# Newnans Lake Conservation Area Land Management Plan

Alachua County, Florida

Governing Board Approved

May 2013

# Newnans Lake Conservation Area Land Management Plan Summary

Management Area Size: 7,573 acres.

**Date of Acquisition**: Acquisition of parcels within the Newnans Lake Conservation Area (NLCA, conservation area) began in 1993

Date of Plan:	May 2013		
Date of Previous Plan:	May 2006		
Major Basin:	Ocklawaha River Basin	Planning Basin:	Orange Creek

**Location:** The conservation area is located in Alachua County, six miles east of downtown Gainesville near the intersection of CR 222 and SR 26.

**Funding Source**: The acquisition funding sources for the Conservation Area include Preservation 2000, ad valorem, mitigation, Florida Forever, Alachua County Forever Bond funds, and Forest Legacy Program funds.

**Management Partners**: The St. Johns River Water Management District (District) serves as lead manager for the entire conservation area.

**Vision Statement:** The Newnans Lake Conservation Area will be managed for the continued protection of the water resources of Newnans Lake, Little Hatchet Creek, Hatchet Creek, and the waters of the greater Ocklawaha River Basin. The focus of the District's land management activities within the Conservation Area is to balance the restoration and enhancement of natural communities with the sustainable management of forest resources. Quality recreational opportunities will continue to be offered, developed, and improved upon, providing a broad range of water and land-based, ecologically oriented recreational options that compliment other recreational amenities available within the region.

# Key Land Use/Recreation Issues:

### **Resource Management Issues:**

- WATER RESOURCES Most water resource protection was accomplished through acquisition. At the time of acquisition alterations to water resources included roads, ditches, bridges, culverts, and silvicultural bedding.
- FIRE MANAGEMENT Implementation of prescribed burns occurs in accordance with annual burn plan and individual unit prescriptions.
- FOREST MANAGEMENT Prior to public acquisition, the majority of the upland acres within the Conservation Area were managed for commercial silviculture. The District will utilize a combination of harvesting, mechanical vegetation management, herbicide treatments, and prescription burning to encourage optimal forest health.
- WILDLIFE The Conservation Area provides habitat for numerous wildlife species including the Florida gopher tortoise (*Gopherus polyphemus*), Bald Eagle (*Haliaeetus leucocephalus*), and Sherman's fox squirrel (*Sciurus niger*).

- EXOTICS Invasive exotic pest plant and animal species occur on the property at low to moderate levels of infestation. The District regularly monitors for the presence of invasive plants and animals and responds with appropriate control actions.
- CULTURAL & ARCHEOLOGICAL RESOURCES A review of the Department of State, Division of Historical Resources indicates there are nine Florida master site locations within the boundaries of the Conservation Area.

# Land Use Management Issues:

- Access Four public access points are located on the Conservation Area. An additional access is associated with the Hatchet Creek Wildlife Management Area and is seasonally available.
- Recreation Use The Conservation Area is open to the public for hiking, bicycling, equestrian activities, primitive camping, and wildlife viewing. Boat access to Newnans Lake is available through the Alachua County-managed Owens-Illinois Park. Seasonal hunting opportunities are available on the Hatchet Creek Wildlife Management Area. All hunting opportunities fall under the jurisdiction of the Florida Fish and Wildlife Conservation Commission.
- Security Maintenance of fences, parking areas, gates, and locks is conducted as needed. The District maintains contact with local law enforcement, Florida Fish and Wildlife Conservation Commission, and a private security firm for any potential security needs.

# Administration:

- Acquisition Although no parcels are uniquely identified, the District may consider purchasing parcels near the Conservation Area that become available and that will aid in the conservation of water resources. Additionally, the District may pursue acquisition of small parcels, property exchanges with neighbors, or surpluses to improve and provide additional access to the Conservation Area or as otherwise warranted. Through the District lands assessment process, one area of potential surplus has been identified.
- Leases, Easements, Special Use Authorizations, and Agreements The District administers numerous leases, agreements, easements, special use authorizations (SUAs) and concessions.

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# **VISION STATEMENT**

The Newnans Lake Conservation Area will be managed for the continued protection of the water resources of Newnans Lake, Little Hatchet Creek, Hatchet Creek, and the waters of the greater Ocklawaha River Basin. The focus of the District's land management activities within the Conservation Area is to balance the restoration and enhancement of natural communities with the sustainable management of forest resources. Quality recreational opportunities will continue to be offered, developed, and improved upon, providing a broad range of water and land-based, ecologically oriented recreational options that compliment other recreational amenities available within the region.

# **OVERVIEW**

This document provides the guidelines and goals for implementation of land management activities at Newnans Lake Conservation Area (Conservation Area) through 2023. This is a revision of the May 2006 Governing Board approved land management plan.

The area that is now the Newnans Lake Conservation Area has a long silvicultural land use history. Analysis of historical aerial photography indicates that by the 1940s, clearing, likely for agricultural and cattle ranching purposes had occurred on the northern portions of the property. By the 1980s, silviculture was the primary land use, with much of the uplands converted to pine plantation.

A portion of the property, approximately 1,700 acres, known as the Newnans Lake Addition is subject to the terms of a Memorandum of Agreement (MOA) between the Florida Forest Service (FFS; formerly Florida Division of Forestry), the District, and Alachua County. The MOA is a condition of funding received from the FFS through the U.S. Department of Agriculture Forest Legacy state grant program. The MOA directs that the Newnans Lake Addition be managed as a working forest.

As a special condition to the December 2000 acquisition of the NPC Timber Plum Creek Newnans Lake parcel, the previous landowner (Plum Creek Timberlands) reserved the right to manage and remove standing timber across approximately 940 acres. In 2007, the District and Plum Creek agreed to modifications of the original timber reservations, these harvests are complete and areas subject to clearcuts are replanted with longleaf pine.

# NEWNANS LAKE CONSERVATION AREA OVERVIEW

# Location

The Conservation Area includes 7,573 acres in Alachua County within the Orange Creek drainage basin, a sub-basin of the Ocklawaha River Basin. The Conservation Area is located in numerous sections of Townships 9 and 10 South and Range 21 East. Figure 1 provides an aerial view of the Conservation Area in 2011.

The Conservation Area is located along portions of the northern and eastern shores of Newnans Lake, approximately 6 miles east of Gainesville. While much of the land within the northern portions of the Conservation Area is contiguous, the parcels to the south are disjunct. Natural features within the Conservation Area and the proximity to public roads limit access opportunities across the Conservation Area. For this reason, District staff manages the Conservation Area as three distinct tracts. These tracts include the Hatchet Creek Tract, the North Tract, and the South Tract. Figure 2 illustrates the location of the Conservation Area.

### **Regional Significance**

The Conservation Area encompasses several miles of shoreline along Newnans Lake, Little Hatchet Creek, and Hatchet Creek as well as large areas of historic floodplain wetlands associated with these water bodies. Within the Orange Creek Basin, water quality, altered hydrology, drought, and invasive exotic species are problematic, particularly for large shallow lakes including Newnans Lake (Orange Creek Basin, 2013). The Orange Creek Basin SWIM program addresses water quality and nutrient loading issues in Newnans Lake.

The Conservation Area is a significant acquisition providing linkage among a broad network of other publicly owned lands and conservation easements. Figure 3 illustrates the regional context of the Conservation Area. Public conservation lands contiguous with or in close proximity to the Conservation Area include:

- Austin Carey Memorial Forest
- o Balu Forest
- Paynes Prairie Preserve State Park
- o Lochloosa Wildlife Conservation Area
- Longleaf Flatwoods Reserve

# Acquisition History

The acquisition of parcels that comprise the Newnans Lake Conservation Area provide for the protection of important water resources and ecological functions. These acquisitions are consistent with the goals of the Orange Creek and Ocklawaha River Basin Projects. These goals, as they apply to Newnans Lake Conservation Area include:

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







The Newnans Lake Conservation Area is comprised of nine (9) parcels, totaling 7,573 acres (Figure 4). Acquisition of parcels within the Newnans Lake Conservation Area began in 1993. The following properties were acquired using funding sources as indicated and were subsequently incorporated in the Conservation Area. Table (1) one summarizes the land acquisition accomplishments. All acreage reported is derived from GIS calculations.

Parcel	LA Number	Acres*	Total Purchase Price	Funding Source	Total District Amount	Closing Date
Gum Root Swamp	1992- 002-P1	374	\$170,000.00	P2000	\$170,000.00	05/13/1993
Pinkson, Alachua County	1995- 031-P1	960	\$1,777,600.00 (\$130,000.00) <b>\$1,647,600.00</b>	P2000 Surplus	\$1,647,600.00	6/8/2001 8/21/2009
Gladstone	1998- 006-P1	1,104	\$889.800.00 (\$15,000.00) <u>(\$50.00)</u> <b>\$874,750.00</b>	P2000 Exchange FDOT ROW	\$874,750.00	4/20/2000 7/20/2007 6/27/2008
Gladstone Addition (Jonathan)	1998- 006-P3	36	\$150,000.00 \$150,000.00 \$300,000.00	Alachua County Florida Forever	\$150,000.00	7/9/2009
NPC Timber Plum Creek Newnans Lake	2000- 035-P1	3,241	\$2,890,000.00 <u>\$131,157.00</u> <b>\$3,021,157.00</b>	P2000 Land Acquisition Fund Bal	\$3,021,157.00	12/14/2000 11/19/2003
Newnans Lake Addition Rayonier - Alachua	2004- 002-P1	1,707	\$1,619,563.30 \$493,000.00 <u>\$1,619,563.30</u> <b>\$3,732,126.60</b>	Alachua County Forest Legacy Program Florida Forever Fund Bal	\$1,619,563.30	6/1/2005
Everett, Ronnie	2006- 041-P1	20	\$15,000.00	Exchange	\$15,000.00	6/27/2008
Bloom/Frank	2007- 036-P1	122	\$412,417.50 \$152,418.50 <u>\$260,000.00</u> <b>\$824,836.00</b>	Alachua County Florida Forever Fund Bal FDOT Mitigation Plan	\$412,418.50	9/29/2008
Titus	2008- 028-P1	9	\$77,520.00	Florida Forever Fund Bal	\$77,520.00	12/22/2008
TOTALS		7,573	\$10,662,989.60		\$7,988,008.80	

Table 1 – Land Acquisition Summary

\*GIS Acres – Reflects all surpluses and exchanges associated with identified parcels.



### *Gum Root Swamp* – 1992-002-P1 – (374 Acres)

This parcel was purchased by the District on 5/13/1993. The acquisition was accomplished using Preservation 2000 funds.

### Pinkson, Alachua County – 1995-031-P1 – (960 Acres)

The original acquisition of this parcel occurred on June 8, 2001 utilizing Preservation 2000 funds. In August 2009, the District surplussed the area formerly leased to the Rotary Club of Gainesville. The District retains a conservation easement over the surplussed property.

### *Gladstone* – 1998-006-P1 – (1,104 Acres)

The original acquisition was accomplished by the District on April 20, 2000 using Preservation 2000 funds. In July 2007, the District exchanged 38 acres of the Gladstone parcel for 20 acres of the Everett parcel (2006-041). The District retains a conservation easement over the 38-acre exchanged parcel. In June 2008, the District conveyed 180 sq. ft. section of the Pinkson parcel to FDOT for the purposes of installing a traffic light.

### Gladstone Addition – Jonathan – 1998-006-P3 – (36 Acres)

This parcel was acquired jointly by the District and Alachua County on July 9, 2009. The District utilized Florida Forever funds to pay 50% of the total purchase price. Alachua County utilized Alachua County Forever program funds.

### NPC Timber – Plum Creek – Newnans Lake – 2000-035-P1 – (3,241 Acres)

The District acquired this parcel on December 14, 2000 utilizing Preservation 2000 funds. In November 2003, a post-closing survey was conducted, ultimately adding an additional 145-acres to the original purchase (2,127 acres). The difference in acreage was purchased using land acquisition funds.

### Newnans Lake Addition – Rayonier Alachua – 2004-002-P1 – (1,707 Acres)

This parcel was acquired by the District and Alachua County utilizing multiple funding sources including Alachua County Forever and Florida Forever, with each participant contributing \$1,619,563.50. Funding to cover the remaining balance of \$493,000.00 was derived from the Forest Legacy program, a federal grant program. A Memorandum of Agreement between the District, Alachua County, a condition of the Forest Legacy funding, the parcel will be maintained as a working forest.

#### *Everett, Ronnie* – 2007-036-P1 – (20 Acres)

The District acquired this parcel on June 19, 2008 as part of an exchange with Ronnie Everett. The District conveyed 38 acres of the Gladstone parcel (1998-006-P1) for receipt of this 20 acres.

#### *Bloom/Frank* – 2007-036-P1 – (122 Aces)

This parcel was acquired jointly by the District and Alachua County on September 29, 2008 utilizing Alachua County Forever, Florida Forever, and FDOT mitigation funds.

#### *Titus* – 2008-028-P1 – (9 Acres)

The District acquired this parcel on February 11, 2009 using Florida Forever funds.

# LOCAL GOVERNMENT LAND USE DESIGNATIONS

### Alachua County

According to the Alachua County, Florida, Alachua County Comprehensive Plan 2011-2030, the Future Land Use designation for the Conservation Area is Preservation.

"The Preservation Future Land Use Category consists of publicly owned lands, including lands owned and managed by non-profit conservation organizations, which are intended for use as natural reserves or managed conservation lands for the preservation of natural resources in perpetuity. Also included in this land use category are those properties acquired in fee or less than fee simple for preservation by federal, state, and local agencies, Water Management Districts, local municipalities, or Alachua County for use as natural reserves or managed conservation lands" (Alachua County Comprehensive Plan 2011-2030).

# NATURAL RESOURCES OVERVIEW

### Topography and Hydrology

The Conservation Area lies within the Newnans Lake Basin, a physiographic subdivision of the Northern Plains Division in the Ocala Uplift district. This basin is characterized with gentle slopes and soils derived from Pliocene phosphatic, clayey sands (Brooks, 1981). The Conservation Area's topography generally ranges from 155 feet above sea level at the highest elevations to 75 feet above sea level along the lakeshore.

The most prominent hydrologic feature of the Conservation Area is Newnans Lake, which encompasses approximately 5,800 acres. Figure 5 depicts the hydrologic features within the Ocklawaha River Basin and the Conservation Area. Also within the Conservation Area are Hatchet Creek and Little Hatchet Creek, both tributaries of Newnans Lake. Hatchet Creek, the larger of the two tributaries drains large areas of swamp and wet flatwoods from areas north of Gainesville. Little Hatchet Creek drains wet flatwoods and industrial areas in Gainesville. This creek flows into the Conservation Area at Gum Root Swamp where it flows across the swamp before being re-channeled through two culverts under SR 26 and County Road 222. Prairie Creek drains Newnans Lake to the south. Historically, the entire volume of Prairie Creek flowed into Paynes Prairie and eventually the Alachua Sink. However, a portion of the creek's water is now diverted to the River Styx through Camps Canal. The River Styx empties into Orange Lake, which in turn, drains to the east into Orange Creek Basin, several water bodies are designated as Outstanding Florida Waters including Lochloosa Lake, Paynes Prairie, River Styx, Lochloosa Creek, and Orange Lake.

### Soil

Soils across the majority of the Conservation Area are hydric or partially hydric in nature, accounting for approximately 55% of the Conservation Area (Figure 6). According to data produced by the United States Department of Agriculture, NRCS, 29 different soil types are present within the conservation area. Addendum 1 includes a detailed soils map and associated series descriptions.





# Natural Communities

Past land use activities have resulted in alteration to the natural communities within the Conservation Area. Varying degrees of disturbance are noted within the floodplain swamp communities; however, the majority of these areas remain relatively intact and functional. The majority of the upland communities have a recent land use history that includes commercial silviculture. The silvicultural activities have resulted in alterations to the soils, hydrology, species compositions and structure within these areas.

The 7,573 acres that comprise the Newnans Lake Conservation Area consist primarily of mesic flatwoods and includes a diverse array of other natural communities (Figure 7). Table 2 details the percent coverage associated with each natural community documented within the Conservation Area. Information relative to the natural communities within the Conservation Area is derived from several sources including personal observations of District staff. Additionally, the general natural community descriptions are characterized using descriptions published in the Florida Natural Areas Inventory's (FNAI) *Guide to the Natural Communities of Florida*. Natural community and species ranking definitions are listed in Addendum 1.

Natural Community Type	Acreage*	Percent Coverage	FNAI Ranking	FNAI Fire Return Interval
Xeric Hammock	4	<1%	G3/S3	Site Specific
Sandhill	1,132	15%	G3/S2	1-3 years
Mesic Flatwoods	3,162	42%	G4/S4	2-4 years
Wet Flatwoods	356	5%	G4/S4	1-3 years in grass dominated systems; 5-7 years in shrubbier systems
Depression Marsh	19	<1%	G4/S4	This community burns in conjunction with adjacent pyric plant communities
Mesic Hammock	6	<1%	G3/S3	This plant community rarely burns
Dome Swamp	94	1%		3-5 years along the outer edges (or as adjacent communities burn); 100-150 years interior
Floodplain Swamp	1,834	24%	G4/S4	This is not a fire adapted community
Clastic Upland Lake	952	13%	G3/S2	
Subtotal	7,559			
Altered Land Types	Acreage	Percent Coverage		Fire Return Interval
Impoundment/Artificial Pond	14	<1%		
Subtotal	14			
Total	7,573	100%		

Table 2 –	Natural	Community	Coverages
		2	0

\*GIS Acres



### Pine Flatwoods

Flatwoods communities typically occur in low areas with little topography and may be further classified as wet, mesic, or scrubby. All three variants of flatwoods likely occur within the Conservation Area, however the scrubby variant has not been uniquely identified. Alterations from past management activities, hydrologic disturbances, and prolonged absence of fire make distinguishing scrubby flatwoods within mesic areas difficult. Natural community reclassification and refinement may occur as restoration and fire management activities progress.

### *Mesic Flatwoods* (3,162 acres)

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

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

The mesic flatwoods communities within the Conservation Area are disturbed, with the most significant alterations resulting from silvicultural activities and the effects of prolonged fire exclusion. Shrub layers within the mesic flatwoods range from nearly absent to heavily overgrown. Additionally, groundcover assemblages vary in diversity and abundance within this community type. Pine species present within the flatwoods communities on the Conservation Area include longleaf, slash, sand, loblolly, and pond pine.

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

### Wet Flatwoods (356 acres)

Soils that support wet flatwoods communities are generally very poorly drained sandy soils that may have a mucky texture in upper horizons. Wet flatwoods occur as ecotonal areas between the

drier mesic flatwoods and wetter areas such as bogs or swamps. They may also occur in broad, low flatlands embedded within these communities.

Well-maintained wet flatwoods exhibit a relatively open-canopy forest of scattered pine trees (longleaf, loblolly, slash, or pond) or cabbage palms (*Sabal palmetto*) with either a thick shrubby understory and sparse groundcover or sparse understory with dense groundcover. Understory species of the subcanopy and shrub layers may include sweetbay (*Magnolia virginiana*), loblolly bay (*Gordonia lasianthus*), and saw palmetto, as well as a suite of ericaceous plants. The groundcover layer may include species such as wiregrass, blue maidencane (*Amphicarpum muhlenbergianum*), and numerous hydrophytic species. The variations in structure and composition may be attributed to subtle edaphic differences as well as differences in hydrologic and fire regimes.

The wet flatwoods within the Conservation Area are disturbed. Prolonged fire exclusion and silvicultural activities including bedding have resulted in much of this community exhibiting suppressed groundcover assemblages and a heavily overgrown midstory that includes a dense coverage of loblolly bay. The wet flatwoods plant community is fire dependant and the District targets return intervals ranging from one to three years, which is consistent with FNAI 2010 descriptions.

### Floodplain Swamp (1,834 acres)

Floodplain swamp communities typically occur on flooded soils along stream channels and within river floodplains. The majority of the Floodplain Swamp communities within the Conservation Area are associated with Newnans Lake, Hatchet Creek, and Little Hatchet Creek. These communities are largely intact.

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

### Blackwater Stream

Blackwater streams are either perennial or intermittent watercourses typically associated with extensive wetlands. Frequently underlain by limestone, blackwater streams most often include sandy with a top layer of organic material. Blackwater streams within the Conservation Area are disturbed include Hatchet Creek and Little Hatchet Creek. Major disturbances are associated with channelization of streams to facilitate construction and maintenance of highways. With the installation of SR 26, a portion of Hatchet Creek was channelized to direct water flow away from the road and minimize the risk of flooding. The soil along the original creek bed was mounded into a spoil pile near the creek, disrupting the hydrological and terrestrial features in the area. The District has determined that removal of the spoil mounds is not ecologically advantageous and any such activity would be more detrimental than the existing disturbance.

### Depression Marsh (19 acres)

Depression marsh communities often occur embedded within a matrix of well-maintained pyric plant communities (FNAI, 2010). Depression marshes are typically found on flat landscapes throughout Florida. They develop when the overlying sand has slumped into a depression in the limestone underlayment. Soils are typically depressional phases of fine sands. Depression marshes are maintained in part against woody shrub invasion by fluctuations in water levels associated with rainfall, fire, and in many cases a combination of both. These seasonal ponds are important (habitat) for numerous species of wildlife, but are particularly important for many amphibians that require breeding sites that are free of predatory fish (Moler, 1987).

### Dome Swamp (94 acres)

Dome swamp communities typically occur embedded within well-maintained pyric plant communities such as flatwoods (FNAI, 2010). The dome swamp communities within the Conservation Area occur primarily within the mesic flatwoods and most exhibit alterations from silvicultural activities and fire seclusion.

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

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

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

### Sandhill (1,132 acres)

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

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

The sandhill plant community is a fire climax community. Fire is a dominant factor in the ecology of this community and frequent fires are necessary to reduce hardwood competition and

to perpetuate pines and grasses. Fire return intervals within sandhill communities range from one to three years. In addition to fire frequency, intensity and season are important fire characteristics that greatly influence the species structure and composition within sandhills. Optimally, sandhills are maintained through frequent, low-intensity, growing season fires.

The sandhills within the Conservation Area are degraded from various past disturbances that range from conversion to pine plantation and other agricultural uses to fire suppression. In many areas, species typically associated with sandhills, such as turkey and sand post oaks, were removed to facilitate pine plantings. Many of these areas also exhibit highly suppressed groundcover and in areas where pine is not the primary canopy species, are heavily invaded by laurel and water oak. In areas where clearcuts from timber reservations have provided an opportunity for a pine species conversion and prescribed fire has been implemented, groundcover regeneration is abundant and some regeneration of site appropriate oaks is apparent.

### Xeric Hammock (4 acres)

Xeric hammock is characterized as an evergreen forest with a low canopy and little understory plants other than palmetto, or a multi-storied forest of tall trees with an open or closed canopy. Several gradations between these extremes may occur.

The xeric hammock natural community is typically an advanced successional stage of scrub, scrubby flatwoods, or sandhill. It is a climax community, having been protected from fire for 30 or more years. When fire does occur in the xeric hammock, it is under extreme conditions, burns catastrophically and it may revert the community back to an earlier successional stage. An example of xeric hammock within the Conservation Area occurs on the southwestern portion of the property and is typical as described by FNAI in that it appears succeeded from sandhill. Portions of the property identified as sandhill are progressing towards a xeric hammock conditions; without restoration and management activities that include fire, it is likely that the acreage of xeric hammock will increase.

### Mesic Hammock (6 acres)

Mesic hammocks often occur on areas of higher ground within basin or floodplain wetlands, on river levees, or in ecotones between wetlands and uplands. These areas are often fire-protected or areas were natural barriers or conditions precluded the frequent occurrence of fire. Soils that support mesic hammock include a mixture of sands with organic material and are often topped with a heavy layer of leaf litter. These areas are not typically considered fire adapted and rarely burns

### Impoundment/Artificial Pond (14 acres)

Impoundments or artificial ponds occur within the Conservation Area. A large borrow pit is located along the northern reaches of the property. Several relict fishponds are located along the eastern portions of the property adjacent to S.R. 26. These ponds are large, deep, hold water, and contain remnants of the water control structures likely installed at the time they were constructed. The berms around the ponds are vegetated with large pines and oak trees.

# PAST MANAGEMENT SUMMARY

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

Water Resources 2006 Plan Strategy	Status
Implement Orange Creek Basin Surface Water	Acquisition activities are largely complete and
Management Plan:	monitoring and management are continual.
<ul> <li>Acquisition and management</li> </ul>	
• Water quality monitoring	
Regularly monitor roads and bridges for	Monitoring occurs as needed.
erosion problems.	

Fire Management 2006 Plan Strategy	Status
Develop and implement annual prescribed fire	Annual burn plans are developed annually by
plans.	September 30 <sup>th</sup> .
Develop and implement comprehensive long-	A comprehensive fire management plan was
term prescribed fire management plan.	developed in 2006.
Complete site preparation burns in appropriate	Site preparation burns were conducted as
areas (primarily clearcuts) prior to replanting.	needed and as weather and site conditions
	allowed.
Administer dormant season burns in all suitable	Since 2006, approximately 50% of the 1,266
flatwoods and sandhills (as conditions allow)	acres burned have been burned in the dormant
until fuel loads allow the introduction of	season.
growing season burns.	
Implement growing season burns in flatwoods	Since 2006, approximately 50% of the 1,266
and sandhills that have sufficiently reduced	acres burned have been burned in the growing
fuels.	season.

Forest Management 2006 Plan Strategy	Status
Determine most beneficial type of harvest for	Forest inventory work was done to determine
stands.	harvest needs.
Determine and implement reforestation and	Reforestation of reserved timber clearcut areas
restoration methods for applicable timber	was accomplished through the planting of
reservation areas.	longleaf pine.
Continue to monitor forest stands for signs of	Forest stands are monitored regularly.
drought, disease, or insect infestation.	

Exotic Species 2006 Plan Strategy	Status
Regularly monitor invasive plant populations	Invasive plants are monitored regularly to
within the conservation area.	determine control needs.
Treat invasive plant populations within the	Invasives are treated as needed.
conservation area as needed.	
Maintain Special Use Authorization that has	This SUA has expired. There is no additional
been issued to a private trapper in order to	SUA in place to handle feral hog control as
assist with control of feral hogs.	evidence of hog occurrence is low.

Cultural Resources 2006 Plan Strategy	Status
Document and report any new sites to the	District staff have worked to document an
Division of Historical Resources.	additional cemetery site within the
	Conservation Area.
Evaluate and modify all land management	District staff modify land management
activities in order to minimize disturbance to	activities in areas where sites are known to
known sites.	occur.

Access 2006 Plan Strategy	Status
Maintain parking areas and kiosks at Hatchet	Parking areas and kiosks are maintained as
Creek and North Tracts.	frequently as budget and staff availability
	permit.
Maintain all trails within the conservation area.	Trails are maintained as frequently as budget
	and staff availability permit.
Maintain agreement with county to provide	This agreement is active and maintained.
public parking for South Tract at Owens-	
Illinois Park.	
Maintain bridges in Hatchet Creek and North	Bridges are regularly inspected and maintained
Tracts.	as necessary.
Maintain all fencing, gates, boundary markers,	Fencing, gates, boundary markers, and roads
and roads within the Conservation Area.	are regularly maintained. District staff also
	installed approximately 1,900 feet of fence on
	the South Tract.
Install bridge within the Newnans Lake	A bridge was constructed within the Hatchet
Addition parcel of the Hatchet Creek Tract.	Creek Tract.

Recreation 2006 Plan Strategy	Status	
Maintain marked trail systems and associated	The trail marking is maintained and brochures	
brochures with trail map.	and trail maps are updated as necessary.	
Reroute low-lying portions of existing trail	Some trails have been rerouted. Additionally,	
through drier areas within the Newnans Lake	foot bridges have been installed to assist hikers	
Addition parcel.	in navigating wetter portions of the trail	
	system.	
As recreational opportunities are expanded,	A group campsite is established within the	
reevaluate the need to provide primitive	Conservation Area.	
campsites within the Conservation Area.		
Establish a Wildlife Management Area within a	In 2008, the Hatchet Creek WMA was	
portion of the Hatchet Creek Tract.	established.	
Close potentially affected trails during timber	Trails are closed as necessary as a safety	
harvests.	precaution and to facilitate timber harvest	
	operations.	

Environmental Education 2006 Plan Strategy	Status
Encourage educational opportunities as they	Education opportunities are encouraged.
arise.	District involvement is subject to staff and
	budget availability.

Security 2006 Plan Strategy	Status
Maintain fencing, posting, and gates.	Fencing, boundary posting, and gates are
	maintained as necessary.
	The District maintains a contract with a private
Maintain private security contract.	firm to provide security within the
	Conservation Area.

### **Cooperative Agreements 2006 Plan Strategy**

<b>Cooperative Agreements 2006 Plan Strategy</b>	Status
Continue to maintain all agreements.	Agreements are maintained and renewed as
	needed.
Develop an intergovernmental management	Through intergovernmental agreements, the
agreement designating the District as lead	District is lead manager of the entire
manager of the co-owned Newnans Lake	Conservation Area.
Addition parcel.	
If necessary, develop an intergovernmental	Seasonal hunting opportunities are restricted to
management agreement designating FWC as	the Hatchet Creek WMA and fall under the
lead manager of hunting related activities.	jurisdiction of the FFWCC.

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# **IMPLEMENTATION**

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

# **RESOURCE PROTECTION AND MANAGEMENT**

# Special Management Considerations

### Wildlife Management Area Safety Zones

The District has developed buffer zones along portions of the boundary adjacent to private property and out parcels (Figure 8). The intent of these zones is to provide a buffer between public uses and provide some measure of separation between the recreating public and neighboring landowners. As this area is Wildlife Management Area, these buffers also serve as "NO HUNTING" areas, providing additional protection to the community. The Wildlife Management Area Safety Zones extend approximately 300 feet into the Conservation Area from the boundary line. The breaks are between ten and twenty feet wide. The District maintains the breaks as needed.

### Forest Legacy

A large portion of the funding for the purchase of the Newnans Lake Addition parcel came from the federal Forest Legacy program. One of the explicit purposes of the Forest Legacy program is to protect environmentally sensitive forested lands. This program requires the use of sustainable forest practices, and requires maintenance of the parcel as a working forest.

### Special Management Considerations Strategies

### **General Maintenance Activities**

• Maintain and manage the Newnans Lake Addition parcel as a working forest in compliance with the stipulations of funding.

### **Specific Strategies**

### Recurrent

• Maintain the Wildlife Management Area Safety Zones as needed.

### Water Resource Protection and Management

Several of the large lakes in the Orange Creek Basin have diminished water quality due to excessive nutrient loads and Newnans Lake is one of the most degraded lakes in Florida (Lippincott, 2011). Newnans and other lakes in the basin were historically known for outstanding fisheries. The decline in water quality and an overall reduction in quality aquatic habitat resulted in a decline in fisheries. "As of 2009, Newnans Lake ranked in the bottom third statewide for angler success for sport fishing" (Lippincott, 2011). Much of the decline in water



quality may be attributed to run-off from urban areas and conversion of wetlands for agricultural uses.

To address the water quality problems within the basin, the District developed the Orange Creek Basin Surface Water Improvement and Management Plan (SWIM). The SWIM plan addresses issues ranging from basin-wide hydrologic alterations and water quality to enhancement of fish habitats and land conservation and restoration. The District has acquired many of the parcels previously identified for acquisition around the lake. These acquisitions contribute to the conservation and management of an extensive amount of wetlands and surface water, contributing to the improvement of water quality and flood protection for Newnans Lake and the greater Orange Creek Basin.

While most water resource protection within the property was accomplished through acquisition, portions of the wetlands and surface water in the Conservation Area are disturbed. Hydrologic disturbance within the Conservation Area include roads, silvicultural bedding, ditches, culverts, bridges, borrow pits, and fish ponds. Additionally, the Conservation Area, including portions of the floodplain, is bisected by S.R. 26 and portions of the Conservation Area are bound by C.R. 224 and S.R. 222. The water resource structures within the Conservation Area are detailed in Figure 9. Table 3 provides details regarding those structure that will require maintenance and repair or that are scheduled for replacement during the scope of this plan. The District will add to this list as need arises.

Structure ID	Туре	Size/Material	Condition	Action Required
40	Culvert	Concrete – 18inch	Poor	Replace by 2016
50	Culvert	Metal – 24 inch	Poor	Replace by 2016
56	Culvert	Concrete – 30inch	Poor	Replace by 2016
80	Culvert	Metal – 24 inch	Poor	Replace by 2016
91	Culvert	Metal – 24inch	Poor	Replace by 2016
107	Culvert	Metal – 24inch	Poor	Replace by 2016
60	Low Water		Very Poor	Repair by 2016
00	Crossing			
62	Bridge	Wood	Fair	Replace Decking by 2018
21	Bridge	Wood	Poor	Replacement by 2020
22	Bridge	Wood	Fair	Replace Decking by 2018
23	Bridge	Wood	Fair	Replace Decking by 2018

Table 3 – Roads Structures Maintenance Needs



### Water Resource Strategies

### **General Maintenance Activities**

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

# Specific Strategies

### Recurrent

• Visually inspect roads, trails, bridges, and culverts for erosion problems and maintenance and repair needs.

Short-term planning horizon (1-5 years)

- Conduct repairs and replacements to road structures as indicated in Table 3.
- Evaluate the potential to develop relict fish ponds into a youth fishing area as discussed in the recreation section.

Long-term planning horizon (1-5 years)

• Conduct replacement of bridge as indicated in Table 3.

# Flora and Fauna

### Native Species

The Conservation Area provides habitat for a variety of floral and faunal species. District staff, other agency cooperators, and volunteers have documented numerous floral and faunal species from across the Conservation Area and these observations are compiled into the Conservation Area species list (Addendum 3).

### Fauna

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

### Florida Black Bear

The Florida black bear is documented within the Conservation Area and numerous road-killed and nuisance animals have been documented in close proximity of the Conservation Area. In addition to habitat loss and fragmentation, threats to the bear include human caused mortality such as road kill and incompatible habitat management. (Draft Black Bear Management Plan for Florida - *Ursus americanus floridanus*). The Conservation Area is located just west of the secondary range of the Ocala population of Florida black bear. To the extent that issues relate to District managed lands, District staff will coordinate as necessary with the FFWCC and other relevant parties regarding the management of bear habitat and the facilitation of movement across the landscape.

### Sherman's Fox Squirrel

Sherman's fox squirrels (*Sciurus niger shermani*), are a state species of special concern documented within the Conservation Area. The Sherman's fox squirrels are known to inhabit sandhills and other natural communities dominated by longleaf pine and wiregrass. When the

communities are degraded or absent, Sherman's fox squirrels will inhabit live oak hammocks. The primary threat to the Sherman's fox squirrels is habitat degradation and loss. Restoration activities of sandhill and other longleaf pine communities within the Conservation Area will focus on restoring species composition and natural fire return intervals, which will benefit the Sherman's fox squirrels.

#### Spotted Turtle

The spotted turtle (*Clemmys guttata*) occurs within the Conservation Area. The spotted turtle is a rare, reclusive reptile that occurs in "bogs and swamps as well as shallow ponds, streams, and ditches that are wooded. They are often associated with habitats that include slow-moving or still water with a soft bottom and abundant vegetation such as sphagnum moss" (Florida Natural Areas Inventory, 2001). "The spotted turtle is not well known in Florida. Much of the information for this species has historically been derived from occasional observation of either road killed specimens or individuals observed on roadways" (P. E. Moler). Management considerations for this species include maintenance of water quality and the maintenance and appropriate management of wooded wetlands.

### Gopher Tortoise

The gopher tortoise (*Gopherus polyphemus*), a state Threatened species occurs within the Conservation Area. In the eastern portions of it's range (Florida, Georgia, portions of Alabama, and South Carolina), the gopher tortoise is included on the U.S. Fish and Wildlife Service register as a candidate for listing. District staff anticipates working to develop baseline population estimates of the gopher tortoise within the Conservation Area. This dataset will be utilized in determining restoration and habitat enhancement needs and as a measure of success of the restoration and management efforts in these areas. This dataset will also be utilized as supplemental documentation for habitat improvement grant applications.

#### Bald Eagle

The Newnans Lake area is an area of significant Bald Eagle nesting site activity. Currently documented within the Conservation Area, there are four active Bald Eagle nest sites (Figure 10) and two nests of unobserved activity status. There are numerous other nest sites, many of them active within close proximity of the Conservation Area. The District will adhere to the guidelines established in the February 2006 U.S. Fish and Wildlife Service (FWS) *Draft National Bald Eagle Guidelines*. This document is effective following the delisting of the species from the Endangered Species list. The Bald Eagle continues to receive protection through the Bald and Golden Eagle Protection Act and the <u>Migratory Bird Treaty Act</u>. The District will consult with the FFWCC and/or the FWS as applicable, prior to conducting management activities within the established management zones that may impact Bald Eagle nesting between the dates of October 1 to May 15. Additionally, the District will confirm activity status at known nesting sites each year. Should new nest sites be identified, GPS locations will be recorded and incorporated into the District Bald Eagle database.

#### Wood Stork

Portions of the Conservation Area lie within the core foraging area (Figure 10) for a nesting colony of the federally endangered Wood Stork (*Mycteria americana*). This rookery is documented approximately 7 miles to the south of the property (Wood Storks, 2010) and much

of the property is within the foraging area radii limits established for north Florida Wood Stork rookeries. The District will adhere to the guidelines established in the January 1990 (or any subsequent revision) U.S. Fish and Wildlife Service (FWS) *Habitat Management Guidelines for the Wood Stork in the Southeast Region*. District staff will utilize the most current data available from FWC or USFWS to determine the location of Wood Stork rookeries. Locations of rookeries will be mapped annually in advance of annual burn plans.

### General Birds

Since 1998, there have been two significant and extended droughts (2002-2004 and 2006-20011/12) affecting the Conservation Area and surrounding areas. During these droughts, the waters of Newnans Lake receded, exposing extensive areas lake bottom and creating mud flats. According to Rex Rowan of Alachua Audubon Society, these mud flats provided abundant foraging opportunities for exceedingly large numbers of shorebirds as well as other water birds. In 2000, local bird enthusiasts identified 30 species of shorebirds on Newnans Lake and during a five-month period in 2012, Rowan reports that over 20 species were recorded. "In both drought periods, the lake was heavily used by wintering shorebirds, but their numbers grew significantly during migrations, suggesting that drought-stricken lakes are valuable stopover sites for migrants" (Rowan). Notable bird species observed during this event include:

- o Ruff
- Hudsonian Godwit
- Sanderling
- Red Knot
- Ruddy Turnstone
- Wilson's Plover

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### **Exotic and Invasive Species**

Several exotic pest plants are known to occur within the Conservation Area. The property is part of the District's Invasive Plant Management Program. Exotic species control is necessary to inhibit the continued proliferation of exotic plants and integral in the maintenance and restoration of natural plant communities. The Invasive Plant Management Program applies various herbicides according to label rates using the most appropriate method of application for the target species. Within the Conservation Area, the District has utilized the following methods for the application of herbicides:

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

While it is unlikely that the District will entirely eradicate invasive plants within the Conservation Area, achieving maintenance control of such species is targeted within the scope of this plan. Exotic pest plant infestations are light to moderate across the Conservation Area; the property is regularly monitored and treated as necessary. Since 2006, District staff have accomplished the treatments indicated in Table 4.

FF			
Species	Acres Treated	<b>Treatment Method</b>	
Cogon Grass	9	Foliar	
Japanese Climbing Fern	No Treatments – Surveys Only		
Mixed Trees**	71	Basal	
Site Preparation***	1,283	Aerial	

Table 4 – Exotic and Invasive Plant Management Accomplishments

\*Acres treated include acres that have received multiple treatments. This is not a spatial accounting of infestations.

\*\*Mixed Trees include the treatment of exotic trees that occur in mixed stands that are difficult to delineate by species. These stands may be in upland or wetland environments.

\*\*\*Site Preparation includes the treatment of vegetation, primarily oaks, within forest management stands identified for reforestation. Treatments reduce competition for newly planted pine trees.

# Feral Hogs

Exotic wildlife species including feral hogs (*Sus scrofa*) occur within the Newnans Lake Conservation Area. The District currently does not utilize feral hog removal agents via the Special Use Authorization (SUA) process, as evidence of infestation appears low. Feral hogs are harvested in conjunction with hunting associated with the Hatchet Creek Wildlife Management Area, where, during designated hunting periods, management of such activities is under the jurisdiction of the Florida Fish and Wildlife Conservation Commission.

On other District managed properties, the District has coordinated via contract with the United States Department of Agriculture (USDA) to assist in the removal of feral hogs. Due to budget reductions, the contract was not renewed at the end of FY2012. Should the feral hog population become problematic and cause damage to natural areas or infrastructure, the District will have the flexibility to enter into short term agreements with the USDA to address specific population reduction initiatives. The District may also attempt to utilize a hog removal agent through an SUA.

### Flora and Fauna Strategies

### **General Maintenance and Management Strategies**

- Collect species occurrence data and incorporate into the District biological database.
- Conduct management activities in a manner consistent with relative rules, regulations, guidelines, and species management plans and in a manner that provides maximum protection for listed, rare, sensitive, or otherwise desirable species.

### **Specific Strategies**

### Recurrent

- Conduct gopher tortoise burrow surveys within select sandhill restoration areas.
- Map Wood Stork and other bird rookeries in advance of annual burn plans.
- Annually survey Bald Eagle nesting sites and record activity status.
- Continue appropriate treatment of exotic vegetation.
- Conduct feral hog removal activities as needed.

### Forest Management

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

The Conservation Area is partitioned into forest management compartments and each compartment is further divided into stands. Figure 12 illustrates the compartments and stands within the Conservation Area and Figure 13 illustrates the dominant pine species within each stand. On properties like the Newnans Lake Conservation Area, where silvicultural management is an intrinsic component of the overall management of the upland portions of the property, values, including timber inventory is collected. These values are verified and incorporated into the District's forest management database. Changes that may occur over time within the compartments and stands resulting from growth and harvest operations, and reforestation are also recorded in the database. This information is used to help land management staff forecast forest management needs.

While tailored to meet silvicultural management goals, primary objectives of harvesting on the Conservation Area are restorative in nature and are to improve species diversity and overall natural community health and vigor. In keeping with the requirements of the USDA Forest Legacy grant requirements, portions of the property will be managed as a working forest and as such, will be subject to silvicultural activities. This section of the plan is intended to meet the planning requirements of the Forest Legacy grant requirements. Additionally, harvesting will occur in response to disease, insect infestation, or mortality from wildfire or wind events. Select harvesting may occur to remove hazardous trees and snags. All revenue generated through forest management is applied towards the District's Land Management Bureau budget to offset management costs for the property.

Since the writing of the last plan, numerous forest management activities have been accomplished by various parties within the Conservation Area. Table 5 provides information relative to forest management techniques (and associated acreage) employed within the Conservation Area since 2006 and Figures 14 and 14a illustrates the location of harvest and planting activities. Figure 15 illustrates harvest activities as they were accomplished by either the District or Rayonier and Plum Creek as part of the now expired timber reservation activities.

Forest management activities anticipated during the scope of this plan include forest inventory evaluations, pine thinning operations, and reforestation. Seedling survival monitoring is conducted to assess the need for replanting an area through the determination of the number of target trees per acre. Reforestation projects may be preceded by various site preparation techniques including mechanical treatments such as harrowing and disking to remove silvicultural bedding, roller chopping and mowing, herbicide applications, and prescribed fire. These techniques may be used singularly or in combination as site conditions warrant. First thinning operations typically occur between the 18th and 22nd year and second thinning operations are conducted, on average, 15 years after the first. Third thinning operations generally fall 15-20 years following the second. These times are largely dependant on ecological factors that affect tree growth and basal area.




Year	Forest Management Activity	Acres	Planting Species*
2007	Clearcut	424	
2008	Clearcut	21	
2009	Clearcut	214	
2010	Clearcut	650	
2006	2 <sup>nd</sup> Thinning	227	
2007	1 <sup>st</sup> Thinning	484	
2008	1 <sup>st</sup> Thinning	273	
2008	2 <sup>nd</sup> Thinning	115	
2009	2 <sup>nd</sup> Thinning	113	
2011	1 <sup>st</sup> Thinning	126	
2007	Planting	127	Longleaf Pine
2009	Planting	417	Longleaf Pine
2011	Planting	667	Longleaf Pine
2012	Planting	214	Longleaf Pine

-1 and $J = COmplete TOLET Management Activities$
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As the biomass market develops in Florida, the District may consider some areas within the Conservation Area for providing raw material to biomass processors. Material from pine plantations and other areas will be considered for biomass sale only if the harvest of such material will serve to meet other District objectives such as ecological restoration and natural community maintenance and management.

Figures 16 - 21 depict the planned forest management activities through the year 2023 by compartment and Table 6 details that information.

Compartment	Stand	Acres	Pine Species	Year Established	Planned Harvest Type	Planned Harvest Year
01	003	24	Slash	1994	1 <sup>st</sup> Thinning	2013
	005	2	Slash	1994	1 <sup>st</sup> Thinning	2013
	006	28	Slash	1994	1 <sup>st</sup> Thinning	2013
	007	8	Slash	1994	1 <sup>st</sup> Thinning	2013
	009	12	Slash	1994	1 <sup>st</sup> Thinning	2013
	010	9	Slash	1994	1 <sup>st</sup> Thinning	2013
	011	75	Slash	1994	1 <sup>st</sup> Thinning	2013
	014	9	Slash	1994	1 <sup>st</sup> Thinning	2013
	017	15	Slash	1994	1 <sup>st</sup> Thinning	2013
	022	5	Slash	1994	1 <sup>st</sup> Thinning	2013
	026	48	Slash	1994	1 <sup>st</sup> Thinning	2013
	039	11	Slash	1994	1 <sup>st</sup> Thinning	2013
	043	84	Slash	1994	1 <sup>st</sup> Thinning	2013
	045	14	Slash	1994	1 <sup>st</sup> Thinning	2013
02	050	11	Slash	1993	1 <sup>st</sup> Thinning	2013
	055	12	Slash	1993	1 <sup>st</sup> Thinning	2013
	059	17	Slash	1949	2 <sup>nd</sup> Thinning	2017
	063	8	Slash	1969	2 <sup>nd</sup> Thinning	2017
	065	4	Slash	1993	1 <sup>st</sup> Thinning	2013
	073	1	Slash	1991	1 <sup>st</sup> Thinning	2013
	074	4	Slash	1988	1 <sup>st</sup> Thinning	2013
	075	7	Slash	1989	1 <sup>st</sup> Thinning	2013
	076	6	Slash	1988	1 <sup>st</sup> Thinning	2013
	080	29	Slash	1960	2 <sup>nd</sup> Thinning	2017
	082	5	Slash	1949	2 <sup>nd</sup> Thinning	2017
04	009	21	Slash	2000	1 <sup>st</sup> Thinning	2018
	012	47	Slash	1997	1 <sup>st</sup> Thinning	2015
	029	12	Slash	2000	1 <sup>st</sup> Thinning	2018
	032	4	Slash	1997	1 <sup>st</sup> Thinning	2015
	033	55	Slash	2000	1 <sup>st</sup> Thinning	2018
	092	5	Slash	2000	1 <sup>st</sup> Thinning	2018
	093	6	Slash	2000	1 <sup>st</sup> Thinning	2018
	094	4	Slash	2000	1 <sup>st</sup> Thinning	2018
	112	2	Slash	1997	1 <sup>st</sup> Thinning	2015
05	003	116	Slash	1986	2 <sup>nd</sup> Thinning	2020

Table 6 – Planned Forest Management Activities

Compartment	Stand	Acres	Pine Species	Year Established	Planned Harvest Type	Planned Harvest Year
	015	7	Slash	1991	2 <sup>nd</sup> Thinning	2020
	022	43	Slash	1988	2 <sup>nd</sup> Thinning	2020
	023	21	Slash	1991	2 <sup>nd</sup> Thinning	2020
	027	53	Slash	1991	2 <sup>nd</sup> Thinning	2020
	036	7	Slash	2001	1 <sup>st</sup> Thinning	2019
	038	20	Slash	2001	1 <sup>st</sup> Thinning	2019
06	003	43	Sand	1987	Clearcut*	2013
	009	4	Sand	1987	Clearcut*	2013
	013	71	Loblolly	1999	1 <sup>st</sup> Thinning	2015
	014	6	Slash	2004	1 <sup>st</sup> Thinning	2022
	017	61	Slash	2004	1 <sup>st</sup> Thinning	2022
	018	3	Loblolly	1989	1 <sup>st</sup> Thinning	2013
	027	2	Slash	2004	1 <sup>st</sup> Thinning	2022
	032	154	Slash	2004	1 <sup>st</sup> Thinning	2022
	043	9	Sand	1988	Clearcut*	2013
	044	3	Sand	1987	Clearcut*	2013
	045	7	Longleaf	1988	1 <sup>st</sup> Thinning	2013
	046	1	Sand	1987	Clearcut*	2013
	048	3	Slash	2004	1 <sup>st</sup> Thinning	2022
	051	8	Slash	2004	1 <sup>st</sup> Thinning	2022
	053	1	Slash	2004	1 <sup>st</sup> Thinning	2022
	054	3	Slash	2004	1 <sup>st</sup> Thinning	2022
	072	5	Sand	1987	Clearcut*	2013
	076	60	Longleaf	1988	1 <sup>st</sup> Thinning	2013
	080	2	Loblolly	1999	1 <sup>st</sup> Thinning	2015
	086	9	Slash	2004	1 <sup>st</sup> Thinning	2022
	087	3	Slash	2004	1 <sup>st</sup> Thinning	2022
	088	6	Slash	2004	1 <sup>st</sup> Thinning	2022
	104	2	Slash	2004	1 <sup>st</sup> Thinning	2022
	112	2	Slash	2004	1 <sup>st</sup> Thinning	2022
07	008	11	Slash	1993	1 <sup>st</sup> Thinning	2013
	010	2	Slash	1993	1 <sup>st</sup> Thinning	2013
	015	2	Slash	1993	1 <sup>st</sup> Thinning	2013

\*Reforestation with longleaf pine in clearcut areas will occur after evaluation of native groundcover response and any requisite restoration activities.













### Forest Management

### **General Maintenance Activities**

- Conduct visual monitoring and forest management activities as necessary in response to disease, insect infestation, or wind damage.
- Implement management activities to encourage optimal forest health and targeted basal areas.
- Monitor biomass market as a potential recipient of materials from the Conservation Area. **Specific Strategies**

Short-term planning horizon (1-5 years)

- Identify and prioritize groundcover restoration needs within planted pine areas.
- Conduct harvest activities as identified in Table 6.
- *Long-term planning horizon (5-10 years)* 
  - Conduct harvest activities as identified in Table 6.

### Upland Restoration and Enhancement

As harvests and replanting activities associated with the timber reservations are complete, management focus is shifting to address the restoration and maintenance of certain upland areas within the property. Inspection of historic aerial imagery reveals that portions of the upland areas within the Conservation Area were cleared as early as the 1940s for agricultural uses, likely cattle ranching and some row cropping. The agricultural uses gave way to commercial silvicultural activities, which remained active on the property through the time of acquisition.

The District plans to implement restoration and enhancement activities on portions of the uplands within the Conservation Area. In restoring sandhills, the District will target a desired future condition that includes diverse native groundcover of >50% coverage and a canopy closure of 20-60%. At maturity and within the canopy closure limits, the canopy will include longleaf pine at an average rate of approximately 100-200 stems per acre (8-12dbh) with a basal area of 40-60ft<sup>2</sup>/acre. Desirable canopy oaks (turkey, sand post, and blue jack) should occur at a rate of 15-20 stems per acre with a basal area of 5-7ft<sup>2</sup>/acre. Regenerating oaks and other shrubs combined should account for  $\leq$ 30% coverage in the midstory. Site conditions that will allow for a fire return interval of between 1 and 3 years are desirable. These parameters are consistent with both the GTMP and optimum habitat conditions for Sherman's fox squirrels (Allen).

In flatwoods, restoration goals include achieving and maintaining the shrub layer to achieve a mosaic of heights ranging between 1 and 5 feet, a pine basal area of between 60 and 90 ft<sup>2</sup>/acre, and a fire return interval based on FNAI descriptions of particular flatwoods variants. Below is a general description of restoration actions to be implemented in the restoration areas identified in Figure 22.



### Sand Pine Removal – Sand Pine Plantation Restoration Areas – 70 Acres

These areas incorporate seven stands that are identified as sandhill on soils that include Tavares, Millhopper, Candler, and Apopka sands. In 1987 and 1988, these areas were planted in sand pine, which subsequently has exhibited high survival. The sand pine in these stands is of merchantable size with diameter at breast height (dbh) values ranging from 4.6 - 9.5 inches. The basal areas in these stands ranges from 83 to 103 ft<sup>2</sup> and greater.

These areas of planted sand pine exhibit highly degraded ecological values. As a result of the disturbance from previous site preparation, and the shade provided by the sand pine, the native ground cover species have diminished. While remnants of the former sandhill species still exist, the extent of their coverage is difficult to assess because they have diminished in both vigor and stature. The sand pine is scheduled for harvest in 2013. Once the sand pine is harvested, District staff intends to prescribe burn the area and monitor the response of sandhill ground cover species. In areas where the ground cover species are sufficient to encourage management as a sandhill, the District intends to control sand pine regeneration and any offsite hardwoods using some combination of mowing, fire, and herbicide. In this scenario, groundcover augmentation may occur. Once groundcover has recovered or is acceptably restored, longleaf pine will be hand-planted at a density of 500 stems/acre.

In areas where little or no groundcover exists or where control of sand pine regeneration is excessive and insurmountable, sand pine will be allowed to regenerate. In this scenario, the area will be managed without fire and will be clearcut on a 20 to 40 year stand replacement cycle.

### Clearcut Restoration Areas – 340 Acres

These areas include several stands of historic sandhills and exhibit degraded ecological values. The stands were former areas of reserved timber that were clearcut. In 2009 and 2012, those areas affected by the clearcut were planted in longleaf pine. Many of these stands have dense coverages of coppice-regenerated turkey oaks in the shrub layer as well as many offsite oak species. Additionally, the majority of the clearcut areas include some coverage of site appropriate groundcover species and while suppressed, wiregrass is present.

Initially, these areas will be evaluated to determine the basal area of desirable mature, canopy height oaks. If excessive, oaks will be reduced to within the desired range. The coverage of smaller oaks within the shrub layer will also be evaluated and treatment, if necessary, will begin with the application of herbicide. Prescribed fire will be utilized to encourage the amelioration of native groundcover within these areas. Augmentation of groundcover may occur through direct seeding of wiregrass and other sandhill species. Since many of these areas are already planted in longleaf pine, these plantings will be monitored for success.

### Oak Encroached Canopy Restoration Areas – 215 Acres

These stands include some coverage of longleaf and slash pine and site appropriate oaks in the canopy. The majority of these stands include heavily encroached and overgrown canopies of offsite oaks, primarily laurel and live oaks. Shading and excessive leaf litter beneath the oak canopies has resulted in a suppressed native groundcover layer.

Restoration and enhancement activities in these areas will include the mechanical removal of canopy oaks focusing on the complete removal of offsite oaks. Desirable oaks and other hardwoods will be thinned to an appropriate basal area. Ideally, the District will pursue a fuel wood harvest to accomplish the removal of canopy oaks; however, it is possible that other mechanical methods will be utilized. Following the harvest or removal of oak trees, herbicide treatments will be necessary to control coppice sprouting and regrowth. Additionally, prescribed fire will be utilized to remove any slash from the harvest and to stimulate any latent wiregrass and other groundcover species. If necessary, groundcover augmentation may occur. Once groundcover has recovered or is acceptably restored, the sites will be evaluated for longleaf pine planting needs.

# Windrow Removal Areas – 187 Acres

A typical windrow will include logging slash and debris that is pushed into linear piles to aid in decomposition. It is believed that the windrows in this area were installed as site preparation prior to the 1971 establishment of the slash pine plantation that currently occupies the site. Unlike other windrows that include slash and other logging debris, these windrows are mostly soil. The windrows are still present and identified for removal. The removal of these windrows will likely be accomplished using a trackhoe to redistribute material. This will aid in the restoration of sheet flow, will redistribute top soil, and will facilitate burning within the identified area. These areas will be evaluated for potential restoration and augmentation of groundcover.

## Upland Restoration and Enhancement

### **General Maintenance Activities**

- Monitor groundcover regeneration.
- Monitor longleaf pine plantings and regeneration.

# **Specific Strategies**

# Short-term planning horizon (1-5 years)

- Conduct clearcut harvest of sand pine within identified areas.
- Conduct fuel wood harvest operation of oaks within identified areas.
- Conduct herbicide treatments of offsite oaks within identified areas.
- Conduct selective herbicide treatments of turkey oak and other site appropriate oaks within the identified areas.
- Conduct removal of windrows within the identified areas.
- Implement prescribed fires as indicated. Long-term planning horizon (5-10 years)
- Augment groundcover by seeding with native grasses.
- Conduct longleaf pine plantings in sand pine removal and other identified areas.

# Fire Management

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

restoration and maintenance of plant communities within the property. Since 2006, District staff implemented prescribed fire on 1,266 acres within the Conservation Area. Additionally, there were several small wildfires on the property since 2006. Figure 23 illustrates the prescribed fire history for the property since 2006.

Historically, the majority of fires occurring on what is now the Conservation Area would have been ignited by lightning during the growing season. The District intends to reintroduce growing season fires where possible, understanding that constraints in some areas such as young pine plantations or other plantings, high fuel loading, organic soils, and proximity to smoke sensitive areas may predicate the use of dormant season burning.

In addition to the presence of organic soils on portions of the property, other factors narrow the window of opportunity for the application of prescribed fire on the portions of the Conservation Area. The close proximity to critical smoke sensitive areas including SR 222, SR 24, SR 26, CR 234, Gainesville Regional Airport, the City of Gainesville, numerous surface streets and suburban and residential areas, and the down drainage effects of Newnans Lake, Hatchet Creek, and Little Hatchet Creek all present smoke management challenges. Smoke management is paramount 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. Smoke management concerns and smoke radii for the Conservation Area are depicted in Figure 24.

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

A system of condition class measures was originally developed by the Nature Conservancy and the USDA Forest Service in 2003 as an effort to assess ecosystem health. It was designed as Fire Regime Condition Class (FRCC) and it is based on a relative measure describing the degree of departure from the historical natural fire regime of a given system. This departure results in changes to one (or more) of the following ecological components: species composition, structural stages, stand age, canopy closure, or mosaic pattern. The District adapted the system in 2008 to measure ecosystem health and therefore land management effectiveness. While fire is the preferred disturbance that maintains most natural communities in Florida, other disturbances can serve as a surrogate for fire. Annually, each burn zone is assigned a condition class score based upon the most recent disturbance and the fire frequency recommended for that plant community by FNAI. If FNAI recommends a fire return interval of 3-5 years, a plant community that has benefited from disturbance in the past 5 years is in condition class one. If it has been more than 5 years but less than 15 years, or three cycles, the zone is in condition class 2.





If it has been more than three times the fire return interval, but can still be recovered by fire, it would fall in to condition class 3. If the plant community has gone without disturbance so long that fire alone can no longer restore the area, it is in condition class 4. District staff will make annual condition class assessments and incorporate them into annual burn planning and work planning processes.

All implementation of prescribed fire within the Conservation Area will be conducted in accordance with the District's Draft Fire Management Plan, the Newnans Lake Conservation Area Fire Management Plan (Addendum 4), and the annual burn plan for the property.

## Fire Management Strategies

## **General Maintenance Activities**

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

## **Specific Strategies**

Recurrent

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

## Cultural Resources

A review of the Department of State, Division of Historical Resources (DHR) indicates nine known Florida Master Site File cultural sites within the Conservation Area. Five of these sites contain prehistoric material. The most significant is the Lake Pithalchocco Canoe Site, which is the largest documented concentration of prehistoric canoes in North America. The remaining four sites contain scattered lithics and artifacts. These sites all date from the 20<sup>th</sup> century and include a frame from a cabin, a logging tram, and remnants of two bridges. Recently staff from the Florida Public Archaeology Network (FPAN) and the St. John River Water Management District documented a cemetery that is not identified in the Florida Master Site file. Once FPAN staff submits the documentation, it will become a Master Site.

District staff have recently identified and reported several new potential sites. If District staff discover any additional sites, staff will document and report those sites to the DHR. District land management activities that may impact these resources will be evaluated and modified to reduce the potential for disturbance of the identified sites. Additionally, detrimental activities discovered on these sites will also be reported to the DHR and appropriate law enforcement agencies. Due to District and State policy, the location of the sites is not identified on public maps.

### Cultural Resource Protection Strategies

### **General Maintenance and Management Strategies**

• Identify and report any new sites.

# LAND USE MANAGEMENT

### Access

Two public parking areas are located on the Conservation Area. The parking areas are fenced and have walkthroughs providing for recreational access. An informational kiosk is located near each of the parking area trailheads. An additional parking area is located on the adjacent Alachua County Owens-Illinois Park property from which, the Newnans Lake Conservation Area may be accessed. The Gum Root Park parking area and access point was closed due to chronic illegal and illicit activity. Reestablishment of this parking area may be considered during the scope of this plan. Additionally, access has been provided in the form of individual Special Use Authorizations for several families to access a small cemetery.

There are currently 37 gates providing management access to and across the property. These gates are monitored regularly for maintenance and/or repair needs from normal wear and tear and vandalism. In an effort to expedite emergency responses and to assist law enforcement and fire rescue in locating individuals in the event of an emergency, four 911 addresses have been issued at certain parking areas and access points to the Conservation Area. Table 7 includes the 911 addresses for the Conservation Area.

911 Address	Location/Description
11309 SE 16 <sup>th</sup> Ave., Gainesville, FL 32641	Owens-Illinois Park – Public Parking Area
1780 NE CR 234, Gainesville, FL 32641	Gate – Management Access
11908 NE SR 26, Gainesville, FL 32609	Public Parking Area - Rotary
1226 NE CR 234, Gainesville, FL 32641	Public Parking Area

### Table 7 – 911 Addresses

Several interior management roads traverse the conservation area, some of which incorporate the multiuse trail system. In order to manage road maintenance, the District utilizes a roads classification system. There are approximately 54 miles of roads within the Conservation Area. Of those, 23 miles are classified as primary roads, which are roads that require routine maintenance. The remaining 31 miles are classified as secondary roads, requiring only periodic maintenance.

Roads will be regularly inspected and receive maintenance and repair as necessary and may be subject to closure during these times. Figure 25 depicts the location of the parking areas, roads, and gates on the property.

### Access Strategies

### **General Maintenance and Management Strategies**

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

### **Specific Strategies**

Recurrent

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



### Recreation

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

Currently, recreational opportunities within the Conservation Area are dispersed resource-based activities. Recreation amenities include three trailheads with designated parking areas, each having an entrance sign and an information kiosk, and access to the property by trails routed using interior roads and firelines that also serve and are maintained as for access and land management purposes. One of the trailheads is located on the Alachua County Owens-Illinois Park property. The County enhanced this area to provide public access to the park, the lake, and the Conservation Area. The Owens-Illinois Park property is managed by Alachua County. Access from SR 26 to the group campsite is available with camping reservations.

The trail system is predominantly for hiking, off-road bicycling, and/or horseback riding and may access areas for wildlife viewing. A boat launch, providing access to Newnans Lake is available at the Owens-Illinois Park.

The District in coordination with Alachua County and the Florida Fish and Wildlife Conservation Commission has developed numerous recreational trails and associated infrastructure to provide opportunities for public recreation in and around the Newnans Lake Conservation Area.

Recreational improvements and considerations for the Conservation Area include:

- **Existing Recreation Structures** Presently recreational structures on the Conservation Area are limited to a picnic area located on the North Tract, accessible from the public parking area off CR 234. The District anticipates constructing a picnic shelter at this locale during the scope of this plan.
- Boat Ramp Access to Newnans Lake An improved boat ramp providing access to Newnans Lake is located on the Alachua County-managed Owens-Illinois Park property.
- **Public Restrooms** Public restrooms are available at the County-managed Owens-Illinois Park.
- Group Camping Group camping is available on the North Tract, which is accessible off CR 26. Camping is restricted to tent camping only; no RVs, travel trailers, or campers are allowed. Group camping is intended for seven or more people and requires a reservation and permit. Group camping is limited to a maximum of seven days. Reservations are available via the District website.
- **Trails** Approximately 19 miles of blazed trails are available for hiking, biking, and equestrian use. Footbridges are available in certain wetland crossings. The District may close trails or portions of trails to accomplish land management activities or when conditions pose a public safety concern.

- **Kiosks** Kiosks are located at each public access point and provide information, which includes maps, trail brochures, and interpretive displays.
- **Hatchet Creek WMA** The Hatchet Creek WMA was established on the northern reaches of the Conservation Area in 2008. Hunting opportunities within this WMA fall under the jurisdiction of the FFWCC. The District will evaluate the expansion of the Hatchet Creek WMA to include other portions of the Conservation Area.

In addition to the above, the District will evaluate the potential to work with the FFWCC to convert the remnants of the fish ponds located off SR 26 to youth fishing ponds.

Historically, District trails and trailheads were maintained through a trail maintenance contract. Budget constraints have caused this responsibility to be shifted to District staff. District staff will target maintenance levels achieved through previous contracts; however, it is possible that other management responsibilities will result in less frequent maintenance. The targeted maintenance schedule includes:

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

Current recreational amenities are included in Figure 26a-c.





# Figure 26b – Recreation Map







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

## **Recreation Strategies**

# **General Maintenance and Management Strategies**

- Maintain parking areas, kiosks, and trails.
- o Maintain current information in recreation guide, trail guides, kiosk, and District website.
- Consult with FFWCC for the potential of development of youth fishing ponds.
- o Continue coordination with FFWCC for the management of the Hatchet Creek WMA.

## **Specific Strategies**

Recurrent

- Mow recreational trails four times each year.
- Mow/maintain parking areas.
- Mow/maintain campsite.
- Remove debris from beneath footbridges.
- Conduct trail blazing and trimming maintenance.

Short-term planning horizon (1-5) years

• Construct picnic shelter at the existing picnic area.

## **Environmental Education**

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

### Environmental Education Strategies

## **General Maintenance Strategies**

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

### **Security**

Security concerns within the Conservation Area include illegal motorized vehicle access, dumping, vandalism of gates, fences, and conservation signage, poaching, illicit activity, and vandalism and theft of artifacts and other cultural resources. The District, primarily through a contract security firm as well as coordination with FFWCC and local law enforcement, administers security and law enforcement for the property.

### Security Strategies

### **General Maintenance and Management Strategies**

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

# **Specific Strategies**

### Recurrent

• Develop monthly, prioritized security needs and provide to contracted security firm.

• Conduct boundary line posting.

# ADMINISTRATION

## Real Estate Administration

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

Through the land assessment process, the District has identified the following parcel (see Figure 4) for potential surplus.

• Gladstone – 1998-006-P1 – Approximately 36 acres in the northwestern portion of the parcel.

## Real Estate Administration Strategies

## **General Maintenance and Management Strategies**

- Evaluate adjacent properties and inholdings for potential acquisition.
- Evaluate identified portion of the Gladstone parcel for potential surplus if necessary.

## Short-term Planning Horizon (1-5 years)

• Refine boundary and parcel data information and map layers.

## Cooperative Agreements, Leases, Easements, and Special Use Authorization

In accordance with District Policy #90-16, the District promotes entering into agreements with other agencies and private parties for cooperation and coordination of management of the District's lands. These cooperative agreements serve to protect the District's water management interests and to enhance the management and public value of the land. Table 8 details the agreements and SUAs in effect during the writing of this plan.

Agreement Number	Туре	Agreement Name	Term
902	SUA	Carr-Miles Access – Access route to adjoining private property	Expires 2-01-2018
251	Intergovernmental	Cooperative Agreement between District and Alachua County – Designates District lead manager	10-year with 20-year autoreneawal increments
352	SUA	Donaldson, Fred & Judy – Access to Sparkman Cemetery	Terminates April 30, 2013
897	SUA	FWC – digital recording devices	Terminates April 30, 2013

### Table 8 – Agreements, Easements, and SUA Table

852	SUA	Frank Buckles – Removal of Dead Trees	Terminates April 30, 2013
774	SUA	Holt, Minnie – Access to Sparkman Cemetery	Autorenewal
755	SUA	Imler, Lorna – Access to Sparkman Cemetery	Terminates March 24, 2016
99	Intergovernmental	Agreement between District and Alachua County allowing use of Owens-Illinois Park parking area	
357	SUA	Podlinsky, Jackie & Viana M. Access to Sparkman Cemetery	Terminates April 30, 2013
359	SUA	Smith, Brenda Lee – Access to Sparkman Cemetery	Terminates April 30, 2013
354	SUA	Smith, Clark G & Thelma Juanita – Access to Sparkman Cemetery	Terminates April 30, 2013
351	SUA	Smith, Frank J & Lisa J. – Access to Sparkman Cemetery	Terminates April 30, 2013
356	SUA	Smith, Margaret M. & Martin – Access to Sparkman Cemetery	Terminates April 30, 2013
383	SUA	Smith, Ronnie – Access to Sparkman Cemetery	Terminates April 30, 2013
353	SUA	Sparkman, Royce – Access to Sparkman Cemetery	Terminates April 30, 2013
349	SUA	Sparkman Wayne & Quincey – Access to Sparkman Cemetery	Terminates April 30, 2013
569	SUA	Sullivan, James E – Access for security and patrol	Terminates March 31, 2014
798	SUA	Towner, Judy A – Access to Sparkman Cemetery	Terminates May 31, 2016

# <u>Cooperative Agreements, Leases, Easements, and Special Use Authorizations Strategies</u> General Maintenance and Management Strategies

• Administer easements, agreements, leases, and SUAs.

# **IMPLEMENTATION CHART**

Newnans Lake Conservation Area – Management Implementation Chart

|--|

TASK	RECURRENT	1-5 YEARS	5-10 YEARS	LEAD (COOPERATOR)			
RESOURCE PROTECTION AND MANAGEMENT							
Special Management							
Considerations							
General Maintenance							
Maintain and manage the							
Newnans Lake Addition parcel as				DI M			
a working forest in compliance				DLIVI			
with the stipulations of funding.							
Recurrent							
Maintain the Wildlife							
Management Area Safety Zones	As Needed			BLM			
as needed.							
Water Resources							
General Maintenance							
Conduct maintenance and							
incidental or emergency repair of				BI M			
water resource structures as				DLW			
needed.							
Maintain water resource							
structures database and				BIM BRS			
incorporate maintenance, repair,							
and any new structures.							
Recurrent							
Visually inspect roads, trails, low							
water crossings, bridges, and	Annually			BLM BOP			
culverts for erosion problems and	runnauny			DLM, DOI			
maintenance and repair needs.							
Short-term Planning Horizon							
Conduct repairs and replacements							
to road structures as indicated in		2018		BLM, BOP			
Table 3.							
Long-term Planning Horizon							
Conduct replacement of bridge as			2023	BLM, BOP			
indicated in Table 3.				22111, 201			
Floral and Faunal							
General Maintenance							
Collect species occurrence data							
and incorporate into the land				BLM			
management biological database.							

Conduct management activities in a manner consistent with relative rules, regulations, guidelines, and species management plans and in a manner that provides maximum protection for listed, rare, sensitive, or otherwise desirable species.			 BLM
Recurrent			
Survey Bald Eagle nesting sites and record activity.	Annually by March 31 <sup>st</sup>		 BLM, BRS
Map Wood Stork and other bird rookeries in advance of annual burn plans.	Annually by September 30th		 BLM, BRS
Conduct gopher tortoise burrow surveys to document population dynamics within select sandhill restoration areas.	Biennially in October – or as time permits		 BLM, BRS
Continue appropriate treatment of exotic vegetation.			 BLM
Conduct feral hog removal activities as need is indicated.			 BLM
Fire Management			
General Maintenance			
Implement prescribed burning as described in the District's Fire Management Plan and the Newnans Lake Conservation Area Fire Management Plan.			 BLM
Recurrent			
Develop annual burn plans.	Annually by September 30 <sup>th</sup> .		 BLM
Populate and maintain fire management database.	Annually by September 30 <sup>th</sup> .		 BLM (BRS)
Conduct fireline maintenance.	Biannually Spring and Fall or as site conditions warrant		 BLM
Short-term Planning Horizon			
Identify and rehabilitate plow lines in areas where remedial action will not cause further damage.		2013	BLM
Forest Management			
General Maintenance			

Conduct visual monitoring of forested areas to identify signs of disease and/or insect infestation.	 		BLM
Implement management activities to encourage optimal forest health and targeted basal areas.	 		BLM
Monitor biomass market as a potential recipient of materials from the Conservation Area.	 		BLM
Short-term Planning Horizon			
Conduct pine harvest operations as detailed (through 2018) in Table 6.	 2013- 2018		BLM
Identify and prioritize groundcover restoration need within planted pine areas.	 2014		BLM
Long-term Planning Horizon			
Conduct pine harvest operations as detailed (2018-2023) in Table 6.	 	2018- 2023	BLM
Upland Restoration and Enhancement			
General Maintenance			
Monitor groundcover regeneration.	 		BLM
Monitor longleaf pine plantings and regeneration.	 		BLM
Short-term Planning Horizon			
Conduct clearcut harvest of sand pine within identified areas.	 2013		BLM
Conduct fuel wood harvest operation of oaks within identified areas.	 2017		BLM
Conduct herbicide treatments of offsite oaks within identified areas.	 2013- 2018		BLM
Conduct selective herbicide treatments of turkey oak and other site appropriate oaks within the identified areas.	 2013- 2015		BLM
Conduct removal of windrows within the identified areas.	 2018		BLM
Implement prescribed fires as indicated.	 2013- 2018		BLM
Long-term Planning Horizon			
-			

Augment groundcover by seeding			2019-	
with native grasses			2023	BLM
Conduct longleaf pine plantings			2010	
in sand pine removal and other			2019-	BLM
identified areas.			2023	
Cultural Resource Protection				
General Maintenance				
Identify and report any new sites.				BLM, BRS
				(DHR)
Access				
General Maintenance				
Maintain parking areas, signs,				<b>BLM</b>
gates, roads, and trails.				
Recurrent				
Update roads, gates, and firelines				
in the land management database	Annually by			BLM
as maintenance, repair, or	September 30th			(BRS)
creation of new roads or trails	September 50th			(DIG)
occurs				
Recreation				
General Maintenance				
Maintain parking areas, kiosks,				BLM
and trails.				
Maintain current information in				BLM
recreation guide, trail guides,				(FWC, BRS, OC)
klosk, and District website.				
Consult with FwC for the				BLM
potential to develop youth fishing				(BRS, FWC)
Continue coordination with FWC				
for the management of the				BIM (FWC BPS)
Hatchet Creek WMA				DLM (I WC, DKS)
Fyaluate the potential and need to				
expand the Hatchet Creek WMA				
into other portions of the				BLM (FWC, AC)
Conservation Area.				
Recurrent				
Mow recreational trails.	Quarterly			BLM
Mow/maintain parking areas.	Bimonthly			BLM
Mow/maintain campsite.	Monthly			BLM
Remove debris from beneath	A			
footbridges.	As needed			BLM
Conduct trail blazing and	Annually by			DI M
trimming maintenance.	December 31 <sup>st</sup> .			BLM
Short-term Planning Horizon				
Construct picnic shelter at the		2015		
existing picnic area		2013		DLIVI (DUP)
<b>Environmental Education</b>				
General Maintenance				
Continue to offer educational opportunities if possible and subject to staff and budget availability.			 OC (BLM)	
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Security				
General Maintenance				
Coordinate with local law enforcement and FFWCC for security needs.			 BLM (FWC, AC)	
Maintain contract with private security firm.			 BLM (BRS)	
Recurrent				
Develop monthly, prioritized security needs and provide to contracted security firm.	Monthly		 BLM	
Conduct boundary posting maintenance.	2013, 2018, 2023		 BLM	
Real Estate Administration				
General Maintenance				
Evaluate adjacent properties and in-holdings for potential acquisition.			 BRS (BLM)	
Evaluate identified portion of the Gladstone parcel for potential surplus if necessary.			 BRS	
Short-term Planning Horizon				
Refine boundary and parcel data information and map layers		2015	 BRS	
Cooperative Agreements, Leases, Easements, and Special Use Authorizations				
General Maintenance				
Administer easements, agreements leases and SUAs			 BLM (BRS)	

BLM – Bureau of Land Management BOP – Bureau of Operations

BRS – Bureau of Real Estate Services

DHR – Division of Historical Resources

FWC - Florida Fish and Wildlife Conservation Commission

OC – Office of Communications

AC – Alachua County

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# **ADDENDUM 1 – SOIL DESCRIPTIONS AND DETAILED MAP**

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

The Apopka series consists of very deep, well drained, moderately permeable soils on ridges and side slopes in the Lower Coastal Plain. They formed in thick beds of sandy and loamy marine or eolian deposits. The understory vegetation supported by this series may consist of bluestem, dog fennel, paspalum, pineland threeawn, and other native grasses and weeds.

The Candler series consists of very deep, excessively drained, rapidly permeable soils on uplands. They formed in thick beds of eolian or marine deposits of coarse textured materials. They are typically located in Marion County, Florida; approximately 200 feet west of the Base Line Road; about 0.75 mile north of Silver Springs. Native vegetation consists of blue jack oak, turkey oak, post oak, live oak, and longleaf pine with a sparse understory of indiangrass, chalky bluestem, pineland threeawn, hairy panicum, and other annual forbs.

The Chipley series consists of very deep, somewhat poorly drained, very rapid or rapidly permeable soils on uplands. Most areas in their natural state include slash pine, longleaf pine, blackjack oak, turkey oak, post oak, and grasses.

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

The Lake series consists of excessively drained, rapidly to very rapidly permeable soils formed in thick beds of sand. They are on nearly level to steep slopes in central Florida. They are located in Lake County, Florida about 3 miles south of Astatula; 1/2 mile west of intersection of State Roads 561 and 455; 150 feet south of Highway 455.

The Mascotte series consists of very deep, poorly and very poorly drained, moderately slowly permeable soils on areas of flats, depressions, and on low stream terraces of the lower Coastal Plain. They formed in sandy and loamy marine sediments. Natural vegetation consists of creeping and chalky bluestem, indiangrass, low panicums, and pineland threeawn. Longleaf pine, slash pine, saw palmetto, gallberry, fetterbush, and wax myrtle are the dominant woody plants on flatwoods sites. Depressional areas are dominated by cypress, slash pine, sand pine, loblolly bay, black gum, red bay, red maple, and sweetbay. The understory includes chalky bluestem, cinnamon fern, club moss, yellow-eyed grass, pitcher plant, greenbriar, and sedges.

The Millhopper series consists of very deep, moderately well drained, moderately permeable soils that formed in thick beds of sandy and loamy marine sediments. Native vegetation consists of live oak, laurel oak, post oak, water oak, sweetgum, cherry laurel, few hickory, and slash and

longleaf pine. The understory is chiefly lopsided indiangrass, hairy panicum, low panicum, greenbrier, hawthorne, persimmon, fringeleaf paspalum, chalky and creeping bluestems, and pineland threeawn.

The Monteocha series consists of very poorly drained, moderately permeable soils that formed in thick deposits of sandy and loamy sediments of marine origin. These soils are in wet depressions within the flatwoods of central and southern peninsular Florida. Native vegetation is dominantly ponded bald cypress, sweetbay, pond pine, red maple, greenbrier, and water tolerant grasses. Swamp tupelo occur in the northern range.

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

The Mulat series consists of poorly drained soils that formed in loamy and acid marine sediments. These soils occur on low-lying and flatwood areas of the lower coastal plain. The natural vegetation is slash and longleaf pine, inkberry (gallberry), waxmyrtle, pineland threeawn, dwarf huckleberry, and bluestems. Some of the wetter areas contain baldcypress and pitcher plants.

The Newnan series consists of somewhat poorly drained soils that formed in thick beds of sandy and loamy marine sediments of slight ridges in the flatwoods areas of central and southern Florida. Native vegetation consists of slash and longleaf pine and scattered live and laurel oaks and a few turkey or water oaks are in some areas. The understory is chiefly huckleberry, blueberry, gallberry, running oak, bracken fern, bluestems, paspalums, pineland threeawn, saw palmetto, greenbrier, lovegrass, and lopsided indiangrass.

The Pelham series consists of very deep, poorly drained, moderately permeable soils that formed in unconsolidated Coastal Plain sediments. These soils are on nearly level broad flats, toe slopes, depressions and drainage ways. The native vegetation consists of slash pine, loblolly pine, and longleaf pine together with sweetgum, black gum, water oak, and cypress. The understory is composed of gallberry, myrtle, swamp holly, and scattered palmettos, and ground cover is wiregrass and other water-tolerant grasses.

The Plummer series dominant vegetation, where wooded, mixed stands of slash, loblolly, and longleaf pine with swamp tupelo and bald cypress and an understory of gallberry, wax myrtle, southern bayberry, wiregrass, pitcher plants, and bracken fern.

The Placid series consists of very deep, very poorly drained, rapidly permeable soils on low flats, depressions, poorly defined drainage ways on uplands, and flood plains on the Lower Coastal Plain. They formed in sandy marine sediments. Natural vegetation consists of pond pine, bay, cypress, gum, pickerel weed, and coarse grasses.

The Pomona series consists of very deep, poorly and very poorly drained, moderate to moderately slowly permeable soils on broad low ridges on the Lower Coastal Plain. They formed in sandy and loamy marine sediments. The native vegetation consists of slash pine, longleaf pine, and south Florida slash pine with an understory of saw palmetto, wax myrtle, gallberry, creeping bluestem, chalky bluestem, indiangrass, and pineland threeawn.

The Pottsburg series includes vegetation such as second growth slash and longleaf pine with an understory of saw palmetto, gallberry, pineland threeawn, broomsedge bluestem, lopsided indiangrass, chalky bluestem, wild grape, and other perennial grasses.

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

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

The Sparr series consists of very deep, somewhat poorly drained, moderately slowly to slowly permeable soils on uplands of the coastal plain. They formed in thick beds of sandy and loamy marine sediments. Native vegetation consists of longleaf pine, slash pine, loblolly pine, magnolia, dogwood, hickory, and live oak, laurel oak, and water oak.

The Starke series consists of very poorly drained, moderate to moderately slowly permeable soils in depressions, poorly defined drainage ways, and on flood plains. Most areas of this soil are in natural vegetation which includes cypress, red maple, sweetgum, sweet bay, scattered slash and pond pine, swamp tupelo, and water tupelo. The understory consists of wax myrtle, inkberry, fetterbush lyonia, swamp cyrilla, greenbriar, maidencane, bracken fern, sedges, and other water tolerant plants.

The Surrency series consist of very deep, very poorly drained soils in flats, depressions, and swamps. Dominant Vegetation: Loblolly pine, slash pine, baldcypress, sweetgum, black gum, red maple, sweetbay magnolia, and water oak; shrubs are inkberry, southern wax myrtle, and titi.

The Tavares series consists of very deep, moderately well drained, rapidly or very rapidly permeable soils on lower slopes of hills and knolls of the lower Coastal Plain. They formed in sandy marine or eolian deposits. In most places the natural vegetation consists of slash pine, longleaf pine, a few scattered blackjack oak, turkey oak, and post oak with an undercover of pineland threeawn. In some places natural vegetation consists of turkey oak, blackjack oak, and post oak with scattered slash pine and longleaf pine.

The Wauchula series consists of very deep, very poorly or poorly drained, moderately slow or slowly permeable soils on flatwoods on the lower coastal plains. They formed in sandy and loamy marine sediments. The natural vegetation consists of longleaf pine, slash pine, saw palmetto, with an understory of inkberry, fetterbush, southern bayberry, and pineland threeawn.

The Zolfo series consists of very deep, somewhat poorly drained soils that formed in thick beds of sandy marine deposits. These soils are on low broad landscapes that are slightly higher than adjacent flatwoods on the lower Coastal Plain of Central Florida. Native vegetation consists of scattered turkey, laurel, or water oaks; long leaf or slash pine with an undercover of pineland threeawn, bluestem, lopsided indiangrass, gallberry, native weeds and saw palmetto.



# **ADDENDUM 2 – SPECIES RANKING DEFINITIONS**

#### FNAI GLOBAL RANKING

G1 = Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.

G2 = Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.

G3 = Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.

G4 = Apparently secure globally (may be rare in parts of range).

**G5** = Demonstrably secure globally.

G#T# = Rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g., G3T1).

#### FNAI STATE RANKING

S1 = Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.

S2 = Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.

S3 = Either very rare and local in Florida (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.

S4 = Apparently secure in Florida (may be rare in parts of range).

S5 = Demonstrably secure in Florida.

#### STATE LEGAL STATUS

**LE** Endangered: species, subspecies, or isolated population so few or depleted in number or so restricted in range that it is in imminent danger of extinction.

LT Threatened: species, subspecies, or isolated population facing a very high risk of extinction in the future.

**LS** Species of Special Concern is a species, subspecies, or isolated population which is facing a moderate risk of extinction in the future.

- **PE** Proposed for listing as Endangered.
- **PT** Proposed for listing as Threatened.
- **PS** Proposed for listing as Species of Special Concern.

N Not currently listed, nor currently being considered for listing.

#### FEDERAL LEGAL STATUS

LE Endangered: species in danger of extinction throughout all or a significant portion of its range.

**LT** Threatened: species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range.

LT, PDL Species currently listed threatened but has been proposed for delisting.

LT,PE Species currently listed Threatened but has been proposed for listing as Endangered.

**SAT** Treated as threatened due to similarity of appearance to a species which is federally listed such that enforcement personnel have difficulty in attempting to differentiate between the listed and unlisted species.

**PE** Proposed for listing as Endangered species.

**PT** Proposed for listing as Threatened species.

**C** Candidate species for which federal listing agencies have sufficient information on biological vulnerability and threats to support proposing to list the species as Endangered or Threatened.

**XN** Non-essential experimental population.

- **SC** Not currently listed, but considered a "species of concern" to USFWS.
- N Not currently listed, nor currently being considered for listing as Endangered or Threatened.

#### FDACS

**C** Commercially exploited.

**ADDENDUM 3 – SPECIES LIST** 

# ADDENDUM 4 – FIRE MANAGEMENT PLAN

Newnans Lake Conservation Area

# FIRE MANAGEMENT PLAN

PREPARED BY

## ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

#### Newnans Lake conservation Fire Management Plan Alachua County, Florida

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

#### **Introduction and Objectives**

The property is located within several Sections of Township 9 and 10 South and Range 21. The Conservation Area covers approximately 7,573 acres in Alachua County along the northern and eastern shores of Newnans Lake.

The Conservation Area is located east of the City of Gainesville, immediately southeast of SR 24, north of SR 20, and is bisected by SR 26. The Gainesville Regional Airport is located west of the property. Figure 1 depicts the general location of the Conservation Area.

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

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



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.

#### **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. The following table (Table 1.) and 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*.

Community Type	Fire return Interval
Floodplain Swamp	This community is not fire adapted.
Mesic Hammock	This community rarely burns
Depression Marsh	This community burns with adjacent communities.
Dome Swamp (edges)	3-5 years along the outer edges (or as adjacent
	communities burn); 100-150 years interior
Sandhill	1-3 years
Xeric Hammock	Site specific, but generally infrequent and
	catastrophic.
Mesic Flatwoods	2-4 years
Wet Flatwoods	1-3 years in grass dominated systems; 5-7 years in
	shrubbier systems

Table 1.

The above referenced fire return intervals relate to intact, well-maintained natural communities. The fire return interval within degraded systems is variable, often elongated. Prescribed fire will be applied as necessary to achieve restoration and management goals.

Wet, and mesic flatwoods as well as sandhill are the most prevalent fire adapted natural community type found within the Conservation Area. The majority of these plant communities, at the time of acquisition were managed for commercial silviculture and pine coverages included primarily slash pine (*Pinus elliottii*) and some sand pine (*P. clausa*). Management techniques implemented within these areas includes clearcut harvesting of pine, thinning of slash pine, roller chopping, and prescribed burning. The mesic and wet flatwoods plant communities within the Conservation Area vary in levels of disturbance. While species compositions are largely appropriate, these areas tend to have contiguous and overgrown shrub and sub canopy layers with many areas exhibiting suppressed groundcover assemblages. The more xeric areas (sandhill) are highly disturbed. Most areas include suppressed/remnant groundcover assemblages.

Fire management within the remaining plant communities (below) will be in conjunction with the associated dominant pyric plant community within each fire management unit (FMU). These

plant communities will burn as site conditions permit during the implementation of controlled burns in adjacent plant communities. Additionally, these areas will not be excluded from fire activities unless warranted by safety or smoke management issues.

Depression marshes are fire-adapted communities. Though fire may not carry entirely through each marsh during every burn, it is an important factor in the maintenance of the edge habitats surrounding them. These marshes are embedded within in the upland areas at the Conservation Area. In general, marsh fires are carried through the herbaceous layer. Many of these marshy areas have been disturbed by a prolonged absence of fire and are encroached by hardwoods or include planted pine. These areas still 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.

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

### Seasonality and Type of Fire

Historically, most fires in Florida occurred in what is commonly referred to as the "growing season." The growing season usually spans from mid March through August. 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 September through mid March, are less intense than growing season burns and are a desirable alternative when igniting fire in young pine plantations. Additionally, dormant season burns help to reduce fuel loads in overgrown areas, resulting in fewer safety and smoke management issues. Fuel loads range widely across the Conservation Area, but in general are moderate to high. While many areas have been treated with prescribed burns, or have been impacted by wildfires, the affects of long-term fire exclusion have not been overcome. These effects include: increased fuel loads, increased dominance of shrubby plants, decreased abundance of herbaceous plants, and shift in species. The District has worked, and intends to continue, to restore the natural distribution and abundance of plant and animal species through the use of prescribed fire and mechanical manipulations. It may take several iterations of fire and likely the addition of mechanical treatments to reduce shrub heights across much of the Conservation Area.

The current 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 anticipate the implementation of growing season burns.

In many cases, fire management units with similar fire management needs may be burned simultaneously, either with crews igniting the areas by hand from the ground, or with the aid of aircraft. Aerial ignition allows District staff to ignite fire management units more quickly, resulting in a faster burnout. In an area with a large mosaic of unavailable fuels, fire can be applied easily to all portions of the unit. With ground based crews this sometimes is infeasible or impossible and may pose a safety issue. An aerial burn safety plan (Exhibit 1) will accompany the individual burn prescriptions and be onsite and on the ground the day of any aerial burn.

### Wildfire Policy

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

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

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

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

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

#### Post Burn Reports

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

#### Smoke Management

A significant challenge to the implementation of any prescribed burn program is smoke management. Since the writing of the last plan in 2006, a total of 10 prescribed burns covering 1,266 acres and 7 wildfires covering less than 50 acres have occurred. Figure 2 illustrates the prescribed fire history since 2006. Fuel loads across the Conservation Area are moderate to high. This accumulation of fuels has the potential to produce a tremendous amount of smoke as areas are burned. As the surrounding areas become increasingly urbanized, smoke management





concerns will increase in magnitude, as there become fewer acceptable places to maneuver a smoke column from a prescribed fire.

The Conservation Area has a limited smoke shed in which to place a smoke column from a prescribed fire. Smoke sensitive areas surround the Conservation Area and effect the smoke management of each burn unit. Smoke management is a limiting factor in the application of prescribed fire with in the Conservation Area. Smoke management considerations include SR 20, SR 24, SR 26, CR 234, several residential areas, the City of Gainesville, and the Gainesville Regional Airport. Additionally, in addition to the presence of organic soils, the down drainage effects of Newnans Lake, Hatchet Creek, and Little Hatchet Creek pose smoke management concerns. Figure 3 illustrates smoke sensitive areas in relation the Conservation Area. As development increases in the area, fire management will become more difficult. Increasing daily traffic on local roads will further impair the District's ability to implement prescribed burns at the appropriate fire return intervals within the Conservation Area.

A smoke screening process will be completed with each prescription, before an authorization is obtained from the Florida Forest Service. A fire weather forecast is obtained and evaluated for suitable burning conditions and smoke management objectives. A wind direction is chosen that will transport smoke away from urbanized areas and/or impact these smoke sensitive areas in the least possible way. When possible, the smoke plume from burns should be directed back through the 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 not be utilized unless other weather conditions mitigate expected fire behavior. Forecast mixing heights should be above 1700ft. Transport winds should be at least 9 mph to effectively minimize residual smoke. Lower transport wind speeds can be utilized if dispersion index and mixing heights are above average. Burns will be conducted with a carefully plotted wind direction to limit and/or eliminate negative impacts from smoke to neighbors and urbanized areas.

### **Mechanical and Chemical Treatments**

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 and/or chemically. A variety of methods including mowing, roller chopping, and herbicide applications may be incorporated as alternatives to prescribed fire.

Many of the pyric plant communities within the Conservation Area are dominated by pine plantations. An integral component to the implementation of a successful prescribed fire program within the Conservation Area is the harvesting of planted pine. Harvesting of pine trees will provide safer conditions for prescribed fire staff and decrease the potential for fire related mortality to the remaining pines and other desirable vegetation. Prescribed fire activities are planned for the Conservation Area over the next ten years and will be conducted in conjunction with annual burn plans and in coordination with harvest plans.

#### **Legal Considerations**

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

### **Fire Management Units**

Fire management units (FMUs) have been delineated on the Conservation Area. Where logical, the District used existing timber stand boundaries and landscape features to delineate fire management units. In many cases, individual timber stands represent the smallest areas of land that are free of roads, trails, or other barriers to fire. 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. Additionally, in an effort to mitigate smoke management and potential urban interface issues, fire management units may be smaller in size than on other parcels or Conservation Areas.

Ideally, District staff would thoroughly address and describe each fire management unit in terms of its fire management needs. Though all units within the bounds of the Conservation Area are somewhat different, all can be categorized into one of several fuel model (FM) descriptions. The thirteen standard fuel models (as described in Hal E. Anderson's *Aids to Determining Fuel Models For Estimating Fire Behavior*) were used as a basis for this categorization. The factors considered in determining each FM are: amount, composition and arrangement of available fuels within units, predicted fire behavior within each unit (under conditions acceptable to implement a prescribed burn), and resources necessary to regain management of a fire in extenuating circumstances. District staff anticipate 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 Conservation Area 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 Models**

## Fuel Model 2

This fuel model includes fire management units that are best described as sandhill and includes primarily those that retain an adequate herbaceous groundcover. Fires in these fuels are typically spread through the herbaceous layer and may include an overstory of longleaf pine, slash pine, and turkey oak. Given appropriate wind speeds and fuel moisture conditions, fire may spread rapidly. The optimal fire return interval in this fuel model is approximately every 1-3 years with growing season burns preferred.

## Fuel Model 7

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

### Fuel Model 9

This category includes fire management units that are best described as sandhill that are converted to sand pine plantations. Closed stands of pine are grouped into this model. Fires will run quickly through surface litter and have moderate to high flame heights. Concentrations of dead-down woody materials will contribute to torching, spotting, and crowning activity. Due to the catastrophic nature of fires in sand pine dominated stands, prescribed fire will not be applied prior to clearcut harvest operations.