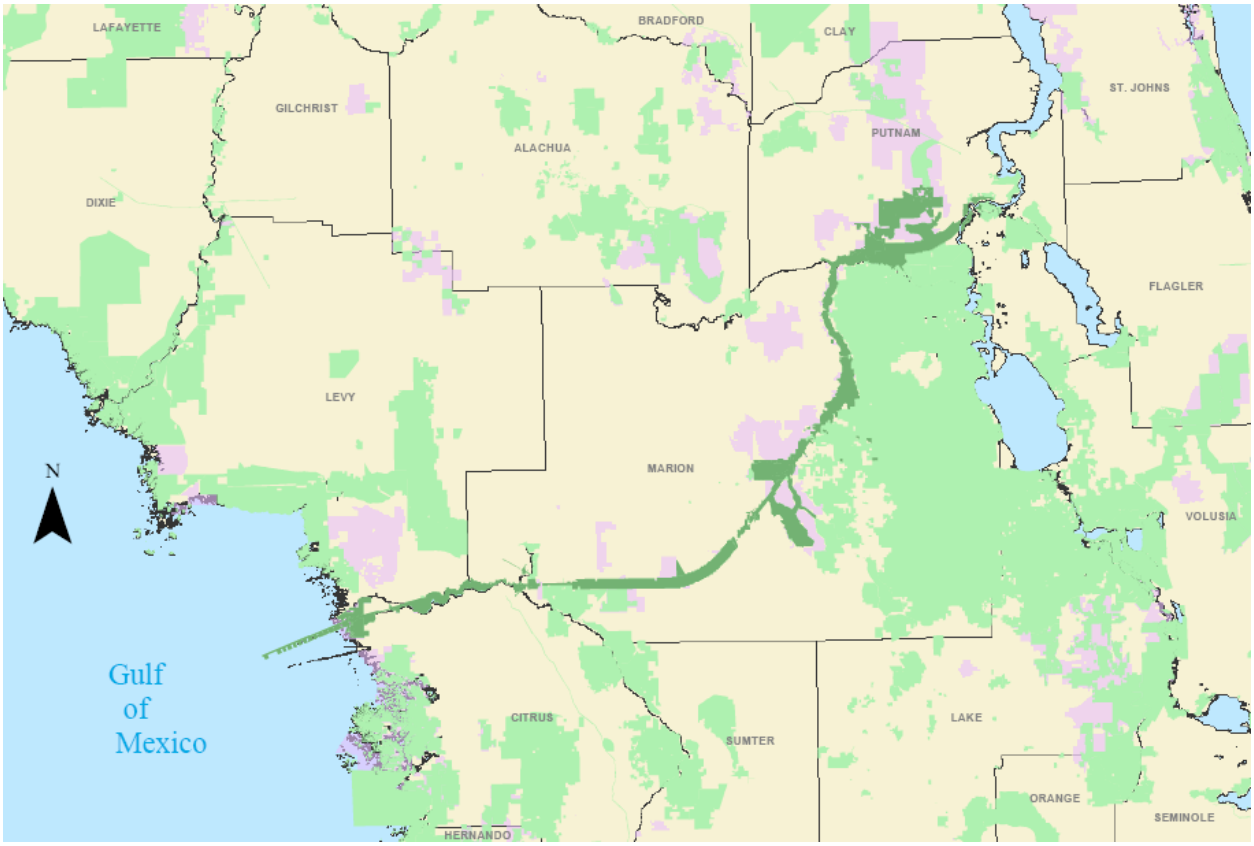
Marjorie Harris Carr
Cross Florida Greenway
Management Plan



Managed by

Florida Department of Environmental Protection
Office of Greenways and Trails

June 2007 – June 2017

Prepared by
Muller and Associates, Inc.
with the
Office of Greenways and Trails

June 15, 2007

Cover: Regional map of the Marjorie Harris Carr Cross Florida Greenway (dark green) in relation to conservation lands (light green) and Florida Forever projects (light purple)

The Florida Department of Environmental Protection
Office of Greenways and Trails

Working to establish a statewide system of greenways and trails for recreation, conservation and alternative transportation purposes.

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DSL Approval Letter

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Marjorie Harris Carr Cross Florida Greenway
Land Management Plan Executive Summary

Lead Agency: Florida Department of Environmental Protection/Office of Greenways and Trails
Common Name of the Property: Marjorie Harris Carr Cross Florida Greenway
Location: Citrus, Levy, Marion and Putnam Counties
Acreage: 78,946 lease acres
Acreage Breakdown: (based on the 2003 UF study; GIS acreage calculation)

Natural Community	Acreage	Natural Community	Acreage
sandhill	5,622	floodplain forest	3,224
scrub	113	basin marsh/marsh lake	4,593
xeric hammock	97	depression marsh	2,611
upland mixed forest	9,536	dome swamp	664
mesic flatwoods	13,542	tidal marsh	1,454
flatwoods	375	herbaceous	108
wet flatwoods	10,012	water	10,822
baygall	782	disturbed	8,029
bottomland	8,922	**Total**	**80,506**

(blackwater stream included in water)

Lease: #4013 of October 27, 2003, with 20 amendments from 1993 through 2006
Use: Multiple use area or for such other purposes as authorized by the provisions of the Greenways Bill; Preservation 2000 and Florida Forever legislation applies to Greenway lands acquired through these programs.
Management Responsibilities: Agency – FDEP, Office of Greenways and Trails
Responsibilities – Lessee, lead manager (greenways and trails)
Agency – Florida Fish and Wildlife Conservation Commission
Responsibilities – management of hunting operations
Designated Land Use: Greenway and Trails
Subleases: Twenty-nine subleases to various entities
Encumbrances: Mineral rights retained by private owner on approximately 16-acre parcel; timber rights retained until 2011 on a 703-acre parcel, Holnam donation; numerous transportation and power rights-of-way possibly exist. Also, a variety of easement interests.
Type Acquisition: Fee simple Barge Canal lands and fee simple through CARL-Preservation 2000, Florida Forever-Board of Trustees, Florida Forever-Greenways and Trails Program, fee simple donations and fee simple mitigation donation with timber rights reserved until 2011.
Unique Features: Scrub, sandhill, blackwater streams, springs, rare/endangered plants and animals, cultural sites
Archaeological/Historical: 202 archeological and historical sites representing at least 25 archaeological cultures with potentially 16 sites eligible for the National Register of Historic Sites (in DHR Florida Master Site File)
Management Needs: Increased staff and equipment; natural community maps of current and historical coverage; development and implementation of a comprehensive restoration plan, including hydrology and shoreline management plan
Acquisition Needs: Acquire gaps in the Greenway and inholdings; acquisition of additional lands, some within Florida Forever projects, for management purposes, to connect to other conservation lands and trail systems and to cure easement lands
Surplus Lands: 10 tracts totaling 325 acres managed by CFG and within the Ocala National Forest

Public Involvement: Public meetings on October 22 and 25, November 5 and December 11, 2001 and November 21, 2002 in association with development of the 2003 UF study. Public meetings were also held May 20, 21, 22, 2003. Management advisory group meeting and a series of public hearings March 27-29, 2007

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ARC Approval Date _____ BTIITF Approval Date: _____

Comments: _____

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I. Introduction

The Marjorie Harris Carr Cross Florida Greenway is 110 miles long, spanning from Yankeetown on Florida's west coast to just south of Palatka on the St. Johns River near Florida's east coast. Generally 300 yards to about one mile wide, the Greenway traverses four counties – Citrus, Levy, Marion and Putnam. Communities near the Greenway include Yankeetown, Inglis, Dunnellon, Ocala, Belleview, Silver Springs, Interlachen and Palatka. Numerous major highways intersect with the Greenway, including US 19, US 41, SR 200, I-75, US 27, SR 40 and SR 19. There are many user access points and a variety of resource-based recreational activities, including hiking, biking, equestrian usage, hunting, camping, fishing, boating and other water-related activities. The Florida National Scenic Trail coincides with the Greenway for about 36 miles. The Greenway is the foundation of the Office of Greenways and Trails' Statewide Greenways System.

The Cross Florida Greenway (CFG) has an unusual land acquisition history. Most of the CFG lands were originally acquired for the purpose of constructing and operating a commercial shipping channel across the state. There were two major efforts to construct a canal across the Florida peninsula: the Gulf-Atlantic Ship Canal (1933-1935), and the Cross Florida Barge Canal (1964-1990). Thousands of acres of land were acquired and millions of dollars were spent designing, engineering and building various segments of the project until it was halted by presidential order due, primarily, to environmental concerns. The Cross Florida Barge Canal project was de-authorized by Congress in 1990 and all lands and structures were transferred to the State of Florida to be managed as a public Recreation and Conservation Area. In 1991 the Governor and Cabinet of the State of Florida signed a resolution agreeing to the terms of the Federal de-authorization bill, thereby officially de-authorizing the Cross Florida Barge Canal project. This action ultimately led to the creation of the Cross Florida Greenway State Recreation and Conservation Area. The Cross Florida Greenway was officially renamed the Marjorie Harris Carr Cross Florida Greenway in honor of the individual who led the fight to stop the Cross Florida Barge Canal project. Restrictions on lands acquired through the Barge Canal de-authorization differ from those on lands acquired with Preservation 2000 and Florida Forever funds.

The CFG traverses four distinct regions of the Florida peninsula – the Withlacoochee Lowlands, Ocala Uplands, Ocklawaha River Valley and Etoniah Basin. A wide variety of natural communities are present, including at least 14 natural community types. The CFG totals approximately 78,946 acres, of which about 8,000 acres are disturbed and 11,000 acres are water. These disturbed lands include some historically significant areas, including the canal land digging areas from the 1930s sea-level ship canal effort.

The CFG lands were acquired through a variety of programs. Most of the lands are former ship and barge canal lands, but a significant amount was acquired with Preservation 2000 and Florida Forever funds. Parts of the CFG were acquired with Greenways and Trails Florida Forever funds and other parcels as parts of Etoniah-Cross Florida Greenway, Longleaf Pine Ecosystem and Crystal River-area projects. Some lands were donated, and some is leased from the Felburn Foundation. Under management agreements, CFG manages some Florida Division of Forestry land and Southwest Florida Water Management District land (connector).

The Department of Environmental Protection's (DEP) Office of Greenways and Trails manages these lands under Lease #4013, dated October 27, 1993. The lease has been amended 20 times through 2006 as additional lands were acquired and passed to OGT for management as part of the Cross Florida Greenway. The lease is for fifty (50) years, and it expires on October 26, 2043 (Appendix 1).

The Cross Florida Greenway is intended to conserve and protect the natural resources and scenic beauty of the former Canal Lands. User-oriented activities can be considered on the former ship and barge canal lands when they are compatible with the proposed use with natural or cultural resources. The Preservation 2000 and Florida Forever acquisitions within the Greenway are intended to protect the natural resources while providing compatible natural resource-based recreation.

This is the second management plan for the CFG. The initial plan, mandated by the legislature, was prepared by the University of Florida (UF) in 1992. The initial plan was not a typical land management plan; much of it dealt with policy recommendations rather than specific objectives for resource and recreation management. The University of Florida, under contract to OGT, also conducted an extensive study of all aspects of the Cross Florida Greenway in 2003. Much of this current document has been excerpted or derived from the documents completed as part of the broader UF study.

Purpose and Scope of Plan

This management plan for the Marjorie Harris Carr Cross Florida Greenway describes its setting, natural resources, and the intended management. Acquired through a transfer agreement between the federal government and the State of Florida, Preservation 2000 funds, Florida Forever funds, and donations, the general management and use of the CFG lands are directed by various statutes and rules. Additionally, management is guided by the purpose and intended use of the land described in the land acquisition project selection process.

The Office of Greenways and Trails' (OGT) mission is "Working to establish a statewide system of greenways and trails for recreation, conservation and alternative transportation purposes". The Cross Florida Greenway is managed to conserve and protect the natural and cultural resources of the greenway while providing, where appropriate, recreational opportunities such as horseback riding, hiking, bicycling, boating, fishing, hunting, and historical and archaeological interpretation.

This management plan is submitted for review to the BOT through the Department of Environmental Protection, Division of State Lands (DSL). Not all of the CFG lands are required to go through this review process because of the diverse manner in which the lands were acquired. However, DEP/OGT wishes to have an integrated management plan and it makes sense to address all CFG lands in one document, even if the lands are not subject to the same constraints. This plan is intended to comply with paragraph 7 of the lease agreement between the BOT and DEP/OGT (Appendix 1); Chapters 253 and 259, Florida Statutes (F.S.); and Chapters 18-2 and 62S, Florida Administrative Code (FAC). The plan is intended to be consistent with the State Land Management Plan. The format and content of this plan for the Marjorie Harris Carr Cross Florida Greenway are in accordance with the Acquisition and Restoration Council recommendations for management plans and the model plan outline provided by the staff of DSL.

All development and resource alteration encompassed in this plan are subject to the granting of appropriate permits, easements, licenses, and other required legal instruments. Approval of the management plan does not constitute an exemption from complying with the appropriate local, state, or federal agencies.

Location

The Cross Florida Greenway is located in four counties in the upper Florida peninsula – Citrus, Levy, Marion and Putnam (Map 1; most maps in this plan have a series of six maps, oriented from west to east). Over a distance of 110 miles it crosses numerous natural communities, physiographic areas and human features such as towns and roads. Frequent access points provide residents and visitors with diverse recreation opportunities. Nearby communities include Yankeetown, Inglis, Dunnellon, Ocala, Belleview, Silver Springs, Interlachen and Palatka. Major highways intersecting with the Greenway include US 19, US 41, SR 200, I-75, US 27, SR 40 and SR 19. The main CFG office is the Marjorie Harris Carr Cross Florida Greenway office located at 8282 SE Hwy 314, Ocala, FL 34470. The phone number for the office is 352.236.7143.

Regional Significance

The Marjorie Harris Carr Cross Florida Greenway is of statewide or national significance in at least three ways. From the recreation standpoint, this 110-mile long greenway offers outstanding opportunities for a variety of land and water-based activities. From the conservation perspective, the Greenway protects exceptional natural areas and

provides important connectors for significant north-south ecological networks. The CFG is culturally interesting because of the history of barge canal activities as well as the historical and archaeological artifacts on the Greenway.

The long history of the barge canal reflects Florida's historical conflicting desires for economic development and environmental protection. The recent and ancient historical resources of the Greenway present opportunities to interpret Florida's history to a diverse audience.

The CFG offers outstanding biking, hiking, paddling and equestrian recreation opportunities with more than 244 miles of trails. Hunting and fishing are both popular activities. In addition, some former barge canal lands are subleased for ball fields, radio-controlled airplane clubs, an archery club, a horse park and a therapeutic equestrian facility. More than two million visitors enjoy the Greenway each year. The CFG also factors heavily into the state's Greenways and Trails Opportunities, including multi-use, hiking and paddling trails, and the ecological greenways network (Map 2).

The Greenway provides a cross-sectional view of the natural areas of the northern portion of the Florida peninsula. According to the 2003 UF study, of FNAI's 82 natural communities, 26 potentially occur within the study area. Two of Florida's top first magnitude springs, Rainbow Springs and Silver Springs, feed into the Greenway's riverine systems. Recent FNAI surveys identified ten natural areas. The CFG has the potential to be a critical ecological connector for the Ocala National Forest/Osceola/Pinhook/Okeefenokee complex on its east end and the Chassahowitzka/Crystal River/Lower Suwannee/Big Bend complex on its west end.

According to the Florida Fish and Wildlife Conservation Commission (FWC), almost 22,000 acres of the Cross Florida Greenway were identified as Strategic Habitat Conservation Areas (SHCAs). The SHCAs are essential to enhancing the long-term security of many plants, animals, and natural communities that constitute essential components of Florida's natural diversity. Generally, FWC conducted this analysis on lands that were not in public ownership at the time of the analysis. The CFG SHCA lands are primarily those acquired north of Rodman Reservoir, scrub sandhill areas near Ocala, and coastal lands at the western end of the Greenway. It is likely that other areas, especially along the Ocklawaha River, would have been included had they not already been in public ownership. Within the CFG, the FWC does identify much of the Ocklawaha River area, Marshall Swamp/Adams Marsh and the Ross Prairie area as biodiversity hot spots for seven or more focal species.

Land Acquisition

Purpose

The Marjorie Harris Carr Cross Florida Greenway was acquired through several avenues. Approximately 61,000 acres were acquired through the transfer of Barge Canal lands from the federal to the State Government in 1991. These lands were intended "to conserve and protect the natural resources and scenic beauty of the Ocklawaha River Valley and all lands and interests formerly acquired by the state or Federal Government for construction and operation of the Cross Florida Barge Canal" [FS 253.781(1)].

Approximately 14,000 additional acres were acquired with Preservation 2000/Florida Forever funds for the Etoniah/Cross Florida Greenway and the Longleaf Pine Ecosystem projects. The Etoniah/Cross Florida Greenway project is intended to fill in gaps in the Greenway, ensure that wildlife such as Florida black bear and scrub jays and plants such as the Etoniah rosemary will have areas in which to live, and provide recreation for the public ranging from long-distance hiking trails to fishing, camping, and hunting. The Longleaf Pine Ecosystem project's purpose is to conserve longleaf pine sandhills and associated rare plants and animals and allow the public to see and enjoy this important Florida natural community. Another 934 acres were acquired with Greenways and Trails/Florida Forever funds, primarily to serve as connectors.

About 2000 coastal acres in Citrus County near the mouth of the Withlacoochee River were acquired as part of the Crystal River/Florida Springs Coastal Greenway project with Preservation 2000 funds. These lands are intended to conserve the natural landscape of this coast, protect the water quality of the spring runs and estuaries, preserve natural lands that link with conservation lands to the south, and provide scenic areas in which the public can enjoy

fishing, hiking, or learning about the natural world of this coast. The Holnam donation, Dixon Hammock, was donated in 2001 as mitigation for a mining expansion permit. The Horn donation was a charitable donation.

The Office of Greenways and Trails also manages as part of the CFG land leased from other entities, including the Southwest Florida Water Management District (SWFWMD) (301 acres), Felburn Foundation (135 acres), and Division of Forestry (trailhead access). The Water Management District land closes part of the CFG gap in the Ross Prairie area. The Felburn property is a former limerock mine now available to the public as a park and trailhead. Map 3 denotes the boundary of the Cross Florida Greenway and topography of the area.

The Oklawaha River Aquatic Preserve is within the Cross Florida Greenway (Florida Aquatic Preserve Act of 1975, section 258.35, Florida Statutes, as amended). Additional aquatic preserves are adjacent nearby. Lake Rousseau is an Outstanding Florida Waters, and the Withlacoochee Riverine and Lake System is a Special Water of the state. The Ocklawaha River is also a Special Water. More information is provided under Nearby Public Lands and Designated Water Resources, below.

The Cross Florida Greenway is not within an Area of Critical State Concern as defined in section 380.05, Florida Statutes. It is not under study for such designation.

Land Acquisition History

The UF 2003 study provides a history of the Cross Florida barge canal. As early as the 1500s, explorers believed a cross-peninsula passage between the east and west coasts of Florida existed. While none was found, dreams of a route other than around the Florida peninsula persisted. In the early 1800s, requests for a project to provide a water route across Florida began and in 1826 Congress authorized the first survey for canal across the peninsula. Despite more surveys and private efforts for a canal, it was not until 1931 that the Florida Legislature established a commission that was authorized to acquire lands for a canal. In 1935, $5 million in federal funds were allocated to begin construction of the sea-level ship canal and work began immediately but stopped again one year later. In 1942, Congress authorized a lock and dam barge canal, but no money was appropriated for construction because other World War II needs were more pressing. Various surveys and studies followed. Federal construction funds were made available in 1963 and construction resumed in 1964. Progress on the Cross Florida Barge Canal was halted in 1971 by an injunction resulting from the efforts of environmental groups that opposed construction of the barge canal. The canal lands were virtually dormant until management of the Cross Florida Barge Canal lands was given to the Office of Greenways Management in 1993. (The Office of Greenways Management was renamed the Office of Greenways and Trails in 1994.) Management of Lake Rousseau was transferred from DEP Division of Recreation and Parks to OGT in 1994.

Starting in 1998, OGT was assigned management authority for additional land purchased primarily with Preservation 2000 and then Florida Forever funds. Most of these lands were acquired for the Etoniah/Cross Florida Greenway and Longleaf Pine Ecosystem projects. The Greenways and Trails acquisition program also purchased the Silver River Connector. In 2006, management of the Crystal River/Hollins property at the mouth of the Withlacoochee River was transferred from the DEP Division of Recreation and Parks to OGT. This property had recently been managed by the DEP Office of Coastal and Aquatic Managed Areas. Table 1 provides an outline of land acquisition and management authority benchmarks for the Cross Florida Greenway.

Numerous lands remain to be acquired in the Etoniah/Cross Florida Greenway Florida Forever project. Many of these lands are intended to be managed by CFG after public acquisition.

Table 1. History of Major Acquisitions and Status for the Cross Florida Greenway

Date	Benchmark
1930s	Acquisition of lands for the Cross Florida Ship Canal (sea-level canal)
1964-1970	Acquisition of Cross Florida Barge Canal lands (lock and dam canal)
1990	Congress de-authorizes the Cross Florida Barge Canal
1991	Florida's Governor and Cabinet sign resolution accepting terms of the Congressional de-authorization
October 27, 1993	Management authority for Cross Florida Greenway given to OGT (original lease date)

1994	Lake Rousseau management transferred to OGT
1998 - 2004	Additions to CFG from: Silver Springs Connector and Heather Island Preserve Greenways & Trails acquisitions Etoniah/Cross FL Greenway P2000/FL Forever project acquisitions
2001	Management of Holnam donation assigned to OGT
2001	Felburn Foundation land included in CFG management
2006	Management of Crystal River/Hollins property at mouth of Withlacoochee River transferred to OGT from Division of Recreation and Parks
2006	Felburn Foundation donates Dull tract to state for inclusion in the CFG

Nearby Public Lands and Designated Water Resources

Reinforcing the concept that the CFG has the potential to serve as a connector between many conservation lands is the fact that at least 67 managed areas totaling more than 940,000 acres are at least partially within 15 miles of the greenway (excluding acreage of Aquatic Preserves) (Map 1). At least 36 managed areas totaling more than 750,000 acres are at least partially within 5 miles of the greenway. The largest of these nearby lands are Chassahowitzka National Wildlife Refuge, Waccasassa Bay Preserve State Park, Goethe State Forest, Withlacoochee State Forest and the Ocala National Forest. Table 2 lists managed areas at least partially within 5 miles of the CFG, ordered from largest to smallest. The state is also working with The Nature Conservancy and Marion County to acquire almost 4500 acres near Silver Springs owned by Avatar Properties, Inc. As noted in Regional Significance, above, the Cross Florida Greenway should be considered in the context of its position to many of these areas. It is intended to be a central component of greenways and trails corridors linking conservation and recreation areas in the region and in the state.

Table 2. Partial listing of Conservation Lands within five miles of the Cross Florida Greenway, in order of size

Conservation Area	Managing Agency
Ocala National Forest	US Dept. of Agriculture, Forest Service
Withlacoochee State Forest	FL Dept. Agriculture and Consumer Services, Div. of Forestry
Big Bend Seagrasses Aquatic Preserve	FL Dept. of Environmental Protection, Ofc. of Coastal & Aquatic Managed Areas
Goethe State Forest	FL Dept. Agriculture and Consumer Services, Div. of Forestry
Waccasassa Bay Preserve State Park	FL Dept. of Environmental Protection, Div. of Recreation and Parks
St. Martins Marsh Aquatic Preserve	FL Dept. of Environmental Protection, Ofc. of Coastal & Aquatic Managed Areas
Crystal River Preserve State Park	FL Dept. of Environmental Protection, Div. of Recreation and Parks
Caravelle Ranch Wildlife Management Area	FL Fish and Wildlife Conservation Commission
Potts Preserve	Southwest Florida Water Management District
Halpata Tastanaki Preserve	Southwest Florida Water Management District
Oklawaha River Aquatic Preserve	FL Dept. of Environmental Protection, Ofc. of Coastal & Aquatic Managed Areas
Caravelle Ranch Conservation Area	St. Johns River Water Management District
Dunns Creek	FL Dept. of Environmental Protection, Div. of Recreation and Parks
Ocklawaha Prairie Restoration Area	St. Johns River Water Management District
Gum Slough SWFWMD Conservation Easement	Southwest Florida Water Management District
Silver River State Park	FL Dept. of Environmental Protection, Div. of Recreation and Parks
Sunnyhill Restoration Area	St. Johns River Water Management District
Rice Creek Conservation Area	St. Johns River Water Management District
Ross Prairie State Forest	FL Dept. Agriculture and Consumer Services, Div. of Forestry
Dunns Creek Conservation Area	St. Johns River Water Management District

Horseshoe Point Conservation Area	St. Johns River Water Management District
Rodman Bomb Target	US Dept. of Defense, Navy
Kohn Conservation Easement	St. Johns River Water Management District
Murphy Creek Conservation Area	St. Johns River Water Management District
Rainbow Springs State Park	FL Dept. of Environmental Protection, Div. of Recreation and Parks
Withlacoochee State Trail	FL Dept. of Environmental Protection, Office of Greenways and Trails
Palatka-Lake Butler State Trail	FL Dept. of Environmental Protection, Office of Greenways and Trails
Carl Duval Moore State Forest and Park	FL Dept. Agriculture and Consumer Services, Div. of Forestry
Seven Sisters Islands	St. Johns River Water Management District
Rainbow Springs Aquatic Preserve	FL Dept. of Environmental Protection, Ofc. of Coastal & Aquatic Managed Areas
Ravine Gardens State Park	FL Dept. of Environmental Protection, Div. of Recreation and Parks
Felburn Park	FL Dept. of Environmental Protection, Office of Greenways and Trails
J. A. Ginn Jr. Parcel	St. Johns River Water Management District
Crystal River Archaeological State Park	FL Dept. of Environmental Protection, Div. of Recreation and Parks
Walton Parcel	St. Johns River Water Management District

According to FDEP, "Outstanding Florida Waters generally include surface waters in National Parks, Preserves, Wildlife Refuges, Seashores, Marine Sanctuaries, Estuarine Research Reserves, certain National Monuments, and certain waters in National Forests, as well as waters in the State Park system, Wilderness Areas, and waters in areas acquired through donation, trade, or purchase under the Environmental Endangered Lands Bond Program (EEL), Conservation and Recreation Lands Program (CARL), Land Acquisition Trust Fund Program (LATF), and Save Our Coast Program (SOC), Wild and Scenic Rivers, and State Aquatic Preserves. Waters that are found to have exceptional recreational or ecological significance which are not protected as above may also be designated as Outstanding Florida Waters." This type of Outstanding Florida Waters is known as Special Waters Outstanding Florida Waters. Often there is geographic overlap between the different Outstanding Florida Waters.

As can be seen by a review of the eligible nearby conservation areas, many Outstanding Florida Waters (OFWs) are near the CFG. In addition to those areas that are OFWs by virtue of being state parks, aquatic preserves or acquisitions through the state's environmental land acquisition programs, four areas within or contiguous with the CFG are Special Waters OFWs - the Oklawaha, Rainbow and Silver Rivers and the Withlacoochee Riverine and Lake System. Lake Rousseau retains its designation as Outstanding Florida Waters from when it was a state recreation area.

Management Authority

Management authority for this property is addressed in general in Chapter 18-2, FAC, "Management of Uplands Vested in the Board of Trustees." Management of this specific property is authorized in Lease #4013 between the BOT and DEP/OGT (Appendix 1). The lease has been amended 20 times as additional properties have been added to the CFG. The Governor and Cabinet sit as the Board of Trustees and are responsible for state-owned lands. The BOT is authorized by 253.03, F.S., to lease State lands to State agencies for the use and benefit of the people of the State of Florida. The lease is for 50 years, ending on October 26, 2043. The lease states that the property is to be managed "as a multiple use area pursuant to s. 253.034(1)(a), Florida Statutes, or for such other purposes as authorized by the provisions of the Greenways Bill adopted by the Legislature." Lands acquired with Preservation 2000 and Florida Forever funds are subject to the legislation establishing these programs

In addition to the state lands lease for 78,946 acres, OGT has several other leases and management agreements for CFG lands. Through a management agreement, OGT manages 301 acres of SWFWMD lands that provide additional connector lands in the vicinity of Ross Prairie. A management agreement with FDOF provides a trailhead for the Ross Prairie area. The Felburn Foundation leases 135 acres to OGT for the Felburn Park and Trailhead, managed by CFG. OGT has an easement from Holnam, Inc. for 4.1 acres and an agreement with the Florida

Department of Transportation (FDOT) for 3.5 acres; both of these properties provide access for the Withlacoochee Bay Trail.

Public Involvement

The University of Florida Planning Team held public meetings on October 22 and 25, November 5 and December 11, 2001 and November 21, 2002 in association with development of the 2003 UF study. Public meetings were also held May 20 (Ocala), 21 (Palatka) and 22 (Dunnellon), 2003

In addition, a management advisory group meeting and a series of public meetings, as required by Ch. 259.032(10), F.S., were held in Inglis, Ocala and Palatka on March 27-29, 2007 to obtain input from both public and private stakeholders regarding management of the Marjorie Harris Carr Cross Florida Greenway. A summary of issues and opportunities raised by the advisory group and other members of the public, as well as a list of participants, is included as Appendix 2.

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II. Natural and Cultural Resources

This chapter describes the natural and cultural resources of the Marjorie Harris Carr Cross Florida Greenway and problems affecting the resources. Chapter IV details how the resources will be managed and how the problems will be addressed.

Physiography

Topography and Geomorphology

The Cross Florida Greenway occurs within the Southern Coastal Plain of Florida. Sub-regions include (from west the east) the Gulf Coastal Flatwoods, Central Florida Ridges and Uplands, and the Eastern Florida Flatwoods. This eco-region is a transitional area from the subtropical climate of the Caribbean Sea to the temperate ecosystems of most of North America. It is dominated by broad, relatively flat pine forest interrupted by riparian and wetlands. This region also contains significant xeric uplands of the Central Ridge and the mesic limestone outcrops of the Brooksville Ridge with a climate that freezes infrequently in winter.

In addressing the CFG in the 2003 UF study, the UF team described the greenway in four regional landscapes (from west to east): the Withlacoochee Coastal Lowlands, the Ocala Uplands, the Ocklawaha River Valley and the Etoniah Basin. Each of the regions contains distinct geographic, hydrologic, and vegetative features. The physiographic regions of the Withlacoochee Coastal Lowlands include the Brooksville Ridge, the Coastal Lowlands, the Coastal Swamps, and Drowned Karst. The Ocala Uplands include the Brooksville Ridge, Tsala Apopka Plain, Western Valley, Sumter Upland, Ocala Hill, and Belleville Hill. The lands of the Ocklawaha River Valley are primarily in the Central Valley and partially within the Mount Dora Ridge. Within the Etoniah Basin landscape, the Rodman Reservoir is in the northern section of the Mount Dora Ridge and the Central Valley with the Kenwood Gap. The majority of the eastern end of the Etoniah Basin is in the St. Johns River Offset. Map 4 shows the regional landscapes of the CFG with historical landscape types, as interpreted by UF primarily from soils data.

Numerous alterations have been made to the topography of the greenway, the most noticeable being the diggings, canals and reservoirs associated with former ship and barge canal activities. Canal impacts extend intermittently from the west to the east end of the CFG. Roadways and railways have also resulted in topographic changes.

Elevations of the greenway range from sea level to about 100 feet above mean sea level. At the western end, the CFG is at sea level, and rises towards the Ocala area, where the elevation is around 100 feet. The CFG dips again in the Marshall Swamp/Ocklawaha Basin area where the elevation is about 30 feet, although the elevation rises relatively dramatically to the east in the Ocala National Forest, especially near the Eureka Dam. The extreme eastern end of the CFG is again near sea level.

The Hydrology/Water Management section will describe alterations to water flow.

Geology

The portion of the CFG near Marshall Swamp lies almost directly along the transect of a series of samples that were used in the development of a geologic map of Florida (Scott *et al*., 2001). According to the map, the uppermost layer in this area of the CFG is the Miocene – Hawthorn Group, Coosawhatchie Formation. This layer is roughly 25 feet thick, and overlies the Eocene – Ocala Limestone, which is slightly more than 50 feet thick in the area. Beneath this is the Eocene – Avon Park Formation, which is approximately at mean sea level at this location. This area of the state has the oldest sediments exposed at the modern land surface, in those locations where the Middle Eocene carbonates of the Avon Park Formation crop out on the crest of the Ocala Platform.

According to Scott *et al*.,

> The Coosawhatchie Formation is exposed or lies beneath a thin overburden on the eastern flank of the Ocala Platform from southern Columbia County to southern Marion County. Within the outcrop region, the Coosawhatchie Formation varies from a light gray to olive gray, poorly consolidated, variably clayey and phosphatic sand with few fossils, to an olive gray, poorly to moderately consolidated, slightly sandy, silty clay with few to no fossils. Occasionally the sands will contain a dolomitic component and, rarely, the dominant lithology will be dolostone or limestone. Silicified nodules are often present in the Coosawhatchie Formation sediments in the outcrop region. The sediment may contain 20 percent or more phosphate (Scott, 1988). Permeability of the Coosawhatchie sediments is generally low, forming part of the intermediate confining unit/aquifer system.

Soils

General soils of the CFG regions contain spodsols in the flatwoods-dominated regions and well-drained entisols, alfisols, and ultisols in the central ridge. The Withlacoochee Lowlands have generally low areas of gently sloping, poorly drained soils. The Ocala Uplands have higher elevations with deep, sandy, well-drained soils. The Ocklawaha and Etoniah areas generally have poorly drained soils.

Based on the Soil Survey Geographic (SSURGO) soil data from the St. Johns River Water Management District (SJRWMD) and SWFWMD, 69 soil series are present on the CFG, with extents ranging from less than an acre to more than 11,000 acres. Table 3 lists the 18 most common soil series of the CFG which make up 85% of the CFG's soil area; the most common 11 soil series make up 70% of the CFG. About 11,000 acres of the CFG are classified as water and not included in these calculations. Appendix 3 includes a full list of the soil series and acreages and more detailed descriptions of the 11 most common soil series. Map 5 illustrates the soils of the Cross Florida Greenway.

Table 3. Common Soils of the Cross Florida Greenway
(sorted by acreage)

Soil Series	Characteristics	Acres
Terra Ceia	very deep, very poorly drained organic soils; occur mostly in nearly level fresh water marshes and occasionally river floodplains	11558.77
Candler	very deep, excessively drained, rapidly permeable soils on uplands	7771.2
Bluff	very deep, very poorly drained, slowly permeable soils in marshes and on broad low terraces along rivers	5182.87
Pomona	very deep, poorly and very poorly drained, moderate to moderately slowly permeable soils on broad low ridges	4719.22
Holopaw	deep and very deep, poorly and very poorly drained soils; occur on low lying flats, in poorly defined drainages or depressional areas	4071.02
Arents	do not have diagnostic horizons because they have been deeply mixed by plowing, spading, or other methods of moving by humans (including canal diggings)	2567.2
Anclote	very deep, very poorly drained, rapidly permeable soils in depressions, poorly defined drainage ways, and flood plains	2438.76
Placid	very deep, very poorly drained, rapidly permeable soils on low flats, depressions, poorly defined drainageways on uplands, and flood plains	2419.03
Arrendondo	well drained soils that are rapidly permeable in the thick sandy surface and subsurface layers and moderate to very slow in the subsoil	2380.91
Riviera	very deep, poorly drained, very slowly permeable soils on broad, low flats and in depressions	2335.58
Palmetto	deep, poorly drained, moderately slowly permeable soils; occur in sloughs, depressions, and poorly defined drainageways in flatwoods	2328.21
Myakka	deep and very deep, poorly to very poorly drained soils on flatwoods, high tidal areas, flood plains, depressions	1719.5
Pompano	very deep, very poorly drained, rapidly permeable soils in depressions, drainageways, and broad flats	1674.68
Homosassa-Lacoochee	moderately deep, very poorly drained, rapid or moderately rapidly permeable soils in tidal marshes - shallow, poorly drained, moderate or moderately rapid permeable soils on broad coastal plain tidal	1587.48

	marshes	
Paisley	deep, poorly drained, slowly permeable soils on nearly level, low broad areas	1390.88
Boca	moderately deep, poorly drained and very poorly drained, moderately permeable soils in low broad flats, poorly defined drainageways and depressions of the flatwoods and adjacent tidal flats	1232.46
Eureka	deep, poorly drained, slowly and very slowly permeable soils on low, broad flat interstream divides and depressions	1130.73
Astatula	very deep, excessively drained, rapidly permeable soils	1092.97
TOTAL		57601.47

Hydrology/Water Management

The Cross Florida Greenway has a complicated and diverse hydrology. The main hydrological systems are the Ocklawaha River and the Withlacoochee River systems. While severely disrupted in areas by construction of various phases of the Cross Florida Ship and Barge Canals, numerous areas still have, or are influenced by, intact hydrological features.

The Ocklawaha River system arises from Lake Apopka and the Harris Chain of Lakes. Water flows north to the upper Ocklawaha River. Marshall Swamp and Adams Marsh, on the CFG, drain into the upper Ocklawaha River as well. The CFG encompasses the Ocklawaha River from here downstream to the dam. The Ocklawaha flows north, where it is joined by the Silver River from the west near Sharpes Ferry Road. The Silver River is a spring-run stream flowing from Silver Springs and the largest tributary of the Ocklawaha. Orange Creek, the Deep Creek system and Camp Branch Creek are other important systems that flow into the Ocklawaha. Historically, the Ocklawaha flowed unimpeded into the St. Johns River.

The Cross Florida Barge Canal and other activities have radically changed parts of the Ocklawaha system. The 3000-acre Adams Marsh, in Marshall Swamp, is impounded by a perimeter dike about nine miles in length. Unlike many other agricultural lands in the area, however, the soil of Adams Marsh was not excavated. From Silver Springs north to the Eureka lock, the Ocklawaha River is essentially unaltered. The Eureka Dam and Lock are still in place, but have never been operational. North of Eureka, the Ocklawaha was channelized, but retains much of its natural characteristics. Approaching Orange Springs, the Ocklawaha displays more of the characteristics of Rodman Reservoir, a consequence of the Kirkpatrick Dam. As a result of the barge canal works, about 7500 acres of floodplain forest in the Ocklawaha River Valley were flooded, as well as 20 second and third magnitude spring habitats along the river.

As the reservoir makes its turn to the east, Orange Creek flows in from the northwest. Further east, the Deep Creek and Sweetwater Creek complexes flow into the reservoir. Much of the Sweetwater Creek complex is on the CFG. East of the reservoir, the east barge canal extends about nine miles to the east-northeast, where it joins with the St. Johns River. This part of the canal bisected the Camp Branch Creek system and disrupted the natural surficial flows. The Camp Branch Creek system originally flowed south–southeast, connecting the Cow Heaven Bay Swamp to the St. Johns River. Buckman Lock, still operational, is located in the eastern canal. CFG lands continue about five miles northeast along the St. Johns River. Historically, the Ocklawaha flowed east-southeast from the location of the Kirkpatrick Dam for approximately nine miles, where it joined the St. Johns River. The flow has been disrupted by the dam and water is released by a spillway into the manmade tailrace and the historical Ocklawaha channel.

CFG staff maintain the Buckman Lock and Kirkpatrick Dam and Spillway. The Buckman Lock controls access to Rodman Reservoir from the St. Johns River through the east barge canal. The Kirkpatrick Dam spillway controls the level of Rodman Reservoir. Generally, the water level of the reservoir is kept at the 18 to 20 feet national geodetic vertical datum (NGVD) level. The water level is drawn down about every three years to about 11 feet to consolidate bottom sediments, enhance the fishery and wildlife habitats and to assist in control of aquatic plants. Documents related to operation of water control structures and the management of Rodman Reservoir/Kirkpatrick Dam are included in Appendix 4.

The St. Johns River Water Management District encompasses the portion of the CFG in the eastern two-thirds of Marion County and in Putnam County. FDEP, USGS and the district do water quality sampling in the Ocklawaha

Basin. The district's frequency of sampling water quality in the Ocklawaha River varies with monitoring station. The water quality at the stations at SR 316 and SR 40 in Marion County is considered good according to the district's water quality index. Orange Creek and the Silver River are each monitored near their confluences with the Ocklawaha River. Water quality at both of these monitoring sites is considered good according to the water quality index. Additional water quality information for the Ocklawaha River is available at http://www.sjrwmd.com/archydro/factPages/ORD.html , for Silver River at http://www.sjrwmd.com/archydro/factPages/SSR.html and for Orange Creek at http://www.sjrwmd.com/archydro/factPages/OR006.html. The Ocklawaha River basin extends far to the south and includes Lake Apopka and the Harris Chain of Lakes.

The water quality index used by SJRWMD is based on 25 analytes. A finding of "good" water quality according to the water quality index does not mean there are no problems in a waterbody and that the quality is not deteriorating. FDEP has placed certain waterbodies and segments within the Ocklawaha River Basin on Florida's 303(d) List of Impaired Surface Waters (March 2003 amended list) for certain parameters. The Ocklawaha River above Lake Ocklawaha (Rodman Reservoir) is on the impaired waters list for nutrients and dissolved oxygen. A list incorporating all new data gathered since issuance of the last list will be issued for FDEP Group 1 basins (including the Ocklawaha River basin) later this year. Additional information is available at http://www.dep.state.fl.us/water/tmdl/amended_gp1.htm

Mytyk and Delfino evaluated nitrate data from the Ocklawaha River Basin from 1953 to 2002 (Mytyk and Delfino, 2004). They found that nitrate levels increased at 5 of 14 stations, with the other stations showing no trend or a decreasing trend. Nitrate concentrations in the Ocklawaha River increased ten-fold downstream from the Silver River (0.07 to 0.78 mg-N/L), and decreased drastically throughout the Rodman Reservoir (0.48 to 0.01 mg-N/L), then increased slightly after the Kirkpatrick Dam (to 0.04 mg-N/L). The sources of nitrate were linked to organic and inorganic fertilizers, and appear to be related to increased urbanization and an increase in lawns that require nutrient fertilization.

Numerous groups have urged the removal of the Kirkpatrick (formerly Rodman) Dam and restoration of Rodman Reservoir to the Ocklawaha River floodplain since the 1970s because of the impact of the reservoir on the Ocklawaha River and floodplain and associated ecosystems. There is resistance to this from other groups such as sports-fishing related organizations and businesses. The Governor and Cabinet, sitting as the Board of Trustees of the Internal Improvement Trust Fund, have an established policy that the Ocklawaha River should be "partially restored" (see explanation below), with the Florida Dept. of Environmental Protection as the lead agency. However, the Legislature has not appropriated funds for this purpose. If funds are made available and permits are issued, it is the intent of FDEP to undertake this restoration. SJRWMD is investigating the potential impact on the St. Johns River from restoration of the Ocklawaha.

Kirkpatrick Dam caused the flooding of a portion of Ocala National Forest lands. The flooding and occupying of these lands was allowed under a special permit from the U.S. Department of Agriculture Forest Service first issued in 1994. This special permit expired in 2002. DEP applied for a new permit, but the Forest Service included conditions about the issuance of the new permit, including a schedule for the reservoir to be drawn down and the dam to be breached. The Secretary of DEP did not sign the Forest Service permit because the permit(s) from SJRWMD necessary to draw down the reservoir had not been approved.

"Partial restoration", the restoration alternative selected by the Governor and Cabinet in 1995, is intended to restore river hydrology and floodplain function to near preconstruction conditions through breaching of the dam, with limited removal and/or alteration of structures and alteration of topography. This alternative will retrieve National Forest System lands at the lowest cost while restoring river and floodplain hydrology. The major components of partial restoration are**:**

1. Drawdown of the reservoir to be accomplished in 3 phases (three years to drop from 18 to four feet National Geodetic Vertical Datum).
2. Limited construction of channel stabilization and erosion control structures in the Ocklawaha River.
3. Limited planting of native plant species to provide for erosion control.
4. Partial leveling of the exposed barge canal side-cast spoil berms.
5. Restoration of the historic Ocklawaha River channel flow by filling the barge canal where it intersects the river channel.

6. Restoration of the historic Deep Creek channel flow by filling the barge canal where it intersects the creek channel.
7. Restoration of the historic Camp Branch floodplain and channel flow by filling the barge canal where it intersects the creek channel.
8. Closure and securing of the Buckman Lock.
9. Removal of 2,000 feet of the Kirkpatrick dam (earthen portion).
10. Partial filling and restoration of the spillway tailrace to natural grade.
11. Development and implementation of a cultural resources operating plan.

The projected cost for repairs and to bring the Buckman Lock, Kirkpatrick Dam and Spillway and the Eureka Lock and Dam up to latest standards for operation is $14.1 million. This estimate is based on the April 2005 inspection report and years of historical data from the Inglis Lock and Dam repair projects and assessment reports. The estimated cost for restoration of the Ocklawaha River is $25.8 million. The yearly operating costs for the dam components and activities and the operating costs for the area after restoration are approximately the same, $198,000 and $234,000 respectively. Snagging for navigation maintenance is expected to increase after river restoration, contributing to almost half of the annual operating cost after restoration.

The Withlacoochee is the main river system on the western end of the CFG. A small portion of the CFG fronts the Withlacoochee River near Dunnellon where the Rainbow River, arising from a first magnitude spring, flows into the river. Downstream of the confluence with the Rainbow River, the Withlacoochee becomes Lake Rousseau. The Withlacoochee River was dammed in the early 1900s to generate electric power, creating Lake Rousseau. The reservoir is no longer used for power generation. Below Lake Rousseau, the CFG forms the south bank of the Withlacoochee in several places as it flows to the gulf.

Current water control structures include the Inglis Dam and Spillway at the western end of Lake Rousseau, the Inglis Lock as part of the western barge canal, and the Inglis Bypass Canal and Spillway. The bypass canal funnels water from Lake Rousseau just east of the lock to a spillway that provides water to the lower reaches of the Withlacoochee River. The Inglis Lock is no longer operational due to its deteriorated condition. The Governor and Legislature will decide whether the lock will be made operational or permanently closed. Permanent closure may require de-authorization by Congress. SWFWMD operates the western barge canal water control dams and spillways under a contract with and funding through OGT; OGT is still currently responsible for the lock. The Lake Rousseau water level is generally at a fixed elevation of 27.5 NGVD. In times of heavy rainfall, additional water can be released to prevent or minimize flooding around Lake Rousseau.

The western barge canal is about nine miles long. It extends from near the western end of Lake Rousseau into the gulf where it extends for about 10½ miles. It cuts through the lower reaches of the Withlacoochee River between the Inglis Bypass Spillway and the western end of Lake Rousseau. The coastal wetlands and wet flatwoods were disrupted by construction of the canal. Inglis Island, formerly land bordering the north side of Lake Rousseau and the Withlacoochee River, was surrounded by water by the canal being cut through on the north side of the land mass.

The CFG west of I-75 is within the Southwest Florida Water Management District (SWFWMD). Water sampling is often done in cooperation with FDEP and the United States Geological Survey (USGS). The water quality of Rainbow River is generally good, but, as is the situation with Silver Springs and other springs in developed areas, the nitrate level has increased. Originally on the 1993 list of impaired waters for nutrient levels, the Rainbow River was removed from the list because further testing showed the waters were not impaired by the level of chlorophyll a. SWFWMD does have a Surface Water Improvement and Management (SWIM) plan for Rainbow River. In general, the water quality of Withlacoochee River by Rainbow River is good. Lake Rousseau has fair water quality. Construction, shoreline alterations and failing septic tanks contribute to sediments, nutrients, and bacteria. Aquatic weed growth is a problem, controlled in part by spraying. Downstream of Lake Rousseau, the Withlacoochee River has similar pollution sources.

The CFG is not directly associated with any riverine systems from east of Dunnellon to Marshall Swamp. However, some significant wetlands are present in the Ross Prairie/Halpata Tastanaki Preserve area. Segments of old ship canal diggings are also in the stretch from the Pruitt Trailhead east to I-75. Some of these hold water, and these diggings disrupt the groundwater characteristics and flow.

In addition to obvious hydrological disruptions resulting from barge canal activities, smaller scale but significant hydrological disruptions are present on the CFG. Roads, pine plantation beddings, ditches and severe firelines are responsible for much of the disturbance. The area north of Rodman Reservoir and the eastern barge canal, acquired as part of the Etoniah/Cross Florida Greenway project, has been heavily bedded. Not all hydrological disturbances have been documented.

Florida designates its surface waters into one of five categories, each with a designated use:

- Class I: Potable water supplies
- Class II: Shellfish propagation or harvesting
- Class III: Recreation, propagation, and maintenance of a healthy, well- balanced population of fish and wildlife
- Class IV: Agricultural water supplies
- Class V: Navigation, utility, and industrial use

All the water of Marion and Putnam Counties and much of Citrus and Levy Counties are classified as Class III waters. At the western end of the CFG, two areas are designated as Class II. The first is "Coastal Waters from the southern side of the Cross Florida Barge Canal southward to the Hernando County line, with the exception of Crystal River (from the southern shore at the mouth of Cedar Creek to Shell Point to the westernmost tip of Fort Island), Salt River (portion generally east and southward along the eastern edge of the islands bordering the Salt River and Dixie Bay to St. Martins River), and St. Martins River from its mouth to Greenleaf Bay." The other area designated as Class II is the mouth of the Withlacoochee River (Ch. 62-302, Florida Administrative Code).

Stringfield (1966) characterized the groundwater system in the area of the CFG:

> "The groundwater system of the [CFG] area includes two fresh-water aquifers. By far the most important of the two as a source of water supply is the Floridan Aquifer, which is composed almost entirely of limestone and dolomite ranging in age from middle Eocene to middle Miocene. This aquifer varies considerably in porosity and permeability both vertically and horizontally, but for practical reasons, it is usually treated as an essentially continuous hydraulic unit present in the subsurface throughout Florida and parts of adjacent states."
>
> "The Floridan Aquifer is overlain in parts of the area by a shallow aquifer, which is more heterogeneous and less continuous than the Floridan Aquifer. This shallow aquifer consists of permeable sand and shell beds, often of limited horizontal and vertical extent, occurring within the stratigraphic section which overlies rocks of the Floridan Aquifer. Materials composing the shallow aquifer range in age from lower Miocene to Holocene."(Stringfield, 1966).

The SJRWMD has three groundwater observation wells on the CFG, and 14 sites within one mile of the CFG. Selected wells provide daily observations, and the district and the USGS conduct potentiometric readings twice a year. The SJRWMD portion of the CFG has little groundwater development, especially in river areas. Sampling in the Summit Reach area near Ocala shows that nitrates have been steadily increasing over the years. The Ocala area is an important water recharge area. The western end of the CFG is in an area generally with an unconfined Floridan Aquifer, except near the Withlacoochee River. Groundwater recharge rates are high, water withdrawal is low, and the level of nitrates in groundwater has increased over time.

Climate

The Greenway primarily exists in a humid, subtropical climate. The region experiences high summer temperatures – over 100 days a year where the temperature rises over 90ºF. The average minimum temperature during the coolest months range in the upper 40's, but brief intervals below freezing may occur several times during a winter season. Occasional severe cold waves can drop the temperature to as low as 15-20ºF. Two distinct seasons are evident in the area – summer (rain season) and winter (dry season). Typically half of the annual rainfall occurs during the four-month period of June through September. The area averages 48 to 60 inches/year, increasing toward the Gulf Coast. A majority of the rain is attributed to the 105 to 120 thunderstorms occurring each year.

The relative humidity generally ranges from 85 to 95 percent during the night and from 50 to 65 percent during the afternoon. Fog is uncommon except during the cooler months. The sun typically shines about two-thirds of the possible daytime. The frequency of sunshine ranges from 60 percent in December and January to 70 percent in April and May.

Natural Communities

The natural community classification used in this plan was developed by the Florida Natural Areas Inventory (FNAI) and the Florida Department of Environmental Protection. The community types are defined by a variety of factors, such as vegetation structure and composition, hydrology, fire regime, topography and soil type. The community types are named for the most characteristic biological or physical feature (FNAI and DEP, 1990). FNAI also assigns Global (G) and State (S) ranks to each natural community and species that FNAI tracks. These ranks reflect the status of the natural community or species worldwide (G) and in Florida (S). Lower numbers reflect a higher degree of imperilment (e.g., G1 represents the most imperiled natural communities worldwide, S1 represents the most imperiled natural communities in Florida). Appendix 5 provides a full explanation of the FNAI ranking system. Some of the data presented here are derived from the 2003 UF study. At times the UF team crosswalked information between multiple vegetation/natural community/land cover classifications.

Given its 110-mile length cutting across the Florida peninsula, it is not surprising that numerous types of natural communities occur on the CFG. Despite the long history of man's activities in the CFG area and the scattered remnants of extreme manipulation of the environment, high quality areas persist. The FNAI data base, which records outstanding examples of natural communities, has 51 occurrence records for 17 different types of natural communities on the CFG, including 11 records for scrub. The rarest natural community types reported by FNAI from the CFG are scrub and spring-run stream. Also notable for rarity from the state perspective are maritime hammock, sandhill and upland pine forest.

More recently, FNAI's 2005 rare plant survey report found that a large portion of the CFG is still in its natural state. Excellent examples of bottomland forest, depression marshes, floodplain forest, floodplain swamp, hydric hammock, maritime hammock, mesic flatwoods, riverine, sandhills, scrub, upland mixed forest, wet prairies, and xeric hammock can still be found. Other types of natural communities likely occur as well. Ten significant sites were identified, based on rarity of a given species, numbers of listed species, numbers of species in general, lack of disturbance, or with lots of disturbance that warrant attention. The 10 significant sites were:

- south of the Inglis Canal and west of U.S. 19
- Inglis Island
- the Diggings scrub & sandhill (from SR 200 to just east of I-75)
- Marshall Swamp
- Ocklawaha River floodplain
- Eureka Dam
- Deep Creek
- select areas surrounding the Rodman Reservoir
- Caravelle Ranch West
- select areas surrounding the Buckman Lock.

The condition of the CFG landcover varies tremendously. Much of the area has been disturbed by barge canal-related activities, and agricultural/silvicultural and urban activities have also disturbed a large proportion of the CFG. The 2003 UF study team did extensive work to define the historic landcover of the Greenway. They researched historic survey notes, maps, aerials and soil surveys and also conducted interviews with ecologists familiar with the area. Map 4 presents the historical landscapes of the CFG area, based primarily on soil surveys.

The UF team also adapted 1995 landcover data to the following categories of the FNAI natural community classification:

- Basin Marsh
- Bottomland Forest

- Depression Marsh
- Floodplain Swamp
- Freshwater Tidal Swamp
- Hydric Hammock
- Mesic Flatwoods
- Sandhill
- Scrub
- Tidal Marsh
- Upland Mixed Forest
- Upland Pine Forest
- Wet Flatwoods
- Xeric Hammock

Additional FNAI natural communities, including blackwater stream, spring-run stream, dome swamp, baygall, maritime hammock and scrubby flatwoods, are known from the CFG, but the UF maps provide a good overall picture of the CFG natural communities. The UF team also characterized disturbed lands into different categories. At times the UF team used hybrid classifications in their work. The UF land cover characterization of the CFG, including natural communities and categories of disturbed land, is presented in Map 6; Table 4 lists natural communities and acreages of each based on the UF analysis. Map 7 is an aerial photograph of the CFG.

Table 4. Summary of Natural Communities on the Cross Florida Greenway, based on the 2003 UF study

Natural Community/Cover Type	Acres	Percent of CFG	Global Rank	State Rank
sandhill	5,622	7.0	G3	S2
scrub	113	0.1	G2	S2
xeric hammock	97	0.1	G3	S3
upland mixed forest	9,536	11.8	G4	S4
mesic flatwoods	13,542	16.8	G4	S4
flatwoods	375	0.5		
wet flatwoods	10,012	12.4	G4	S4
baygall	782	1.0	G4	S4
bottomland	8,922	11.1	G4	S3
floodplain forest	3,224	4.0	G4	S3
basin marsh/marsh lake	4,593	5.7	G4	S4
depression marsh	2,611	3.2	G4	S4
dome swamp	664	0.8	G4	S4
tidal marsh	1,454	1.8	G5	S4
herbaceous	108	0.1		
water	10,822	13.4		
disturbed	8,029	10.0		
Total	**80,506**	**99.8**		

According to the UF analysis, about 76% of the CFG can be classified as natural communities with varying levels of disturbance, 13% is water (including the Rodman Reservoir, Lake Rousseau and natural water bodies), and 10% is disturbed. Approximately 5622 acres, 7%, are sandhill. According to the UF analysis, other xeric communities, scrub and xeric hammock, are only about 100 acres, or 0.1%, each. The major natural communities based on acreage are mesic flatwoods, wet flatwoods, upland mixed forest, and bottomland. These communities total approximately 50% of the CFG, and two-thirds of the natural community coverage.

According to the UF analysis, approximately 10% of the CFG is disturbed to such an extent that it can't be assigned to a natural community type. Pastureland, cropland/pastureland, shrub and brushland, canal, agriculture, woodland pastures, and transportation utilities account for 80% of the disturbance on the CFG, excluding water.

OGT has contracted with FNAI to conduct a natural communities survey of the CFG. This project will provide higher-resolution information on the natural communities, including a current and historical natural community landcover map and descriptions of current natural communities. The survey will include extensive field work. More details are provided under Goals and Objectives.

Ecological associations vary within the four landscapes of the CFG. The UF team identified the key ecological associations of the Withlacoochee Coastal Lowlands as hydric hammock/tidal marsh/freshwater tidal swamp/wet flatwoods - wet flatwoods/tidal marsh - wet flatwoods/sandhill - mesic flatwoods/sandhill. For the Ocala Uplands, the associations are sandhill/scrub/upland pine forest (red oak), sandhill/xeric hammock/wet prairie, and wet flatwoods/mesic flatwoods/depression marsh. The Ocklawaha River Valley is characterized by the floodplain swamp/ bottomland forest/depression marsh/basin marsh/mesic flatwoods/wet flatwoods association and scrub/sandhill. The associations of the Etoniah Basin are floodplain swamp/basin swamp/mesic flatwoods/wet flatwoods and scrub/sandhill association.

The following are brief descriptions of natural communities occurring on the CFG. The initial descriptions are based on the FNAI Guide to Natural Communities, followed by additional details derived from FNAI and UF work and observations by CFG staff. The complete FNAI descriptions of these community types can be found in Appendix 6. The natural community survey contract with FNAI will provide more detailed descriptions of the distribution, community composition and condition.

Sandhill

Sandhills are characterized as a forest of widely spaced pine trees with a sparse understory of deciduous oaks and a fairly dense ground cover of grasses and herbs on rolling hills of sand. The most typical associations are dominated by longleaf pine, turkey oak, and wiregrass. Sandhills occur on hilltops and slopes of gently rolling hills. Their soils are composed of deep, marine-deposited, yellowish sands that are well-drained and relatively sterile. Fire is a dominant factor in the ecology of this community. Sandhills are a fire climax community, being dependent on frequent ground fires to reduce hardwood competition and to perpetuate pines and grasses. The natural fire frequency appears to be every 1 to 3 years. Without frequent fires, sandhills may eventually succeed to xeric hammock. Unburned or cutover sandhills may be dominated by turkey oak.

Typical plants include bluejack oak, sand post oak, sparkleberry, persimmon, winged sumac, pinewoods dropseed, Indian grass, wild buckwheat, queen's delight, yellow foxglove, bracken fern, runner oak, goats rue, partridge pea, milk pea, dollarweeds, wild indigo, gopher apple, and golden-aster.

Sandhill is a very common community type in the Ocala Upland region. The quality ranges from total conversion to pasture to good quality occurrences. High quality sandhill with few exotics persist around the canal diggings west of I-75 and in a more limited extent southwest of Santos. Exotics are absent in recently burned sandhill but present in sandhill disturbed by Off-Road Vehicle (ORV) trails/roads, All Terrain Vehicle (ATV) trails, excavation and land clearing.

CFG has prescribed burned 3,907 acres of this community type. Many more sandhill acres need to be burned, but this is complicated by housing developments on both sides of the Greenway and major roads that must be considered for smoke management purposes. In some areas, the encroaching oaks may not respond to prescribed fire because of their large size. Other control means, such as girdling or herbicides, may be required. Ninety-five percent of the pastures (1,865 acres) on the CFG in the central Ocala region have been replanted with longleaf, a critical restoration step. One hundred twenty-five acres have also been planted with wiregrass. Good quality sandhills are priority areas for burning.

Documented listed plant species found in this community type on the Cross Florida Greenway include angle-pod, garberia, long-spurred mint, sandhill spiny-pod and scrub stylisma. Some other concerns for this community include the presence of several exotic species, numerous trails (foot, horse, vehicular

traffic), a need for more aggressive prescribed fire and pressures from intensely developed neighboring communities. Listed animal species that have been documented in this natural community on the CFG include gopher frog, gopher tortoise, eastern indigo snake, eastern diamondback rattlesnake, and southern hognose snake.

Scrub

Scrub occurs in many forms, but is often characterized as a closed to open canopy forest of sand pines with dense clumps or vast thickets of scrub oaks and other shrubs dominating the understory. The ground cover is generally very sparse, being dominated by ground lichens or, rarely, herbs. Open patches of barren sand are common. Scrub is essentially a fire maintained community. Ground vegetation is extremely sparse and leaf fall is minimal, thus reducing the chance of frequent ground fires. As the sand pines mature, however, they retain most of their branches and build up large fuel supplies in their crowns. When a fire does occur, this fuel supply, in combination with the resinous needles and high stand density, ensures a hot, fast burning fire. Such fires allow for the regeneration of the scrub community which might otherwise succeed to xeric hammock.

Typical plants include sand pine, sand live oak, myrtle oak, Chapman's oak, scrub oak, saw palmetto, rosemary, rusty lyonia, ground lichens, scrub hickory, scrub palmetto, hog plum, silk bay, beak rush, milk peas, and stagger bush.

The CFG has several areas of overgrown scrub that are in the process of being restored. One major scrub area is the tract acquired by the Longleaf Pine Ecosystem Project. In this area immediately west of I-75, the scrub jay habitat was increased by 200 acres by removing the sand pine overstory. The area was not chopped, but the skidders knocked down much of the vegetation. Few exotic species are on this site. The area is now primarily oak scrub with an overstory of Chapman's oak and sand live oak. This site's proximity to I-75 presents an extreme challenge in using prescribed burning as a restoration tool.

FNAI surveyed a large area containing both scrub and sandhill species, south of the Oak Run subdivision, east of SR 200 and west of where CR 484 curves. FNAI reported the scrub community is composed of an overstory of older mature sand pine, with an open to thick understory of sand live oak, Chapman's oak, myrtle oak, saw palmetto, scrub palmetto, Florida rosemary and the listed species, long-spurred mint and garberia. The ground cover component of this site has patchy occurrences of lichens, as well as numerous graminoids such as wiregrass, arrowfeather threeawn, and sandy field beaksedge. FNAI rated this site as one of the highest quality scrub sites observed by FNAI on the CFG, based on the large plant species diversity, rare plant occurrences, lack of disturbances, and its large size.

Another relatively significant scrub is at the western end of the CFG. Approximately 300 acres, the dominant tree species are scrub live oak, myrtle oak and Chapman's oak. Other plants include saw palmetto, milkpea, tarflower and rusty lyonia. Florida scrub jay has been observed in the scrub, although it apparently is nesting/roosting in an adjacent privately owned tract. Some of the scrub is overgrown; all is in need of management. Dry conditions have delayed burning. Until recently, this scrub was managed by the FDEP Office of Coastal and Aquatic Managed Areas, which chopped about 100 acres of the scrub in early 2004.

Restoration is planned for the other scrub areas of the CFG, located near the southwest end of the Rodman Dam, north of the Rodman Reservoir, and east of the Eureka Dam. All suffer from fire suppression. Due to transportation corridors and development, some scrub may require either very small burn units and/or mechanical treatments.

Listed plant species documented in scrub on the Cross Florida Greenway are Chapman's skeleton grass, garberia, giant orchid and long-spurred mint. Listed animal species documented in the community include the scrub jay.

Xeric Hammock

Xeric Hammock is characterized as either a scrubby, dense, low canopy forest with little understory other than palmetto, or a multi-storied forest of tall trees with an open or closed canopy. Several gradations

between these extremes exist. Xeric hammock is an advanced successional stage of scrub or sandhill. The variation in vegetation structure is predominantly due to the original community from which it developed. In all cases, however, the soils consist primarily of deep, excessively-drained sands that were derived from old dune systems. The sparsity of herbs and the relatively incombustible oak litter preclude most fires from invading xeric hammock. When fire does occur, it is nearly always catastrophic and may revert xeric hammock into another community type. Xeric hammock only develops on sites that have been protected from fire for 30 or more years.

Typical plants include live oak, sand live oak, laurel oak, turkey oak, blackjack oak, red oak, sand post oak, staggerbush, saw palmetto, sparkleberry, pignut hickory, southern magnolia, redbay, American holly, wild olive, black cherry, fox grape, beautyberry, bluejack oak, Chapman's oak, persimmon, and yaupon.

This community is fairly common in the Ocala Uplands region of the CFG, especially around the canal diggings west of I-75. Two hundred twenty-four acres are included in the prescribed fire program due to proximity to other communities adjacent to these xeric hammock areas. Generally, CFG xeric hammock occurs as a strand in transition areas between sandhill and pastures and may be due to historical fire suppression. In general, the condition is fair to good. Listed plant species documented from this community type on the Cross Florida Greenway are garberia and pigmy pipes.

Maritime Hammock

Maritime hammock is characterized as a narrow band of hardwood forest lying just inland of the coastal strand community. Maritime hammock occurs on old coastal dunes that have been stabilized long enough for the growth of a forest. Tree growth often begins in swales between old dune ridges where a higher moisture gradient exists. The isolated strips of tree growth gradually coalesce into a continuous forest. The generally mesic conditions and insular locations of well-developed maritime hammock communities inhibit natural fires, which occur no more frequently than once every 26 to 100 years.

Live oak, cabbage palm, and redbay generally combine to form a dense, wind-pruned canopy whose streamlined profile deflects winds and generally prevents hurricanes from uprooting the trees. Other typical plants include American holly, southern magnolia, red cedar, false mastic, paradise tree, lancewood, wild olive, saw palmetto, beautyberry, poison ivy, coral bean, coontie, prickly ash, wild coffee, snowberry, myrsine, caper tree, marlberry, rouge-plant, and ferns.

This community is not common on the CFG and occurs on a small section of the Withlacoochee Coastal Lowlands at the western end of the CFG. The rare plants angle-pod, coastal vervain, and crested coralroot have been found from this area. FNAI described this maritime hammock in the second-year rare plant report:

> This site is characterized by its exposed limestone and numerous limestone-loving plants (calciphiles). The canopy is closed and is dominated by southern red cedar (*Juniperus virginiana*), live oak (*Quercus virginiana*), soapberry (*Sapindus marginatus*), cabbage palm (*Sabal palmetto*), southern magnolia (*Magnolia grandiflora*), slash pine (*Pinus elliottii*), and pignut hickory (*Carya glabra*). The understory is open to thick with individuals of upland swamp privet (*Forestiera ligustrina*), Florida swamp privet (*Forestiera segregata*), small flower mock buckthorn (*Sageretia minutiflora*), red mulberry (*Morus rubra*), wax myrtle (*Myrica cerifera*), saltbush (*Baccharis halimifolia*), yaupon holly (*Ilex vomitoria*), and Cherokee bean (*Erythrina herbacea*). Herbs noted in this community were mostly on the outer edge bordering the trail and included the listed plants, coastal vervain (*Glandularia maritima*) and angle-pod (*Matelea gonocarpos*). Other herbs observed were rouge plant (*Rivina humilis*), Carolina wild petunia (*Ruellia caroliniensis*), and wild coffee (*Psychotria nervosa*)…

Upland Mixed Forest

Upland Mixed Forests are characterized as well-developed, closed-canopy forests of upland hardwoods. Upland mixed forests occur on rolling hills that often have limestone or phosphatic rock near the surface and occasionally as outcrops. Soils are generally sandy-clays or clayey sands with substantial organic and often calcareous components. Upland mixed forest may be difficult to distinguish from upland pine forests that have not been burned for several years.

Typical plants include gum bumelia, hackberry, persimmon, red cedar, red mulberry, wild olive, redbay, laurel cherry, black cherry, bluff oak, water oak, cabbage palm, basswood, winged elm, Florida elm, sparkleberry, Hercules' club, slippery elm, beautyberry, partridgeberry, sarsaparilla vine, greenbrier, trilliums, beech drops, passion flower, bedstraw, strawberry bush, silverbell, caric sedges, fringe tree, horse sugar, white oak, and blackgum.

Upland mixed forest is common throughout the Ocala Upland region, usually in scattered remnants next to pasture. It is also common in the Ocklawaha River vicinity and near Rodman Reservoir. Much has been converted to pasture; the remaining upland mixed forest is generally in fair condition. FNAI reports that most of the old abandoned homesites are in this habitat, resulting in numerous and often locally abundant exotic species. Exotics are also common in other disturbed areas associated with fire suppression, land clearing, ORV trails/roads, firebreaks, powerlines, urban interface, and trash dumping. Some areas of upland mixed forest have little shrub and native groundcover strata remaining and appear to have been impacted by past cattle grazing and loafing. Listed plant species found in upland mixed forest on the Cross Florida Greenway include angle-pod, Florida spiny-pod, garberia, giant orchid, pinewood dainties, pinkroot, plume polypody, swamp plume polypody, and widespread polypody.

Upland Pine Forest

Upland pine forest is characterized as a rolling forest of widely spaced pines with few understory shrubs and a dense ground cover of grasses and herbs. Pristine areas are dominated by longleaf pine and wiregrass, while areas that suffered agricultural disturbances are dominated generally by shortleaf and loblolly pines and old field grasses and herbs. Fire is a dominant factor in the ecology of this community because it reduces hardwood encroachment and facilitates pine and wiregrass reproduction. Without relatively frequent fires, upland pine forest succeeds to upland mixed forest and eventually to upland hardwood forest. The natural fire frequency appears to be every 3 to 5 years. More frequent fires would likely eliminate pine recruitment.

Typical plants include southern red oak, runner oak, bluejack oak, blackjack oak, post oak, sassafras, black cherry, gallberry, persimmon, mockernut hickory, twinflower, huckleberry, dangleberry, goldenrod, Indian grass, partridge pea, goats rue, winged sumac, blueberry, dog fennel, snakeroot, golden-aster, yellow jessamine, broomsedge, asters, pencil flower, bracken fern, greenbrier, fox grape, flowering dogwood, sweetgum, and blackgum. Historically, much of northwestern and central Marion County was upland pine forest characterized as open woodland with numerous southern red oaks, mockernut hickories, dogwoods and a wide variety of grasses and forbs in the understory. Longleaf pine and wiregrass occurred in that system, but did not dominate it.

As of 2006, 418 acres in this community type were successfully planted in longleaf pine. Some of the off-site slash pine plantations on the Upland Pine Forest in the central region are being converted into longleaf pine. These plantations cover approximately 250 acres of upland pine forest in the central region. These areas are very popular with the various trail user groups and any timber operations would be severely hampered by the need to protect the many trails through these areas for scenic and shade purposes. With some planning and media coverage, one 12-acre plantation was planted with longleaf pine and wiregrass in the winter of 2007. Some upland pine forests on the CFG are in good condition, but fire suppression is affecting the quality. Prescribed burns are difficult because of the presence of trails and nearby subdivisions. Comprehensive restoration plans will include consideration of southern red oak restoration.

Mesic Flatwoods

Mesic flatwoods are characterized as an open canopy forest of widely spaced pine trees with little or no understory but a dense ground cover of herbs and shrubs. Several variations of mesic flatwoods are recognized, the most common associations being longleaf pine - wiregrass - runner oak and slash pine - gallberry - saw palmetto. Mesic flatwoods occur on relatively flat, moderately to poorly drained terrain. The soils typically consist of 1-3 feet of acidic sands generally overlying an organic hardpan or clayey subsoil. During the rainy seasons, water frequently stands on the hardpan's surface and briefly inundates much of the flatwoods; while during the drier seasons, ground water is unobtainable for many plants whose

roots fail to penetrate the hardpan. Thus, many plants are under the stress of water saturation during the wet seasons and under the stress of dehydration during the dry seasons.

Another important physical factor in mesic flatwoods is fire, which probably occurred every 1 to 3 years during pre-Columbian times. Nearly all plants and animals inhabiting this community are adapted to periodic fires; several species depend on fire for their continued existence. Without relatively frequent fires, mesic flatwoods succeed into hardwood-dominated forests whose closed canopy can essentially eliminate the ground cover herbs and shrubs. Typical plants include St. Johns-wort, dwarf huckleberry, fetterbush, dwarf wax myrtle, stagger bush, blueberry, gopher apple, tar flower, bog buttons, blackroot, false foxglove, white-topped aster, yellow-eyed grass, and cutthroat grass.

About 3,150 acres of mesic flatwoods are included in CFG's prescribed fire program. Approximately 1,500 acres of mesic flatwoods in the Etoniah area that were clearcut prior to the state's acquisition are currently being restored. Additionally, there are 3,162 acres in pre-merchantable slash pine plantations in this community that will eventually undergo a thinning operation to help reduce the fuel loads and then be incorporated into the prescribed fire program. The thinning operations on the east end of the Greenway have helped prescribed fire operations by reducing the fuel loads and opening the stand so that tree mortality is not beyond acceptable levels. These improvement thinnings have also created wildlife openings and regeneration areas for new growth. Management efforts are resulting in different age classes of trees. In the future, more openings will be created when stands are revisited, to encourage an uneven-aged pine component in the flatwoods.

FNAI noted that many mesic flatwoods sites, particularly those that have been recently burned, were free of exotic plants and support diverse native flora. Exotic plants were frequently noted in mesic flatwoods disturbed by fire suppression, land clearing, off highway vehicle (OHV) trails/roads, firebreaks, urban interface, and trash dumping. Listed plant species found in this community type on the Cross Florida Greenway are blue butterwort, giant orchid, hooded pitcher plant, and pine lily [Catesby's lily, *Lilium catesbaei]*.

Scrubby Flatwoods

Scrubby flatwoods are characterized as an open canopy forest of widely scattered pine trees with a sparse shrubby understory and numerous areas of barren white sand. The vegetation is a combination of scrub and mesic flatwoods species. The white sandy soil is several feet deep and drains rapidly. However, the water table is unlikely to be very deep. Scrubby flatwoods normally do not flood even under extremely wet conditions. Scrubby flatwoods often occupy broad transitions or ecotones between these communities. Only after a long absence of fire and during periods of drought does the leaf litter become sufficiently combustible and concentrated enough to support an ecological burn. Several species of plants in scrubby flatwoods are typical scrub plants which endure only with long intervals between fires. A period of approximately 3 to 8 years between fires appears to be natural for this community.

Typical plants include longleaf pine, slash pine, sand live oak, Chapman's oak, myrtle oak, scrub oak, saw palmetto, staggerbush, wiregrass, dwarf blueberry, gopher apple, rusty lyonia, tarflower, golden-aster, lichens, silkbay, garberia, huckleberry, goldenrod, runner oak, pinweeds, and frostweed.

Scrubby flatwoods is an uncommon community type on the CFG, occurring in limited areas in the Etoniah Basin region. This community is primarily around the visitor center off of SR 19 north of the canal, on former barge canal lands and around Deep Creek. None of it is in good condition, mainly from fire suppression during the approximately 40 years since the last logging. Approximately 295 acres of this community type, all that is in the Etoniah region, are included in the current prescribed fire program.

Hydric Hammock

Hydric hammock is characterized as a well developed hardwood and cabbage palm forest with a variable understory often dominated by palms and ferns. Hydric hammock occurs on low, flat, wet sites where limestone may be near the surface and frequently outcrops. Soils are sands with considerable organic material that, although generally saturated, are inundated only for short periods following heavy rains. The

normal hydroperiod is seldom over 60 days per year. Because of their generally saturated soils and the sparsity of herbaceous ground cover, hydric hammocks rarely burn.

Typical plants include cabbage palm, diamond-leaf oak, red cedar, red maple, swamp bay, sweetbay, water oak, southern magnolia, wax myrtle, saw palmetto, bluestem palmetto, needle palm, poison ivy, dahoon holly, myrsine, hackberry, sweetgum, loblolly pine, Florida elm, swamp chestnut oak, American hornbeam, Walter viburnum, royal fern, peppervine, rattanvine, yellow jessamine, and Virginia creeper.

Hydric hammock is fairly common on the CFG, occurring in the Ocklawaha River region and the Etoniah Basin region. One of the most significant examples of quality hydric hammock on the Cross Florida Greenway is the Deep Creek Atlantic white cedar swamp. Nine listed plant species occur here, including angle-pod, Chapman's sedge, Florida willow, gopherwood buckthorn, large-leaved grass-of-parnassus, needle palm, pinkroot, southern rein orchid and variable-leaved Indian plantain. The Atlantic white cedar swamp was historically logged. The quality of hydric hammock on CFG ranges from good to heavily disturbed.

Wet Flatwoods

Wet flatwoods are characterized as relatively open-canopy forests of scattered pine trees or cabbage palms with either thick shrubby understory and very sparse ground cover, or a sparse understory and a dense ground cover of hydrophytic herbs and shrubs. Several variations exist between these extremes. Wet flatwoods occur on relatively flat, poorly drained terrain. During the rainy season, water frequently stands on the surface, inundating the flatwoods for one or more months per year. During the drier seasons, ground water is less accessible for many plants whose roots fail to penetrate the hardpan. Thus, many plants are under the stress of water saturation during the wet seasons, and under the stress of dehydration during the dry seasons.

Another important physical factor in wet flatwoods is fire. Natural fires probably occurred every 2 to 4 years during pre-Columbian times. Nearly all plants and animals inhabiting this community are adapted to periodic fires, and several species depend on fires for their continued existence. Without relatively frequent fires, wet flatwoods succeed into hardwood dominated forests whose closed canopy would essentially eliminate the ground cover herbs and shrubs. In fact, much of the variation in community structure is probably associated with fire frequency. Typical plants include pond pine, slash pine, sweetbay, spikerush, beakrush, sedges, dwarf wax myrtle, gallberry, titi, saw palmetto, creeping beggarweed, deer tongue, gay feather, greenbrier, bluestem, and pitcher plants.

This community type is fairly common throughout the CFG, especially in the Etoniah Basin Region. The quality of occurrences on the CFG varies widely. The hooded pitcher plant has been documented in this community type on the Cross Florida Greenway. Wet flatwoods on the CFG have been logged, ditched, drained and fire suppressed. Many of the areas have naturally regenerated. Many of the recent Florida Forever acquisitions in the Etoniah basin were logged within the late 1990s/early 2000s, prior to being under state control. All were bedded and ditched. For wet flatwoods, management efforts are concentrating on those in the Etoniah basin.

Baygall

Baygalls are generally characterized as densely forested, peat-filled seepage depressions often at the base of sandy slopes. Baygalls typically develop at the base of a slope where seepage usually maintains a saturated peat substrate. They may also be located at the edges of floodplains or in other flat areas where high lowland water tables help maintain soil moisture. Since baygalls rarely dry out enough to burn, the normal fire interval in these communities is probably 50-100 years or more.

The canopy is composed of tall, densely packed, generally straight-boled evergreen hardwoods dominated by sweetbay, swamp red bay, and loblolly bay. A more or less open understory of shrubs and ferns commonly occurs, while sphagnum mats are often interlaced with the convoluted tree roots. Other typical plants include dahoon holly, Atlantic white cedar, fetterbush, male-berry, myrtle-leaved holly, large gallberry, wax myrtle, odorless wax myrtle, hurrah-bush, dog-hobble, white alder, possumhaw, red

chokeberry, Virginia willow, laurel greenbrier, poison ivy, cinnamon fern, chain fern, wild grape, netted chain fern, sweetgum, cypress, lizard's tail, and needle palm.

Baygalls are common in the Etoniah region. Due to fire suppression, many of these areas are expanding, especially into bedded pine areas. The natural hydrology of these communities has also been somewhat altered on the CFG due to the digging of the barge canal.

Bottomland Forest
Bottomland forest is characterized as a low-lying, closed-canopy forest of tall, straight trees with either a dense shrubby understory and a little ground cover, or an open understory and ground cover of ferns, herbs, and grasses. Typical plants include water oak, live oak, red maple, sweetgum, loblolly pine, white cedar, cabbage palm, diamond-leaf oak, southern magnolia, loblolly bay, swamp tupelo, spruce pine, American beech, dahoon holly, wax myrtle, swamp dogwood, Florida elm, stiffcornel dogwood, and American hornbeam.

Bottomland Forest occurs on low-lying flatlands that usually border streams with distinct banks, such that water rarely overflows the stream channel to inundate the forest. They also occur in scattered low spots in basins and depressions that are rarely inundated, which allows typical upland species to survive. Soils are generally a mixture of clay and organic materials. The water table is high, but bottomland forests are inundated only during extreme floods or exceptionally heavy rains (i.e., not annually).

On the CFG, bottomland forest is restricted to the Ocklawaha River floodplain; many occurrences are of high quality with no exotics. FNAI noted that exotic pest plant species associated with this community are generally found in disturbed areas such as the Sharpes Ferry bridge and boat ramps. Other disturbances include land clearing, trash dumping, old homesites, unauthorized ORV trails/roads, ditching/hydrologic disturbances, and urban interface.

Floodplain Swamp
Floodplain swamps occur on flooded soils along stream channels and in low spots and oxbows within river floodplains. Floodplain swamps are flooded for most of the year, with sites along channels inundated by aerobic flowing water while those of sloughs and backswamps are flooded with anaerobic water for extensive periods of time. Soils and hydroperiods determine species composition and community structure. Seasonal and often prolonged inundations restrict the growth of most shrubs and herbs, leaving most of the ground surface open or thinly mantled with leaf litter. Floods redistribute detrital accumulations to other portions of the floodplain or into the main river channel. This rich organic debris is essential to the functional integrity of downriver ecosystems such as estuaries. These swamps are usually too wet to support fire.

Dominant trees are usually buttressed hydrophytic trees such as cypress and tupelo; the understory and ground cover are generally very sparse. Other typical plants include water tupelo, swamp titi, wax myrtle, dahoon holly, myrtle-leaved holly, large gallberry, possumhaw, hurrah-bush, white alder, lizard's tail, leather fern, royal fern, marsh fern, soft rush, laurel greenbrier, hazel alder, hawthorn, and swamp privet. Floodplain swamps harbor a diverse array of animals including both temporary and permanent residents.

Floodplain swamp is a common community type on the Cross Florida Greenway, especially in the Ocklawaha River Valley. It is also found on the east end of Inglis Island by the flooded Withlacoochee River/Lake Rousseau. Parts of the floodplain are of high quality with few or no exotics. Exotic pest plant species are generally found in disturbed areas such as the Sharpes Ferry bridge. Two listed plant species are documented from this community on the Cross Florida Greenway - angle-pod and sweet pinxster azalea. Listed animal species that have been documented in this natural community on the CFG include limpkin and white ibis. Alteration of the hydroperiod by impoundments or river diversions and the disruption of floodplain communities has had devastating consequences to the entire Ocklawaha River system. Many plant and animal species, both onsite and down river, depend upon the presence and natural fluctuations of these swamps for survival and reproduction. The only management action taken in this community has been control of invasive species.

Basin Marsh
Basin marshes are large, irregularly shaped, herb-dominated wetlands, maintained by fires, which usually occur every 1-10 years. The deepest areas within basin marshes may remain saturated year-round. They are distinguished from depression marsh by their irregular shape, large size, and many deep peat areas, which, due to their year-round saturation, burn less frequently. Some common plant species include pickerelweed, bulltongue arrowhead, spikerushes, and maidencane, water toothleaf, peelbark St.John's wort, Tracy's beaksedge, broomsedge bluestem, slimspike threeawn, bluejoint panicum, rose-of-Plymouth, and yellow-eyed grasses, pink sundew, flattened pipewort, tenangle pipewort, combleaf mermaidweed , and Florida yellow bladderwort.

This community is not commonly found on the CFG. Two listed plant species, the hooded pitcher plant and the pine lily, have been documented in basin marshes on the CFG. Disturbances to basin marshes on the Cross Florida Greenway include ditches, major roads and past cattle grazing. Cattle affect the basin marshes by grazing on the native vegetation, disturbing the soil, as well as spreading seeds of weedy grasses through their dung.

Some basin marshes in the Ocala Uplift and Etoniah areas have been burned. Unburned areas were highly disturbed by pine plantation activities, including double bedding .

Depression Marsh
Depression marshes are typically small, rounded wetlands, dominated by herbaceous species, and are maintained by frequent fires every 1-10 years. Depression marshes often dry out during periods of low rainfall, and as a result, burn more frequently and completely than basin marshes. Depression marshes are similar in vegetation and physical features to, but are generally smaller than, basin marshes. Some common species include pickerelweed, bull tongue, arrowhead, and maidencane, Carolina willow, fireflag, southern cattail, peelbark St.John's wort, Peruvian primrose willow, wax myrtle, water toothleaf, broomsedge bluestem, common water hyacinth, spikerushes and pipeworts.

Depression marshes are abundant on the Cross Florida Greenway, and are found in association with wet prairie, wet flatwoods, and mesic flatwoods. This community type is especially common in the Etoniah Basin region. One listed plant species, the hooded pitcher plant, has been documented in this community. Disturbances to depression marshes on the Cross Florida Greenway include intensive logging, ditches, and past cattle grazing. In general, these areas are included in larger prescribed fire burn units. A few depression marshes are in good shape. A couple of the depression marshes on the barge canal have been incorporated into burn units. The hydrology of the marshes in the barge canal area was affected by the canal.

Dome Swamp
Dome swamps are characterized as shallow, forested, usually circular depressions that generally present a domed profile because smaller trees grow in the shallower waters at the outer edge, while bigger trees grow in the deeper water in the interior. Dome swamps typically develop in sandy flatwoods and in karst areas where sand has slumped around or over a sinkhole, creating a conical depression. Dome swamps often derive much of their water through runoff from surrounding uplands, but they may also be connected with underground channels, in which case subterranean flows would dominate the hydrological regime. Fire is essential for the maintenance of a cypress dome community. Without periodic fires, hardwood invasion and peat accumulation would convert the dome to Bottomland Forest or Bog. Dome swamps dominated by bays are close to this transition. Fire frequency is greatest at the periphery of the dome and least in the interior where long hydroperiods and deep peat maintain high moisture levels for most of the year. The normal fire cycle might be as short as 3 to 5 years along the outer edge and as long as 100 to 150 years towards the center.

Pond cypress, swamp tupelo, and slash pine are common plants. Other typical plants include red maple, dahoon holly, swamp bay, sweetbay, loblolly bay, pond apple, Virginia willow, fetterbush, chain fern, netted chain fern, poison ivy, laurel greenbrier, Spanish moss, wild pine, royal fern, cinnamon fern, coastal plain willow, maidencane, orchids, wax myrtle, swamp titi, St. John's wort, sawgrass, lizard's tail, swamp primrose, water hyssop, redroot, sphagnum moss, floating heart, buttonbush, arum, and fire flag.

Dome swamps are more commonly found in the Etoniah Basin region and west of SR 200. Many of these areas are not easily recognized due to historic logging operations, ditching, hydrological changes and fire suppression. In general, the dome swamps were not bedded. Dome swamps west of SR 200 are generally in better condition than those to the east.

Tidal Marsh
Marine and estuarine tidal marshes are floral-based natural communities generally characterized as expanses of grasses, rushes and sedges along coastlines of low wave-energy and river mouths. Tidal marsh soils are generally very poorly drained muck or sandy clay loams with substantial organic components and often a high sulfur content. Tidal fluctuation is the most important ecological factor in tidal marsh communities, cycling nutrients and allowing marine and estuarine fauna access to the marsh. Black needlerush and smooth cordgrass are indicator species that usually form dense, uniform stands. Other typical plants include saltgrass, saltmeadow cordgrass (marsh hay), gulf cordgrass, soft rush and other rushes, salt myrtle, marsh elder, saltwort, sea oxeye, cattail, big cordgrass, bulrushes, seashore dropseed, seashore paspalum, shoregrass, glassworts, seablight, seaside heliotrope, saltmarsh boltonia, and marsh fleabane.

This community is not common on the CFG, occurring on a small section of the Withlacoochee Coastal Lowlands at the extreme western end of the CFG. Listed animal species documented in this natural community include Wilson's plover and American oystercatcher.

Blackwater Stream
Blackwater streams are characterized as perennial or intermittent seasonal watercourses originating deep in sandy lowlands where extensive wetlands with organic soils function as reservoirs, collecting rainfall and discharging it slowly to the stream. The tea-colored waters of blackwater streams are laden with tannins, particulates, and dissolved organic matter and iron derived from drainage through swamps and marshes. Typical plants include golden club, smartweed, sedges, and grasses. Blackwater streams of the CFG include the Ocklawaha River, Camp Branch Creek, Deep Creek system (including Alligator Creek and Poley Branch), Orange Creek and the Withlacoochee River. The Ocklawaha receives significant input from Silver River, a spring-run stream, and the Withlacoochee receives significant input from Rainbow River, also a spring-run stream.

Spring-run Stream
Spring-run streams are characterized as perennial water courses which derive most, if not all, of their water from artesian openings in the underground aquifer. Spring-run streams generally have sand bottoms or exposed limestone along their central channel. Spring-run streams are among the most productive aquatic habitats. Typical plants include tape grass, wild rice, giant cutgrass, arrowheads, southern naiads, pondweeds, and chara.

The mouths of two first magnitude spring-run streams open onto the CFG. On the western end of CFG, the Rainbow River flows into the Withlacoochee River. On the eastern end, Silver River flows into the Ocklawaha. In addition, it is reported that the creation of Rodman Reservoir resulted in the covering of 20 small springs.

Native Species

The native species of the Cross Florida Greenway have not been surveyed recently. The Cross Florida Greenway is expected to have the typical plant and animal species associated with the natural communities listed above. The 2003 UF study has a brief listing of some common species in Appendix F. Given the proximity and similarity of habitats, the flora and fauna of the CFG should be similar to those of Rainbow Spring and Silver Spring State Parks, Ross Prairie State Forest, and Caravelle Ranch WMA. Given the diversity of natural communities of CFG, with many areas in fair to good shape, a high diversity of native species is expected. The Listed Species section, below, provides information on some of the rare native species known to be on the site.

More than 20 roads and railways intersect with the CFG. Many are high speed roads. These roadways pose a considerable threat to wildlife of the CFG, and interrupt the recreational experience for CFG visitors. To date, an overpass and underpass are in place on the CFG, and more are planned for the near future (see section *Planned Public Uses and Assessment of Impacts*, Chapter III).

Listed Species

Statutorily-recognized lists of rare and endangered species are produced at the federal level by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service, and at the state level by the Florida Fish and Wildlife Conservation Commission and the Florida Department of Agriculture and Consumer Services (FDACS). The Florida Natural Areas Inventory (FNAI) also produces a list of rare and endangered species, and maintains a data base of occurrences of these species in Florida.

Several notable studies of the CFG have been conducted regarding the resources, including listed species, of the barge canal lands. In some cases, these studies covered a broader area, since environmental impacts were a concern. Most recently, FNAI has conducted three surveys involving rare and endangered species for the CFG. FNAI's 1991 report was an overall survey of natural communities, rare plants, and rare animals. Since 2000, FNAI has conducted a rare plant and a rare animal survey. The FNAI data base has records for 22 types of plants and 48 vertebrates as rare or endangered on the CFG (Table 5). During surveys, FNAI also recorded information on plants listed by FDACS but not tracked by FNAI. As with natural communities, FNAI assigns Global (G) and State (S) ranks to each species that FNAI tracks. Lower numbers reflect a higher degree of imperilment (e.g., G1 represents the most imperiled natural communities worldwide, S1 represents the most imperiled natural communities in Florida). Appendix 5 provides a full explanation of the FNAI ranking system.

FNAI data are based on field-documented occurrences of rare species; however, the data may not represent comprehensive surveys, and therefore should not be regarded as the final statement of the biological resources of the Greenway. FNAI data should not be substituted for site-specific surveys if required by future management actions or developments.. Although FNAI has conducted surveys for the CFG, because of the size and characteristics of the CFG, it is likely that numerous occurrences of rare plants and animals are undocumented. Surveys for many species of rare animals are difficult and time-consuming.

Table 5. FNAI-tracked species and natural communities reported by FNAI as present on the Cross Florida Greenway

Scientific Name	Common Name	FNAI Global Rank	FNAI State Rank	Federal Status	State Status
Fish					
Ameiurus brunneus	Snail Bullhead	G4	S3	N	N
Etheostoma olmstedi	Tessellated Darter	G5	S1	N	LS
Notropis cummingsae	Dusky Shiner	G5	S4	N	N
Pteronotropis welaka	Bluenose Shiner	G3G4	S3S4	N	LS
Amphibians					
Ambystoma cingulatum	Flatwoods Salamander	G2G3	S2S3	LT	LS
Ambystoma tigrinum	Tiger Salamander	G5	S3	N	N
Pseudobranchus striatus lustricolus	Gulf Hammock Dwarf Siren	G5T1	S1	N	N
Rana capito	Gopher Frog	G3	S3	N	LS
Reptiles					
Alligator mississippiensis	American Alligator	G5	S4	LT(SA)	LS
Clemmys guttata	Spotted Turtle	G5	S3?	N	N
Crotalus adamanteus	Eastern Diamondback Rattlesnake	G4	S3	N	N
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	LT

Gopherus polyphemus	Gopher Tortoise	G3	S3	N	LS
Heterodon simus	Southern Hognose Snake	G2	S2	N	N
Pituophis melanoleucus mugitus	Florida Pine Snake	G4T3	S3	N	LS
Pseudemys concinna suwanniensis^	Suwannee Cooter	G5T3	S3	N	LS
Sceloporus woodi	Florida Scrub Lizard	G3	S3	N	N
Stilosoma extenuatum	Short-tailed Snake	G3	S3	N	LT
Birds					
Aphelocoma coerulescens	Florida Scrub-jay	G2	S2	LT	LT
Aramus guarauna	Limpkin	G5	S3	N	LS
Ardea alba	Great Egret	G5	S4	N	N
Buteo brachyurus	Short-tailed Hawk	G4G5	S1	N	N
Charadrius wilsonia	Wilson's Plover	G5	S2	N	N
Egretta caerulea	Little Blue Heron	G5	S4	N	LS
Egretta thula	Snowy Egret	G5	S3	N	LS
Egretta tricolor^	Tricolored Egret	G5	S4	N	LS
Eudocimus albus	White Ibis	G5	S4	N	LS
Haematopus palliatus	American Oystercatcher	G5	S2	N	LS
Haliaeetus leucocephalus	Bald Eagle	G5	S3	N	LT
Ixobrychus exilis	Least Bittern	G5	S4	N	N
Nyctanassa violacea	Yellow-crowned Night-heron	G5	S3	N	N
Nycticorax nycticorax	Black-crowned Night-heron	G5	S3	N	N
Pandion haliaetus	Osprey	G5	S3S4	N	LS*
Pelecanus occidentalis	Brown Pelican	G4	S3	N	LS
Rallus longirostris scottii	Florida Clapper Rail	G5T3?	S3?	N	N
Rynchops niger	Black Skimmer	G5	S3	N	LS
Sterna antillarum	Least Tern	G4	S3	N	LT
Sterna maxima	Royal Tern	G5	S3	N	N
Sterna sandvicensis	Sandwich Tern	G5	S2	N	N
Mammals					
Lasiurus cinereus	Hoary Bat	G5	SU	N	N
Mustela frenata olivacea	Southeastern Weasel	G5T4	S3?	N	N
Mustela frenata peninsulae	Florida Long-tailed Weasel	G5T3	S3	N	N
Neofiber alleni	Round-tailed Muskrat	G3	S3	N	N
Neovison vison halilimnetes	Gulf Salt Marsh Mink	G5T3	S3	N	N
Podomys floridanus	Florida Mouse	G3	S3	N	LS
Sciurus niger shermani	Sherman's Fox Squirrel	G5T3	S3	N	LS
Trichechus manatus	Manatee	G2	S2	LE	LE
Ursus americanus floridanus	Florida Black Bear	G5T2	S2	N	LT*
Plants					
Agrimonia incisa	Incised Groove-bur	G3	S2	N	LE
Arnoglossum diversifolium	Variable-leaved Indian-plantain	G2	S2	N	LT
Carex chapmanii	Chapman's Sedge	G3	S3	N	LE
Dicerandra cornutissima	Longspurred Mint	G1	S1	LE	LE
Eriogonum longifolium var. gnaphalifolium	Scrub Buckwheat	G4T3	S3	LT	LE
Forestiera godfreyi	Godfrey's Privet	G2	S2	N	LE
Glandularia maritima^	Coastal Vervain	G3	S3	MC	LE
Gymnopogon chapmanianus	Chapman's Skeletongrass	G3	S3	N	N
Matelea floridana	Florida Spiny-pod	G2	S2	N	LE
Monotropa hypopithys	Pinesap	G5	S1	N	LE
Monotropsis reynoldsiae	Pigmy Pipes	G1Q	S1	N	LE
Parnassia grandifolia	Large-leaved Grass-of-parnassus	G3	S2	N	LE
Pecluma dispersa	Widespread Polypody	G5	S2	N	LE
Pecluma plumula	Plume Polypody	G5	S2	N	LE
Pecluma ptilodon	Swamp Plume Polypody	G5?	S2	N	LE
Phyllanthus liebmannianus ssp. ***platylepis***^	Pinewood Dainties	G4T2	S2	MC	LE
Pteroglossaspis ecristata	Giant Orchid	G2G3	S2	N	LT
Pycnanthemum floridanum	Florida Mountain-mint	G3	S3	N	LT
Salix floridana	Florida Willow	G2	S2	N	LE

Sideroxylon lycioides	Buckthorn	G5	S2	N	LE
Spigelia loganioides	Pinkroot	G2Q	S2	N	LE
Stylisma abdita	Scrub Stylisma	G3	S3	N	LE
Natural Communities					
Blackwater stream		G4	S3	N	N
Depression marsh		G4	S4	N	N
Dome swamp		G4	S4	N	N
Floodplain forest		G4	S3	N	N
Floodplain swamp		G4	S4	N	N
Hydric hammock		G4	S4	N	N
Marine tidal marsh		G5	S4	N	N
Maritime hammock		G3	S2	N	N
Mesic flatwoods		G4	S4	N	N
Sandhill		G3	S2	N	N
Scrub		G2	S2	N	N
Scrubby flatwoods		G3	S3	N	N
Spring-run stream		G2	S2	N	N
Upland mixed forest		G4	S4	N	N
Upland pine forest		G3	S2	N	N
Wet flatwoods		G4	S4	N	N
Xeric hammock		G3	S3	N	N
Other Elements					
Bird Rookery		GNR	SNR	N	N

Total count: Number of tracked elements: 88; Number of distinct occurrences: 221
^ indicates species not processed into the FNAI data base but reported by FNAI staff as present on the CFG; these occurrences are not reflected in the total number of distinct occurrences
See Appendix 5 for a full explanation of ranks and status
Information from FNAI data base on January 18, 2007 and augmented with information from FNAI surveys of the Cross Florida Greenway

Listed Plant Species

For the CFG prior to 2001, only four rare plant species with a total of eight occurrences were recorded in FNAI's database. The FNAI 2001to 2004 surveys documented 90 new occurrences of 28 tracked species of rare plants on the CFG. FNAI also re-located six of the eight previously recorded occurrences and was able to locate four historical occurrences. It is likely that other rare plant occurrences will be found as staff traverse the CFG and as restoration efforts improve habitat quality.

Among the rarest plant species found on the CFG are *Dicerandra cornutissima*, long-spurred mint (FNAI global status G1/FNAI state status S1; Federal status LE/ State status LE), *Monotropsis reynoldsiae,* pigmy pipes (G1Q/S1; N/LE), *Arnoglossum diversifolium,* variable-leaved Indian-plantain (G2/S2; N/LT), *Matelea floridana,* Florida spiny-pod (G2/S2;MC/LE), *Pteroglossaspis ecristata,* giant orchid (G2/S2; MC/LT), *Salix floridana,* Florida willow (G2/S2; MC/LE), *Spigelia loganioides,* pinkroot (G2/S2; N/LE) and *Phyllanthus liebmannianus* ssp. *platylepis,* pinewood dainties (G4T2/S2; MC/LE). FNAI included species-specific and sometimes site-specific management recommendations in their report.

FNAI's survey revealed 12 natural community types that provide critical habitat for the 28 listed plant species documented on the CFG: hydric hammock (nine species), upland mixed forest/mesic hammock (nine species), sandhill (five species), bottomland forest (five species), mesic flatwoods (four species), scrub (four species), maritime hammock (three species), floodplain swamp (two species), wet prairie (two species), xeric hammock (two species), depression marsh (one species) and wet flatwoods (one species). These totals include species listed by FDACS but not tracked by FNAI.

FNAI also identified 10 significant sites for rare plant species on the CFG, based on rarity of a given species, numbers of listed species, numbers of species in general, lack of disturbance, or with high levels of disturbance that warrant attention. FNAI provided management considerations for each site. The 10 significant sites are:

- south of the Inglis Canal and west of U.S. 19
- Inglis Island

- the Diggings scrub & sandhill (from SR 200 to just east of I-75)
- Marshall Swamp Trail
- Ocklawaha River floodplain
- Eureka Dam
- Deep Creek
- select areas surrounding the Rodman Reservoir
- Caravelle Ranch West
- select areas surrounding the Buckman Lock.

Six sites were recommended for additional rare plant survey efforts: the Diggings, Caravelle Ranch West, Ocklawaha River, St. Johns River, Orange Springs Creek and Sunday Bluff.

In its rare plant surveys, FNAI documented five populations of *Dicerandra cornutissima*, long-spurred mint, on CFG. All five were found in mostly sand pine-dominated scrub with sandhill interspersed within. FNAI observed "Fire suppression in the sandhill components of this site is problematic, and has led to the invasion of sand pine, but burning this area will need to be conducted with precision, since the fire response of the long-spurred mint is not known. As with the long-spurred mint locations further west on the CFG, roadside edges are the preferred habitat. Care should be taken in moving dirt along the jeep trails, in driving any heavy equipment off of the road or establishing/maintaining fire plow lines."

Additional species-specific recommendations are included in Chapter IV. In general, management actions needed are: reroute trails/activities as necessary to reduce human disturbance and control of exotic species, prescribed fire for natural communities, hydrologic restoration and decrease wild hog and armadillo populations.

Listed Animal Species

FNAI conducted surveys on the CFG for about 24 rare animal species from October 2003 to May 2004 and located 16 FNAI-tracked species. Among the rarest species located were *Heterodon simus*, southern hognose snake (G2/S2; N/N), *Aphelocoma coerulescens*, Florida scrub-jay (G2/S2; LT/LT), *Gopherus polyphemus*, gopher tortoise (G3/S3; N/LS), *Rana capito*, gopher frog (G3G4/S3; N/LS), *Charadrius wilsonia*, Wilson's plover (G5/S2; N/N), *Haematopus palliates*, American oystercatcher (G5/S2; N/LS) and *Mycteria americana*, wood stork (G5/S2; LE/LE). FNAI also recorded two wading bird rookeries and a least tern rookery. FNAI provided management suggestions for each species. FNAI also has one or more records for *Pseudobranchus striatus lustricolus*, Gulf Hammock dwarf siren (G5T1/S1; N/N).

The 2003 UF study identifies the east and west regions of the CFG as the most important segments to serve as connectors for wildlife movement areas. The eastern end of the CFG is contiguous in places with the Ocala National Forest, one of the most important black bear areas in Florida. The FWC's map Black Bear Populations in Florida (2004) shows approximately the eastern half of the CFG as being in the primary and secondary ranges for the Ocala bear population, and the western end is in the secondary range for the Chassahowitzka bear population. The CFG extends northward and is an essential component in a potential connector leading to the Etoniah Creek State Forest, Camp Blanding, Jennings State Forest, Osceola National Forest, Pinhook Swamp and the Okefenokee National Wildlife Refuge. The western end of the CFG, near the Chassahowitzka National Wildlife Refuge/Crystal River complex, serves as an important coastal segment with the potential to connect with the Goethe State Forest, Waccasassa Bay Preserve State Park, Lower Suwannee River National Wildlife Refuge and the Big Bend Wildlife Management Area.

Most of the gopher tortoises located during the FNAI survey were on the western segment of the CFG, west of I-75. Some burrows were also located in the extreme eastern end. As expected, the gophers were found in disturbed areas with herbaceous ground cover and sandy substrate, including berms and powerline cuts, as well as the open natural communities with well-drained sandy substrates, such as scrub, sandhill and scrubby flatwoods.

Gopher tortoises are absent from much apparently suitable habitat on the CFG. OGT has allowed relocation of gopher tortoises onto the CFG in coordination with FWC, which permits the relocations. OGT currently requires

testing of tortoises for upper respiratory tract disease if the tortoises will be relocated into an existing population on the CFG. Relocated tortoises are also contained by fencing for the first two months to establish site fidelity.

Based on their field surveys, FNAI only reported scrub jays from CFG-managed scrub immediately west of I-75. The proximity to I-75 to the east and suburban development immediately to the west makes prescribed fire difficult. Around 2004, CFG logged sandpines from the scrub to encourage growth of oak scrub for the scrub jays. A small buffer area with mature sandpines was left along I-75. Prescribed burns and/or mechanical treatments are essential to the success of this scrub jay population. Scrub jays are also reported very near the scrub formerly managed by DEP's Office of Coastal and Aquatic Managed Areas (CAMA) on the western end of the greenway near Yankeetown. CAMA started restoration of this scrub and continued work may result in jays nesting in this scrub. Prescribed fire and community restoration on the CFG in general may result in establishment of additional jay populations in the future.

Prescribed burning is an essential tool to manage many of the listed animal species that occur on the CFG. Many inhabit fire-dependent communities, such as scrub, sandhill, scrubby flatwoods and mesic flatwoods. In addition, fire is needed to manage the isolated and ephemeral wetlands essential for amphibians, such as the striped newt and gopher frog. Without regular fire, shrubs and hardwoods can significantly change the character of these wetlands. For fishes, maintenance of water quality and no further alterations to the Ocklawaha River are important.

The rookeries noted by FNAI are at the western end of the CFG. A black-crowned night-heron (*Nycticorax nycticorax*) rookery on Spoil Island 7 supports an estimated 50-75 nesting pairs. FNAI also documented a colony of 75-100 least terns (***Sterna antillarum)*** on the western end of Spoil Island 8. No nests were found, but the terns mobbed human observers, possibly indicating a strong attraction to the area. FNAI also recorded a wading bird rookery with about 100 pairs of nesting birds on a willow island on the eastern end of Lake Rousseau. White ibis occupied one half of the island, and great egrets (*Ardea alba*), cattle egrets (*Bubulcus ibis*), little blue herons (*Egretta caerulea*), and tricolored herons (*E. tricolor*) occupied the other half. In cooperation with FWC, warning signs are posted in the rookery areas on the spoil islands during critical seasons.

Manatees (*Trichechus manatus)* are also present on the CFG and frequently wander through Rodman Reservoir. In response to manatee mortality caused by water control structures operations, manatee protection grates, acoustic detection devices and pressure sensors were installed on the lock and spillway. There is no access for manatees at the western end of the canal, because the lock is not functional and the spillways are above the water level on the gulf side.

A 1997 report on the effect of proposed restoration of the Ocklawaha River (Smith, 1997) found little information on the use of the area by manatees prior to the creation of Rodman Reservoir; however, it is believed that manatees may have used the Ocklawaha frequently. Subsequent to the formation of Rodman, manatees have been observed using Blue Spring, a second magnitude spring submerged by Rodman Reservoir that may serve as a warm-water refuge for manatees. According to this report, the partial restoration alternative will reestablish traditional manatee access routes to upper Oklawaha River reaches and tributaries. When restored, the Oklawaha River in the vicinity of the Rodman Dam will maintain adequate depth for manatees to traverse this section of the free-flowing river. Normal current speed along the river will not be great enough to prohibit manatees moving into and through the river system. The report states that habitat quality and accessibility for manatees will also likely improve over operative Barge Canal conditions.

Invasive Non-native Species

Invasive Non-native Plant Species

Due to the disturbed nature of a significant portion of its land and waters, the large proportion of boundary edge, numerous intersecting transportation routes and large amount of disturbance on adjoining properties, the CFG has serious invasive exotic species problems. Cogon grass is especially a problem on the Marion County portion of the CFG. Cogon grass was first mapped by CFG staff in 1996 and treated with herbicide in 1997. In 1998 CFG staff became active in the Withlacoochee Region Invasive Plant Working Group. This group is made up of public conservation land managers representing the counties of this region. Land managers submit projects and compete

for funding through DEP's Bureau of Invasive Plant Management Program (BIPM). In addition, OGT began working cooperatively with other state and federal land management agencies to eradicate cogon grass across jurisdictional boundaries.

Beginning in fiscal year 2000-2001, OGT received a special FCO appropriation to treat invasive exotics on the CFG. OGT received $127,000 per year for three years. From December 2001 to May 2003, FNAI conducted upland surveys for invasive exotic plant species. Thirty-six species of upland exotic pest plant species represented by 1047 occurrences were documented on CFG lands. Twenty-five of these species are Category I invasive non-native plant species (Table 6). According to the Florida Exotic Pest Plant Council (EPPC), Category I invasive plant exotics alter native plant communities by displacing native species, changing community structures or ecological functions, or hybridizing with natives. This definition does not rely on the economic severity or geographic range of the problem, but on the documented ecological damage caused. Category II invasive exotics are those that have increased in abundance or frequency but have not yet altered Florida plant communities to the extent shown by Category I species.

Table 6. Summary list of upland exotic pest plant species documented on the Marjorie Harris Carr Cross Florida Greenway from 2001-2003

***Scientific Name*/ Common Name**	**FL EPPC**	***Scientific Name*/ Common Name**	**FL EPPC**	***Scientific Name*/ Common Name**	**FL EPPC**
Abrus precatorius Rosary pea	I	*Lantana camara* Lantana	I	*Pueraria montana* Kudzu	I
Albizia julibrissin Mimosa	I	*Ligustrum lucidum* Glossy privet	I	*Rhynchelytrum repens* Natal grass	II
Aleurites fordii Tung oil tree	II	*Ligustrum sinense* Chinese privet	I	*Ruellia brittoniana (=R. tweediana)* Mexican petunia	I
Ardisia crenata Coral ardisia	I	*Lonicera japonica* Japanese honeysuckle	I	*Sapium sebiferum* Chinese tallow tree	I
Asparagus densiflorus (=*A. aethiopicus*) asparagus fern	I	*Lygodium japonicum* Japanese climbing fern		*Schinus terebinthifolius* Brazilian pepper	I
Broussonetia papyrifera Paper mulberry	II	*Macfadyena unguis-cati* Cats claw vine	I	*Sesbania punicea* Rattlebox	II
Casuarina equisetifolia Australian pine	I	*Melia azedarach* Chinaberry	I	*Solanum viarum* Tropical soda apple	I
Cinnamomum camphora Camphor tree	I	*Nandina domestica* Heavenly bamboo	I	*Tradescantia fluminensis* White-flowered wandering jew	I
Dioscorea bulbifera Air potato	I	*Nephrolepis cordifolia* Sword fern	I	*Urena lobata* Caesar weed	II
Elaeagnus pungens Silverthorn	II	*Paederia foetida* Skunk vine	I	*Urochloa mutica* Paragrass	I
Imperata cylindrica Cogon grass	I	*Panicum repens* Torpedo grass	I	*Wisteria sinensis* Wisteria	II
Koelreuteria elegans Golden rain tree		*Pteris vittata* Chinese brake fern	II	*Xanthosoma sagittifolium* Elephant ear	II

from Herring and Schultz, 2003

FNAI recorded the locations of the exotic species with descriptions of each setting. FNAI also identified areas with high exotic pest plant concentrations and made species and geographic-related recommendations for eradication efforts. Some of the species recommended for immediate action were *Imperata cylindrica* (cogon grass), *Lygodium japonicum* (Japanese climbing fern), *Dioscorea bulbifera* (air potato), *Panicum repens* (torpedo grass), *Albizia julibrissin* (mimosa), *Ardisia crenata* (coral ardisia), and *Cinnamomum camphora* (camphor tree). Generally, the worst problems were in disturbed areas, including areas with numerous trails.

In addition to funding FNAI's invasive exotic plants survey, OGT contracted with the University of Florida Weed Science Department to develop individual weed control plans. These plans recommended the latest and most efficient eradication methodologies for those invasives documented on the CFG.

CFG has an aggressive program to control invasive non-native plant species, supported in part by funds from the DEP Bureau of Invasive Plant Management. CFG's invasive species approach has three basic guidelines. The first is that areas are retreated as needed. Once OGT makes a financial commitment to treat an infestation, all benefits are lost if retreatments don't follow soon thereafter. Second, invasive plant control efforts are guided by FNAI's recommendations, adjusted for cost efficiencies such as geographic proximity of sites. Third, given OGT's limited staff and the extent of the invasive species problem, OGT has chosen to treat exotics section by section from west to east. A systematic approach makes follow up treatments easier and helps ensure infestations are not overlooked or missed. Initially, CFG just treated for cogon grass. Treatment of additional non-native invasives began in fiscal year 04-05. Non-native invasive species control is contracted out, and contractors are given the treatment guidelines. Since 1997, and primarily since 2000, CFG has treated 828 acres for invasive non-native species, primarily cogon grass. Of this total, 453 acres are retreatment acres, meaning that the same acre has been treated for invasive species more than once. Under current guidelines, when contractors treat an area for invasive species, they do not treat just the species recommended for immediate action; they treat all the invasive non-native species in the area.

Aquatic non-native invasive plant species are also present on the Cross Florida Greenway. *Hydrilla verticillata*, hydrilla, and *Pistia stratiotes*, water lettuce, have a strong presence in Rodman Reservoir. Other invasive species are also present. These species are controlled to a degree by lowering water levels on the reservoir approximately every three years. Lowering the reservoir's water level dries the shallow areas, killing the aquatic invasive plants, in addition to numerous other benefits. DEP Bureau of Invasive Plant Management provides approximately $30,000 per year for aquatic plant control in Rodman. The DEP Aquatic Invasives Section budgets up to $1 million per year to control aquatic non-native invasive plant species in Lake Rousseau through contractors spraying the plants.

Invasive Non-native Animal Species

Florida does not have an official invasive non-native animal species list, but at least 392 exotic vertebrate species are known to occur in Florida. Invasive non-native animal species are not as large an issue on CFG as invasive plants. Feral hogs are a problem on the CFG, and they have been documented to have deleterious effects on listed plant species such as pine lily and hooded pitcher plants. In the eastern region of the CFG, hogs are having negative impacts on wetlands, depression marshes and listed plants. CFG issues permits for hog trappers in areas where hogs are known to be a problem, such as Putnam County CFG lands, Marshall Swamp, and Inglis Island. Feral cats and dogs are occasionally problematic, and local animal control agencies are contacted for control of these species when needed. Some monkeys from Silver Springs are on the CFG. Control of these non-native animals is under the authority of the FWC. Coyotes are reportedly common in the eastern region of the CFG; no control methods are being used for this species.

Problem Native Species

No native species are reported as being a problem on CFG.

Forest Resources

Sustainable forestry is an important component of Florida's economy and can provide funds for management of lands. Chapter 253, Florida Statutes, requires that plans for 1,000+-acre parcels contain an analysis of multiple-use potential, to include a professional forester's assessment of the resource conservation and revenue-producing potentials of the tract's forests. OGT considers forest management consistent with the purposes for acquisition of this property when the activities contribute to restoration management.

The timber resources on the Cross Florida Greenway are not managed to maximize short-term economic revenue but rather to achieve a wide array of long-term public benefits. The health of the forest ecosystem is paramount in importance. The silvicultural practices on the CFG, including harvesting, thinning, burning and reforestation, are exercised to establish a healthy forest with an age distribution that best duplicates natural conditions. Well-timed and executed timber harvests play an integral role by removing off-site trees to reestablish native species and thinning dense forest stands to improve under-story habitat, to allow less damaging prescribed burns and to improve forest health. From 2000 until 2006, CFG had an agreement with the Division of Forestry to provide assistance in reaching CFG prescribed fire goals. CFG now has a forester position, 6 certified burn managers and 10 staff members who have at least CFG's minimum requirement of S130 and S190.

A comprehensive inventory of merchantable pine stands and hardwoods was completed in November 2000 (Appendix 7). The total acreage inventoried was approximately 57,000 acres. About 3,500 acres were not inventoried at that time due to problems with boundary line identifications or because the lands did not have any significant timber component Taking the results from this inventory and applying a conservative 5% growth rate to represent the last 5 years of growth provides the following figures: approximately 310,620 tons of sawtimber, 80,810 tons of chip-n-saw, and 113,840 tons of pulpwood. The hardwood inventory provided the following volume estimates: 16,100 hard hardwood sawtimber, 87,730 hard hardwood pulpwood, 9,100 tons soft hardwood sawtimber, 26,280 tons soft hardwood pulpwood, and 820 tons of cypress products. The areas with the questionable boundary lines will be inventoried as the lines are surveyed. Recent acquisitions have additional standing pine and hardwood that will also be inventoried.

Appendix 7 also addresses fire management on the CFG. The primary purpose of prescribed burning is to restore, maintain and protect all native ecosystems and their ecological processes. In addition, regular prescribed fires enhance timber management operations and reduce the fuel loading, thereby enhancing public safety. Approximately 25,000 acres of the Cross Florida Greenway support vegetative communities that are fire dependent. CFG staff recognize that prescribed burns are critical to the restoration and maintenance of many natural communities of the CFG. However, the configuration and location of the CFG magnify greatly the prescribed burn difficulties faced by most managed areas. The relatively narrow width of the CFG alone makes conducting large prescribed burns difficult. The western portion of the CFG in particular faces increasing urban encroachment, providing further difficulties. With more than 20 roads and railways intersecting the CFG, including major highways, smoke management poses particular challenges.

Because of the prescribed burn challenges and staff limitations, CFG has focused its prescribed burn efforts on the areas most in need. Priority is given to maintaining the units already prescribed burned on a regular rotation so that progress on these units is not lost. New units are brought into the rotation based on those that have been planted or thinned or those that contain rare plant species that are fire dependent. CFG staff have delineated burn units for the areas burned to date, some of which have received fire up to three times since 1997. The CFG does not have a comprehensive fire management plan with all desired burn units delineated; additional units are defined as they are brought into the burn rotation. Priority natural communities for prescribed burns are scrub, sandhill, mesic flatwoods and wet flatwoods.

Mineral Resources

The mineral rights of approximately 16 acres of the CFG on the north side of the canal where US 19 crosses are privately owned. Minerals are currently being extracted from the berm on this land adjacent to the canal. No other mineral extraction is taking place on the CFG, and none has occurred in the recent past. Reportedly material was

extracted from several borrow pits on CFG lands for construction of I-75. Three limerock pits totaling approximately 25 acres are in the Santos area. Other materials such as phosphate, limestone and sand undoubtedly exist on the Greenway, but they could not be removed without significant damage to the natural communities on site or lowering the potential for restoration.

Cultural, Archaeological, and Historical Resources

The Florida Department of State, Division of Historical Resources (DHR) maintains the Florida Master Site File that documents many of Florida's archaeological and historical features. A review of the Florida Master Site File on January 16, 2007 (M. Wisenbaker, pers. comm.) disclosed 202 archeological and historical sites to be within the CFG. Seventy-eight of the sites are in Citrus County, four in Levy, 112 in Marion, and eight in Putnam County. CFG field staff use a map series of archaeological and cultural sites from the 1992 report to assist them as they are conducting field operations.

The cultural and historical sites volume of the 1992 UF study was a review of existing data from the Master Site File to make management recommendations; it was not a field study. It identified 117 sites within or touching canal land boundaries. The 2003 UF study provides a written history of the greenway and a regional context, rather than focusing on specific cultural sites within the greenway. According to the 1992 study, most of the sites identified at the western end of the barge canal lands are shell middens with Deptford and later Weeden Island components. Proceeding inland toward higher elevations, the number of unidentified prehistoric lithic scatters increase. Further inland, toward the St. Johns River drainage, there is a rise in the number of St. Johns/Orange/Transitional sites between the Withlacoochee and Ocklawaha Rivers.

Since the 1992 plan, much of the CFG boundary has been better defined, and additional lands have been added to the CFG through various land acquisition programs and transfers from other agencies. The recent Master Site File reports two hundred two sites have been identified on the CFG and numerous sites have two or more site types recorded from the site. At least 25 archaeological cultures have been reported, ranging from prehistoric to World War II. The vast majority of the sites have not been evaluated by the State Historic Preservation Office as to whether the sites are eligible for listing on the National Register of Historic Places. The Office did determine that one site is potentially eligible for listing, and that nine sites are ineligible. For about half of the sites, the surveyor made an evaluation as to eligibility for listing. According to the surveyors' evaluations, 16 sites are eligible (one of which the Office said is ineligible), four sites are likely eligible, and 78 sites are ineligible for listing on the National Register of Historic Places. Most of the eligible sites are prehistoric habitations and middens. The only active historical research being conducted on the CFG is by a doctoral student from the University of Florida who is researching lost Spanish missions along the Ocklawaha River.

Works related to construction of the barge canal are the most obvious historical artifacts on to the Cross Florida Greenway. Among the more cryptic features are four large concrete bridge stanchions located in the median of US 441. Mostly obscured by trees, these structures represent the only bridge construction started for the 1930s ship canal. The 1930s ship canal diggings are also impressive. A combination of men, mule teams and machinery removed almost 13 million cubic yards of material from the 10-mile cut in the Ocala Uplands area.

Scenic Resources

The Cross Florida Greenway does not have any officially recognized scenic resources. However, the Ocklawaha River south of Rodman Reservoir is a winding, undeveloped, picturesque waterway. Deep Creek, with its Atlantic white cedar, excellent hydric hammock, numerous rare plants and few disturbances is also scenic. In addition, the 1930s canal diggings and bridge stanchions, as well as the more recent canal works, provide interesting reminders of some historic activities that have taken place along the Greenway. The pavilion located at the western end of the CFG Withlacoochee Bay Trail offers a beautiful view of the Gulf of Mexico and its marshes. Three locations on the CFG, Inglis Island, Inglis Dam, and Withlacoochee Bay Trail, are designated sites on the Great Florida Birding Trail.

III. Use of the Property

Previous Use and Development

The lands of the Marjorie Harris Carr Cross Florida Greenway have a long history of human use. The various barge canal studies and the University of Florida 1992 management plan and 2003 study documents provide extensive information and interpretation on the Greenway's historic use and development. In addition to the Native Americans who settled the area about 2000 years ago, people of European descent have been active in the area since the 16th century. Subsistence farming, plantations and timbering were common. Around 1870, the Ocklawaha River saw increased steamboat trade and tourism.

Along with the more obvious barge canal-related manipulations, the Cross Florida Greenway has seen a variety of uses since its acquisition for the barge canal and prior to establishment of the Greenway. Land was acquired for the sea level ship canal in the 1930s and for the barge canal in the 1960s. When canal work was not taking place on these lands, they were often leased out for caretaker purposes, and timbering and grazing were common. The state managed most of the barge canal lands from the 1960s to 1990 and the state took over management of all former barge canal lands in 1991.

Current Public Use and Land Uses

The Cross Florida Greenway probably supports a wider variety of outdoor public recreation uses than any other park and recreation land in Florida (Map 8). Part of this is due to the way in which the canal lands came into state ownership. In some places, much of the canal lands were disturbed and proximate to developed areas. The barge canal statute (Ch. 253.7825, F.S.) states that **"**the promotion and development of resources-based activities shall be given priority consideration, although user-oriented activities shall not be arbitrarily prohibited when site-specific studies indicate compatibility of the proposed use with natural or cultural resources. …'user-oriented activities' are those which can be provided in a variety of locations and include such activities as golf, tennis, baseball, archery, target shooting, and playground activities."

The CFG provides standard outdoor recreation uses such as hiking, biking, horseback riding, swimming, fishing, hunting and boating and attracts more than 2 million visitors each year. With more than 244 miles of trails, the CFG offers many choices to hikers, bikers, and equestrians. Trail types range from Americans with Disabilities Act (ADA)-accessible multi-use paved and improved surface limerock to use-specific trails with opportunities for both novices and those looking for challenge. Bike trails are varied, including the Santos Trail System, one of only 40 trails designated worldwide as an "epic ride" by the International Mountain Biking Association. All existing unpaved trails are subject to be redesigned due to management considerations and environmental impacts.

The Greenway also supports a broad array of equestrian activities, such as horseback riding and wagon trails, and subleases 500 acres for the Florida Horse Park, as allowed by the barge canal statute. Land was subleased for a sports complex adjacent to schools, and a Boundless Playground was constructed next to a popular multi-use trail, at the Baseline Road Trailhead in Marion County. Some areas are subleased to an archery club and radio-controlled aircraft clubs (see Subleases, below). All of the subleased lands are former barge canal lands; much of the acreage was not heavily disturbed and was leased for grazing. Table 7 lists existing recreation areas within the Cross Florida Greenway.

Table 7. Existing Recreation Areas within the Cross Florida Greenway

Etoniah Basin Region	Ocklawaha River Valley Region	Ocala Uplands Region	Withlacoochee Lowlands Region
- H.H. Buckman Lock Multi-Use Recreation Area • Visitor Center East • St. John's Loop South Trailhead • St. John's Trailhead North - Etoniah West Management Area - Rodman Multi-Use Recreation Area • Rodman Campground and Recreation Area • Kirkpatrick Dam and Recreation Area - Kenwood Recreation Area - Orange Springs Boat Landing* - Hog Valley Boat Landing	- Payne's Landing boat ramp - Eureka Historic Dam and Lock Recreation Area boat ramps - Piney Island Boat Landing - Gore's Boat Landing and Campground* - Osceola Landing - Ray Wayside Park/Boat Launch* - Ocklawaha Visitor Center* - Marshall Swamp Trailhead	- Baseline Road Trailhead* and Substations* - Ocala Rotary Sports Complex* - Santos Historic Site and Multi-Use Recreation Area • Bridge Stanchions • Recreation Area • Trailhead and Campground • J. J. Croskey Ballfield/Historic Santos Ballfields - John Franks Trailhead - Ocala Model Airplane Club* - Land Bridge Trailhead - 49th Avenue Trailhead - Shangri-La Equestrian Trailhead and Campground - Ross Prairie Trailhead and Campground - Pruitt Trailhead	- Citrus County R/C Club* - East Dunnellon Multi-Use Recreation Area • T.K. Egan Sports Complex* - Inglis Historic Dam and Lock Multi-Use Recreation Areas • Inglis Dam Recreation Area • Inglis Island • Inglis Lock • Inglis Bypass • Inglis Model RC Club* - Withlacoochee Lowlands Multi-Use Recreation Area • Withlacoochee Bay Trail Recreation Area • Felburn Park Trailhead

* = at least some portion subleased by OGT to another entity

Multiple-Use Trails

Multiple-use trails exist along road crossings and are found sporadically throughout the CFG. Road crossings include the I-75 land bridge and the 49th avenue underpass, as well as at-grade crossings with signage. The more than 65 miles of multi-use trails on the CFG include natural surface, limestone, gravel/improved, and paved surfaces. Baseline Trailhead and subtrailheads and Withlacoochee Bay Trail Recreation Area are currently the only two recreation areas with multiple-use paved trails. The trail mileage reported in the sections below each count the multi-use trail mileage, so the total of all user-trail types exceed the actual number of trail miles on the CFG.

Hiking

Hikers have 113 miles of hiking trails on the CFG. The most significant hiking trail in Florida runs through the East end of the CFG – the Florida National Scenic Trail (FNST). Approximately 36 miles of the FNST are on the Greenway. The Florida Trail Association (FTA) maintains the FNST and about five miles of loop trail on the CFG. The 41 miles maintained by the FTA are the only hiking-only trails on the CFG. These trails are limited to foot traffic and provide hikers with a chance to experience the natural environment in a quiet setting.

Biking

There are 118 miles of bicycle trails on the CFG, most of which are concentrated on the CFG between SR 484 and US 441. Only non-motorized biking is allowed; most of the bicycling is off-road or along service roads. For off-road cyclists, the Santos Trails encompass one of the most popular biking areas. The International Mountain Biking Association describes Santos as "Once a hotspot for unauthorized stunts and unapproved trails, Santos has emerged as a model trail system, with flowing singletrack, bombproof wooden structures, a bike skills park with progressive challenges and jaw-dropping technical features at the Vortex quarry. In addition to drawing the top riders in the region, Santos is the perfect place for beginner or intermediate riders to hone their technical skills." Bikers who prefer paved road surfaces have two primary destinations – Baseline Trailhead with 5.1 miles of paved looped trails and the 5-mile Withlacoochee Bay Trail. Events include the annual Cross Florida Greenway Tour. This annual bike ride also features some equestrian, wagon ride and hiking opportunities. The Fat Tire Festival is another biking event, and numerous other bike races are held throughout the year.

Equestrian

With 138 miles of equestrian trails on the CFG (18 of which are wagon trails), equestrians have multiple choices. Many of the recreation areas are also equipped with equestrian amenities including troughs, hitching posts, and parking areas suitable for horse trailers. The Florida Horse Park and Equestrian Center, located near I-75, provides equestrians with corrals, stables and event facilities. Two trailheads are specifically outfitted for equestrian camping: St. Johns Loop South and Ross Prairie Trailheads, with both developed and primitive camping opportunities. In addition, there are plans to improve the Shangri-La equestrian Trailhead for equestrian camping.

Interpretive Trails

Currently, there are a limited number of interpretive trails on the CFG. The Marshall Swamp Trailhead has a 2.25-mile interpretive trail leading visitors through a variety of habitats. The Ocklawaha Visitor Center hosts a 1.5-mile interpretive trail. The St. John's South Trailhead and Marjorie Harris Carr Cross Florida Greenway Visitor Center East also have interpretive trails. A small interpretive trail leads to the bridge stanchions behind the Sheriff's Substation on U.S. 441. The Great Florida Birding Trail is located on three CFG recreation areas: Inglis Island, Inglis Dam, and Withlacoochee Bay Trail.

Paddling

Paddling opportunities abound on the CFG. Rodman Reservoir, the Ocklawaha River, the short stretch of the Withlacoochee River bordered by the CFG, Lake Rousseau and Withlacoochee Bay are all suitable for canoe and kayak activities. In addition, creeks and spring run streams flowing into the CFG waterbodies offer more areas to explore. Numerous launches specifically accessible to canoes and kayaks are available. The Withlacoochee River is a state designated paddling trail

Boating

Boating is popular on the CFG, both as a means to access fishing areas and for general boating recreation. More than a dozen boat ramps provide power boats with direct access to the Cross Florida Barge Canal, Withlacoochee River, Lake Rousseau, Ocklawaha River, Rodman Reservoir, and the Gulf of Mexico. Around 2002, OGT installed day marker navigational aids in both Rodman Reservoir and Lake Rousseau to provide a channel with suitable depth. Submerged tree stumps can make navigation in both of these waterbodies hazardous. OGT is responsible for removal of obstructions, including floating vegetation, from the river channel in Rodman Reservoir; the U.S. Army Corps of Engineers is responsible for navigation obstructions elsewhere. OGT is working with FWC and the Coast Guard to provide channel markers for the original river channel (not the navigation channel) within Rodman Reservoir.

Camping

Five campgrounds are open to the public on the CFG – Gore's Landing, Santos Campground, Rodman Campground, St. Johns Loop South, and Ross Prairie. Rodman, Ross Prairie and Santos offer RV and electric hookups in addition to tent sites. Gore's Landing and St. Johns Loop South have no electricity available. St. Johns Loop South and Ross Prairie were specifically designed to handle equestrian camping needs, with amenities such as large campsites and parking areas. Group camping is available on Inglis Island by permit only. Camping opportunities are available elsewhere on the CFG by permit only, with the exception of several primitive campsites along the FNST which are available to FTA members without a permit.

Fishing

Fishing opportunities are plentiful along the CFG. Rodman Reservoir, the Ocklawaha River, Lake Rousseau and Withlacoochee Bay are all popular fishing areas. In addition to boater-accessible fishing areas, there are numerous other fishing opportunities. To help accommodate fishing access, multiple observation decks are along the CFG that can also be used for fishing. Land-based fishing is also popular around locks, spillways and dams. Ray Wayside Park and Gore's Landing are also frequented fishing spots. Black crappie, bluegill, sunfish are among the species found in the Reservoir. Redbreast sunfish and spotted sunfish are popular in the Ocklawaha River, as well as the occasional striped bass.

Hunting

The Florida Fish and Wildlife Conservation Commission (FWC) manages all hunting on CFG lands. Three thousand acres of former barge canal lands at the eastern end of the CFG are leased to the FWC for management as part of the Caravelle Ranch Wildlife Management Area (WMA). In addition, FWC has an agreement with CFG for FWC to manage hunting on the more recent Preservation 2000/Florida Forever purchases north of the eastern barge canal, totaling about 13,000 acres. FWC also has an agreement with CFG for FWC to manage hunting on the 2917-acre Gore's Landing Unit of the Ocklawaha River WMA. The Caravelle WMA has 65 days of hunting each year, including separate seasons for archery, muzzleloaders and general gun. Small game hunting is also allowed. Popular species to hunt include deer, turkey, quail, hogs and squirrel. Hunting seasons are generally of short duration with a limited number of hunters, and hunter satisfaction is good. The Gore's Landing Unit has 52 days of hunting each year, with the same species sought as at Caravelle.

Visitor/Educational/Cultural Centers

Two visitor education facilities are located on the CFG, the Ocklawaha River Valley Visitor Center on SR 40 and the Marjorie Harris Carr Cross Florida Greenway Visitor Center East. The Ocklawaha visitor center, near the Silver and Ocklawaha Rivers, offers educational material and is adjacent to an interpretive hiking trail. The east visitor center, located at Buckman Lock, offers educational materials and is located next to a trailhead. Neither visitor center has classrooms available. The east center hosts approximately 25 field trips per year for the Putnam County schools, and occasionally makes classroom presentations and presentations to other groups. CFG volunteers sometimes participate in the events. The FWC has supported these efforts by providing their Florida native wildlife environmental education trailer at times and also bringing live alligators to presentations.

Picnicking

There are picnic tables at almost every CFG recreation area; sheltered picnic tables are found on several sites.

ADA Facilities and Services

The CFG is equipped with numerous ADA compliant facilities. The visitor centers, large restroom facilities, and paved parking areas found at developed recreation sites are all ADA compliant. ADA compliant decks are located near Kirkpatrick Dam, Inglis Dam, the Withlacoochee Bay Trail, and Eureka West. Ross Prairie has one ADA compliant campsite. Rodman Campground has ADA campsites available. In March 2006, a Boundless Playground was opened adjacent to the Baseline Trailhead. Specially-designed, these playgrounds provide recreational and

educational opportunities for children with and without disabilities. Simple differences include a poured-in-place rubber surface, ramps on the play sets, elevated sand table and activity panels and swings and bouncers with high-back support. The playground was made possible by a generous donation from The Felburn Foundation, was constructed by OGT and is operated and maintained by Marion County. The Marion Therapeutic Riding Association is developing a facility on the CFG to provide disabled individuals with the benefits of horseback riding and driving.

Subleases, agreements and easements

OGT subleases 29 parcels to other entities for a variety of purposes. All are on former barge canal lands. Table 8 lists the major subleases on the CFG. For those subleases ending during the period covered by this management plan period, the intended future of each lease is indicated. In addition to the subleases in Table 8, OGT subleases seven buildings as residences to staff and to law enforcement personnel that provide security for the CFG by virtue of their presence.

The Baseline Road to Marshall Swamp Trail is leased to Marion County for operation and maintenance. The Ocklawaha Visitor Center is leased to the US Forest Service (USFS) and serves both the Ocala National Forest and the Cross Florida Greenway. OGT is investigating other options for staffing the visitor center because of staffing shortages in the Forest Service.

Three thousand acres of former barge canal land are leased to the FWC and are part of the Caravelle Ranch Wildlife Management Area. Four boat ramps are leased to Marion County – Gore's Landing, the Orange Springs boat ramp and two ramps at Eureka, all of which provide access to the Ocklawaha.

Approximately 30 acres are leased to the Marion Therapeutic Riding Association, Inc. This non-profit group provides the opportunity for individuals challenged by physical, mental, and emotional disabilities to take advantage of the extraordinary physical and psychological benefits of horseback riding and driving (http://www.mtraocala.org/). Marion County also leases land for a 4-H club facility.

Five hundred acres are leased to the Florida Department of Agriculture and Consumer Services, which leases the land to the Florida Agriculture Center and Horse Park Authority for the Florida Horse Park, as authorized in Florida Statutes (Ch. 253.7825). Equestrian facilities are located at the park, and special events are held there.

CFG leases 105 acres of land to the City of Dunnellon for the T.K. Egan Sports Complex; approximately 10 of these acres are developed. Seventy-eight acres are leased to Marion County for Ocala Rotary Sports Complex. These ballfields are widely used by the communities.

Lands are leased to the Citrus County R/C Club, Ocala Flying Club and Nature Coast R/Cers clubs. These areas are used for radio-controlled airplanes. The Ocala Flying Club recently relocated at CFG's request, and has constructed a paved runway and structures. Facilities at the other two RC clubs are minimal. Land is also leased to Forest Archers, Inc., an archery club. These leases will expire within four years; OGT is reviewing the situations and will make a decision on lease renewal at a later date.

CFG also leases land to the Marion County Sheriff and the Florida Marine Patrol for law enforcement stations. An area formerly heavily infested with cogon grass is leased to the Marion County Sheriff for an inmate work farm project. The cogon grass was eliminated by their operations. In exchange for the land use, inmate labor is provided to the CFG. The work farm, sports complex and 4H leases are all located at the intersection of CR 464 and SR 35. The Florida National Guard leases land for a helicopter landing area for special operations training

About 2 acres are leased to the U.S. Army Corps of Engineers for chemical storage near the Buckman Lock. Less than one acre is leased to Southern Hy-power Corporation for a hydro electric facility which has not yet been permitted or constructed in the Inglis Spillway.

Three acres are leased to Marion County for use as a recycling staging area. The County will donate a site previously used for recycling to CFG. The City of Dunnellon has an easement on CFG land used for water/wastewater plant.

Table 8. Subleases on the Cross Florida Greenway

Lessee	Feature Name	Acres	Start Date	End Date	Future Lease Plans
US Army COE	Chemical Storage - Buckman Lock	1.8	5/1/94	4/30/09	update/ renew
Southern Hy-Power Corp.	Hydro-Electric Facility Inglis Spillway	0.61	10/17/95	10/16/25	
Citrus County R/C Club	Highway 484 Dunnellon (radio-control field)	45	7/1/98	6/30/08	pending review
Marion County	4-H Club Facility-SW corner Hwy 464 & C.R. 35	45	3/2/99	1/31/43	
Marion County	Base Line Road To Marshall Swamp Trail	830	3/2/99	2/28/24	
City Of Dunnellon	Dunnellon Ball Fields	105	7/1/95	6/30/07	update/ renew
Marion County	Gore's Landing (boat landing)	106	10/4/06	10/3/11	update/ renew
Marion County	Sheriff's Substation	3.43	7/1/95	6/30/45	
FL Marine Patrol	Marine Patrol Station - Inglis	8.6	7/1/95	6/30/45	
Fish & Wildlife Cons. Commission	Caravelle Wildlife Management Area	3,000	7/1/95	6/30/45	
Marion County	Rotary Sports Complex Subsublease	78	9/1/97	9/1/47	
DACS/FL Agriculture Center and Horsepark Authority	DACS Horse Park - Hwy 475 (subsubleased to Horsepark Authority) **Amended On 02/11/02	500	4/1/97	3/31/47	
Ocala Flying Club	CR 475-Near Land Bridge (radio-control field)	188.23	10/1/00	9/30/10	pending review
Marion County	Orange Springs Boat Ramp (f/k/a 4013-80)	15.5	7/1/95	11/30/09	update/ renew
Nature Coast R/Cers	Inglis-Flying Model Club (radio-control field)	9.8	10/5/01	8/31/08	pending review
Marion County	Sheriff's Work Farm Project **amended	125.3	10/1/00	9/30/10	3 5-yr lease options
Adjunct General, State Of Florida	Fla. National Guard - Eureka Lock - Helicopter Landing Area	124	11/27/01	10/31/07	update/ renew
Forest Archers Inc.	Silver Springs Connector Property - archery club	60.03	6/25/02	5/15/07	update/ renew
Marion Therapeutic Riding Assn.	Therapeutic Equestrian Facility	30.2	7/1/03	6/30/23	
USDA Forest Service	Ocklawaha Visitor Center		10/31/03	6/30/08	pending review
Marion County	Median Of 441 South Of 80th Street	17.75	11/20/06	11/19/11	update/ renew
Marion County	Recycling Center (donating previous site within 18 mos.)	3.01	11/16/06	12/31/17	

OGT formerly leased some lands for cattle grazing. No cattle grazing leases are currently in place.

The Holnam tract was part of a mining mitigation agreement. The former owners retain the right to timber two parcels of these lands through 2011. The properties also contain a restriction stating that the state's use of the property cannot interfere with or hinder the mining activity on Holnam's adjacent property.

As mentioned in "Mineral Resources", above, the mineral rights on approximately 16 acres of CFG lands are retained by a private landowner.

Numerous powerline and transportation rights-of-way easements are in place on the CFG. This is expected, due to the CFG's linear character, proximity to urban areas and intersection with numerous transportation linear facilities.

Lands Leased from Others

Six parcels managed by CFG are either leased from other entities or are covered by management agreements. The Southwest Florida Water Management District has an agreement with OGT that gives CFG management of 301 acres that help bridge the gap between Dunnellon and Ross Prairie. The Division of Forestry has an agreement with OGT that provides access to the Ross Prairie Trailhead. In exchange, OGT includes information at the trailhead about Ross Prairie State Forest. The Felburn Foundation leases 135 acres to OGT on the western end of the Greenway for use as a trailhead. Felburn Park is a former mining area with water features adjacent to the western barge canal. OGT has a license agreement with the Florida Department of Transportation for 3.5 acres for use as part of the Withlacoochee Bay Trail, and OGT has an access easement of 4.1 acres from Holnam, Inc. at the western end of the CFG related to Withlacoochee Bay Trail access. OGT also leases space in a chemical storage room at Buckman from the Army Corps of Engineers. The land the chemical storage room is on is leased by OGT to the Corps.

Planned Uses and Assessment of their Impacts

During the next ten years, OGT plans to extend the Cross Florida Greenway's existing trail system and to improve connections with other existing trails and managed areas, such as the Withlacoochee State Trail. Other facilities are planned to enhance visitor education and access. The layout of current CFG trails will be reviewed. In addition to planned, sanctioned trails, there are numerous un-sanctioned trails on the Greenway. Some existing facilities and trails will be realigned to protect sensitive areas, promote sustainable trails and in other cases to enhance user enjoyment and safety. Some trails may be closed. New emphasis will be placed on loop trails for the enjoyment of the more casual user, when it is compatible with resource protection and management. Placement of all new trails and facilities will be conducted with environmental protection and restoration as the top concern. Any new facilities in the Rodman Reservoir area will have to be functional and accessible at current reservoir levels and at the "partial restoration" water level. The construction and availability of many of the proposed facilities will depend on the availability of funding above CFG's current funding level.

Determination of Public Uses that are Consistent with Acquisition Purposes

Public uses of the Marjorie Harris Carr Cross Florida Greenway must follow the statutory requirements of the programs under which they were acquired and the management policy statement. In addition, they must comply with Chapter 62S- FAC, the State Greenway rule. As discussed in the purpose of acquisition in section one, the CFG was acquired through at least four avenues – transfer of barge canal lands from the federal government to the state in 1991, Preservation 2000/Florida Forever acquisitions, leases and donations. Land was acquired using Preservation 2000 and Florida Forever for the Etoniah/Cross Florida Greenway, Crystal River/Florida Springs Coastal Greenway, Longleaf Pine Ecosystem and for Greenways and Trails connectors. The Felburn Foundation leases lands for Felburn Park to OGT and also donated the Dull tract in 2006. Holnam Inc. donated lands as part of mining mitigation, and the Horn property was donated by the Horn family. These lands are managed similarly to Preservation 2000/Florida Forever acquisitions.

Existing and planned uses of the Marjorie Harris Carr Cross Florida Greenway comply with the Conceptual State Lands Management Plan and represent "balanced public utilization" and are detailed below under "Planned Public Uses and Assessment of Impacts" and "Analysis of Multiple-Use Potential". Uses other than those approved below must be reviewed and approved by OGT in advance of such use.

Planned Public Uses and Assessment of Impacts

Additional facilities are planned for the CFG (Table 9; Map 8). Protection of natural resources, including the avoidance of further fragmentation of habitat and potential movement corridors, will take precedence over recreation considerations. OGT will make every effort to ensure that facilities will be environmentally sensitive and will use building techniques and fixtures that focus on energy efficiency, water conservation, storm water runoff reduction, and minimal impact to natural resources.

Table 9. Proposed Facilities for the Cross Florida Greenway

Withlacoochee Lowlands Region	Ocala Uplands Region	Ocklawaha River Valley Region	Etoniah Basin Region
- *Dixon Hammock to Inglis Island Equestrian Trail* - US 19 Boat Ramp - Felburn Visitor and Environmental Education Center - Withlacoochee Bay Trail Phase III - *Eagle's Nest Campground* - Dunnellon to Inglis Lock Multi-use Trail Corridor - Dunnellon Withlacoochee Trailhead - South Dunnellon Withlacoochee Connector Multi-use Trail Corridor - Rainbow Springs Connector Multi-use Trail Corridor - CFG to Nature Coast Connector Multi-use Trail - Dunnellon to Pruitt Trailhead Multi-use Trail Corridor	- Redesigned Equestrian Trails in Marion County - *Shangri-La Equestrian Trailhead Improvements* - FL Horse Park Realignment - Vortex Area Trailhead - Trail Users Support Shop - Santos to Baseline Trail (paved +possible equestrian trail) - Ross Prairie Trailhead Access Road and Multi-use Connector - *Ross Prairie Section Singletrack Bike Trail Loop* - Pruitt Trailhead Access Road and Multi-use Connector - *Pruitt Section Singletrack Bike Trail Loop*	- Marshall Swamp to Rodman Trail (natural surface) - *Eureka Recreation Area* - *Ocklawaha Paddling Trail with Camping*	- Etoniah Trailhead and Check Station - Etoniah Multi-use Trail System (use existing roads) - Kenwood Recreation Area Improvements - *St. Johns Loop South Equestrian Trailhead Improvements*

Proposed facilities shown in italics require full evaluation for feasibility before OGT proceeds with construction/installation

Each facility is discussed separately below. Prior to any significant ground disturbance to a site, photographs, maps and a description of planned activities will be submitted to FNAI and the Division of Historic Resources. Placement of the trail system and facilities will be determined by topography and natural resources while considering the desired recreational uses and management needs, including fire management. Existing woods roads, trails, and firelines may become a part of the trail system; some may be closed or re-routed because of wetlands, soil erosion or sensitive habitat. Others may be reserved for service roads or fire control. A balance will be struck between creating recreational trails and establishing service roads that serve both recreational and management needs, including fire management. The potential role of the trail system in fire management will also be considered during

design. Sensitive habitats will be avoided, and some small bridges or boardwalks may be necessary to traverse wetlands. All trails will be designated.

Numerous road and railway expansions that will affect the CFG are in various stages, from preliminary proposals to construction. OGT regularly comments on the proposals and participates in advisory groups related to proposed transportation changes. OGT has successfully worked with FDOT and other authorities to have strong consideration given to impacts on the CFG from these projects. As a result, CFG-related crossings are often built into the designs. Some will function as just recreational trail crossings, others will be designed for wildlife crossings as well. The anticipated CFG-related road crossings include:

- SE 25th Ave. and 95th St – at-grade crossing with markings and signage
- CR 475 underpass crossings, near SE 110th St. – design almost complete, design and construction funded by FDOT
- CR 475A underpass crossing, near land bridge trailhead – design and construction funded by FDOT
- CR 484 underpass, west of Shangri-La – design and construction funded by FDOT
- SR 35/CR 464 intersection – planned recreational/wildlife corridor as roads are widened – starting in approximately 2011 – will facilitate paved trail connector from Baseline Trailhead to Santos
- SR 200 underpasses – multiple underpasses for recreation and wildlife when SR 200 is widened across Ross Prairie
- US 441 corridor realignment in Santos – OGT will recommend recreation and wildlife crossings, with possible realignment so that median does not separate road but is retained as part of CFG (includes 1930s ship canal bridge stanchions)

Other road and rail expansions that would affect the CFG are earlier in the planning stages. These include:

- US 19 at the west barge canal – expand bridge from two to four lanes to match current highway lane numbers
- Sharpes Ferry Bridge replacement
- SR 19 at east barge canal – potential widening
- I-75/CR 484 vicinity – proposed new interstate interchange
- SW 95th Street – proposed expansion
- Several proposed railway expansions
- Several additional proposed new road alignments in Ocala area

OGT will continue to stay involved in planning for transportation corridor changes that may affect the CFG.

Withlacoochee Lowlands Region

Dixon Hammock to Inglis Island Equestrian Trail
The feasibility of establishing an equestrian trail from the Dixon Hammock Trails to Inglis Island will be evaluated and constructed, if feasible.

US 19 Boat Ramp
OGT has been approached by Citrus County to consider leasing 16 acres of land on the north side of the barge canal just west of US 19 for a boat ramp (Map 8a). This CFG holding is isolated from other OGT lands. FDOT is planning to widen US 19 and will use three to four acres of these lands for drainage for the bridge. The US 19 widening will displace boat ramp parking already in place on the south side of the canal. This parcel is somewhat disturbed; the berm along the canal is being mined by the entity that retains the mineral rights to the land. A 30-year lease is planned that will give the county five years to fund, design, permit and construct the boat ramp, or the lease will be canceled if this project is not pursued further by the county. The initiation of this project is dependent on FDOT's schedule, Citrus County and funding availability. Anticipated partners include Citrus County, FWC and the U.S. Fish and Wildlife Service.

Felburn Visitor and Environmental Education Center
A visitor center/environmental education facility is proposed to be located in Felburn Park, near the western end of the CFG (Map 8a). The closest CFG visitor center is near Silver Springs. The Felburn Visitor Center would be

located behind the trailhead near the bathhouse. A building with a main entry/exhibit area and labs and classrooms is anticipated. One or more Fishing for Success ponds may be located on the site, a former mining area. Fishing for Success is a program intended to introduce children to fishing. Because of its proximity to salt water, both a fresh and salt water pond may be incorporated in the program. Detailed plans have not yet been designed. Because it is a former mining area, no sensitive resources will be impacted. Anticipated partners include the Felburn Foundation and the UF Fisheries Department.

Withlacoochee Bay Trail Phase III
Phase III of the Withlacoochee Bay Trail is anticipated to extend the existing trail from Felburn Park along the canal berm to where the Withlacoochee River was bisected by the canal to Inglis Island (Map 8a). An eastward bridge will be necessary and an existing powerline easement will be utilized. The footprint will be confined to disturbed lands. FDOT has committed to funds for the trail and bridge. Anticipated partners include the Felburn Foundation (land) and FDOT (funds). Design work is scheduled to start in one to two years.

Eagle's Nest Campground
The feasibility of a campground on the Eagle's Nest property to provide camping facilities near Inglis Island (Map 8a) is being evaluated. Contrary to what its name implies, the Eagles Nest Addition is a disturbed parcel of former mining land with a lake, fronting on the Withlacoochee River. It was acquired by Preservation 2000 as part of the transaction to acquire the rest of Inglis Island. Depending on the feasibility, an estimated 30 to 60 campsites are envisioned, designed in one or two loops similar to the Florida Park Services' campground design. The feasibility of providing for equestrian campers will also be evaluated. Some cabins may be included. Fishing areas would be designated and a kayak launch would be provided. A staff and/or law enforcement residence is also planned for the area. No partners are anticipated. Development will depend on funding for facilities and staffing.

Dunnellon to Inglis Lock Multi-use Trail Corridor
CFG has very little land going east-west along the north and south shores of Lake Rousseau and this causes a large gap in the CFG trail system. OGT would like to establish a paved connector trail north of Lake Rousseau from Dunnellon to the Inglis Lock, primarily using existing right-of-way of CR 40 (Map 8a). Environmental impact is expected to be minimal, given the trail's location in a right-of-way. A trail separated from the road is planned. CFG is in the process of getting letters of support. Anticipated partners include Marion County, Levy County, FDOT and the Cities of Dunnellon and Inglis. The timeframe to completion is approximately five to 10 years.

CFG to Nature Coast Multi-use Connector Trail Corridor
A paved connector from the CFG to Goethe State Forest to Chiefland and the Nature Coast trail system would greatly expand the opportunities for CFG trail users (Map 8b). In addition to the 53,000-acre Goethe State Forest, visitors could access the Nature Coast State Trail. The state does not own most of the land necessary to make the connection to Goethe; the cooperation of private landowners will likely be necessary. Because of the potential to link two major equestrian trail systems, accommodations for equestrian use will be made if feasible. Anticipated partners are the City of Dunnellon, FDOT, FDOF and private landowners. The timeline is roughly estimated to be five to ten years.

Rainbow Springs Multi-use Connector Trail Corridor
A connector trail is proposed from the CFG to Rainbow Springs State Park to provide access across CR 484, Dunnellon Withlacoochee Trailhead and South Dunnellon Withlacoochee Multi-use Connector Trail Corridor Currently, the connection between the CFG and the Withlacoochee State Trail is along paved roadways, through Dunnellon, south on US 41, across the US 41/Withlacoochee Bridge, continuing south on US 41 to a small spur trail that connects to the state trail (Map 8b). To alleviate this situation, a trailhead and connector trail for the Withlacoochee State Trail is proposed on the south side of the Withlacoochee River, east of US 41. A bridge across the Withlacoochee will be required to connect with CFG lands north of the Withlacoochee; the bridge design is in progress. Minimal restrooms and parking as well as boardwalks along the Withlacoochee wetlands are planned. South from the Withlacoochee, a paved trail will follow the old CSX railroad bed and parallel US 41 on the east side. The trail will then cut across US 41 and connect with the Withlacoochee State Trail. The land along the old railbed is disturbed, and care will be taken in locating the trailhead and boardwalk. It will be approximately two years until construction starts. Partners include FDOT and the City of Dunnellon.

Dunnellon to Pruitt Trailhead Multi-use Trail Corridor
A multi-use trail corridor is planned to link the Pruitt Trailhead to the ballfields in Dunnellon. Additional land acquisition will be necessary for this trail to be put in place

Ocala Uplands Region

Ross Prairie and Pruitt Trailheads Access Road and Multi-use Connector
A multi-use stabilized trail and access road is planned to link the Ross Prairie Trailhead to the current limerock trail, and the Pruitt Trailhead to the end of the current limerock trail (Map 8b). These facilities are dependent on land acquisition and on consideration and approval by the SWFWMD. The whooping crane area will be taken into consideration for trails and facilities planned for the Halpata Tastanaki area.

Ross Prairie and Pruitt Sections Bike Trail Loops
A loop of singletrack bicycle trail in the Ross Prairie section and a loop in the Pruitt section are planned (Map 8c)

Redesigned Equestrian Trails in Marion County
The existing equestrian trail system in Marion County (Map 8c) will be redesigned into a series of loops out of each trailhead and a single through-trail. Safety, manageability, sustainability and navigability will be maximized in the redesign. "Traversing" equestrian trails are available in the canal diggings area, but these trails are difficult to sustain because of soils and the nature of the use. OGT is currently evaluating these trails.

Shangri-La Equestrian Trailhead Improvements
The feasibility of developing additional equestrian facilities at the existing Shangri-La equestrian trailhead (Map 8c) will be evaluated. Restroom facilities and water may be provided, and electricity may be phased in over time.

Florida Horse Park Realignment
The Florida Horse Park currently occupies 500 acres of the CFG. Establishing trail connections through this area is critical and cooperation of the Horse Park Authority is necessary for trail continuity and public utilization and enjoyment. The current alignment of the horse park within the Greenway make environmental restoration difficult (Map 8c). OGT would like to work with DACS and the Florida Horse Park to realign the horse park area to enhance trail usage and provide more options for restoration. This would benefit the potential value of the CFG as a wildlife corridor as well. Ideally, this would be accomplished by acquiring additional disturbed lands adjacent to the CFG's south border. This would provide more opportunity for trail connections and a wildlife corridor and provide additional buffer to the CFG. The lands to the south are primarily horse farms. OGT will also partner with the Authority to provide educational and interpretive materials and programs.

Vortex Freeride Area Trailhead
The Vortex Freeride Area is a heavily disturbed old mining site popular with bikers. OGT will develop a trailhead in the vicinity (Map 8c), probably in FY 2009-10. Facilities will include parking, permanent restrooms, potable water, and a law enforcement residence.

Trail Users Support Shop
CFG manages land along US 441 in Santos. OGT will consider designating a portion of this highway frontage for a concession that could provide goods and services to the CFG trail users (Map 8c). Since this is highway frontage, environmental impact would be minimal. A public/private partnership is anticipated. As part of the evaluation process, OGT will consider the availability of existing suitable structures on nearby private property that would be appropriate for a support shop.

Santos to Baseline Trail (paved)
A paved multi-use trail is planned from Santos to the Baseline Trailhead (Map 8d). The feasibility of a parallel equestrian trail is being considered. Environmental impact would be low, since the trail would be located on rural pasture and ruderal lands. FDOT has provided funds for a concept study. Anticipated partners include FDOT and Marion County. The timeframe for completing is estimated at five to seven years. .

Ocklawaha River Valley Region

Marshall Swamp to Rodman Multi-use Trail Corridor (natural surface)
Continuous land-based trails on the CFG do not extend north of Marshall Swamp. It is highly desired to extend one or more natural surface trails northeast from Marshall Swamp to Deep Creek/Rodman Reservoir area (Maps 8d, e, f). Potential partners include the Florida Park Service and the US Forest Service. A specific route for this trail has not been defined. The Silver River State Park management plan includes plans for a suspension footbridge across the Silver River; this could serve a role in the trail. Northeast of Silver River State Park, outparcels on the west side of the Ocklawaha River make trail placement on this side of the river difficult. However, FDOT is planning to replace the Sharpes Ferry Bridge on CR 314 and expand the current two-lane bridge over SR 40. OGT can partner with FDOT and Marion County on a plan to have a trail cross to the east side of the Ocklawaha. On the east side of the Ocklawaha, the US Forest Service/Ocala National Forest would be a natural partner for a trail when OGT lands are unsuitable or have gaps. An equestrian trail serving these same areas will be evaluated. A trail south from Sharpes Ferry to Sunnyhill Restoration Area, which is managed by the SJRWMD, would also be part of this trail system.

Ocklawaha Paddling Trail with Camping
The feasibility of establishing a paddling trail on the Ocklawaha River and into Rodman Reservoir will be evaluated. The trail may be established with GPS points and maps, rather than posted signage (Maps 8d, e, f). If feasible, a system of primitive campsites may be established and designated.

Eureka Recreation Area
The proposed Eureka Recreation Area (map 8e) is a heavily disturbed borrow pit with extensive unsanctioned OHV activity. The feasibility of providing between 60 and 120 campsites, designed like the Florida Park Service module campsites, with potable water and permanent restroom facilities will be evaluated. Law enforcement residences would be included. If implemented, the USFS is an anticipated partner. The timeframe for developing this recreation area is estimated to be from five to 15 years.

Etoniah Basin Region

Kenwood Recreation Area Improvements
The existing dirt road at the Kenwood Recreation Area (Map 8f) will be paved and restrooms will be added. This ramp is heavily used by recreational and tournament fishermen. Restrooms will be designed to ensure protection of water quality, possibly through the use of advanced wastewater treatment. If feasible, the campground will be reopened if funds and staffing are available.

Etoniah Trailhead and Check Station
Approximately five acres, currently bedded pine plantation, will be utilized to provide a trailhead with a hardened surface for the Etoniah property (Map 8f). Facilities will be designed to accommodate horse trailers and other users. Fenced horse trailer parking and non-potable water will be provided. It will also serve as a game check station during the WMA hunting season. FWC is anticipated to be a partner in the operation of this facility, which will be completed in 2007.

St. Johns Loop South Equestrian Trailhead Improvements
The feasibility of providing additional equestrian facilities at St. Johns Loop South will be evaluated (Map 8f). Restroom facilities and water may be provided. Campground facilities may be developed.

Adjacent Land Uses

A wide variety of land uses are adjacent to the Cross Florida Greenway (Map 9). On its eastern end, major adjacent land uses include conservation lands (e.g., Caravelle Ranch WMA, Ocala National Forest and Rice Creek Conservation Area), pine plantations and uses with a more natural and rural character. Southwest of the Ocklawaha, the land use changes to a more suburban character. Although there are many horse farms and agricultural areas, large-scale developments are also in place. Especially west of I-75, some of these developments are immediately

adjacent to the CFG. Heading west, on the north side of CFG, agricultural uses are interspersed with development, while the south side is primarily conservation lands (Ross Prairie State Forest and Halpata Tastanaki Preserve) and some agricultural land. Around the city of Dunnellon, the CFG is hemmed in by development. Although some agricultural land use remains north and south of Lake Rousseau, numerous private residences line the shore. Throughout the length of the Greenway, especially west of the Ocklawaha River, the CFG is intersected numerous times by transportation and power corridors.

Potential Surplus Lands

OGT staff identified 10 tracts totaling 325 acres managed by CFG and within the Ocala National Forest as potential surplus lands not necessary for the CFG (Map 10d). The state has conducted some land exchanges with the U.S. Forest Service in the past, and these Ocala National Forest inholdings would be suitable for a similar transaction. It is not desirable to have these state-owned lands within the Ocala National Forest transferred to private ownership. As an interim measure, OGT will pursue a management agreement with the Forest Service whereby the Forest Service will manage the state-owned lands (now under lease to OGT) within the Ocala National Forest.

Except for those few parcels indicated as potential surplus, OGT wishes to retain all lands currently in the CFG. However, there are some privately-owned lands essential for continuity, management and access that are not in state ownership. If the only way to gain possession of these critical lands is to trade them for less-critical state-owned lands within the CFG, this may be a recommended approach. The situations and decisions should be evaluated on a case-by-case basis.

Prospective Land Acquisitions

Not all lands essential for the long-term protection, management and recreational use of the Cross Florida Greenway have been acquired. In considering these issues, OGT staff reviewed the current Greenway holdings, information prepared by the UF planning team and current Florida Forever project boundaries and used their knowledge of how the landscape is changing around the Greenway to identify optimum boundaries for the Greenway. Map 10 shows existing Greenway holdings, nearby managed areas, nearby Florida Forever projects and optimum boundaries for the Greenway.

The optimum boundary of the CFG identified by staff (Map 10) includes about 90,000 unacquired acres. These acres were placed in three categories: Priority 1, Priority 2, and remaining lands. Priority 1 lands are those that are essential for closing gaps in the CFG, especially east of Dunnellon and in the Santos area, and for providing a manageable width. Priority 2 lands are those that would provide a strong connection to Goethe State Forest, protect important lands near Marshall Swamp, fill in some private holdings between CFG and Ocala National Forest and provide for better management and access for holdings on the east and west sides of the Ocklawaha River. Lands that would contribute to the Greenway's role in north-south corridors on the east and west ends of the CFG were given special consideration. There are 4740 acres designated as Priority 1; 1000 of those acres are already in a Florida Forever Project. Priority 2 contains 42,675 acres, 17,000 of which are within existing Florida Forever Projects. The remaining 42,585 acres in the optimum boundary have not been assigned a priority. These lands would enhance the protection, management and recreational use of the CFG.

OGT is working to improve the CFG's configuration using means other than land purchases. As possible negotiations with adjacent landowners for swaps/exchanges that improve connectivity and manageability are proposed, OGT will review and consider them for the benefit of the State when feasible and within statutory constraints. For years, Marion County, through an informal arrangement, has been using 30 acres of the CFG for lawn waste disposal. This agreement will be formalized through a lease, and in exchange the county will give land important for Greenway continuity to the state. OGT is also subleasing three acres of former barge canal lands to Marion County for a recycle staging area for 10 years, and in exchange the Greenway will be given about 1.4 acres back that was used for a similar purpose. OGT will also work with Marion County and other governments and groups that are working to protect the natural quality of lands adjacent to the CFG through conservation easements and other means.

Identification of prospective land acquisitions is solely for planning purposes and not for regulatory purposes. A property's identification as a prospective acquisition is not meant to be used by any party or other government body to reduce or restrict the lawful right of private landowners. Identification of these lands does not empower or require any government entity to impose additional or more restrictive environmental land use or zoning regulations. Identification is not meant to be used as the basis for permit denial or the imposition of permit conditions.

Analysis of Multiple-Use Potential

The following actions or activities have been considered under the multiple-use concept as possible uses to be allowed on the greenway (Table 10). "Approved" uses are deemed to be in concert with the purposes for state acquisition, with the Conceptual State Lands Management Plan, and with DEP'S agency mission, goals and objectives. It does not mean that approved uses are suitable for all areas of the Greenway. "Conditional" means the use may be acceptable, but will be allowed only if approved through a process other than the land management plan development and approval process. "Rejected" means the item is not in concert with one or more of these various forms of guidance available for decision-making.

Table 10. Analysis of Multiple-Use Potential for Marjorie Harris Carr Cross Florida Greenway

Activity	Approved	Conditional	Rejected
Protection of endangered and threatened species	Y		
Ecosystem maintenance	Y		
Soil and water conservation	Y		
Hunting		Y	
Fishing	Y		
Swimming		Y	
Wildlife observation	Y		
Hiking	Y		
Bicycling	Y		
Horseback riding	Y		
Timber harvest		Y	
Cattle grazing		Y	
Camping	Y		
Apiaries			Y
Linear facilities		Y	
Off road vehicle use			Y
Environmental education	Y		
Citriculture or other agriculture			Y
Preservation of archeological and historical sites	Y		
(Other uses as determined on an individual basis)			

Timber harvest is intended to be used only for natural community management and restoration purposes. Hunting is allowed only in the established Caravelle Ranch and Gore's Landing Unit Wildlife Management Areas and on the Rodman Reservoir and Lake Rousseau for waterfowl. OGT can direct changes to the hunting areas, times and methods, but FWC hunt management actions are also dependent on FWC rule changes. Motorized vehicle use (not including boats), other than for management purposes, is not compatible with the resources and uses of the CFG. Limited exceptions may be made for hunting, when vehicles must be operated only on named or numbered roads Any other motorized vehicle use must be approved in advance by OGT. Limited OHV use on the CFG was considered during the drafting of this management plan but is not recommended because of the low level of enforcement personnel on the CFG and the availability of more than 120 miles of marked, enforced OHV trails on the adjacent Ocala National Forest. No cattle grazing is allowed on the CFG at present, but may be allowed as a

temporary management tool to control vegetation growth in areas awaiting restoration. In this case, special precautions will be required to avoid introduction of non-native invasive species from grazing.

Proposed Single- or Multiple-Use Management

The former barge canal lands are defined in statute as multiple-use lands [Ch. 253.7825(1)]. OGT intends to manage this portion of the CFG as such. The statute further states that "it is appropriate, with the approval of the department, to allow more fishing docks, boat launches, and other user-oriented facilities to be developed and maintained by local governments." The statute specifies that "A horse park-agricultural center may be constructed by or on behalf of the Florida Department of Agriculture and Consumer Services on not more than 500 acres of former canal lands." [Ch. 253.7825(4)(a)]. However, "Those activities and structures associated with the horse park-agricultural center which are determined by the greenways managing entity to be inappropriate uses of greenways lands shall be sited on lands outside the greenways boundary." [Ch. 253.7825(4)(d)]. Other than proposed facilities described in this plan, no other user-oriented facilities are anticipated to be developed and maintained by local governments. In addition, existing uses of leased lands will be evaluated to determine if they are appropriate to conserve and protect the natural resources and scenic beauty of the CFG. The initial management lease for the former canal lands has been amended 20 times to include other lands, mostly acquired with Preservation 2000 and Florida Forever lands. These lands are being managed as multiple-use lands, subject to the funding legislation and acquisition purposes.

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IV. Management Issues, Goals and Objectives

Central to the management of individual state greenways are the mission of the Office of Greenways and Trails (OGT), the land acquisition program(s) through which a specific greenway was acquired, and the original intent for acquiring the project. These are described below, followed by a summary of accomplishments for this greenway since acquisition. Goals and objectives for the Marjorie Harris Carr Cross Florida Greenway for the next 10 years are addressed in the next section. Each management subject area is addressed, starting with a brief description of pressing issues, if any. A discussion of needs for the subject area follows, and the intended management direction and activities are described. At the end of each section the pertinent goals and objectives are listed. Many of the goals and objectives apply to more than one subject area. In this case, the goals and objectives are placed in the subject area that seems most appropriate. Goals and objectives for all subject areas are also presented in one table in Appendix 8.

Program Framework and Goals

The Office of Greenways and Trails' (OGT) mission is "Working to establish a statewide system of greenways and trails for recreation, conservation and alternative transportation purposes." OGT's efforts are guided by its statutes, rules, and a legislatively adopted plan titled "Connecting Florida's Communities". The Legislature intended that the greenways and trails "will serve to implement the concepts of ecosystems management while providing, where appropriate, recreational opportunities, including, but not limited to, horseback riding, hiking, bicycling, canoeing, jogging, and historical and archaeological interpretation, thereby improving the health and welfare of the people." (Chapter 260, FS).

The Cross Florida Greenway will be managed to provide greenway and trails recreation opportunities without damaging the natural and cultural resources of the property.

Qualifications for state designation

The Cross Florida Greenway was acquired through four means: transfer of former Cross Florida Barge Canal Lands from the federal government to the state, acquisition of lands through Preservation 2000 and Florida Forever programs, donation of lands, and leases with private and public owners. It provides greenway and trails recreation opportunities without damaging the natural and cultural resources of the property. The CFG is intended to serve as a critical component of the comprehensive statewide Greenways and Trails System. Chapter 253.781, Florida Statutes, established the former barge canal lands as the Cross Florida Greenways State Recreation and Conservation Area. As such it qualifies as a state Greenway.

Manager

The Florida Department of Environmental Protection, Office of Greenways and Trails (OGT) is the lead manager of the Marjorie Harris Carr Cross Florida Greenway.

State Greenway Rules and Regulations

Chapter 62S-3, FAC, Operations, Activities and Recreation on Lands Under the Management of the Office of Greenways and Trails, supplements the policies, standards and criteria provided by Chapter 18-2, Management of Uplands Vested in the Board of Trustees. The management goals of state greenways focus on implementing the concepts of ecosystems management while providing recreational opportunities where appropriate. Appendix 9 provides the full text of the rules.

Desired Future Conditions

By 2057, the Marjorie Harris Carr Cross Florida Greenway exceeds the original vision. Through an enthusiastic and determined effort, the uplands and wetlands of the Greenway are now restored natural communities, not just in appearance, but in function as well. The Ocklawaha River is once again free-flowing, and its formerly submerged floodplain is flourishing. The remnant scrub, sandhill and flatwoods in place when the state assumed ownership are flourishing and expanding due to a well-designed and executed prescribed burn and restoration regime. Formerly disturbed areas are well into a program that includes restoration of groundcover as well as overstory.

The Greenway extends beyond its original barge canal boundaries through purchases made possible by Preservation 2000, Florida Forever and Florida 2100, the state's century-long conservation lands acquisition and restoration program. The north-south wildlife corridors on the Greenway's east and west ends are a reality, with strong continuous, ecological connections extending on the eastern end from the Wekiva/Volusia/Ocala National Forest complex through the Greenway to Camp Blanding, Osceola National Forest, Pinhook Swamp and the Okeefenokee Swamp. On the western end, the Greenway is an integral connector between the Chassahowitzka/Crystal River complex and the Goethe/Waccasassa/Suwannee complex to the north. The central part of the Greenway also sustains important natural communities and provides a movement corridor.

The restoration and expansion of the Greenway is due in part to the passionate support of it user groups, both residents and visitors. By having resource-based recreation available in an environmentally sensitive manner, the people using the Greenway have come to understand and appreciate the ecological importance of sound environmental stewardship. User groups and neighborhoods near the Greenway participate in the Adopt-a-Mile program. In this initiative, people volunteer not just to improve the facets of the Greenway that they use, but all aspects of the Greenway in a mile-long segment. From trail maintenance to interpretive materials to ecological restoration and monitoring, these volunteers bring an enthusiasm and energy that sustains and enhances the Greenway.

The Greenway is a world-class trail destination. Recognizing the ecological and economic benefits of the Greenway, governments, non-profits and private enterprise have partnered to extend the Greenway trail system from St. Augustine on Florida's east coast to Yankeetown on the west coast – truly The Cross Florida Greenway. Trail systems have been planned and re-aligned to provide an enjoyable nature-based experience while protecting the ecological integrity of the Greenway. Visitor centers at I-95, I-75 and US 19 are popular locations for people to learn about the Greenway and its environments and to launch their own expeditions on the Greenway. Many take advantage of the shuttle services between various access points. The scrub adjacent to I-75 is a popular brief stopover for I-75 travelers, with people attracted by the scrub jay and then learning about Florida's scrub and sandhill ecosystems. Throughout the trail system, interpretive materials are in place to explain the ecosystems intersected by the Greenway as well as the history of the Greenway, from pre-historic to present times.

The Greenway is an integral part of the Florida National Scenic Trail. The Greenway provides a major multi-use trail corridor linking Ocala National Forest to the Withlacoochee State Trail near Dunnellon. The trail extends from Dunnellon through Goethe State Forest to the Nature Coast Greenway system, with another spur paralleling Lake Rousseau to the coast and then connecting north and south along the coast. Loop trails are also in place for the more casual hikers. Equestrians continue to enjoy the trails the Greenway offers, from horseback to horse wagon trails. The Santos area continues to attract bike riders from around the world who want to experience the bike trail system and the Vortex Freeride area. The bike trail system, like the hiking trail, extends the length of the greenway, with guided and self-guided tours available. The ecological/historical bike tour has proven popular, with expert guides explaining the intertwined ecology and history of the area, from prehistoric people's interaction with the various ecosystems, to Spanish influence, to the steamboat period along the Ocklawaha to the man and machine digging of the 1930s ship canal. Private campgrounds and bed and breakfast inns provide lodging along the route, with numerous side trips available.

Hunting and fishing remain popular. The Caravelle Ranch and Ocklawaha River Wildlife Management Areas provide a respite from a developing Florida and allow hunters a taste of what Florida used to be. The Ocklawaha River continues to produce trophy bass, and people still enjoy the simplicity of catching panfish with their kids.

The paddling trails of the Greenway continue to be popular. Paddlers can enter the Ocklawaha from a variety of access points, including the St. Johns River. Public ownership of the Ocklawaha River banks allows paddlers to immerse themselves in the experience of an undeveloped river and floodplain. Some choose to paddle upstream from the St. Johns River to the Silver River; others prefer the easier, downstream paddle originating at Silver Springs. On the western end, some paddlers venture from the Withlacoochee River onto Lake Rousseau's paddling trails. Others venture inland from the Florida Circumnavigation Paddling Trail, up the Withlacoochee River to the Inglis Bypass Spillway. Using the spillway portage, they then paddle through Lake Rousseau to the Withlacoochee.

The annual Cross Florida Greenway Tour draws celebrants from across the United States, as well as from other countries. Numerous people participate in the varied trail activities. The Cross Florida Greenway Ultra Marathon, with biking, running, swimming and paddling, has become a recognized international event. CFG staff are planning events for the 50th anniversary of the designation of the Ocklawaha River as a National Wild and Scenic River.

Major Accomplishments for Marjorie Harris Carr Cross Florida Greenway from 2000-2006

Following are some major accomplishments for the Marjorie Harris Carr Cross Florida Greenway from 2000 through 2006:

- Natural communities
  - 7800 acres burned
  - 1975 acres planted in longleaf pine, 125 acres in wiregrass
  - Contracted FNAI to map existing and historical natural community coverages of CFG and to make recommendations on burn units
- Rare/endangered species
  - Contracted FNAI to conduct surveys of rare plant and animal species and to provide management recommendations
  - Installed and subsequently upgraded manatee protection devices on Rodman Reservoir water control structures
  - Initiated restoration activities in scrub to improve scrub jay habitat
- Invasive non-native species
  - Contracted FNAI to survey invasive non-native plant species and to make recommendations
  - Contracted University of Florida Weed Science Department to develop individual weed control plans and guidelines
  - Annually requested and received funding to treat invasive non-native plant species
  - Instituted a systematic invasives control program
  - Hired contractors to perform invasives control work
  - Treated 828 acres for invasive non-native species, including 453 retreatment acres
  - Conducted two drawdowns of Rodman Reservoir for ecosystem restoration
- Recreation
  - Installed visitor counter mechanisms on trails and facilities
  - With partners, provided recreation access for an estimated 2 million visitors each year
  - Established Withlacoochee Bay Trail (multi-use paved and equestrian use)
  - Developed approximately 15 miles of limerocked trail (much of it improvement of existing trails, roads and firelines), 10.5 miles of paved multi-use trail, and 15 miles of singletrack bike trails, 10 miles of Florida National Scenic Trail and 5 miles of loop hiking trail
  - Encouraged formation of Greenway Equestrians group and began process of improving equestrian trail system
  - Implemented plan to better manage bike trails in the Santos and Vortex area, consolidating trails, improving sustainability, navigability, and risk management and constructing Vortex freeride area and skills development area at Santos Trailhead
  - Santos Trail System designated as an "Epic Ride" by the International Mountain Biking Association
  - Volunteers
    - Actively encouraged volunteers to help with CFG management

  - Began annual multi-user group trailwork parties and volunteer appreciation picnics to celebrate National Trails Day and National Public Lands Day
  - Volunteers contributed more than 11,000 hours to CFG lands, including subleased areas, in 2006
- General management
  - Conducting surveys to define CFG boundaries and identify and resolve encroachments
  - Negotiated lease with Felburn Foundation for the Felburn Park property
  - Received Dull property donation from the Felburn Foundation
  - Construction of I-75 land bridge completed in 2000 and 49th Ave. tunnel completed

Goals and Objectives for the Cross Florida Greenway – Fiscal Years 2007-08 through 2016-17

Goals and objectives were developed specifically for the Marjorie Harris Carr Cross Florida Greenway based on the purposes for which the lands were acquired, the condition of the resources present, and management issues for the property. The goals and objectives presented here reflect programmatic goals and the ideas of OGT personnel in charge of managing and protecting the area, as well as input from cooperative managers, user groups and other stakeholders from outside DEP. The agency believes the goals and objectives to be consistent with the various forms of guidance provided to managers.

Management issues related to the resource categories described in Chapter II, as well as other important management topics, are discussed below in separate sections. Within each section, approaches for dealing with these issues are described. At the end of each section, goals and objectives related to those issues are listed, as well as other objectives essential to the section. Appendix 8 presents all the goals and objectives in a table, along with timelines and, if available, estimated costs to accomplish management actions on the greenway, as required by Florida Statutes. Objectives are listed in priority order under each goal. Although the goals and objectives are separated according to resources and issues, this does not necessarily mean that the manager will undertake separate tasks to achieve each objective. For example, trail planning for the different types of users will often be done at the same time, especially in the same geographic area.

The ability to implement the specific goals and objectives identified in this plan is dependent upon the availability of funding resources for these purposes. Many of the objectives here will require funding in excess of the level of funding that the Cross Florida Greenway currently receives. In addition to requesting additional funds through the normal budgeting process, CFG staff will continue to pursue other potential means to accomplish objectives, including grants, funds from other state agencies, in-kind services and volunteers. However, CFG staff should not be expected or required to accomplish those objectives that require means greater than the regular budget.

Resource Management and Protection

Soil Management

Few soil erosion problems have been noted on the greenway, but the property has not been comprehensively assessed for erosion. If erosion problems are noted, they will be addressed by the least disruptive means possible. Erosion control will be considered as trails and other facilities are planned.

Goal 1: Manage soil to reduce and prevent erosion
Objective 1a: Assess property to identify major erosion areas
Objective 1b: Implement erosion control measures such as berms and plantings
Objective 1c: Install erosion control structures as recommended by design & engineering surveys

Hydrology/Water Management

The hydrological disruptions on the CFG range from woods roads and bedded pine plantations to dams and locks. A comprehensive hydrological restoration plan including an inventory of hydrological disruptions and recommended management actions is needed. This plan may need to separate hydrological restoration and mitigation actions related to things such as woods road and bedded pine plantations from the dams and locks issue, which is far more controversial and costly. This hydrological restoration plan is likely to be an integrated part of the comprehensive natural community restoration plan mentioned in Goal 3.

The 2003 UF study provides a "walk-through" of the CFG. Proceeding from east to west, the plan makes general and site-specific recommendations for management and restoration. UF formulated the recommendations based on multiple sources, including the 1992 Management Plan, discussions with OGT staff, and public input. The UF plan will be consulted when preparing the overall hydrological restoration plans for the CFG.

Rodman Reservoir does not have comprehensive water operations and emergency flood operations plans. The existing documents need to be updated to ensure the public's safety. Some of the current operation documents are included in Appendix 4.

Restoration of the Ocklawaha River will proceed if Legislative funds are appropriated.

OGT will work to restore water quality of the CFG and will consider water quality in all management decisions and actions. CFG staff will work with water regulatory agencies, other managing agencies and adjacent landowners to restore water quality. Access points and visitor use sites, such as bank fishing locations, will be evaluated for water quality impacts and re-designed or closed if environmental impacts are unacceptable.

Goal 2: Maintain/restore natural flow ways and protect and restore water quality
Objective 2a: Resolve emergency or critical small scale hydrological disturbances
Objective 2b: Update the Rodman Reservoir shoreline management plan, water operations plan and emergency flood operations plan
Objective 2c: If funding is received, implement the Partial Restoration Plan for the Kirkpatrick Dam/Ocklawaha River
Objective 2d: Work to restore water quality of water bodies on the CFG through CFG actions and cooperation with regulatory agencies, other managing agencies and adjacent landowners
Objective 2e: Conduct a comprehensive inventory of hydrological changes to the property (bedding, trams, ditching, fire lines, roads, etc.) and their impacts and prepare and implement a comprehensive hydrological restoration plan (this may be part of the overall natural community restoration plan)
Objective 2f: Restore major hydrological alterations on the property (5%/year)
Objective 2g: Ensure that planned as well as unsanctioned trails do not cause runoff and water quality problems

Natural Communities Management

OGT manages the natural communities on site with a holistic, ecosystem based approach. Prescribed fire is a major management tool, although burning efforts need to be greatly increased. Some information is available concerning the current and former status of natural communities on site, but additional information is needed. FNAI is under contract to delineate the current natural community boundaries and to provide a map of the historical natural community distribution. FNAI will also describe composition and condition of the natural communities and provide management recommendations and priorities. Preliminary fire unit boundary recommendations will also be included for those areas for which OGT has not established burn units.

After FNAI completes its work, a comprehensive restoration plan for CFG will be prepared if funding is available. The plan will consider the processes as well as the components of the ecosystems. Such aspects as vegetation structure and composition, hydrology, soil condition, fire, animal species, listed species, reintroduction of native species, cultural resources, and control and eradication of invasive non-native species will be addressed in the plan. Specific goals and objectives, an implementation schedule and monitoring will be part of the plan.

Although no cattle graze on the CFG at the moment, OGT may allow cattle grazing as a temporary management tool in certain areas in need of restoration. Some areas were timbered recently prior to the state acquiring the lands. These lands are in need of restoration. Pine is regenerating, but it is at the stage that prescribed burns would cause an unacceptable level of pine mortality. Cattle grazing may be used as an interim measure to control growth of

some vegetation. Measures will be taken to prevent introduction of non-native invasive species by the cattle's activities.

Sandhill, scrub, mesic flatwoods, wet flatwoods and hydric hammock are OGT's priorities for restoration and management efforts on the CFG. Red oak woods will also be strongly considered, based on FNAI's analysis of historical vegetation. OGT planted 100 acres of longleaf pine and wiregrass in Ocala-area improved pasture in 2007. Scrub jays will be surveyed in 2007-2008 and scrub management will be adjusted depending on jay presence or absence. Fire and mechanical treatment of scrub is anticipated in the next two years. A 650-acre wildfire in Etoniah-area mesic/wet flatwoods will be reforested in 2008 after some hydrologic restoration to the bedded areas. There are also plans to reforest 1500 acres of clearcut Etoniah mesic flatwoods. Thinning is planned for 3162 acres of pre-merchantable slash pine. Specific management objectives for hydric hammock will be developed after the FNAI natural community survey.

Until the FNAI natural community contract is complete in 2008, the following desired future conditions and proposed management actions for the natural communities will be used to guide management decisions and actions for priority natural communities. These descriptions are adapted from the approved Ross Prairie State Forest management plan and have been modified in places to reflect CFG conditions. This state forest is adjacent to the CFG and contains many similar resources. (See also Listed Species Management, Invasive Non-native Species Management, and Fire Management, below).

Sandhill

Desired Future Conditions

The sandhills of the CFG will be represented by rolling, sandy hills dominated by longleaf pine and wiregrass. Scattered, uneven-aged longleaf pine will be the primary overstory component. There will be at least three distinct age classes of longleaf pine. Mid-story species found here will be bluejack oak, turkey oak, post oak and sand live oak. The primary ground cover will consist of wiregrass with some representation of winged sumac, partridge pea, runner oak and sandhill spiny pod. Animal species expected to be found here would include white-tailed deer, wild turkey, gopher tortoise, eastern indigo snake, Florida pine snake, eastern diamondback rattlesnake, bobwhite quail and Sherman's fox squirrel.

Proposed Management to Achieve Desired Future Conditions

For those sandhills with intact groundcover, the typical appearance of the upland sandhill longleaf pine/wiregrass plant community will be achieved by a carefully planned prescribed burning program. Burns scheduled at 1-3 year intervals, utilizing both winter and growing season burns, will allow the natural mix of sandhill species to develop. In some cases, herbicides or mechanical treatments may be necessary to control oaks and to achieve the natural species component.

All silvicultural treatments should be directed toward developing the desired uneven-aged longleaf pine component. No areas of sandhill are in need of thinning in the near future. Some supplemental planting may be necessary to achieve the desired basal areas and to provide enough fuel (pine needles) to carry fire. In some of the higher-quality sandhills, there appear to be sufficient mature pines to provide regeneration of any open areas created and the planting of longleaf pine seedlings will not be needed.

For the previously disturbed sandhills, prescribed burns at 3-4 year intervals will be needed to maintain the understory vegetation. Some oaks may need to be girdled or treated with herbicides. Weed fields will be a problem to successfully burn. Mowing or chopping may be required to prepare the site for burning. Bahia grass will continue to be the dominant ground cover in most of the area, with weeds and briars covering the remainder.

As the longleaf pine reach merchantability (15-20 years old), early improvement thinnings should commence. These thinnings should reduce the number of trees per acre and maintain growth rates for the remaining trees. Additional wildlife openings may be incorporated into these thinnings, if needed. Additional thinnings will be required at 7-10 year intervals to obtain the desired widely spaced stands. As these trees reach 25-30 years of age, natural regeneration should be encouraged to achieve the multi-aged appearance. It may be necessary to utilize chemical or mechanical means to provide an adequate seed bed for the longleaf pine and promote native ground cover.

Scrub

Desired Future Conditions

An important management goal for the scrub is to promote habitat for the Florida scrub jay. In areas intended for scrub jays, the shrubs will be maintained by fire or other means as feasible at a height not to exceed 10 feet. Some scrub will be at the optimal height for scrub jays, four to six feet. These scrubs will interface with the adjacent scrubby flatwoods and sandhills, their boundaries defined primarily by fire. Consideration will also be given to managing for sand pine scrub. The typical scrub species of sand live oak, myrtle oak, Chapman's oak, rusty lyonia, Florida rosemary and saw palmetto will be present. Rare species, such as long-spurred mint, longleaf crabgrass, Ashe's savory and Etonia rosemary will be present. Animal species expected in the scrub in addition to the Florida scrub jay will be gopher tortoise, fox, bobcat, white-tailed deer and a number of bird species.

Proposed Management Activities to Achieve Desired Conditions

Some restoration efforts have taken place on the western and I-75 scrubs in the last several years. CFG intends to burn portions of the western end that CAMA chopped, and OGT will chop more of this scrub as well as scrub on other parts of the CFG. Burns will be introduced to the other scrubs as well, conditions permitting. The proximity of the I-75 scrub to I-75 makes burning very difficult, and additional mechanical restoration techniques may have to be substituted for burning. The status of scrub jays will be considered as management is planned for each site. After restoration, the scrub will be maintained by prescribed fire so a portion is always at optimal height (4' - 6'). The fire return interval will be determined by adaptive management. Initially the interval is expected to be 6-20 years.

Mesic Flatwoods/Wet Flatwoods

Desired Future Conditions

The flatwoods will have an open to relatively open canopy forest of pines; in the wetter flatwoods, cabbage palms may make up the canopy. The understory will vary from thick shrubby understory in some wet flatwoods to no understory and a dense ground cover of herbs and shrubs. Typical plants include longleaf pine, slash pine and dwarf wax myrtle. In the more mesic conditions, typical plants include St. Johns-wort, dwarf huckleberry, fetterbush, stagger bush and blueberry. In the wetter flatwoods, typical plants include pond pine, sweetbay, spikerush, beakrush, sedges, gallberry, titi and saw palmetto. Animal species expected here include the white-tailed deer, fox, bobcat and numerous bird species.

Proposed Management Activities to Achieve Desired Future Conditions

Hydrologic restoration, reforestation, thinnings and prescribed fire will all be necessary to restore and maintain the flatwoods, many of which were bedded and clearcut in the Etoniah area. Eventually, a fire frequency of every 1-4 years will be needed in order to maintain the flatwoods. Fires will be allowed to burn into the adjacent communities to create a natural transition zone.

Goal 3: Restore, maintain and protect natural communities

Objective 3a: Continue natural community management activities, including prescribed burning and planting, with priority given to scrub, sandhill, mesic/wet flatwoods and hydric hammock as described in the CFG restoration priorities document (see Goal 8 also)

Objective 3b: Prepare a revised GIS map and description of FNAI natural communities and disturbed areas on the property

Objective 3c: Identify historic vegetative community types of the property in order to restore habitats to the proper natural community composition.

Objective 3d: Develop quantifiable vegetative management objectives for the property to ultimately achieve desired future conditions for the area's natural communities

Objective 3e: Develop and implement a comprehensive natural community restoration plan with specific goals and objectives, an implementation schedule and monitoring program

Objective 3f: Restore disturbed areas, setting priorities based on rarity and quality

Native Species Management

A variety of surveys have been conducted regarding native species on and near the CFG, some in connection with barge canal activities. No recent comprehensive native species surveys have been conducted. Given the greenway's

proximity to the University of Florida, some faculty or students may be interested in conducting some of the surveys. It is intended that the ecosystem management approach will suit the needs of native species, and no separate management efforts will be necessary for individual native species. (See also Research and Monitoring and Partnerships and Regional Coordination, below)

Goal 4: Maintain and protect the native species
Objective 4a: Manage native plants and animals through proper natural community management
Objective 4b: Implement species-specific management actions as necessary according to objective, scientific standards

Listed Species Management

In general, OGT manages natural resources at the ecosystem level, with the assumption that proper management of ecosystems will provide for the needs of the myriad species that are part of each ecosystem. However, in certain situations this may not be true. An example is a natural community in poor condition, perhaps in conjunction with extreme circumstances such as drought. In this case, some species may not fare well and the continued survival of a species in the Greenway may require specific efforts. OGT manages specifically for listed species as needed, in conjunction with ecosystem management activities.

OGT employs this ecosystem management approach on the CFG and will continue to do so. In addition, OGT will incorporate species-specific recommendations made by FNAI based on the FNAI's surveys of rare plant and animals on the CFG. Table 11 lists the FNAI-tracked species reportedly on the CFG for which FNAI provided management recommendations.

Generally, FNAI recommended re-routing trails as necessary to reduce human disturbance to rare species, control of invasive non-native plant species, prescribed fire in the pyrogenic natural communities during growing season, hydrological restoration, and reduction of the armadillo and hog populations. Prescribed fire is probably the most important management activity. OGT will also give special management consideration to the 10 sites that FNAI identified as significant for rare plant species (sites are listed in Chapter II).

FNAI (2005) also recommended surveying of new acquisitions for rare plants and that a few selected areas be surveyed more intensively, especially as land management of sites changes such as with the reintroduction of prescribed fire or with the eradication of invasive species. Some of the sites in which further survey work would be beneficial include the following:

1. The Diggings – ferns and bryophytes could be more thoroughly surveyed particularly among the numerous rock faces that occur in the Diggings.
2. Caravelle Ranch West – Given this site's close proximity to Deep Creek and the numerous wetlands that it has including the floodplains of four creeks, wet prairies, depression marshes, mesic flatwoods, and wet flatwoods, some of the rare wetland species documented in Deep Creek could also potentially occur here. The southern portion of Caravelle Ranch West also has a Scrub Island in which survey time was limited, and the initial visit indicated that the potential for rare plants is there.
3. Ocklawaha River – With the large expanse that the river covers, and the limited access points, more survey time would be beneficial. Areas south of CR 314 and between SR 40 and CR 316 along the Ocklawaha River floodplain should be surveyed for additional occurrences of pinkroot (*Spigelia loganioides*), angle-pod (*Matelea gonocarpos*), and Godfrey's privet (*Forestiera godfreyi*).
4. St. Johns River – The vastness of the floodplain and the access issues warrant more survey time of the St. Johns River.
5. Orange Springs Creek– The western portion of Orange Springs Creek that crosses CR 315 appears to have little disturbance and a high species diversity. At the time of the survey, the CFG boundaries were not clearly delimited for this site.
6. Sunday Bluff – An unnamed north/south Forest Service Rd. that is east of the Ocklawaha River, west of FR 67, and south of CR 316 was followed to gain access to the CFG floodplain. Natural communities are in good condition and show potential to have listed species.

These sites will be considered when additional rare plant surveys are planned.

Table 11. FNAI-tracked species reported by FNAI as present on the Cross Florida Greenway for which FNAI provided management recommendations

Scientific Name	Common Name	FNAI Global Rank	FNAI State Rank	FNAI Management Recommendations
AMPHIBIANS				
Rana capito	Gopher Frog	G3	S3	Protect non-fragmented mosaics of both the breeding and non-breeding habitat; prescribe burn and allow prescribed fires to burn through the isolated wetlands that gopher frogs use for breeding in order to deter hardwoods
REPTILES				
Drymarchon couperi	Eastern Indigo Snake	G3	S3	institute best management practices for xeric communities, including prescribed fire; post areas, especially roads, indicating that all snakes on the CFG are legally protected and should not be disturbed or harassed in any way
Gopherus polyphemus	Gopher Tortoise	G3	S3	xeric communities should be burned every 2-4 years with an emphasis on spring and summer burns
Heterodon simus	Southern Hognose Snake	G2	S2	prescribed burning of xeric communities; in overgrown areas, mechanical removal of oaks with minimal disturbance of the ground layer followed by fire
BIRDS				
Aphelocoma coerulescens	Florida Scrub-jay	G2	S2	frequent fire during the growing season to keep the scrub communities from becoming overgrown; if prescribed burning is not feasible, a gyro-mower could be used as a substitute
Aramus guarauna	Limpkin	G5	S3	avoid removal of vegetation from wetlands or permanent bodies of water, especially for the edges; avoid sources of pollution that could cause a decline in apple snail populations; monitor both apple snail and limpkin populations frequently
Charadrius wilsonia	Wilson's Plover	G5	S2	restrict human access to the spoil islands, particularly during the birds' breeding seasons, which are primarily from March – July; monitor and remove potential nest predators (e.g., raccoons) as needed
Eudocimus albus	White Ibis	G5	S4	avoid activities that destroy wetlands or other aquatic areas that could serve as nesting sites, such as willow islands and swamps
Haematopus palliatus	American Oystercatcher	G5	S2	restrict human access to the spoil islands, particularly during the birds' breeding seasons, which are primarily from March – July; monitor and remove potential nest predators (e.g., raccoons) as needed
Haliaeetus leucocephalus	Bald Eagle	G5	S3	protect nesting trees and a surrounding buffer from disturbance; maintain good water quality in order to support abundant freshwater fish upon which these birds feed
Pandion haliaetus	Osprey	G5	S3S4	protect nesting trees and a surrounding buffer from disturbance; maintain good water quality in order to support abundant freshwater fish upon which these birds feed
Sterna antillarum	Least Tern	G4	S3	restrict human access to the spoil islands, particularly during the birds' breeding seasons, which are primarily from March – July; monitor and remove potential nest predators (e.g., raccoons) as needed
MAMMALS				
Sciurus niger shermani	Sherman's Fox Squirrel	G5T3	S3	maintain relatively open longleaf pine ecosystems with frequent fire
OTHER ELEMENTS				
Bird Rookery		GNR	SNR	protect rookeries from tree removal, and protect wetlands in the area that may serve as foraging sites
PLANTS				

Arnoglossum diversifolium	Variable-leaved Indian-plantain	G2	S2	limit access to maintain quality of site and protect upstream creek and floodplain from disturbances
Carex chapmanii	Chapman's Sedge	G3	S3	limit access to maintain quality of site and protect upstream creek and floodplain from disturbances
Dicerandra cornutissima	Longspurred Mint	G1	S1	place under a regular prescribed burn regime, control exotic plants (especially *Rhynchelytrum repens*) and limit off road activity such as foot, horse, or vehicular traffic to designated trails
***Glandularia maritima*^**	Coastal Vervain	G3	S3	mow after flowering/fruiting season and avoid parking heavy equipment off the road
Gymnopogon chapmanianus	Chapman's Skeletongrass	G3	S3	limit access by closing the trail to vehicular traffic and avoiding parking heavy equipment off of the road
Matelea floridana	Florida Spiny-pod	G2	S2	control nearby exotic pest plant populations of *Albizia julibrissin* (mimosa), *Broussonetia papyrifera* (paper mulberry), and *Imperata cylindrica* (cogon grass)
Monotropsis reynoldsiae	Pigmy Pipes	G1Q	S1	Control ATV traffic and restrict ATVs from the area south of the paved road; eradicate nearby exotic pest plant populations of *Imperata cylindrica* (cogon grass) and *Rhynchelytrum repens* (natal grass)
Parnassia grandifolia	Large-leaved Grass-of-parnassus	G3	S2	limit access to maintain quality of site and protect upstream creek and floodplain from disturbances
Pecluma dispersa	Widespread Polypody	G5	S2	Remove competing exotic plant *species Lygodium japonicum* (Japanese climbing fern) and *Pteris vittata* (Chinese brake fern) by hand-pulling and digging rather than herbicide application to avoid injuring nearby desirable species; pedestrian, equestrian, and bicycle traffic should be restricted to marked trails
Pecluma plumula	Plume Polypody	G5	S2	Remove competing exotic plant *species Lygodium japonicum* (Japanese climbing fern) and *Pteris vittata* (Chinese brake fern) by hand-pulling and digging rather than herbicide application to avoid injuring nearby desirable species; pedestrian, equestrian, and bicycle traffic should be restricted to marked trails
Pecluma ptilodon	Swamp Plume Polypody	G5?	S2	limit pedestrian, equestrian, and bicycle traffic to the main trail and to stabilize nearby bank erosion
Phyllanthus liebmannianus ssp. ***platylepis*^**	Pinewood Dainties	G4T2	S2	road should be gated to prevent excessive traffic
Pteroglossaspis ecristata	Giant Orchid	G2G3	S2	Control ATV traffic and restrict ATVs from the area south of the paved road; eradicate nearby exotic pest plant populations of *Imperata cylindrica* (cogon grass) and *Rhynchelytrum repens* (natal grass)
Salix floridana	Florida Willow	G2	S2	limit access to maintain quality of site and protect upstream creek and floodplain from disturbances
Sideroxylon lycioides	Buckthorn	G5	S2	limit access to maintain quality of site and protect upstream creek and floodplain from disturbances
Spigelia loganioides	Pinkroot	G2Q	S2	limit access to maintain the quality of the site and eradicate exotics such as *Imperata cylindrica* (cogon grass); in disturbed areas population, mow after the plants have set seed
Stylisma abdita	Scrub Stylisma	G3	S3	institute regular prescribed burn regime

OGT will conduct a survey for scrub jays on CFG. OGT will consider introducing scrub jays into suitable, unoccupied habitat. Scrub jay experts will be consulted to determine if this is advisable. If scrub jays are to be introduced, OGT will coordinate with permitting agencies and authorities to accomplish this.

OGT will continue to allow relocation of gopher tortoises to the CFG and has draft guidelines for relocation of gopher tortoises to the CFG. Under the draft guidelines, tortoises to be introduced into an existing population are tested for upper respiratory tract disease (URTD); if the test is positive, the tortoises is not relocated into an existing population but may be located in unoccupied habitat. As of March 2007, FWC is revising its management plan for gopher tortoises. When the FWC plan is finalized, OGT will redraft its relocation guidelines. The OGT guidelines may be stricter than the FWC management plans because the OGT guidelines address the tortoises on state-owned lands. Until the guidelines are finalized, decisions will be made on a case-by-case basis, and FWC will be consulted for recommendations. The OGT guidelines will also address post-relocation monitoring.

Tortoises will be considered in the fire management plan. Fragmentation of tortoise habitat will be considered, and the fire program will be planned to provide herbaceous forage for the tortoises in suitable areas. It is likely that tortoises will become more visible and increase in number with an established fire program.

The presence of listed species will be considered when trails are being designed and fire management units are established.

Goal 5: Maintain and protect the listed species
Objective 5a: Survey property for scrub jay and incorporate information into scrub management planning
Objective 5b: Prepare and implement gopher tortoise relocation guidelines for the property
Objective 5c: Prepare and implement a listed plant species management plan
Objective 5d: Survey listed plant species and assess their population requirements and provide information to FNAI
Objective 5e: Prepare and implement a listed animal species management plan
Objective 5f: Survey listed animal species and assess their population requirements and provide information to FNAI

Invasive Non-native Species Management

OGT will continue coordinating with other agencies to control invasive non-native species and will continue to apply for funding from available sources. OGT will also coordinate with local governments that are developing invasive non-native species management plans and will make OGT's plans and information available to them. Comprehensive inventory of invasive non-native plant species is planned on a regular basis.

OGT plans to develop a site weed management plan modeled after a Nature Conservancy template. The site weed management plan includes sections such as description of management goals, weed management plan implementation schedule and annual costs and workplans. The control methodologies will be a section of the plan as well. The Nature Conservancy also suggests following an adaptive management strategy for weeds. This strategy is made up of 6 steps. 1) Establish conservation targets and goals. 2) Identify and prioritize species/infestations that threaten targets and goals. 3) Assess control techniques. 4) Develop and implement weed management plan. 5) Monitor and assess impact of management actions. 6) Review and modify.

Goal 6: Eradicate invasive non-native species or maintain at the lowest practical level
Objective 6a: Continue to coordinate with DEP Bureau of Invasive Plant Management on the funding and operation of an invasive non-native plants control program
Objective 6b: Continue to coordinate with DOT to eradicate cogon grass and other shared invasives
Objective 6c: Develop a site weed management plan modeled after a Nature Conservancy template
Objective 6d: Conduct a comprehensive inventory of invasive non-native plants on the property
Objective 6e: Continue to reduce/eliminate populations of feral animals by establishing programs as needed.

Problem Native Species Management

No native species are reported as being a problem on the site.

Forest Resources Management

An update of the timber assessment of the property is planned, and the results of that will be considered when restoration and management plans are being prepared. Most forest resources management-related objectives are in the Natural Communities section.

Goal 7: Manage forest resources consistent with the purposes of this property, when the activities contribute to restoration management (see also Natural Community objectives)
Objective 7a: Update the Timber Management Assessment

Fire Management

Prescribed burning is intended to mimic the conditions provided by a natural burning regime and is the most important natural resource management action for uplands on the Greenway at this time. The desire is to restore and maintain plant community structure and biodiversity within the natural communities. Table 12 indicates the natural fire frequency for select natural communities on the CFG after fuel loads are at normal levels. The Greenway's 110 mile length shares a border with many residential areas, and the more than 20 transportation corridors intersecting the Greenway make smoke management particularly challenging. Approximately 80,000 vehicles travel the stretch of I-75 along the CFG each day. Burning adjacent to residential developments can aggravate neighbor's allergies and respiratory problems. All of this needs to be taken into account when planning burns.

Prescribed fire and smoke management become more complicated as additional development is placed adjacent to the Greenway. OGT staff will work with local planners and major landowners to ensure that future developments are aware of smoke management issues. OGT will work with developers and local governments to encourage incorporation of smoke easements into future development orders.

The CFG has a fire management plan with prescribed fire procedures (Appendix 7). All burns are documented with pre and post-burn photographs. A data base is maintained with prescribed burn histories. Currently 7800 acres of the CFG are in the prescribed burn program in 84 units ranging in size from 9.5 acres to 600 acres; 55 units are 100 acres or fewer. The size of the burn units is affected by such factors as roads and trails. Sanctioned and unsanctioned trails act as fire breaks that make burning difficult and less efficient. In some instances it can take one day to burn just 60 acres. Many more acres on the CFG need to be included in the prescribed burn program, and areas already in the program need to be burned on a regular basis to maintain community structure. Additional acres will be added to the prescribed burn program as burn capacity is increased. Information from the FNAI natural community mapping project, including FNAI's recommendations regarding new burn units, will be incorporated into the fire management plan.

From 2000 until 2006, the CFG had an agreement with the Division of Forestry to provide assistance in reaching CFG prescribed fire goals. In 2006 the forester who had been supervising the forestry operations transferred to CFG and took over the prescribed burning planning and monitoring. At this time OGT took complete responsibility for the CFG prescribed fire program. Over the last few years, CFG trained staff so that CFG now has 6 certified burn managers and 10 staff members who at least meet CFG's minimum training requirement of S190 Introduction to Wildland Fire Behavior and S-130 Wildland Firefighter Training. OGT wants to have enough trained staff and equipment in the future to have 3 independent prescribed fire teams, one in each of the three regions of the CFG. This would allow the CFG to conduct three burns simultaneously during good burning weather days.

All prescribed burns are conducted with authorization from the Department of Agriculture and Consumer Services, Division of Forestry (DOF). Wildfire suppression activities are coordinated between OGT and DOF. OGT staff usually brief homeowners associations in meetings prior to burn season. Prior to each burn, OGT notifies the fire services for the counties in which they are burning, and fire services notifies the sheriff's office.

Table 12. Natural Fire Frequency for Fire-Dependent Natural Communities on Cross Florida Greenway after Fuel Build-up is Reduced.
(Community acreage based on the 2003 UF study; fire frequency based on recommendations from FNAI)

Natural Community/ Cover Type	Acres	Natural Fire Frequency	Comments
sandhill	5,622	1-3 years	
scrub	113	6-20 years	varies depending on the type of scrub and the goals for management (whether for jays, other species). sometimes its better to manage for the target species. For one rare scrub mint, a return interval of 6-12 years
xeric hammock	97		allow fires to burn into this natural community type (NC) from surrounding communities.
Scrubby flatwoods		3-8 years	
upland mixed forest	9,536		Allow fires to move into this NC from surrounding areas.
upland pine forest		1-3 years	

maritime hammock			non pyrogenic
mesic flatwoods	13,542	1-3 years	
flatwoods	375		(see specific flatwood types for fire frequency)
wet flatwoods	10,012	2-4 years	
baygall	782	50-100 years	
bottomland forest	8,922		not pyrogenic, but maintain burned ecotones with upland pyrogenic NCs
floodplain forest	3,224		non pyrogenic
floodplain swamp			not pyrogenic, but maintain burned ecotones with upland pyrogenic NCs
hydric hammock			not pyrogenic, but maintain burned ecotones with upland pyrogenic NCs
basin marsh/marsh lake	4,593		fires in surrounding areas should be encouraged to burn into this NC, maintaining graminoid ecotones and vegetation structure. Burn with the surrounding NC
depression marsh	2,611		fires in surrounding areas should be encouraged to burn into this NC, maintaining graminoid ecotones and vegetation structure. Burn with the surrounding NC
dome swamp	664		fires in surrounding areas should be encouraged to burn into this NC, maintaining graminoid ecotones and vegetation structure. Burn with the surrounding NC
tidal marsh	1,454		burning seems to be beneficial in keeping shrub encroachment down, and in the panhandle rare orchids have been discovered after burning marshes. burning tidal marshes should take low priority compared to pyrogenic uplands. Apply fire on an experimental or "as needed" basis to control shrub encroachment.
freshwater tidal marsh			not pyrogenic, but maintain burned ecotones with upland pyrogenic NCs
herbaceous	108		
water	10,822		
disturbed	8,029		
Total	**80,506**	**99.8**	
The intended fire frequency is general and approximate; the prescribed burn plan will evaluate the on-site communities in more detail and re-assess the intended fire frequency. Natural communities without acreage denoted are reported as present on CFG by FNAI but were not listed in the UF land cover analysis.			

Goal 8: Conduct fire management operations to help restore and maintain natural communities and to mimic natural fire effects

Objective 8a: Provide necessary training and acquire equipment for fire prescription and suppression and be able to conduct three burns simultaneously

Objective 8b: Reduce fuel loads on the property to recommended levels on 5 to 15% of the burnable acreage on the property each year (combination mechanical reduction and prescribed fire)

Objective 8c: Restore vegetation structure and composition of pyrogenic natural communities through an aggressive prescribed fire program prioritized by natural community

Objective 8d: Accomplish the annual burn objectives listed in the burn plan

Objective 8e: Update and expand burn plan for the property and incorporate information from the natural community survey as it becomes available

Objective 8f: Realign and close trails as necessary to facilitate fire management

Objective 8g: Protect the property from wildfire

Objective 8h: Continue to notify neighboring landowners in advance of prescribed burns (via meetings, email, phone trees, signage, etc.)
Objective 8i: Continue to document all woods roads, trails, and firelines using GPS
Objective 8j: Continue to delineate fire management and rescue access routes and provide this information to the sheriff and emergency services

Mineral Resources Management

No specific management activities are necessary for mineral resources.

Cultural, Archaeological, and Historic Resources Management

The management of cultural resources is often complicated because these resources are irreplaceable and extremely vulnerable to disturbances. The advice of historical and archaeological experts is required in this effort. Actions that require permits or approval from DHR include development, site excavations or surveys, disturbances of sites or structures, disturbances of the substrate, and any other actions that may affect the integrity of the cultural resources. These actions could damage cultural resources.

OGT staff are coordinating with staff of the Florida Master Site File on the best ways to integrate updated information from the Master Site File into their regular and emergency management activities to help ensure that known archaeological and historical sites will be protected. Staff also follow the DHR-produced Management Procedures for Archaeological and Historical Sites and Properties On State-owned or Controlled Lands (Appendix 11).

Staff will also coordinate with DHR about the feasibility and desirability of proposing potentially eligible sites for inclusion on the National Register of Historic Places.

Goal 9: Survey, monitor and protect archaeological and historic sites on the property
Objective 9a: On an annual basis, provide field and planning staff with updated archaeological information from the Florida Master Site File
Objective 9b: Ensure that archaeological and historic sites known to CFG staff are represented in the FL Master Site File and that results of any archaeological and historical surveys of the property are provided to DHR on an annual basis
Objective 9c: Pursue funding to conduct a cultural survey of the CFG western coastal lands
Objective 9d: Patrol archaeological and historic sites on the property to prevent damage
Objective 9e: Coordinate with DHR on the feasibility of proposing one site per year for listing on the National Register of Historic Places
Objective 9f: Conduct all ground-disturbing activities in accordance with DHR guidelines
Objective 9g: Regularly assess the condition of archaeological and historic resources. Monitor the condition of important sites in poor condition using photopoints

Scenic Resources Management

OGT will investigate and consider the designation of scenic resource sites on the CFG. Potential areas include the Ocklawaha River, Deep Creek, the Gulf overlook, designated birding sites and barge canal structures. Designation of any sensitive resources, such as Deep Creek, will have to consider the possible impacts of increased visitation. Designation of the Ocklawaha River as a National Wild and Scenic River will be evaluated.

Goal 10: Protect the scenic resources of the property
Objective 10a: Identify the scenic resources of the property and potential threats to those resources
Objective 10b: Ensure that property operations do not decrease the scenic qualities of the property, unless necessary to protect the natural resources or visitor safety
Objective 10c: Evaluate the designation of the Ocklawaha River as a National Wild and Scenic River
Objective 10d: Evaluate the designation of selected scenic resources along the CFG
Objective 10e: Enhance the use of the Great Florida Birding Trail designated sites on the CFG by adding birding interpretive signs and keeping incompatible uses away from prime birding areas
Objective 10f: Designate an astronomy area on the CFG that has minimal light pollution and has nearby road access

Security Management

Security is a major concern on the CFG, given the high visitor usage over a large area, numerous access points and irregular boundary. Because of the manner in which barge canal lands were acquired, the irregular shape and the amount of time that the lands were in minimum custodial care, CFG boundaries are ill-defined. CFG has a long-term project to survey the boundaries, resolve title issues and post and fence as necessary, and resolve encroachments. Encroachments vary from fence line placement to entire houses being constructed on CFG lands. It will be years, possibly as many as 10, until the survey work is completed.

In certain areas of the CFG, the state owns uplands between the reservoir and upland private landowners. There are continuing disputes between these landowners and the state regarding access to Rodman Reservoir and construction of docks and other activities. CFG intends to write a shoreline management plan patterned after other reservoir management plans to make it clear to landowners what is and is not allowed and to provide a lucid process for requesting access to the reservoir across state-owned uplands from private lands. CFG will ensure that the shoreline management plan will not grant rights or set policy that could interfere with restoration of the Ocklawaha.

CFG staff have a good working relation with the sheriffs' departments, especially the Marion County Sheriff, and DEP and FWC enforcement personnel. OGT has funded mountain bikes, ATVs, dirt bikes and communications equipment to help law enforcement access and patrol the CFG. Five houses on CFG lands are leased to law enforcement personnel who provide a degree of security for the CFG. Additional on-site security residences are desired. OGT would also like at least three full-time law enforcement personnel dedicated to the CFG, one in each administrative region.

Goal 11: Establish security measures sufficient to protect the property's integrity and to restrict unauthorized access and use

Objective 11a: Evaluate the current boundary posting & maintain the boundary of the property

Objective 11b: Fence the property boundary where necessary to prevent illegal use, complete boundary survey and resolve encroachment issues by 2016

Objective 11c: Prepare a shoreline management plan to make it clear to landowners what is and is not allowed and to provide a lucid process for requesting access to the reservoir across state-owned uplands from private lands

Objective 11d: Continue to coordinate with FWC & DEP law enforcement, and the Levy, Citrus, Marion & Putnam County Sheriffs about security concerns

Objective 11e: Continue to coordinate with the local Community CrimeWatch organizations

Objective 11f: Establish at least five additional security residences on site

Objective 11fg: Coordinate with state and local law enforcement to increase law enforcement presence for each of the three management regions of the CFG

Research and Monitoring

Some research and monitoring is being conducted on the CFG, primarily related to restoration efforts, non-native invasive species and water quality and quantity. As restoration efforts progress, it will continue to be important to monitor the changes related to the restoration efforts. It is also important to monitor the status of listed species on the property, especially if restoration efforts are undertaken to benefit those species or may have a negative effect on the species. Research and monitoring are also important to assess the character and health of the various natural communities, including aquatic communities, and species. Progress on eradication of invasive non-native species will continue to be monitored. The water management districts are monitoring water quality, both surface and groundwater. The USGS measures water quantity, including groundwater and stream flow. Some of these issues are addressed in the goal and objectives for this section; others are addressed in related sections.

Any research or other activity that involves the collection of plant or animal species on state greenway property requires coordination with the greenway manager. Permits from the Florida Fish and Wildlife Conservation Commission, the Department of Agriculture and Consumer Services, or the U.S. Fish and Wildlife Service may be required.

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Goal 12: Facilitate and conduct scientific research and monitoring to optimally manage and protect natural communities and native plant and animal species of the property
Objective 12a: Establish photo-plots in restoration areas
Objective 12b: Annually sample established vegetative treatment plots
Objective 12c: Support water quality monitoring stations on the property maintained by other agencies
Objective 12d: Ensure that all research and monitoring projects have all required permits from relevant agencies

Education and Training

Some of the main natural communities on the CFG are fire-dependent communities, and a prescribed fire program is necessary to maintain them. OGT staff interacts with adjacent landowners and neighbors to educate them about prescribed fire and to notify them when planned burning will occur. The actions of adjacent landowners can have a large influence on the establishment and control of exotic species on greenway. OGT staff will work with adjacent landowners to prevent exotic species problems.

Goal 13: Educate the public and local governments concerning resources, issues and management goals/objectives of the property
Objective 13a: Interact with adjacent landowners via phone, mail, and direct contact regarding management issues, such as exotics and burns. Develop and/or provide brochures, letters and web site materials explaining the prescribed burning, restoration and exotic species programs
Objective 13b: Develop and/or provide historical, natural resources and orientation educational materials and displays, including entrance kiosk(s) with regulations and website-based materials. Relate the greenway natural and historical resources to the region in general
Objective 13c: Encourage adjacent landowners to establish control programs for invasive exotic plants
Objective 13d: Provide public service announcements and press releases to local and state media contacts on an as-needed basis
Objective 13e: Lead educational and interpretive day trips for equestrians and other user groups

NOTE: Planned facilities are described in more detail in *Planned Uses and Assessment of Their Impacts* in Chapter III.

Public Access and Visitor Use

Public Access / Parking / Handicap Facilities

Although numerous access points exist on the CFG, additional access and facilities are desired in certain segments, and pressure exists to provide even more access points. Particularly in the Ocala area, numerous developments are being placed adjacent to the CFG. Many neighbors wish to have direct access to the CFG from their developments. While public access is good, unrestrained access can cause management problems and unnecessarily impact the natural resources of the CFG. CFG will develop and implement a policy addressing neighbor access to the CFG. All access points and trails, existing and planned, are subject to be changed due to management considerations and environmental impacts. OGT will also work with private businesses along the CFG to encourage the businesses to provide recreation and tourism services. OGT will also work with stakeholders to identify areas where user fees may be appropriate. Some objectives related to access for a specific user group are addressed in other sections, such as biking and equestrian.

Goal 14: Provide public access to encourage compatible uses where appropriate on the property that do not detract from the conservation and management goals and objectives *(see also objectives under various goals such as hiking and biking that incorporate access)*
Objective 14a: Develop ('07 & '08) and implement a policy addressing adjacent landowner access to the CFG
Objective 14b: Develop a trailhead for the Etoniah Addition. Facilities will include parking, fenced horse trailer parking, and non-potable water
Objective 14c: Review existing trails to determine if any need to be closed or realigned for safety, protection of natural resources and navigability

Objective 14d: Establish a trailhead with parking, potable water, permanent restroom facilities, and a law enforcement residence at the Eureka pit area
Objective 14e: Develop additional non-motorized vehicle access points as other public-access trails are linked to CFG
Objective 14f: Work with private businesses along the CFG to provide recreation and tourism services (e.g., boat and bike rentals, tours), including a trail support shop on US 441 in Santos ('08 to '10)
Objective 14g: Work with stakeholders to identify areas where user fees may be appropriate
Objective 14h: As facilities are developed, provide universal access in all cases except where the law allows reasonable exceptions (e.g., where handicap access is structurally impractical, or where providing such access would change the fundamental character of the facility being provided)

Education Facilities

The Ocklawaha River and Marjorie Harris Carr Cross Florida Greenway East Visitors Centers provide general information and educational materials to visitors. An additional visitor center with classroom facilities for the western portion of the CFG, probably at Felburn Park, is desirable. Additional information, such as natural, recreational, cultural and historical resources interpretation materials will be developed and made available..

Goal 15: Establish and/or maintain locations for providing educational materials and/or programs for visitors (see also education and training, above)
Objective 15a: Continue to provide educational and interpretive materials and programs at the Ocklawaha River and east visitors centers
Objective 15b: Develop visitors center/education facility at Felburn Park to provide educational and interpretive materials and programs
Objective 15c: Evaluate development additional facilities at the Florida Horse Park to provide educational and interpretive materials and programs
Objective 15d: Develop trail signage that provides natural, recreational, cultural and historical resources interpretation
Objective 15e: Develop brochures that interpret natural, recreational, cultural and historic resources of the CFG and the region
Objective 15f: Develop checklists for the public on distribution of plants and animals known to occur on the CFG
Objective 15g: Cooperate with the City of Palatka and volunteers to develop an exhibit on greenways and trails in Putnam County for the Water Works Environmental Education Center
Objective 15h: As additional entrance points are developed, provide interpretive displays and materials at each location as appropriate and needed

Multi-use Trails

As described in Chapter III, additional multi-use trails, including crossings, are planned for the CFG. The additional trails are necessary to provide access to areas currently without trails. Crossings are necessary for visitor safety and wildlife. Not all land necessary for some of the listed trails is in public ownership. A combination of land acquisition and private landowner agreements will be necessary to establish some of the listed trails.

Goal 16: Establish multi-use trails and facilities where appropriate on the property that do not detract from the conservation and management goals and objectives
Objective 16a: Establish multi-use paved trails linking Dunnellon to the Withlacoochee State Trail ('10), Santos Trailhead to the Baseline Road paved trail ('12), , Dunnellon to Inglis Lock facility ('13) and Dunnellon to Chiefland ('15)
Objective 16b: Establish multi-use trail linking the Ross Prairie Trailhead to the current limerock trail ('07) and the Pruitt Trailhead to end of the current limerock trail ('09)
Objective 16c: Establish multi-use trail corridor linking the Pruitt Trailhead to trails in Dunnellon ('12)
Objective 16d: Working with FDOT and other partners, establish road crossings at CR 484 ('08), CR 475 ('09), CR 475A ('09), 95th St. ('10), CR 35/SR 464 intersection ('11), SR 200 ('17) and US 441 (?'20)
Objective 16e: Working with FDOT and other partners, establish waterway crossings at Dunnellon/Withlacoochee River ('11) and Inglis Island/Withlacoochee River ('12)
Objective 16f: Partner with the USFS to establish a multi-use natural surface trail corridor linking the Marshall Swamp Trailhead to Deep Creek/Kirkpatrick Dam/Ocklawaha River
Objective 16g: Work with the City of Palatka, Putnam County, other state agencies, and public interest groups to connect the CFG to the Water Works Environmental Education Center in Palatka by hiking, bicycling, and paddling trails
Objective 16h: Establish linkages to other publicly-accessible multi-use trails

Hiking

Trails for hiking-only are maintained by the Florida Trail Association. Additional hiking trails, especially loop trails, are desirable. The inclusion of more interpretive materials along the trails is warranted. Further incorporation of the Florida National Scenic Trail within the CFG should also be encouraged. Linkages to other publicly accessible hiking trails would also be beneficial.

Goal 17: Encourage hiking trails where appropriate on the property that do not detract from the conservation and management goals and objectives

Objective 17a: Continue to work with the Florida Trail Assoc. to promote responsible use and establishment and maintenance of hiking trails

Objective 17b: Encourage relationships with other groups focused on responsible use and establishment and maintenance of hiking, walking, running and interpretive trails

Objective 17c: Evaluate establishing additional hiking trails to form loop and/or interpretive trails near popular trailheads such as Santos, Historic Santos, Rotary Sports Complex, St. Johns North and Rodman campground

Objective 17d: Establish linkages to other publicly-accessible hiking trails

Biking

Responsible biking on the CFG is necessary to protect the resources. The Ocala Mountain Bike Association is active in promoting proper trail usage. Similar efforts by other bike groups should be encouraged. Additional, defined bike trails are needed in some areas of the Greenway. The partnership with the International Mountain Bicycling Association should be continued.

Goal 18: Encourage biking trails where appropriate on the property that do not detract from the conservation and management goals and objectives

Objective 18a: Continue to work with the Ocala Mountain Bike Assoc. to promote responsible use and establishment and maintenance of bicycle trails

Objective 18b: Encourage the formation of similar bicycle trail groups in the Rodman and Inglis/Dunnellon areas

Objective 18c: Partner with the International Mountain Bicycling Assoc. to further establish the CFG as a mountain biking destination

Objective 18d: Establish a trailhead with potable water, permanent restroom facilities, and a law enforcement residence at the Vortex Freeride area

Objective 18e: Establish 1 loop of singletrack bicycle trail in the Ross Prairie section and 1 loop in the Pruitt section

Objective 18f: Establish linkages to other publicly-accessible biking trails

Equestrian

As with bikes, responsible equestrian usage of trails is essential on the Greenway. CFG staff will work with the Greenway Equestrians group and others to encourage responsible use and establishment and maintenance of equestrian trails. Redesign of existing equestrian trails and establishment of additional trails and equestrian facilities are planned.

Goal 19: Establish equestrian trails and facilities where appropriate on the property that do not detract from the conservation and management goals and objectives

Objective 19a: Encourage the further development of the Greenway Equestrians group to promote responsible use and establishment and maintenance of equestrian trails

Objective 19b: Encourage relationships with similar equestrian trail groups in the Rodman area and Inglis/Dunnellon area

Objective 19c: Redesign and re-sign the equestrian trail system in Marion County into a series of loops out of each trailhead and a single through trail. Maximize safety, sustainability and navigability

Objective 19d: Evaluate establishment of an equestrian trail linking the Dixon Hammock Trails to Inglis Island and Santos Trailhead to the Rodman Reservoir area

Objective 19e: Establish linkages to other publicly-accessible equestrian trails

Objective 19f: Establish additional equestrian camping facilities at St. John's Loop south and Shangri-La

Objective 19g: Continue to assist the Marion Therapeutic Riders Assoc in their goal of providing equestrian interaction to challenged individuals

Objective 19h: Work with the Florida Agriculture Center and Horse Park Authority to provide additional services for equestrian trail users

Paddling

Although paddling is a popular sport on the Greenway, no trails are currently designated. CFG will work with paddling groups to establish paddling trails and primitive campgrounds along the paddling routes, as appropriate. It is the Army Corps of Engineers' responsibility to maintain the navigability of the Ocklawaha River. CFG is already working with Marion County and other agencies to remove snags from the river to enhance navigability and will continue cooperative efforts.

Goal 20: Establish paddling trails and facilities where appropriate on the property that do not detract from the conservation and management goals and objectives

Objective 20a: Designate and consider marking a paddling trail on the Ocklawaha River with designated official primitive campsites. Publish info in maps, brochures and on the internet

Boating

Motorized boating is popular on the CFG, especially for fishing. As discussed in Chapter III, OGT will provide improved and additional boating access in a responsible manner.

Goal 21: Encourage boating where appropriate on the property, ensuring that it does not detract from the conservation and management goals and objectives

Objective 21a: In partnership with Citrus County, establish additional motorized boat launching site at US 19 and the barge canal

Objective 21b: Pave Kenwood Recreation Area road, provide restrooms and one or more law enforcement residences

Objective 21c: Assess the impacts of boat wakes and determine if additional no wake zones are needed

Objective 21d: In cooperation with FWC and the Coast Guard, provide channel markers for the original river channel (not the navigation channel) within Rodman Reservoir if funds are available

Objective 21e: Continue partnerships with local governments in the operation and maintenance of boat launches on the CFG

Camping

Camping is available in a limited number of areas along the CFG. OGT plans improved and additional camping facilities, some in association with other activities, such as paddling.

Goal 22: Encourage camping where appropriate on the property that does not detract from the conservation and management goals and objectives (see additional camping objectives under equestrian, paddling and boating goals)

Objective 22a: Establish developed campground facilities at Eagle's Nest

Objective 22b: Evaluate need for and resource impact of expansion of current campgrounds into adjacent disturbed areas.

Objective 22c: Encourage private industry and nearby land management agencies to provide additional developed RV campgrounds near the CFG

Objective 22d: Consider establishing additional primitive campground facilities (no vehicle access, minimal facilities) in several locations along the Ocklawaha River (boater friendly, improvement of current facilities), along the proposed natural surface trail corridor connecting Marshall Swamp and Rodman (possibly the same as the boater campsites) and between Pruitt Trailhead and Felburn Park

Fishing

Fishing, especially from boats, is popular along the CFG. The opportunity to provide more land-based fishing access points will be evaluated and implemented, if feasible.

Goal 23: Encourage fishing where appropriate on the property that does not detract from the conservation and management goals and objectives

Objective 23a: Assess the impacts, desirability, demand for, and cost of installing multi-purpose boardwalks/docks that would allow for non-boat fishing on the CFG

Objective 23b: Work with UF Fisheries Department, Fishing for Success and FWC to establish Fishing For Success ponds in Felburn Park and East Visitor Center

Objective 23c: Establish additional fishing access points at appropriate locations

Hunting

The feasibility of providing additional hunting opportunities will be discussed with FWC, which manages all hunts on CFG lands. Hunting on CFG lands west of the Ocklawaha will be discussed with FWC. Water fowl hunting is being considered for the Adams Marsh area. Care will be taken to ensure that hunting does not unduly detract from other user groups use of the CFG.

Goal 24: Encourage hunting where appropriate on the property that does not detract from the conservation and management goals and objectives
Objective 24a: Continue cooperation with FWC managing hunts in designated hunting areas on the CFG
Objective 24b Coordinate with FWC to clarify intended hunting areas along the Ocklawaha outside of the Gore's Landing Unit
Objective 24c: Consult with FWC about the feasibility and desirability of establishing hunting in the Marshall Swamp/Adams Marsh area and necessary facilities.

Operations and Facilities

Priority Management Activities, Cost Estimates and Funding Sources

In the 2005 land management review of the CFG, management review team members recognized that CFG staffing for natural resource management is inadequate, and recommended that additional FTEs were needed to adequately address the resource management needs including burning and biological monitoring. CFG has been unsuccessful in obtaining a significant increase in staffing, despite the OGT central field office having the additional management responsibility for four State Trails, Price's Scrub Greenway and the Ichetucknee Trace Recreation Area assigned with only three FTEs provided with the four State Trails. OGT has increased its capacity to conduct burns by requiring rangers to be able to meet burn team fitness requirements, obtain burn training and participate in burns.

Funds needed to protect and manage the CFG, and to achieve the objectives for the Greenway, are derived from a variety of sources, including the Land Acquisition Trust Fund, the CARL Trust Fund, the Bureau of Invasive Plants Management and special appropriations. A significant funding and management challenge is that OGT does not receive CARL Trust Fund management funds for the majority of the acreage it manages, since these lands were transferred from the federal government rather than acquired through the state's land acquisition programs. Private conservation organizations and user groups may be cooperators for funding of specific projects. Alternative funding sources, such as mitigation and transportation project funds, are regularly sought to supplement existing funding.

The fiscal year 2006-2007 budget for the Cross Florida Greenway is:
Salaries & Benefits - $788,583
Other Personal Services (Non-FTE employees) - $466,224
Expenses - $290,341
Management of Water Control Structures - $549,414
Long Term Management Funding - $1,497,112
Total - $3,591,674

The priority management activities, and an approximate schedule and estimated cost, if available, are listed below. Additional recreation facilities and staff are desired. However, natural resource management, especially prescribed burning and restoration of lands in fair to good shape, is the most pressing need for the Cross Florida Greenway. This need is detailed in the land management review (Appendix 13). If the flexibility exists, funding of planned expansion of visitor facilities and infrastructure should be delayed if necessary to provide funds for natural resources management.

Management Priorities
(Objectives that require funds above the normal baseline funding to be completed are indicated by "*"; "'07" means July 2007 through June 2008, etc.)

First Priority

1. Continue natural community management activities, including prescribed burning and planting, with priority given to scrub, sandhill, mesic/wet flatwoods and hydric hammock as described in the CFG restoration priorities document (ongoing need; $60,000/yr at current level, additional effort and funding needed*)
2. Prepare a revised GIS map and description of FNAI natural communities and disturbed areas on the property and identify historic vegetative community types of the property in order to restore habitats to the proper natural community composition. Include management and fire recommendations ('07, '08; $133,000)
3. Continue to coordinate with DEP Bureau of Invasive Plant Management on the funding and operation of an invasive non-native plants control program (ongoing need; $200,000/yr)
4. Fund additional natural resource management staff (three biologists and nine rangers with natural resource management, including prescribed burning, as their main activity).(ongoing need; $60,000 per position first year with $40,000 per position recurring per year)
5. Coordinate with Division of State Lands and other agencies in the acquisition of critical inholdings and connectors (ongoing need; cost dependent on real estate costs)
6. Fund additional staff to operate the CFG (one manager – Inglis area, three assistant managers, two field support staff, three volunteer coordinators, one interpretive staff) (ongoing need; manager $70,000 first year and $45,000 recurring, assistant managers $65,000 first year and $35,000 recurring, field support staff $60,000 each first year and $35,000 recurring, volunteer coordinator and interpretive staff $60,000 each first year and $40,000 recurring*)
7. Provide necessary training and acquire equipment for fire prescription and suppression and be able to conduct three burns simultaneously (ongoing need; $400,000 for first year, $100,000/yr ongoing*[some new funds required])
8. Survey property for scrub jay and incorporate information into scrub management planning ('07, '08; conducted by staff)
9. Develop and implement a comprehensive natural community restoration plan with specific goals and objectives, an implementation schedule and monitoring program (plan development '09 and '10, then ongoing need; $250,000 for plan development, implementation cost unknown*)

Second Priority

1. Update the Rodman Reservoir management plan, water operations plan and emergency flood operations plan ('07, '08; $50,000)
2. Implement the Partial Restoration Plan for the Kirkpatrick Dam/Ocklawaha River (implementation dependent on funding and permitting; current estimate for implementation $25,000,000*)
3. Review existing trails to determine if any need to be closed or realigned for management of natural resources and enhancement of prescribed burning, safety and navigability (initial comprehensive review '07 and '08, then ongoing)
4. Develop and implement a policy addressing adjacent landowner access to the CFG (develop in '07 and '08, implementation ongoing; existing staff effort)
5. Restore major hydrological alterations on the property (ongoing need; full cost unknown*, some costs included in regular staff activities)
6. Establish at least 5 new security residences and coordinate with state and local law enforcement to increase law enforcement presence for each of the three management regions of the CFG (ongoing need; $100,000+ each for residences*)

Third Priority

1. Establish trail connector between Dunnellon ballfields and Pruitt Trailhead (completion date dependent upon land swap with private adjacent landowner/s; cost approximately $100,000)

2. Establish paved trail connector between Baseline Trailhead and Santos (completion date based upon FDOT road expansion crossings installation and funding commitment for paved trail 2012; cost $1,500,000 for paved trail design, permitting and construction; FDOT funding crossings for ROW exchange.)
3. Midway Road Trailhead to be developed with law enforcement residence and minimal facilities ('08 completion; $175,000)
4. John Franks Trailhead ('08; donated)
5. Dunnellon Trailhead to Withlacoochee State Trail Connector ('11; $2,500,000)
6. Withlacoochee Bay Trail Phase III ('13; $3,500,000)

Table 14 shows the current staffing level for the CFG. "FTE" refers to full-time equivalent permanent staff members. "OPS" refers to other personnel services, which are temporary staffing positions. The number of FTEs or OPS refers to the number of full-time permanent or temporary staff members in each position title. Table 15 lists proposed additional staff necessary to accomplish objectives, especially related to natural resource management. Additional funds will also be needed to contract for outside expertise.

Table 14. Current Staffing Level for the Marjorie Harris Carr Cross Florida Greenway

Position Title	# FTEs	# OPS
OMC Manager	2	0
OMC I	1	0
OMC II	0	2
Maintenance & Construction Superintendent	2	0
Environmental Specialist II	2	0
Park Service Specialist	5	1
Greenways Trail Ranger	5	6
Administrative Assistant	0	2. 5
Lock Manager	0	1
Lock Operator	0	2
Public Information Specialist	0	3
Campground Attendant	0	10
Total	17	27.5

Table 15. Proposed Additional Staff for the Marjorie Harris Carr Cross Florida Greenway

Position Title	# FTEs	# OPS
Manager (Inglis area)	1	0
Assistant Manager (one for each area)	3	0
Biologists (one for each area)	3	0
Ranger	9	0
Administrative Assistant	2	0
Volunteer Coordinator	3	0
Interpretive Coordinator	1	0
Campground Attendant	0	9
Total	22	9

Goal 25: Conduct operations and obtain and maintain facilities and staff to soundly manage, protect and make accessible the property

Objective 25a: Obtain funding for additional staffing (20 FTE, 9 OPS) and outsourced assistance to provide support for property development and operations

Objective 25b: Continue to pursue alternative funding sources, such as mitigation projects, grants and fundraising, to supplement baseline budget funds

Objective 25c: Based on the overall management needs of the CFG, evaluate subleases in advance of their ending dates and decide whether to renew the subleases, change terms of the subleases or to not renew the subleases

Analysis of Potential for Contracting Restoration and Management Activities by Private Vendors

The following restoration and management activities have been considered for outsourcing to private entities. The Cross Florida Greenway currently outsources mowing, fencing, survey boundary work, restroom cleaning, trash pickup, exotic plant control, timbering, planting, engineering and operation of the west barge canal-related water control structures. Table 16 delineates potentially outsourced activities by categories as follows: "approved" designates items that FDEP does not have expertise to complete and/or those that can be done at less cost with equivalent results by outside sources; "conditional" designates items that could possibly be done by FDEP or outside sources for equivalent cost and results; "rejected" designates items that can be done with FDEP expertise and/or at less cost than outside sources. Depending on the size of the task, some things can be done more efficiently by existing OGT staff than through outsourcing.

Table 16. Potential Contracting for Activities on the Cross Florida Greenway

Activity	Approved	Conditional	Rejected
Prescribed burning		Y	
Minor fireline installation		Y	
Fireline, fence, and trail maintenance	Y		
Fence installation	Y		
Roller chopping	Y		
Organism inventory and monitoring	Y		
Listed species mapping and needs assessment	Y		
Restore/enhance encroachment and ruderal areas		Y	
Determine extent of hydrologic needs of greenway	Y		
Restore hydrology	Y		
Reduce exotic species	Y		
Education facilities, programs, and literature development and printing		Y	
Education signs development and installation		Y	
Trail and boardwalk installation		Y	
Law enforcement and patrol	Y		
Timber harvesting	Y		

OGT currently contracts with SWFWMD for operation of the water control structures as the west end of the barge canal. OGT would like to make a similar arrangement with SJRWMD for operation of the east barge canal water control structures in accordance with Florida Statutes 253.7829(1)(b) which states that "Operation and maintenance of water control structures may be delegated by the department to the St. Johns River Water Management District or the Southwest Florida Water Management District, as necessary."

Goal 26: Consider outsourcing those property operations that outside sources can conduct for less cost and with equivalent or better results than property staff

Objective 26a: Transfer management of eastern barge canal water control structures to the SJRWMD, similar to what has been done with the western barge canal structures to SWFWMD

Objective 26b: On a continuing basis, analyze property operations and identify those activities for which property staff do not have the expertise or that can be completed at less cost with equivalent or better results by outside sources

Objective 26c: Consider outsourcing activities identified by Objective 26b

Partnerships and Regional Coordination

Cooperating Agencies

The greenway is managed in accordance with all applicable Florida Statutes and administrative rules. Agencies having a major or direct role in the management of the greenway are discussed in relevant portions of this plan. OGT and DEP Division of Recreation and Parks staff cooperate on a regular basis, often sharing equipment and conducting prescribed burns together. The Department of Agriculture and Consumer Services, Division of Forestry

(DOF), assists OGT staff in the development of wildfire emergency plans and provides the authorization required for prescribed burning. The Florida Fish and Wildlife Conservation Commission (FWC) assists staff in the enforcement of state laws pertaining to wildlife, freshwater fish and other aquatic life existing within greenway boundaries and manages hunting on the two Wildlife Management Areas on the CFG.

In addition, FWC aids OGT with wildlife management programs, including the development and management of Watchable Wildlife programs and fishery enhancement activities. The Department of State, Division of Historical Resources (DHR) assists staff to assure protection of archaeological and historical sites. Emphasis is placed on protection of existing resources as well as the promotion of compatible outdoor recreational uses.

The Florida Natural Areas Inventory recently surveyed the CFG for non-native invasive species and rare plants and animals.

CFG has established cooperative relationships with the Marion County Sheriff and the Parks and Recreation Department, as well as with Citrus County and the City of Dunnellon.

Goal 27: Establish and maintain relationships with other agencies to enhance management and protection of the property (see also objectives under other goals such as research, security management, hunting and boating)
Objective 27a: Coordinate management efforts with other agencies
Objective 27b: Coordinate on a continuing basis with local law enforcement and permitting agencies regarding patrol and potential violations
Objective 27c: Continue collaborative efforts with DOF, FWC, WMDs, DHR, DEP, local governments and others for the protection and management of activities on the property
Objective 27d: Coordinate joint educational programs with other federal, state or local agencies

Cooperating Organizations

Cooperative relationships with other organizations can provide additional strength and expertise to both organizations. OGT has established relationships with numerous user groups, including hiking, biking and equestrian. Volunteers contributed more than 11,000 hours to the CFG in 2006. Volunteer assistance helps plan, establish, and maintain the recreational opportunities on the greenway and manage the natural resources. OGT staff will continue their relationships with these groups.

The Florida Greenways and Trails Foundation, Inc. has been a strong supporter of the CFG and has provided important funding. The Foundation bylaws specifically identify providing support to the CFG. CFG staff will continue to work with the foundation.

Goal 28: Establish and maintain relationships with other organizations to enhance management and protection of the property
Objective 28a: Continue working with the Florida Greenways and Trails Foundation, Inc. and solicit volunteers and funds to assist property staff to accomplish goals of the property
Objective 28b: Coordinate management efforts with other local natural areas and local environmental organizations
Objective 28c: Coordinate management efforts with local trail recreation-based organizations such as the Florida Trail Assoc., Ocala Mountain Bike Assoc., Greenway Equestrians group, and Aquaholics paddling group
Objective 28d: Provide property and community recognition and support for volunteers
Objective 28e: Increase volunteer hours by 5% in each succeeding year and broaden projects beyond those specific to a user group (dependent on funding and hiring a dedicated volunteer coordinator)

Land Use Coordination

The long-term health and connectivity of the Cross Florida Greenway will be directly influenced by the surrounding land use. OGT will work with neighboring landowners and residents to inform the public, local government planning staff, and elected officials about the potential impact of proposed land use changes on the Greenway and the surrounding area.

Goal 29: Review, define, and minimize impacts associated with planned and existing development along or within the property

Objective 29a: Address impacts associated with existing and future development concerning fire management, connectivity and other issues
Objective 29b: Continually review comprehensive plan amendments and land development regulations that govern proposed land use changes on properties adjacent to the property and coordinate with OGT headquarters on comments. Coordinate with neighbors on the review.
Objective 29c: Coordinate with local governments on greenway, corridor and transitional zoning efforts as they relate to CFG
Objective 29d: With local governments and state agencies, encourage the placement of smoke easements on lands in the vicinity of the CFG

Prospective Land Acquisitions and Potential Surplus Lands

More detailed information on prospective land acquisitions and potential surplus lands is included in Chapter III. Goals and objectives related to land acquisition are:

Goal 30: Define optimum boundaries for the property and facilitate acquisition and/or surplusing of lands to achieve these boundaries
Objective 30a: Coordinate with Division of State Lands and other agencies in the acquisition of critical inholdings and connectors; consider leasing critical lands as an interim step
Objective 30b: Nominate for acquisition through Florida Forever and the Greenway and Trails programs those parcels that are important for management of the property, contain important resources, or are linkages to provide additional greenways and trails opportunities
Objective 30c: Acquire mineral rights to the 16-acre parcel at US 19 on the west end of the CFG and timber rights in Dixon Hammock
Objective 30d: Through innovative partnerships, ensure that the CFG is connected to the surrounding conservation lands and trails, such as Goethe State Forest and Withlacoochee State Trail
Objective 30e: Assist in the acquisition of all lands related to CFG within the Etoniah/Cross Florida Greenway, Florida Springs Coastal Greenway, Heather Island/Oklawaha River, Longleaf Pine Ecosystem, Gulf Hammock and Mill Creek Florida Forever projects by providing DEP DSL with information on development, available parcels, ownership, and local contacts every 3 months
Objective 30f: Coordinate with DSL on facilitating a land exchange with the Forest Service, exchanging those state lands within Ocala National Forest for Forest Service lands adjacent to the CFG that would enhance management of the CFG. As an interim measure, pursue a management agreement with the Forest Service whereby the Forest Service will manage the state-owned lands (now under lease to OGT) within the Ocala National Forest
Objective 30g: Investigate easements and rights-of-way on the CFG and consider options for extinguishing access easements

Compliance with State and Local Government Requirements

This land management plan is in compliance with the Citrus, Levy, Marion and Putnam Counties Local Government Comprehensive Plans as well as that of the Cities of Dunnellon , Inglis and Yankeetown (Appendix 12, Verification of Compliance with Local Comprehensive Plans). The plan is intended to be in compliance with the State Lands Management Plan, adopted March 17, 1981 by the Board of Trustees of the Internal Improvement Trust Fund and considering balanced public utilization, specific agency statutory authority, and other legislative or executive constraints.

Goal 31: Ensure that use and management of the property complies with state and local government requirements
Objective 31a: Ensure that each planned use of the property complies with the State Lands Management Plan adopted by the Trustees
Objective 31b: Ensure that each planned use of the property complies with pertinent Local Government Comprehensive Plans

Land Management Review

A management review of the Marjorie Harris Carr Cross Florida Greenway was last conducted in 2005 with a final report dated August 5, 2005. A copy of the report containing four recommendations and 13 checklist findings is in Appendix 13. The recommendations are addressed in appropriate sections of this management plan.

Priority List of Management, Research, and Information Needs

- Prescribed burning for natural community management, focusing on scrub, sandhill, mesic and wet flatwoods
- Control of invasive, non-native plant species
- Acquisition of land to close gaps in the Greenway
- Natural community maps with management and fire recommendations
- Development and implementation of a comprehensive restoration plan
- Restoration of natural communities
- Restoration of the Ocklawaha River
- Re-alignment and closing of some trails
- Establishment of a continuous trail system along the Cross Florida Greenway from the Gulf of Mexico to the St. Johns River

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VI. Maps

Map 1. Location of Cross Florida Greenway and Proximate Conservation Areas
Map 2. Greenways and Trails Opportunities in the Vicinity of the Cross Florida Greenway
Map 4. Historical Landscapes of the Cross Florida Greenway
Map 5. Cross Florida Greenway Soils Map
Map 6. Cross Florida Greenway Land Cover Map
Map 7. Aerial Photograph of the Cross Florida Greenway
Map 8. Current and Proposed Public Uses and Facilities of the Cross Florida Greenway
Map 9. Land Use Map for the Area Surrounding the Cross Florida Greenway
Map 10. Optimum Boundaries for the Cross Florida Greenway

Map series segments names:

a - Lake Rousseau Area
b – Dunnellon Area
c – Ross Prairie Area
d – Silver River Area
e – Ocklawaha Area
f – Sweetwater Creek Area