acres of the Kilbee Tract, LA #1987-016-P1, is found west of SR 46 in Volusia and Seminole County and is managed as part of Little-Big Econ State Forest. This parcel was purchased from four local Geneva women: Mrs. Marjorie Kilbee Lansing, Mrs. Lorraine Yarborough Whiting, Mrs. Virginia Yarborough Kraftsow, and Mrs. Betty Yarborough Schlusemeyer. Mrs. Lansing's brother, Mr. William G. Kilbee, the Uncle of Mrs. Whiting, Kraftsow, and Schlusmeyer, deeded this portion of his father's property, Mr. E.H. Kilbee, to his sister and three nieces. The remaining Kilbee property was deeded to Mr. William G. Kilbee's nephew, Mr. Ed Yarborough, of which the District now owns a large portion. The Kilbee property was originally purchased from the Lee family, from whom the District recently purchased property further south of BLCA. These parcels now make up a large portion of conservation lands managed by the District that protect the Econlockhatchee and St. Johns Rivers.

LA #1995-054 Buck Lake Tract

This 7,708-acre parcel closed on May 31, 1996 for $8,000,000 utilizing SOR/BOND95 funds. The property was purchased from the Haiseal Timber, Inc.

A post closing adjustment to LA #1995-054 added approximately 45 acres to the Buck Lake Tract to own an identified gap in the access road to the property. The property consisted of 9.7793 acres of non-sovereign land in which the District paid $1,212 per acre.

LA #1997-009 Food Basics Corp.

This 347.27 parcel was purchased on January 28, 2000 for $257,965 utilizing Preservation 2000 funds. This property was purchased to protect the uplands bordering the St. Johns River. The property also allowed for access to the Kilbee Tract.

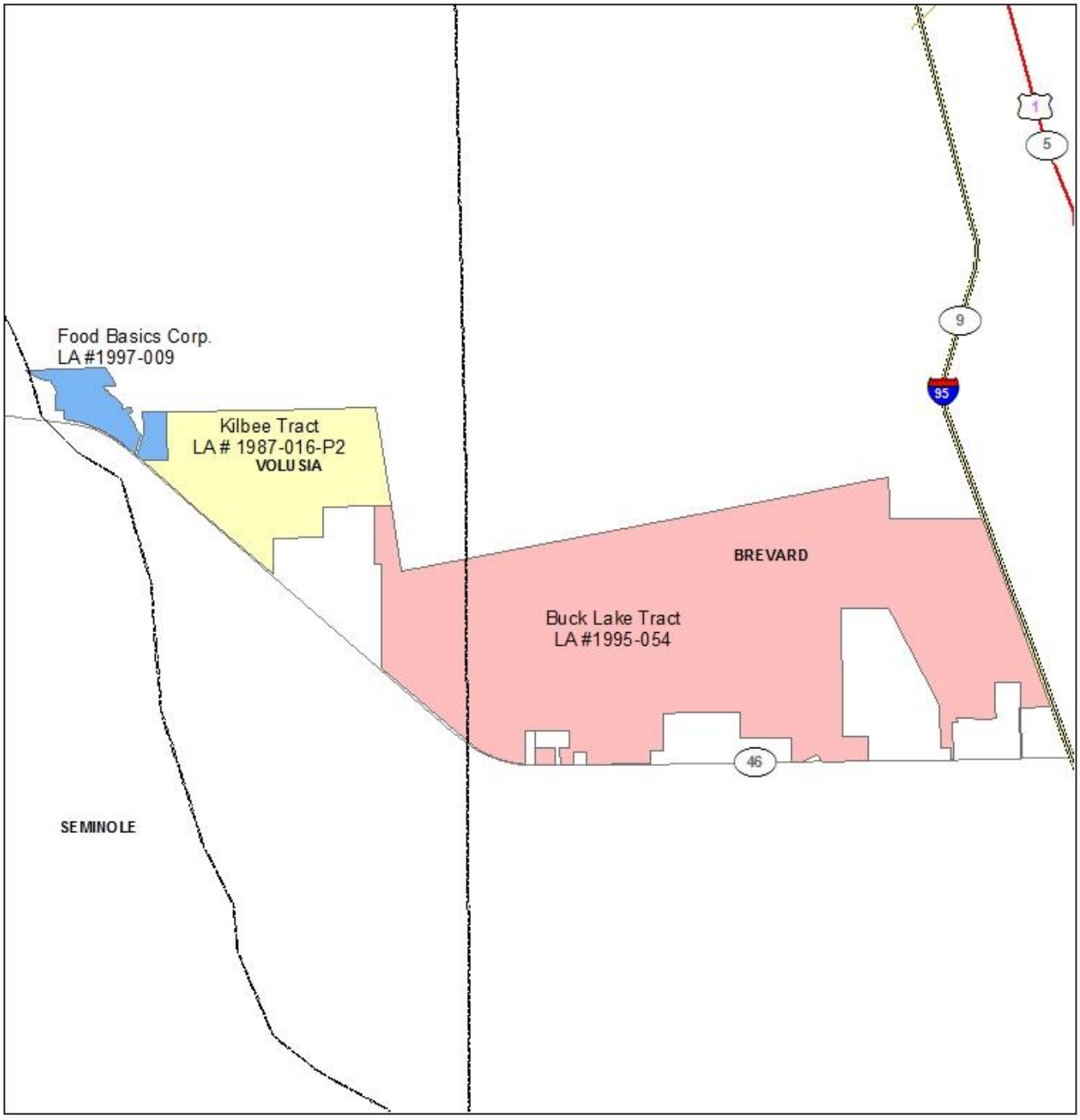

Figure 3.
Acquisition History Map
Buck Lake Conservation Area

1 0.5 0 1 Miles

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Legend

- Kilbee 3/18/1993
- Buck Lake 5/31/1996
- Food Basics 1/28/2000
- County Boundaries

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Local Government Land Use Designation

Brevard County

According to the Brevard County Comprehensive Plan, the Future Land Use Designation for BLCA is Public Conservation to provide for the protection of publicly held environmentally sensitive areas. Buck Lake is zoned as General Use, or GU, which describes rural single-family residential development, or describes unimproved lands. This designation allows single-family residential dwellings, parks and public recreational facilities, and other nonrelated uses. Some of the property is also zoned as Agricultural Residential, or AU. The AU designation allows for single-family residential dwellings, raising and grazing of animals, bee keeping, and parks and recreational facilities.

Volusia County

According to the Volusia County Comprehensive Plan, the Future Land Use designation for BLCA is Conservation, or C. This classification is applied to certain lands, which are either owned or controlled by a governmental agency, but it may be applied to privately owned lands upon request of the owner. It is the purpose of this classification to protect and preserve:

(1) Parks, recreation or similar areas;
(2) Historic or archaeologic sites;
(3) Fishing, wildlife, or forest management areas;
(4) The natural environment of other selected public lands such as wellfields; and
(5) Any other unusual or unique feature or areas such as governmentally designated canoe trails, wild or scenic watercourses.

NATURAL AND CULTURAL RESOURCES OVERVIEW

Topography and Hydrology

According to the Physiographic Divisions of Florida, BLCA is found in the Eastern Flatwoods District, St. Johns Wet Prairie subsection. The Eastern Flatwoods District is a portion of the area called the Coastal Lowlands where elevations are generally less than 90 feet. The district originated as a sequence of barrier islands and lagoons during Plio-Pleistocene and Recent time. The St. Johns Wet Prairie subsection consists of marshes and grass prairies with clumps of cabbage palms and willow that are seasonally flooded. The lake basins are controlled by the soil structure in the underlying Ocala limesone. The surficial fine sand, silty sand and clayey sand are Late Pleistocene lagoonal deposits. Elevations in the St. Johns Wet Prairie subsection tend to be between 6 and 12 feet above present sea level.

At BLCA, elevations range from 20 feet on the southeastern boundary and 15 feet in the northeast corner to a flat plateau of 10 feet on most of the property. Elevations are 5 feet and below around Buck Lake in the center, the salt flats towards the west of the property, and bordering the St. Johns River (Figure 4). The ridge on the eastern portion of the

property supports approximately 700 acres of scrub and scrubby flatwoods, which provides habitat for the threatened Florida scrub-jay and other scrub-dependent species.

The majority of the property is found within the northern reaches of the Upper St. Johns River Basin, Puzzle Lake Planning Unit. The western most portion of the property is in the Middle St. Johns River Basin, Deep Creek Unit. The BLCA is dominated by various hydrological features. A large basin swamp is found on the eastern side of the property between areas of higher elevations. This area receives surface water runoff from adjacent uplands and discharges into the headwaters of Six-Mile Creek. This creek runs southward to Salt Lake, Loughman Lake, and ultimately the St. Johns River. The central western portion of the property features Buck Lake and its surrounding floodplain marshes. Buck Lake drains intermittently both southward towards Puzzle Lake and on toward the St. Johns River as well as northwestward through Cabbage Slough and on toward the St. Johns River.

Four sloughs traverse the property generally in a north to south direction. Three of the sloughs are barely discernible due to their extremely shallow nature. They are demarcated by fairly broad bands of wetlands that slowly shunt water towards the St. Johns River. Cabbage Slough, which is located on the western shore of Buck Lake, is well drained and carries water from Buck Lake, under SR 46, and on to the marshes surrounding Puzzle Lake and the St. Johns River. The second slough surrounds Buck Lake and runs southward toward a small outlet that runs under SR 46. Further east, a slough begins in the area of Freshwater Lake and heads southeast to join with Six-Mile Creek. The least defined slough is located on the eastern boundary of the property and enters BLCA through culverts under I-95. This slough becomes somewhat consolidated in a basin swamp near the southeastern boundary of the property.

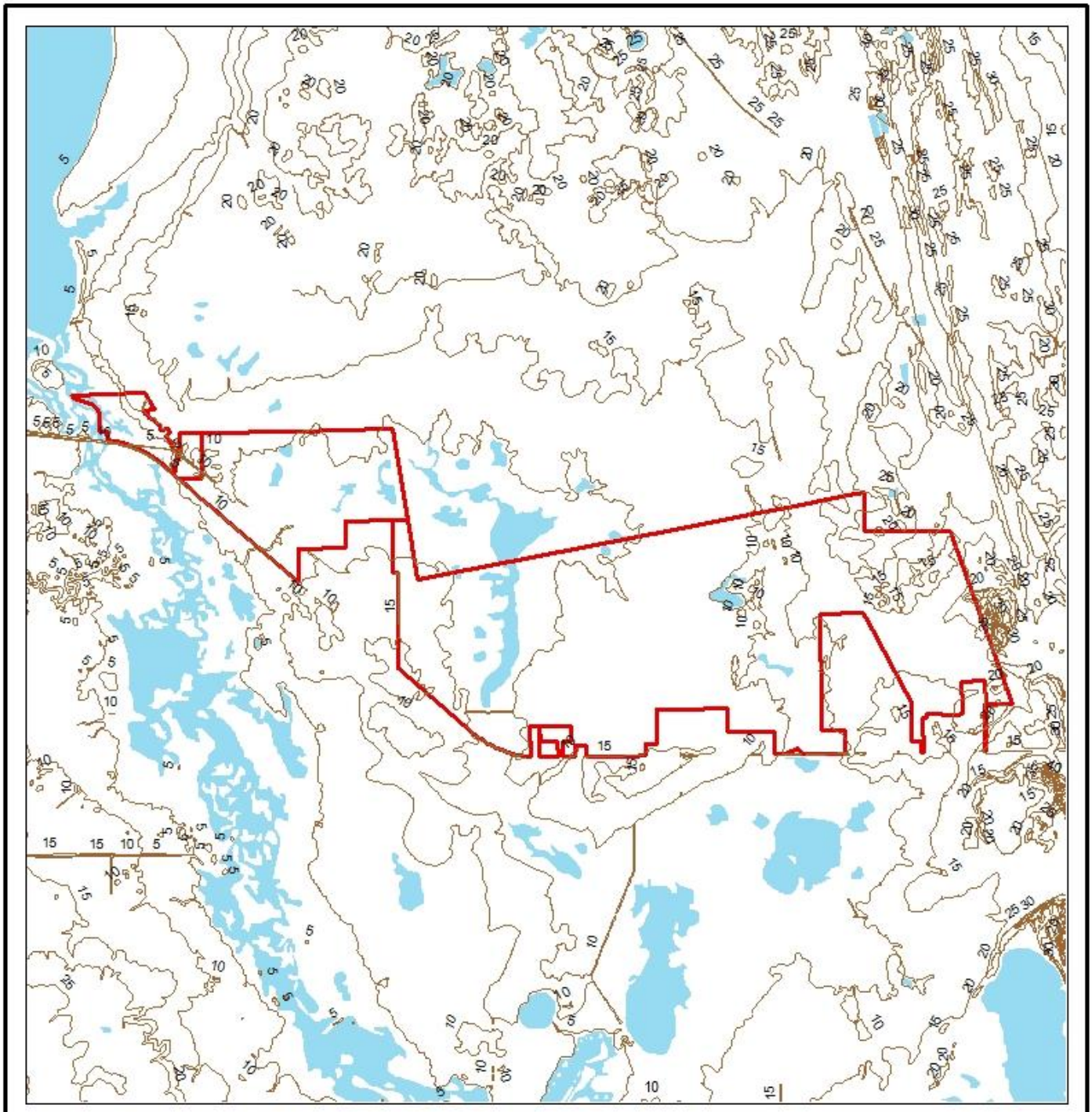

Figure 4. Topography Map

Buck Lake Conservation Area

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Legend

- Buck Lake Conservation Area
- Topo Five Foot Contours 24K
- Hydrography 100K, Shading

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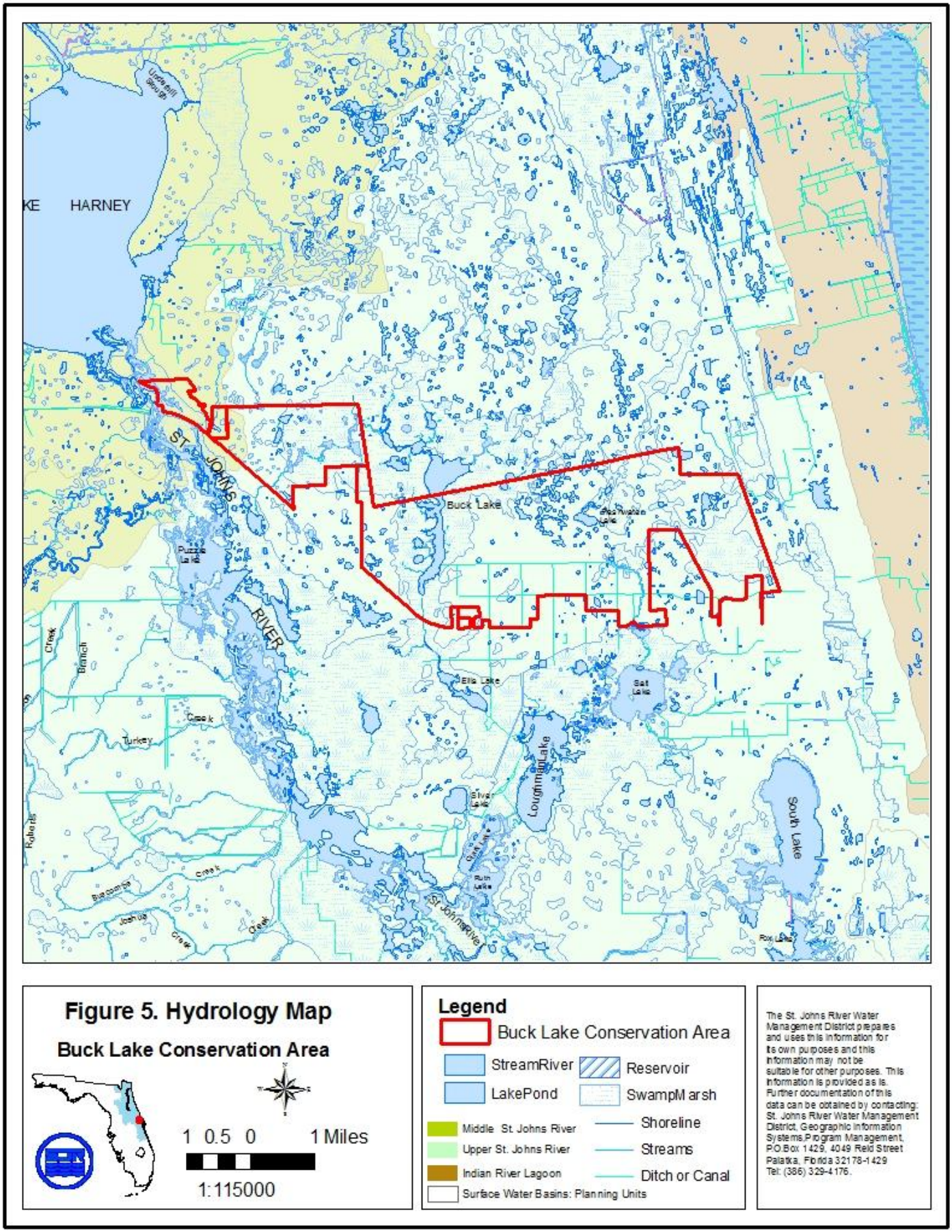

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Soils

The Eastern Flatwoods District area is a generally low, flat district that originated as a sequence of barrier islands and lagoons in Plio-Pleistocene and Recent times. The resulting landscape consists of broad expanses of flatwoods with prairies, ridges, and a variety of coastal features. Surficial materials are primarily sandy with significant areas of peaty deposits (Myers and Ewel 1990).

According to data produced from the United States Department of Agriculture, Natural Resource Conservation Service, 29 different soil types have been identified within BLCA (Figure 6). The United States Department of Agriculture, Soil Conservation Service, was used to gather soil information about the soil types and produce the following descriptions of the dominant soil types found on the property. The soil descriptions are located in Addendum 1.

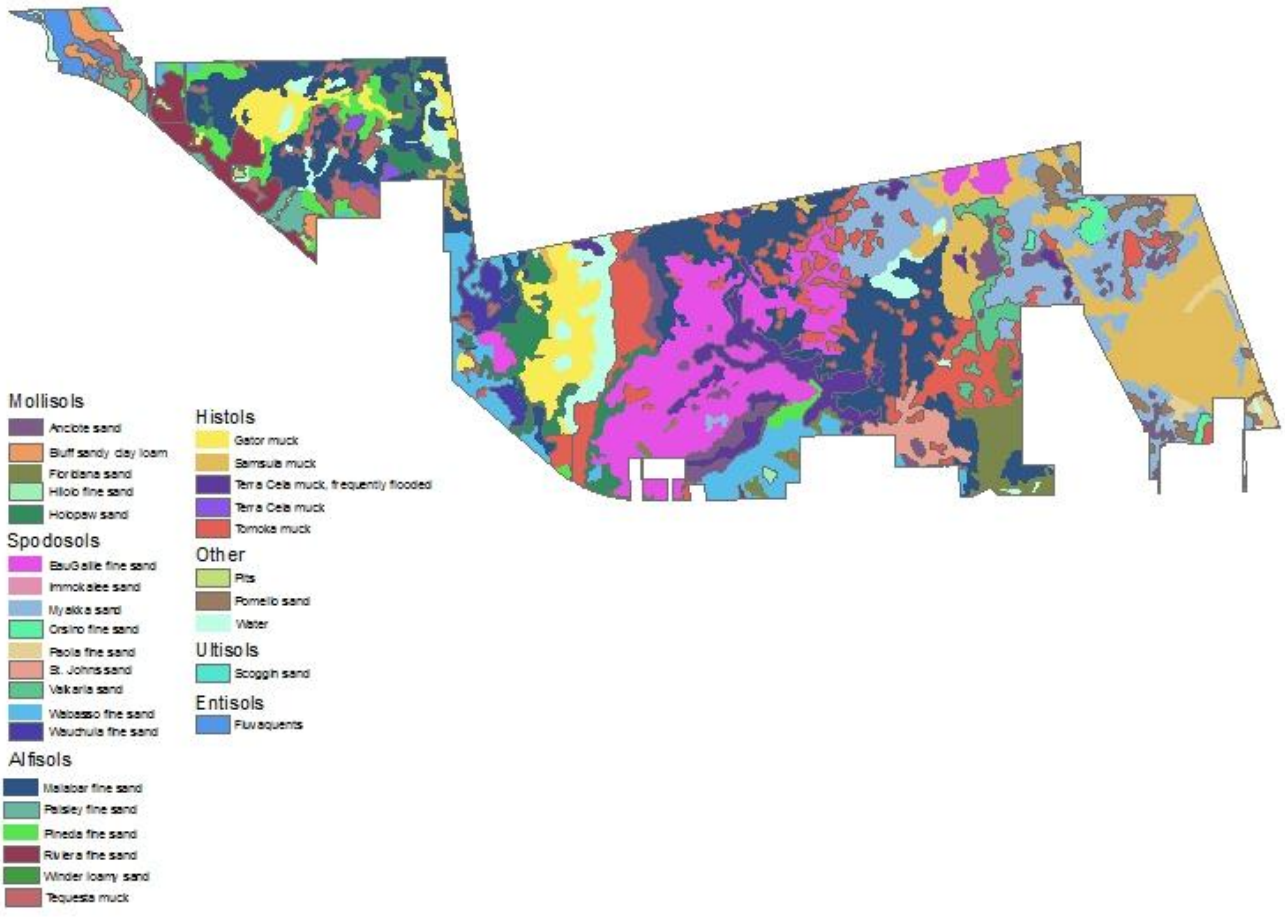
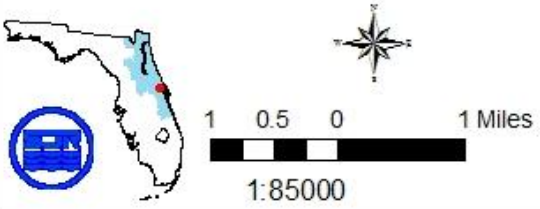


Figure 6. Soils Map
Buck Lake Conservation Area



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Natural Communities and Wildlife

The 9,606 acres that comprise BLCA consist primarily of scrub, scrubby flatwoods, mesic flatwoods, wet flatwoods, basin swamp, salt flats, and floodplain marshes of the St. Johns River. Information relative to the natural communities within the Conservation Area is derived from 1940's historical aerial imagery analysis, DOQQ aerial imagery analysis from 1984, 1990, 2004, and 2006 aerial imagery, and on site ground truthing. 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*.

Scrub (202 acres, 2.1%)

Scrub occurs on sand ridges along former shorelines and are composed of well-washed, deep sands that are brilliant white at the surface. Scrub can be characterized as vast thickets of scrub oaks and other shrubs dominating the understory with sparse ground cover and open patches of barren sand. Scrub is categorized by FNAI as G2 and S2, or imperiled globally due to rarity and imperiled in the state due to rarity.

Plants and animals of this community type, documented within the Conservation Area, include sand live oak (*Quercus geminata*), scrub oak (*Q. inopina*), saw palmetto (*Serenoa repens*), gopher tortoise (*Gopherus polyphemus*), eastern indigo snake (*Drymarchon couperi*), and Florida scrub-jay (*Apheloma coerulescens*).

Scrub is a fire-maintained community and prescribed fire is the main tool utilized to maintain open sandy and herbaceous areas and appropriate shrub layer composition, density, and heights for the threatened Florida scrub-jay and other scrub-dependent species. Ground vegetation is extremely sparse and leaf litter is minimal, thus reducing the chance of frequent ground fires. It is suggested that scrub historically burned on a 10-20 year fire return interval. The scrub at BLCA will be maintained by a fire return interval of approximately 3-10 years. The District will analyze the habitat conditions to determine the appropriate return interval for fire to reach desired habitat conditions.

Pine Flatwoods

Flatwoods communities are distinguished by very flat, level topography. The scrubby, mesic, and wet flatwoods communities at the Conservation Area are fairly intact with healthy ground cover and shrub layers. Historic land use of the Buck Lake parcel was timber production. Preceding the Buck Lake Tract purchase in 1996, the previous owner logged the flatwoods communities to nine trees per acre leaving seed trees. These communities are being managed for natural regeneration. Prescribed burning is the main tool utilized to maintain a healthy ground cover and shrub layer height to reduce competition for natural regeneration and to maintain open areas for the Florida scrub-jay foraging.

Scrubby Flatwoods (455 acres, 4.8%)

Scrubby flatwoods are characterized as an open canopy forest of widely scattered pine trees with a sparse shrubby understory and numerous areas of barren white sand.

Typical plants and animals of this community type, documented within the Conservation Area, include longleaf pine (*Pinus palustris*), slash pine (*P. eliottii*), sand pine (*P. clausa*), sand live oak (Q. *geminata*), runner oak (*Q. minima*) saw palmetto (*Serenoa* repens), wiregrass (*Aristida beyrichiana*), various ericaceous components, red shouldered hawk (*Buteo lineatus*), marsh rabbit (*Sylvilagus palustris*), turkey vulture (*Cathartes aura*), six-lined race runner (*Cnemidophorus sexlineatus*), gopher tortoise (*Gopherus polyphemus*), and Florida scrub-jay (*Aphelocoma coerulescens*).

It is suggested that scrubby flatwoods historically burned on an 8-25 year fire return interval to allow for the general sparsity of ground vegetation to collect enough leaf litter to carry fire. The scrubby flatwoods community at BLCA will be maintained by a fire return interval of approximately 3-5 years. The District will analyze the habitat conditions to determine the appropriate return interval for fire to reach desired habitat conditions.

Mesic Flatwoods (1,442 acres, 15.1%)
Mesic flatwoods are characterized as an open canopy forest of widely spaced pine trees with little or no understory, but a dense ground cover of herbs and shrubs.

Plants and animals of this community type, documented within the Conservation Area include longleaf pine, slash pine (*P. elliottii*), wiregrass (*Aristida stricta*), saw palmetto (*Serenoa repens*), southern black racer (*Coluber constrictor priapus*), pileated woodpecker (*Dryocopus pileatus*), and white tailed deer (*Odocoileus virginianus*).

Important factors to maintaining mesic flatwoods is seasonal hydroperiods and fire. Natural fire return intervals are approximately 1 to 8 years. Mesic flatwoods are found between the higher elevation areas of scrubby flatwoods and the lower elevations of wet flatwoods on the Buck Lake parcel.

Wet Flatwoods (2,698 acres, 28.2%)
Wet flatwoods are characterized as relatively open-canopy forests of scattered pine trees or cabbage palms with either thick shrubby understory and very sparse ground cover or a sparse understory and a dense ground cover of hydrophytic herbs and shrubs.

Typical plants and animals of this community type documented within the Conservation Area include South Florida slash pine (*P. elliotti*), cabbage palm (*Sabal palmetto*), red bay (*Persea borbonia*), saw palmetto, and various ericaceous components.

The wet flatwoods community is dependent on a hydroperiod of water saturation for one or more months per year and on a fire return interval of 3 to 10 years.

Basin Swamp (523 acres, 5.5%)

Basin swamp is characterized as a relatively large and irregularly shaped basin that is not associated with rivers, but is vegetated with hydrophytic trees and shrubs that can withstand extended hydroperiod.

Typical plants documented within the Conservation Area include willow, sweet bay, loblolly bay, tupelo gum, sweet gum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), cricket frog (*Acris gryllus*), pileated woodpecker (*Drycopus pileatus*), and numerous species of song and wading birds.

Typical hydroperiod is approximately 200-300 days. Fire return interval may be between 5 to 150 years.

Basin Marsh (238 acres, 2.5%)
Basin marsh is characterized as an herbaceous or shrubby wetland situated in a relatively large and irregular shaped basin. This natural community is found adjacent to Buck Lake. Around 18 acres of this natural community is transitioning into shrubby species.

Animal species documented in this natural community include great blue heron (*Ardea Herodias*).

Fire maintains the open herbaceous community by restricting shrub invasion. The normal interval between fires in herbaceous marshes is between 1 to 3 years.

Depression Marsh (649 acres, 6.8%)
Depression marshes are characterized as a shallow, usually rounded depression in sand substrate with herbaceous vegetation often in concentric bands. This community is generally smaller than basin marshes. Depression marshes are extremely important in providing breeding or foraging habitat for amphibians. Depression marshes are maintained by hydroperiods of 50 to 200 days per year and periodic fire to restrict invasion of shrubs and trees and the formation of peat.

Wet Prairie (151 acres, 1.6%)
Wet prairie is characterized as a treeless plain with a sparse to dense ground cover of grasses and herbs. The most important physical factors are hydrology and fire. Wet prairie is seasonally inundated or saturated for 50 to 100 days each year and burns every 2 to 4 years.

Floodplain Marsh (2,033 acres, 21.3%)
Floodplain marshes are wetlands of herbaceous vegetation and low shrubs that occur in river floodplains, including in Central Florida along the St. Johns River, on sandy alluvial soils with considerable peat accumulation. Species documented in this natural community include switchgrass (*Panicum virgatum*).

Floodplain marshes are maintained by regimes of fire and water. Fires apparently burn on a 1 to 5 year basis to restrict shrub invasion. Floodplain marshes are flooded with water for about 250 days annually, which prevents invasion by shrubs.

Floodplain Marsh-Salt Flats (101 acres, 1.1%)
Salt flats are characterized by open sandy areas with an upwelling of salt water due to underground trapped marine deposits. This area of the St. Johns River has a natural upwelling of connate water, or water trapped in the pores of a rock during formation of the rock, that is high in salinity. Salt flats areas just south of BLCA have recorded salinities as high as 35 parts per thousand at 3 feet below the ground surface. There is a geological fault that runs along the St. Johns channel in this reach of the river. The east side has uplifted and the clay confining unit, the Hawthorne Formation, has eroded away in many areas. This has allowed upward expression of old trapped salt water (S. Hall, pers. comm.). The Floodplain Marsh-Salt Flats areas currently do not have vegetation. This area is managed as Floodplain Marsh and will be burned along with this natural community on a 1-5 year fire return interval.

Floodplain Marsh-Salt Flats Vegetated (248 acres, 2.6%)
Salt flats vegetated are characterized by salty sandy areas that support salt tolerant species. This community was formed as noted in Floodplain Marsh-Salt Flats above, however, this area supports species of plants expected to occur along the coast (S. Hall, pers. comm.).

This area borders areas of Floodplain Marsh and will be burned along with this natural community on a 1-5 year fire return interval.

Plants and animal species documented in this community include saltwort (*Batis maritima*), salt bush (*Baccharis halimifolia*), slender seapurslane (*Sesuvium maritumum*), shoreline seapurslane (*Sesuvium portulacastrum*), annual glasswort (*Salicornia bigelovii*), seashore dropseed (*Sporobolus virginus*), salt sandspurry (*Spergularia mariana*), bushy seaside oxeye (Borrchia frutescens), woodstork (*Mycteria americana*), roseate spoonbill (*Platalea ajaja*), bald eagle (*Haliaeetus leucocephalus*), and white ibis (*Eudocimus alba*).

Hydric Hammock (186 acres, 1.9%)
Hydric hammock is characterized as a well developed hardwood and cabbage palm forest with a variable understory often dominated by palms and ferns.

Plant species documented at the Conservation Area include live oak (*Quercus virginiana*), laurel oak (Quercus laurifolia), magnolia (Magnolia grandiflora), water oak (Quercus nigra), swamp bay (Persea palustrus), red maple (Acer rubrum), and cabbage palm (*Sabal palmetto*).

Hydric hammock is maintained through a hydrologic regime of saturated soils approximately 60 days per year.

Prairie Hammock (147 acres, 1.5%)
Prairie hammock is characterized as a clump of tall cabbage palms and live oaks in the midst of prairie or marsh communities. Plant species documented in these areas include

cabbage palm (*Sabal palmetto*). Oak and palm dominated prairie hammocks on drier sites tolerate occasional light ground fires, but more diverse hammocks rarely burn. Prairie hammocks are seldom inundated for more than 10 to 40 days each year.

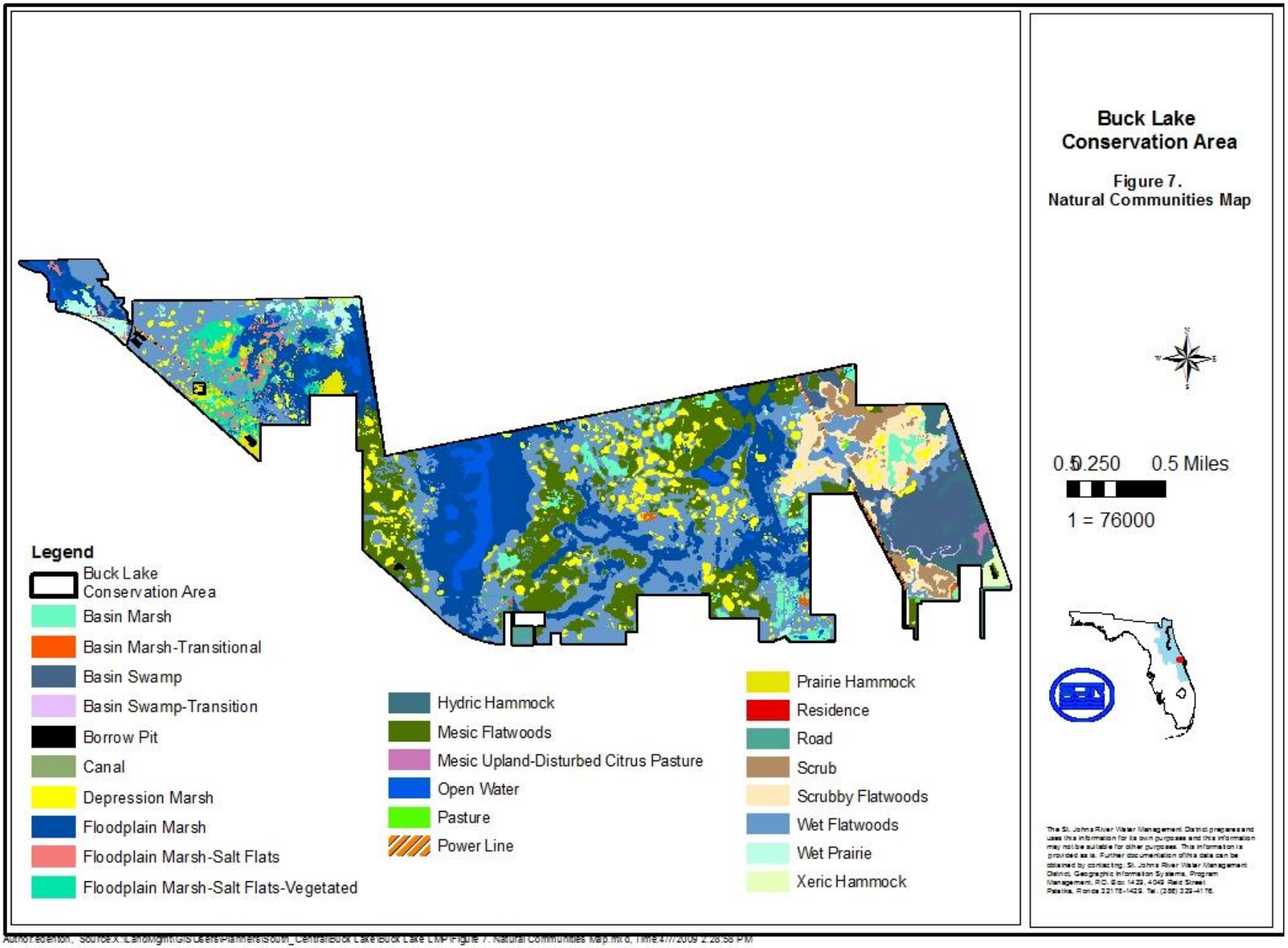
Open Water (328 acres, 3.4%)
Areas of open water include Buck Lake, Freshwater Lake, and flooded areas in the center of depression and basin marshes.

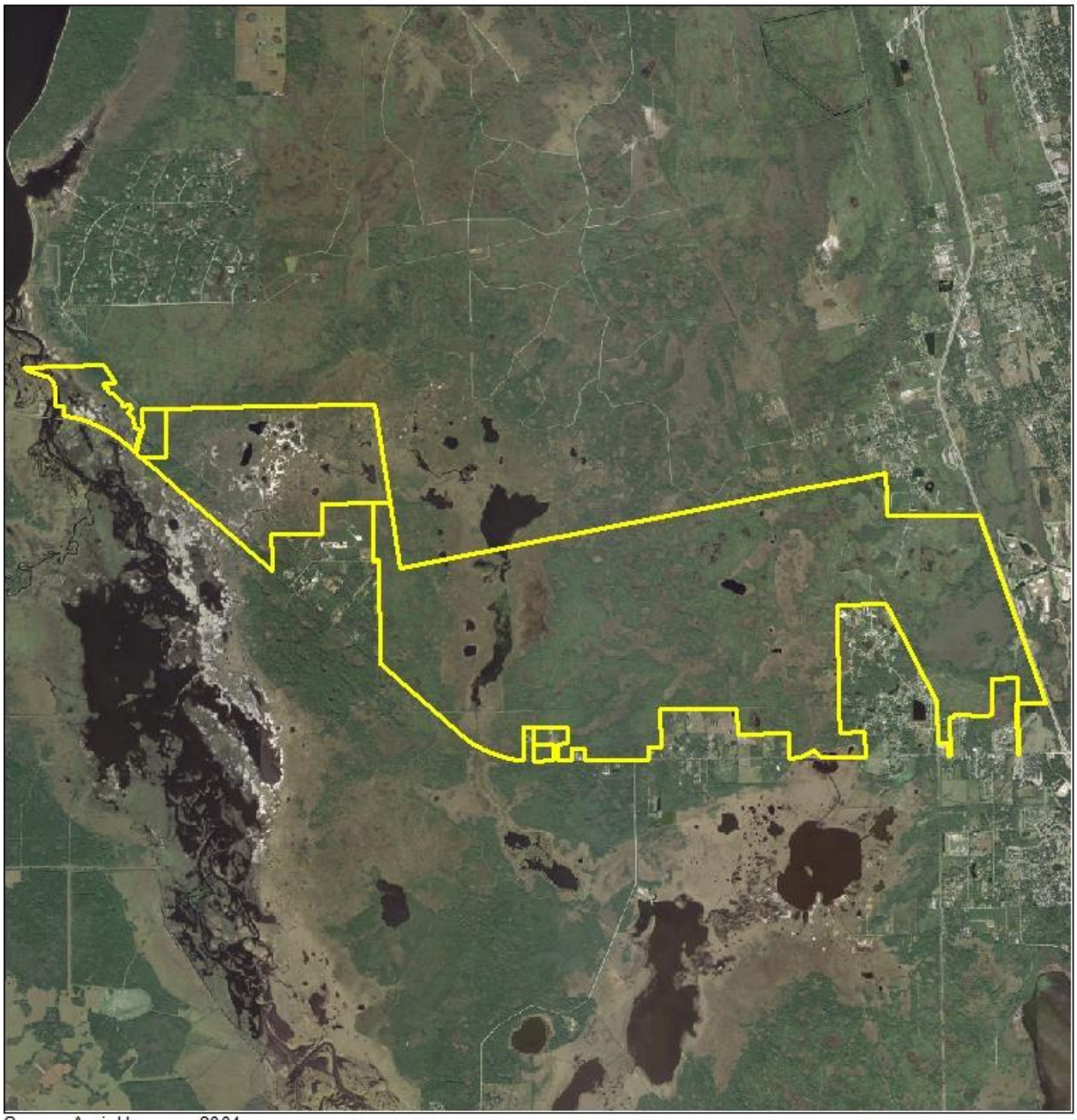
Xeric Hammock (34 acres, 0.4%)
Xeric hammock is characterized as a multi-storied forest of tall trees with an open or closed canopy. Species documented on site include live oak. Xeric hammock is often considered the climax community on sandy uplands and had typically been protected from fire for more than 30 years.

Other areas of BLCA consist of borrow pit, canal, pasture, powerline, a security residence, and roads. Table 1 below lists the natural communities and their associated acreages.

Table 1. BLCA Natural Communities

Natural Communities	Acres	% Total
Basin Marsh	220	2.3%
Basin Marsh Transitional	18	0.2%
Basin Swamp	523	5.5%
Borrow Pit	30	0.3%
Canal	2	0.0%
Depression Marsh	649	6.8%
Floodplain Marsh	2033	21.3%
Floodplain Marsh Salt Flats	101	1.1%
Floodplain Marsh Salt Flats Vegetated	248	2.6%
Hydric Hammock	186	1.9%
Mesic Flatwoods	1442	15.1%
Open Water	328	3.4%
Pasture	6	0.1%
Powerline	49	0.5%
Prairie Hammock	147	1.5%
Residence	0.35	0.0%
Road	40	0.4%
Scrub	202	2.1%
Scrubby Flatwoods	455	4.8%
Wet Flatwoods	2698	28.2%
Wet Prairie	151	1.6%
Xeric Hammock	34	0.4%
Total	9565	


Buck Lake
Conservation Area
Figure 7.
Natural Communities Map
0 0.25 0.5 Miles
1 = 76000
Legend
Buck Lake Conservation Area
Basin Marsh
Basin Marsh-Transitional
Basin Swamp
Basin Swamp-Transition
Borrow Pit
Canal
Depression Marsh
Floodplain Marsh
Floodplain Marsh-Salt Flats
Floodplain Marsh-Salt Flats-Vegetated
Hydric Hammock
Mesic Flatwoods
Mesic Upland-Disturbed Citrus Pasture
Open Water
Pasture
Power Line
Prairie Hammock
Residence
Road
Scrub
Scrubby Flatwoods
Wet Flatwoods
Wet Prairie
Xeric Hammock



Source: Aerial Imagery 2004.

Figure 8. Aerial Imagery Map
Buck Lake Conservation Area

1 0.5 0 1 Miles

1:85000

Legend

Buck Lake Conservation Area Boundary

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

Author:mashour, Source:X:\LandMgmt\GIS\Users\Planners\South_Central\Buck Lake\Buck Lake LMP\Figure 1. Location Map.mxd, Time:12/24/2008 9:03:19 AM

Cultural Resources

A review of the Department of State, Division of Historical Resources GIS data for Brevard and Volusia counties indicates four Florida Master Sites documented within the conservation area. Alderman's BBQ site is a prehistoric, St. Johns Period, and 20th Century American site. Turtle Island is a prehistoric mound, and Rest Area is a prehistoric campsite, and is considered a prehistoric shell midden from the Archaic, Late Archaic, and Orange periods. Freshwater Mound is also an identified site with limited information. If any additional sites are located, District staff will document and report the sites to the Division of Historical Resources. District land management and restoration activities that may affect these resources will be evaluated and modified to reduce any potential disturbance of identified sites. Due to District and State policy, the location of the sites is not identified on public maps.

PAST MANAGEMENT SUMMARY

This section outlines all strategies in the previous plan and summarize progress.

Security

2002 Plan Strategy: Maintain signage and gates.
Status: The District continues to maintain signage, fencing, posting and gates at BLCA.
2002 Plan Strategy: Continue coordinating with Brevard County Sheriff's Deputy.
Status: The District continues to coordinate with Brevard County as well as Volusia County Sheriff's deputies. The District also coordinates with contracted security to visit the property as needed. The District also has an on site-security resident who is a Brevard County deputy that patrols the property. The District coordinates meetings twice yearly with Florida Fish and Wildlife Conservation Commission law enforcement to review and improve Buck Lake Wildlife Management Area regulations and patrol.

Restoration

2002 Plan Strategy: Pursue mitigation opportunities for filling ditches.
Status: Due to the relatively low impact of water resources at BLCA, the District has not yet pursued mitigation at this site. The District will consider this restoration project for completion within the next five years.

Fire Management

2002 Plan Strategy: Continue prescribed burn program.
Status: The BLCA prescribed burning program has burned approximately 10,700 acres since 1997. Around 7,900 acres of the property burned in the 1998 wildfires. Through annual burn plans, over 2,558 acres of the property have been burned since the last management plan was approved in 2002.
2002 Plan Strategy: Develop and implement a fire management plan to maintain native community structure and assemblages.
Status: The District has developed a Comprehensive Fire Management Plan for BLCA.
2002 Plan Strategy: Establish post-burn photo plots during normal burn rotation for representative plant communities.

Status: Two plant transect plots were delineated and various photos have been documented at these sites. The District delineated four additional plots in 2009 and photos were documented at the time of installation in February 2009.
2002 Plan Strategy: Continue to monitor photo plots already established.
Status: Photo plots will continue to be monitored at BLCA.

Forest Management
2002 Plan Strategy: District staff will inventory pine trees on site.
Status: District staff conducted an inventory of pine trees in the scrubby flatwoods areas on the east side of BLCA. This inventory concluded that there were 299 pines present in these areas in 1943. In 2008, 497 pines were counted through natural regeneration. It was determined that pines should be removed to one tree per acre in these scrubby areas in order to manage for scrubby flatwoods dependent species such as the threatened Florida scrub-jay. A further aid recommended in this inventory is to take pines down to no more than two trees per acre in an additional 200-foot buffer around the scrubby flatwoods areas. This was accomplished in spring 2009.
2002 Plan Strategy: District staff will monitor the regeneration of pine trees.
Status: District staff has monitored the regeneration of pine at BLCA through observation during property visits. Seed trees were left on the property at nine trees per acre when the property was logged prior to District acquisition. These trees have allowed for abundant natural regeneration in the wet and mesic flatwoods areas. In addition, a healthy prescribed burning program has decreased ground cover competition allowing trees to regenerate.

Water Resources
2002 Plan Strategy: Continue to evaluate effects of stormwater runoff from local sources.
Status: Water resources staff monitors water quality at State Road 46-Seminole Ranch North, and State Road 50-Seminole Ranch South. Water quality has not been monitored within BLCA.
2002 Plan Strategy: Continue to work with Brevard County to evaluate stormwater management plans for the site.
Status: The District has not been approached by Brevard County to evaluate stormwater management plans for the site.

Listed Species
2002 Plan Strategy: Continue to maintain and build upon species lists.
Status: District land management staff adds species to lists as they are noted on the property. District Upper Basin Environmental Sciences staff conducted a plant species survey in March 2009. Volunteers conducted a butterfly survey on May 14, 2008 noting 30 species. District staff and Audubon volunteers conduct bird species surveys. The District maintains a biological database of Upper Basin flora and fauna, which will be updated as species are documented.
2002 Plan Strategy: Conduct post-burn surveys in scrub restoration areas if staff time is available.
Status: District staff deemed that this action was not necessary.

2002 Plan Strategy: Continue to coordinate with the USFWS for Florida scrub-jay monitoring.
Status: The District conducts scrub-jay monitoring and maps the territories yearly. BLCA is also part of the Jay Watch program. This program is run by The Nature Conservancy with volunteers who monitor Florida scrub-jays yearly and record the state of the habitat every other year.
2002 Plan Strategy: Continue to manage scrub areas for Florida scrub-jays and other scrub endemic species.
Status: The District manages scrub and scrubby flatwoods areas to benefit scrub dependent species including the Florida scrub-jay, gopher tortoise, and eastern indigo snake. Staff has conducted prescribed burns when possible. Pines were thinned in this area in 2000. In 2008, overstory in scrub habitat was felled to prevent perching of predator birds. In winter 2009, scrubby flatwoods and a surrounding 200-foot buffer were logged to no more than two stems per acre. The District has developed vegetation monitoring transects that were monitored in 2009 and will be monitored every two years in conjunction with Jay Watch monitoring. The District has developed scrub management desired conditions and will manage these areas to maintain these conditions.
2002 Plan Strategy: Continue to cooperate with Brevard County for assistance with scrub management.
Status: Scrubby flatwoods management was completed on approximately 553 acres in partnership with the Brevard County Environmentally Endangered Lands program by 2003, when the USFWS grant concluded. This work included brontosaurus mowing larger oak trees to reduce predator bird perching, feller buncher logging to reduce the number of pines and ultimately reduce predator bird perching, and banding scrub-jays. Presently, Brevard County is working on their North Buck Lake Scrub Sanctuary to manage scrubby flatwoods habitat adjacent to the northeast of BLCA.
2002 Plan Strategy: Continue coordinating the grant received from the USFWS for scrub management.
Status: This grant was completed in 2003.

Exotic Species
2002 Plan Strategy: Monitor and continue to treat exotic and invasive vegetation.
Status: District staff has treated Brazilian pepper, cogon grass, Chinese tallow, Lygodium, hyacinth, water lettuce, and melaleuca, at BLCA on a maintenance/as needed schedule.
2002 Plan Strategy: Continue volunteer trapping program for hogs.
Status: The District utilizes the United States Department of Agriculture as well as volunteer feral hog agents to remove hogs from BLCA.

Access
2002 Plan Strategy: Continue regular maintenance on access areas.
Status: The District continues regular maintenance on two trailhead parking areas at the east BLCA entrance as well as the west BLCA entrance. Locks are changed as needed and parking areas are mowed through contract.
2002 Plan Strategy: Maintain signs and kiosks.

Status: The District recreation land management staff maintains BLCA entrance signs, campsite signs, trail brochure boxes, and kiosks as needed.

Recreation
2002 Plan Strategy: Continue regular maintenance on trails and campsites.
Status: The District maintains 13 miles of trails through assistance of a volunteer from the Brevard County EELs program. The volunteer prunes encroaching branches and saw palmetto fronds and paints trail markers. One group campsite and one walk in campsite are maintained as needed. The group campsite reservation system is maintained through the land management office at District headquarters in Palatka and reservations will be available through the District's website by Fiscal Year 2009-2010.
2002 Plan Strategy: Develop trail map for property.
Status: A trail map was developed for the property in 2003. The map delineates thirteen miles of trails, campsites, recreational uses, and rules and regulations. The trail guide will be updated during 2009 to reflect updates to recreation on site. The trail guide is provided at the kiosk.

Cultural Resources
2002 Plan Strategy: Coordinate with Florida Division of Historical Resources and take action to reduce potential disturbance of any sites identified.
Status: The District will coordinate with Florida Division of Historical Resources at the time any potential disturbance is anticipated.

Environmental Education
2002 Plan Strategy: Evaluate the potential for developing environmental education opportunities on the property.
Status: The District offers many environmental education programs that are provided in the form of workshops, online materials, or by requesting speakers or specific programs. New programs include the Great Water Odyssey and Project Wet Workshops. The Great Water Odyssey is an interactive, multidisciplinary educational experience available free of charge to educators in the District. Project Wet is a program designed to teach educators about water resources and is based on FCAT standards. Project Wet Workshops are offered at various times during the year in many counties, including Brevard and Volusia Counties. The District has not developed a Legacy Program for this conservation area.

Cooperative Agreements
2002 Plan Strategy: Maintain agreements to assist with the management and maintenance of Buck Lake Conservation Area.
Status: The District added a new security resident to BLCA and advertised for a new hog removal volunteer. The District partnered with entities to allow Florida scrub-jay research and butterfly surveys, permitted two bee-keeping sites, and maintains four revenue-generating leases on the property. The District has also maintained an intergovernmental agreement with Florida Fish and Wildlife Conservation Commission to administer the property as a wildlife management area. The District has maintained all other agreements assisting in management of the property.

IMPLEMENTATION

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

RESOURCE PROTECTION AND MANAGEMENT

Security

The property was posted soon after the original survey work was completed. Fencing has been erected where possible and gates are located at the east and west entrance sites. Maintenance of the fence lines and replacement of boundary signs is ongoing. An onsite resident is located at the east BLCA entrance. The resident will patrol the property as needed and create a presence at the site. The property is part of a wildlife management area. The District schedules meetings with Florida Fish and Wildlife Conservation Commission (FWC) law enforcement to coordinate regulations on the property. The District will continue to coordinate with Volusia and Brevard County Sheriff's Offices, FWC law enforcement, and a private security firm under contract by the District for any potential security needs.

Security Strategies

- Maintain signage, fences, gates, and boundary marking.
- Continue to maintain security resident on site.
- Continue coordinating with Volusia and Brevard County Sheriff's Offices, FWC law enforcement, and a private security firm for any potential security needs.
- Coordinate with FWC to establish and enforce wildlife management area rules.

Water Resource Protection

Most water resource protection within the Conservation Area was accomplished with the acquisition of the property. Development is not currently a significant impact to BLCA as it is located in a relatively rural area and is located near other public lands. Most hydrologic disturbances within the Conservation Area are related to a series of shallow ditches, Six Mile Creek/Six Mile Canal, and roads that traverse the property. Six Mile Canal carries stormwater runoff from I-95 and stormwater from the town of Mims, through a large ditch that traverses the Fawn Lake Subdivision, and feeds into Six Mile Creek. Six Mile Creek discharges southward to Salt Lake, on to Loughman Lake, and into the St. Johns River. Over the next five years, the District will continue to manage the property for conservation in a means to protect water resources overall within the Conservation Area.

Water Resource Protection Strategies

- Continue managing BLCA for conservation purposes.

Wetland Restoration

Prior to the 1940s an extensive network of shallow ditches was constructed to drain surface water from the interior of the property to Six Mile Creek and Buck Lake. At least 10 miles of ditches exist on the property mostly located in the south central portion of the property (Figure 5). Over the next five years, the District will utilize the latest GIS analysis to evaluate which direction ditches are flowing, those ditches that if filled or

plugged will not create off site impacts, and determine a method for restoration. Restoration of the property will be completed including ditch filling or plugging to restore natural hydrology to those areas deemed appropriate for restoration.

Wetland Restoration Strategies

- Plug and/or fill ditches within the property to restore natural hydrology to the Conservation Area.

Flora and Fauna

Through the unique natural communities such as salt flats, scrub, and scrubby flatwoods with a mostly intact natural system, BLCA provides habitat for many species of flora and fauna. Through volunteer plant surveys on November 6, 2003, March 17, 2004, May 5, 2004, May 8, 2004, November 4, 2006, District staff sightings, and District Environmental Sciences staff surveys on March 30 and 31, 2009, 270 plant species have been recorded with one endangered plant species identified on site. A May 14, 2008 butterfly survey conducted by Florida Natural Areas Inventory identified 30 butterfly species. District staff, with volunteer support, have surveyed bird species monthly between October 1999 through September 2000. This effort has identified 173 species of birds. District staff has recorded additional fauna species.

Detailed below are listed species identified on the property through the various surveys at BLCA. The scientific names are hyperlinked to find further information regarding these species. Additional information can be found at www.fnai.org and http://www.florida.plantatlas.usf.edu/.

Plants

Threatened-State Listed

Lechea divaricata Pine pinweed
Carex chapmanii Chapman's sedge
Myrcianthes fragrans Simpson's stopper

Endangered-State Listed

Tillandsia fasciculata Cardinal Plant

Birds

Endangered-Federal and State Listed

Caracara cheriway Crested caracara
Mycteria americana Wood stork

Endangered-Federally Listed, Threatened-State Listed

Sterna antillarum Least tern

Endangered-State Listed

Falco peregrinus Peregrine falcon

Threatened-Federal and State Listed

Aphelocoma coerulescens Florida scrub-jay

Threatened-State Listed

Grus canadensis Sandhill crane

Species of Special Concern-State Listed

Aramus guarauna Limpkin
Cistothorus palustris Marsh wren
Egretta caerulea Little blue heron
Egretta thula Snowy egret
Egretta tricolor Tricolored heron
Eudocimus albus White ibis
Pelecanus occidentalis Brown pelican
Platalea ajaja Roseate spoonbill

FNAI Listed

Accipiter cooperii Cooper's Hawk
Aimophilla aestivalis Bachman's sparrow
Ardea alba Great egret
Elanoides forficatus Swallow-tailed kite
Elanus leucurus White-tailed kite
Falco columbarius Merlin
Haliaeetus leucocephalus Bald eagle
Ixobrychus exilis Least bittern
Nyctanassa violacea Yellow-crowned night-heron
Nycticorax nycticorax Black-crowned night-heron
Passerina ciris Painted bunting
Picoides villosus Hairy woodpecker
Plegadis falcinellus Glossy ibis
Setophaga ruticilla American redstart

Reptiles

Threatened-State Listed

Gopherus polyphemus Gopher tortoise

Treated as Threatened-Federally Listed

Alligator missippisiensis SAT

Species of Special Concern-State Listed

Rana capito aesopus Florida gopher frog

BLCA habitat will be managed for conservation to encourage the proliferation of listed species. District staff will coordinate specific listed species management guidelines through the south central region land manager.

Florida scrub-jay habitat will be managed according to defined desired conditions in the Forest Management Section below. The District aims to improve habitat to increase the population. In addition, when population and habitat conditions are appropriate for additional Florida scrub-jays, the District is willing to serve as a recipient site. The property is also part of the Jay Watch program. Jay Watch is an initiative of the Nature Conservancy (TNC) established to garner data consistent in methodology with the standardized protocols established by both TNC and Archbold Biological Station. Volunteers, under the supervision of District staff, conduct annual surveys of scrub-jays. Information including the number of birds observed (juvenile and adult) and leg band information is recorded at established survey points. Jay Watch volunteers also conduct biennial vegetation sampling. Information including percent coverage of oak shrubs, mean heights of shrub layers, percent coverage of ground cover (bare sand or herbaceous <15cm), and percent coverage of pine is determined within permanent 10m circular plots. This information will be utilized by the TNC database and will not necessarily guide management on the property as habitat is only monitored where Florida scrub-jays might be present and not habitat wide.

Flora and Fauna Strategies

- Manage the property for conservation to encourage plant and animal diversity and the proliferation of listed species.
- District staff will continue to add to the species list any newly noted flora and fauna.
- District staff will coordinate listed species management through south central region land manager.
- Continue to manage scrub and scrubby flatwoods habitat for the proliferation of Florida scrub-jay and scrub endemic species.
- Continue to coordinate the Jay Watch program on the property in cooperation with The Nature Conservancy.

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 of the parcel." The management goal of this property is to maintain BLCA as natural habitat for wildlife. To achieve this goal, the management objectives of this property are to maintain no overstory species in scrub areas, maintain no more than nine trees per acre in the scrubby flatwoods natural communities and no more than nine trees per acre in a 200 foot buffer in the transition between scrubby flatwoods and mesic flatwoods, and to utilize prescribed burning in the mesic and wet flatwoods communities to promote natural regeneration of pine species to reach 50 square feet of basal area. The management objectives of this property may require pine harvesting and oak management. Revenue is not anticipated through these forest management activities due to the low density of pines and the long distance to nearest mill, however in the event that revenue is generated,

revenue will be applied toward the District's land management division budget to offset management costs for the property.

Mesic and Wet Flatwoods Forest Management
Prior to public acquisition in 1996, the Buck Lake Parcel was logged to nine trees per acre in a seed supply harvest. The stocking rate was further reduced by the 1998 wildfires on the property. Through the use of these leave trees for seed supply, natural regeneration is occurring on the property. Prescribed burning is utilized as site preparation so seeds can reach the soil on the forest floor to germinate. Burning is also used to limit competition of vegetative material and hardwoods against the regenerating pines and to maintain a healthy ground cover layer and shrub layer once regenerating trees reach a certain age. It is ideal to conduct prescribed burns during the summer months to remove small vegetative material and reduce hardwood cover and to stimulate growth of herbaceous species, grasses, and sedges.

In the mesic and wet flatwoods areas, prescribed burning will be utilized over the next five years to achieve a desired future condition of 50 square feet of basal area and to maintain and improve habitat for wildlife. Natural regenerating pine is estimated to be 10 years old in these areas. Logging in these natural communities is not anticipated under the 5-year purview of this plan, however logging may occur as needed due to, but not limited to southern pine beetle or other insect outbreaks and salvage harvest due to natural disaster.

Scrub and Scrubby Flatwoods Forest Management
Approximately 657 acres of historic scrub and scrubby flatwoods natural communities occur on the east side of the property in higher elevations. The 7,708 acre Buck Lake Tract was logged prior to public acquisition in 1996 and densities were further reduced following the 1998 wildfires. In 1999, Brevard County Environmentally Endangered Lands program funded the mechanical treatment of nine acres of overgrown scrub using a Kershaw cutter. An additional 23 acres of treatment were funded by the County utilizing a feller-buncher to harvest pine and pile burns were conducted with the felled trees to create open sandy areas. In 2000, the District received a Partnership for Wildlife Project grant issued by the U.S. Fish and Wildlife Service (USFWS). This grant reimbursed 50% of costs to the District for restoration work within the scrubby flatwoods at BLCA. Accomplishments under this grant include 196 acres of drum chopping and 357 acres of prescribed burning. In late 2008, tall oaks were felled to prevent perching of avian predators of the Florida scrub-jay. In winter 2009, all merchantable timber was harvested from the scrub and scrubby flatwoods. An additional 200-foot buffer in the transition between scrubby flatwoods and mesic flatwoods were thinned to one stem per acre. Currently, natural regeneration is occurring from the leave trees. Also in 2009, vegetation transects were installed to monitor species composition and assemblages of the shrub and groundcover layers.

The District defines optimal Florida scrub-jay habitat as having vegetation heights between 1-3m, greater than 50% scrub oak species coverage, a maximum pine density of no greater than 9 stems per acre, and 20 to 50% open bare sandy ground and/or

groundcover components. Over the next five years under the purview of this plan, scrub and scrubby flatwoods areas, along with a 200-foot buffer, will be maintained or improved to a mosaic within these standards through prescribed burning, mechanical treatments such as chopping or mowing, and harvest operations. Areas delineated as scrub-jay habitat at BLCA include scrub, scrubby flatwoods, and mesic flatwoods. Pine densities will be managed across these natural communities to maintain each community's optimal condition with lower pine densities occurring in the more xeric areas.

Forest management action in Florida scrub-jay habitat should be limited to those months not utilized by the Florida scrub-jay for nesting-mid March through June. In addition, if nesting is known to be active earlier than mid March in a certain area, forest management actions should be postponed until post nesting. Florida scrub-jay territories will be mapped annually to note change in territories. As new territories are mapped, they will be included in the annual burn plans. With this information, prescribed burning should be organized so as to not burn more than half a territory at one time.

Scrub and scrubby flatwoods habitat vegetation transects installed and monitored in February 2009 will be monitored by District staff every two years, 2011, 2013 under the purview of this plan. Based on information from Jay Watch, transect monitoring, and onsite observation, if it is determined that habitat has grown beyond District Florida scrub-jay habitat desired conditions, management funding will be budgeted to maintain the area as needed. Any management conducted in these areas will be recorded quarterly in the District Scrub Management Tracking spreadsheet and Habitat notes and ArcGIS Scrub Management Tracking map including type of work, contractor information, costs, staff hours, results, observations, and photo points.

Other Forest Habitat Management

An area in the northwest corner of the Kilbee tract, east of Morgan Alderman Road, was logged in 1998 due to pine mortality following the wildfires. The Food basics parcel was also logged at this time, which was prior to District ownership. This acreage was planted through aerial seeding and replanted in seedlings. The success of these plantings is undetermined. Under the purview of this plan, this area will have success plots set up to determine the success and the next steps for management. Additionally, 20 acres in the eastern portion of BLCA bordering I-95 is in citrus and pasture. The citrus trees have been treated with herbicide at the request of the Department of Agriculture and Consumer Services. The area will be allowed to return to native habitat through natural regeneration and prescribed burning.

The District will abide by Florida Silviculture Best Management Practices. The District will remove trees as needed in the case of insect infestations, disease, and damage from severe weather, wildfire, or other occurrences that could jeopardize the health of natural communities.

<u>Forest Management Strategies</u>

- Allow mesic and wet flatwoods pine to regenerate to a goal of 50 square feet of basal area through natural regeneration and the use of prescribed burning.
- Manage scrub and scrubby flatwoods through the use of prescribed burning and mechanical chopping and mowing to achieve the District's defined optimal Florida scrub-jay habitat of vegetation heights between 1-3m, greater than 50% scrub oak species coverage, a maximum pine density of no greater than 9 stems per acre, and 20 to 50% open bare sandy ground and/or groundcover components. Remap Florida scrub-jay territories yearly and include map in annual burn plans. Alter annual burn plan so as not to burn more than half a Florida scrub-jay territory at one time.
- Monitor scrub and scrubby flatwoods vegetation transects every two years to plan for management and budgeting in the following fiscal year to maintain District desired conditions. Take photos every two years at each vegetation transect.
- Maintain Scrub Management Tracking spreadsheet quarterly recording all management, costs, and Florida scrub-jay effects.
- Maintain ARCGIS Scrub Management map quarterly recording fieldwork, field observations, and costs.
- Evaluate the need to install survival plots for the northwest acreage.

Fire Management

The District's primary use of fire is to mimic natural fire regimes to encourage the perpetuation and amelioration of native pyric plant communities and dependent wildlife. Additionally, the application of fire aids in the reduction of fuels and minimizes the potential for catastrophic and damaging wildfires. Fire management activities are critical to maintaining the natural communities within BLCA as many of the resident communities evolved with fire. Therefore, prescribed fire is an important, and relatively inexpensive, tool for use in the maintenance of plant communities within the Conservation Area.

Historically, the majority of fires occurring on what is now BLCA would have been ignited by lightening during the growing season and by Native Americans. The District has utilized prescribed burning on the property since 1997 integrating growing season and dormant season burns. In the catastrophic 1998 wildfires, the majority of the property burned under high heat. The District intends to continue growing season fires where possible, understanding that various constraints, such as high fuel loading and weather conditions, may necessitate the use of dormant season burning.

Limiting factors narrowing the window of opportunity for the application of prescribed fire on the portions of the Conservation Area is the border of the property to I-95 and SR 46. Smoke management concerns for the Conservation Area are illustrated in Figure 9. Smoke management is of utmost concern and any potential burns will be conducted to minimize off-site impacts by maneuvering smoke plumes away from smoke sensitive areas and by ensuring adequate smoke dispersal.

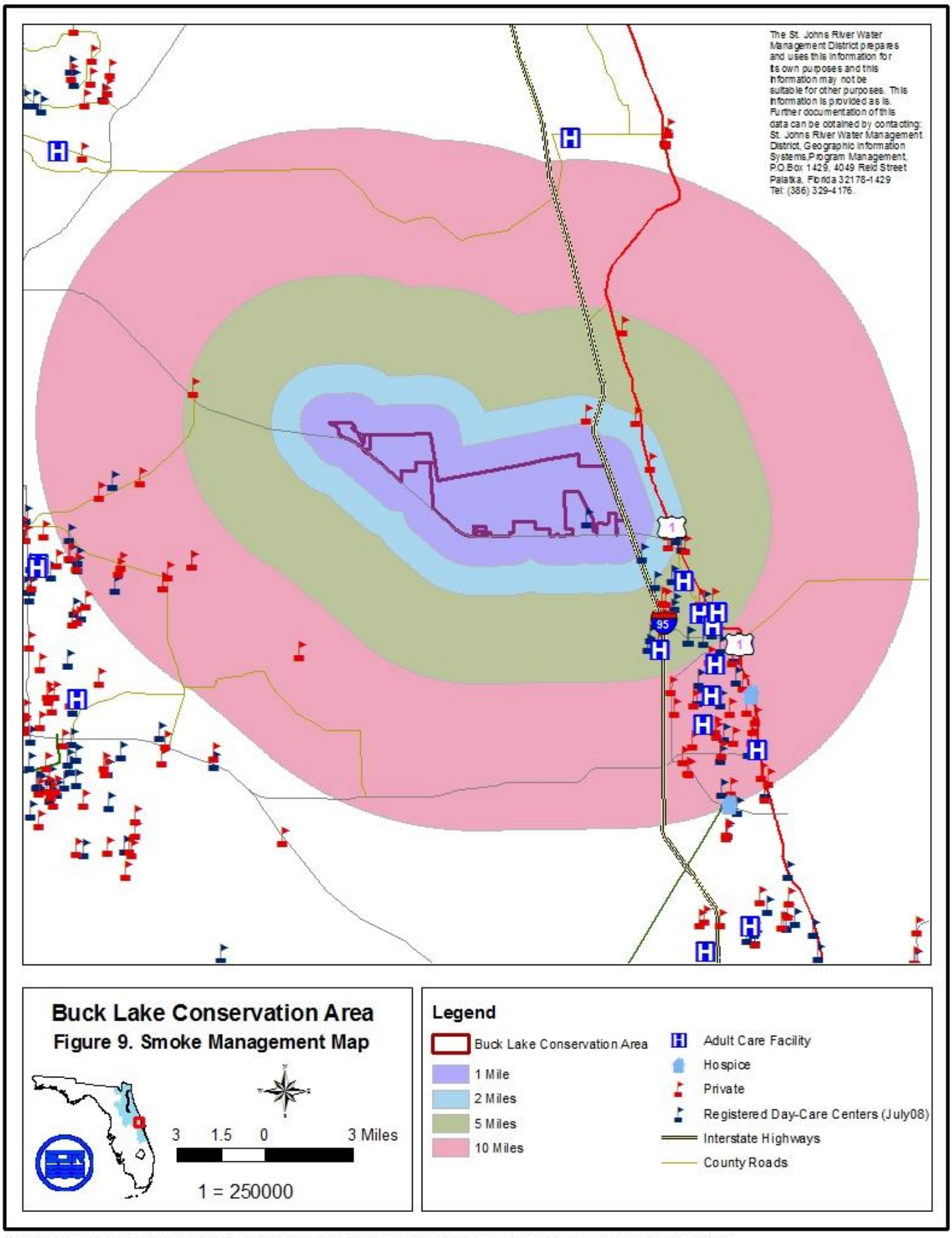
While prescribed fire is the preferred tool for restoration and maintenance within the Conservation Area, it may be necessary to implement mechanical methods of vegetation

management. During periods of extended drought or in areas where implementing prescribed fire safely is not feasible, the District may employ management methods such as selective herbicide treatments, mowing, roller chopping, and overstory manipulation.

During the next five years, the District aims to utilize prescribed fire at BLCA to perpetuate scrub and scrubby flatwoods communities for the Florida scrub-jay and other scrub dependent species, regenerate pine in wet and mesic flatwoods areas, maintain ground cover and shrub layer species, and prevent encroachment of woody species into wetlands. Individual fire lines may be widened by mowing or chopping to provide additional fire control. All implementation of prescribed fire within the Conservation Area will be conducted in accordance with the District's Fire Management Plan, the Buck Lake Conservation Area Fire Management Plan (Appendix C) and the annual burn plans for the property.

Fire Management Strategies

- Implement prescribed burning as described in the District's Fire Management Plan and the Buck Lake Conservation Area Fire Management Plan.
- Develop annual burn plans.
- Utilize growing season burns where possible.
- Conduct dormant season burns when not feasible in the growing season and in areas of high fuel loading and/or extended fire exclusion.



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Exotic Species
Several exotic pest plants occur within the Conservation Area including Brazilian pepper (*Schinus terebenthifolius*), cogon grass (*Imperata cylindrical*), Chinese tallow (*Triadica sebifera*), old world climbing fern (*Lygodium microphyllum*), water hyacinth (*Eichhornia crassipes*), water lettuce (*Pistia stratiotes*), and melaleuca. BLCA is part of the District's Invasive Plant Management Program. The program has targeted the abovementioned species and over the next five years will treat and monitor these species as requested by land management staff. Although it is unlikely that the Invasive Plant Management Program will completely eradicate invasive and exotic plant populations in the conservation area, management is aimed toward holding populations to a "maintenance control" level. At this level, the property is regularly monitored and herbicide treatments are applied as necessary in order to keep the populations from spreading. Information regarding treatment of these species can be found at http://www.fleppc.org/index.cfm.

Exotic wildlife species known to occur within the Conservation Area include feral hogs (*Sus scrofa*) and nine banded armadillos (*Dasypus novemcinctus*). The District utilizes the United States Department of Agriculture as well as volunteer feral hog agents to remove hogs. The District will continue this hog removal effort through USDA and hog removal agents over the next five years.

Exotic Species Strategies

- Continue to monitor and treat invasive and exotic plant species within the property.
- Continue to utilize USDA and volunteer agents to remove feral hogs on the property as needed.

Cultural Resources Protection
According to Chapter 40C-9.220, all archaeological and cultural resources on District Lands are protected. Removal, alteration, or destruction of archaeological or cultural resources is prohibited on all District Lands unless authorized by the District. The District shall consult the Florida Department of State, Division of Historical Resources prior to authorizing the removal, alteration or destruction of any archaeological or cultural resources on District Lands.

At BLCA, the District will make all efforts to avoid disturbances to the four identified cultural resources on site. District land management and restoration activities that may affect these resources will be evaluated and modified to reduce any potential disturbance of identified sites. Due to District and State policy, the location of the sites is not identified on public maps.

Cultural Resources Protection Strategies

- Identify and report any detrimental activities to the sites to the Division of Historical Resources and law enforcement.
- Identify and report any new sites to Florida Department of State, Division of Historical Resources.

LAND USE MANAGEMENT

Access

BLCA has two public entrances to BLCA off SR 46. The first is the East Buck Lake Entrance just west of I-95 off SR 46, just north of the Salt Lake Wildlife Management Area Entrance. The second is the West Buck Lake Entrance, west of Hatbill Road, just east of Dusty Lane. Each entrance has a parking area and an informational kiosk with noted allowable uses, a trail map, and BLCA site-specific information.

Four land management entrances are located on the property, one off Morgan Alderman Road and east onto a power line easement, one on Dusty Lane, which is a side road off SR 46 on the western boundary of the Buck Lake parcel, one at the west Buck Lake entrance to the left before the entrance gate, and one off SR 46 onto Old Grove Road just west of I-95. Regular inundation of the property, soft, sandy soils when the property is in a drier season, security issues due to the remote nature of the property, and historical dumping events illustrates the need for limited public vehicular access. Members of the public with the proper hunting permits and licenses during hunting season are provided limited vehicular access to the property from the eastern entrance once checked in by the game check operator. As necessary, the roads are improved to provide District access along with limited hunting related access.

As a means to create maintenance schedules and budget planning assistance, the District has mapped and categorized the roads and trails at BLCA. The roads map is found in Figure 11.

Over the next five years, the District, in cooperation with FWC, will continue to improve roads and install gravel at low water crossings as needed for land management access or to improve limited vehicular public access for hunting. At the time roads, trails or firelines are added or repaired, roads may be closed as needed.

<u>Access Strategies</u>

- Maintain parking areas, signs, gates, trails, and roads.

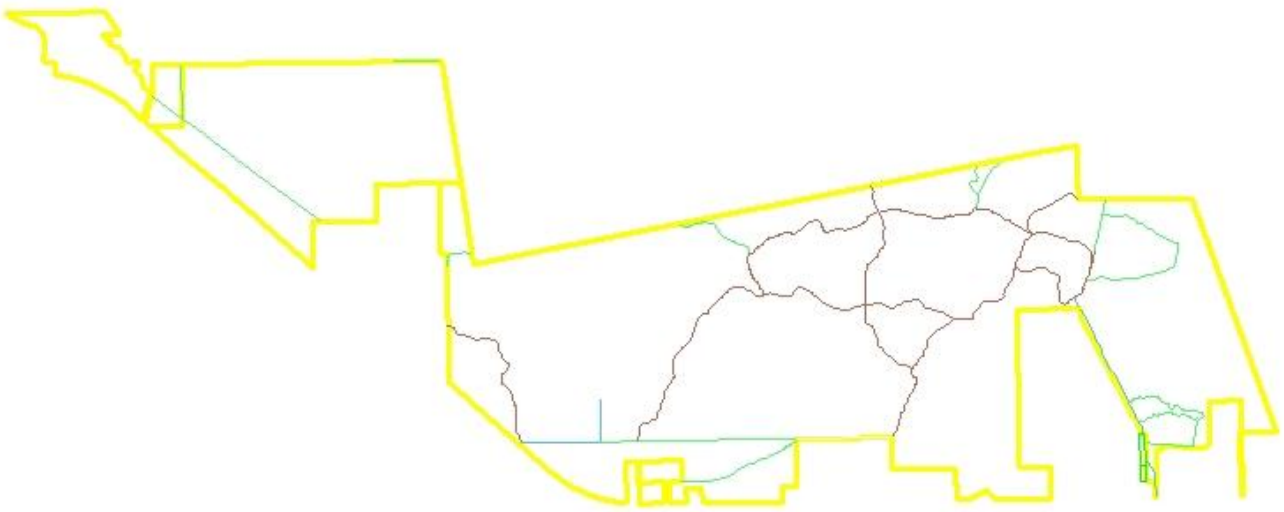

Figure 10. Roads Map
Buck Lake Conservation Area

1 0.5 0 1 Miles

1 = 85000

Legend

- Buck Lake Conservation Area
- Class C Road-Stabilized with coquina or rock. Routine mowing and holes repaired immediately.
- Class D Road-Limited stabilized surface without ditches. Mowing routinely.
- Class E Road-Seasonal road/trail. Infrequent maintenance.

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Author:tmashour, Source:X:\LandMgmt\GIS\Users\Planners\South_Central\Buck Lake\Buck Lake LMP\Figure 11. Roads and Access Map.mxd, Time:3/17/2009 4:24:23 PM

Recreation and Outreach

Recreational opportunities available within the Conservation Area include hiking, bicycling, horseback riding, wildlife viewing, primitive and group camping, and hunting. In total, 18.2 miles of multiuse trials are provided on the property. A trail guide was developed in 2003 for the property, which can be found online at http://floridaswater.com/recreationguide/index.html or on site at the parking area kiosks. Red, white and yellow trails have been developed on the property. A Brevard County Environmentally Endangered Lands Program volunteer assists the District in maintaining the trails. A map of the property and additional information can be found at the aforementioned website.

An observation tower overlooks Buck Lake and is located by taking the red trail from the west entrance. A primitive campsite is found by hiking from the east entrance on the white trail. A group campsite is found at the Buck Lake observation tower and accessed by hiking from the west entrance. For vehicular access to the group campsite, a permit can be obtained by accessing the District's website at floridaswater.com or calling the District's Division of Land Management at 1-386-329-4404.

BLCA is a wildlife management area. The land is managed by the District; the hunts are administered by Florida Fish and Wildlife Conservation Commission (FWC). Persons using the Buck Lake Wildlife Management Area are required to have appropriate licenses, permits, and stamps, unless otherwise noted by FWC and the District. Hunting on District Land is also subject to District rules and regulations. Visit http://myfwc.com/recreation/Hunt_WMABrochs.htm for hunt brochures and additional information.

No motorized vehicles are allowed on the property except as authorized during hunting season. Off-road vehicles (including motorcycles and all terrain or track vehicles) are not allowed. Camping is prohibited during hunting season.

Over the next five years, the District aims to maintain a port-o-let restroom at the east entrance off SR 46 for visitor use. The restroom will be set up and maintained beginning Fiscal Year 2009-2010. The trail guide will be updated in 2009 to reflect the restroom, updated campsite locations, and an updated boundary. The District plans to maintain current recreational opportunities on the property. The District will work together with FWC to update wildlife management issues into potential rule changes.

Recreation Strategies

- Update BLCA Trail Guide; include any recreational improvements in the next edition of the District's Recreation Guide to District Lands.
- Set up and maintain portable restroom beginning Fiscal Year 2009-2010.
- Continue partnership with Brevard County EELs program for volunteer trail maintenance.
- Maintain recreation trails and amenities and update as needed.

- Maintain wildlife management area in partnership with FWC and update as needed.

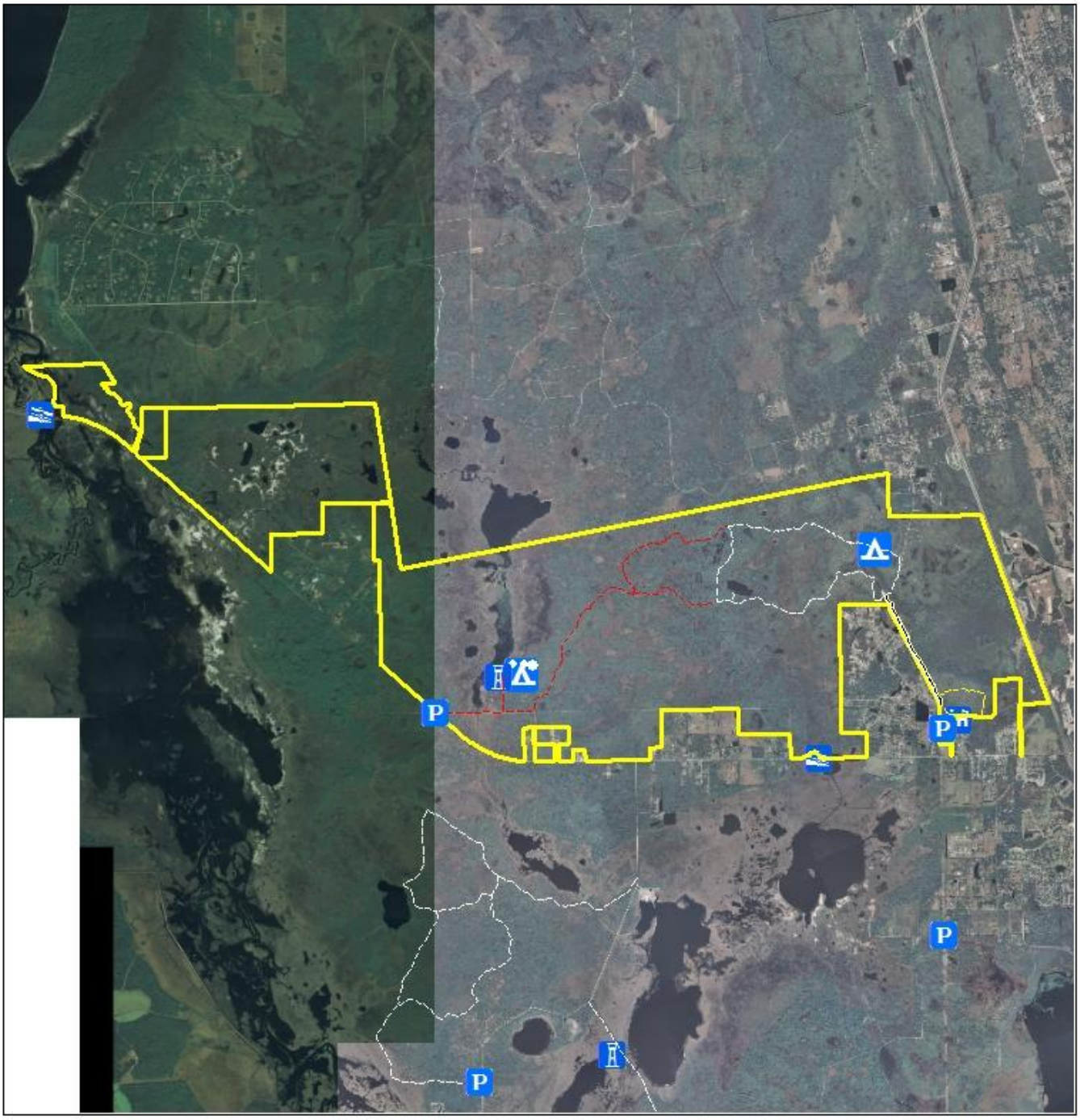

Figure 11. Recreation Map
Buck Lake Conservation Area

1 0.5 0 1 Miles

1 = 85000

Legend

- Buck_Lake_Boundary3_2009
- Red
- White
- Yellow Spur
- Yellow / White Connector
- Boat launch
- Observation Platform
- Security residence
- Individual - Four Tent sites allowed per area
- Group - For 7 or more people per tent site

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Author:tmashour, Source:X:\LandMgmt\GIS\Users\Planners\South_Central\Buck Lake\Buck Lake LMP\Figure 11. Roads and Access Map.mxd, Time:3/17/2009 4:24:23 PM

ADMINISTRATION

Acquisition

According to Chapter 40C-9.031 Florida Administrative Code, the District shall adopt a five-year plan designating the areas of land to be acquired. At this time, there are no parcels identified within the five-year plan for purchase adjacent to Buck Lake. As the District considers purchasing parcels that become available near BLCA that will aid in the conservation of water resources in the St. Johns Upper and/or Middle Basins, the parcels will be added to the five-year plan. As part of the land acquisition program, the District may consider surplussing land when needed.

Acquisition Strategies

- Continue to pursue those parcels that will aid in the conservation of the St. Johns River Upper and Middle Basins.

Cooperative Agreements, Leases, Easements, and Special Use Authorizations

The District is authorized to enter Cooperative Agreements/Cooperative Management Leases, Leases, Easements and Special Use Authorizations. According to Chapter 373.1391 Florida Statutes, Chapter 40C-9.410, the District is authorized and encouraged to enter into cooperative land management agreements with state agencies or local governments to provide for the coordinated and cost-effective management of lands to which the water management districts, the Board of Trustees of the Internal Improvement Trust Fund, or local governments hold title. According to Chapter 40C-9.370, a person shall apply for a District Lease to use District Land if the use constitutes an agricultural activity or is of such nature as to require a legal interest in the District Land according to guidelines in the aforementioned section. According to Chapter 40C-9.380, the District does not encourage the use of District Lands for utility right-of-way easements or other similar purposes except according to the aforementioned section's criteria. According to Chapter 40C-9.360, a person shall apply for a Special Use Authorization to use District Lands according to guidelines in the aforementioned section.

The following list and Table 1 identify all current agreements at BLCA. The District may consider entering into additional agreements as needed or as requested upon internal review, including the installation of cell towers on reasonable disturbed areas on the property.

Special Use Authorizations

Agreement #209-Special Use Authorization that provides for Archbold Biological Station to conduct Scrub-jay Research.

Agreement #466-Special Use Authorization with Florida Natural Areas Inventory to enter the property to conduct butterfly surveys.

Agreement #179-Revenue generating special use authorization with Ralph Higgenbotham for Palm Frond Harvest. This special use authorization expires April 30, 2009 and will be evaluated for renewal for a 5-year term.

Agreement #83-Special Use Authorization with Hurricane Island Outward Bound for camping, trail maintenance, and campsite construction and maintenance.

Agreement #532-Special Use Authorization with Roger Nixon for hog removal.

Agreement #563-Special Use Authorization for a Security Residence with Orlando Vecchio.

Agreement #533-Special Use Authorization with Rebecca Smith for a recreational event.

Agreement #497-Revenue Generating special use authorization with Webb's Honey for apiary sites at BLCA.

Intergovernmental Management Agreements

Agreement #70-Buck Lake Intergovernmental Management Agreement-Anticipating the partnership in funding between the District and Brevard County, this agreement delineated that the District would be the lead management entity for the Buck Lake Parcel, LA #1995-054. It also provided that Brevard County would assist in managing scrub and scrubby flatwoods communities for the benefit of the threatened Florida scrub-jay. Florida scrub-jay habitat was managed in 2003 in partnership with Brevard County. This agreement will be terminated as Brevard County has fulfilled its portion of the agreement.

Agreement #71-Intergovernmental Management Agreement with Florida Fish and Wildlife Conservation Commission for Type I Buck Lake Wildlife Management Area.

Leases

Agreement #91-Revenue generating lease with Clear Channel Worldwide for a billboard at Buck Lake. This lease expires in June 2010 and the District will evaluate possible renegotiation of this lease.

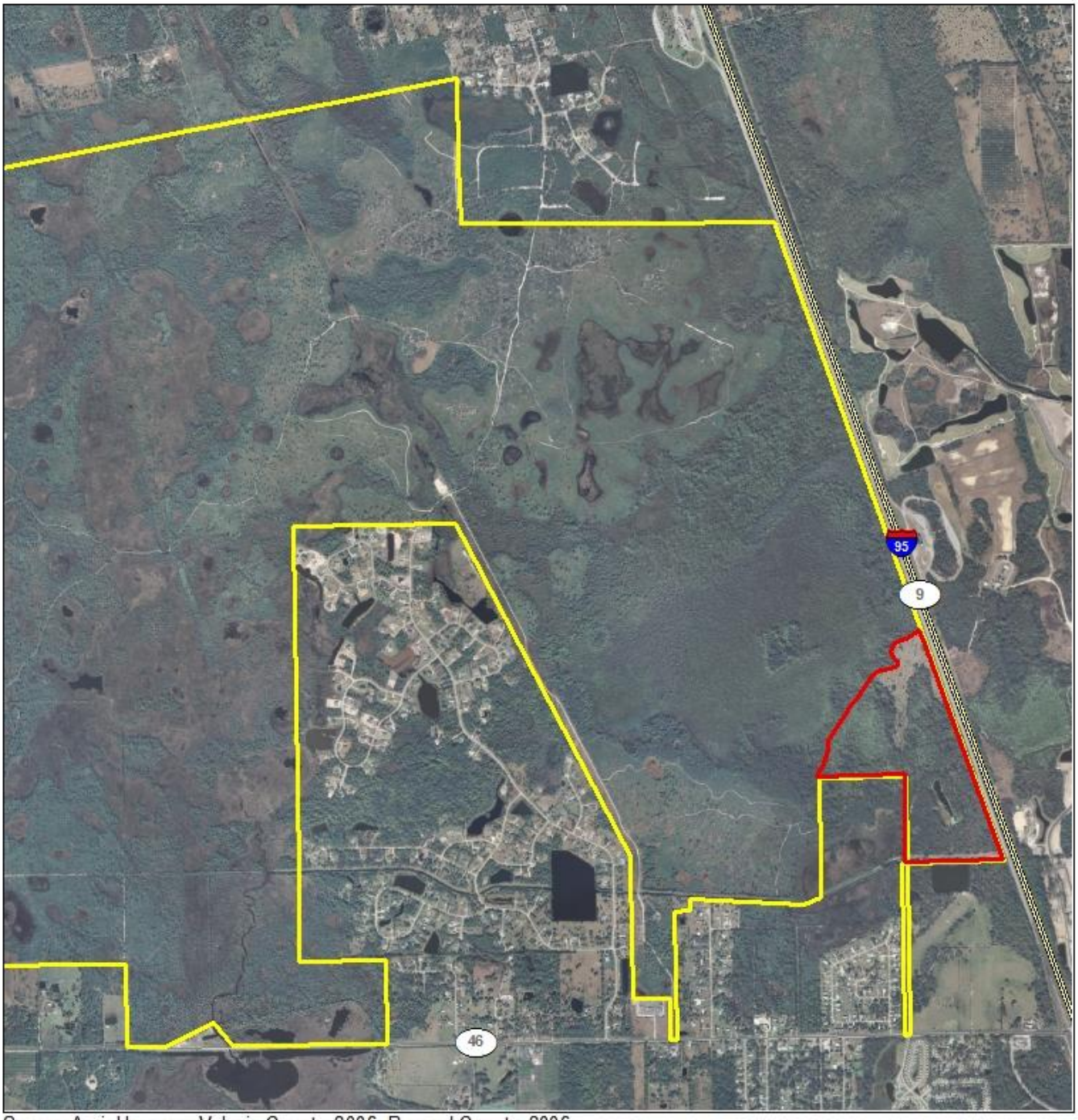
Agreement #239-Revenue generating lease with Ilean Speer for cattle grazing, as depicted in Figure 12.

Table 2. Leases, Easements, and Special Use Authorizations at BLCA.

Agreement #	Agency/ Individual	Begin	Term	Acres	Expiration
#209 Special Use Authorization	Archbold Biological Station	January 1, 2006	one year with 4 one year autorenewals	Buck Lake	December 31, 2010
#70 Intergovernmental Management Agreement	Brevard County	November 11, 1998	5 year term with 25 year autorenewals	Buck Lake	November 10, 2003 with 25 year autorenewals
#71 Intergovernmental Management Agreement	FWC Wildlife Management Area	April 14, 1999	5 year with 5 year autorenewals	Buck Lake	April 13, 2004 with 5 year autorenewals
#91 Lease	Clear Channel Worldwide	Acquired through acquisition	July 1, 1990, assumed upon acquisition	Buck Lake	June 30, 2010
#466 Special Use Authorization	Florida Natural Areas Inventory	May 15, 2008	one year with four one year autorenewals	Buck Lake	May 14, 2013
#179 Special Use Authorization	Ralph Higgenbotham Palm Harvest	November 1, 2004	one year with 4 six month terms	Buck Lake	April 30, 2009
#83 Special Use Authorization	Hurricane Island Outward Bound	September 30, 2004	one year with four one year autorenewals	Buck Lake	September 22, 2009
#532 Special Use Authorization	Roger Nixon Hog Removal	January 1, 2009	one year with four one year autorenewals	Buck Lake	December 31, 2013
#563 Special Use Authorization	Orlando Vecchio Security Residence	May 1, 2007	Autorenewals	Buck Lake	Termination upon 30 days notice
#533 Special Use Authorization	Rebecca Smith Recreational Event	November 25, 2008	one year with four one year autorenewals	Buck Lake	November 24, 2013
#239 Lease	Ilean Speer Cattle Grazing	May 13, 2003	Autorenewals	Buck Lake	May 12, 2004 with autorenewals
#497 Special Use Authorization	Web's Honey Apiary Sites	August 1, 2008	one year with four one year autorenewals	Buck Lake	July 31, 2013

Leases, Special Use Authorizations, and Agreements Strategies

- Continue to monitor all agreements and continue to evaluate as they come up for renewal.



Source: Aerial Imagery Volusia County, 2006, Brevard County, 2006.

Figure 12. Cattle Lease Map
Buck Lake Conservation Area

0.2 0.1 0 0.2 Miles

1:25000

Legend

- Cattle Lease-105 acres
- Buck Lake Conservation Area

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Author:tmashour, Source:X:\LandMgmt\GIS\Users\Planners\South_Central\Buck Lake\Buck Lake LMP\Figure 1. Location Map.mxd, Time:12/24/2008 9:03:19 AM

Revenue Generation

According to Chapter 40C-9.420, Revenues Generated from District Lands, "All revenues generated from the use of District Lands shall be used for District Land acquisition or management." Revenues from BLCA as of 2009 include $1,000 per year from lease # 91, a Clear Channel Worldwide billboard lease, $500 per year for lease #239, which is a cattle grazing lease, a $9,850 per year palm frond harvest special use authorization, which divided by four properties, BLCA brings in $2,462.50 yearly, and $50 per apiary site for special use authorization #497. The total revenue generated at this time is $4,062.50. Table 2 below lists all agreements for revenue generation at BLCA.

Table 3. Revenue Generation at BLCA

Agreement #	Agency/ Individual	Payment Frequency	Term Amount	Expiration	Revenue
#91 Lease	Clear Channel Worldwide	Annually	$1,000	June 30, 2010	$1,000/year
#239 Lease	Ilean Speer Cattle Grazing	Annually	$500	May 12, 2004 with autorenewals	$500/year
#179 Special Use Authorization	Ralph Higgenbotham Palm Harvest	November 1, 2004	one year with four additional six month terms	April 30, 2009	$2,462.50/year on November 4 each year
#497 Special Use Authorization	Web's Honey Apiary Sites	August 1, 2008	one year with four one year autorenewals	July 31, 2013	$100 per year: $50/site for 2 sites at Buck Lake
Total					**$4,062.50**

Revenue Strategies

- The District will continue to monitor all revenue generating agreements for receipt of payment and upon expiration for renewal evaluation.

IMPLEMENTATION CHART

Table 4. BLCA Implementation Chart

TASK	RESPONSIBLE LEAD	DUE DATE	COOPERATORS
RESOURCE PROTECTION AND MANAGEMENT			
Security			
Maintain signage, fences, gates, and boundary marking.	District-LM	Ongoing	
Maintain security residence on site.	District-LM	Ongoing	District-LM
Continue coordinating with Volusia and Brevard County Sheriff's Offices, FWC law enforcement, and a private security firm for any potential security needs.	District-LM	Ongoing	
Coordinate with FWC to establish and enforce wildlife management area rules.	District-LM	2009, 2010, 2011,	FWC

TASK	RESPONSIBLE LEAD	DUE DATE	COOPERATORS
		2012, 2013 and as needed	
Water Resource Protection			
Continue managing BLCA for conservation purposes.	District-LM	Ongoing	
Wetland Restoration			
Plug and/or fill ditches within the property to restore natural hydrology to the Conservation Area.	District-LM	As funding becomes available.	
Flora and Fauna			
Manage the property for conservation to encourage plant and animal diversity and the proliferation of listed species.	District-LM	Ongoing	
District staff will continue to add to the species list any newly noted flora and fauna.			
District staff will coordinate listed species management through south central region land manager.	District-LM	Ongoing	
Continue to manage scrub and scrubby flatwoods habitat for the proliferation of Florida scrub-jay and scrub endemic species.	District-LM	Ongoing	
Continue to coordinate the Jay Watch program on the property in cooperation with The Nature Conservancy.	District-LM	Veg-Summer 2009, Veg-Summer 2011, Veg-Summer 2013, jay surveys yearly	TNC
Forest Management			
Allow mesic and wet flatwoods pine to regenerate to a goal of 50 square feet of basal area through natural regeneration and the use of prescribed burning.	District-LM	Ongoing through annual burn plans.	
Manage scrub and scrubby flatwoods through the use of prescribed burning and mechanical chopping and mowing to achieve the District's defined optimal Florida scrub-jay habitat of vegetation heights between 1-3m, greater than 50% scrub oak species coverage, a maximum pine density of no greater than 9 stems per acre, and 20 to 50% open bare sandy ground and/or groundcover components. Remap Florida scrub-jay territories yearly and include map in	District-LM	Ongoing	

TASK	RESPONSIBLE LEAD	DUE DATE	COOPERATORS
annual burn plans. Alter annual burn plan so as not to burn more than half a Florida scrub-jay territory at one time.			
Remap Florida scrub-jay territories yearly and include map in annual burn plans. Alter annual burn plan so as not to burn more than half a Florida scrub-jay territory at one time.	District-LM	Yearly	
Monitor scrub and scrubby flatwoods vegetation transects every two years to plan for management and budgeting in the following fiscal year to maintain District desired conditions. Take photos every two years at each vegetation transect.	District-LM	Summer 2011, Summer 2013	
Maintain Scrub Management Tracking spreadsheet quarterly recording all management, costs, and Florida scrub-jay effects.	District-LM	Quarterly	
Maintain ARCGIS Scrub Management map quarterly recording field work, field observations, and costs.	District-LM	Quarterly	
Evaluate the need to install survival plots for the northwest acreage.	District-LM	Spring 2010	
Fire Management			
Implement prescribed burning as described in the District's Fire Management Plan and the Buck Lake Conservation Area Fire Management Plan.	District-LM	Ongoing	
Develop annual burn plans.	District-LM	Septmber 2010, 2011, 2012, 2013, 2014	
Utilize growing season burns where possible.	District-LM	Ongoing	
Conduct dormant season burns when not feasible in the growing season and in areas of high fuel loading and/or extended fire exclusion.	District-LM	Ongoing	
Exotic Species			
Continue to monitor and treat invasive and exotic plant species within the property.	District-IPM	Ongoing	District-LM
Continue to utilize USDA and other agents to remove feral hogs on the property as needed.	District-LM	Ongoing, Evaluate as hog SUA expires Jan. 1, 2014.	USDA
Cultural Resources			
Identify and report any detrimental activities to the sites to the Division of Historical Resources and law enforcement.	District-LM	Ongoing	
Identify and report any new sites to Florida Department of State, Division of Historical	District-LM	Ongoing	

TASK	RESPONSIBLE LEAD	DUE DATE	COOPERATORS
Resources.			
LAND USE MANAGEMENT			
Access			
Maintain parking areas, signs, gates, trails, and roads.	District-LM	Ongoing	
Recreation and Outreach			
Update BLCA Trail Guide; include any recreational improvements in the next edition of the District's Recreation Guide to District Lands.	District-LM, District-OC	Spring 2009	
Set up and maintain portable restroom beginning Fiscal Year 2009-2010.	District-LM	Oct. 2009	
Continue partnership with Brevard County EELs program for volunteer trail maintenance.	District-LM	Ongoing	
Maintain recreation trails and amenities and update as needed.	District-LM	Ongoing	
Maintain wildlife management area in partnership with FWC and update as needed.	District-LM, District-PW	Ongoing	FWC
ADMINISTRATION			
Acquisition			
Continue to pursue those parcels that will aid in the conservation of the St. Johns River Upper and Middle Basins.	District-LA	As needed	
Cooperative Agreements, Leases, Easements, and Special Use Authorizations			
Continue to monitor all agreements and continue to evaluate as they come up for renewal.	District-LM, District-DOLR	Ongoing	
Revenue Generation			
The District will continue to monitor all revenue generating agreements for receipt of payment and upon expiration for renewal evaluation.	District-DOLR	Upon payment date, and April 30, 2009, June 30, 2010; May 12, 2004-autorenews; July 31, 2013.	

Key: District LM-District Land Management
District ES-District Environmental Sciences
USDA-United States Department of Agriculture
District IPM-District Invasive Plant Management
District-LA-District Division of Land Acquisition
District-OC-District Office of Communications

District PW-District Public Works
District-DOLR-District Department of Operations and Land Resources
FWC-Florida Fish and Wildlife Conservation Commission
TNC-The Nature Conservancy

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APPENDIX A. SOILS

Mollisols

Soils found in the Mollisols soil taxonomic order have a thick, dark surface horizon and a base saturation of 50% or more. Limestone bedrock, an argillic horizon, and marl may be present or absent. They do not occur extensively in Florida; they are found only in relatively small, scattered areas. Soils in this order found at BLCA include:

Anclote
Bluff Clay Loam
Floridana sand
Hilolo fine sand
Holopaw sand

Spodosols

Soils found in the Spodosols order are dominated by nearly level, somewhat poorly to poorly drained sandy soils with dark sandy subsoil layers. Ecosystems generally are flatwoods and wet to dry prairies with ponds and cypress domes interspersed. Soils in this order found at BLCA include:

Eau Gallie fine sand
Immokalee sand
Myakka Sand
Orsino fine sand
Paola fine sand
St. Johns Sand
Valkaria sand
Wabasso fine sand
Wauchula fine sand

Alfisols

Soils found in the Alfisols order have a percent base saturation of 35% or more. The higher base status of these soils generally derives from wet conditions that prevent or retard downward leaching of bases or from a high content of Ca and Mg carbonates in the soil parent materials, providing a continuous source of basic cations. Natural ecosystems are largely mixed hardwood forests. Soils in this order found at BLCA include:

Malabar Sand
Paisley fine sand
Pineda fine sand
Riviera fine sand
Winder loamy sand
Tequesta muck

Histols

Soils found in the Histols order are dominately organic, consisting of peat and muck deposits of varying thickness over sand, marl, limestone, or other material. The organic material usually has accumulated in an extremely wet environment and can vary in consistency from a fibrous, matted, turf-like material to a mud-like, plastic, slime or ooze. The ecosystems these soils are typically found in include swamps and marshes. Soils in this order found at BLCA include:

Gator muck
Samsula muck
Terra Ceia muck
Tomoka Muck

Ultisols

Ultisols are dominated by level to sloping, well-drained loamy soils and sandy soils with loamy subsoils. Natural ecosystems are generally mixed hardwood and pine forests. This soil profile usually consists of sandy material overlying a loamy or clayey subsoil. Base saturation in these soils is usually less than 35%. Soils in this order found at BLCA include:

Scoggin Sand

Entisols

Entisols are dominated by nearly level to sloping, excessively drained thick sands. Ecosystems are generally sandhill and sand pine scrub. They lack thick, dark surfaces, argillic horizons, and any other diagnostic features. Entisols in Florida range widely not only in geographic extent, but also in natural degree of wetness or dryness, depth to bedrock, nature of parent materials, and landscape position. Soils in this order found at BLCA include:

Fluvaquents

Other

Pomello
Pits (borrow pit)

APPENDIX B. SPECIES LISTS

Avian Species List				
Genus	**Species**	**Variety**	**Common Name**	**Comments**
Acer	*rubrum*		Red maple	
Agalinia	*maritima*		Saltmarsh false foxglove	
Aletris	lutea		Yellow colicroot	
Alternathera	*philoxeroides*		Alligator weed	Category II exotic
Amorpha	*herbacea*		Leadplant	
Amphicarpum	*mulenbergianum*		Blue maidencane	
Ampolepsis	*arborea*		Pepper vine	
Anagallils	*minima*		Chaffweed	
Ardisia	escallonioides		Marlberry	
Andropogon	*glomeratus*		Broom sedge grass	
Andropogon	*ternarius*		Splitbeard bluestem	
Andropogon	virginicus		Broomsedge bluestem	
Argemone	*mexicana*		Mexican poppy	
Aristida	purpurascens	tenuispica	Hillsboro Threeawn	
Aristida	*beyrichiana*		Wire grass	
Aristida	*spiciformis*		Bottlebrush	
Aristida	*stricta*		Wire grass	
Asimina	*obovata*		Bigflower pawpaw	
Asimina	pygmaea			
Asimina	reticulata		Netted pawpaw	
Aster	*carolinianus*		Climbing aster	
Aster	*reticulatus*		White-top aster	
Baccharis	*halimifolia*		Salt bush	
Bacopa	*carolinina*		Lemon bacopa	
Bacopa	*monnieri*		Water hyssop	
Bejaria	*racemosa*		Tarflower	
Bidens	*alba*		Beggarticks	
Bidens	*mitis*		Smallfruit beggarticks	
Blechnum	*serrulatum*		Swamp fern	
Borrichia	*frutescens*		Bushy seaside oxeye	
Bulbostylis	*ciliatifolia*		Hair sedge	
Callicarpa	*americana*		American beautyberry	
Campanula	*floridana*		Bellflower	
Canna	*flaccida*		Golden canna	
Carex	*chapmannii*		Chapman's sedge	
Carex	*intumescens*		Greater bladder sedge	
Carex	*bromoides*		Bromelike sedge	
Carex	*fissa*	*aristata*	Hammock sedge	
Carex	*nigromarginata*		Blackedge sedge	
Carphephorus	*corymbosus*		Paint brush	
Carphephorus	*odoratissimus*		Vanilla leaf	
Carya	*aquatica*		Water hickory	
Carya	*glabra*		Hickory	

Celtis	*laevigata*		Hackberry	
Centella	*asiatica*		Spade leaf	
Cephalanthus	*occidentalis*		Buttonbush	
Chamaecrista	*fasciculata*		Partride pea	
Chamaecrista	*nictitans*		Sensitive pea	
Chasmanthium	laxum	sessiflora	Longleaf woodoats	
Chenopodium	*ambrosioides*		Mexican tea	
Cicuta	*maculata*		Water hemlock	
Cinnamomum	*camphora*		Camphor tree	Category I exotic
Cirsium	horridulum		Pubple thistle	
Cirsium	nuttallii		Nuttall's thistle	
Citrus	*spp.*			
Cladium	*jamaicense*		Saw grass	
Coreopsis	*leavenworthii*		Leavenworth's tickseed	
Cornus	*foemina*		Swamp Dogwood	
Conyza	*canadensis*		Canadian horseweed	
Crotolaria	*rotundifolia*		Rabbit bells	
Cuphea	carthaganensis			
Cyclospermum	leptophyllum		Marsh parsley	
Cynanchum	scoparium		Leafless swallowwort	
Cyperus	odoratus		Flagrant flatsedge	
Dactyloctenium	aegyptium		Durban crowfoot grass	
Dalea	pinnata	adenopoda	Summer farewell	
Dichanthelium	commutatum		Variable witchgrass	
Dichanthelium	dichotomum		Cypress witchgrass	
Dichanthelium	ensifolium		Cypress witchgrass	
Dichanthelium	ovale		Egleaf witchgrass	
Dichanthelium	sphaerocarpon		Roundseed witchgrass	
Diospyrus	*virginiana*		Persimmon	
Drosera	brevifolia		Dwarf sundew	
Drosera	*capillaris*		Pink sundew	
Eleocharis	sp.		Spikerush	
Eleocharis	geniculata		Canada spikerush	
Elephantopus	*elatus*		Elephant's foot	
Epidendrum	*conopseum*		Green-fly orchid	Comercially exploited
Eragrostis	*elliotti*		Elliott's lovegrass	
Eragrostis	*virginica*		Coastal lovegrass	
Erechtites	hieraciifolius		American burnweed	
Erigeron	quercifolius		Oakleaf fleabane	
Erigeron	*vernuus*		White-top fleabane	
Eriocaulon	sp.		Pipewort	
Erocaulon	*decangulare*		Ten-angle pipewort	
Eryngium	baldwinii		Baldwin's ergyno	
Eryngium	*yuccifolium*		Rattlesnake master	
Erythrina	herbacea		Coralbean	
Eupatorium	*mikanioides*		Semaphore Eupatorium	
Eupatroium	*capillifolium*		Dogfennel	
Euthamia	caroliniana		Slender flattop goldenrod	

Euthamia	*graminifolia*		Flattop goldenrod	
Fuirena	scirpoidea		Southern umbrellasedge	
Galactia	*elliotti*		Elliott's milk pea	
Galium	*tinctorum*		Stiffmarsh bedstraw	
Galium	*uniflorum*		Oneflower bedstraw	
Gamochaeta	*antillana*		Caribbean purple everlasting	
Gaylussacia	*dumosa*		Dwarf huckleberry	
Gelsimium	*sempervirens*		Yellow jassamine	
Geranium	*carolinianum*		Cranesbill	
Gnaphalium	*pensylvanicum*		Cudweed	
Gordonia	*lasianthus*		Loblolly bay	
Gratiola	*hispida*		Shaggy hedge-hyssop	
Habenaria	*spp.*		Spider orchid	
Hedyotis	*procumbens*		Innocense	
Helianthemum	corymbosum		Pine barren frostweed	
Helianthus	*angustifolia*		Narrow leaf sunflower	
Helianthus	floridanus		Florida sunflower	
Heliotropium	curassavicum		Seaside heliotrope	
Heterotheca	subaxillaris		Camphor weed	
Hibiscus	*grandiflorus*		Swamp hibiscus	
Hibiscus	*coccineus*		Scarlet hibiscus	
Hieracium	*gronovoli*		Hawkweed	
Hydrocotyle	*umbellata*		Dollarweed	
Hypericum	brachyphyllum		Coastal plain St. John's-wort	
Hypericum	*cystifolium*		Roundpod St. John's-wort	
Hypericum	*fasciculatum*		Peelbark St. John's-wort	
Hypericum	*hypercoides*		St. Andrew's cross	
Hypericum	mutilum		Dwarf St. John's-wort	
Hypericum	*reductum*			
Hypericum	*tetrapetalum*			
Hypoxis	*curtissi*		Common yellow stargrass	
Hypoxis	*juncea*		Fringed yellow stargrass	
Hyptis	*alata*		Musky mint	
Ilex	*cassine*		Dahoon holly	
Ilex	ambigua		Carolina holly/Sand holly	
Ilex	glabra		Gallberry	
Ilex	vomitoria		Yaupon holly	
Ipomoea	sagittata		Saltmarsh morning-glory	
Iresine	*diffusa*		Bloodleaf	
Iris	*hexegona*		Prairie iris	
Iris	virginica		Virginia iris	
Juncus	*effusus*		Soft rush	
Juncus	roemerianus		Needle rush	
Juniperus	*virginiana*		Red cedar	
Lachnocaulon	anceps		Whitehead bogbutton	
Lachnocaulon	minus		Small's bogbutton	
Licania	michauxii		Gopher apple	

Lacnanthes	*caroliniana*		Carolina red root	
Lechea	divaricata		Pine Pinweed	Federally endangered
Lechea	*spp.*		Pineweed	
Leptochloa	*fusca*	*fascicularis*	Bearded sprangletop	
Liatris	gracilis		Slender gayfeather	
Liatris	tenuifolia	quadriflora	Shortleaf gayfeather	
Licania	*michauxii*		Gopher apple	
Linaria	*canadensis*		Canada toadflax	
Linaria	*floridana*		Apalachicola toadflax	
Liquidambar	*styraciflua*		Sweet gum	
Lobelia	*feayana*		Bay lobelia	
Lobelia	glandulosa		Glade lobelia	
Lobelia	paludosa		White lobelia	
Ludwigia	curtissii		Curtiss' promrose willow	
Ludwigia	peruviana		Peruvian primrose willow	Category I exotic
Lupinus	*diffusus*		Sky-blue lupine	
Lycium	*carolinianum*		Christmas berry	
Lycopodiella	*sp.*		Club-moss	
Lygodesmia	aphylla		Rose-rush	
Lyonia	*ferruginea*		Rusty lyonia	
Lyonia	*fruticosa*		Coastalplain staggerbush	
Lyonia	*lucida*		Shiny lyonia	
Magnolia	*grandiflora*		Southern magnolia	
Magnolia	*virginiana*		Sweey bay	
Mikania	*scandens*		Climbing hempvine	
Mitchella	*repens*		Partridge berry	
Morus	*alba*		White mulberry	
Myrcianthes	*fragrans*		Twinberry	
Myrica	*cerifera*		Wax myrtle	
Myriophyllum	*aquaticum*		Parrot feather watermilfoil	
Nothoscordum	*bivalve*		False garlic	
Nuphar	*lutea*		Yellow pond lilly	
Nyssa	*sylvatica*	*var. biflora*	Swamp tupelo	
Oclemena	*reticulata*		Whitetop aster	
Oldenlandia	*uniflora*		Clustered mille graines	
Oplismenus	*hirellus*		Basket grass	
Opuntia	*humifusa*		Prickly pear cactus	
Osmanthus	*americanus*		Wild olive	
Osmunda	*regalis*		Royal fern	Commercially exploited
Oxalis	*stricta*		Yellow wood sorrel	
Packera	*glabella*		Butterweed	
Palafoxia	*feayi*		Feay's palafox	
Palafoxia	integrifolia		Coastalplain palafox	
Panicum	*hemitomon*		Maidencane	
Panicum	*repens*		Torpedo grass	Category I Exotic
Panicum	*virgatum*		Switchgrass	
Parietaria	*floridana*		Florida pellitory	

Paspalum	*notatum*		Bahia grass	Exotic
Paspalum	*setaceum*		Thin paspalum	
Passiflori	*incarnata*		Purple passionflower	
Pathenocissus	*quinquefolia*		Virginia creeper	
Persea	*borboni*	*var. borbonia*	Red bay	
Persea	*borboni*	*var. humilis*	Silk bay	
Persea	*palustris*		Swamp bay	
Phlebodium	*aureum*		Golden polypody	
Phoradendron	*leucrpum*		Mistletoe	
Phylla	nodiflora			
Physalis	*arenicola*		Ground cherry	
Physalis	*walteri*		Walter's groundcherry	
Piloblephis	*rigida*		Wild pennyroyal	
Pinguicula	lutea		Yellow butterwort	
Pinguicula	*pumilla*		Small butterwort	
Pinus	*clausa*		Sand pine	
Pinus	*elliotti*		Slash pine	
Pinus	*serotina*		Pond pine	
Pinus	*palustrus*		Longleaf pine	
Pinus	*taeda*		Loblolly pine	
Piriqueta	cistoides	subsp. caroliniana	Pitted stripeseed	
Pityopsis	*gramnifolia*		Narrowleaf silk grass	
Plantago	*virginica*		Virginia plantain	
Pleopeltis	*polypodioides*	*var. michauxiana*	Ressuection fern	
Pluchea	*rosea*		Camphor weed	
Polygala	cymosa		Tall pinebarren milkwort	
Polygala	lutea		Orange milkwort	
Polygala	*nana*		Candy root	
Polygala	rugelii		Yellow milkwort	
Polygonum	punctatum		Dotted smartweed	
Polypremum	procumbens		Rustweed	
Pontedaria	*cordata*		Pickerel weed	
Proserpinaca	pectinata		Combleaf mermaidweed	
Psychotria	nervosa		Wild coffee	
Pteridium	*aquilinum*	*var. pseudocaudatum*	Bracken fern	
Pterocaulon	*pycnostachyum*		Black root	
Quercus	*chapmanii*		Chapman's oak	
Quercus	*inopina*		Scrub oak	
Quercus	laurifolia		Laurel oak	
Quercus	*geminata*		Sand live oak	
Quercus	minima		Dwarf live oak	
Quercus	*myrtifolia*		Myrtle oak	
Quercus	*nigra*		Water oak	
Quercus	*pumila*		Running oak	
Quercus	*virginiana*		Live oak	
Rhexia	mariana		Pale meadowbeauty	
Rhus	*copallinum*		Winged sumac	
Rhynchospora	colorata		Starrush whitetop	

Rhynchospora	decurrens		Swampforest beaksedge	
Rhynchospora	megalocarpa			
Rhynchospora	microcarpa			
Rhynchospora	ocxorata		Fragrant beacksedge	
Rubus	*argutus*		Sawtooth blackberry	
Rubus	*trivialis*		Southern dewberry	
Ruellia	*brittoniana*		Mexican petunia	Category I exotic
Rumex	*verticillatus*		Swamp dock	
Sabal	*palmetto*		Cabbage palm	
Sabatia	brevifolia		Shortleaf rosegentian	
Sabatia	grandiflora		Largeflower rosegentian	
Saccharum	*giganeum*		Sugarcane plumgrass	
Sagittaria	isoetiformis		Quillwort arrowhead	
Sagittaria	*lancifolia*		Duck potato	
Salicornia	*bigelovii*		Annual glasswort	
Salix	*caroliniana*		Carolina willow	
Salvia	*lyrata*		Lyre-leaved sage	
Salvinia	*minima*		Water spangles	
Sambucus	*canadensis*		Elderberry	
Sambucus	*nigra*		American elder	
Samolus	*ebracteatus*		Water pimpernel	
Sapium	*sebiferum*		Chinese Tallow	
Sarracenia	minor		Hooded pitcher plant	
Saururus	*cernuus*		Lizard's tail	
Schinus	terebenthifolia		Brazilian pepper	exotic
Sclevia	*triglomerata*		Tall nutgrass	
Scutellaria	integrifolia		Helmet skullcap	
Serenoa	*repens*		Saw palmetto	
Sesbania	vesicaria		Bladderpod	
Sesuvium	maritumum		Slender seapurslane	
Sesuvium	portulacastrum		Shoreline seapurslane	
Setaria	*geniculata*		Knotroof foxtail	
Sideroxylon	*reclinatum*		Smooth bumelia	
Sirghastrum	*secundum*		Lopsided Indian grass	
Sisyrinchium	*angustifolium*		Narrowleaf blue-eyed grass	
Smilax	*auriculata*		Greenbrier	
Smilax	*bona-nox*		Saw greenbrier	
Smilax	*pumila*		Dwarf smilax	
Smilax	*laurifolia*		Smilax	
Solanum	*viarum*		Tropical Soda Apple	Category I Exotic
Solidago	fistulosa		Pinebarren goldenrod	
Solidago	*odor*	*var. chapmanii*	Goldenrod	
Spartina	*bakerii*		Spartina	
Spiranthes	vernalis		Spring ladiestresses	
Sporobolus	*indicus*		Smut grass	
Symphyotrichum	carolinianum		Climbing aster	
Syngonanthis	*flavidulus*		Bantam-buttons	
Taraxacum	*officinale*		Dandelion	

Taxodium	*ascendens*		Pond cypress	
Taxodium	*distichum*		Bald cypress	
Tillandsia	*fasciculata*		Cardinal airplant	
Tillandsia	*recurvata*		Ball moss	
Tillandsia	setacea		Southern needleleaf	
Tillandsia	*usneoides*		Spanish moss	
Tillandsia	*utriculata*		Giant airplant	
Trichostema	*dichotomum*		Blue curls	
Typha	*domingensis*		Southern cattail	
Ulmus	*americana*		American elm	
Urena	*lobata*		Caesar weed	
Utriculata	subulata			
Vaccinium	*arboreum*		Sparkleberry	
Vaccinium	*corymbosum*		Highbush blueberry	
Vaccinium	darrowii		Darrow's blueberry	
Vaccinium	*myrsinites*		Shiny blueberry	
Vaccinium	*stamineum*		Deerberry	
Verbesina	virginica		White crownbeard	
Viola	*lanceolata*		Bog white violet	
Viola	primulifolia		Primroseleaf violet	
Vitis	*rotundifolia*		Muscadine	
Vittaria	*lineata*		Shoestring fern	
Woodwardia	*virginica*		Virginia chain fern	
Ximenia	*americana*		Hog plum	
Xyris	*spp.*		Yellowe-eyed grass	
Yucca	*filamentosa*		Adam's needle	
Zanthoxylum	*clava-herculis*		Hercules' Club	
Zeuxine	strateumatica		Soldier's orchid	

Avian Species List	
Aix sponsa	Wood Duck
Anas penelope	American Wigeon
Anas platyrhynchos	Mallard
Anas fulvigula	Mottled Duck
Anas discors	Blue-winged Teal
Anas acuta	Northern Pintail
Anas crecca	Green-winged Teal
Aythya collaris	Ring-necked Duck
Bucephala clangula	Common Goldeneye
Lophodytes cucullatus	Hooded Merganser
Meleagris gallopavo	Wild Turkey
Colinus virginianus	Northern Bobwhite
Gavia immer	Common Loon
Podilymbus podiceps	Pied-billed Grebe

Pelecanus erythrorhynchos	American White Pelican
Pelecanus occidentalis	Brown Pelican
Phalacrocorax auritus	Double-crested Cormorant
Anhinga anhinga	Anhinga
Botaurus lentiginosus	American Bittern
Ixobrychus exilis	Least Bittern
Ardea herodias	Great Blue Heron
Ardea alba	Great Egret
Egretta thula	Snowy Egret
Egretta caerulea	Little Blue Heron
Egretta tricolor	Tricolored Heron
Bubulcus ibis	Cattle Egret
Butorides virescens	Green Heron
Nycticorax nycticorax	Black-crowned Night-Heron
Nyctanassa violacea	Yellow-crowned Night-Heron
Eudocimus albus	White Ibis
Plegadis falcinellus	Glossy Ibis
Platalea ajaja	Roseate Spoonbill
Mycteria americana	Wood Stork
Coragyps atratus	Black Vulture
Cathartes aura	Turkey Vulture
Pandion haliaetus	Osprey
Elanoides forficatus	Swallow-tailed Kite
Elanus leucurus	White-tailed Kite
Haliaeetus leucocephalus	Bald Eagle
Circus cyaneus	Northern Harrier
Accipiter striatus	Sharp-shinned Hawk
Accipiter cooperii	Cooper's Hawk
Buteo lineatus	Red-shouldered Hawk
Buteo jamaicensis	Red-tailed Hawk
Caracara cheriway	Crested Caracara
Falco sparverius	American Kestrel
Falco columbarius	Merlin
Falco peregrinus	Peregrine Falcon
Rallus elegans	King Rail
Rallus limicola	Virginia Rail
Porzana carolina	Sora
Gallinula chloropus	Common Moorhen
Fulica americana	American Coot

Aramus guarauna	Limpkin
Grus canadensis	Sandhill Crane
Pluvias squatarola	Black-bellied Plover
Charadrius semipalmatus	Semipalmated Plover
Charadrius vociferus	Killdeer
Himantopus mexicanus	Black-necked Stilt
Actitis macularius	Spotted Sandpiper
Tringa solitaria	Solitary Sandpiper
Tringa melanoleuca	Greater Yellowlegs
Tringa flavipes	Lesser Yellowlegs
Arenaria interpres	Ruddy Turnstone
Calidris pusilla	Semipalmated Sandpiper
Calidris mauri	Western Sandpiper
Calidris minutilla	Least Sandpiper
Calidris fuscicollis	White-rumped Sandpiper
Calidris melanotos	Pectoral Sandpiper
Calidris alpina	Dunlin
Calidris himantopus	Stilt Sandpiper
Limnodromus griseus	Short-billed Dowitcher
Limnodromus scolopaceus	Long-billed Dowitcher
Gallinago delicata	Wilson’s Snipe
Scolopax minor	American Woodcock
Chroicocephalus philadelphia	Bonaparte’s Gull
Larus atricilla	Laughing Gull
Larus delawarensis	Ring-billed Gull
Larus argentatus	Herring Gull
Sternula antillarum	Least Tern
Gelochelidon niloticta	Gull-billed Tern
Hydroprogne caspia	Caspian Tern
Sterna forsteri	Forster's Tern
Columba livia	Rock Pigeon
Streptopelia decaocto	Eurasian Collared-Dove
Zenaida macroura	Mourning Dove
Columbina passerina	Common Ground-Dove
Coccyzus americanus	Yellow-billed Cuckoo
Megascops asio	Eastern Screech-Owl
Bubo virginianus	Great Horned Owl
Strix varia	Barred Owl
Chordeiles minor	Common Nighthawk

Chaetura pelagica	Chimney Swift
Archilochus colubris	Ruby-throated Hummingbird
Megaceryle alcyon	Belted Kingfisher
Melanerpes erythrocephalus	Red-headed Woodpecker
Melanerpes carolinus	Red-bellied Woodpecker
Sphyrapicus varius	Yellow-bellied Sapsucker
Picoides pubescens	Downy Woodpecker
Picoides villosus	Hairy Woodpecker
Colaptes auratus	Northern Flicker
Dryocopus pileatus	Pileated Woodpecker
Contopus virens	Eastern Wood-Pewee
Empidonax sp.	
Sayornis phoebe	Eastern Phoebe
Myiarchus crinitus	Great Crested Flycatcher
Tyrannus tyrannus	Eastern Kingbird
Lanius ludovicianus	Loggerhead Shrike
Vireo griseus	White-eyed Vireo
Vireo solitarius	Blue-headed Vireo
Vireo olivaceus	Red-eyed Vireo
Cyanocitta cristata	Blue Jay
Aphelocoma coerulescens	Florida Scrub-Jay
Corvus brachyrhynchos	American Crow
Corvus ossifragus	Fish Crow
Progne subis	Purple Martin
Tachycineta bicolor	Tree Swallow
Stelgidopteryx serripennis	Northern Rough-winged Swallow
Riparia riparia	Bank Swallow
Hirundo rustica	Barn Swallow
Poecile carolinensis	Carolina Chickadee
Baeolophus bicolor	Tufted Titmouse
Sitta pusilla	Brown-headed Nuthatch
Thryothorus ludovicianus	Carolina Wren
Troglodytes aedon	House Wren
Cistothorus platensis	Sedge Wren
Cistothorus palustris	Marsh Wren
Regulus calendula	Ruby-crowned Kinglet
Polioptila caerulea	Blue-gray Gnatcatcher
Sialia sialis	Eastern Bluebird
Catharus guttatus	Hermit Thrush

Turdus migratorius	American Robin
Dumetella carolinensis	Gray Catbird
Mimus polyglottos	Northern Mockingbird
Toxostoma rufum	Brown Thrasher
Sturnus vulgaris	European Starling
Anthus rubescens	American Pipit
Bombycilla cedrorum	Cedar Waxwing
Vermivora celata	Orange-crowned Warbler
Parula americana	Northern Parula
Dendroica petechia	Yellow Warbler
Dendroica tigrina	Cape May Warbler
Dendroica coronata	Yellow-rumped Warbler
Dendroica virens	Black-throated Green Warbler
Dendroica fusca	Blackburnian Warbler
Dendroica dominica	Yellow-throated Warbler
Dendroica pinus	Pine Warbler
Dendroica discolor	Prairie Warbler
Dendroica palmarum	Palm Warbler
Mniotilta varia	Black-and-white Warbler
Setophaga ruticilla	American Redstart
Seiurus aurocapilla	Ovenbird
Seiurus noveboracensis	Northern Waterthrush
Geothlypis trichas	Common Yellowthroat
Piranga rubra	Summer Tanager
Pipilo erythrophthalmus	Eastern Towhee
Aimophiila aestivalis	Bachman's Sparrow
Spizella passerina	Chipping Sparrow
Passerculus sandwichensis	Savannah Sparrow
Melospiza melodia	Song Sparrow
Melospiza georgiana	Swamp Sparrow
Junco hyemalis	Dark-eyed Junco
Cardinalis cardinalis	Northern Cardinal
Passerina caerulea	Blue Grosbeak
Passerina cyanea	Indigo Bunting
Passerina ciris	Painted Bunting
Dolichonyx oryzivorus	Bobolink
Agelaius phoeniceus	Red-winged Blackbird
Sturnella magna	Eastern Meadowlark
Euphagus cyanocephalus	Brewer's Blackbird

Quiscalus quiscula	Common Grackle
Quiscalus major	Boat-tailed Grackle
Molothrus ater	Brown-headed Cowbird
Carduelis tristis	American Goldfinch

Mammalian Species List		
Genus	**Species**	**Common Name**
Odocoileus	*virginianus*	White Tailed Deer
Sciurus	*carlinensis*	Gray Squirrel
Sigmodon	*hispidus*	Cotton Rat
Peromyscus	*gossypinus*	Cotton Mouse
Didelphis	*virginiana*	Virginia Opossum
Sus	*scrofa*	Feral Hog
Lutra	*canadensis*	River Otter
Procyon	*lotor*	Raccoon
Dacypus	*novemcinctus*	Armadillo
Sylvilagus	*floridanus*	Eastern Cottontail
Sylvilagus	*palustris*	Marsh Rabbit
Felis	*rufus*	Bobcat
Ochrotomys	nuttalli	Golden Mouse

Scientific Name		**Common Name**
Acris	*gryllus gryllus*	Southern cricket
Hyla	*cinerea*	Green treefrog
Rana	*capito aesopus*	Florida gopher frog

Reptile Species List		
Scientific Name		**Common Name**
Alligator	*mississippiensis*	American alligator
Anolis	*sagrei*	Cuban brown anole*
Coluber	*constrictor priapus*	Southern black racer
Crotalus	*adamanteus*	Eastern diamondback rattlesnake
Gopherus	*polyphemus*	Gopher tortoise
Nerodia	*taxispilota*	Brown water snake
Cnemidophorus	*sexlineatus*	Six lined racerunner

Acris	*gryllus*	Cricket frog
Ophisaurus	*ventralis*	Eastern glass lizard
Drymarchon	*corais couperi*	Eastern indigo snake

*Exotic

Fish Species List		
Scientific Name		**Common Name**
Micropterus	*salmoides*	Largemouth bass
Lepomis	*microlophus*	Redear sunfish
Pomoxis	*nigromaculatus*	Black crappie
Lepisosteus	*platyrhincus*	Florida gar
Amia	*calva*	Bowfin
Lepomis	macrochirus	Bluegill
Gambusia	Holbrooki	Mosquito fish
Erimyzon sucetta		Lake chubsucker

Butterfly Species List		
Scientific Name		**Common Name**
Eurytides	*marcellus*	Zebra Swallowtail
Papilio	*polyxenes*	Black Swallowtail
Papilio	*glaucus*	Eastern Tiger Swallowtail
Papilio	*troilus*	Spicebush Swallowtail
Papilio	*palamedes*	Palamedes Swallowtail
Ascia	*monuste*	Great Southern White
Phoebis	*sennae*	Cloudless Sulphur
Eurema	*daira*	Barred Yellow
Eurema	*lisa*	Little Yellow
Satyrium	*favonius*	'Southern' Oak Hairstreak
Strymon	*melinus*	Gray Hairstreak
Leptotes	*cassius*	Cassius Blue
Agraulis	*vanillae*	Gulf Fritillary
Heliconius	*charithonia*	Zebra Heliconian
Euptoieta	*claudia*	Variegated Fritillary
Phyciodes	*phaon*	Phaon Crescent
Phyciodes	*tharos*	Pearl Crescent
Vanessa	*atalanta*	Red Admiral
Junonia	*coenia*	Common Buckeye
Anartia	*jatrophae*	White Peacock
Limenitis	*archippus*	Viceroy
Hermeuptychia	*sosybius*	Carolina Satyr
Epargyreus	*clarus*	Silver-spotted Skipper
Erynnis	*horatius*	Horace's duskywing
Erynnis	*zarucco*	Zarucco Duskywing
Copaeodes	*minimus*	Southern Skipperling
Hylephila	*phyleus*	Fiery Skipper

Polites	*vibex*	Whirlabout
Euphyes	*arpa*	Palmetto Skipper
Oligoria	*maculata*	Twin-spot Skipper

APPENDIX C. BUCK LAKE CONSERVATION AREA FIRE MANAGEMENT PLAN

Buck Lake Conservation Area

FIRE MANAGEMENT PLAN

PREPARED BY

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
DIVISION OF LAND MANAGEMENT
June 2009

Buck Lake Conservation Area
Fire Management Plan
Brevard and Volusia Counties, 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 Buck Lake Conservation Area (BLCA).

Introduction and Objectives

The BLCA covers approximately 9,606 acres in Brevard and Volusia Counties. This conservation area includes three contiguous parcels and is located in numerous sections of Townships 20 and 21 south and Ranges 33 and 34 east. The property is located north of State Road 46 and west of I-95 east of Mims and northeast of Geneva. Figure 1 depicts the general location of the Conservation Area.

The 1,938 acre Kilbee Tract was purchased in 1993, the 7,708 acre Buck Lake Tract was purchased in 1996 and the 346 acre Food Basics Tract was purchased in 2000. Figure 2 illustrates individual parcels.

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 also leads to the excessive accumulation of fuel loads, which increases the risk for catastrophic wildfires. The goals for the implementation of fire management activities within the BLCA include:

1. Reduction of fuel loads through the application of dormant season burns to decrease potential risk of damaging wildfires.
2. Continuation of growing season burns to encourage the perpetuation of native fire adapted ground cover species.
3. Restoration and maintenance of a mosaic of natural plant communities and ecological diversity.
4. Maintenance and restoration of ecotonal areas.
5. Utilize prescribed fire to achieve the range of optimal habitat for the Florida scrub-jay and other species associated within the scrub and scrubby flatwoods communities by meeting habitat management standards.
6. Mitigation of smoke management issues.

The achievement of these goals requires that the conservation area 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.

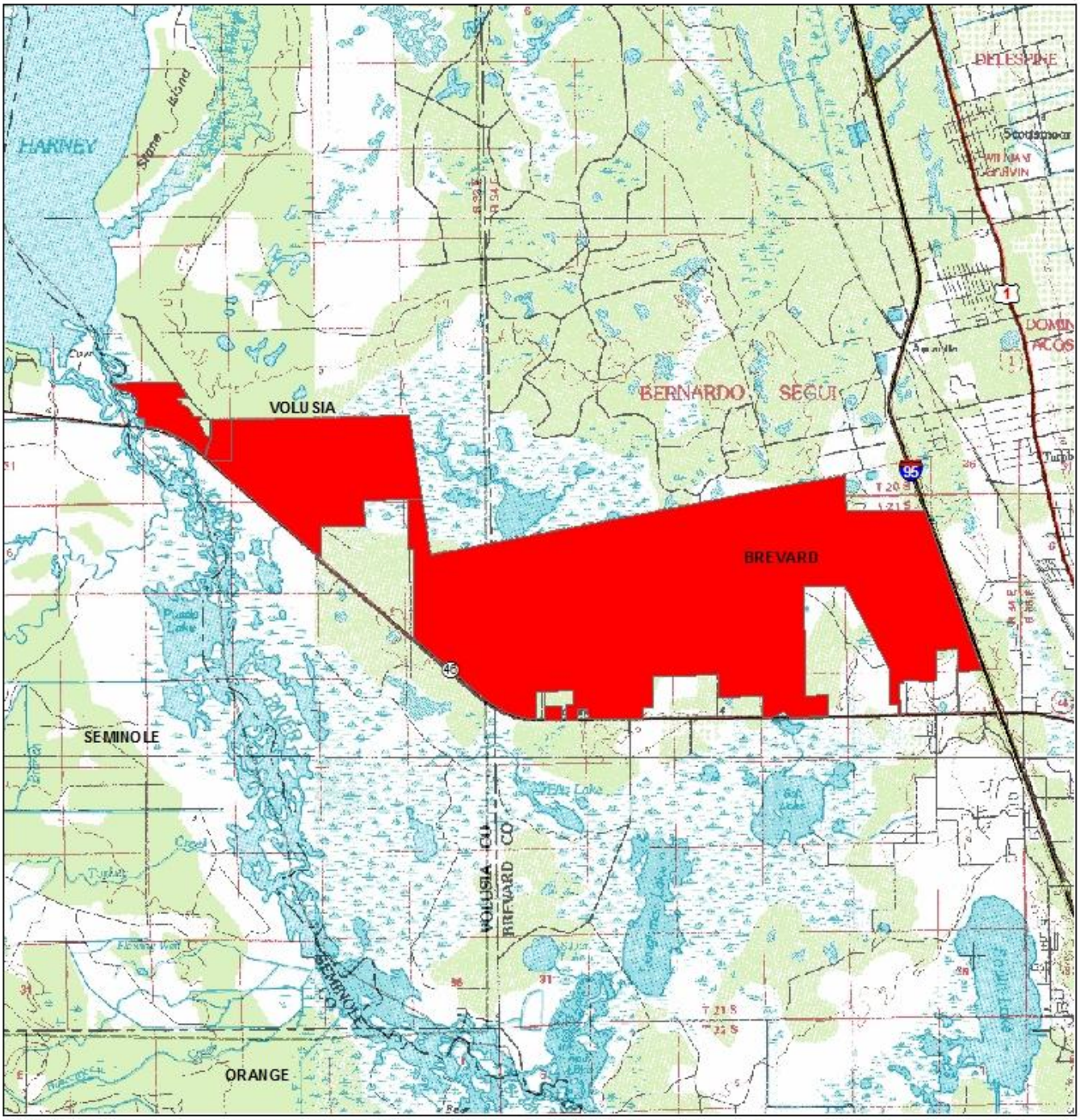

Figure 1. Location Map

Buck Lake Conservation Area

1 0.5 0 1 Miles

1:100000

Legend

- Buck Lake Conservation Area
- County Boundaries
- Hydrography 100K, Arcs
- Hydrography 100K, Shading
- Interstate HWY
- US HWY
- State HWY
- Others

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

Author:tmashour, Source:X:\Land\Mgmt\GIS\Users\Planners\South_Central\Buck Lake\Buck Lake LMP\Figure 1. Location Map.mxd, Time:12/24/2008 9:03:19 AM

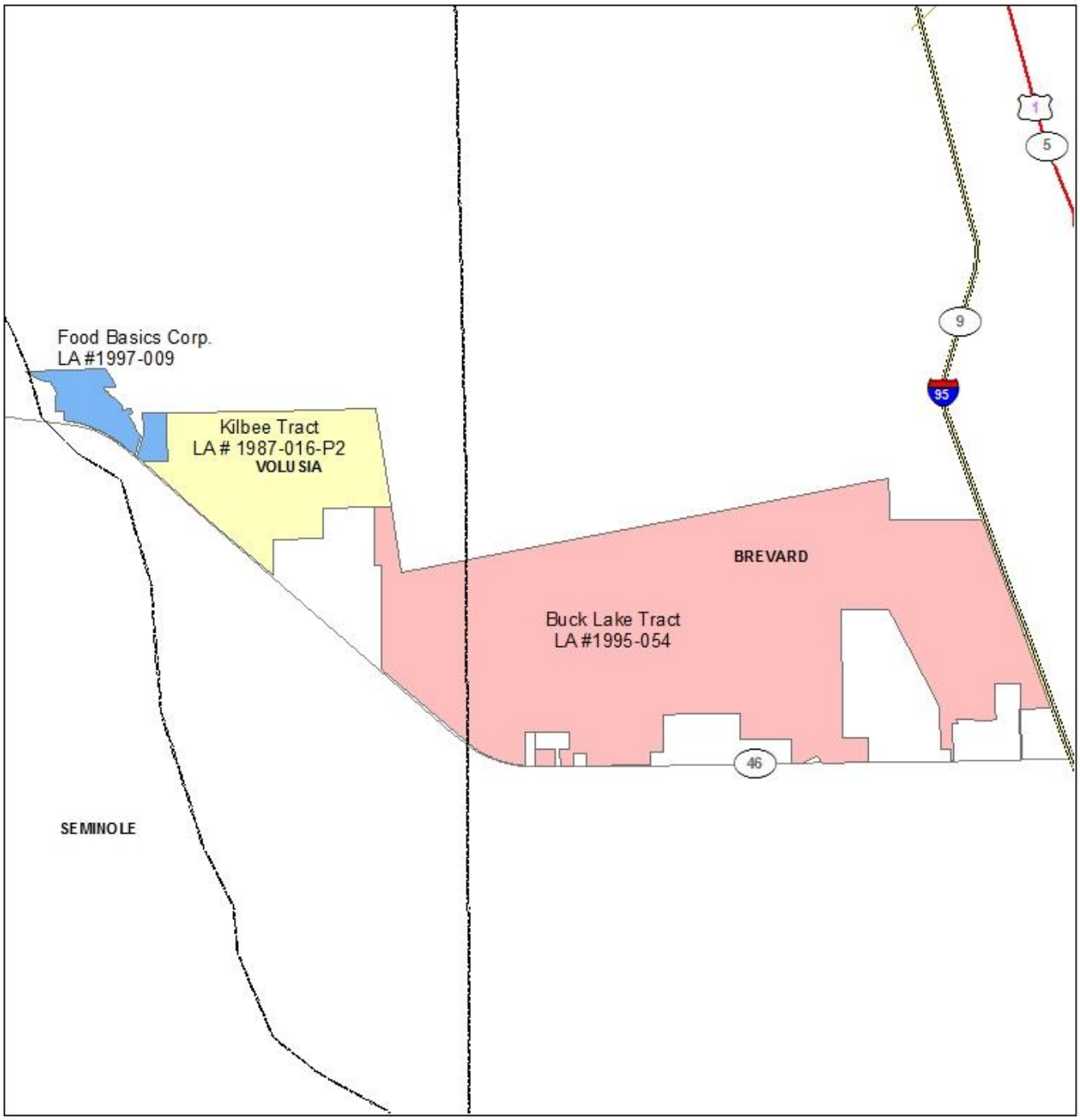

Figure 2.
Acquisition History Map
Buck Lake Conservation Area

1 0.5 0 1 Miles

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Legend

- Kilbee 3/18/1993
- Buck Lake 5/31/1996
- Food Basics 1/28/2000
- County Boundaries

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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 disturbances to perpetuate themselves while others are not fire adapted and subsequently do not require fire to maintain their characteristics. Discussion of native plant communities occurring on the Conservation area 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).

Table 1.

Community Type	Fire return Interval
Scrub	20-80 years in a scrub oak dominated community (The District will burn on a 3-10 year fire return intervals based on analysis of the needs of each burn unit.)
Scrubby Flatwoods	8-25 years (The District will burn on 3-5 year fire return intervals based on analysis of the needs of each burn unit.)
Mesic Flatwoods	1-8 years
Depression Marsh (edges)	1-8 years in conjunction with associated flatwoods and depending on composition of edge species
Wet Flatwoods	3-10 years
Basin Marsh	1-8 years in conjunction with associated flatwoods and depending on composition of edge species
Basin Swamp	5 to 150 years
Floodplain Marsh	1-5 years to restrict shrub invasion
Salt Flats	1-5 years in conjunction with associated floodplain marsh burns.
Salt Flats Vegetated	1-5 years in conjunction with associated floodplain marsh burns.
Wet Prairie	2 to 4 years
Hydric Hammock	Maintained through hydrology.
Prairie Hammock	Tolerate occasional light ground fires.

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

Fire Return Interval-Uplands

Scrub, scrubby flatwoods, mesic flatwoods, and marsh are the most prevalent fire adapted natural community types found within the Conservation area. The 7,708 acre Buck Lake

Tract was logged prior to public acquisition in 1996 and stocking rate was further reduced following the 1998 wildfires. In 1999, Brevard County Environmentally Endangered Lands program funded the mechanical treatment of nine acres of overgrown scrub using a Kershaw cutter. An additional 23 acres of treatment were funded by the County utilizing a feller-buncher to harvest pine and pile burns were conducted with the felled trees to create open sandy areas. In 2000, the District received a Partnership for Wildlife Project grant issued by the U.S. Fish and Wildlife Service (USFWS). This grant reimbursed 50% of costs to the District for restoration work within the scrubby flatwoods at BLCA. Accomplishments under this grant include 196 acres of drum chopping and 357 acres of prescribed burning. In late 2008, tall oaks were felled to prevent perching of avian predators of the Florida scrub-jay. In winter 2009, all merchantable timber was harvested from the scrub and scrubby flatwoods. An additional 200-foot buffer in the transition between scrubby flatwoods and mesic flatwoods were thinned to one stem per acre. Currently, natural regeneration is occurring from the leave trees. Mesic flatwoods, scrubby flatwoods, and wet flatwoods ground cover and shrub layer are diverse and abundant. Fuels for carrying fire are in tact. Scrub ground cover is open and sandy and consists of saw palmetto (*Serenoa repens*), and oak leaf litter. Fire fuels are scarce until there is a build up of leaf litter. Fire return intervals in scrub are 10-20 years and 8-25 years in scrubby flatwoods. However, scrub fire management units will be burned on a 2-10 year fire return interval and scrubby flatwoods fire management units will be burned on a 3-5 year interval. These fire return intervals will be dependent upon analysis of the burn unit and the needs for maintaining these natural communities to District desired conditions.

Fire Return Interval-Wetlands
Floodplain Marsh is a fire adapted community. Fires may burn on a 1 to 5 year basis to restrict shrub invasion. Floodplain marshes border the St. Johns River on the west side of the property. Floodplain marsh fires are carried through wetland plant species following a frost or periods of low water or drought. Fire will be applied in the opportunity these conditions are met.

Wet Prairie is a fire adapted community. This community burns every 2 to 4 years to prevent the encroachment of woody species. The grasses and herbs carry fire. Wet prairie may not carry fire evenly through the community due to frequent inundation; however fire will be applied as frequently as needed to maintain this natural community.

Floodplain Marsh-Salt Flats and Floodplain Marsh-Salt Flats Vegetated
This area is similar to Floodplain Marsh, but with areas of open sand or areas of marsh with salt tolerant vegetation. This area is west of the St. Johns River on the west side of the property. This area borders the Floodplain Marsh and will be burned along with this natural community on a 1-5 year fire return interval.

Fire management within the remaining pyric plant communities (below) will be in conjunction with the associated adjacent wet or mesic flatwoods communities. 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 marsh is a fire-adapted community. 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. The natural fire regime would burn approximately every 1-8 years. Depression marshes are embedded within the upland areas at the Conservation area and are located in a mosaic pattern throughout the entire property. In general, depression marsh fires are carried through the herbaceous layer. They occupy an important niche in providing habitat for numerous species of wildlife. Fire will be applied to these marshes any time surrounding natural communities are burned.

Fire return intervals in a basin marsh community are approximately every 1-10 years. Basin marshes are also embedded within the uplands and found throughout the property. Like the depression marsh, fires may not burn through each basin marsh every burn, but frequent fires are important for the maintenance of edge habitats or ecotonal areas.

The *basin swamp* is not a primary target for fire management at the BLCA; however, this natural community grades into mesic and wet flatwoods communities, which are fire dependent. Basin swamps are considered fire influenced, because while they do support fire at some frequency, fire has the potential to have rather extreme effects. Under normal hydrologic conditions, fire will burn the edges of this community type without penetrating to the center. This is the desired effect of fire within the basin swamp, as it will prohibit the expansion of hardwoods and shrubs into the adjacent flatwoods.

Prairie hammock on drier sites tolerate occasional light ground fires, however more diverse hammocks rarely burn. Prairie hammocks will be burned in conjunction with basin marsh and wet prairie communities to prevent encroachment of cabbage palm into neighboring grass and herbaceous dominating communities. The primary carrier of fire is grass and herbaceous species.

Hydric hammock is not a fire adapted community. This natural community may burn in conjunction with the associated adjacent wet or mesic flatwoods communities. Hydric hammock is typically maintained through a hydrologic regime of saturated soils approximately 60 days per year.

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 July. Fires during the spring and early summer months generally have significant ecological benefits as most fire-adapted flora is perpetuated by fire. Mimicking lightning ignited natural fires by implementing prescribed fire during the growing season provides benefits to natural systems by controlling shrub layers and encouraging diversity in groundcover species.

Dormant season burns, conducted from mid November through the end of February, are less intense than growing season burns and are a desirable alternative when igniting fire in areas of high fuel loads or areas of young regeneration. While fuel loads are not exceptionally high in most parts of the Conservation area, selected areas of mesic flatwoods have more fuel build up. These fuel conditions may require that some of the initial applications of fire be in the form of dormant season burning. This will allow for the reduction of fuel loads while providing for the protection of desirable vegetation. The ultimate goal of this strategy will be to move the prescribed fire application into a growing season rotation. District staff anticipates the transition to growing season burns to occur after several applications of dormant season fire and only after a sufficient reduction of fuel levels and tree growth is achieved.

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, highly time consuming, 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.

Scrub and Scrubby Flatwoods Fire Management

Prescribed fire will be utilized to restore or maintain optimal habitat for Florida scrub-jays and other scrub and scrubby flatwoods dependent species. The optimal parameters include vegetation heights between 1-3m, greater than 50% scrub oak species coverage, a maximum pine density of no greater than 9 stems per acre, and 20 to 50% open bare sandy ground and/or groundcover components.

In order to minimize temporary loss of habitat due to fire or mechanical maintenance disturbance in certain scrub and scrubby flatwoods areas, annual burn plans will be updated with yearly mapping of scrub-jay areas. Season of burns, and sequence of individual burns, will take into account nesting season and habitat condition of surrounding burn units.

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, DOF, 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 for suppression measures, 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, Division of Forestry (DOF), 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, and contractor hours. 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

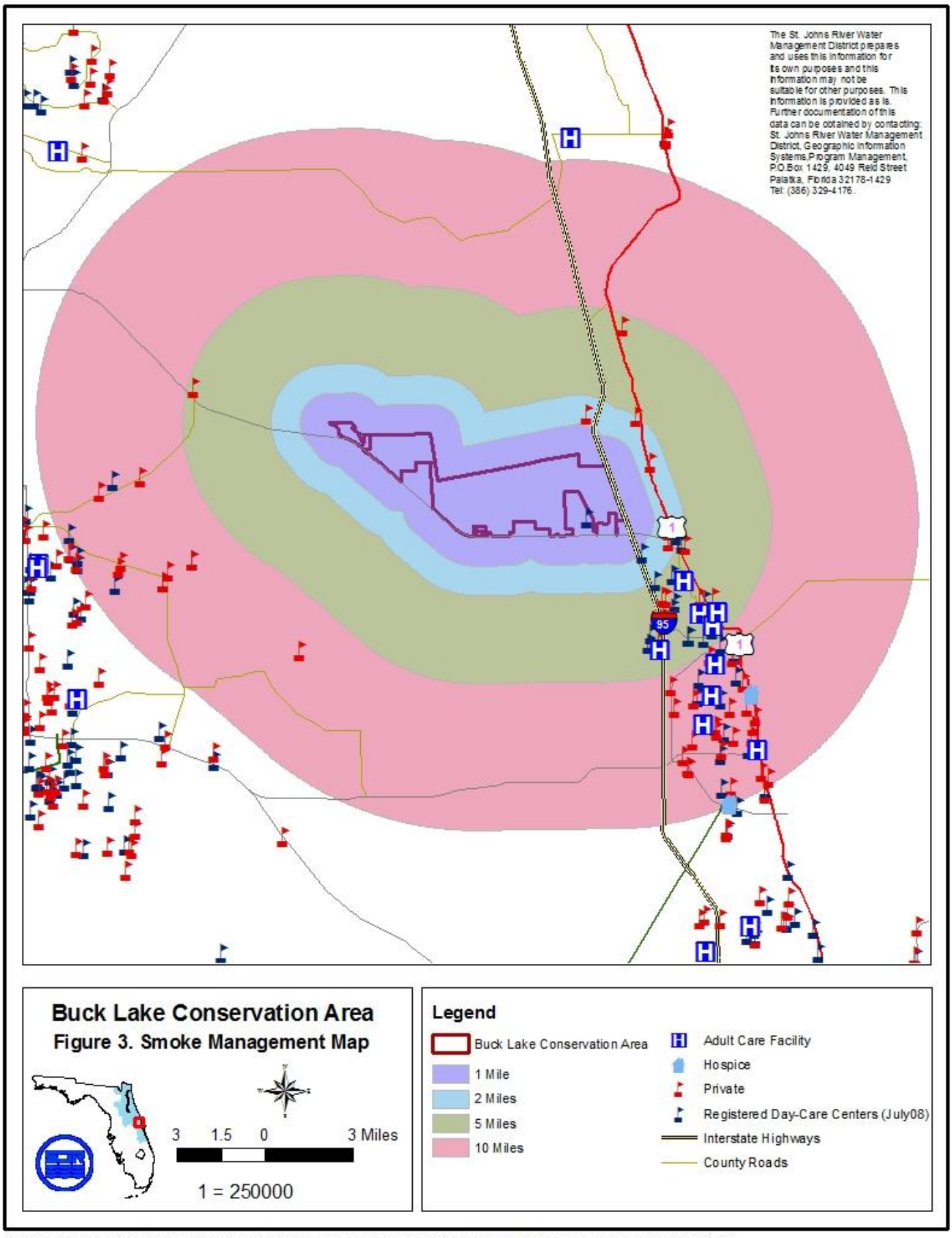
A significant challenge to the implementation of any prescribed burn program is smoke management. BLCA has undergone prescribed burns since 1998, however, there are various areas with fuel load build up. This accumulation of fuels has the potential to produce a tremendous amount of smoke as areas are burned. As the City of Mims/Titusville and surrounding areas become increasingly urbanized, this problem will increase in magnitude, as there become fewer acceptable places to maneuver a smoke column from a prescribed fire.

While the BLCA has an acceptable smoke shed on the north and west boundaries in which to place a smoke column from a prescribed fire, there are smoke sensitive areas on the south and east sides of the Conservation Area that effect the smoke management of each burn unit. Smoke management must be considered when burning near I-95 on the east and near SR 46 on the southern boundary. Figure 3 illustrates smoke sensitive areas in relation the BLCA. As development increases in the area, fire management will become more difficult. BLCA has an acceptable smoke shed into which to place a smoke column from a prescribed fire in the Miami Corp undeveloped property to the north and the St. Johns River to the west.

The majority of fire dependent areas at the BLCA fall within fuel models 3, 4, 7, and 9, or a combination thereof. Depending on the arrangement and composition of fuels, fire spread will be through grasses, shrubs, and/or needle litter. Areas within the Conservation area having heavier shrub and midstory fuel accumulation can burn for long periods of time causing additional smoke management issues.

A smoke screening process will be completed with each prescription, before an authorization is obtained from the FDOF. A fire weather forecast is obtained and evaluated for suitable burning conditions and smoke management objectives. A wind direction is chosen that will transport smoke away from urbanized areas and/or impact these smoke sensitive areas in the least possible way. When possible, the smoke plume from burns should be directed back through the Conservation area. 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 35. Dispersions of greater than 69 will only be selected if other weather and/or site conditions allow for the mitigation of potential extreme 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 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.



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Mechanical Treatments

Short and long-term weather conditions and urban interface issues are important considerations when implementing a prescribed fire program. Weather conditions such as extended droughts or insurmountable smoke management issues due to increased urbanization may require the District to manage natural systems mechanically. A variety of methods including mowing, roller chopping, and herbicide applications may be incorporated as alternatives or supplements to prescribed fire.

The pyric plant communities within the scrub and scrubby flatwoods areas may not burn as frequently as needed to maintain Florida scrub-jay populations and other scrub dependent species. Mechanical treatment such as chopping and mowing may be necessary to maintain the habitat as a supplement to prescribed burning. Individual fire lines may be widened by mowing or chopping to provide additional fire control.

Legal Considerations

Only burn managers certified by FDOF 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 negligence is proven.

Fire Management Units

Fire management units (FMUs) have been delineated at BLCA (Figure 4). Where logical, the District used existing roads to determine fire management units. Occasionally, several fire management units with similar fire needs will be burned simultaneously and stand lines provide a break in fuels so that staff may burn smaller areas than initially planned if needed. Prescribed burning has been applied to BLCA since 1997. Table 1 is a summary of the fire history on the property.

Table 1. Fire History at Buck Lake Conservation Area

Date	Management Unit	Zone	Land Type	Acres
9/18/1997	Buck Lake		Flatwoods	16.68
1998	Buck Lake			7,900
1/21/1998	Buck Lake	BL-1	Scrub	45
3/3/1998	Buck Lake	BL-1	Scrub	15
6/7/2001	Buck Lake	CS-4	Flatwoods	0
12/7/2001	Buck Lake	BL 9B	Scrub Roller Chopped	10
1/11/2002	Buck Lake	BL 9A	Scrub Roller Chopped	26
1/24/2002	Buck Lake	9A and 9B	Scrub Roller Chopped	28
1/25/2002	Buck Lake	9C	Scrub Roller Chopped	73
2/1/2002	Buck Lake	(C East	Scrub Roller Chopped	10
2/15/2002	Buck Lake	BL3A	Scrub Roller Chopped	18

7/26/2002	Buck Lake	comp 1 stands 11, 110 &111	Scrub, marsh and swamp	90
7/30/2002	Buck Lake	comp 1 stands 13 & 28	Scrub, scrubby flatwoods, marsh	71
12/3&4/02	Buck lake	BL-12	Scrubby Flatwoods and Chopped Scrub	107
7/14/2003	Buck lake	BL-2	Scrubby Flatwoods and Chopped Scrub	30
7/22/2003	Buck lake	BL-10	Scrubby Flatwoods and Chopped Scrub	77
1/8/2004	Buck Lake	BL-3	Scrubby Flatwoods	56
4/16/2004	Buck Lake	BL-1	Scrubby Flatwoods	93
8/1/2005	Buck lake	BL-22	Marsh	7
8/1/2005	Buck lake	CS-3	Marsh	1
3/2/2006	Buck Lake	BL-8	Flatwoods	175
3/28/2008	Buck lake	BL-15	Flatwoods	136.0
4/3/2008	Buck lake	BL-7	Flatwoods & Marsh	600.0
4/17/2008	Buck lake	BL-3	Scrub and Scrubby flatwoods	63.0
12/9/2008	Buck lake	BL-1	Flatwoods	73.0
12/10/2008	Buck lake			
1/28/2009	Buck lake	BL-16	Flatwoods	179.0
1/28-29/2009	Buck lake	BL-19	Flatwoods and Marsh	800.0
Total Acres				**10,699.55**
Acres Burned Since June 2002 (Last Management Plan)				**2,558**

Fuel Models

Fire management units are categorized into four 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 the BLCA 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 conservation area contain multiple FMs. In these instances, the designated FM is dominant in coverage. Figure 4 illustrates the FM associated with individual fire management units.

Fuel Model 3
This category includes fire management units BL-8, CS-1, CS-2, and components of BL-11, 14, 18, 19, and 22.

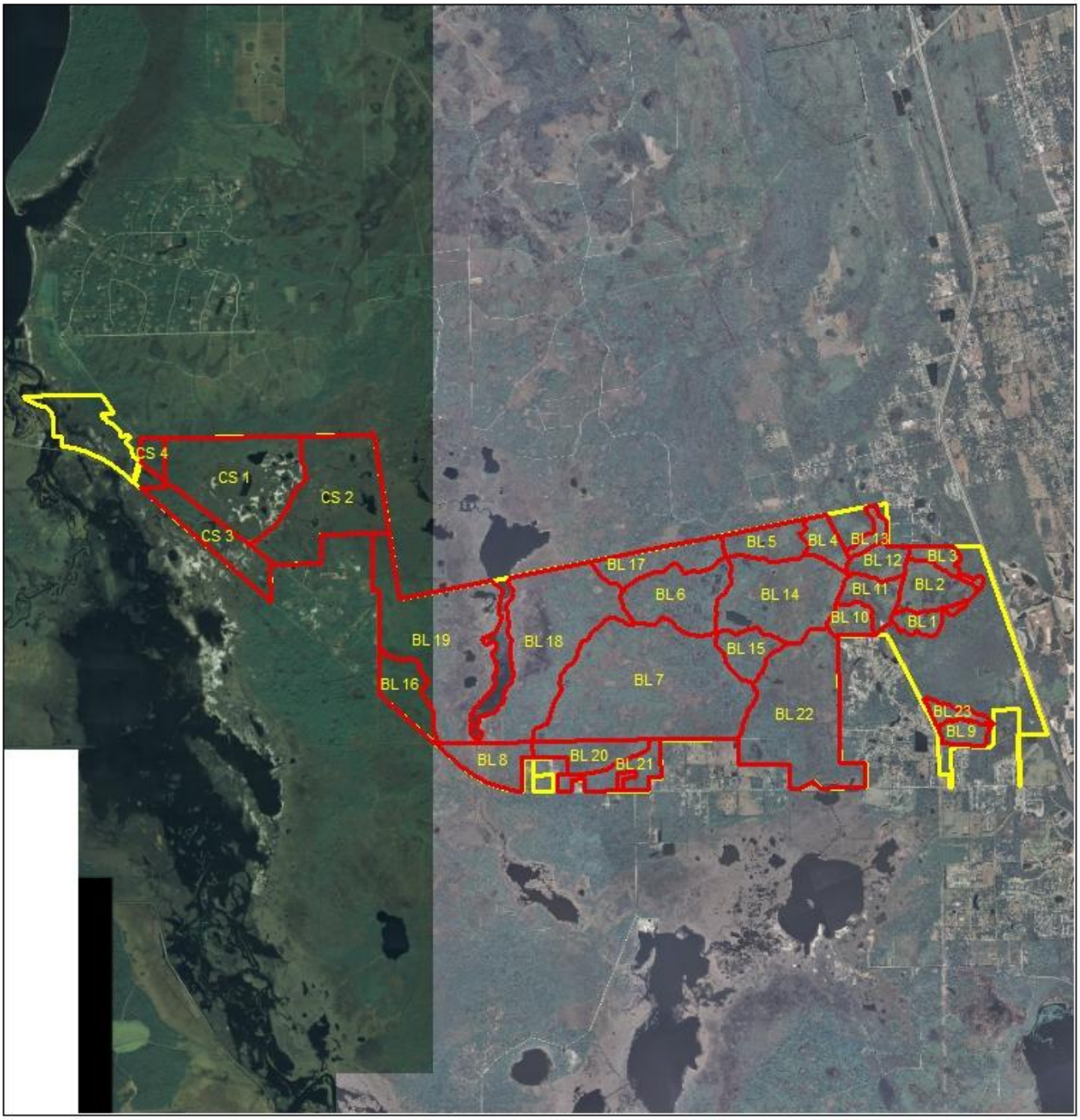
This category includes fire management units within the Conservation Area that include floodplain marsh (BL-18 and 19), floodplain marsh associated with salt flats or vegetated salt flats (CS-1 and CS-2), or large areas of basin marsh (BL-8, 11, 14, 18, 19, and 22). Fires in these fuels are the most intense of the grasses and flames may spread through the upper heights of the grass and across standing water. Given appropriate windspeeds and fuel moisture conditions, fires can spread very rapidly. The optimal fire return interval in this fuel model is approximately every 1-10 years with growing season burns being preferred.

Fuel Model 4
This category includes fire management units BL 9, 12, and 13 with components in BL 2, 3, and 11.

This category's fire management unit is best described as scrub and scrubby flatwoods. This unit consists of dense scrub oak with minimal palmetto and wiregrass. While pockets of shrubs (palmetto) and groundcover (wiregrass) may contribute to the fire, the contiguous oak leaf litter will serve as the primary carrier of the fire. Fire return intervals are every 3-10 years. Mechanical treatment may be necessary if the unit does not carry fire for long periods as the area should be maintained for Florida scrub-jay habitat per standards determined in the Scrub and Scrubby Flatwoods Fire Management section above.

Fuel Model 7
This category includes fire management units BL-1, 4, 5, 6, 10, 15, 16, 17, 20, 21, 23, CS-4, and components of BL 2, 3, 14, 18, 19, and 22.

This category includes fire management units that are mesic and wet flatwoods interspersed with depression marshes. 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 s. The herbaceous layer is generally intact and includes wiregrass. Fire will carry through the grass layer within the depression marshes depending on hydrology. The optimal fire return interval for this FM is approximately every 1 to 10 years. Growing season burns are preferable.



Buck Lake Conservation Area

Figure 4. Fire Management Units Map

1 0.5 0 1 Miles

1 = 85000

Legend

- Buck Lake Conservation Area
- Fire Management Units

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Fuel Model 9
This category includes Fire Management Unit BL-9.

This category includes fire management units that are best described as mesic flatwoods, however the area is thickly planted with pine. This unit exhibits a closed canopy and suppressed herbaceous and shrub layers due in part to excessive shading from pine. While pockets of shrubs (palmetto) may contribute to the fire, the contiguous leaf litter and needle drop will serve as the primary carrier of the fire. The optimal fire return interval in these areas is approximately every 3-10 years and should occur in the growing season. It is likely that dormant season burns and/or mechanical treatment will be necessary initially.

Table 2 is a summary of the fire management units at BLCA and the associated fuel models.

Table 2. Fire Management Units and Fuel Models at Buck Lake Conservation Area

Fire Management Unit	Fuel Model	Old Zone	Acres
BL 1	7	BL1	74
BL 2	4 and 7	BL2	176
BL 3	4 and 7	BL3	72
BL 4	7	BL4	94
BL 5	7	BL5	155
BL 6	7	BL6	337
BL 7	3 and 7	BL7	1218
BL 8	3	BL8	178
BL 9	4	BL9	66
BL 10	7	BL10	77
BL 11	3 and 4	BL11	130
BL 12	4	BL12	103
BL 13	4	BL13	49
BL 14	3 and 7	BL14	532
BL 15	7	BL15	137
BL 16	7	BL16	176
BL 17	7	BL17	205
BL 18	3 and 7	BL18	814
BL 19	3 and 7	BL19	854
BL 20	7	BL20	160
BL 21	7	BL21	143
BL 22	3 and 7	BL22	778
BL 23	7	was part of	53

		9	
CS 1	3	CS1	664
CS 2	3	CS2	643
CS 3	9	CS3	240
CS 4	7	CS4	49

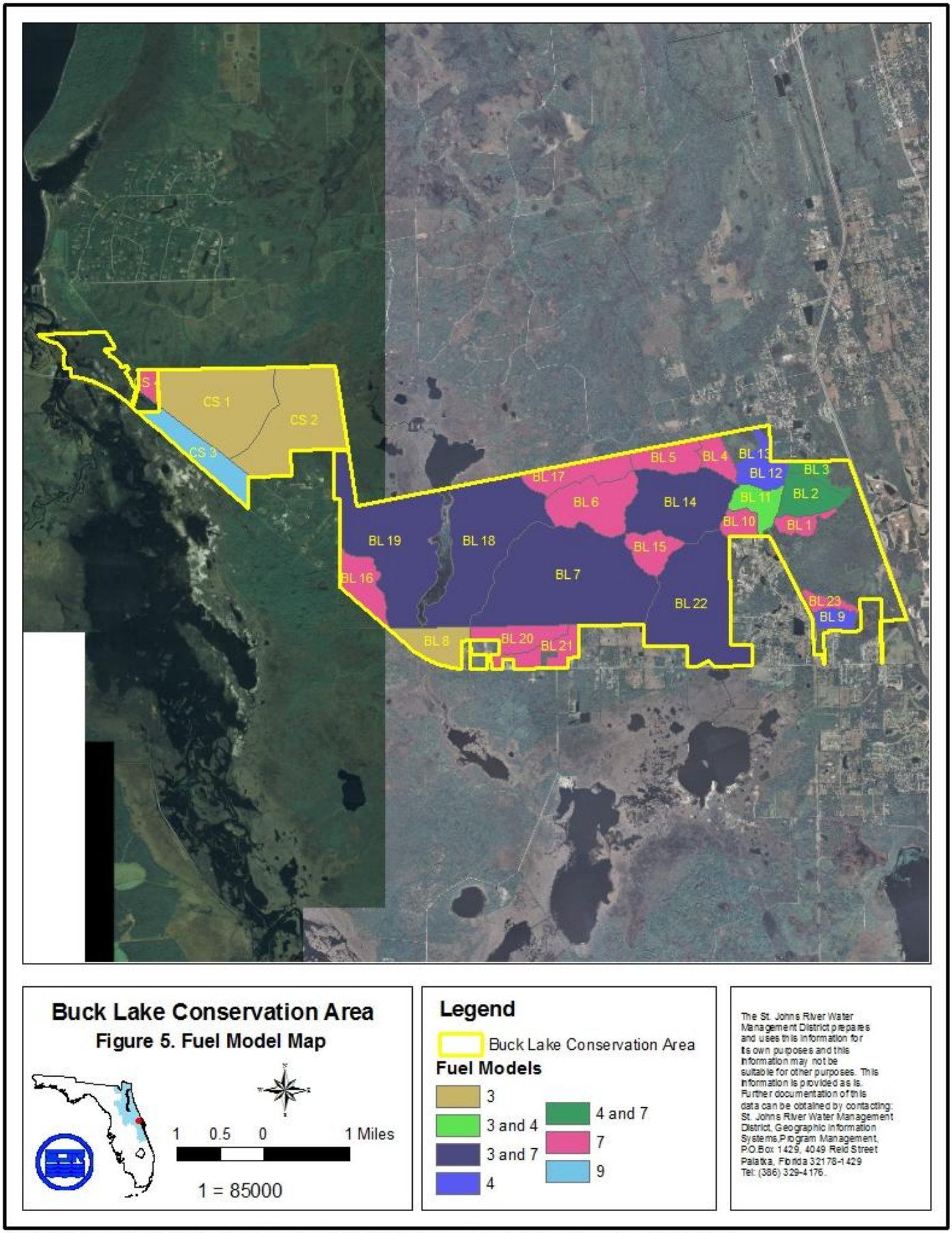

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Exhibit 1
Aerial Burn Safety Plan
Buck Lake Conservation Area

The hazards associated with this type of burning are related to working with the helicopter, the sphere dispenser, and dealing with active fire. All helicopter safety procedures and all district fireline policies and procedures will be followed.

1. **BRIEFING -** During the operational briefing the safety plan will be reviewed with all personnel on the burn.
2. **HELICOPTER SAFETY -** The pilot will give a helicopter safety briefing at the morning operational briefing.
3. **IGNITION MACHINE SAFETY –** The operator will review the operation and cleaning procedures for the dispenser at the morning briefing.
4. **PERSONAL PROTECTIVE EQUIPMENT –** The incident commander will ensure that all personnel have the required PPE.
5. **HIGH HAZARD AREAS –** All high hazard areas such as power lines shall be designated on the map and attached to the burn plan.
6. **EMERGENCY LANDING ZONES –** These should be confirmed with the pilot and indicated on the burn map. **Helispot Latitude _____"N**
   Longitude _____"W

Crash Rescue Plan

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

INCIDENT COMMANDER or BURN BOSS

1. **Notify 911**
2. Notify Brevard County Fire and Rescue (321)633-1766
3. Notify Brevard County Sheriff's Office (321)264-5209
4. Notify Volusia County Fire and Rescue (386)-252-4911
5. Notify Volusia County Sheriff's Office (386)-248-1777
6. Assume responsibility of the Rescue Operation.
7. Notify NTSB (305)957-4610 OR 404-462-1666)
8. Delegate responsibility of 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. If the IC is in the helicopter, second in command will assume rescue operation responsibilities and assign the most qualified to fire control.

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	

DIVISION OF FORESTRY

1. Orlando District 407-856-6512

NTSB

1. Southeast Regional Office 305-957-4610
2. Southeast Field Office 404-462-1666