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Agenda Item: 3L10

PALM BEACH COUNTY
BOARD OF COUNTY COMMISSIONERS
AGENDA ITEM SUMMARY

Meeting Date: April 4, 2017 (X) Consent ( ) Regular ( ) Ordinance ( ) Public Hearing

Department
Submitted By: Environmental Resources Management
Submitted For: Environmental Resources Management

I. EXECUTIVE BRIEF

Motion and Title: Staff recommends motion to approve: an updated Management Plan (Plan) for the High Ridge Scrub Natural Area.

Summary: The Plan identifies natural resources present on the site, provides for the preservation, restoration, management and passive recreational uses of those resources, and summarizes significant onsite events that occurred following BCC approval of the initial plan in 2001. The next update to the Plan will be due in 2027. District 3 (AH)

Background and Justification: The Natural Areas Management Advisory Committee reviewed and unanimously recommended the Plan for approval at its January 20, 2017 meeting.

The public use facilities, environmental restoration activities, fencing and signage have been completed. Annual management and maintenance costs, including biological monitoring, prescribed burns/mechanical vegetation reduction, ongoing nonnative/invasive animal and plant control, and repair and replacement of facilities, as needed, are estimated to be $164,577. Funds for the management and maintenance of the site are expected to come from the Natural Areas Fund, Natural Areas Stewardship Endowment Fund, Pollution Recovery Trust Fund, Ag Reserve Land Management Fund and/or Ad valorem funding. Staff also will pursue grants to offset a portion of land management costs.

Attachments:
1. High Ridge Scrub Natural Area Management Plan

Recommended by: _____ 3/1/17
Department Director **Date**

Approved by: _____
Deputy County Administrator **Date**

II. FISCAL IMPACT ANALYSIS

A. Five Year Summary of Fiscal Impact:

Fiscal Years	2017	2018	2019	2020	2021
Capital Expenditures	$164,577	$169,514	$174,600	$179,838	$185,233
Operating Costs					
External Revenues					
Program Income (County)					
In-Kind Match (County)					
NET FISCAL IMPACT	$164,577	$169,514	$174,600	$179,838	$185,233
# ADDITIONAL FTE POSITIONS (Cumulative)					

Is Item Included in Current Budget? **Yes** X No ____

Budget Account No.: **Fund** 1226 **Department** 380 **Unit** 3162 **Object** Various
Program ____

B. Recommended Sources of Funds/Summary of Fiscal Impact:

Fiscal year 2017 costs include $164,577 in annual management and maintenance costs. Over the past five years, management and maintenance costs for County owned/managed natural areas have increased an average of 3% per year. Actual costs for FY 2018 and beyond may be higher or lower than projected. Funds for the management and maintenance of the site are expected to come from the Natural Areas Fund (1226), Natural Areas Stewardship Endowment Fund (1220), Ag Reserve Land Management Fund (1222) and/or Ad valorem funding.

C. Department Fiscal Review: S. Neary

III. REVIEW COMMENTS

A. OFMB Fiscal and /or Contract Administrator Comments:

3/10/17
OFMB ET 3/8 AC 3/10/17

3/15/17
Contract Administrator

B. Legal Sufficiency:

Anne Adelgren 3-16-17
Assistant County Attorney

C. Other Department Review:

Department Director

MANAGEMENT PLAN FOR

HIGH RIDGE SCRUB

NATURAL AREA

FCT PROJECT # 99-015-P9A

2017

Prepared by:

Palm Beach County
Department of Environmental Resources Management
2300 North Jog Road, 4th Floor
West Palm Beach, Florida 33411- 2743

THE PALM BEACH COUNTY NATURAL AREAS SYSTEM MANAGEMENT STATEMENT

The Palm Beach County Natural Areas System is comprised of those environmentally sensitive lands that are owned or leased by the County and managed as natural areas by the County's Department of Environmental Resources Management. These natural areas were selected and acquired to preserve the rare and diverse native ecosystems present on these sites and the endangered, threatened, and rare species of plants and animals that live there.

Purpose and Goals of the Natural Areas System

- *The purpose of the Natural Areas System is to protect, restore and manage remnant native ecosystems, and the plants and animals characteristic of those ecosystems, in perpetuity, throughout Palm Beach County. The management of each natural area shall be coordinated with that of the other natural areas in the system.*

- *Attempts shall be made to maintain physical and/or biological connections with other publicly- or privately-owned natural areas through additional land acquisitions, conservation easements, interlocal agreements, greenway/trail connections and other appropriate actions.*

Management Considerations

- *County natural areas shall be open to the public for non-consumptive/non-destructive, resource-based recreation, environmental education and scientific research. Public use shall not take precedence over ecosystem protection. Public uses shall be limited to those that are compatible with the perpetual preservation and management of the native ecosystems, plants and animals found on the natural area.*

- *All public use facilities shall be chosen, designed and located to have minimal impact on the rare and imperiled plants, animals and natural communities found on the natural area. Facilities, structures or roads (other than management accessways/firebreaks or access roads) that would cause fragmentation of a natural area shall not be permitted.*

- *To the extent practicable, fire-maintained native ecosystems shall be burned at the fire interval necessary to maintain those ecosystems. Burns shall be conducted by trained personnel, using a prescribed burn plan that addresses safety and smoke concerns.*

- *Native ecosystems that have been impacted by invasive/nonnative plant infestations, land-clearing activities, drainage and/or other man-made disturbances shall be restored to their previous condition, if practicable, or to a native ecosystem that is better suited to current environmental conditions.*

- *The special requirements of listed species shall be considered in developing management strategies for each natural area, but an individual species' needs shall not take precedence over management of an entire ecosystem or be allowed to have a detrimental impact on that ecosystem's complement of species.*

Management Plan Development and Revision

- *A management plan shall be written for each natural area that: 1) describes the natural and cultural resources; 2) identifies any constraints associated with managing the natural area in an urbanized environment; and 3) identifies the strategies and techniques that will be used to preserve, restore and manage the native ecosystems, preserve the cultural resources, protect listed species, control invasive/non-native plants and animals, provide for appropriate public access, and prevent unauthorized access and activities.*

- *Each plan shall be reviewed by the Palm Beach County Natural Areas Management Advisory Committee (NAMAC), a citizens' advisory board, and the public shall be invited to comment on the plan at a public hearing held by NAMAC in the community in which the site is located. Following NAMAC's review of any comments received, the plan shall be sent to the Board of County Commissioners for approval.*

- *Each approved plan shall be subsequently reviewed at least every ten years by the County.*

EXECUTIVE SUMMARY

The 39.3-acre High Ridge Scrub Natural Area (natural area) is located in the east-central portion of Palm Beach County (County). The County owns the entire natural area. The County purchased the site from four separate owners in 1998. Funding for the natural area came from the Palm Beach County Environmentally Sensitive Lands Bond Referendum of March 12, 1991 and matching funds from the Florida Communities Trust.

Scrub and scrubby flatwoods are the only natural communities present on the site. Thus far, 204 species of plants and 133 species of animals have been recorded on the site, including seven plant and eleven animal species that have been listed as having some degree of endangerment by at least one governmental agency or have been ranked by the Florida Natural Areas Inventory.

The primary purpose for the acquisition of this natural area was to preserve, restore/enhance and manage the site's ecological resources, including the existing natural communities, their component plant and animal species, and local groundwater resources. Acquisition and development of the site as a natural area have provided the general public with opportunities for recreational activities, environmental education and scientific research which are consistent with the primary purpose of the site's acquisition. It also has helped the County comply with portions of its comprehensive plan by preserving and restoring/enhancing the natural resources of the natural area, while providing compatible public uses.

Public use facilities have been constructed; the site opened to the public in October 2007. An accessible nature trail, hiking trail, shade shelter with benches, memorial bench and kiosk with interpretive displays provide valuable opportunities for the public to observe and learn about the site's distinctive plant communities and associated animals, and to appreciate their biological uniqueness. The main public access, including parking facilities, a bicycle rack and pedestrian entrance, is located east of and connects to High Ridge Road. Neighborhood pedestrian access to the site is via a pedestrian gate located on the north side of Tom-a-toe Road.

This updated management plan: 1) identifies the existing natural resources, including rare and imperiled species and vegetation communities; 2) identifies factors that affect the preservation, restoration and long-term management of the existing resources; 3) addresses the site-specific goals, strategies and techniques that will be used to preserve, restore/enhance, manage and monitor the existing resources; 4) ensures that the natural area is managed in accordance with all applicable grant restrictions; and 5) identifies public recreational uses that may be accommodated without adversely affecting the site's natural resources. This management plan also includes: information related to the estimated capital costs, estimated annual management and maintenance costs, and any other issues identified by staff.

The management plan will be reviewed at least once every ten years by the Palm Beach County Natural Areas Management Advisory Committee and updated as necessary on the basis of new information, improvements in management techniques or other relevant factors.

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1. INTRODUCTION

1.1 LOCATION AND DESCRIPTION

High Ridge Scrub Natural Area (natural area) is located in the east-central portion of Palm Beach County (County) (Figure 1). The 39.3-acre natural area is located within an unincorporated portion of the County. The natural area is bordered to the west by High Ridge Road; to the north by two individual residential lots and High Ridge Heights single-family residential subdivision; to the east by the CSX railroad/Interstate 95; and to the south by single-family residential lots and Tom-a-toe Road.

The nearest federal- or state-owned conservation areas are the Lantana Scrub Natural Area and Arthur R. Marshall Loxahatchee National Wildlife Refuge which are located approximately 1.6 miles to the northeast (Figure 1) and 9.8 miles west of the natural area, respectively. The Lantana Scrub Natural Area is owned by the state and managed by the County. The nearest significant waterbodies are Lake Worth Drainage District's (LWDD) Equalizing Canal Number 4 (E-4 Canal), Lake Osborne and the Lake Worth Lagoon/Atlantic Intracoastal Waterway which are located approximately 0.4 mile west, 0.5 mile northwest and 1.2 miles east of the natural area, respectively. County-owned natural areas within a 3-mile radius include Hypoluxo Scrub Natural Area, 0.8 miles to the east; Rosemary Scrub Natural Area, 0.4 miles to the southeast; and North Ocean Ridge Mangroves Natural Area, 2.6 miles to the southeast.

The only regional and district county parks within a 3-mile radius of the natural area are John Prince Memorial Park, approximately 1.3 miles to the north, and Santaluces Athletic Complex, approximately 1.5 miles to the northwest (Figure 1). In addition, there are a number of smaller county parks in the vicinity of the natural area. There are no municipal parks adjacent to or in the immediate vicinity of the natural area.

The natural area is composed of a variety of landforms. In general, uplands within the site – scrub and scrubby flatwoods – exhibit a fair amount of relief. Ground elevations within the natural area generally range from 16 feet to 49 feet National Geodetic Vertical Datum (South Florida Water Management District [SFWMD] 2008). All of the natural area is located on the Pamlico Ridge (Iverson and Austin 1988).

Scrub and scrubby flatwoods are the only natural communities present on the site. Both of the intact natural communities present on the natural area have been ranked by the Florida Natural Areas Inventory (FNAI) as imperiled in Florida (FNAI 2016). The natural area contains important habitat for many rare plant and animal species. Thus far, 204 species of plants and 133 species of animals have been recorded on the site, including seven plant and eleven animal species that have been listed as having some degree of endangerment by at least one governmental agency or have been ranked by FNAI. A list of plant species recorded at the site is provided in Appendix A and a list of animal species recorded at the site is provided in Appendix B. The listed plant and animal

species recorded at the site are indicated in Tables 1 and 2, respectively. Definitions for the listing categories used by the agencies are provided in Appendix C.

1.2 PAST USES

Nearly all of the natural area has been modified by one or more past uses. All of the natural area has been modified by the creation of a regional drainage system. In addition, portions of the natural area have been modified by past agricultural uses, the creation of dirt trails, the construction of an adjacent railway and road, past mining activities, clearing of native vegetation, and unauthorized uses including off-highway vehicle (OHV) usage, paint-ball activities, fort building and dumping.

The earliest known direct impacts at the natural area included the creation of a regional drainage system, the clearing of native vegetation for agricultural use and the creation of three dirt trails through the site. The earliest known indirect impact (noise and separation from natural lands to the east) was from the Seaboard Airline Railway (now CSX Transportation). All four of these impacts began prior to 1928 (United States Coast and Geodetic Survey [USCGS] 1930); impacts from the regional drainage system (more xeric conditions) and railroad (noise and nonnative/invasive seed source) continue today.

When the LWDD was formed in 1915 its mission was to create a regional drainage system to "reclaim" lands west of the coastal ridge in southeastern and east-central Palm Beach County so that they could be settled and/or used for agricultural purposes (LWDD undated). One of the drainage canals dug by the LWDD was the E-4 Canal which is located 0.4 mile west of the natural area. The LWDD drainage system lowered the water table within and adjacent to the natural area which caused all of the natural area to become more xeric (see Section 3.1).

By 1928 native vegetation had been cleared from the southeastern and south-central portions of the present-day natural area and three sections of grove or orchard had been planted (USCGS 1930). Between 1928 and 1940 natural area lands north of the initial grove/orchard were cleared and planted with fruit trees (USCGS 1930, United States Department of Agriculture [USDA] 1940); based on historic aerial photographs most of the initial grove/orchard was still in production in 1940 (USDA 1940). By 1953, however, both the initial and subsequent groves/orchards appear to have been abandoned (USDA 1953).

Two of the three dirt trails created through the natural area prior to 1928 were located just west of the Seaboard Airline Railway. These north-south trails provided access from the predecessor of Hypoluxo Road, to the northeastern and east-central portions of the natural area. The easternmost trail also may have provided access to the adjacent railway. These two trails merged just north of the pre-1928 grove/orchard. The merged trail continued southward along the eastern edge of the grove/orchard before exiting the natural area and to provide access to and from lands south of the natural area. The third trail extended in a north-south direction both north and south of present-day Hypoluxo Road. Most of the third trail was located approximately one-quarter mile west of

the railway, in about the same location as present-day High Ridge Road. However, the southernmost portion of the trail turned to the east just west of the west-central boundary of the natural area. The trail ran in an east-west direction through the central portion of the site, until it merged with the first two trails. The westernmost dirt trail was abandoned between 1928 and 1940 (USCGS 1930, USDA 1940). The easternmost trail was abandoned between 1940 and 1953 (USDA 1940 and 1953). Portions of the middle and merged trails were used until the late 1980s (Florida Department of Transportation [FDOT] 1986 and 1991). After their abandonment all three dirt trails became overgrown by vegetation; at the present time there is little to no evidence that these trails ever existed.

High Ridge Road was constructed as a paved road just west of the natural area between 1940 and 1953 (USDA 1940 and 1953). The presence of this road effectively separated the natural area from natural lands west of the natural area.

Mining activities began in the south-central portion of the site between 1940 and 1953 (USDA 1940 and 1953). Initially all mining activities took place within the limits of the abandoned 1928 grove/orchard (USDA 1953). Fill removed from the natural area was hauled offsite using the middle dirt trail and an old access road within the old orchard/grove. Both these roads were improved through the placement of a shellrock base. The mined area was expanded between 1953 and 1964 to include the remainder of the 1928 grove/orchard, as well as most of the 1940 grove/orchard (FDOT 1964, USDA 1953). By 1964 at least half of the natural area had been mined; no additional mining appears to have occurred after 1964 (FDOT 1964 and 1968). Vegetation within the mined areas was very slow to regenerate, a situation that was exasperated by subsequent OHV use of the site.

Between 1953 and 1964 two linear, filled areas were created in the southwestern portion of the natural area (FDOT 1964, USDA 1953). One linear, filled area was created approximately 150 feet north of the southern property boundary. It started near the western property boundary and continued eastward for 400 to 450 feet (FDOT 1964). The other linear, filled area intersected with the first one approximately 300 feet east of the western property boundary. This area was created in a general north-south orientation and was most likely between 400 and 500 feet long. The purpose of these filled areas is unknown. However, their use appears to have been temporary since they were heavily vegetated in the 1964 FDOT aerial photograph.

The amount of understory vegetation was visibly reduced in the southwestern half of the natural area between 1940 and 1964 (FDOT 1964, USDA 1940). Between 1940 and 1953 the understory in two small areas – one in the west-central portion of the site and one in the western portion of the pre-1928 grove/orchard - had visibly been reduced (USDA 1940 and 1953). By 1964 the understory within the entire southwestern portion of the site had been reduced (FDOT 1964). By 1986 the affected areas had been re-colonized by mostly native vegetation (FDOT 1986).

OHV use began at the natural area between 1964 and 1968 (FDOT 1964 and 1968). Initially most of the OHV activities took place within the previously mined area. However, as time went on, a few additional trails were created within the natural area (FDOT 1973, 1986 and 1991). Uncontrolled OHV use continued until the site was purchased by the County in 1998. Additional OHV use occurred a few times after the County purchased the site, but the installation and maintenance of a perimeter fence and regulatory signage, and regular patrols by the Wildlands Task Force (see Section 4.5) and ERM staff appears to have eliminated OHV use at this site. Based on aerial photographs taken by FDOT between 1973 and 1991 OHV use appears to have significantly delayed the re-growth of vegetation within the previously mined area. By 1991 previously mined areas that were not used as part of the OHV trail system had been re-colonized by a mixture of native and nonnative plants; in contrast, areas that had been used for OHV purposes remained relatively unvegetated (FDOT 1991).

Other unauthorized uses of the natural area have included dumping of trash and yard waste both before and after acquisition of the site by the County; paint-ball activities; partying; and fort building. All unauthorized activities continue to be monitored and addressed on a case-by-case basis by members of the Wildlands Task Force and ERM staff.

1.3 ADJACENT LAND USES

The natural area and all of the lands immediately north and south of the natural area, and most of the lands immediately west and east of the site are within an unincorporated portion of the County. Some of the lands immediately northwest and southeast of the natural area are within the City of Boynton Beach's municipal boundaries. The entire natural area has a designation of "Conservation" on the County's Future Land Use Atlas (Palm Beach County 2008). The "Conservation" designation is intended to protect important natural environmental features, including endangered and threatened species. The entire natural area is designated as "Single Family Residential" on the County's most recent Zoning District maps (Palm Beach County 2016). Since the County's Unified Land Development Code (ULDC) allows natural areas with Future Land Use designations of "Conservation" to exist in all zoning categories, the County will not seek to change the zoning designation for this site.

Both large-scale and localized impacts from adjacent roads and railroads, and adjacent and nearby commercial, industrial, residential and vacant properties are to be expected at the natural area. Impacts that have affected and continue to affect all or most of the natural area include invasion of the site by nonnative plant species via seeds produced by nonnative plants growing within adjacent road and railroad rights of ways, and within adjacent and nearby properties; access to the site by OHV; dumping; and animal mortality from vehicular and train traffic.

In addition to these impacts, localized to large-scale impacts may be caused by domestic cats (*Felis catus*) and/or dogs (*Canis lupus familiaris*) which originate from adjacent and nearby residential properties. Feral/free-roaming cats and stray dogs can cause wildlife mortality. Efforts to mitigate

for these impacts include an aggressive nonnative/nusiance animal control program, public outreach, volunteer and interpretive programs, and enforcement of the provision of the Palm Beach County Natural Areas Ordinance, as amended, (Chapter 11, Article XI of the Palm Beach County Code; http://discover.pbcgov.org/erm/Publications/PBCNaturalAreasOrdinance.pdf; Natural Areas Ordinance) regarding the prohibition of domestic animals and pets on the natural area. Domestic animals may be a problem at the natural area due to the large number of residential properties that surround the site.

1.4 USES THAT ARE NOT APPROPRIATE

Public uses on county natural areas such as High Ridge Scrub Natural Area are regulated by the Natural Areas Ordinance which has been adopted by the County's Board of County Commissioners (BCC). The Natural Areas Ordinance restricts public uses within a county-managed natural area to those that are compatible with the perpetual preservation and protection of the natural area. This ordinance permits passive recreational activities such as hiking, nature study and photography. Other uses (for example, fishing, canoeing/kayaking, horseback riding and/or bicycling in areas that have been designated for such uses, environmental education and scientific research) are permitted as long as they do not jeopardize the protection of the existing natural resources. The Natural Areas Ordinance prohibits destructive uses such as OHV use and dumping, and requires special permits for camping, horseback riding, scientific research involving collection of plant and animal specimens or the use of watercraft in wetlands, and nighttime use of the natural area. Except for service animals, no dogs, cats, or other domestic animals are permitted on the natural area. The ordinance also prohibits damaging, taking, molesting, trapping, hunting and/or poaching of plants and animals. Although not prohibited by the Natural Areas Ordinance, logging is not appropriate for this natural area since it does not contain commercially-viable quantities of timber.

There are no plans for any concessions to be located on the site, nor are there plans to provide a camping area or allow horseback riding, fishing or boating on the natural area. There are sufficient retail businesses in the vicinity of the natural area to supply services normally provided by concessionaires. A camping area is not appropriate for the site given the imperiled status of both of the natural communities and the sensitivity of the rare and endangered plant and animal species - both of which could be negatively impacted if camping was permitted on the site.

Horses are not permitted on the site due to the imperiled status of both of the natural communities and the sensitivity of the rare and endangered plant and animal species - both of which would be negatively impacted if equestrians were permitted on the site - and due to the high potential for soil erosion on the site.

There are no wetlands or navigable waters on the site, so there is no way to accommodate fishing or boating uses.

No vehicles (for example, OHVs, bicycles, skateboards, etc.) are permitted beyond the designated parking lot/trailhead, except to perform the monitoring, maintenance and land management activities described in this management plan, and except as authorized by the County's Access Policy for Use of Natural Area Trails and Other Public Use Facilities by Persons with Mobility Disabilities. No drones are permitted within the natural area, except to assist with the management and monitoring activities described in this management plan or as may be permitted for scientific research.

1.5 OUTPARCELS

There are no outparcels adjacent to the natural area that would be suitable for acquisition. All of the land immediately east of the natural area is owned by CSX Transportation or a private school and is used for transportation or recreational purposes, respectfully. All of the lands north, south and west of the natural area have already been developed or cleared for residential or transportation purposes.

1.6 MANAGEMENT AND USE RESTRICTIONS

Management activities and public uses on the natural area are restricted to those that are consistent with the preservation and protection of the rare and endangered plants, animals and ecosystems found on the site. To ensure that the natural area is preserved and protected in perpetuity, management activities and public uses on the site are regulated by restrictions imposed by the Natural Areas Ordinance (see Section 1.4), and by conservation easements granted by the County to the SFWMD and The Nature Conservancy (TNC) (see Appendix D and Section 1.7). Management of a 12.76-acre portion of the natural area (Figure 2) also is restricted by the conditions imposed in the Florida Communities Trust (FCT) Grant Award Agreement dated August 8, 2001 (Appendix E).

The size, shape and location of the natural area do not restrict certain management activities such as invasive/nonnative vegetation removal or upland restoration activities. These factors do, however, limit what can be done on the site relative to the reintroduction of fire. The site's proximity to Interstate 95, the CSX railroad, High Ridge Road, residential areas and schools severely limits the options for prescribed burning.

There are no other known legislative or executive constraints that affect the development, use or management of the site. The natural area is not within an aquatic preserve or a designated area of critical state concern, and is not under study for such a designation.

1.7 EASEMENTS, CONCESSIONS, LEASES AND OTHER ENCUMBRANCES

There are five easements, one set of grant award restrictions and two encroachments that restrict use of and/or benefit the natural area. There are no concessions or leases that affect the natural area.

One access easement, one right of way easement, one recorded utility easement and two conservation easements affect the natural area. In 1981 a 14-foot-wide access easement was placed in an east-west direction over the southern portions of the Seppala Tract (Figure 2) and the two parcels which lie between the Seppala Tract and High Ridge Road. The easement both benefits and encumbers a portion of the natural area. The easement gives the owners of the Seppala Tract the ability to use the easement area within the other two parcels to travel between the natural area tract and High Ridge Road; it also provides the owners of the other two parcels the right to use the easement area within the Sepalla Tract to access the western edge of the CSX railroad right of way. This easement could be abandoned if the owners of all benefiting parcels agreed to the abandonment.

In 1963 a 40-foot-wide road right of way was created west of the Hecht Tract to allow the then owners of the tract and surrounding lands to access High Ridge Road. The existence of the right of way easement benefits the natural area by providing legal access to the southeastern portion of the natural area via the private Tom-a-toe Road.

An 8-foot-wide utility easement is present over the northern 8 feet of the Hecht Tract. The east-west oriented easement runs the entire width of the tract.

In 2005 the BCC approved a resolution establishing a standard form conservation easement to be placed over all county-owned natural areas (R2005-1770). This conservation easement provides a level of protection that is not affected by the retirement of county or state conservation bonds. It limits improvements to those that support land management activities and recreational opportunities that have little or no impact on natural resources. It also allows for the removal/eradication of nonnative and nuisance plants and animals, and the implementation of environmental restoration/enhancement projects. The County granted standard form conservation easements over the natural area to the SFWMD and TNC in March 2006 (Appendix D).

A 12.76-acre portion of the natural area was acquired with matching funds from FCT and therefore is constrained by the conditions imposed in the associated Grant Award Agreement (Figure 2; Appendix E). Under this agreement, the County must provide FCT with at least 60 days prior written notice regarding any proposed lease of any interest in, the operation of any concession on, any sale or option, the granting of any management contracts, and any use of the FCT project site by any person other than that person's capacity as a member of the general public; no related documents will be executed without the prior written approval of FCT. All fees collected from a lease, concession contract, management contract, etc. on a FCT project site shall be reported to

FCT and placed in a segregated account solely for the upkeep and maintenance of that FCT project site.

Any proposed modification to the approved management plan and/or any site alterations or physical improvements that are not addressed in the approved management plan requires prior FCT review and approval.

Finally, there are two encroachments that affect small portions of the natural area. These minor encroachments are associated with utility poles that lie immediately west and south of the Florida Affordable Housing, Inc. Tract. The first encroachment is an anchor line that is located within the west-central portion of the tract. The anchor line, which extends approximately 20 feet into the natural area, helps support a utility pole just west of the Florida Affordable Housing, Inc. Tract. The second encroachment, an overhead powerline, crosses the extreme southern portion of the southwest corner of the tract. Neither of these encroachments is expected to adversely affect management of the site and both are expected to remain "as is."

No additional easements, concessions, leases or other encumbrances are anticipated.

1.8 PLAN DEVELOPMENT AND REVIEW

The initial management plan for this site was approved by the BCC on October 2, 2001. Although it is the County's goal to review each approved management plan at least once every ten years, budget constraints and the resulting loss of staff have delayed the preparation of this update. This updated management plan identifies changes that have occurred at the natural area since the preceding management plan was approved by the BCC.

The main goal of this management plan is to help ensure that the site's natural resources are protected in perpetuity. Scientific research, environmental education and resource-based recreational uses are permitted as long as they do not jeopardize the protection of these resources. In keeping with these goals, this management plan: 1) identifies the existing natural resources, including rare and imperiled species and vegetation communities; 2) identifies any changes that occurred to those resources subsequent to approval of the initial management plan; 3) identifies factors that affect the preservation, restoration and long-term management of the existing resources; 4) addresses the site-specific goals, strategies and techniques that will be used to preserve, restore/enhance, manage and monitor the existing resources going forward; 5) ensures that the natural area continues to be managed in accordance with applicable grant restrictions; 6) evaluates the effect, if any, of existing recreational uses on the site's natural resources; and 7) identifies any recreational uses that could be added or that should be discontinued at the site. This management plan also includes information related to the site's connectivity with other conservation areas, an estimation of annual management and maintenance costs, and any other issues identified by staff.

All draft natural areas management plans prepared by ERM are reviewed by a seven-member, BCC-appointed, advisory committee known as the Natural Areas Management Advisory Committee (NAMAC). The purpose of NAMAC is to review and comment on draft management plans developed for natural areas acquired and/or managed by the County, and to hold public hearings on initial management plans prior to their review and adoption by the BCC. As development of each draft management plan nears completion, NAMAC members are invited to tour the natural area with staff. All comments received from NAMAC members during the site visit are taken into consideration during completion of the draft management plan. The draft management plan is then sent to NAMAC for review and comment. The draft management plan also is posted on the ERM website for public review and comment.

Members of the public were invited to comment on this draft management plan at the January 20, 2017 regularly-scheduled meeting of NAMAC when the plan was discussed by the committee. Comments also were accepted in the weeks leading up to the plan's final review and approval by NAMAC. No comments were received during the public review process. Members of the public also had the opportunity to comment on the plan on (month day year) when it was considered and approved by the BCC. This updated management plan was reviewed and approved by FCT on (month day year).

1.9 SITE ACQUISITION HISTORY

In 1986 the BCC funded an inventory of the native ecosystems in Palm Beach County by two Florida Atlantic University professors, Dr. Grace Iverson and Dr. Daniel Austin (Iverson and Austin 1988). The study was completed in 1988, with additional work in 1989. The study identified 38 "A" quality sites, 14 of which were identified as "high priority acquisition sites" by the County's Environmentally Sensitive Lands Acquisition Advisory Committee (ESLAAC). On March 12, 1991, the voters of Palm Beach County approved a $100 million bond referendum to purchase environmentally sensitive lands with emphasis on the 14 high-priority sites. Although the Highridge Sandmine ecosite (now known as High Ridge Scrub Natural Area) was one of the 38 "A" quality sites identified in the study, it was not selected by ESLAAC as one of the 14 high-priority acquisition sites.

All four tracts within the natural area (Figure 2) were purchased by the County in 1998. The first and largest portion of the natural area (26.5 acres) was acquired from the Hoysgaard family in April for $1,085,000. In July a 2.57-acre tract was purchased from Martin and Nancy Seppala for $100,000, and an 8.83-acre tract was acquired from Florida Affordable Housing, Inc. Tract for $535,000. The last portion of the site, a 1.43-acre tract, was acquired from Nina Hecht in December for $45,000.

In May 1999 the County submitted an application to the FCT Preservation 2000 Program for matching funds to help pay for acquisition of the Seppala, Hecht and Affordable Housing, Inc.

tracts (Figure 2). In 2001 the County received $246,608 in matching funds from FCT following FCT's approval of an interim management plan for the natural area.

Information regarding notable events taking place at the natural area subsequent to the site's acquisition is depicted in the following chapters: "Management and Restoration Activities" (Chapter 4), "Site Development and Improvement" (Chapter 5) and "Chronology of Major Events" (Chapter 8).

2. PURPOSE AND OBJECTIVES

2.1 PURPOSE OF ACQUISITION

The primary purpose of the County's Natural Areas System is to protect native ecosystems and biological diversity throughout Palm Beach County. The primary purpose for the acquisition of this natural area was to preserve, restore/enhance and manage the site's ecological resources, including the existing natural communities, their component plant and animal species, and local groundwater resources. Acquisition and development of the site as a natural area have provided the general public with opportunities for recreational activities, environmental education and scientific research which are consistent with the primary purpose of the site's acquisition.

It also has helped the County comply with portions of its comprehensive plan by preserving and restoring/enhancing the natural resources of the natural area, while providing compatible public uses. Policies and objectives outlined in the County's comprehensive plan which are furthered by the acquisition and management of the site include: the preservation and protection of native communities and ecosystems to ensure that representative communities remain intact (Conservation Element, Goal 2, Objective 2.1); the protection and preservation of endangered and threatened species, special of special concern and their associated habitats (Conservation Element, Goal 2, Objective 2.4); and the continued efforts to eradicate prohibited invasive non-native vegetation (Conservation Element, Goal 2, Objective 2.5).

All portions of the natural area are important to preserving ecological resource values of the site. Because every portion of the site provides habitat for at least one rare or endangered plant species, animal species or natural community, there are no portions of the property that can be declared as surplus.

2.2 MANAGEMENT GOALS AND OBJECTIVES

The natural area contains scrub and scrubby flatwoods native vegetation communities (Figure 3). These communities, most of which can be considered as moderate- to high-quality within the context of urbanized southeastern Florida, were in a somewhat degraded condition at the time of site acquisition. Maintaining and improving the ecological quality of these native vegetation communities is one of the primary management goals for this site. Another primary goal is to restore, enhance and/or manage disturbed areas in a manner that will enhance the overall biological diversity of the site and/or meet specific needs of listed species. Habitats for listed species will be managed for the needs of individual species when such management is compatible with the overall management of the ecosystems within the natural area.

The following goals and objectives reflect desired management outcomes that are specific to High Ridge Scrub Natural Area. The objectives are actions or measureable outcomes of management targeted to achieve either short-term goals (achievable within 2 years) or long-term goals

(achievable within 10 years). All of the following goals and objectives are subject to and contingent upon annual budgetary funding and appropriations by the BCC.

Habitat Restoration and Improvement

Goal 1. Create a landscape mosaic of healthy scrub in various stages of regrowth that maximizes species diversity and habitat quality on the site (short-term and long-term).

Objective A. Conduct prescribed burns within Management Units 1, 2 and 4 (Figure 4) at 15- to 20-year intervals to achieve a diversity of scrub successional stages.

Objective B. Use mechanical vegetative reduction methods, as needed, to create a mosaic of natural communities and successional stages, and reduce the risk of catastrophic wildfire.

Goal 2. Maintain and enhance a healthy scrubby flatwoods community (short-term and long-term).

Objective A. Conduct prescribed burns within Management Unit 3 (Figure 4) at a 8- to 15-year interval to maintain the scrubby flatwoods natural community on the site.

Objective B. Use mechanical vegetative reduction methods, as needed, to create a mosaic of natural communities and successional stages, and reduce the risk of catastrophic wildfire.

Imperiled Species Habitat Maintenance, Enhancement, Restoration or Population Restoration

Goal 1. Protect, restore/enhance and maintain imperiled species habitats (short-term and long-term).

Objective A. Conduct prescribed burns in accordance with the schedule provided in Table 3 to maintain the diversity and health of the native plant communities on the site.

Objective B. Implement a photo-monitoring program for selected natural communities.

Objective C. Monitor the status of imperiled plant and animal species populations in accordance with monitoring schedules established by ERM (see Chapter 7).

Objective D. Enforce relevant provisions of the Natural Areas Ordinance, such as those dealing with damage to or removal of plants, molestation or harassment of animals, introduction or release of nonnative plants and animals, and prohibition of domestic animals and pets.

Nonnative, Invasive and Nuisance Species Maintenance and Control

Goal 1. Control nonnative and invasive plant species, and nonnative and nuisance animal species so that they do not significantly impact native communities (short-term and long-term).

Objective A. Maintain coverage of invasive/nonnative plant species at less than 1 percent of the natural area by conducting annual invasive/nonnative plant treatments

Objective B. Monitor the site for domestic and feral cats, stray dogs, coyotes (*Canis latrans*), raccoons (*Procyon lotor*) and other nonnative/nuisance animals during opportunistic observations and scheduled wildlife monitoring surveys, and remove/control populations of nonnative/nuisance animals as necessary and feasible.

Cultural and Historical Resources

This management objective is not applicable to High Ridge Scrub Natural Area. No significant cultural or historical resources have been identified on the site at this time. If any cultural or historical resources are identified at a later date, the procedures used to protect the newly discovered cultural/historical resource(s) will depend on which agency has the ultimate review authority – Florida Department of State, Division of Historical Resources (FDHR) or the County pursuant to Article 9 of the County's ULDC.

Sustainable Forest Management

This management objective is not applicable to High Ridge Scrub Natural Area. The natural area does not provide commercial forest resources.

Capital Facilities and Infrastructure

Goal 1. Maintain the existing facilities and infrastructure in safe condition (short-term and long-term).

Objective A. Monitor the integrity and condition of facilities on a regular basis, including the parking lot, concrete nature trail, hiking trails, kiosk, shade shelter, bike rack, signs, fencing and gates.

Objective B. Close unsafe areas to the public immediately upon the detection of a problem.

Objective C. Replace/repair damaged fencing and signage as soon as possible.

Objective D. Replace/repair minor cracked/damaged infrastructure issues within six months of detection, contingent upon receipt of any necessary permits, construction contract requirements and/or budgetary funding and appropriations by the BCC.

Objective E. Replace/repair major cracked/damaged infrastructure issues within one year of detection, contingent upon receipt of any necessary permits, construction contract requirements and/or budgetary funding and appropriations by the BCC.

Goal 2. Maintain the overall appearance and aesthetics of the natural area (short-term and long-term).

Objective A. Maintain public use facilities (cleaning of concrete nature trail, parking lot, etc.) on a biweekly or as-needed basis.

Objective B. Mow management accessways and firebreaks on an as-needed basis.

Objective C. Paint over or remove graffiti from public use facilities on an as-needed basis.

Public Access and Recreational Opportunities

Goal 1. Continue to provide non-consumptive/non-destructive, resource-based public access and recreational opportunities within the natural area (short-term and long-term).

Security

Goal 1. Implement appropriate security and access control measures to prevent unauthorized activities, such as use by OHVs, dumping and off-trail use (short-term and long-term).

Objective A. Install and maintain a fence and gate system which is designed to restrict public vehicular access to the designated parking lot and eliminate dumping on the site.

Objective B. Install and maintain signage to identify the site as a natural area and to inform the public as to the uses and activities that are permitted and not permitted on the site.

Objective C. Subject to funding appropriations from the Board of County Commissioners, continue to fund the Wildlands Task Force to enforce the Natural Areas Ordinance, as amended.

Objective D. Subject to funding appropriations from the Board of County Commissioners, provide annual training sessions designed to educate local law enforcement officers about County ordinances related to the protection of natural areas and site-specific security issues.

3. NATURAL AND CULTURAL RESOURCES

High Ridge Scrub Natural Area contains a remnant of the native upland communities formerly present in southeastern Florida. Agriculture, urbanization, road and railroad construction, hydrologic modifications, fire suppression and other human-related disturbances have eliminated or severely modified most of the native upland and wetland communities near the natural area. The site's natural communities currently represent a mosaic of historical, successional and altered vegetation communities. The natural area is not a designated area of state concern or under study for such designation, and is not within an aquatic preserve.

A thorough inventory and assessment of the existing natural resources had to be conducted before meaningful management goals and objectives could be developed for the natural area. The following sections summarize the site's existing natural resources. Disturbances which have affected, and/or continue to affect, these natural resources also are identified. Restoration, enhancement and management activities designed to mitigate for adverse impacts to the site's natural resources are described in Chapters 4 and 5. A discussion of the archaeological and historical resources is provided in Section 3.6.

Both the scientific and common names of plant and animal species are provided the first time the species is mentioned in this management plan. After the initial reference, only the common name is used. A list of plants and animals recorded at the natural area are provided in Appendixes A and B, respectively.

3.1 HYDROLOGY

There are no wetlands on the natural area at the present time. It also appears that there were no wetlands on the site prior to regional drainage improvements (USDA 1940). Historically the natural area was part of a narrow strip of uplands that was sandwiched between two north-south, freshwater wetlands - a narrow, linear wetland that was located just east of the present-day CSX railroad and a broader, shallow-water wetland that was located just west of present-day High Ridge Road. These two wetlands became overdrained and were lost as a result of a regional drainage system that was constructed prior to 1940 (USDA 1940 and 1953). At the present time the nearest wetland is a water retention area/water hazard within High Ridge Country Club golf course; this wetland is located approximately 775 feet west of the natural area. Larger wetlands/waterbodies – the E-4 Canal, Lake Osborne and Lake Worth Lagoon - are located approximately 0.4 mile west, 0.5 mile northwest and 1.3 miles east of the natural area, respectively.

Although no drainage improvements have been installed on the natural area, regional drainage improvements have caused the water table within and adjacent to the natural area to drop several feet. The first hydrological impact that occurred in the vicinity of the natural area was the creation of an inlet near the present-day Lake Worth Inlet in the early 1860s (Vines 1970). The inlet was prone to migration and closure. As a result it was relocated in 1877 to a different site north of the

original cut until the new location also proved to be unstable. In 1917 the Lake Worth Inlet was stabilized at its original location. The creation of the Lake Worth Inlet lowered water levels within the Lake Worth Lagoon from a few feet above sea level before the inlet was created, to sea level following the opening of the inlet. This lowered the water table east of the natural area.

Drainage systems constructed west, south and north of the natural area also lowered the water table within and adjacent to the natural area. The E-4 Canal was dug west of the natural area prior to 1928 (USCGS 1930). The southern portion of this canal connected Lake Osborne, and historic wetlands south and west of the natural area to the Lake Worth Lagoon via the Boynton Canal (approximately 1.8 miles south of the natural area). The northern portion of the E-4 Canal connected the northern portion of Lake Osborne to the Lake Worth Lagoon via the West Palm Canal, approximately 5.2 miles north of the natural area. According to a water surface and shoreline map drawn by Pierce (1970), over fifty percent of the historic surface area of Lake Osborne was lost due to over drainage between 1883 and 1969.

Although some runoff may enter the natural area from High Ridge Road or an adjacent residential property during extreme rainfall events, any surface water entering the natural area quickly percolates into the highly permeable soils found within the natural area.

3.2 NATURAL COMMUNITIES

The following discussion provides a general description of each of the “intact” and altered (“disturbed”) plant communities present on the natural area – (scrub and scrubby flatwoods) (Figure 3). Unless otherwise indicated, the descriptions provided for intact communities are based upon the FNAI classification system (FNAI 2010). If a community is so altered that it no longer resembles or functions as an intact plant community, an alternative description has been developed. The phrase "natural community" is used in this plan, even when a plant community has been altered. A list of the typical plant species found in Palm Beach County is provided for each of the intact plant communities found on the site; these lists are based on information contained in FNAI 2010 and on species ranges provided in Wunderlin and Hansen 2011.

The goal of natural communities management is to restore and maintain as many of the natural communities that historically occupied the site as possible. Both of the natural communities on the natural area have been enhanced or restored (see Section 4.4). They will be maintained through the implementation of invasive/nonnative plant and nonnative/nuisance animal control programs (see Sections 4.4.2 and 4.4.3), through the closure of all old OHV trails that are not part of the management accessway/firebreak system, and through security measures designed to eliminate OHV use and dumping (see Section 4.5). Since scrub and scrubby flatwoods are fire-maintained communities, they also will be maintained through the implementation of a prescribed burn program and/or through mechanical vegetation reduction (see Section 4.4.1).

The only area that lacks a natural community is the "developed area" (Figure 3). This 0.3-acre area includes the parking lot and entrance driveway.

3.2.1 Scrub

Scrub communities occur on sand ridges along former shorelines and are characterized by very-well-drained soils, a relatively open canopy, a dense-to-open understory layer and a sparse groundcover layer. Scrub communities are composed of evergreen shrubs, with or without a canopy of pines. The signature species – three species of scrub oaks (myrtle oak [*Quercus myrtifolia*], sand live oak [*Quercus geminata*] and Chapman's oak [*Quercus chapmanii*]), sand pine (*Pinus clausa*) and Florida rosemary [*Ceratiola ericoides*] – are found in scrub statewide. Other typical scrub plant species which occur in the County include saw palmetto (*Serenoa repens*), threeawns (*Aristida* spp.), hairsedges (*Bulbostylis* spp.), pinweeds (*Lechea* spp.), jointweeds (*Polygonella* spp.), sandyfield beaksedge (*Rhynchospora megalocarpa*) and ground lichens (*Cladina* spp. and *Cladonia* spp.). Listed animal species found in Palm Beach County that typically are associated with scrub include gopher tortoise (*Gopherus polyphemus*) and Florida scrub-jay (*Aphelocoma coerulescens*) (Bartlett and Bartlett 2011, FNAI and FDNR 1990, NatureServe 2015).

Scrub is a fire-maintained community. Recommended fire return intervals for scrub habitats range from 3 to 40 years and are dependent on the dominant plant species – oak scrub has a recommended fire return interval of 3 to 20 years, sand pine scrub has a recommended fire return interval of 5 to 40 years and rosemary scrub has a recommended fire return interval of 15 to 30 years. Periodic fire is one of the physical disturbances that help maintain the areas of open sand that characterize typical scrub. Fire is necessary for the growth and proliferation of many of the rare and/or endemic species that are found in scrub communities in Florida.

The density of key species within a scrub canopy often is a reflection of fire frequency. Individual sand pines usually are killed by fire, but replaced through reseeding. It takes nearly 10 years for the replacement stand of sand pines to mature and begin producing new seeds, and sand pines start to die off once they reach 50 years of age (FNAI 2010). Therefore, fires which occur at relatively short intervals (before replacement trees become mature enough to produce seeds) or at relatively long intervals (approaching, or beyond, the normal reproductive life of sand pine) may eliminate sand pines from a scrub community. Similarly, Florida rosemary succumbs to fire and is reestablished from seed. This species requires 10 to 15 years to reach reproductive maturity and becomes senescent around 40 years of age. As a result, Florida rosemary also may be eliminated from scrub due to too frequent or too infrequent fire. Most of the other scrub species resprout readily from root-shoots following fire.

The scrub community at the natural area will be prescribed burned on a 15- to 20- year interval. This proposed burn interval is within the range that is typically desired for scrub communities. The scrub community occupies approximately 21.3 acres and is predominately oak scrub.

FNAI (2016) ranked scrub as G2/S2 - imperiled both globally and in Florida because of rarity or vulnerability to extinction.

3.2.2 Scrubby Flatwoods

Scrubby flatwoods are characterized as having an open canopy of widely-spaced pine trees and a low, shrubby understory dominated by scrub oaks and saw palmetto, often interspersed with areas of barren white sand. Scrubby flatwoods will not flood, even under extremely wet conditions (Abrahamson and Hartnett 1990). The principal canopy species in South Florida is slash pine (*Pinus elliottii*). In the County the understory consists of one or more of three scrub oaks - myrtle oak, Chapman's oak and sand live oak - and shrubs typical of mesic flatwoods such as saw palmetto, gallberry (*Ilex glabra*), coastalplain staggerbush (*Lyonia fruticosa*), fetterbush (*Lyonia lucida*) and deerberry (*Vaccinium stamineum*) (FNAI 2010, Wunderlin and Hansen 2011). Grasses and subshrubs include wiregrass (*Aristida stricta* var. *beyrichiana*), broomsedge bluestem (*Andropogon virginicus*), little bluestem (*Schizachyrium scoparium*), dwarf live oak (*Quercus minima*), shiny blueberry (*Vaccinium myrsinites*), dwarf huckleberry (*Gaylussacia dumosa*), gopher apple (*Licania michauxii*), Chapman's goldenrod (*Solidago odora* var. *chapmanii*), running oak (*Quercus pumila*), coastalplain honeycombhead (*Balduina angustifolia*), narrowleaf silkgrass (*Pityopsis graminifolia*) and October flower (*Polygonella polygama*). Listed animal species that are typically associated with scrubby flatwoods in Palm Beach County include gopher tortoise and Florida scrub-jay (Abrahamson and Hartnett 1990, Bartlett and Bartlett 2011, NatureServe 2015).

Due to the relatively sparse ground cover and the presence of open, sandy areas, natural fire frequency in scrubby flatwoods is lower than in other flatwoods communities (Abrahamson and Hartnett 1990). Under natural conditions, this community burns once every 5 to 15 years. Scrubby flatwoods tend to burn in a spotty fashion leaving a mosaic of lightly-burned, intensely-burned and unburned areas.

The scrubby flatwoods community at the natural area will be prescribed burned on an 8- to 15-year interval. This proposed burn interval is within the range that is typically desired for scrubby flatwoods communities. There are 17.7 acres of scrubby flatwoods at the natural area.

FNAI (2016) ranked scrubby flatwoods as G2/S2? - imperiled both globally and in Florida because of rarity or vulnerability to extinction. The question mark indicates that the state status is questionable at present.

3.3 PLANTS AND ANIMALS - OVERVIEW

A total of 204 species of plants have been recorded at the natural area (Appendix A). Of these, seven have been listed for protection or special management by a government agency or have been

ranked by FNAI (Table 1). To date, 76 species of plants recorded at the site are not native to the South Florida mainland. These species are discussed in more detail in Section 4.4.2.

A total of 133 species of animals have been recorded at the natural area - 5 arachnids, 1 millipede, 52 insects, 8 reptiles, 62 birds and 5 mammals (Appendix B). Of these, eleven have been listed for protection or special management by a government agency or have been ranked by FNAI (Table 2). To date, three species of invertebrates and five species of vertebrates recorded at the site are not native to the South Florida mainland. These species are discussed in more detail in Section 4.4.3.

Some native plant and animal species recorded at the natural area are habitat-specific, using only one natural community, while others use a variety of natural communities. Therefore, the preservation, restoration, enhancement and management of all of the natural communities at the natural area are critical to the long-term preservation of animal species indigenous to the site.

3.4 LISTED SPECIES

3.4.1 Plants

Seven plant species recorded at the natural area have been listed for protection or special management by at least one governmental agency or have been ranked by FNAI (Table 1). These species will be protected as components of the natural communities of which they are a part. All listed/ranked plant species recorded at the natural area will be protected by implementing management activities designed to restore, enhance and maintain the natural communities in which they occur; controlling/removing invasive/nonnative vegetation; implementing a prescribed burn program; routing management accessways, trails and other public use facilities away from known populations whenever possible; relocating plants that cannot be avoided during construction and restoration activities; and protecting the site from plant collectors. Species known to be susceptible to fire may be protected during prescribed burn activities by one or more of the following actions: having multiple management units, burning only one unit at a time to maintain a seed source on the unburned parts of the site, maintaining a mosaic of seral stages on the site, creating temporary firebreaks, or relocating individual plants to other locations on the site prior to a prescribed burn. Information regarding the monitoring of listed/ranked plant species is provided in Section 7.2.

This section includes a brief description of each listed/ranked plant species and any species-specific management/protection strategies that may be used to protect that species. The ranks and designations assigned to the species are provided in Table 1. Listed/ranked plant species recorded at the natural area are discussed in alphabetical order by common name. The typical habitats provided for each species are as described by Wunderlin and Hansen (2011) unless otherwise noted.

Common wild pine (*Tillandsia fasciculata*)

This epiphytic bromeliad was first recorded at the natural area by ERM staff in 1996; it is frequently observed at the natural area. It is typically found in cypress swamps, hammocks and flatwoods. All species of Tillandsia may be killed directly by fire, or indirectly as a result of the loss of the protective tree canopy or death of the host tree (Robertson and Platt 1992 and 2001).

Coontie (*Zamia pumila*)

This long-lived dioecious cycad was planted at the natural area by ERM staff in 2009 and 2014; it is frequently observed at the natural area. It is typically found in oak hammocks, pinelands and shell middens. Coontie is fire tolerant. Because it produces both neurotoxins and carcinogens (University of North Florida 2012), care should be taken when handling this plant.

Curtiss' milkweed (*Asclepias curtissii*)

This extremely rare, endemic perennial herb was recorded at the natural area in 1996 and 2007 by ERM staff. It has not been recorded on the site since 2007. It is typically found in scrub, usually in close association with woody shrubs that provide shade (Mondo et al. 2010).

Giant wild pine (*Tillandsia utriculata*)

This epiphytic bromeliad was first recorded at the natural area by ERM staff in 1995; it is frequently observed at the natural area. Giant wild pine is typically found in hammocks and cypress swamps. The giant wild pine population decreased significantly following Hurricane Wilma in 2005. All species of Tillandsia may be killed directly by fire, or indirectly as a result of the loss of the protective tree canopy or death of the host tree (Robertson and Platt 1992 and 2001).

Inflated & reflexed wild pine (*Tillandsia balbisiana*)

This epiphytic bromeliad was first recorded at the natural area by ERM staff in 1995. It was occasionally observed at the natural area between 1995 and 2008, but has not been recorded on the site since 2008. Inflated & reflexed wild pine is typically found in hammocks and scrub. All species of Tillandsia may be killed directly by fire, or indirectly as a result of the loss of the protective tree canopy or death of the host tree (Robertson and Platt 1992 and 2001).

Shell-mound pricklypear (*Opuntia stricta*)

This perennial forb was recorded at the natural area by ERM staff in 1995 and 1996, but was not recorded on the site between 1996 and 2014. In 2014 seven plants grown from pad cuttings were planted on the natural area. As of May 2016 all seven plants were in good condition. This species is typically found on dunes and shell middens, and in coastal hammocks.

Spreading pinweed (*Lechea divaricata*)

This herb was first recorded at the natural area by ERM staff in 1996. It was recorded at the natural area on several occasions between 1996 and 2011, but has not been recorded on the site since 2011. It is typically found in scrub and scrubby flatwoods (Chafin 2000). This species is adapted to fire.

3.4.2 Animals

Eleven animal species recorded at the natural area have been listed for protection or special management by at least one governmental agency or have been ranked by FNAI (Table 2). They include two insects, one reptile and eight birds. The listed/ranked animal species at the natural area will be managed and protected as components of the natural communities of which they are a part. All listed/ranked animal species will be managed and protected through the implementation of management activities designed to restore, enhance and maintain the natural communities used by these species; by establishing a protective buffer zone around any existing nest or rookery, or any nest or rookery that may be discovered in the future; and by the enforcement of anti-poaching regulations. Although the eastern indigo snake (*Drymarchon corais couperi*) and Florida scrub-jay once inhabited the natural area and/or surrounding lands, they were extirpated from the natural area prior to its acquisition by the County.

This section includes a brief description of each listed/ranked species, including the habitats in which it is typically found and the species' primary diet. The ranks and designations assigned to the species are provided in Table 2. Listed/ranked animal species recorded at the natural area are discussed in alphabetical order by common name.

American redstart (*Setophaga ruticilla*)

This migratory warbler was first recorded at the natural area by ERM staff in 2008; it is rarely observed at the natural area. American redstarts actively glean foliage for insects and spiders, and hover or take long flights to capture flying insects (Pranty et al. 2006). Fall migrants arrive in Florida between late July and early November, and spring birds pass through between late March and early June (Maehr and Kale 2005). This species does not nest in South Florida (Sherry and Holmes 1997).

Atala (*Eumaeus atala*)

This butterfly was first recorded at the natural area by ERM staff in 2012; it is regularly observed at the natural area. Its larval food plant is coontie, a native shrub (Minno et al. 2005) that is found on the natural area. Atala typically are found in tropical hardwood hammocks, pine rocklands and gardens.

Bald eagle (*Haliaeetus leucocephalus*)

This very large bird of prey was recorded at the natural area by ERM staff in 2002. It has not been recorded at the site since that time. Bald eagles feed primarily on fish and waterbirds (Pranty et al. 2006). This species inhabits coastal beaches, salt marshes, dry prairies, mixed pine and hardwood forests, wet prairies and marshes, pine flatwoods, sandhills and agricultural areas (Maehr and Kale 2005). In Florida, most bald eagles are year-round residents, but winter migrants do occur. Bald eagles typically nest in pine trees, but also may nest in mangrove trees or cypress; most nests are built more than 50 feet off the ground (Stevenson and Anderson 1994). The bald eagle is not known to have nested on the natural area.

Cassius blue butterfly (*Leptotes cassius theonus*)

This small butterfly was first recorded at the natural area by ERM staff in 1998. Cassius blue butterflies are locally common along the edges of hammocks, thickets, disturbed areas and gardens (Minno et al. 2005). Its larval food plants include eastern milkpea (*Galactia volubilis*), hairypod cowpea (*Vigna luteola*), rosary pea (*Abrus precatorius*) and cape leadwort (*Plumbago auriculata*). Except for hairypod cowpea, all of these species have been found on the natural area.

Gopher tortoise (*Gopherus polyphemus*)

Based on population surveys for this species at the natural area, a relatively large population of this medium-sized terrestrial turtle is present on the site. Gopher tortoises are plant eaters; they are known to feed on up to 400 species of grass and herbaceous plants (Ashton and Ashton 2008). They can travel up to two miles from their burrows to feed. They also may eat carrion, small animals, insects and other invertebrates. The gopher tortoise typically inhabits sandhill, scrub, scrubby flatwoods, xeric hammock, pine flatwoods, dry prairie, coastal strand, mixed pine-hardwood communities and a variety of disturbed well-drained habitats (Florida Fish and Wildlife Conservation Commission [FWC] 2012). The gopher tortoise is considered to be a keystone species in upland communities because of the important role that this species plays in relation to other plants and animals. At least 411 species of vertebrate and invertebrate animals are known to use gopher tortoise burrows (Mushinsky et al. 2006).

The close proximity of the natural area to smoke-sensitive areas severely limits the use of prescribed fire as a gopher tortoise habitat management tool. Therefore, mechanical vegetation reduction activities were conducted in Management Unit 4 (Figure 4) in 2012 and again in 2015 to reduce fuel loads and create open space suitable for gopher tortoises. Portions of Management Unit 1 also were mechanically reduced in 2015. This management technique will continue to be used during periods when it is not possible to conduct a prescribed burn.

Little blue heron (*Egretta caerulea*)

One individual of this medium-sized heron was recorded at the natural area by ERM staff in 2016. Little blue herons feed on small fish and amphibians, aquatic crustaceans, insects, worms and snakes (FWC 2013a). This species inhabits coastal beaches, salt marshes, mangroves, hardwood swamps, cypress swamps, wet prairies, freshwater marshes, lakes and ponds, and flooded agricultural areas (Maehr and Kale 2005, Pranty et al. 2006). Nesting occurs between late February and August in single species or multiple species wading bird colonies, mainly at saltwater sites (Maehr and Kale 2005). The little blue heron is not known to nest at this site.

Merlin (*Falco columbarius*)

One individual of this small- to medium-sized falcon was recorded at the natural area by ERM staff in 2008. It has not been recorded at the site since that time. This species preys chiefly on small birds, but may feed on small mammals and insects (Maehr and Kale 2005, Pranty et al. 2006). Merlins can be seen in virtually any open habitat, usually near water (Pranty et al. 2006). These migratory falcons can be locally common along the Atlantic coast of Florida from September to April. This species does not nest in Florida.

Osprey (*Pandion haliaetus*)

This large bird of prey was first recorded on the natural area by ERM staff in 2000; it is occasionally observed at the natural area. It feeds almost exclusively on fish (FWC 2013b, Pranty et al. 2006). Ospreys are widely distributed in Florida and may be found near coastal beaches, salt marshes, open saltwater, open freshwater, mangroves, and wet prairies and marshes (Maehr and Kale 2005). In South Florida, nesting occurs from late November to early summer (FWC 2013b). Ospreys use live or dead trees, telephone poles and human-made structures for nesting; they create large stick nests high above the ground that they use for many years (Pranty et al. 2006). They are not known to nest at the natural area.

Painted bunting (*Passerina ciris*)

This colorful, migratory songbird species was first recorded at the natural area by ERM staff in 2006; it is rarely observed at the natural area. Painted buntings feed primarily on seeds, but also eat small fruits, insects and spiders (Maehr and Kale 2005, Pranty et al. 2006). They are found in dense vegetation along hammock and woodland edges and in abandoned citrus groves and urban areas. This species frequently overwinters in southern and central Florida, but does not nest south of Brevard County (Pranty et al. 2006).

White ibis (*Eudocimus albus*)

This wading bird was first recorded at the natural area by ERM staff in 2003; it is occasionally observed at the natural area. White ibises typically feed on small fish, crustaceans, worms, snakes, grasshoppers and aquatic insects (Maehr and Kale 2005, Pranty et al. 2006). They inhabit virtually every wetland habitat in Florida; they even forage in agricultural fields and lawns (Pranty et al. 2006). White ibises nest in large colonies in mangroves, thickets or swamps (Maehr and Kale 2005, Pranty et al. 2006). Eggs are laid in platform nests from March through May. This species is not known to nest at the natural area.

Wood stork (*Mycteria americana*)

This large wading bird was recorded flying over the natural area by ERM staff in 2013. Wood storks feed primarily on fish, but crustaceans, gastropods, amphibians, reptiles, mammals, other birds and arthropods also may be consumed (USFWS 1997 and 2007). They typically inhabit freshwater ponds, wet prairies and marshes, cypress swamps, salt marshes mangroves and flooded agricultural fields (Maehr and Kale 2005, Pranty et al. 2006). In Florida, nesting occurs in large colonies in forested wetlands from November to May, either high in cypress trees or lower in mangroves. Freshwater colony sites must remain flooded throughout the nesting period to protect the young against predation and abandonment (USFWS 1997). The wood stork is not known to nest at this natural area. However, USFWS has designated the entire eastern half of Palm Beach County as a core foraging area for this species; four rookeries have been recorded in the County (USFWS 2016).

3.5 ARCHAEOLOGICAL AND HISTORICAL RESOURCES

FDHR, which maintains the Florida Master Site File, identifies one linear resource in the vicinity of the natural area - the Seaboard Airline Railway (8PB12917). The former Seaboard Airline Railway property is owned and managed by CSX Transportation. The activities proposed in this management plan will have no effect on this resource.

No archaeological or historical resources are known to exist within the site (Kennedy et al. 1991, Longo 2005). Any ground disturbance of previously undisturbed areas will be coordinated with FDHR and the Palm Beach County archaeologist. If any archaeological or historical sites are discovered in the future, FDHR management procedures will be followed to protect those sites. If human remains are found, the provisions of Section 872.05, Florida Statutes, will be followed to protect those remains. The County will comply with Chapter 267, Florida Statutes, in its management of any archaeological or historic sites discovered on the natural area. If historic resources are found on the natural area, a historic resources protection plan will be developed in consultation with the Palm Beach County Historic Preservation Officer. If future resources permit and funding is appropriated, the County will consider conducting an archival and historical study to determine if anything of historic importance occurred on the property, and conduct a direct

archaeological study if the results of the archival and historical study indicated that an archaeological study would be beneficial.

4. MANAGEMENT AND RESTORATION ACTIVITIES

Baseline environmental assessments of the existing plant communities, and plants and animals were conducted by ERM staff between 1995 and 2001. This information was used to identify the initial management activities necessary to protect, restore/enhance and maintain the natural resources of the site, and to determine the locations and types of public use facilities that were installed on the site. Additional environmental investigations conducted between 2002 and 2016 were analyzed to identify any changes that should be made to the existing public use facilities, land management practices or monitoring requirements. This information serves as the basis for this updated management plan.

4.1 MANAGEMENT RESPONSIBILITIES

The County is responsible for all restoration/enhancement and management activities, and all public use facilities constructed on the site. Volunteers from the local community may assist with some of the responsibilities; these activities are coordinated by ERM.

4.2 MANAGEMENT UNITS

The natural area is divided into four management units using management accessways, and natural and man-made features as boundaries and firebreaks (Figure 4). The management units have been designed to maximize the long-term diversity of natural communities, and native plant and animal species on the site. These units range in size from 8.0 to 11.0 acres, and are small enough to allow for safe and practical fire management. A management unit may be subdivided into smaller units in order to facilitate management and/or monitoring activities, or to minimize the effect of smoke on adjacent properties during a prescribed burn. The boundaries of the management units were modified from those proposed in the original management plan in order to minimize/avoid impacts to existing upland communities.

4.3 MAINTENANCE

4.3.1 Removal of Debris and Litter

All of the debris and litter found on the natural area at the time of its acquisition has been removed. If additional debris is found, it will be removed in a timely manner unless such removal would cause undesirable damage to a rare or imperiled natural community, or listed species. The installation of perimeter fencing and management access gates has and will continue to help prevent the dumping on the site. Periodic site cleanups to remove litter are conducted by county staff with the assistance of volunteers.

4.3.2 Trail Maintenance

Periodic trail maintenance will be performed by county staff and community volunteers. All existing trails not used for site management or as part of a designated hiking trail will be allowed to revegetate with native vegetation.

4.3.3 Facilities Maintenance

County staff is responsible for the maintenance of all public use facilities, fencing/gates, signage and management accessways/firebreaks.

4.4 RESTORATION AND ENHANCEMENT ACTIVITIES

The site has been and will continue to be managed in a manner that preserves, restores and enhances the natural resource values. Restoration/enhancement activities conducted to date include the commencement of a fire management plan (see Section 4.4.1), implementation of invasive/nonnative plant and nonnative/nuisance animal control programs (see Sections 4.4.2 and 4.4.3, respectively), exclusion of unauthorized uses (see Section 4.5), and completion of one environmental restoration/enhancement project (see Section 4.4.4).

4.4.1 Fire Management

Because of development, natural, lightning-induced fire can no longer fulfill the needs of natural communities in the County which are dependent upon fire for their long-term survival (for example, basin marsh, depression marsh, dome swamp, mesic flatwoods, scrub, scrubby flatwoods, slough marsh, wet flatwoods and wet prairie). Natural fire can no longer spread from adjacent lands onto the natural area because all of the surrounding fire-dependent communities have been lost to development. When natural fire does occur within or adjacent to the natural area it is quickly extinguished due to the threat it poses to adjacent developed areas. Prescribed fire and mechanical fuel reduction activities will be used at this site to help maintain the existing fire-dependent communities and reduce the risk of damage from wildfire on the adjacent developed areas.

ERM has assumed the primary responsibility for prescribed burning at the natural area. Assistance in the form of firefighting staff and equipment will be requested from Palm Beach County Fire Rescue. Additional assistance may be provided by Florida Department of Agriculture and Consumer Services' (FDACS) Florida Forest Service (FFS), Palm Beach County Parks and Recreation Department, FWC, TNC and trained volunteers. Fire-related safety training is required of anyone participating in a prescribed burn. All prescribed burns will comply with Section 590.125(3), Florida Statutes (Certified Prescribed Burning; Legislative Findings and Purpose).

ERM has written a flexible fire management plan for the natural area (Appendix F). Development of the fire management plan was coordinated with FFS and FWC. The fire management plan takes into consideration surrounding land uses, smoke management concerns, safety issues, and the ecological benefits and consequences of the specific fire management strategies. It contains specific tools and management practices designed to minimize adverse impacts to native vegetation and wildlife, while maximizing the beneficial effects of prescribed burns. A specific burn plan will be prepared for the proposed burn area prior to conducting a prescribed burn.

Development-related smoke management concerns dictate extremely narrow weather conditions in which prescribed burning may take place at the natural area. Mechanical reduction of vegetation may be used as a surrogate for fire if a given area/habitat cannot be burned.

Surveys for fire-intolerant listed plant species will be conducted before each prescribed burn. If deemed appropriate, fire-intolerant plants may be relocated outside the burn area. If relocation is not practical due to the presence of hard-to-relocate species or larger populations of listed plants a temporary firebreak may be created to protect the area that contains the listed species from the planned burn. These relatively small unburned areas will increase the diversity of the site. A permit will be obtained for the relocation of a listed plant species when required.

All of the management units identified for this site will be treated with prescribed fire. Therefore, each management unit also can be considered a "burn unit." Depending on the specific conditions and objectives of a burn, a burn unit may be subdivided into smaller subunits to reduce smoke concerns or provide specific habitat benefits. Staff also may investigate the use of micro-burns to help restore habitat and increase species diversity.

Each burn unit was designed so that fire would burn through ecotones and move in a natural, spotty fashion across the landscape. The resulting patchwork of burned and unburned areas will produce a mosaic of vegetation at various stages of maturity, thereby maximizing diversity within and among the various plant communities. This will provide habitat for species that typically use, or may even be restricted to, communities in a particular state of maturity.

The burn interval for each burn unit was chosen based on the predominant natural community present in that unit. An interval of 15 to 20 years was selected for the Management Units 1, 2 and 4 because of the presence of scrub (see Figures 3 and 4). An interval of 8 to 15 years was selected for Management Unit 3 which is classified as scrubby flatwoods.

The prescribed burn program for this site began with a prescribed burn in Management Unit 1 in September 2002. Management Unit 4 was mechanically reduced in 2012 and again in 2015. A portion of Management Unit 1 also was mechanically reduced in 2015.

All of the burn units within the natural area are scheduled to be burned within the next ten years. The proposed burn schedule for the natural area is as follows: Unit 4 in 2017, Unit 2 in 2019, Unit

1 in 2022 and Unit 3 in 2024 (Table 3). This schedule is conditional upon weather conditions and how many, if any, smoke related issues are experienced during the each of the scheduled burns. Management Units 2 and 3 are adjacent to the CSX railroad tracks and Interstate 95, and will be very difficult to burn.

When the use of prescribed fire is not feasible/permitted ERM will strive to create a mosaic of natural communities and successional stages, and reduce the risk of catastrophic wildfire through the use of mechanical vegetation reduction methods, subject to and contingent upon annual budgetary funding and appropriations by the BCC. This methodology uses a machine to reduce (grind or shred) vegetation into mulch-sized chips. The mulch chips are then left in place to allow for the recycling of nutrients.

The risk of wildfire also has been reduced through the thinning of unnaturally-dense sand pine stands. Under this method, a tree removal company cut down and physically removed excess pine trees from the portions of the natural area that were targeted for thinning by the site manager. Sand pines were reduced to densities that mimic those found in natural communities where fire has not been suppressed for an extended period of time.

There have been no wildfires within the natural area since it was acquired.

If a wildfire occurs on the site in the future, the appropriate actions will be taken by the authorized fire emergency response agency. Active fire suppression measures will only be used if deemed necessary by that agency since they are extremely destructive to vegetation and other natural features. If such measures are undertaken to control a fire, all plow lines will be backfilled after the fire has been extinguished and disturbed areas will be rehabilitated to the greatest extent possible.

A public education campaign has been developed for this natural area. This campaign includes informing the adjacent residents and business owners of the necessity and benefits of fire, the safety features of prescribed burning versus wildfires, and the strategies that will be developed to minimize the impacts of smoke on the nearby developed areas. The County will coordinate with the appropriate fire emergency response agencies and FDOT prior to conducting a prescribed burn. If requested, county staff will meet with local community groups such as homeowners' associations to coordinate with residents, provide information on the necessity of conducting prescribed burns and describe the safety precautions that will be taken to protect adjacent lands.

4.4.2 Invasive/Nonnative Plant Control

Like many fragmented conservation lands in southeastern Florida, the natural area has been invaded by a number of nonnative plant species. To date, 76 nonnative plant species have been recorded at the natural area – 37.3 percent of the plant species recorded on the site (Appendix A). Many of these species were brought to the site by animals (especially birds), or is spread from

adjacent properties or from vegetation piles that were dumped on the site prior to its acquisition. Many species were recorded prior to the implementation of the invasive/nonnative plant control program and may no longer be present. Nonnative plant species are expected to continue to colonize the site from surrounding properties; periodic invasive/nonnative plant control treatments will be required to prevent these species from adversely affecting the natural area.

A number of the nonnative, and some native, plant species recorded at the natural area exhibit invasive tendencies. In this management plan, the phrase "invasive plant species" includes the plants designated as Category I (invasive) and Category II (potentially invasive) by Florida Exotic Pest Plant Council (FLEPPC 2015), those designated as noxious weeds, or Class I or Class II prohibited aquatic plants by FDACS (FDACS 2014 and 2008, respectively), as well as native plant species that are harmful to other native vegetation (such as love vine [*Cassytha filiformis*]) or that are too dense or inappropriate for the targeted vegetation community. Invasive nonnative plant species pose a serious threat to the natural communities and listed species found at the site, and are a major management concern.

Thirty-seven (48.7 percent) of the nonnative plant species recorded at the natural area are designated as either Category I or Category II species by FLEPPC (2015). A current copy of FLEPPC's list of invasive exotic plant species can be found at http://www.fleppc.org/list/list.htm. Five (6.6 percent) of the nonnative plant species have been designated as noxious weeds by FDACS (FDACS 2014) and four (5.3 percent) have been designated as Class I prohibited aquatic plant species (FDACS 2008). All of these species are identified in Appendix A.

The control of nonnative and invasive native plant species is a high priority at this site. A multi-phase invasive/nonnative plant control program began in 1999 and was completed in 2006. Follow-up invasive/nonnative plant treatments have been conducted on an as-needed basis since 2007. The site is now in maintenance condition. A site is considered to be in "maintenance condition" when the coverage of invasive plant species does not exceed 1 percent of the canopy or understory layers within any given management year. In addition to invasive nonnative plant species, invasive native species also can have an adverse impact on fragmented natural communities. Native plant species that have an adverse effect on other native species at the natural area, or are too dense or inappropriate for the targeted vegetation community, may be targeted for eradication/control until such time that the invasive native species is no longer having an adverse impact on the site.

Methodologies used to control/eradicate invasive nonnative and invasive native plant species at the natural area may include mechanical removal, herbicidal treatment, hand removal and the use of periodic prescribed fire. Biological control methods may be used on a case by case basis. Ruderal species, which are typical of open disturbed sites and do not invade functioning natural communities, are controlled through prescribed burning and avoiding unnecessary disturbances.

Mechanical removal methods typically are used to remove accessible, dense stands of highly-invasive nonnative trees such as Australian-pine (*Casuarina equisetifolia*), Brazilian pepper (*Schinus terebinthifolius*) and melaleuca (*Melaleuca quinquenervia*). The tree and its root system are mechanically removed, then chipped for on-site use or off-site disposal. Any outlying sprouts or resprouts from root remnants are treated with herbicides. Mechanical removal methods were used at the natural area in 1999 to remove approximately 8 acres of Brazilian pepper in the northeast and southeast portions of the natural area, and in 2002 to remove three large Java plums (*Syzgium cumini*) and one mango (*Mangifera indica*).

Herbicidal treatments typically are used to control/eradicate individual and scattered invasive/nonnative trees, shrubs and palms; inaccessible (by heavy equipment) dense stands of invasive/nonnative trees; and invasive/nonnative vines and groundcover species. Herbicidal application methodologies include hack-and-squirt, cut-stump, basal bark, foliar treatments and broadcast spraying. Hack-and-squirt, cut-stump and basal bark methods are typically used to control/eradicate individual and scattered nonnative trees, shrubs and palms. Foliar treatments are used for invasive/nonnative vines, and for small patches of invasive/nonnative grasses, sedges and forbs. Broadcast spraying is primarily used for larger areas of invasive/nonnative grasses, sedges and forbs. Invasive/nonnative plant species which are resistant to herbicides or which easily resprout from basal mats, roots or vegetative fragments may require repeated herbicide application before the species is eradicated from an area. All herbicide treatments comply with the instructions on the herbicide label, are applied under the supervision of a licensed applicator and employ Best Management Practices for their application.

Hand removal is used to remove seedlings of invasive/nonnative tree and shrub species. Since tree and shrub seedlings are not reproductive, they typically are pulled out of the ground and left to decompose on site after the soil has been shaken from the roots of the plant.

Hand removal also may be used in combination with herbicide treatments to treat invasive/nonnative vines, as well as invasive/nonnative plants that are resistant to herbicides. In the case of invasive/nonnative vines, the targeted vine is cut at an appropriate height. The base is then hand-pulled or treated with a systemic herbicide; vine stems are either removed from the supporting plant or left to decompose in the trees. In the case of plants that are resistant to herbicides, hand removal may be used as the sole plant control method or it may be used as a follow up method to remove plants that are still alive following an herbicidal treatment.

Finally, hand removal may be used to help control plant species that readily reestablish from seed (for example, rose natalgrass [*Melinis repens*] and thalia lovegrass [*Eragrostis atrovirens*]) or that resprout from vegetative fragments (for example, air potato [*Dioscorea bulbifera*], American evergreen [*Syngonium podophyllum*], arrowleaf elephant's ear [*Xanthosoma sagittifolium*], golden pothos [*Epipremnum pinnatum*] and nightblooming cactus [*Hylocereus nudatus*]). In these cases, the seedheads and vegetative parts of the invasive/nonnative plants are bagged and removed from the site.

4.4.3 Nonnative/Nuisance Animal Control

Nonnative and nuisance (feral and certain native species) animals can be a problem on sites like the natural area. The presence and impacts of nonnative/nuisance animals will be monitored as part of the systematic and opportunistic wildlife surveys. Targeted surveys for nonnative/nuisance animals also may be undertaken if additional information is required. Nonnative/nuisance animal control programs will be developed and implemented, as necessary, to control species that adversely affect the natural area.

Thus far, three species of invertebrates and five species of vertebrates recorded at the natural area are not indigenous to the South Florida mainland (See Appendix B). The only native vertebrate species recorded at the natural area that may become a nuisance is the raccoon. A short description of the potentially harmful nonnative invertebrate species and all nonnative/nuisance vertebrate species found on the natural area is provided below. No control methods will be undertaken for species identified below as having no significant impact on the natural area.

None of the nonnative invertebrate species recorded at the natural area appear to be having a negative effect on the natural communities. Therefore, no control methods are proposed for these species at this time.

The brown anole (*Anolis sagrei*) has become the most abundant anole in South Florida (FWC undated[a]). This prolific species is well-adapted to habitats modified by humans and can live in most inland and coastal habitats, including disturbed areas (FWC undated[a]), Meshaka et al. 2004). Although its primary diet is insects, the brown anole also eats hatchling green anoles; this predation appears to have caused a rapid decline in the population of the native green anole in Florida. This species is occasionally observed at the natural area. Potential control efforts for this species will be explored in the future if it is determined that it is having a negative effect on the natural area.

The Eurasian collard-dove (*Streptopelia decaocto*) is a medium to large-sized, stocky dove. It is most common in coastal, suburban and agricultural areas where food, roosts and nesting sites are abundant (Johnson and Donaldson-Fortier 2012). Eurasian collard-doves are grain eaters and are frequent visitors to bird feeders (Pranty et al. 2006). This species is occasionally observed at the natural area. Eurasian collard-doves are not expected to affect the natural area in any significant way.

The European starling (*Sturnus vulgaris*) is associated with disturbed sites and urban environments, as well as open grassy or agricultural areas (FWC undated[b], Johnson and Givens 2012). This medium-sized songbird is omnivorous; it feeds on a wide variety of invertebrates (such as beetles, insects, earthworms and spiders), as well as seeds, plants and fruits. It is a cavity nester, and can aggressively displace native bird species from nest holes in trees, human-made structures and artificial nesting boxes. This species is frequently observed at the natural area. Due

to the limited amount of habitat available for cavity-nesters on the site, this species is not expected to have a significant negative impact on native bird species at the natural area.

A common pet, the monk parakeet (*Myiopsitta monachus*) has become the most widespread and abundant parrot in North America (Pranty et al. 2006). Monk parakeets typically build large, communal stick nests in trees, palms or on artificial structures such as radio towers, light poles and electric utility structures (Johnson and Logue 2012, Pranty et al. 2006). This species feeds on a wide variety of flowers, fruits, seeds, berries and other plant material. It is rarely observed at the natural area. This species does not appear to adversely affect native plants or animals (Johnson and Logue 2012).

The raccoon is common throughout Florida (FWC undated[c]). It feeds on fruits, plant material, eggs, crustaceans, small animals and garbage. Raccoons are found wherever suitable combinations of woods and wetlands provide acceptable food and den sites, from swamps and marshes to mesic woods, cultivated areas and urban situations (Whitaker and Hamilton 1998). This species is considered to be one of the primary carriers of the rabies virus in the United States (The Humane Society of the United States 1997). This species is rarely observed at the natural area. Wildlife cameras and opportunistic surveys will be used to monitor the raccoon population at the natural area and determine if any actions are needed to control this species.

Although nonmigratory breeding white-winged dove (*Zenaida asiatica*) are present year-round in South Florida, FWC classifies this species as a nonnative species (FWC undated[d], Maehr and Kale 2005). Because it is considered a migratory game bird by USFWS and FWC, a Florida hunting license and a Florida migratory bird permit are required to legally hunt this species on lands where hunting is permitted (Giuliano et al. 2013); hunting of white-winged doves and all other wildlife is prohibited on county natural areas. This dove feeds on seeds, grain, insects and some fruit (Pranty et al. 2006). This species is very rarely observed at the natural area. It is not expected to adversely affect the natural area.

4.4.4 Restoration and Enhancement Projects

All of the planned restoration and enhancement projects have been completed at the natural area. Activities conducted to date include the implementation of a prescribed burn program, and mechanical vegetation reduction and pine thinning activities designed to reduce fuel levels, and create a mosaic of natural communities and successional stages within the site (see Section 4.4.1); implementation of invasive/nonnative plant and nonnative/nuisance animal control programs (see Sections 4.4.2 and 4.4.3, respectively); installation of native plantings (see Subsection 4.4.4.1); and removal of trash dumped on the site prior to its acquisition by the County.

Restoration/enhancement activities conducted to date have already begun to improve the natural communities on the site in terms of biological composition and ecological function. However, it will take several years for planted native vegetation to mature and for additional native plants to

recruit into the restored/enhanced areas. Once this has happened, restoration of the site will be considered complete.

4.4.4.1 Native Plantings

Native plantings conducted on the site between 2000 and 2014 included three vegetation salvage, one mitigation, four volunteer and one opportunistic planting projects. Native planting projects completed to date are described in chronological order below.

In 2000 approximately ten cabbage palms (*Sabal palmetto*) and ten live oaks (*Quercus virginiana*) salvaged from an offsite development were planted in disturbed areas in the southeastern and northeastern portions of the site as part of the County's native vegetation salvage program. In 2003 volunteers planted approximately 45 live oak, slash pine, coco plum (*Chrysobalanus icaco*) and American beautyberry (*Callicarpa americana*) saplings and seedlings in disturbed areas within the southeastern portion of the site. In July 2007 a second volunteer group planted 48 trees/shrubs (including American beautyberry, slash pine and partridge pea [*Chamaecrista fasciculata*]) in and around the parking lot. In December 2007 approximately 375 slash pines and 75 live oaks were planted along the eastern perimeter of the site to mitigate for native trees removed from an offsite development project. Eight cabbage palms salvaged from the Winding Waters Natural Area were planted in High Ridge Scrub Natural Area parking lot in December 2007. In March 2008 volunteers planted an additional 165 trees and shrubs (including scrub oak, saw palmetto and gopher apple) in and around the parking lot. A volunteer event conducted in August 2009 planted an additional twenty American beautyberry, twenty saw palmetto and fifteen coontie in and around the parking lot. In July 2014 seven, opportunistically-acquired, shell-mound pricklypear were planted within the natural area. The last native planting conducted to date included the installation of ten mature coontie salvaged from an offsite development area in November 2014. Additional small-scale plantings may occur on an opportunistic basis if appropriate native plants become available in the future.

4.5 SECURITY

The Palm Beach County Sheriff's Office (Sheriff's Office) has the primary responsibility for public safety and law enforcement at High Ridge Scrub Natural Area, including routine patrols of the boundaries. The County also has contracted with the Sheriff's Office to have Wildlands Task Force deputies conduct extra patrols of the natural area when needed. The Wildlands Task Force is a specially-trained and specially-equipped unit that was formed to prevent illegal activities on natural areas managed by the County and to enforce the provisions of the Natural Areas Ordinance. There is no on-site manager or security guard and no on-site staff residence. Instead, ERM staff, trained volunteer site stewards and/or neighborhood watch groups (where available) visit the site on a regular basis and report any signs of illegal and prohibited activities to the Wildlands Task Force.

The County's Natural Areas Ordinance regulates public use of the natural area. The ordinance provides for passive recreational activities (for example, hiking, nature study and photography), environmental education and scientific research. It prohibits destructive uses such as OHV use, dumping, and poaching of plants and animals. The ordinance gives law enforcement personnel the authority to fine and/or arrest persons damaging a natural area. Dumping on public lands is prohibited by state law (state statute 403.413).

The natural area is open to the public daily from sunrise to sunset. Access hours are posted at each public entrance. In addition, regulatory signs have been posted at each corner of the natural area and every 500 feet along the perimeter of the natural area. The signs state that the site is a protected natural area and cite the appropriate county ordinance.

The entire perimeter of the site is fenced to help prevent unauthorized access to the natural area (see Section 5.2). Currently, the County is responsible for opening and closing the gates to the parking lot. Gate responsibility may be delegated to a local steward or stewardship group if approved by the County.

4.6 STAFFING

Because of the following factors, on-site staffing is not proposed for this natural area:

- the low-impact, non-consumptive activities allowed on the site require limited oversight by staff;
- the site is closed from sunset to sunrise;
- sufficient security measures (fencing, regulatory signage, Wildlands Task Force) are in place to protect the site when it is closed to the public;
- ERM staffing levels are insufficient to provide on-site staffing at any of the County's natural areas; and
- the construction and use of a permanent office or residence for on-site staff would adversely affect the site's natural resources.

Instead, ERM has created a roving management team that is trained to conduct all levels of management activities, including invasive/nonnative vegetation control, prescribed burning, mechanical vegetation reduction activities and environmental monitoring. ERM also has created a volunteer site steward program. These trained volunteers periodically visit their assigned site and provide feedback to staff regarding the site's condition and any problems noted. Volunteers from local citizens' organizations, businesses and schools provide additional support where feasible and necessary.

4.7 COORDINATION WITH ADJACENT LAND MANAGERS

There are no conservation lands adjacent to the natural area. The County will review any land use changes or development plans proposed for properties adjacent to the natural area to ensure the protection of biological communities and to avoid or minimize adverse impacts to listed species.

4.8 PUBLIC OUTREACH, ENVIRONMENTAL EDUCATION AND SCIENTIFIC RESEARCH

ERM has a very active public outreach and environmental education program. To help members of the public become invested in the natural area, numerous volunteer opportunities, environmental education events and resource-based recreational activities are provided each year. These events may be led by ERM staff or by volunteer community groups, clubs, businesses and/or knowledgeable individuals. Volunteer opportunities may include trash pickups, removal of nonnative/invasive plant species, trail maintenance, environmental restoration projects, etc. Environmental education events may include informational discussions on natural communities, native or nonnative plant or animal species, land management techniques or the effects of man on natural ecosystems; species surveys/inventories; educational programs for school use; etc. Activities that encourage members of the public to get out and enjoy the resource-based recreational opportunities afforded by the County's natural areas may include guided walks/hikes or canoe/kayak tours, running or biking events, group equestrian rides, kids' catch and release fishing tournaments, star gazing, etc.

Interpretative exhibits have been prepared and installed in a kiosk located adjacent to the parking lot. These exhibits help educate the public about the natural resources present on the site, the negative impacts of nonnative/invasive plants and nonnative/nuisance animals, any restoration/enhancement projects that have been undertaken at the site, ongoing management activities such as prescribed fire and/or mechanical vegetation reduction activities, and/or any other relevant topics.

Information related to the site's natural resources, location, size and any existing public use facilities/recreational amenities, as well as links to the site's trail guide, current management plan, any restoration project summaries and photo album may be found on ERM's High Ridge Scrub Natural Area webpage at: http://discover.pbcgov.org/erm/NaturalAreas/High-Ridge-Scrub.aspx. Information on how to obtain a free natural areas map application for mobile devices may be found at: http://discover.pbcgov.org/erm/Publications/ERMsMobileMaps.pdf. Printed copies of the site's trail guide are available in a brochure box attached to the kiosk that is adjacent to the parking lot. The trail guide, other literature and advertising materials indicate that the natural area was acquired using FCT funds.

ERM staff will request that FWC include High Ridge Scrub Natural Area in the South Florida section of the Great Florida Birding and Wildlife Trail when that section of the trail is updated.

No specific research needs have been identified for this site. ERM does not anticipate performing any scientific research other than compiling and interpreting the data from monitoring activities, but will allow researchers affiliated with institutes of higher learning, botanical gardens and government agencies to conduct scientific research on a permit basis.

4.9 RESPONSE TO SIGNIFICANT EVENTS

The natural area was impacted by two hurricanes in September 2004 (Hurricanes Frances and Jeanne) and one hurricane in October 2005 (Hurricane Wilma). A large number of mature sand pines in Management Unit 1 and a few in other portions of the site were knocked down and killed during the 2004 hurricanes. Several of the fallen pines blocked management accessways and trails within the site. A 20-foot-long section of chain-link fence also was damaged by fallen trees. Debris was blown into the natural area during each of the 2004-2005 hurricanes. The site was closed to the public while fallen trees were removed from management accessways and trails, fence repairs were completed and debris was removed from the site.

If a natural or human-caused event severely damages structures or native vegetation, or alters the natural values of the site in the future, ERM staff will assess the nature of the damage/alteration and take actions necessary to protect the public and minimize/mitigate impacts to the site. The first priority following a significant event will be to secure the site to ensure public safety and prevent dumping, vandalism and unauthorized vehicular use. If hazardous conditions exist, the natural area will be closed to the public until such conditions have been eliminated. The site also may be closed until public use facilities have been repaired. Damaged/altered native plant communities will be managed to encourage natural regeneration following such an event. Management practices will be adjusted, if necessary, to accommodate the new conditions at the site. The County will inform FCT about any impacts caused by the event, and any actions designed to help restore damaged/altered natural resources and/or public use facilities. If the natural values of the site are severely limited or eliminated, the County and State will discuss future plans for the site. All significant events affecting the natural area will be discussed in the next annual report to FCT and the next Annual Site Evaluation (ASE). The event also will be summarized in the next update to the management plan.

4.10 CLIMATE CHANGE

The natural area will help address climate change in two ways: 1) the preservation and restoration/enhancement of the existing plant communities will help reduce greenhouse gases by converting carbon dioxide to oxygen; and 2) the restored/enhanced plant communities will serve as a refuge for wildlife affected by climate change-induced habitat losses.

5. SITE DEVELOPMENT AND IMPROVEMENT

All structural improvements and major land alterations were done in compliance with applicable local, state, regional and federal laws and regulations. All required licenses and permits were obtained prior to the commencement of any construction, native vegetation removal or major land alterations on the natural area. All of the existing improvements were constructed in disturbed portions of the site to the greatest extent practicable. The location of each improvement was surveyed for listed species prior to the construction of that facility. If any listed species were found within the construction area, the location of the improvement was adjusted to avoid impacts to the listed species, or the listed species was relocated to a safe location on the natural area.

The County is responsible for maintaining all public use facilities, fencing, gates, signage, management accessways/firebreaks and other structures on the natural area.

5.1 PUBLIC USE FACILITIES AND ACCESS

The natural area is a publicly-owned preserve and resource-based, outdoor recreational site. It is open to the public during daylight hours, unless a special, after-hours use permit has been issued. The hours of operation are posted at each designated public access point.

All public use facilities (Figure 5) have been carefully chosen, designed and located so as to not jeopardize the site's natural resources, including the rare and endangered plants, animals and natural communities found on the natural area. They also have been designed and located to ensure that more than 70 percent of the predominately natural habitat has been left intact and protected from human disturbance. All of the public use facilities have been placed in upland portions of the site to reduce the potential for flooding. Public uses permitted on this site include nature appreciation and study, hiking, nature photography and bird/wildlife watching. The relatively small size of the parking lot limits the number of people that are on the site at any given time. With the exception of the use of vehicles for management purposes, all human traffic within the natural area is by foot.

Several of the existing public use facilities are compliant with Americans with Disabilities Act (ADA) requirements. The parking lot includes one designated ADA-compliant parking space. This parking space connects to an ADA-compliant pathway that leads to an interpretive kiosk, and an ADA-compliant concrete nature trail and shade shelter.

The primary public access is via a 5-car, 1-bus parking lot located just east of High Ridge Road (Figure 5). A bicycle rack has been installed adjacent to the parking lot to encourage visitors to ride bicycles to the natural area. Unpaved areas within the parking lot have been landscaped with native plants to provide additional wildlife habitat and to enhance the parking lot's appearance. Gates have been installed across the entrance and exit driveways to control entry to the parking lot. Currently the gates are left in the open position because ERM staffing levels are insufficient

to allow for the daily opening and closing of the gates. The responsibility of opening and closing the gates may be delegated to a site steward in the future.

In addition to the parking lot, residents from the Tom-a-toe Road neighborhood can access the natural area through a pedestrian gate located near the end of Tom-a-toe Road.

Approximately 0.6 mile of trail has been created within the natural area (Figure 5). This includes a 0.2-mile-long nature trail and a 0.4-mile-long natural-surfaced hiking trail. Both of the trails can be accessed from the parking lot.

The concrete nature trail begins at the parking lot. The nature trail is a minimum of 5-feet-wide to accommodate wheelchairs and other non-motorized mobility devices. Trail markers have been placed along the nature trail with station numbers that correspond to information in the printed trail guide.

The hiking trail has a natural soil base. Access to the hiking trail is from the parking lot (Figure 5). Portions of the hiking trail are co-located with management accessways/firebreaks; other portions of the management accessways/firebreaks also may be used for foot traffic. The portions of the hiking trail that are not co-located with management accessways/firebreaks will be maintained at a width of three to six feet. The hiking trail will not be improved other than the addition of color-coded blazes on trees and/or posts to help keep hikers on the trail. Public use of secondary trails will be discouraged by signage and vegetative barriers, by not maintaining the trails, and by encouraging the regeneration of native vegetation in these trails.

Non-trail amenities provided at the natural area include a shade shelter with two benches and a memorial bench. Both the shade shelter and memorial bench are accessible from the parking lot via the nature trail. Drinking water and restrooms are not available at the natural area.

5.2 FENCING AND GATES

The entire perimeter of the site has been fenced to restrict access to and prevent unauthorized use of the site. Strategically-placed internal fences help prevent unauthorized access by vehicles. All unnecessary interior fencing has been removed to reduce impacts to wildlife movements.

The types of fencing that currently exist on the natural area include galvanized chain-link, vinyl-coated chain-link and two-rail, split-rail with wire backing. After the County acquired the site, the existing fencing along the southeastern perimeter of the site was removed and replaced with 6-foot-tall, green-vinyl-coated chain-link fence. Six-foot-tall, green-vinyl-coated chain-link fencing also was installed along the northern and southern edges of the site, and at the southwest and northwest corners where the site borders High Ridge Road. Six-foot-tall, galvanized chain-link fencing was installed along the eastern edge of the site where it borders the railroad. Two-rail,

split-rail fencing was installed along the west-central edge of the site where it borders High Ridge Road and around the perimeter of the parking lot.

New management access gates have been installed at the natural area in the southeastern portion of the site next to Tom-a-toe Road, in the southeastern corner of the parking lot, and at the northwest corner of the site where it borders High Ridge Road.

Public vehicular access (including bicycle access) to the parking lot is provided through a gate installed near the parking lot entrance. Neighborhood pedestrian access is through a pedestrian maze gate that was installed in the perimeter chain-link fence along Tom-a-toe Road.

5.3 SIGNS

Signs identifying the site as a natural area were installed on the east side of High Ridge Road, and the east side of the site (facing Interstate 95 and the CSX railroad) to inform drivers/railroad passengers of the existence of the natural area. An entrance sign was installed on High Ridge Road near the entrance to the parking lot. A permanent dedication sign also was installed near the entrance to the parking lot. The dedication sign states that the natural area was acquired for environmental preservation and public recreation purposes with funds provided by the County and FCT, and is managed by the County.

Regulatory signs have been posted at each corner of the natural area and every 500 feet along the perimeter of the natural area. These signs identify High Ridge Scrub Natural Area as a protected site and cite the County's Natural Areas Ordinance. Access hours and natural area rules signs have been installed adjacent to the parking lot and pedestrian entrance. Signs that notify visitors of trail use restrictions, security patrols, the presence of hidden cameras and other site-specific information also have been or may be installed on the site. Trail markers with station numbers corresponding to descriptive information in the trail guide have been installed along the nature trail. Trail markers also have been installed at various points along the hiking trail to keep hikers on the designated trail.

A "No Trash Area" sign has been installed adjacent to the natural area parking lot; a "Carry In – Carry Out" or similar sign will be installed near the shade shelter in an effort to reduce periodic littering at that location. Success of the new sign will be monitored following installation. If visitors still continue to litter after the new sign is installed, trash and recycling receptacles may be installed if staffing levels are sufficient to service the receptacles at least twice a week. Typically trash receptacles are not provided at County natural areas for the following reasons: 1) the lack of trash receptacles promotes the concepts of "carry in - carry out" and "leave only footprints"; 2) the use of trash receptacles within natural areas draws wildlife to areas where they may come in contact with, or be fed by, members of the public; 3) people empty all their vehicle trash into the receptacles which leaves little room for other trash; 4) people attempt to place trash in receptacles even after they are full resulting in unsanitary/unsafe conditions for other visitors

and wildlife; 5) trash which is left in receptacles may blow into the adjacent natural communities or be scattered by wildlife; and 6) the removal of trash receptacles from county natural areas has not increased the amount of trash found on the site.

5.4 MANAGEMENT ACCESSWAYS/FIREBREAKS

A network of management accessways and firebreaks has been established around the perimeter of the natural area and between each of the management units (Figure 4). Management accessways are cleared, drivable trails. They typically have an unimproved sand/dirt surface; however, portions of the trail may be stabilized where very fine soils or other conditions make it difficult for management and/or emergency vehicles to access the site. Management accessways are primarily used for vehicular access related to land management activities and for the containment of wildfires and prescribed burns when they occur. Management accessways also may be used as part of a designated hiking and/or multiuse trail.

Firebreaks which are not part of the management accessway system may be established within management units to separate fire-intolerant natural communities from adjacent burn areas and/or to create smaller burn units. These firebreaks, which are cleared on an as-needed-basis, may include areas that have been cleared of vegetation (bare soil), as well as areas where the vegetation has been mowed or cut/chopped. Temporary firebreaks are allowed to revegetate following a prescribed burn.

All management accessways/firebreaks were located whenever possible on existing trails and within disturbed areas; natural firebreaks were used when feasible. The management accessways/firebreaks on this site were designed and located to ensure that more than 70 percent of the predominately natural habitat was left intact and protected from human disturbance. Prior to construction, all management accessway/firebreak locations were surveyed for listed species. If a listed species was likely to be impacted by the proposed construction, the management accessway/firebreak was rerouted or the listed species was relocated elsewhere on the site. Management accessway/firebreak locations were field adjusted to minimize impacts to wetlands and/or avoid steep slopes whenever possible.

5.5 OTHER STRUCTURES AND IMPROVEMENTS

No structures or improvements are planned for the site other than those described in Sections 5.1 through 5.4.

5.6 PRIORITY SCHEDULE FOR SITE MANAGEMENT ACTIVITIES

Completed and proposed restoration/enhancement activities - fire management, mechanical vegetation removal/thinning, invasive/nonnative plant removal/control, nonnative/nuisance animal control and restoration/enhancement projects - are described in Section 4.4. Completed

site improvements are described in Sections 5.1 through 5.5. Public use facilities were constructed; the natural area officially opened to the public in October 2007. Management of the natural area is now in maintenance mode; invasive/nonnative vegetation and nonnative/nuisance animal control activities are ongoing, and structures will be replaced when needed due to age or damage.

A priority schedule for ongoing and proposed management activities over the next ten years is provided in Table 3. All of the activities shown in Table 3 are contingent upon annual budgetary funding and appropriations by the BCC.

6. COSTS AND FUNDING SOURCES

The County has sole responsibility for security, development, restoration/enhancement, management and maintenance of the natural area. These activities are accomplished by existing county personnel, with assistance from county contractors and community volunteers.

6.1 INITIAL CAPITAL COSTS

Initial capital costs related to the wildfire mitigation, environmental restoration/enhancement, site development and security projects/activities described in Sections 4.4 and 5.1 through 5.5 totaled $542,977. All of the proposed capital projects and activities have been completed.

6.2 ESTIMATED ANNUAL MANAGEMENT AND MAINTENANCE COSTS

Annual management and maintenance costs are expected to average $164,577 over the next ten years (Table 4). These costs will be minimized by coordinating the management and maintenance of natural areas on a countywide basis. Costs also will be minimized whenever possible through the use of volunteers for non-hazardous/non-technical activities. However, most of the ongoing management and maintenance work, including all hazardous and technical work, will be done by existing county personnel with assistance from county contractors. All future management and maintenance activities (repair/replacement of site improvements, invasive/nonnative vegetation and nonnative/nuisance animal control activities, wildfire mitigation, etc.) are subject to, and contingent upon, annual budgetary funding and appropriations by the BCC.

6.3 FUNDING SOURCES

Most of the funds used to acquire, secure, develop, restore/enhance, manage and maintain the natural area have and will continue to come from County funding sources. Grants and other outside funding sources have been and will continue to be used to offset some of these costs as opportunities arise. To date, approximately $246,608 of the acquisition costs were paid by FCT and approximately $9,520 of the capital restoration costs were paid using grant funds received from the USDA, Natural Resources Conservation Service, Wildlife Habitat Incentives Program.

Most of the capital costs were paid using funds from the Palm Beach County Environmentally Sensitive Lands Bond Referendum of March 12, 1991 and the Palm Beach County Lands for Conservation Purposes Bond Issue Referendum of March 9, 1999. The balance of the capital costs, as well as all long-term land management/maintenance costs, have and will continue to come from the Palm Beach County Natural Areas Fund, Palm Beach County Natural Areas Stewardship Endowment Fund, Ag Reserve Land Management Fund and/or Palm Beach County General Fund, as may be amended.

The County has established a Natural Areas Stewardship Endowment Fund which includes funds from restricted gifts and other sources. These funds are invested and the interest earned provides operating funds for county natural areas. The County also has established a Natural Areas Fund to help pay for the development, restoration/enhancement and management of county natural areas. Funding sources for the Natural Areas Fund includes cash payments made in lieu of preservation requirements contained in Article 14, Chapter C (Vegetation Preservation and Protection Ordinance) of the Palm Beach County ULDC, as well as monies received from the sale of development rights removed from natural area lands, leases of county-owned land in the Agricultural Reserve, and the use of county natural areas as offsite mitigation areas. And lastly, the Pollution Control Recovery Trust Fund, which receives fees related to civil violations under Article 14 of the ULDC, may be used to help pay for restoration/enhancement projects on county natural areas. Even with these possible funding sources, the County recognizes the need for additional management funds. ERM will investigate all possible local, state, or federal sources of land management funds, however, the County will not apply for funds from any grant program whose requirements conflict with the terms and conditions of the FCT grant award agreement.

7. MONITORING AND REPORTING

The natural area is managed specifically to preserve, restore/enhance and maintain natural resource values, and to allow public uses that do not adversely affect the existing resources. Restoration/enhancement and other land management activities are continually monitored and assessed to determine whether the stated objectives for natural vegetation communities and listed species are being achieved, and/or to identify any new species not previously identified on the site. Management practices are adjusted (a process known as "adaptive management") if an analysis of the monitoring data indicates that management objectives are not being met. Likewise anthropogenic impacts are monitored to ensure that public uses do not negatively impact the natural area. If an analysis of monitoring data indicates that public uses are having a negative impact on vegetation and/or wildlife populations, a carrying capacity or additional use restrictions may need to be established for the site. Monitoring data also will be used to prepare ASEs and FCT reports (see Section 7.6).

The effects of management activities and public uses will be determined through implementation of the monitoring program described in the following sections. Monitoring protocols have been developed to ensure consistency on all natural areas managed by ERM. Copies of these protocols are available upon request. The types of monitoring activities conducted on the natural area are summarized in the following sections. The monitoring requirements and procedures contained in this chapter are based on the monitoring protocols in existence as of December 2016. If any of the monitoring protocols are amended or revised prior to the next update of this management plan, the monitoring requirements contained in this chapter will automatically be revised so that they are in compliance with the newly approved monitoring protocols.

7.1 PHOTOMONITORING

The primary objective of photomonitoring is to obtain a qualitative, long-term visual record of changes in vegetative composition and/or condition over time, including the effects of planned management and restoration activities. Photomonitoring also may be used on a short-term basis to document relatively rapid changes in vegetation coverage which are related to specific restoration or management activities, such as the mechanical removal of invasive/nonnative vegetation, ditch filling/plugging, recontouring of areas which have been mined or filled, and prescribed fire; or to document changes related to natural events, such as wildfires and tropical storms/hurricanes.

Photomonitoring began at the natural area in 2002. Four permanent photomonitoring stations have been established in areas where planned management or restoration activities have occurred, or are anticipated to occur, and in areas in which natural vegetation succession of management interest is expected to occur. One photomonitoring station has been established in each management unit. When the photomonitoring stations were established in each of the management units, staff attempted to locate the stations so that at least one long-term photomonitoring station

was installed in each native vegetation community to provide photographic documentation of the effects of management and/or restoration activities on that community. Two of the original photomonitoring stations were relocated in 2009/10 due to overgrown vegetation that was obscuring the viewpoints of each of the photomonitoring stations.

7.2 VEGETATION MONITORING

As of December 2016 no vegetation transects had been established at the natural area. In the future if vegetation monitoring is required by the conditions of a permit, grant or any other agreement, or if vegetation transects are needed to monitor the effects of a destructive natural event (such as a hurricane, wildfire, pest, disease or invasive species), a point intercept transect monitoring method will be used (subject to approval by the overseeing agency or organization). Transects will be surveyed twice a year, once in the dry season and once in the wet season. Data will be recorded at predetermined intervals along each transect. If an analysis of the transect data indicates that negative natural community changes are occurring, additional transects may be established in the affected management unit to determine if the changes are localized or widespread.

Any plant species that has been listed for protection or special management by at least one governmental agency and/or is ranked as a S1-S3 species by FNAI, and that has been observed on the site during a given calendar year, will be recorded in ERM's Environmental Enterprise Database (EEDB). In addition, population information is collected for certain listed plant species in accordance with established monitoring protocols. Additional surveys may be conducted if it is determined that they are necessary to document the effect(s) of changing site conditions, or a significant natural event or land management activity on one or more listed plant species. If the population of a species is too large to practically count all individuals, a representative portion of the population is surveyed. A species-specific monitoring plan may be developed for endangered listed plant species when more intense monitoring is needed due to regulatory requirements, management information needs, or because the species is highly endangered or suspected to be declining.

County staff also records any plant species encountered opportunistically (during a normal site visit) on a natural area that has not previously been recorded for the site. The sighting and any specific information obtained during the opportunistic sighting (for example, the number of individual plants observed, location, whether or not the plant is blooming or fruiting, etc.) are recorded in the EEDB.

7.3 WILDLIFE MONITORING

Migratory bird surveys have been performed within the natural area since 2003; nonmigratory were performed from 2010 through 2015. Migratory bird surveys are conducted when migratory bird species are expected to be present - September through October and February through May. Nonmigratory wildlife surveys are conducted from June through August. All surveys have been

conducted in a manner that is largely repeatable in order to obtain information that can be compared from year to year.

Any animal species observed at the site that has been listed for protection or special management by at least one governmental agency or that has been ranked as a S1-S3 species by FNAI, and that has been observed on the site during a given calendar year, will be recorded in ERM's EEDB. A species-specific monitoring plan may be developed for any listed animal species that is recorded as breeding on the site, if deemed necessary/feasible by the site manager and his/her supervisor.

County staff also records any animal species that is encountered opportunistically (during a regular site visit) and that has not previously been recorded for the site. The sighting and any specific information obtained during the opportunistic sighting (for example, the number of individuals observed, whether they were adult/juvenile, male/female, breeding, feeding, etc.) are recorded in the EEDB.

Regularly-scheduled species-specific monitoring has been conducted at the natural area for one species – the gopher tortoise - since 2005.

7.4 HYDROLOGICAL MONITORING

Since there are no wetlands or open water areas, hydrological monitoring will not be conducted at this site.

7.5 CLIMATE CHANGE MONITORING

All of the monitoring information gathered on the site will be evaluated for changes that may be the result of climate change. If significant changes in rainfall patterns and/or vegetation communities are noted over time, staff will attempt to mitigate for these changes if possible. If the changes cannot be mitigated for, county staff will modify its management practices to provide the highest quality vegetation communities practicable under the new climate conditions.

7.6 ANNUAL REPORT

ERM will prepare and submit a stewardship report to FCT each year unless the reporting requirements are modified by FCT. The stewardship report will be designed to meet the reporting requirements for the FCT-funded portion of the natural area. ERM staff also will prepare an ASE report each year. Each ASE will include information related to structural improvements, natural events, management activities and restoration activities that occurred during the prior year, as well as the degree of success of any management and restoration activities relative to the stated management goals for the site. The ASE will include a description of any changes to the monitoring plan that occurred during the prior year, as well as recommendations for future management actions for the natural area. A general review of management efforts related to

natural vegetation communities and the status of listed species also will be completed at the end of each management year and included in the ASE.

The ASE will be the vehicle through which detailed information on the management of the natural area will be shared with other ERM staff, including any new or current employee who may be assigned as the site manager in the future. ASEs will provide information that will be used in conjunction with data stored in the NRS portion of ERM's EEDB to allow staff biologists, ecologists and engineers to analyze and evaluate the success of staff management activities on the natural area over a period of years. ASEs will provide the basis for trend analysis of site data that will be performed at least every five years by staff.

Information on all listed plant and animal species recorded at the natural area will be provided to FNAI on an annual basis, using one of the forms that are available at http://www.fnai.org/fieldreportingforms.cfm or as otherwise requested by FNAI.

8. CHRONOLOGY OF MAJOR EVENTS (1998-2017)

Year	Month	Event
1998	April	Hoysgaard Tract purchased by the County for $1,085,000.
	July	Seppala Tract purchased by the County for $100,000; Florida Affordable Housing, Inc. Tract purchased by the County for $535,000.
	December	Hecht Tract purchased by the County for $45,000.
1999		Eight acres of Brazilian pepper monoculture were removed mechanically from the northeast and southeast portions of the site.
	November	OHV users cut two holes in the fence that lies adjacent to the railroad right of way and were using the site. A Sheriff's deputy responded to a call from a neighbor, but no one was caught.
2000	September	Future Land Use changed to Conservation.
2001	June	Public hearing and open house held on initial management plan.
	August	State matching funds of $246,608 received from FCT for a portion of the cost to acquire the natural area.
	October	Initial management plan approved by BCC.
2002		Paintball activities were noted throughout the year. The Wildlands Task Force increased patrols in an attempt to stop/reduce this activity.
	March	Construction of management accessways/firebreaks completed.
	September	Unit 1 was prescribed burned. The burn was patchy with only 40 to 50 percent of the unit carrying fire.
	December	A section of chain-link fence was cut and OHV tracks were noted within the site. The fence was quickly repaired.
2003		Paintball activities were noted throughout the year. The Wildlands Task Force continued patrols in an attempt to stop/reduce this activity.
		A pedestrian maze gate was installed in the chain-link fence fronting Tom-a-toe Road to provide local residents with access to the site.
2004	September	Hurricanes Frances and Jeanne impacted the site. A large number of mature sand pines in Management Unit 1 and a few in other portions of the site died off. Downed trees and branches damaged 20 feet of chain-link fence and blocked portions of the management accessways and trails. Debris was blown into the natural area.

Year	Month	Event
2005		Recruitment of sand pine seedlings noted in Management Unit 1.
	October	Hurricane Wilma blew roofing material and other debris into the site.
		A Phase I Archaeological Survey was completed for the site.
2006		The initial nonnative/invasive vegetation treatments were completed.
	March	Conservation Easements were granted to SFWMD and TNC.
	May	Construction of public use facilities began.
2007		Several instances of dumping occurred adjacent to Tom-a-toe Road. The dumping occurred within the Hecht Tract, but outside the fence line. A large "No Dumping" sign was posted on the fence, flyers were sent to local residents and the area was mulched in an effort to curb this activity.
	March	Construction of public the use facilities and associated signage was completed.
	October	The natural area was officially opened to the public.
	December	Approximately 375 slash pines and 75 live oaks were planted along the eastern perimeter as mitigation for an offsite development project.
2008		Evidence of party activities was found in and around the shade shelter. The Wildlands Task Force focused patrols in that area in an attempt to stop/reduce the activity.
	March	Volunteers planted 165 scrub oak, saw palmetto and gopher apple in and around the parking lot.
2009		There were no significant events.
2010		Graffiti was spray-painted on the concrete nature trail, and a foam mattress and cardboard "fort" materials were found on the site. All were removed by ERM staff.
2011		The site reached maintenance level relative to nonnative/invasive plant coverage (nonnative species covering less than 1% of site).
2012	March	Vegetation within Management Unit 4 was mechanically reduced.
2013		There were no significant events.
2014	January	Portions of the management accessways washed out during an un-named storm that dropped 15 to 22 inches of rain in the vicinity of the natural area (National Weather Service 2014). Shellrock was brought in to fill-in the washed out areas and stabilize the management accessways.
	February	A memorial bench was installed at the start of the nature trail loop.
	July	Seven shell-mound pricklypear were planted on the site.

Year	Month	Event
2015		Evidence of partying activities was noted in and around the parking lot. The height of the surrounding vegetation was reduced to make the area more visible from High Ridge Road.
		The concrete under the shade shelter was spray-painted. The paint was removed by ERM staff.
	February	Vegetation within Management Units 1 and 4 was mechanically reduced.
2016		Portions of the management accessways which washed out as a result of the 2014 rain event experienced additional washouts during this timeframe.
		Evidence of partying activities continued in and around the parking lot and shade shelter.
	June	Two teens were caught using a self-made "party fort", chopping down pine trees to create a fire and having air soft pellets guns within the natural area. They each were issued citations by the Wildlands Task Force.
	September	OHV usage was reported several times during the year; one OHV user was caught in the site by a Wildlands Task Force deputy in September.
	December	Vegetation within Management Unit 4 was mechanically reduced.
2017	January	Update to management plan approved by NAMAC.
	(month)	Update to management plan approved by BCC.
	(month)	Update to management plan approved by FCT.

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10. FIGURES

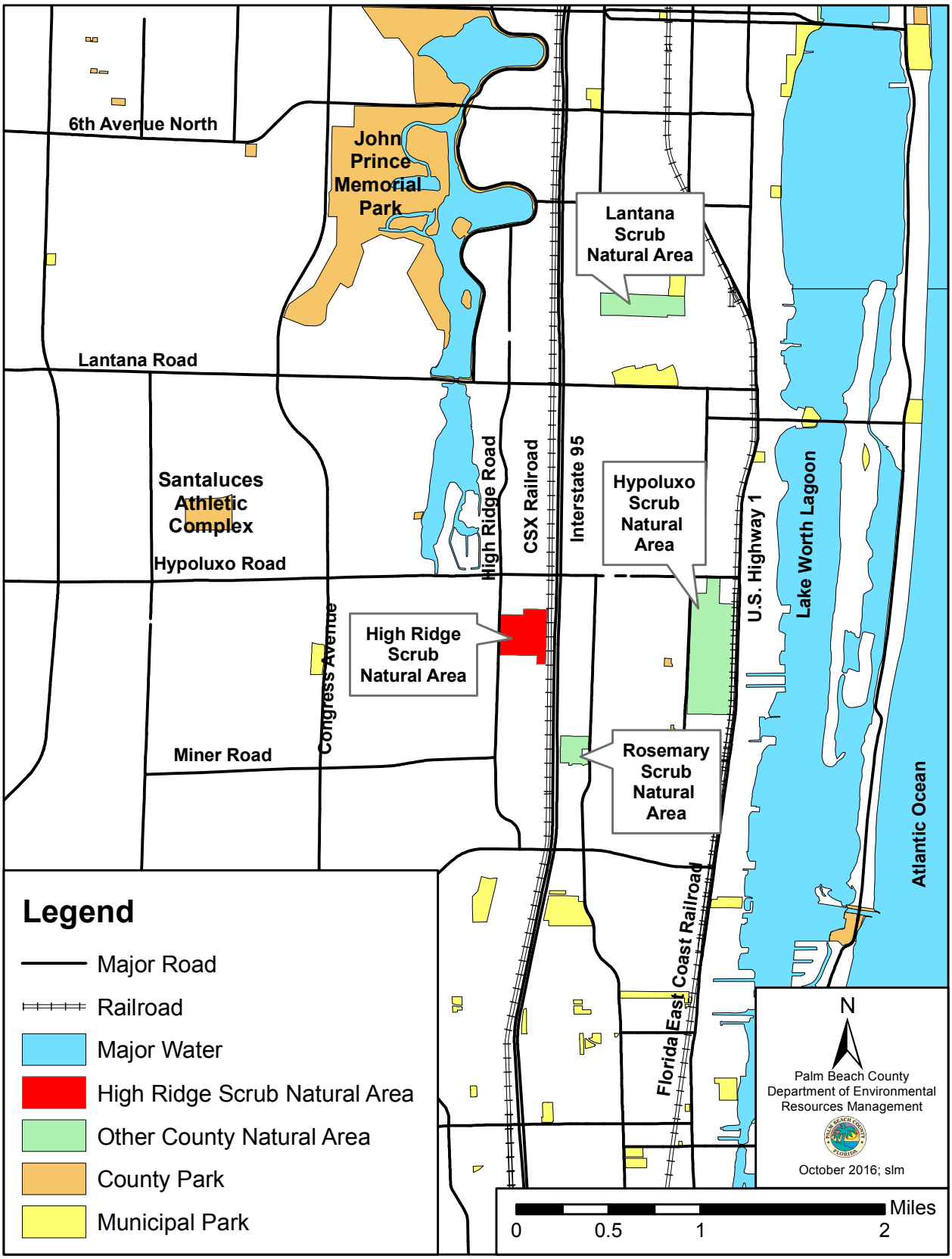


Figure 1. High Ridge Scrub Natural Area Location Map

Figure 2. High Ridge Scrub Natural Area FCT Project Area / Tract Map

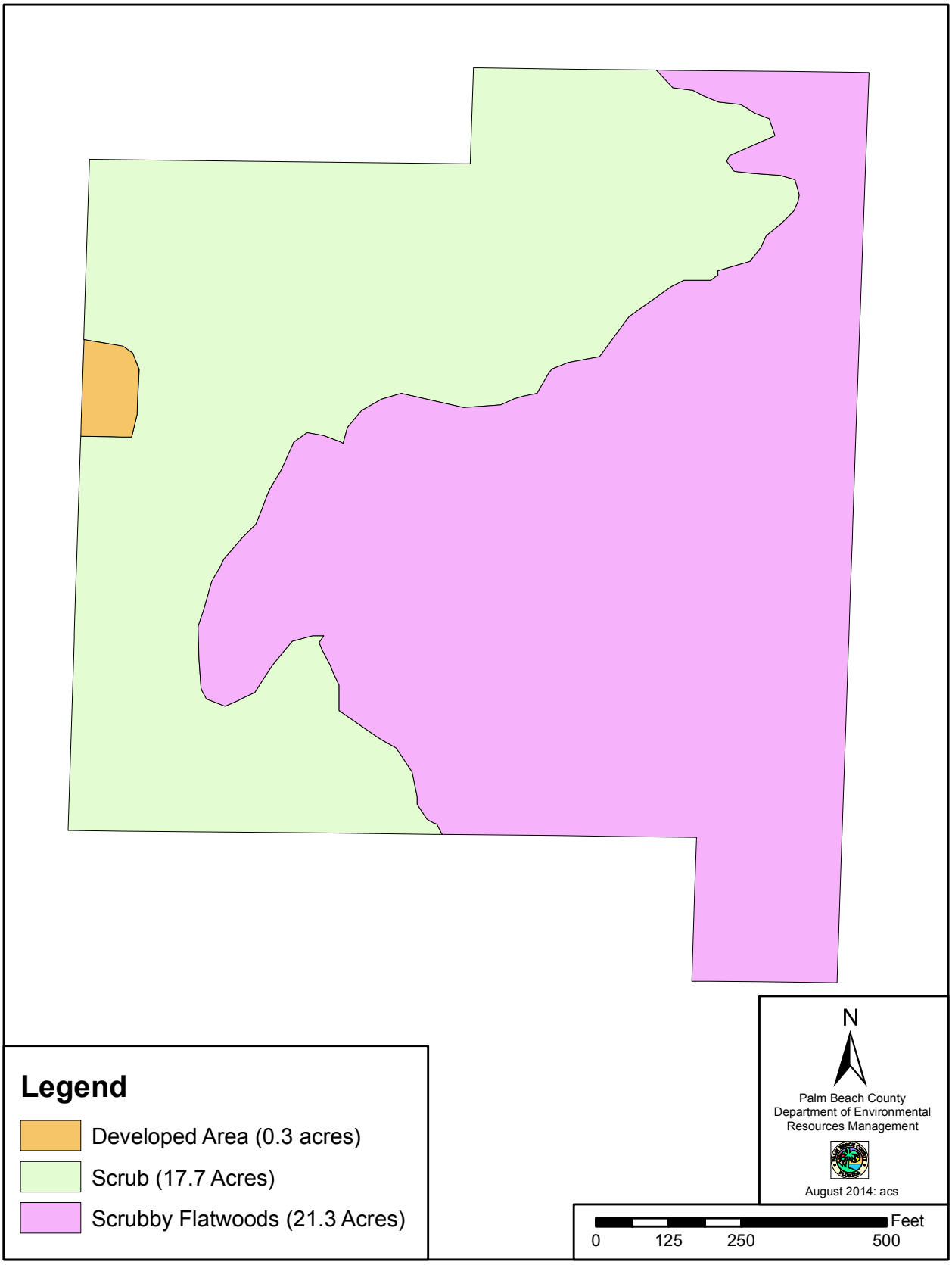


Figure 3. High Ridge Scrub Natural Area Vegetation Map

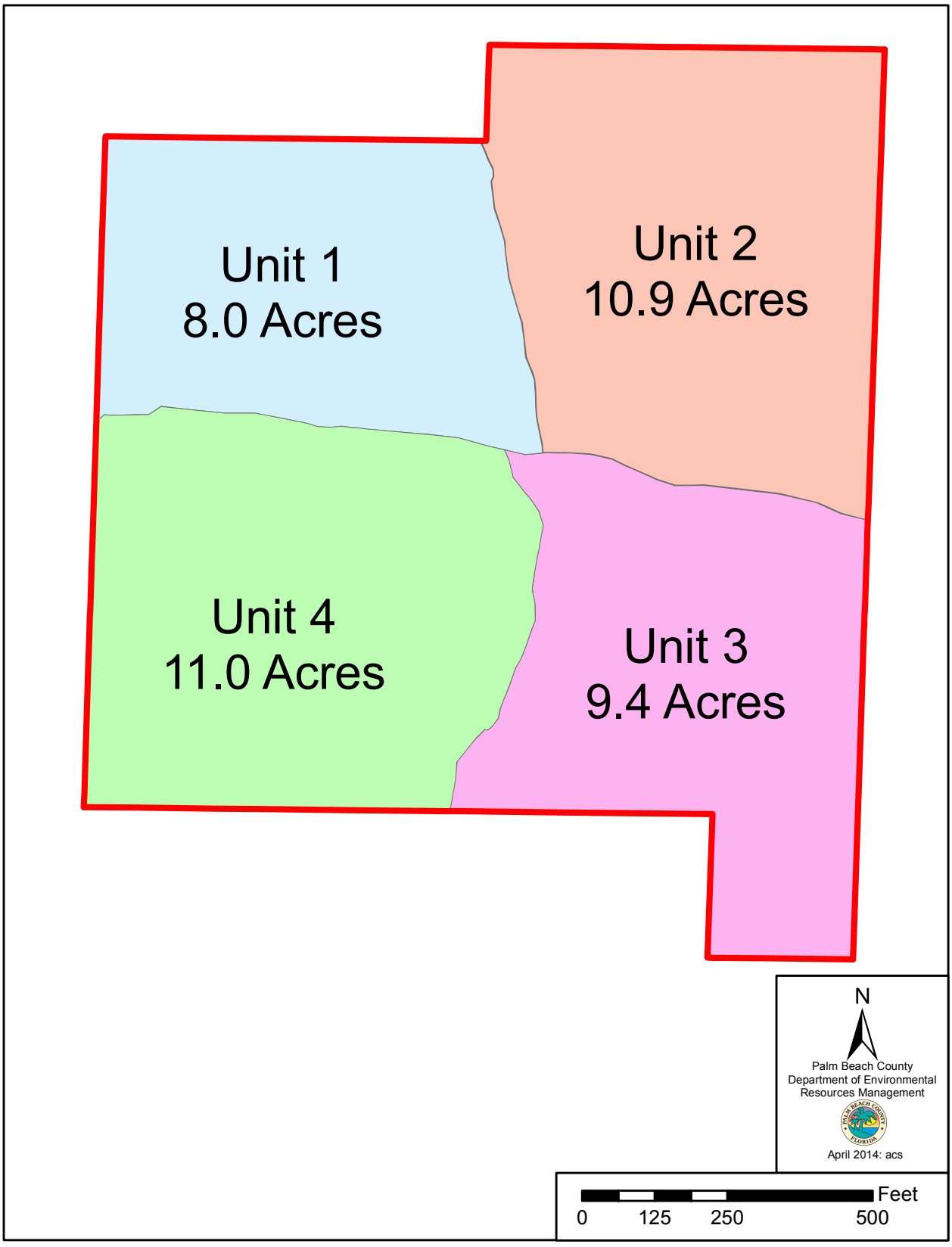


Figure 4. High Ridge Scrub Natural Area Management Units Map

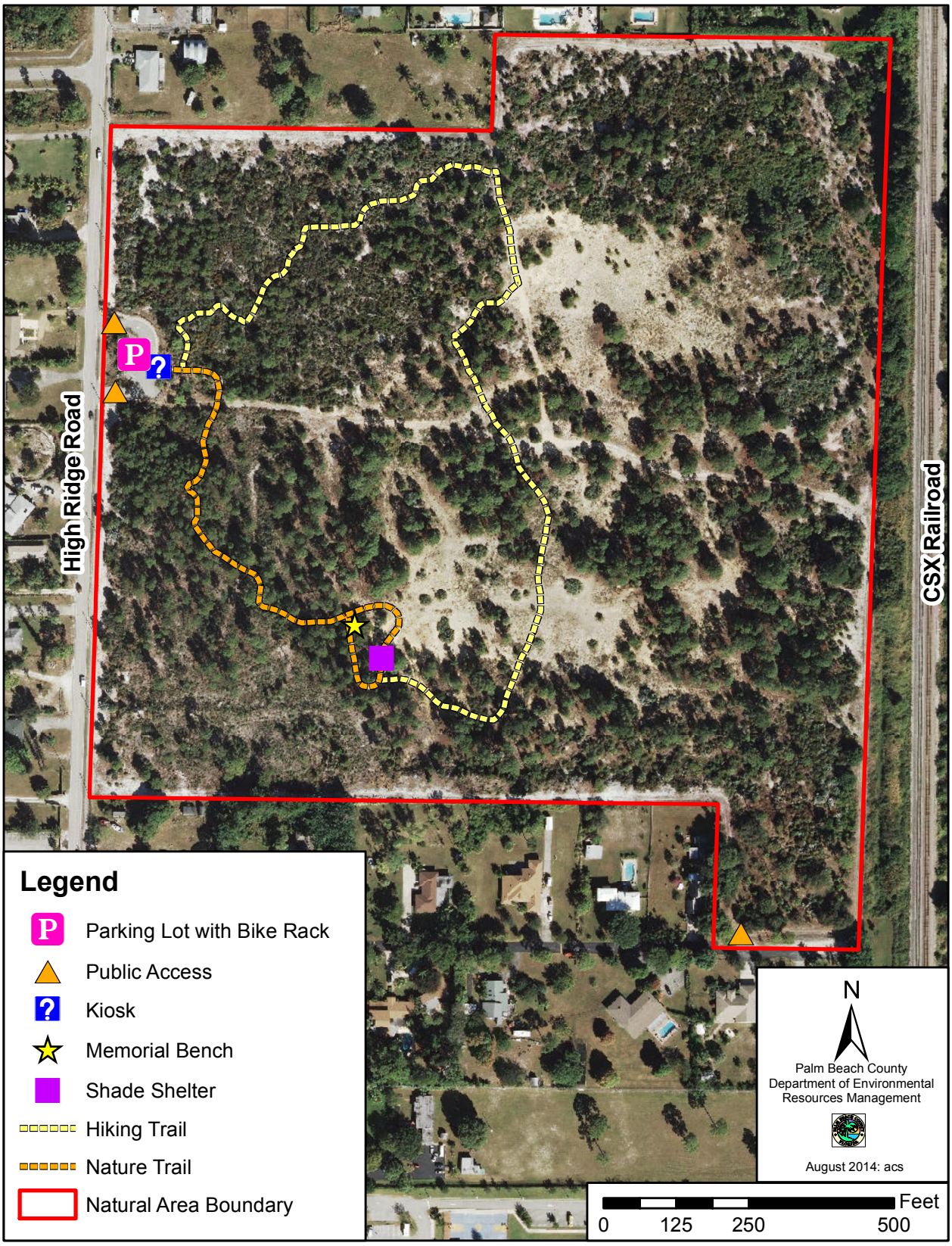


Figure 5. High Ridge Scrub Natural Area Public Use Facilities Map

11. TABLES

Table 1. Listed Plant Species Recorded at High Ridge Scrub Natural Area

		LISTING STATUS		
SCIENTIFIC NAME	COMMON NAME	FNAI	USFWS	FDACS
Asclepias curtissii	Curtiss' milkweed	N	N	E
Lechea divaricata	Spreading pinweed	G2/S2	N	E
Opuntia stricta	Shell-mound pricklypear	N	N	T
Tillandsia balbisiana	Inflated & reflexed wild pine	N	N	T
Tillandsia fasciculata	Common wild pine	N	N	E
Tillandsia utriculata	Giant wild pine	N	N	E
Zamia pumila	Coontie	N	N	CE

CE = Commercially exploited
E = Endangered
FDACS = Florida Department of Agriculture and Consumer Services
FNAI = Florida Natural Areas Inventory
N = Not listed
T = Threatened
USFWS = United States Fish and Wildlife Service

Occurrences determined from field surveys and data by ERM (1995-2016). Ranks assigned by FNAI are from an April 2016 tracking list (FNAI 2016), designations assigned by the Florida Department of Agriculture and Consumer Services are from FDACS (2016), and designations assigned by the United States Fish and Wildlife Service are from USFWS (undated). Definitions for the ranks and designations used by these entities are provided in Appendix C.

Table 2. Listed Animal Species Recorded at High Ridge Scrub Natural Area

		LISTING STATUS		
SCIENTIFIC NAME	COMMON NAME	FNAI	USFWS	FWC
Egretta caerulea	Little blue heron	G5/S4	N	T
Eudocimus albus	White ibis	G5/S4	N	N
Eumaeus atala	Atala	G4/S2	N	N
Falco columbarius	Merlin	G5/S2	N	N
Gopherus polyphemus	Gopher tortoise	G3/S3	C	T
Haliaeetus leucocephalus	Bald eagle	G5/S3	N	N
Leptotes cassius theonus	Cassius blue	N	T(S/A)	FT(S/A)
Mycteria americana	Wood stork	G4/S2	T	FT
Pandion haliaetus	Osprey	G5/S3S4	N	SSC*
Passerina ciris	Painted bunting	G5/S3	N	N
Setophaga ruticilla	American redstart	G5/S2	N	N

C = Candidate
E = Endangered
FE = Federally-designated Endangered
FT = Federally-designated Threatened
FT(S/A) = Federally-designated Threatened due to Similarity of Appearance
FWC = Florida Fish and Wildlife Conservation Commission
FNAI = Florida Natural Areas Inventory
N = Not listed
SSC = State Species of Special Concern
T = Threatened
T(S/A) = Threatened due to Similarity of Appearance
USFWS = United States Fish and Wildlife Service

* Currently only the Monroe County population of this species is listed as a state species of special concern.

Occurrences determined from data collected by ERM (1990-2016). Ranks assigned by FNAI are from a January 2016 tracking list (FNAI 2016); designations assigned by FWC are from Chapter 68A-27, Florida Administrative Code, as updated on January 11, 2017; and designations assigned by USFWS are from USFWS (undated). Definitions for the ranks and designations used by these entities are provided in Appendix C.

Table 3. Priority Schedule for Site Management Activities

ACTIVITY	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Update management plan	X									X
NAMAC review of updated management plan	X									
BCC approval of updated management plan	X									
Prescribed burn or mechanical fuel reduction - Unit 4	X									
Prescribed burn or mechanical fuel reduction - Unit 2			X							
Prescribed burn or mechanical fuel reduction - Unit 1						X				
Prescribed burn or mechanical fuel reduction - Unit 3								X		
Conduct monitoring activities	X	X	X	X	X	X	X	X	X	X
Conduct maintenance invasive/nonnative plant control activities	X	X	X	X	X	X	X	X	X	X
Conduct regular facilities maintenance/mowing	X	X	X	X	X	X	X	X	X	X
Coordinate volunteer work days	X	X	X	X	X	X	X	X	X	X

Table 4. Estimated Annual Management and Maintenance Costs (in 2016 dollars)

Site Management and Maintenance

Prescribed habitat burns or mechanical fuel reduction (personnel and equipment - $27,500 per burn or reduction, 4 burns/reductions in a 10-year period/10 years to next management plan update)	$11,000*
Mowing and maintenance of management accessways/hiking trails (3 times/year)	$1,157*
Fence line maintenance (3 times/year)	$1,157*
Maintenance of public use facilities, including parking lot, nature trail and trail markers/signs (bi-weekly or as needed) and trimming of hiking trail vegetation (2 times/year)	$7,522*
Site management – monitoring program, annual reports, management plan updates, listed species protection, volunteer coordination and supervision, public outreach, educational materials and intergovernmental coordination	$78,686*
Nonnative/invasive plant control (39 acres)	$40,677**
Repair/replacement due to damage/vandalism (0.005% of structural facilities cost of $281942)	$1,410**
Subtotal – present annual cost	**$141,609**

Capital Facilities Maintenance and Replacement

Removal and replacement of facilities with 10-year expected life (trail markers, interpretive markers, rules signs, miscellaneous signs, natural area signs, credits sign, entrance sign, parking lot signs, regulatory signs, restriping/remarking of parking lot, traffic assemblies, post and rail fencing) and facilities with 20-year expected life (detectable warning surfaces, bicycle rack, kiosk, bollards, shade shelter roof, shade shelter benches, steel maintenance gates, chain-link fencing, removal and replacement of wheel stops)	$170,304
Estimated annual cost over 10 years @ 4% interest rate	$20,998**
Removal and replacement of facilities with 10-year expected life and facilities with 30-year expected life (milling and resurfacing of parking lot and entrance road)	$26,763
Estimated annual cost over 20 years @ 4% interest rate	$1,970**
Subtotal – estimated annual capital replacement costs	**$22,968**

TOTAL ANNUAL COST (in 2016 dollars) $164,577

* To be performed by existing Palm Beach County personnel.

** Funding for these activities will come from the Palm Beach County Natural Areas Fund, Palm Beach County Natural Areas Stewardship Endowment Fund, Ag Reserve Land Management Fund and/or Palm Beach County General Fund, as may be amended.

NOTE: All facilities and activities listed are subject to annual budgetary funding and appropriations by the Palm Beach County Board of County Commissioners

APPENDIX A

PLANT SPECIES RECORDED AT

HIGH RIDGE SCRUB NATURAL AREA

APPENDIX A

PLANT SPECIES RECORDED AT HIGH RIDGE SCRUB NATURAL AREA

Updated September 12, 2016

Scientific Name	Common Name
Abrus precatorius * NX (I)	Rosary pea
*Acacia auriculiformis** (I)	Earleaf acacia
Albizia lebbeck * (I)	Woman's tongue
Allamanda cathartica *	Brownbud allamanda
Ambrosia artemisiifolia	Common ragweed
Andropogon glomeratus	Bushy bluestem
Andropogon ternarius	Splitbeard bluestem
Andropogon virginicus	Broomsedge bluestem
Aristida gyrans	Corkscrew threeawn
Aristida sp.	Threeawn
Aristida stricta var.beyrichiana	Wiregrass
*Arundo donax**	Giant reed
Asclepias curtissii	Curtiss' milkweed
Asimina reticulata	Netted pawpaw
*Asparagus aethiopicus** (I)	Sprenger's asparagus-fern
Asparagus setaceus *	Common asparagus-fern
Asystasia gangetica * (II)	Chinese violet
Baccharis halimifolia	Groundsel tree
Bambusa vulgaris *	Common bamboo
Bejaria racemosa	Tarflower
Bidens alba	Beggarticks
Blechnum serrulatum	Swamp fern
Bulbostylis ciliatifolia	Capillary hairsedge
Caesalpinia bonduc	Gray nicker
Callicarpa americana	American beautyberry
Callisia ornata	Florida scrub roseling
Cassia sp. *	Cassia
Cassytha filiformis	Love vine
Casuarina equisetifolia * NX (PAP I) (I)	Australian-pine
Casuarina glauca * NX (PAP I) (I)	Suckering Australian-pine
Catharanthus roseus *	Madagascar periwinkle
Cenchrus echinatus	Southern sandbur
Cenchrus spinifex	Coastal sandbur
Centrosema virginianum	Spurred butterfly pea
Ceratiola ericoides	Florida rosemary
Chamaecrista fasciculata	Partridge pea
Chromolaena odorata	Jack-in-the-bush

Chrysobalanus icaco	Coco plum
Cinnamomum camphora * (I)	Camphortree
Citrullus lanatus *	Watermelon
Citrus x *aurantium* *	Grapefruit, sour orange, sweet orange
Cladina evansii	Powder-puff lichen
Cladina subtenuis	Dixie reindeer lichen
Cladonia leporina	Jester lichen
Cnidoscolus stimulosus	Tread-softly
Coccoloba uvifera	Seagrape
Conyza canadensis	Canadian horseweed
Crotalaria pallida var. *obovata* *	Smooth rattlebox
Crotalaria rotundifolia	Rabbitbells
Crotalaria spectabilis *	Showy rattlebox
Croton glandulosus	Vente conmigo
Cuscuta exaltata	Tall dodder
Cyperus ligularis	Swamp flatsedge
Cyperus ovatus	Pinebarren flatsedge
Dactyloctenium aegyptium * (II)	Durban crowfootgrass
Delonix regia *	Royal poinciana
Desmodium incanum *	Zarzabacoa comun
Desmodium tortuosum *	Dixie ticktrefoil
Dichanthelium portoricense	Hemlock witchgrass
Digitaria sp.	Crabgrass
Diodia teres	Poor Joe
Diospyros virginiana	Common persimmon
Emilia fosbergii *	Florida tassleflower
Emilia sonchifolia *	Lilac tassleflower
Eragrostis ciliaris *	Gophertail lovegrass
Eragrostis elliottii	Elliott's lovegrass
Erechtites hieraciifolius	Fireweed
Eremochloa ophiuroides *	Centipedegrass
Eugenia uniflora * (I)	Surinam cherry
Eupatorium capillifolium	Dogfennel
Euphorbia polyphylla	Lesser Florida spurge
Eustachys petraea	Pinewoods fingergrass
Ficus aurea	Strangler fig
Ficus benjamina *	Weeping fig
Ficus microcarpa * (I)	Indian laurel
Froelichia floridana	Cottonweed
Galactia volubilis	Eastern milkpea
Helianthemum nashii	Florida scrub frostweed
Helianthus debilis	East coast dune sunflower
Heteropogon contortus *	Tanglehead
Heterotheca subaxillaris	Camphorweed
Hibiscus acetosella *	African rosemallow

Hieracium gronovii	Queen-devil
Ilex cassine	Dahoon
Impatiens walleriana *	Garden impatiens
Indigofera hirsuta *	Hairy indigo
Ipomoea quamoclit *	Cypressvine
Iresine diffusa	Juba's bush
Kalanchoe delagoensis *	Chandelier plant
Kalanchoe pinnata * (II)	Life plant
Lactuca graminifolia	Grassleaf lettuce
Lantana camara * (I)	Shrubverbena
Lechea divaricata	Spreading pinweed
Lepidium virginicum	Virginia pepperweed
Liatris tenuifolia	Shortleaf gayfeather
Licania michauxii	Gopher apple
Linaria floridana	Apalachicola toadflax
Lupinus diffusus	Skyblue lupine
Lyonia fruticosa	Coastalplain staggerbush
Lyonia lucida	Fetterbush
Mangifera indica *	Mango
Melinis repens * NX (PAPI) (I)	Rose natalgrass
Merremia dissecta *	Noyau vine
Momordica charantia * (II)	Balsampear
Nephrolepis brownii * (I)	Asian sword fern
Nephrolepis cordifolia * (I)	Tuberous sword fern
Nerium oleander *	Oleander
Oenothera humifusa	Seabeach eveningprimrose
Opuntia humifusa	Pricklypear
Opuntia stricta	Shell-mound pricklypear
Palafoxia feayi	Feay's palafox
Panicum amarum	Bitter panicgrass
Panicum maximum * (II)	Guineagrass
Parthenocissus quinquefolia	Virginia creeper
Paspalum setaceum	Thin paspalum
Passiflora foetida *	Fetid passionflower
Passiflora suberosa	Corkystem passionflower
Pennisetum purpureum * (I)	Napiergrass
Persea borbonia var. *humilis*	Silk bay
Philodendron hederaceum var. *oxycardium* *	Heartleaf philodendron
Phlebodium aureum	Golden polypody
Phyla nodiflora	Turkey tangle fogfruit
Phyllanthus tenellus *	Mascarene Island leafflower
Phyllanthus urinaria *	Chamber bitter
Physalis walteri	Walter's groundcherry
Phytolacca americana	American pokeweed
Pinus clausa	Sand pine

Pinus elliottii	Slash pine
Pityopsis graminifolia	Narrowleaf silkgrass
Pleopeltis polypodioides var. *michauxiana*	Resurrection fern
Plumbago auriculata *	Cape leadwort
Poinsettia cyathophora	Paintedleaf
Poinsettia heterophylla	Fiddler’s spurge
Polygala incarnata	Procession flower
Polygala setacea	Coastalplain milkwort
Polygonella ciliata	Hairy jointweed
Polygonella polygama	October flower
Polygonella sp.	Jointweed
Pongamia pinnata *	Karum tree
Portulaca pilosa	Pink purslane
Pseudognaphalium obtusifolium	Rabbit tobacco
Psidium guajava * (I)	Guava
Psychotria nervosa	Wild coffee
Quercus chapmanii	Chapman's oak
Quercus geminata	Sand live oak
Quercus myrtifolia	Myrtle oak
Quercus pumila	Running oak
Quercus virginiana	Live oak
Rhynchospora megalocarpa	Sandyfield beaksedge
Richardia grandiflora * (II)	Largeflower Mexican clover
Ricinus communis * (II)	Castorbean
Rivinia humilis	Rougeplant
Sabal etonia	Scrub palmetto
Sabal palmetto	Cabbage palm
Sansevieria hyacinthoides * (II)	Bowstring hemp
Schefflera actinophylla * (I)	Australian umbrella tree
Schinus terebinthifolius * NX (PAP I)(I)	Brazilian pepper
Schizachyrium scoparium	Little bluestem
Selaginella arenicola	Sand spike-moss
Senna occidentalis *	Septicweed
Serenoa repens	Saw palmetto
Setaria corrugata	Coastal foxtail
Setaria parviflora	Knotroot foxtail
Seymeria pectinata	Piedmont blacksenna
*Sida cordifolia**	Lima
Sida rhombifolia	Indian hemp
Sida ulmifolia	Common fanpetals
Sisyrinchium xerophyllum	Jeweled blue-eyed grass
Smilax auriculata	Earleaf greenbrier
Solanum americanum	American black nightshade
Solanum diphyllum * (II)	Twoleaf nightshade
Solidago odora var. *chapmanii*	Chapman’s goldenrod

*Sorghum halapense**	Johnson grass
*Spermacoce verticillata** (II)	Shrubby false buttonweed
*Sphagneticola trilobata ** (II)	Creeping oxeye
Sphagnum sp.	Sphagnum
*Sporobolus indicus**	Smutgrass
Sporobolus virginicus	Seashore dropseed
Stenotaphrum secundatum	St. Augustinegrass
*Syagrus romanzoffiana** (II)	Queen palm
*Syzygium cumini** (I)	Java plum
*Syzygium jambos** (II)	Rose-apple
*Taliparitiliaceum** (II)	Mahoe
*Tecoma capensis **	Cape honeysuckle
*Terminalia muelleri** (II)	Australian almond
Tillandsia balbisiana	Inflated & reflexed wild pine
Tillandsia fasciculata	Common wild pine
Tillandsia recurvata	Ballmoss
Tillandsia setacea	Southern needleleaf
Tillandsia sp.	Airplant
Tillandsia usneoides	Spanish moss
Tillandsia utriculata	Giant wild pine
*Tradescantia fluminensis** (I)	Small-leaf spiderwort
*Tradescantia spathacea** (II)	Oyster-plant
*Tribulus cistoides** (II)	Burrnut
Triplasis purpurea	Purple sandgrass
*Urena lobata** (I)	Caesarweed
*Urochloa distachya**	Tropical signalgrass
Vaccinium myrsinites	Shiny blueberry
Vitis rotundifolia	Muscadine
Vitis shuttleworthii	Calloose grape
Ximenia americana	Hog plum
Yucca aloifolia	Spanish bayonet
Zamia pumila	Coontie

NOTES:

* = Nonnative species

NX = Species is on the state noxious weed list (Rule 5B-57.007, Florida Administrative Code)

PAP I = Species designated as Class I Prohibited Aquatic Plant by FDACS (2008)

PAP II = Species designated as Class II Prohibited Aquatic Plant by FDACS (2008)

(I) = Exotic species designated as Category I by FLEPPC (FLEPPC 2015)

(II) = Exotic species designated as Category II by FLEPPC (FLEPPC 2015)

Scientific and common names of vascular plant species generally follow Integrated Taxonomic Information System (2016); NatureServe (2015); USDA, NRCS (2016), and Wunderlin and Hansen (2008). Lichens are from Brodo et al. (2001).

APPENDIX B

ANIMAL SPECIES RECORDED AT

HIGH RIDGE SCRUB NATURAL AREA

APPENDIX B

ANIMAL SPECIES RECORDED AT HIGH RIDGE SCRUB NATURAL AREA
Updated 10/11/16

SCIENTIFIC NAME	COMMON NAME
ARTHROPODA	
Arachnida (Arachnids)	
Argiope argentata	Silver garden spider
Gasteracantha cancriformis	Spinybacked orbweaver
Leucauge venusta	Orchard orbweaver
Nephila clavipes	Golden silk orbweaver
Peucetia viridans	Green lynx spider
Diplopoda	
Narceus sp.	Millipede
Insecta (Insects)	
Diptera	
Eupeodes americanus	American flower fly
Plecia nearctica *	Lovebug
Hemiptera	
Acanthocephala terminalis	Leaf-footed bug
Tibicen sp.	Cicada
Hymenoptera	
Formica exsectoides	Allegheny mound ant
Pheidole megacephala *	Bigheaded ant
Pogonomyrmex sp.	Harvester ant
Polistes sp.	Paper wasp
Solenopsis invicta *	Red imported fire ant
Solenopsis sp.	Fire ant
Lepidoptera	
Agraulis vanillae	Gulf fritillary
Anartia jatrophae	White peacock

Anisota stigma	Spiny oakworm moth
Ascia monuste	Great southern white
Danaus gilippus	Queen
Danaus plexippus	Monarch
Eumaeus atala	Atala
Eurytides marcellus	Zebra swallowtail
Heliconius charithonia tuckeri	Zebra longwing
Leptotes cassius theonus	Cassius blue
Limenitis archippus	Viceroy
Marpesia petreus	Ruddy daggerwing
Papilio cresphontes	Giant swallowtail
Phoebis sennae	Cloudless sulphur
Pyrgus oileus	Tropical checkered-skipper
Pyrisitia lisa	Little yellow
Samea sp.	Stem-borer
Strymon melinus	Gray hairstreak
Syntomeida epilais	Oleander moth
Thorybes bathyllus	Southern cloudywing
Urbanus proteus	Long-tailed skipper
Utetheisa ornatrix	Bella moth

Neuroptera

Myrmeleon sp.	Antlion

Odonata

Anax junius	Common green darner
Celithemis eponina	Halloween pennant
Enallagma doubledayi	Atlantic bluet
Epitheca stella	Florida baskettail
Erythemis plebeja	Pin-tailed pondhawk
Erythemis simplicicollis	Eastern pondhawk
Erythemis vesiculosa	Great pondhawk
Erythrodiplax minuscula	Little blue dragonlet
Erythrodiplax umbrata	Band-winged dragonlet
Libellula auripennis	Golden-winged skimmer
Pachydiplax longipennis	Blue dasher
Pantala flavescens	Wandering glider
Tramea carolina	Carolina saddlebags
Tramea lacerata	Black saddlebags

Orthoptera

Chortophaga australior	Southern green-striped grasshopper
Romalea microptera	Eastern lubber grasshopper
Schistocerca americana	American grasshopper
Schistocerca damnifica	Mischievous bird grasshopper

Phasmatodea

Anisomorpha buprestoides	Two-striped walking stick

CHORDATA

Reptilia (Reptiles)

Squamata

Anolis sagrei *	Brown anole
Aspidoscelis sexlineata	Six-lined racerunner
Coluber constrictor	North American racer
Micrurus fulvius	Harlequin coralsnake
Opheodrys aestivus	Rough greensnake
Pantherophis guttatus	Red cornsnake
Plestiodon inexpectatus	Southeastern five-lined skink

Testudines

Gopherus polyphemus	Gopher tortoise

AVES (Birds)

Accipitriformes

Accipiter cooperii	Cooper's hawk
Accipiter striatus	Sharp-shinned hawk
Buteo jamaicensis	Red-tailed hawk
Cathartes aura	Turkey vulture
Coragyps atratus	Black vulture
Haliaeetus leucocephalus	Bald eagle
Pandion haliaetus	Osprey

Anseriformes

Anas fulvigula	Mottled duck

Apodiformes	
Archilochus colubris	Ruby-throated hummingbird
Chaetura pelagica	Chimney swift
Caprimulgiformes	
Antrostomus vociferus	Eastern whip-poor-will
Chordeiles minor	Common nighthawk
Ciconiiformes	
Mycteria americana	Wood stork
Columbiformes	
Streptopelia decaocto *	Eurasian collard-dove
Zenaida asiatica *	White-winged dove
Zenaida macroura	Mourning dove
Coraciiformes	
Megaceryle alcyon	Belted kingfisher
Falconiformes	
Falco columbarius	Merlin
Falco sparverius	American kestrel
Passeriformes	
Cardinalis cardinalis	Northern cardinal
Corvus brachyrhynchos	American crow
Cyanocitta cristata	Blue jay
Dumetella carolinensis	Gray catbird
Geothlypis trichas	Common yellowthroat
Lanius ludovicianus	Loggerhead shrike
Mimus polyglottos	Northern mockingbird
Mniotilta varia	Black-and-white warbler
Myiarchus crinitus	Great crested flycatcher
Passerina ciris	Painted bunting
Passerina cyanea	Indigo bunting
Polioptila caerulea	Blue-gray gnatcatcher
Progne subis	Purple martin
Quiscalus major	Boat-tailed grackle
Quiscalus quiscula	Common grackle
Sayornis phoebe	Eastern phoebe
Seiurus aurocapilla	Ovenbird

Setophaga americana	Northern parula
Setophaga caerulescens	Black-throated blue warbler
Setophaga coronata	Yellow-rumped warbler
Setophaga discolor	Prairie warbler
Setophaga dominica	Yellow-throated warbler
Setophaga palmarum	Palm warbler
Setophaga pinus	Pine warbler
Setophaga ruticilla	American redstart
Setophaga striata	Blackpoll warbler
Setophaga virens	Black-throated green warbler
Sturnus vulgaris *	European starling
Tachycineta bicolor	Tree swallow
Thryothorus ludovicianus	Carolina wren
Toxostoma rufum	Brown thrasher
Troglodytes aedon	House wren
Vireo griseus	White-eyed vireo
Vireo solitarius	Blue-headed vireo

Pelecaniformes

Ardea herodias	Great blue heron
Bubulcus ibis	Cattle egret
Egretta caerulea	Little blue heron
Eudocimus albus	White ibis

Piciformes

Dryocopus pileatus	Pileated woodpecker
Melanerpes carolinus	Red-bellied woodpecker
Picoides pubescens	Downy woodpecker

Psittaciformes

Myiopsitta monachus *	Monk parakeet

Strigiformes

Megascops asio	Eastern screech-owl

Mammalia (Mammals)

Dasypus novemcinctus	Nine-banded armadillo
Didelphis virginiana	Virginia opposum
Procyon lotor	Raccoon
Sciurus carolinensis	Eastern gray squirrel
Sylvilagus floridanus	Eastern cottontail

* = Nonnative species

NOTE: Scientific and common names of species generally follow FWC (2016), FNAI (2016), NatureServe (2015), Integrated Taxonomic Information System (2016) or Arnett (2000).

APPENDIX C

DEFINITIONS OF DESIGNATIONS AND RANKS FOR LISTED SPECIES AND NATURAL COMMUNITIES

APPENDIX C

DEFINITIONS OF DESIGNATIONS AND RANKS FOR LISTED SPECIES AND NATURAL COMMUNITIES

United States Fish and Wildlife Service (USFWS) - Wildlife and Plants

Species listed in the Code of Federal Regulations (CFR) and protected under the provisions of the Endangered Species Act of 1973 (16 USC 1531-1543, as amended); animals are listed in 50 CFR 17-11 and plants are listed in 50 CFR 17-12.

Endangered (E)	Any species which is in danger of extinction through all or a portion of its range other than a species of the Class Insecta determined by the Secretary [of the Interior] to constitute a pest whose protection under the provisions of this chapter would present an overwhelming and overriding risk to man.
Threatened (T)	Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.
Candidate (C)	Species identified by the United States Fish and Wildlife Service (USFW) or the National Marine Fisheries Service (NFMS), which are considered to be candidates for listing under the Endangered Species Act as published in the *Federal Register*.
Similarity of Appearance (S/A)	If a species closely resembles an endangered or threatened species, such species may be treated as endangered or threatened if the Director of USFWS makes a determination that the species shall appear in the list in 50 CFR 17.11 (wildlife) or the list in 50 CFR 17.12 (plants).

Florida Fish and Wildlife Conservation Commission (FWC) - Animals

Species listed in Chapter 68A-27 of the Florida Administrative Code (F.A.C.) as Florida Endangered and Threatened Species, and protected under that chapter and the Endangered and Threatened Species Act, Section 372.072, Florida Statutes (F.S.).

Federally-designated Endangered and Threatened Species (FE) and (FT)	Species of fish or wild animal life, subspecies or isolated populations of species or subspecies, whether vertebrate or invertebrate, that are native to Florida and are classified as Endangered or Threatened under Commission rule by virtue of designation by the United States Departments of Interior or Commerce as endangered or threatened under the Federal Endangered Species Act, 16 U.S.C. § 1531 et seq. and rules.

State-designated Threatened Species (ST)	As designated by the Commission, species of fish or wild animal life, subspecies, or isolated population of a species or subspecies, whether vertebrate or invertebrate, that are native to Florida and are classified as Threatened as determined by paragraph (a), (b), (c), (d), or (e) [in subsequent part of definition] in accordance with Rule 68A-27.0012., F.A.C.
Species of Special Concern (SSC)	Per Rule 68A-27.005, management plans will be developed for the species listed in this rule and the species will be evaluated under the listing criteria in subsection 68A-27.001(3), F.A.C. for listing as a State-designated Threatened species.
Candidate Species	A species of fish or wild animal life, subspecies, or isolated populations of species or subspecies, whether invertebrate or vertebrate, that the Commission has determined warrants listing as a State-designated Threatened Species in accordance with Rule 68A-27.0012, F.A.C., and is awaiting final Commission action to be added to the list of Florida Endangered and Threatened Species in Rule 68A-27.003, F.A.C.

Florida Department of Agriculture and Consumer Affairs (FDACS) - Plants

Species listed in Chapter 5B-40 of the Rules of FDACS, Division of Plant Industry and protected under the Preservation of Native Flora of Florida Act (Section 581.185, F.S.).

Endangered (E)	Species of plants native to the state that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue, and includes all species determined to be endangered species or threatened species pursuant to the federal Endangered Species Act of 1973, as amended.
Threatened (T)	Species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in such number as to cause them to be endangered.
Commercially Exploited (CE)	Species native to the state which are being removed in significant numbers from native habitats in the state and sold or transported for sale.

Florida Natural Areas Inventory (FNAI) - Plants, Animals and Natural Communities

FNAI ranks indicate the global (G) or state (S) status of a species or a natural community. Rank definitions are from FNAI (2016).

FNAI Global Rank Definitions

G1 Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1,000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.

G2 Imperiled globally because of rarity (6 to 20 occurrences or less than 3,000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.

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

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

G5 Demonstrably secure globally.

G#? Tentative rank (e.g., G2?).

FNAI State Rank Definitions

S1 Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1,000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.

S2 Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3,000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.

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

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

S5 Demonstrably secure in Florida.

APPENDIX D

CONSERVATION EASEMENTS

CFN 20070287006
OR BK 21832 PG 1593
RECORDED 06/13/2007 11:05:08
Palm Beach County, Florida
Sharon R. Bock, CLERK & COMPTROLLER
Pgs 1593 - 1601; (9pgs)

Return to:
South Florida Water Management District
Post Office Box 24680
West Palm Beach, Florida 33416-4680

Prepared by:
Palm Beach County Department of Environmental Resources Management
3323 Belvedere Road, Building 502
West Palm Beach, FL 33406

DEED OF CONSERVATION EASEMENT FOR HIGH RIDGE SCRUB NATURAL AREA

THIS DEED OF CONSERVATION EASEMENT is given this 29 day of MARCH, 2006, by Palm Beach County, a political subdivision of the State of Florida, whose business mailing address is 301 N. Olive Avenue, West Palm Beach, Florida 33401 ("Grantor") to the South Florida Water Management District, a public corporation of the State of Florida existing by virtue of Chapter 25270, Laws of Florida, 1949, and operating pursuant to Chapter 373, Florida Statutes (F.S.) and Title 40E, Florida Administrative Code, as a multipurpose water management district with its principal office at 3301 Gun Club Road, West Palm Beach, FL 33406 ("Grantee"). As used herein, the term Grantor shall include any and all successors or assigns of the Grantor, and all subsequent owners of the "Property" (as hereinafter defined) and the term Grantee shall include any successor or assign of Grantee.

WITNESSETH

WHEREAS, Grantor is the owner of that certain real property situated in Palm Beach County, Florida, more specifically described in Exhibit "A" attached hereto and incorporated herein (the "Property"); and

WHEREAS, Grantor desires that the Property be preserved and maintained in perpetuity as part of the County's Natural Areas System; and

WHEREAS, the Grantor is agreeable to granting and securing to the Grantee a perpetual conservation easement as defined in Section 704.06, F.S., over the Property and Grantee is willing to accept such conservation easement; and

WHEREAS, the Florida Communities Trust has awarded the Grantor a grant partially reimbursing the Grantor's costs in acquiring all or a portion of the Property and restricted the use of that portion of the Property to purposes consistent with the Preservation 2000 grant program through a Grant Award Agreement (R 2001-1083), recorded in Palm Beach County Official Records Book 12847, Pages 1127 through 1138 between the Florida Communities Trust and the Grantor, and the Grantee is in agreement that the restrictions thus placed on the Property are consistent with the intent to ensure the perpetual maintenance and protection of said Property; and

WHEREAS, the Grantee acknowledges that any change to this conservation easement that affects the Property shall be subject to review and approval by the Florida Communities Trust prior to implementation of that change, for so long as the terms and conditions of the Grant Award Agreement, as may be amended from time to time, are in effect for the Property.

NOW, THEREFORE, in consideration of the above and the mutual covenants, terms, conditions, and restrictions contained herein, and pursuant to the laws of the State of Florida and in particular Section 704.06, F.S., Grantor hereby voluntarily grants, creates, and establishes a conservation easement for and in favor of the Grantee upon the Property of the nature and character and to the extent hereinafter set forth, which shall run with the land and be binding upon the Grantor, and shall remain in full force and effect forever.

1. **Purpose.** It is the purpose of this conservation easement (Easement) to assure that the Property will be retained forever predominantly in its natural condition and that the land and water areas will be retained and managed in a manner that will protect native plant and animal communities. Grantee will hold this Easement exclusively for conservation purposes.
2. **Rights of Grantee.** To accomplish the purpose of this Easement, the following rights are conveyed to Grantee by this Easement:
    a. To enter upon the Property at reasonable times in order to enforce the rights herein, provided that such entry shall not unreasonably interfere with the use and quiet enjoyment of the Property by the Grantor; and
    b. To enjoin any activity on or use of the Property that is inconsistent with this Easement and to enforce the restoration of such areas or features of the Property that may be damaged by any inconsistent activity or use.

3. **Reserved Rights.** Grantor reserves to itself and to its successors and assigns all rights accruing from ownership of the Property, including the right to engage in, or permit or invite others to engage in, all uses of the Property that are not expressly prohibited herein and that are not inconsistent with the purpose of this Easement. Without limiting the generality of the foregoing, the following rights are expressly reserved:

    a. The Grantor may construct, maintain and operate public use facilities for the purpose of educating the public about the natural resources of the Property or for the purpose of providing opportunities for recreational activities which have minimal or no impact on natural resources or ecosystems; and
    b. The Grantor may place signs or markers as necessary to identify property boundaries, trails, restoration areas or other site features or activities related to management and maintenance or the passive recreational use of the Property; and
    c. The Grantor may construct and maintain management roads, firebreaks, trails, walkways, docks, and facilities necessary to support the public use and land management activities; and

d. The Grantor may remove or kill, by any lawful means, exotic or nuisance vegetation and animal species, conduct prescribed burns, and conduct other management activities necessary to carry out conservation purposes; and
e. The Grantor may conduct site restoration or enhancement projects determined by the Grantor not to conflict with the purpose of this Easement.

4. **Prohibited uses and activities.** Subject to the reserved rights stated in Section 3, the following uses and activities are prohibited in or on the Property:
    a. Construction or placing of buildings, roads, signs, billboards, advertising, utilities, or other structures on or above the ground, other than those roads, structures or signs that may be authorized herein and are consistent with or necessary to accomplish the purpose of this Easement; and
    b. Dumping or placing of soil or other substance or material as landfill, or dumping or placing of trash, waste or unsightly or offensive materials; and
    c. Removal or destruction of trees, shrubs, other vegetation, or wildlife; and
    d. Excavation, dredging, or removal of loam, peat, gravel, soil, rock, or other material substance in such manner as to affect the surface; and
    e. Activities detrimental to drainage, flood control, water conservation, erosion control, soil conservation, or fish and wildlife habitat preservation including, but not limited to, ditching, diking and interior fencing (perimeter fencing shall not be considered a violation of this subparagraph); and
    f. Acts or uses detrimental to such aforementioned retention of land or water areas; and
    g. Acts or uses which are detrimental to the preservation of any features or aspects of the Property having historical or archaeological significance, except for those lawful acts necessary to achieve natural area restoration.

5. **Access.** No right of access by the general public is conveyed or restricted by this Easement.

6. **Operation and Upkeep.** Grantee shall not be responsible for any costs and liabilities related to the operation, upkeep and maintenance of the Property.

7. **Enforcement.** Enforcement of the terms, provisions and restrictions of this Easement shall be at the reasonable discretion of Grantee, and any forbearance on behalf of Grantee to exercise its rights hereunder in the event of any breach hereof by Grantor shall not be deemed or construed to be a waiver of Grantee's rights hereunder.

8. **Assignment.** Upon prior written approval by Grantor, this Easement may be transferred or assigned by Grantee to another organization qualified to hold such interests under applicable State laws. Transfers or assignments shall be accomplished by written amendment of this Easement.

9. **Severability.** If any provision of this Easement or the application thereof to any person or circumstance is found to be invalid, the remainder of the provisions of this

Easement shall not be affected thereby, as long as the purpose of the Easement is protected.

10. **Amendment.** This Easement may be amended, altered, released or revoked only by written agreement between the parties hereto and their assigns or successors, which shall be filed in the public records in Palm Beach County.

11. **Notices.** All notices, consents, approval or other communications hereunder shall be in writing and shall be deemed properly given if sent by United States certified mail, return receipt requested, addressed to the appropriate party or successor.

12. **Entire Agreement**. This Easement, (including the Exhibits hereto and any written amendments thereto, executed by all parties), constitutes the entire Easement, and supersedes all prior agreements and understandings, oral and written, between the parties with respect to the subject matter hereof.

TO HAVE AND TO HOLD unto Grantee forever. The covenants, terms, conditions, restrictions and purpose imposed with this Easement shall be binding upon Grantor, and shall continue as a servitude running in perpetuity with the Property.

Grantor hereby covenants with said Grantee that Grantor has good right and lawful authority to convey this Easement.

IN WITNESS WHEREOF, the Parties hereto have executed this Conservation Easement this 29 day of MARCH, 2006.

PALM BEACH COUNTY, FLORIDA
BY ITS BOARD OF COUNTY COMMISSIONERS

By: _____
Tony Masilotti, Chairman

ATTEST:
SHARON R. BOCK, CLERK & COMPTROLLER

By: _____
Deputy Clerk

APPROVED AS TO FORM AND LEGAL SUFFICIENCY

By: _____
Assistant County Attorney

APPROVED AS TO TERMS AND CONDITIONS

By: _____
Richard E. Walesky, Director
Department of Environmental Resources Management

EXHIBIT A

LEGAL DESCRIPTION OF THE PROPERTY

HIGH RIDGE SCRUB NATURAL AREA

THE EAST HALF OF THE NORTH HALF OF THE SOUTH ONE QUARTER OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 9, TOWNSHIP 45 SOUTH, RANGE 43 EAST, PALM BEACH COUNTY, FLORIDA.

SUBJECT TO EASEMENT OF EVEN DATE FOR INGRESS AND EGRESS OVER AND ACROSS THE SOUTH 14 FEET OF SAID LANDS.

SAID PARCEL CONTAINING 112,154 SQUARE FEET OR 2.5747 ACRES, MORE OR LESS.

TOGETHER WITH

A CERTAIN PARCEL OF LAND LYING IN SECTION 9, TOWNSHIP 45 SOUTH, RANGE 43 EAST, PALM BEACH COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THE SOUTH HALF (S 1/2) OF THE SOUTH QUARTER (S 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF SAID SECTION 9, TOGETHER WITH THE NORTH HALF (N 1/2) OF THE SOUTHWEST QUARTER (SW 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF SAID SECTION 9, TOGETHER WITH, THE NORTH EIGHTH (N 1/8) OF THE NORTH HALF (N 1/2) OF THE SOUTH HALF (S 1/2) OF THE SOUTHWEST QUARTER (SW 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF SAID SECTION 9.

SUBJECT TO THE RIGHT OF WAY OF HIGH RIDGE ROAD.

SAID PARCEL CONTAINING 26.520 ACRES, MORE OR LESS.

ALSO TOGETHER WITH

THE NORTH HALF (N 1/2) LESS THE WEST 236.54 FEET OF THE FOLLOWING DESCRIBED PROPERTY, TO-WIT:
BEGINNING AT THE QUARTER CORNER IN THE WEST LINE OF SECTION 9, TOWNSHIP 45 SOUTH, RANGE 43 EAST, PALM BEACH COUNTY, FLORIDA (SAID WEST LINE OF SECTION 9, BEING ALSO THE CENTER LINE OF HIGH RIDGE ROAD, AS NOW LAID OUT AND IN USE); THENCE NORTHERLY, ALONG SAID WEST LINE OF SAID SECTION 9, FOR A DISTANCE OF 329.92 FEET TO A POINT; THENCE, EASTERLY, AT AN ANGLE OF 91 DEGREES 13 MINUTES 19 SECONDS (TURNED FROM SOUTH TO EAST), FOR A DISTANCE OF 870.00 FEET TO A POINT OF BEGINNING, AND THE NORTHWEST CORNER OF THIS PARCEL; THENCE CONTINUING EASTERLY FOR A DISTANCE OF 488.19 FEET, WHICH POINT IS THE NORTHEAST CORNER OF THIS PARCEL; THENCE SOUTHERLY, AT AN ANGLE OF 88 DEGREES 39 MINUTES 49 SECONDS (TURNED FROM WEST TO SOUTH) FOR A DISTANCE OF 494.49 FEET TO A POINT, WHICH POINT IS THE SOUTHEAST CORNER OF THIS PARCEL; THENCE WESTERLY AT AN ANGLE OF 91 DEGREES 21 MINUTES 08 SECONDS (TURNED FROM NORTH TO WEST) FOR A DISTANCE OF 487.21 FEET TO A POINT, WHICH POINT IS THE SOUTHWEST CORNER OF THIS PARCEL; THENCE NORTHERLY, PARALLEL TO SAID WEST LINE OF SAID SECTION 9, FOR A DISTANCE OF 494.59 FEET TO THE POINT OF BEGINNING.

PROJECT NO. 2006012-03	SHEET: 1 OF 4	PROJECT: HIGH RIDGE SCRUB NATURAL AREA		DRAWN: KAL CHECKED: WCE APPROVED: GWM SCALE: 1"=250' DATE: 11/01/05	NO.	REVISION	BY DATE
		DESIGN FILE NAME: 2006012-03.DGN	DRAWING NO.: S-1-05-2418	FIELD BOOK NO.: N/A			

PALM BEACH COUNTY
ENGINEERING AND PUBLIC WORKS
ENGINEERING SERVICES
160 AUSTRALIAN AVENUE
WEST PALM BEACH, FL 33406

TOGETHER WITH A NON-EXCLUSIVE RIGHT OF WAY AND EASEMENT WITH RIGHT OF INGRESS AND EGRESS OVER THE FOLLOWING OESCRIBED PARCEL:

A STRIP OF LAND 40 FEET IN WIDTH EXTENDING THROUGH THE SOUTH QUARTER (S 1/4) OF THE SOUTHWEST QUARTER (SW 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF SECTION 9, TOWNSHIP 45 SOUTH, RANGE 43 EAST, PALM BEACH COUNTY, FLORIDA; SAID 40 FOOT STRIP OF LAND LYING 20 FEET ON EACH SIDE OF, PARALLEL AND CONTIGUOUS TO THE FOLLOWING SPECIFICALLY OESCRIBED LINE:

FROM THE WEST QUARTER CORNER OF SAID SECTION 9, NORTHERLY, ALONG THE WEST LINE OF SAID SECTION 9, (ALSO BEING THE CENTER LINE OF HIGH RIDGE ROAD), A OISTANCE OF 82.09 FEET TO THE POINT OF BEGINNING; THENCE TURNING AN ANGLE OF 91 OEGREES 13 MINUTES 19 SECONDS FROM SOUTH TO EAST AND RUNNING EASTERLY, A OISTANCE OF 1357.70 FEET TO THE END OF THE SPECIFICALLY OESCRIBED LINE.

THIS OESCRIPTION OESCRIBES THE PROPERTY AS OESCRIBED IN OEED RECORDED IN OFFICIAL RECORD BOOK 3462, PAGE 671, PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA.

THE NET AREA OF THE ABOVE OESCRIBED PARCEL CONTAINS 1.4264 ACRES OR 62,134 SQUARE FEET MORE OR LESS.

ALSO TOGETHER WITH

THE SOUTH ONE-HALF (1/2) OF THE FOLLOWING OESCRIBED PARCEL:

NORTH $^{1}/_{2}$ OF SOUTH $^{1}/_{2}$ OF SOUTHWEST $^{1}/_{4}$ OF NORTHWEST $^{1}/_{4}$ TOGETHER WITH THE SOUTH $^{3}/_{4}$ OF SOUTH $^{1}/_{2}$ OF NORTH $^{1}/_{2}$ OF SOUTHWEST $^{1}/_{4}$ OF NORTHWEST $^{1}/_{4}$ OF SECTION 9, TOWNSHIP 45 SOUTH, RANGE 43 EAST, PALM BEACH COUNTY, FLORIDA, LESS THE WESTERLY 25 FEET THEREOF.

SAID PARCEL CONTAINING 8.83 ACRES, MORE OR LESS

ALL FOUR PARCELS TOGETHER CONTAIN 39.351 ACRES, MORE OR LESS.

SURVEYOR'S NOTES

BEARINGS ARE BASED ON A GRID (NAD 83, 1990 ADJUSTMENT) BEARING OF SOUTH 01°50'13" WEST ALONG THE WEST LINE OF THE NORTHWEST QUARTER OF SECTION 09, TOWNSHIP 45 SOUTH, RANGE 43 EAST AND ALL OTHER BEARINGS ARE RELATIVE THERETO.

NO SEARCH OF THE PUBLIC RECORDS HAS BEEN MADE BY THE SIGNING SURVEYOR.

THIS IS NOT A SURVEY.

IT IS POSSIBLE THAT THERE ARE DEEDS OF RECORD, UNRECORDED DEEDS, EASEMENTS, OR OTHER INSTRUMENTS WHICH COULD AFFECT THE SUBJECT PROPERTY, WHICH ARE UNKNOWN TO THE SIGNING SURVEYOR.

SHEET: 2 OF: 4 PROJECT NO. 2006012-03	PROJECT: HIGH RIDGE SCRUB NATURAL AREA	DESIGN FILE NAME: 2006012-03.DGN	DRAWING NO.: S-1-05-2418	DRAWN: KAL CHECKED: WCE DATE: 11/01/05 SCALE: 1"=250' APPROVED: DWN FIELD BOOK NO.: N/A	NO. / REVISION / BY / DATE

PALM BEACH COUNTY
ENGINEERING AND PUBLIC WORKS
ENGINEERING SERVICES
160 AUSTRALIAN AVENUE
WEST PALM BEACH, FL 33406

THIS PURPOSE OF THIS LEGAL & SKETCH IS TO COMBINE FOUR BOUNDARY SURVEY'S INTO ONE LEGAL & SKETCH AT THE REQUEST OF PALM BEACH COUNTY ENVIRONMENTAL RESOURCES MANAGEMENT DIVISION. SEE THE BOUNDARY SURVEY'S PREPARED BY PALM BEACH COUNTY SURVEY SECTION - DWG NO. S-3-98-1253, S-3-98-1258, & S-3-98-1302, AND THE BOUNDARY SURVEY PREPARED BY ADAIR & BRADY, INC. DRAWING NO. FP-1515, DATED 04-08-86 FOR ADDITIONAL INFORMATION.

THIS INSTRUMENT PREPARED BY GLENN W. MARK, P.L.S. IN THE OFFICE OF THE COUNTY ENGINEER, 160 AUSTRALIAN AVENUE, WEST PALM BEACH, FLORIDA 33406.

NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

I HEREBY CERTIFY THAT THE LEGAL DESCRIPTION AND SKETCH SHOWN HEREON MEETS THE MINIMUM TECHNICAL STANDARDS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 61G17-6, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

Glenn W. Mark

GLENN W. MARK, P.L.S.
FLORIDA CERTIFICATE #5304

11/7/05
DATE

PROJECT NO. 2006012-03 | SHEET: 3 OF: 4

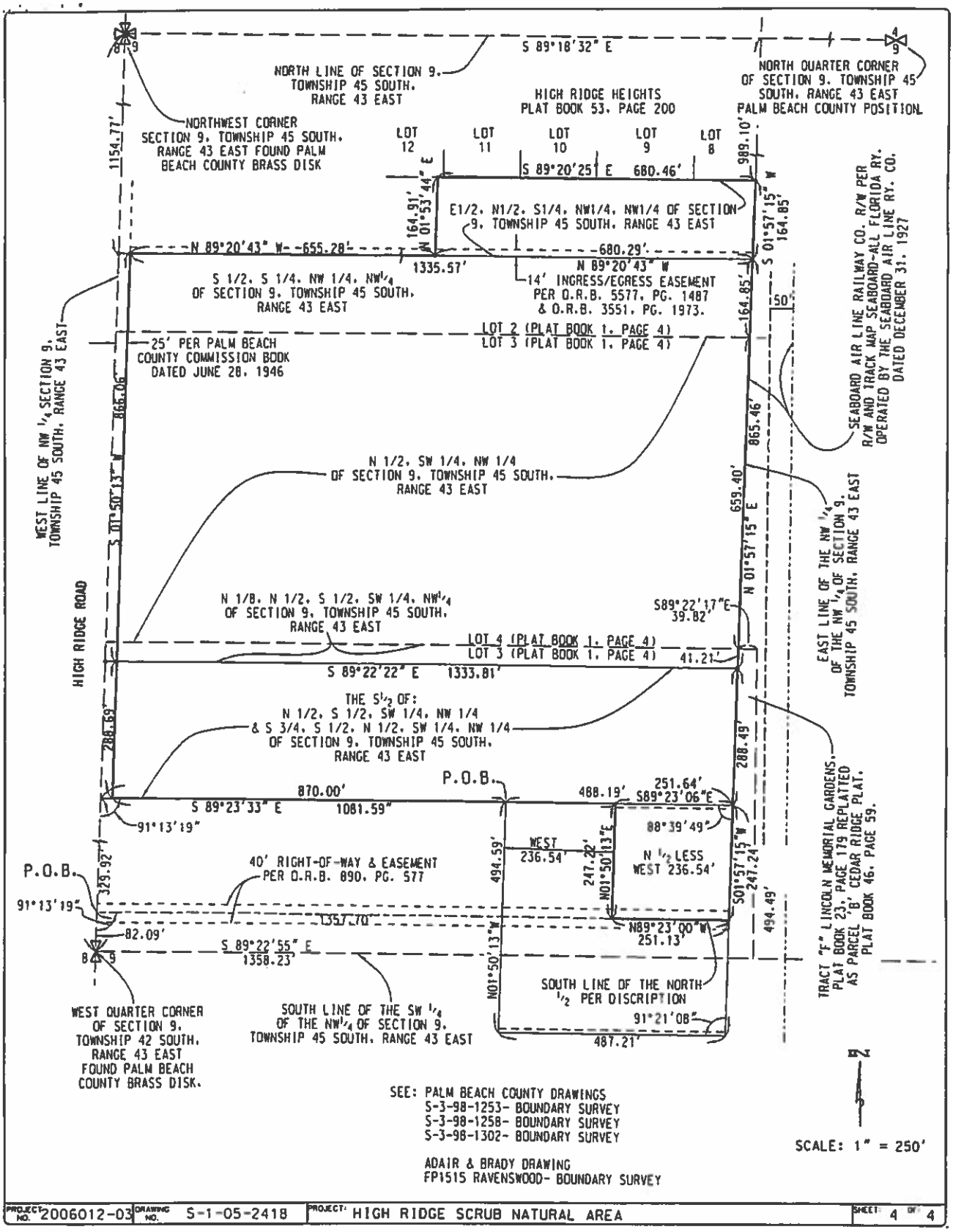
PROJECT: HIGH RIDGE SCRUB NATURAL AREA

DESIGN FILE NAME: 2006012-03.DGN | DRAWING NO.: S-1-05-2418

DATE DRAWN: 11/01/05 | DRAWN: KAL | CHECKED: WCE | APPROVED: GWM | SCALE: 1"=250' | FIELD BOOK NO.: N/A

NO.	REVISION	BY	DATE

PALM BEACH COUNTY
ENGINEERING AND PUBLIC WORKS
ENGINEERING SERVICES
160 AUSTRALIAN AVENUE
WEST PALM BEACH, FL 33406



Prepared by:
Palm Beach County Department of Environmental Resources Management
3323 Belvedere Road, Building 502
West Palm Beach, FL 33406

Return to:
Laura P. Robinson
Senior Attorney-Southern U.S. Region
The Nature Conservancy-Florida Chapter Office
222 S. Westmonte Drive, Suite 300
Altamonte Springs, FL 32714

CFN 20100012464
OR BK 23637 PG 1857
RECORDED 01/12/2010 12:07:06
Palm Beach County, Florida
Sharon R. Bock, CLERK & COMPTROLLER
Pgs 1857 - 1869; (13pgs)

DEED OF CONSERVATION EASEMENT FOR HIGH RIDGE SCRUB NATURAL AREA

THIS DEED OF CONSERVATION EASEMENT is given this 29 day of MARCH, 2006, by Palm Beach County, a political subdivision of the State of Florida, whose business mailing address is 301 N. Olive Avenue, West Palm Beach, Florida 33401 ("Grantor") to The Nature Conservancy, a District of Columbia non-profit corporation, with its principal office at 222 S. Westmonte Drive, Suite 300, Altamonte Springs, FL 32714 ("Grantee"). As used herein, the term Grantor shall include any and all successors or assigns of the Grantor, and all subsequent owners of the "Property" (as hereinafter defined) and the term Grantee shall include any successor or assign of Grantee.

WITNESSETH

WHEREAS, Grantor is the owner of that certain real property situated in Palm Beach County, Florida, being 39.35 acres more or less, and more specifically described in Exhibit "A" attached hereto and incorporated herein (the "Property"); and

WHEREAS, Grantor desires that the Property be preserved and maintained in perpetuity as part of the County's Natural Areas System; and

WHEREAS, the Grantor is agreeable to granting and securing to the Grantee a perpetual conservation easement as defined in Section 704.06, F.S., over the Property and Grantee is willing to accept such conservation easement; and

WHEREAS, the Florida Communities Trust has awarded the Grantor a grant partially reimbursing the Grantor's costs in acquiring all or a portion of the Property and restricted the use of that portion of the Property to purposes consistent with the Preservation 2000 grant program through a Grant Award Agreement (R2001-1083), recorded in Palm Beach County Official Records Book 12847, pages 1127 through 1138, between the Florida Communities Trust and the Grantor (the "Grant Agreement"), and the Grantee is in agreement that the

restrictions thus placed on the Property are consistent with the intent to ensure the perpetual maintenance and protection of said Property; and

WHEREAS, the Grantee acknowledges that any change to this conservation easement that affects the Property shall be subject to review and approval by the Florida Communities Trust prior to implementation of that change, for so long as the terms and conditions of the Grant Award Agreement, as may be amended from time to time, are in effect for the Property.

NOW, THEREFORE, in consideration of the above and the mutual covenants, terms, conditions, and restrictions contained herein, and pursuant to the laws of the State of Florida and in particular Section 704.06, F.S., Grantor hereby voluntarily grants, creates, and establishes a conservation easement for and in favor of the Grantee upon the Property of the nature and character and to the extent hereinafter set forth, which shall run with the land and be binding upon the Grantor, and shall remain in full force and effect forever.

1. **Purpose.** It is the purpose of this conservation easement (Easement) to assure that the Property will be retained forever predominantly in its natural condition and that the land and water areas will be retained and managed in a manner that will protect native plant and animal communities. Grantee will hold this Easement exclusively for conservation purposes.
2. **Rights of Grantee.** To accomplish the purpose of this Easement, the following rights are conveyed to Grantee by this Easement:
    a. To enter upon the Property at reasonable times in order to enforce the rights herein, provided that such entry shall not unreasonably interfere with the use and quiet enjoyment of the Property by the Grantor; and
    b. To enjoin any activity on or use of the Property that is inconsistent with this Easement and to enforce the restoration of such areas or features of the Property that may be damaged by any inconsistent activity or use.

3. **Reserved Rights.** Grantor reserves to itself and to its successors and assigns all rights accruing from ownership of the Property, including the right to engage in, or permit or invite others to engage in, all uses of the Property that are not expressly prohibited herein and that are not inconsistent with the purpose of this Easement. Without limiting the generality of the foregoing, the following rights are expressly reserved:

    a. The Grantor may construct, maintain and operate public use facilities for the purpose of educating the public about the natural resources of the Property or for the purpose of providing opportunities for recreational activities which have minimal or no impact on natural resources or ecosystems; and
    b. The Grantor may place signs or markers as necessary to identify property boundaries, trails, restoration areas or other site features or activities related to management and maintenance or the passive recreational use of the Property; and

c. The Grantor may construct and maintain management roads, firebreaks, trails, walkways, docks, and facilities necessary to support the public use and land management activities; and
d. The Grantor may remove or kill, by any lawful means, exotic or nuisance vegetation and animal species, conduct prescribed burns, and conduct other management activities necessary to carry out conservation purposes; and
e. The Grantor may conduct site restoration or enhancement projects determined by the Grantor not to conflict with the purpose of this Easement, and provided such projects are consistent with the management plan approved by the Board of County Commissioners for the Property.

4. **Prohibited uses and activities.** Subject to the reserved rights stated in Section 3, the following uses and activities are prohibited in or on the Property:
   a. Construction or placing of buildings, roads, signs, billboards, advertising, utilities, or other structures on or above the ground, other than those roads, structures or signs that may be authorized herein and are consistent with or necessary to accomplish the purpose of this Easement; and
   b. Dumping or placing of soil or other substance or material as landfill, or dumping or placing of trash, waste or unsightly or offensive materials; and
   c. Removal or destruction of trees, shrubs, other vegetation, or wildlife; and
   d. Excavation, dredging, or removal of loam, peat, gravel, soil, rock, or other material substance in such manner as to affect the surface; and
   e. Activities detrimental to drainage, flood control, water conservation, erosion control, soil conservation, or fish and wildlife habitat preservation including, but not limited to, ditching, diking and interior fencing (perimeter fencing shall not be considered a violation of this subparagraph); and
   f. Acts or uses detrimental to such aforementioned retention of land or water areas; and
   g. Acts or uses which are detrimental to the preservation of any features or aspects of the Property having historical or archaeological significance, except for those lawful acts necessary to achieve natural area restoration.

5. **Access.** No right of access by the general public is conveyed or restricted by this Easement.

6. **Operation and Upkeep.** Grantee shall not be responsible for any costs and liabilities related to the operation, upkeep and maintenance of the Property.

7. **Enforcement.** Enforcement of the terms, provisions and restrictions of this Easement shall be at the reasonable discretion of Grantee, and any forbearance on behalf of Grantee to exercise its rights hereunder in the event of any breach hereof by Grantor shall not be deemed or construed to be a waiver of Grantee's rights hereunder.

8. **Condemnation.** Grantor hereby agrees that at the time of the conveyance of this Conservation Easement to the Grantee, this Conservation Easement gives rise to a real property right, immediately vested in the Grantee, which the parties stipulate to have a fair market value determined by multiplying (1) the fair market value of the Property unencumbered by the Conservation Easement by (2) the ratio of the value of the Conservation Easement at the time of this grant to the value of the Property, without deduction for the value of the Conservation Easement, at the time of this grant. The ratio of the value of the Conservation Easement to the value of the Property unencumbered by the Conservation Easement shall remain constant. If all or any part of the Property is taken by exercise of the power of eminent domain or acquired by purchase in lieu of condemnation, whether by public, corporate, or other authority, so as to terminate this Conservation Easement, in whole or in part, Grantor and Grantee may act jointly to recover the full value of the interests in the Property subject to the taking or in lieu purchase and all direct or incidental damages resulting therefrom. Grantor and Grantee shall each be responsible for its respective expenses incurred in connection with the taking or in lieu purchase. Grantor and Grantee shall use any proceeds received under the circumstances described in this section for on-going management or restoration on other Palm Beach County owned natural areas. Notwithstanding any provision of this Easement to the contrary, the parties agree that, during the term of the Grant Agreement, this Section shall not apply to that portion of the Property encumbered by the Grant Agreement and that the terms of the Grant Agreement shall control.

9. **Assignment.** The Grantor and the Grantee recognize and agree that the benefits and obligations of this Conservation Easement are in gross and assignable only in accordance with the terms of this section.

    a. Qualified Assignee. The benefits and obligations of this Conservation Easement shall only be assigned to an organization that is, at the time of the assignment, both (i) a "qualified organization" as that term is defined in Section 170(h) of the Internal Revenue Code and (ii) authorized to acquire and hold conservation easements under Section 704.06 of the Florida Statutes. (or any successor provision then applicable). Grantee may make all such assignments with the prior written consent of Grantor. Grantee shall use good faith efforts to insure that any grantee under such assignment is one of the following entities: Qualified Land Trust or a Governmental Conservation Entity (as defined below) (collectively, the "Permitted Parties").

    b. Qualified Land Trust. For purposes of this Conservation Easement, a Qualified Land Trust shall mean a land trust properly organized under applicable laws that: a) has adopted the Land Trust Standards and Practices promulgated by the Land Trust Alliance or a successor organization, b) has been in existence for a minimum of 5 years and c) has the financial capacity to fully carry out the obligations of the grantee hereunder.

c. Government Conservation Entity. For purposes of this Conservation Easement, a Governmental Conservation Entity shall mean a unit of federal, state or local government whose purposes include holding conservation easements, protecting relatively natural habitat of fish, wildlife, or plants, or similar ecosystems, or preserving open space (including farmland and forest land).

d. Notice of Assignment. Grantee agrees to give written notice to Grantor of its intention to assign the benefits and obligations of this Conservation Easement at least thirty days (30) days prior the date of such assignment. Grantor's consent to a proposed assignment to a Permitted Party may not be unreasonably withheld by Grantor. In connection with any assignment under this Conservation Easement to any party other than a Permitted Party, Grantor's consent may be withheld in Grantor's sole discretion. No assignment shall serve to expand the Grantee's or the public's right to access herein or otherwise serve to amend, expand, or restrict the rights and obligations of Grantor or Grantee as set forth herein

e. Terms of Assignment. The Grantee shall require, as a condition of any assignment of the benefits and obligations of this Conservation Easement, that the assignee organization shall agree to continue to carry out in perpetuity, under substantially the same terms as contained in this Conservation Easement, the Purpose of this Conservation Easement. Transfers or assignments shall be accomplished by written amendment of this Easement.

10. **Severability.** If any provision of this Easement or the application thereof to any person or circumstance is found to be invalid, the remainder of the provisions of this Easement shall not be affected thereby, as long as the purpose of the Easement is protected.

11. **Amendment.** This Easement may be amended, altered, released or revoked only by written agreement between the parties hereto and their assigns or successors, which shall be filed in the public records in Palm Beach County.

12. **Notices.** All notices, consents, approval or other communications hereunder shall be in writing and shall be deemed properly given if sent by United States certified mail, return receipt requested, addressed to the appropriate party or successor.

13. **Subordination.** Notwithstanding any provision of this Easement to the contrary, the parties acknowledge and agree that this Easement is and shall remain subject and subordinate to the Grant Agreement during the term of the Grant Agreement.

TO HAVE AND TO HOLD unto Grantee forever. The covenants, terms, conditions, restrictions and purpose imposed with this Easement shall be binding upon Grantor, and shall continue as a servitude running in perpetuity with the Property.

Grantor hereby covenants with said Grantee that Grantor has good right and lawful authority to convey this Easement.

IN WITNESS WHEREOF, the Parties hereto have executed this Conservation Easement this 29 day of MARCH, 2006.

PALM BEACH COUNTY, FLORIDA
BY ITS BOARD OF COUNTY COMMISSIONERS

By: _____
Tony Masilotti, Chairman

ATTEST:
SHARON R. BOCK, CLERK & COMPTROLLER

By: _____
Deputy Clerk

APPROVED AS TO FORM AND LEGAL SUFFICIENCY

By: _____
Assistant County Attorney

APPROVED AS TO TERMS AND CONDITIONS

By: _____
Richard E. Walesky, Director
Department of Environmental Resources Management

WITNESSES:

_____
Printed Name Mark Daniels

_____
Printed Name NEAL CHEEK

THE NATURE CONSERVANCY, a District of Columbia Nonprofit corporation, authorized to transact business in the State of Florida as The Nature Conservancy, Inc.

By: _____
Katherine D. Skinner
Vice President

Date: Nov 16, 2009

(Corporate Seal)

LEGAL REVIEW: _____ 11/12/09

STATE OF FLORIDA)
)
COUNTY OF PALM BEACH)

The foregoing instrument was acknowledged before me this 29 day of March, 2006, by Tony Masilotti, as Chairman of the Board of County Commissioners of Palm Beach County, a political subdivision of the State of Florida, on behalf of the County, who is personally known to me and who did not take an oath.

(NOTARY PUBLIC) Gloria Madison
SEAL Notary Public

Gloria Madison
Commission #DD251037
Expires: Oct 19, 2007
Bonded Thru
Atlantic Bonding Co., Inc.

Gloria Madison
(Printed, Typed or Stamped
Name of Notary Public)
Commission No.:
My Commission Expires:

NORTH CAROLINA
STATE OF ~~FLORIDA~~ /)
)
COUNTY OF Durham)

The foregoing instrument was acknowledged before me this 16 day of November, 2009, by Katherine D. Skinner as Vice Pres. of The Nature Conservancy, a District of Columbia nonprofit corporation authorized to transact business in the State of Florida as The Nature Conservancy, Inc. SHe is personally known to me.

(NOTARY PUBLIC) Margaret A. Porell
Notary Public

SEAL

Margaret A. Porell
(Printed, Typed or Stamped
Name of Notary Public)
Commission No.: 2007354 00045
My Commission Expires: 06/17/2013

MARGARET A. PORELL
NOTARY
PUBLIC
ORANGE COUNTY, N.C.
My Commission Expires 6/17/2013

EXHIBIT A

LEGAL DESCRIPTION OF THE PROPERTY

HIGH RIDGE SCRUB NATURAL AREA

THE EAST HALF OF THE NORTH HALF OF THE SOUTH ONE QUARTER OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 9, TOWNSHIP 45 SOUTH, RANGE 43 EAST, PALM BEACH COUNTY, FLORIDA.

SUBJECT TO EASEMENT OF EVEN DATE FOR INGRESS AND EGRESS OVER AND ACROSS THE SOUTH 14 FEET OF SAID LANDS.

SAID PARCEL CONTAINING 112,154 SQUARE FEET OR 2.5747 ACRES, MORE OR LESS.

TOGETHER WITH

A CERTAIN PARCEL OF LAND LYING IN SECTION 9, TOWNSHIP 45 SOUTH, RANGE 43 EAST, PALM BEACH COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THE SOUTH HALF (S 1/2) OF THE SOUTH QUARTER (S 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF SAID SECTION 9, TOGETHER WITH THE NORTH HALF (N 1/2) OF THE SOUTHWEST QUARTER (SW 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF SAID SECTION 9, TOGETHER WITH, THE NORTH EIGHTH (N 1/8) OF THE NORTH HALF (N 1/2) OF THE SOUTH HALF (S 1/2) OF THE SOUTHWEST QUARTER (SW 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF SAID SECTION 9.

SUBJECT TO THE RIGHT OF WAY OF HIGH RIDGE ROAD.

SAID PARCEL CONTAINING 26.520 ACRES, MORE OR LESS.

ALSO TOGETHER WITH

THE NORTH HALF (N 1/2) LESS THE WEST 236.54 FEET OF THE FOLLOWING DESCRIBED PROPERTY, TO-WIT:
BEGINNING AT THE QUARTER CORNER IN THE WEST LINE OF SECTION 9, TOWNSHIP 45 SOUTH, RANGE 43 EAST, PALM BEACH COUNTY, FLORIDA (SAID WEST LINE OF SECTION 9, BEING ALSO THE CENTER LINE OF HIGH RIDGE ROAD, AS NOW LAID OUT AND IN USE); THENCE NORTHERLY, ALONG SAID WEST LINE OF SAID SECTION 9, FOR A DISTANCE OF 329.92 FEET TO A POINT; THENCE, EASTERLY, AT AN ANGLE OF 91 DEGREES 13 MINUTES 19 SECONDS (TURNED FROM SOUTH TO EAST), FOR A DISTANCE OF 870.00 FEET TO A POINT OF BEGINNING, AND THE NORTHWEST CORNER OF THIS PARCEL; THENCE CONTINUING EASTERLY FOR A DISTANCE OF 488.19 FEET, WHICH POINT IS THE NORTHEAST CORNER OF THIS PARCEL; THENCE SOUTHERLY, AT AN ANGLE OF 88 DEGREES 39 MINUTES 49 SECONDS (TURNED FROM WEST TO SOUTH) FOR A DISTANCE OF 494.49 FEET TO A POINT, WHICH POINT IS THE SOUTHEAST CORNER OF THIS PARCEL; THENCE WESTERLY AT AN ANGLE OF 91 DEGREES 21 MINUTES 08 SECONDS (TURNED FROM NORTH TO WEST) FOR A DISTANCE OF 487.21 FEET TO A POINT, WHICH POINT IS THE SOUTHWEST CORNER OF THIS PARCEL; THENCE NORTHERLY, PARALLEL TO SAID WEST LINE OF SAID SECTION 9, FOR A DISTANCE OF 494.59 FEET TO THE POINT OF BEGINNING.

PROJECT NO. 2006012-03	SHEET: 1 OF: 4	PROJECT: HIGH RIDGE SCRUB NATURAL AREA	DESIGN FILE NAME: 2006012-03.DGN	DRAWING NO.: S-1-05-2418	DATE DRAWN: 11/01/05 CHECKED: WCE DRAWN: KAL APPROVED: GWM SCALE: 1"=250' FIELD BOOK NO.: N/A	NO. / REVISION / BY / DATE	PALM BEACH COUNTY ENGINEERING AND PUBLIC WORKS — ENGINEERING SERVICES — 160 AUSTRALIAN AVENUE WEST PALM BEACH, FL 33406

TOGETHER WITH A NON-EXCLUSIVE RIGHT OF WAY AND EASEMENT WITH RIGHT OF INGRESS AND EGRESS OVER THE FOLLOWING DESCRIBED PARCEL:

A STRIP OF LAND 40 FEET IN WIDTH EXTENDING THROUGH THE SOUTH QUARTER (S 1/4) OF THE SOUTHWEST QUARTER (SW 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF SECTION 9, TOWNSHIP 45 SOUTH, RANGE 43 EAST, PALM BEACH COUNTY, FLORIDA; SAID 40 FOOT STRIP OF LAND LYING 20 FEET ON EACH SIDE OF, PARALLEL AND CONTIGUOUS TO THE FOLLOWING SPECIFICALLY DESCRIBED LINE:

FROM THE WEST QUARTER CORNER OF SAID SECTION 9, NORTHERLY, ALONG THE WEST LINE OF SAID SECTION 9, (ALSO BEING THE CENTER LINE OF HIGH RIDGE ROAD), A DISTANCE OF 82.09 FEET TO THE POINT OF BEGINNING; THENCE TURNING AN ANGLE OF 91 DEGREES 13 MINUTES 19 SECONDS FROM SOUTH TO EAST AND RUNNING EASTERLY, A DISTANCE OF 1357.70 FEET TO THE END OF THE SPECIFICALLY DESCRIBED LINE.

THIS DESCRIPTION DESCRIBES THE PROPERTY AS DESCRIBED IN DEED RECORDED IN OFFICIAL RECORD BOOK 3462, PAGE 671, PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA.

THE NET AREA OF THE ABOVE DESCRIBED PARCEL CONTAINS 1.4264 ACRES OR 62,134 SQUARE FEET MORE OR LESS.

ALSO TOGETHER WITH

THE SOUTH ONE-HALF (1/2) OF THE FOLLOWING DESCRIBED PARCEL:

NORTH $^{1}/_{2}$ OF SOUTH $^{1}/_{2}$ OF SOUTHWEST $^{1}/_{4}$ OF NORTHWEST $^{1}/_{4}$ TOGETHER WITH THE SOUTH $^{3}/_{4}$ OF SOUTH $^{1}/_{2}$ OF NORTH $^{1}/_{2}$ OF SOUTHWEST $^{1}/_{4}$ OF NORTHWEST $^{1}/_{4}$ OF SECTION 9, TOWNSHIP 45 SOUTH, RANGE 43 EAST, PALM BEACH COUNTY, FLORIDA, LESS THE WESTERLY 25 FEET THEREOF.

SAID PARCEL CONTAINING 8.83 ACRES, MORE OR LESS

ALL FOUR PARCELS TOGETHER CONTAIN 39.351 ACRES, MORE OR LESS.

SURVEYOR'S NOTES

BEARINGS ARE BASED ON A GRID (NAD 83, 1990 ADJUSTMENT) BEARING OF SOUTH 01°50'13" WEST ALONG THE WEST LINE OF THE NORTHWEST QUARTER OF SECTION 09, TOWNSHIP 45 SOUTH, RANGE 43 EAST AND ALL OTHER BEARINGS ARE RELATIVE THERETO.

NO SEARCH OF THE PUBLIC RECORDS HAS BEEN MADE BY THE SIGNING SURVEYOR.

THIS IS NOT A SURVEY.

IT IS POSSIBLE THAT THERE ARE DEEDS OF RECORD, UNRECORDED DEEDS, EASEMENTS, OR OTHER INSTRUMENTS WHICH COULD AFFECT THE SUBJECT PROPERTY, WHICH ARE UNKNOWN TO THE SIGNING SURVEYOR.

PROJECT NO. 2006012-03	SHEET: 2 OF: 4	PROJECT: HIGH RIDGE SCRUB NATURAL AREA	DESIGN FILE NAME 2006012-03.DGN	DRAWING NO. S-1-05-2418	DATE DRAWN: 11/01/05 CHECKED: WCE DRAWN: KAL APPROVED: GWM SCALE: 1"=250' FIELD BOOK NO. N/A

NO.	REVISION	BY	DATE

PALM BEACH COUNTY
ENGINEERING AND PUBLIC WORKS
ENGINEERING SERVICES
160 AUSTRALIAN AVENUE
WEST PALM BEACH, FL 33406

THIS PURPOSE OF THIS LEGAL & SKETCH IS TO COMBINE FOUR BOUNDARY SURVEY'S INTO ONE LEGAL & SKETCH AT THE REQUEST OF PALM BEACH COUNTY ENVIRONMENTAL RESOURCES MANAGEMENT DIVISION. SEE THE BOUNDARY SURVEY'S PREPARED BY PALM BEACH COUNTY SURVEY SECTION - DWG NO. S-3-98-1253, S-3-98-1258, & S-3-98-1302, AND THE BOUNDARY SURVEY PREPARED BY ADAIR & BRADY, INC. DRAWING NO. FP-1515, DATED 04-08-86 FOR ADDITIONAL INFORMATION.

THIS INSTRUMENT PREPARED BY GLENN W. MARK, P.L.S. IN THE OFFICE OF THE COUNTY ENGINEER, 160 AUSTRALIAN AVENUE, WEST PALM BEACH, FLORIDA 33406.

NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

I HEREBY CERTIFY THAT THE LEGAL DESCRIPTION AND SKETCH SHOWN HEREON MEETS THE MINIMUM TECHNICAL STANDARDS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 61G17-6, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

Glenn W Mark

GLENN W. MARK, P.L.S.
FLORIDA CERTIFICATE #5304

11/7/05
DATE

PROJECT NO. 2006012-03 | SHEET: 3 OF: 4

PROJECT:

HIGH RIDGE SCRUB
NATURAL AREA

DESIGN FILE NAME	DRAWING NO.
2006012-03.DGN	S-1-05-2418

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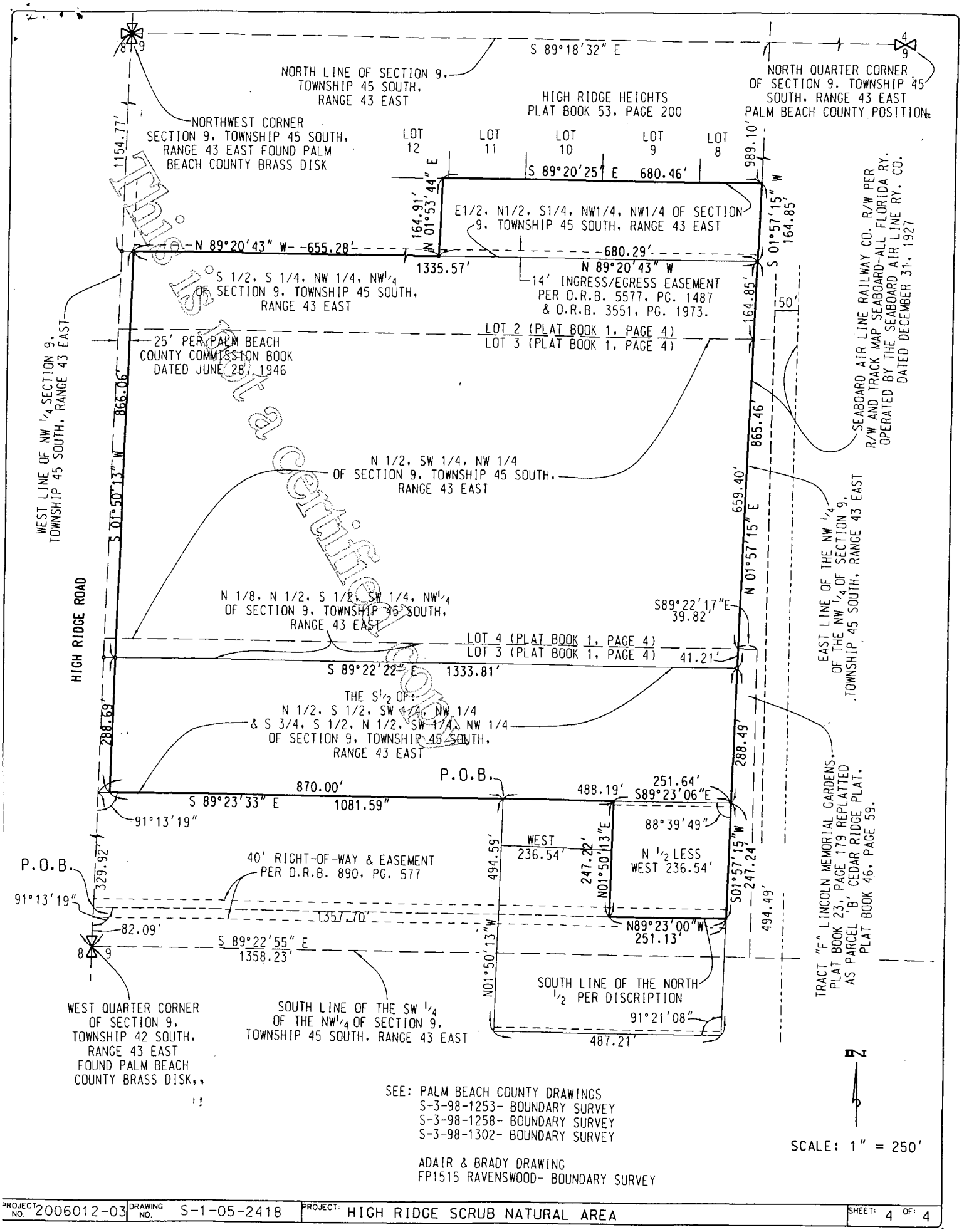
PALM BEACH COUNTY
ENGINEERING AND PUBLIC WORKS

ENGINEERING SERVICES

160 AUSTRALIAN AVENUE
WEST PALM BEACH, FL 33406



PROJECT NO.	DRAWING NO.	PROJECT	SHEET
2006012-03	S-1-05-2418	HIGH RIDGE SCRUB NATURAL AREA	4 OF 4

APPENDIX E

GRANT AWARD AGREEMENT

This document prepared by:
Ann J. Wild
Florida Communities Trust
Department of Community Affairs
2555 Shumard Oak Blvd.
Tallahassee, FL 32399

FLORIDA COMMUNITIES TRUST
P9A AWARD# 99-015-P9A
FCT Contract# 02-CT-5F-55-5A-J1-015

GRANT AWARD AGREEMENT

R2001 1085 JUL 10 2001

THIS AGREEMENT is entered into this 6th day of August, JUL 10 2001, 2001, by and between the FLORIDA COMMUNITIES TRUST ("FCT"), a nonregulatory agency within the State of Florida Department of Community Affairs, and PALM BEACH COUNTY, a political subdivision of the State of Florida ("FCT Recipient"), in order to impose terms, conditions, and restrictions on the use of the proceeds of certain bonds, hereinafter described, and the lands acquired with such proceeds and as described in Exhibit "A" attached hereto and made a part hereof ("Project Site"), as shall be necessary to ensure compliance with applicable Florida Law and federal income tax law and to otherwise implement provisions of Chapters 253, 259, and 380, Florida Statutes.

WHEREAS, Part III Chapter 380, Florida Statutes, the Florida Communities Trust Act, creates a nonregulatory agency within the Department of Community Affairs, which will assist local governments in bringing into compliance and implementing the conservation, recreation and open space, and coastal elements of their comprehensive plans and in otherwise conserving natural resources and resolving land use conflicts by providing financial assistance to local governments to carry out projects and activities authorized by the Florida Communities Trust Act;

WHEREAS, Section 1 of the Florida Preservation 2000 Act provides for the distribution of ten percent (10%) of the net Preservation 2000 Revenue Bond proceeds to the Department of Community Affairs to provide land acquisition grants and loans to local governments through the FCT;

WHEREAS, the Governor and Cabinet authorized the sale and issuance of State of Florida Department of Natural Resources Preservation 2000 Revenue Bonds ("Bonds");

WHEREAS, the Bonds were issued as tax-exempt bonds, meaning that the interest on the Bonds is excluded from the gross income of Bondholders for federal income tax purposes;

WHEREAS, Rule 9K-4.010(2)(f), F.A.C., authorizes FCT to impose conditions for funding on those FCT applicants whose projects have been selected for funding in accordance with Rule Chapter 9K-4, F.A.C.;

WHEREAS, the FCT has approved the terms under which the Project Site is acquired and the deed whereby the FCT Recipient acquires title to the Project Site shall contain such covenants and restrictions as are sufficient to ensure that the use of the Project Site at all times complies with Section 375.051, Florida Statutes and Section 9, Article XII of the State Constitution and shall contain clauses providing for the conveyance of title to the Project Site to the Board of Trustees of the Internal Improvement Trust Fund upon the failure of the FCT Recipient to use the Project Site acquired thereby for such purposes; and

WHEREAS, such covenants and restrictions shall be imposed by an agreement which shall describe with particularity the real property which is subject to the agreement and shall be recorded in the county in which the real property is located; and

WHEREAS, the purpose of this Agreement is to set forth the covenants and restrictions that are imposed on the Project Site subsequent to its acquisition with the FCT Preservation 2000 Bond award.

NOW THEREFORE, in consideration of the mutual covenants and undertakings set forth herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, FCT and FCT Recipient do hereby contract and agree as follows:

I. GENERAL CONDITIONS.

1. Upon execution and delivery by the parties hereto, the FCT Recipient shall cause this Agreement to be recorded and filed in the official public records of Palm Beach County, Florida, and referenced by the warranty deed vesting fee simple title to the Project Site in the FCT Recipient, and in such manner and in such other places as FCT may reasonably request, and shall pay all fees and charges incurred in connection therewith.

2. The FCT Recipient and FCT agree that the State of Florida Department of Environmental Protection will forward this Agreement to Department of Environmental Protection Bond Counsel for review. In the event Bond Counsel opines that an amendment is required to this Agreement so that the tax exempt status of the Preservation 2000 Bonds is not jeopardized, FCT and FCT Recipient shall amend the Agreement accordingly.

3. This Agreement may be amended at any time. Any amendment must be set forth in a written instrument and agreed to by both the FCT Recipient and FCT.

4. This Agreement and the covenants and restrictions contained herein shall run with the Property herein described and shall bind, and the benefits shall inure to, respectively, the FCT and the FCT Recipient and their respective successors and assigns.

5. This Agreement shall be governed by and construed in accordance with the laws of the State of Florida, with respect to both substantive rights and with respect to procedures and remedies.

6. Any notice required to be given hereunder shall be given by personal delivery, by registered mail or by registered expedited service at the addresses specified below or at such other addresses as may be specified in writing by the parties hereto, and any such notice shall be deemed received on the date of delivery if by personal delivery or expedited delivery service, or upon actual receipt if sent by registered mail.

FCT:

Florida Communities Trust
Department of Community Affairs
2555 Shumard Oak Blvd.
Tallahassee, FL 32399-2100
ATTN: Executive Director

FCT Recipient:

PALM BEACH COUNTY Department of
Environmental Resources Management
3323 Belvedere Rd, Bldg 502
West Palm Beach, FL 33406-1548
ATTN: Richard Walesky, Director

7. If any provision of the Agreement shall be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired.

II. PROJECT SITE REQUIREMENTS IMPOSED BY CHAPTER 259, CHAPTER 375, AND CHAPTER 380, PART III, FLORIDA STATUTES.

1. If any essential term or condition of this grant agreement is violated by the FCT Recipient or by some third party with the knowledge of the FCT Recipient and the FCT Recipient does not correct the violation within 30 days of notice of the violation, fee simple title to all interest in the Project Site shall be conveyed to the Board of Trustees of the Internal Improvement Trust Fund.

The FCT shall treat such property in accordance with Section 380.508(4)(e), Florida Statutes.

2. Any transfer of the Project Site shall be subject to the approval of FCT and FCT shall enter into a new agreement with the transferee, containing such covenants, clauses, or other restrictions as are sufficient to protect the interest of the people of Florida.

3. The interest, if any, acquired by the FCT Recipient in the Project Site will not serve as security for any debt of the FCT Recipient unless FCT approves the transaction.

4. If the existence of the FCT Recipient terminates for any reason, title to all interest in real property it has acquired with the FCT award shall be conveyed to the Board of Trustees of the Internal Improvement Trust Fund, unless FCT negotiates an agreement with another local government or nonprofit organization which agrees to accept title to all interest in and to manage the Project Site.

5. In the event that the Project Site is damaged or destroyed or title to the Project Site, or any part thereof, is taken by any governmental body through the exercise or the threat of the exercise of the power of eminent domain, the FCT Recipient shall deposit with the FCT any insurance proceeds or any condemnation award, and shall promptly commence to rebuild, replace, repair or restore the Project Site in such manner as is consistent with the Agreement. The FCT shall make any such insurance proceeds or condemnation award moneys available to provide funds for such restoration work. In the event that the FCT Recipient fails to commence or to complete the rebuilding, repair, replacement or restoration of the Project Site after notice from the FCT, the FCT shall have the right, in addition to any other remedies at law or in equity, to repair, restore, rebuild or replace the Project Site so as to prevent the occurrence of a default hereunder.

Notwithstanding any of the foregoing, FCT will have the right to seek specific performance of any of the covenants and restrictions of this Agreement concerning the construction and operation of the Project Site.

III. PROJECT SITE OBLIGATIONS IMPOSED BY FCT ON THE FCT RECIPIENT.

1. The Project Site shall be managed only for the conservation, protection and enhancement of natural and historical resources and for passive, natural resource-based public outdoor recreation which is compatible with the conservation, protection and enhancement of the Project Site, along with other related uses necessary for the accomplishment of this purpose.

The proposed uses for the Project Site are specifically designated in the Project Plan as approved by FCT.

2. The FCT Recipient shall prepare and submit to FCT an annual report as required by Rule 9K-4.013, F.A.C.

3. The FCT Recipient shall ensure that the future land use designation assigned to the Project Site is for a category dedicated to open space, conservation, or outdoor recreation uses as appropriate. If an amendment to the FCT Recipient's comprehensive plan is required to comply with this paragraph, the amendment shall be proposed at the next comprehensive plan amendment cycle available to the FCT Recipient.

4. FCT Recipient shall ensure, and provide evidence thereof to FCT, that all activities under this Agreement comply with all applicable local, state, regional and federal laws and regulations, including zoning ordinances and the adopted and approved comprehensive plan for the jurisdiction as applicable. Evidence shall be provided to FCT that all required licenses and permits have been obtained prior to the commencement of any construction.

5. The FCT Recipient shall, through its agents and employees, prevent the unauthorized use of the Project Site or any use thereof not in conformity with the FCT approved Project Plan.

6. FCT staff or its duly authorized representatives shall have the right at any time to inspect the Project Site and the operations of the FCT Recipient at the Project Site.

7. All buildings, structures, improvements, and signs shall require the prior written approval of FCT as to purpose. Further, tree removal, other than non-native species, and/or major land alterations shall require the written approval of FCT. The approvals required from FCT shall not be unreasonably withheld by FCT upon sufficient demonstration that the proposed structures, buildings, improvements, signs, vegetation removal or land alterations will not adversely impact the natural resources of the Project Site. The approval by FCT of the FCT Recipient's management plan addressing the items mentioned herein shall be considered written approval from FCT.

8. If archaeological and historic sites are located on the Project Site, the FCT Recipient shall comply with Chapter 267, Florida Statutes. The collection of artifacts from the Project Site or the disturbance of archaeological and historic sites on the Project Site will be prohibited unless prior written authorization has been obtained from the Department of State, Division of Historical Resources.

9. The FCT Recipient shall ensure that the Project Site is identified as being publicly owned and operated as a passive, natural resource-based public outdoor recreational site in all signs, literature and advertising regarding the Project Site. The FCT Recipient shall erect a sign(s) identifying the Project Site as being open to the public and as having been purchased with funds from FCT and FCT Recipient.

IV. OBLIGATIONS INCURRED BY FCT RECIPIENT AS A RESULT OF BOND PROCEEDS BEING UTILIZED TO PURCHASE THE PROJECT SITE.

1. If the Project Site is to remain subject, after its acquisition by the State and the FCT Recipient, to any of the below listed activities or interests, the FCT Recipient shall provide at least 60 days written notice of any such activity or interest to FCT prior to the activity taking place, and shall provide to FCT such information with respect thereto as FCT reasonably requests in order to evaluate the legal and tax consequences of such activity or interest:

a. any lease of any interest in the Project Site to a non-governmental person or organization;

b. the operation of any concession on the Project Site to a non-governmental person or organization;

c. any sales contract or option to buy things attached to the Project Site to be severed from the Project Site, with a non-governmental person or organization;

d. any use of the Project Site by non-governmental persons other than in such person's capacity as a member of the general public;

e. a management contract of the Project Site with a non-governmental person or organization; and

f. such other activity or interest as may be specified from time to time in writing by FCT to the FCT Recipient.

2. FCT Recipient agrees and acknowledges that the following transaction, events, and circumstances may not be permitted on the Project Site as they may have negative legal and tax consequences under Florida law and federal income tax law:

a. a sale of the Project Site or a lease of the Project Site to a non-governmental person or organization;

b. the operation of a concession on the Project Site by a non-governmental person or organization;

c. a sale of things attached to the Project Site to be severed from the Project Site to a non-governmental person or organization;

d. any change in the character or use of the Project Site from that use expected at the date of the issuance of any series of bonds from which the disbursement is to be made;

e. any use of the Project Site by non-governmental persons other than in such person's capacity as a member of the general public;

f. a management contract of the Project Site with a non-governmental person or organization; and

g. such other activity or interest as may be specified from time to time in writing by FCT to the FCT Recipient.

DELEGATIONS AND CONTRACTUAL ARRANGEMENTS BETWEEN THE FCT RECIPIENT AND OTHER GOVERNMENTAL BODIES, NOT FOR PROFIT ENTITIES, OR NON GOVERNMENTAL PERSONS FOR USE OR MANAGEMENT OF THE PROJECT SITE WILL IN NO WAY RELIEVE THE FCT RECIPIENT OF THE RESPONSIBILITY TO ENSURE THAT THE CONDITIONS IMPOSED HEREIN ON THE PROJECT SITE AS A RESULT OF UTILIZING BOND PROCEEDS TO ACQUIRE THE PROJECT SITE ARE FULLY COMPLIED WITH BY THE CONTRACTING PARTY.

V. CONDITIONS THAT ARE PARTICULAR TO THE PROJECT SITE AS A RESULT OF THE FCT APPROVED MANAGEMENT PLAN.

1. Outdoor recreational facilities including a nature trail and interpretive signage shall be provided. The facilities shall be developed in a manner that allows the general public reasonable access for observation and appreciation of the natural resources on the project site without causing harm to those resources.

2. A permanent recognition sign shall be maintained in the entrance area of the project site. The sign shall acknowledge that the project site is open to the public and was purchased with funds from the Florida Communities Trust Preservation 2000 Program and the Recipient. Such recognition shall also be included in all printed literature and advertising associated with the project site.

3. Regularly scheduled and ongoing educational programs that promote the protection of natural and cultural resources shall be provided at the project site.

4. The native vegetative communities that occur on the project site shall be preserved and appropriately managed to ensure the long-term viability of these communities.

5. The project site shall be managed in a manner that protects and enhances habitat for listed wildlife species that utilize or could potentially utilize the project site, including the gopher tortoise and scrub jay. The management of listed species habitat shall be coordinated with the Florida Fish and Wildlife Conservation Commission to ensure the protection of listed species on the project site. Periodic surveys of listed species on the project site shall be conducted to ensure the protection of listed animal species and their habitat.

6. A vegetation analysis of the project site shall be performed to determine which areas of the site need prescribed burning or mechanical clearing to maintain natural fire-dependent vegetative communities. The development of a prescribed burn plan shall be coordinated with the Division of Forestry and the Florida Fish and Wildlife Conservation Commission.

7. Disturbed areas on the project site shall be managed for natural succession to a natural community in terms of biological composition and ecological function.

8. An ongoing monitoring and control program for invasive vegetation including exotic (non-native) and nuisance native plant species shall be implemented at the project site. The objective of the control program shall be the elimination of invasive exotic plant species and the maintenance of a diverse association of native vegetation. The Exotic Pest Plant Council's List of Florida's Most Invasive Species shall be used to assist in identifying invasive exotics on the project site.

9. The project site shall be managed as an addition to the adjacent county-owned tract.

10. The project site shall be managed in conjunction with other publically-owned conservation lands in east central Palm Beach County to provide synergistic benefits for resource conservation and to promote the recovery and maintenance of listed animal species.

11. Prior to the commencement of any proposed development activities, measures will be taken to determine the presence of any historical or archaeological sites.

All planned activities involving known archaeological sites or potential site areas shall be closely coordinated with the Department of State, Division of Historic Resources in order to prevent the disturbance of significant sites.

12. The requirements imposed by other grant program funds that may be sought for activities associated with the project site shall not conflict with the terms and conditions of this award.

THIS GRANT AWARD AGREEMENT embodies the entire Agreement between the parties.

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement.

R2001 1083 JUL 10 2001

Witness:

Judith Crosbie
Print Name: Judith Crosbie

Joseph Smith
Print Name: Joseph Smith

Richard E. Walesky
APPROVED AS TO TERMS AND CONDITIONS.

PALM BEACH COUNTY

BY: W Jewell
~~Its:~~ Warren H. Newell, Chairman

Date: JUL 10 2001

DOROTHY H. WILKEN, CLERK
Board of County Commissioners

Attest: Dorothy H. Wilken
Deputy Clerk

BOARD OF COUNTY COMMISSIONERS PALM BEACH COUNTY FLORIDA

Accepted as to Legal Form and Sufficiency:

M. Jul
Date: 6/25/01

STATE OF FLORIDA
COUNTY OF Palm Beach

The foregoing instrument was acknowledged before me this 10 day of July, 2001, by Warren H. Newell, as Chairman. He/~~She~~ is personally known to me.

Gloria Madison
Notary Public
Print Name: Gloria Madison
Commission No.
My Commission Expires:

Gloria Madison
Commission # CC 880946
Expires Oct. 19, 2003
Bonded Thru
Atlantic Bonding Co., Inc.

GAA/99-015-P9A
05-23-01

9

FLORIDA COMMUNITIES TRUST

Print Name:

Print Name: GAYLE H. BRETT

Janice Browning
Executive Director
Date: 8/8/01

Accepted as to Legal Form and Sufficiency:

Ann J. Wild, Trust Counsel
Date: 8/6/01

STATE OF FLORIDA
COUNTY OF LEON

8th The foregoing instrument was acknowledged before me this 8th day of August, 2001 by ~~JANICE BROWNING~~ CAROLINE SUTTON as She is personally known to me.

Notary Public
Print Name:
Commission No.
My Commission Expires:

Gayle H. Brett
MY COMMISSION # CC781236 EXPIRES
October 6, 2002
BONDED THRU TROY FAIN INSURANCE, INC.

GAA/99-015-P9A
05-23-01

Exhibit "A"

The South one-half(S1/2) of the following described parcel:

North one-half (N1/2) of the South one-half (S1/2) of the Southwest one-quarter (SW1/4) of the Northwest one-quarter (NW1/4) together with the South three-quarters (S3/4) of the South one-half (S1/2) of the North one-half (N1/2) of the Southwest one-quarter (SW1/4) of the Northwest one-quarter (NW1/4) of Section 9, Township 45 South, Range 43 East, Palm Beach County, Florida, less the westerly 25 feet thereof.

And

The East half of the North half of the South one-quarter of the Northwest quarter of the Northwest quarter of Section 9, Township 45 south, Range 43 East, Palm Beach County, Florida

And

The North half (N1/2) Less the West 236.54 feet of the following described property.

Beginning at the Quarter corner in the west line of Section 9, Township 45 south, Range 43 East, Palm Beach County, Florida (said West section of said Section 9, being also the center line of High Ridge Road, as now laid out and in use) thence Northerly, along said West line of said Section 9, for a distance of 329.92 feet to a point; thence Easterly at an angle of 91 degrees 13 minutes 19 seconds (turned from South to East), for a distance of 870.00 feet to a point of beginning, and the Northwest corner of this parcel; thence continuing Easterly for a distance of 488.19 feet, which point is the Northeast corner of this parcel; thence Southerly, at an angle of 88 degrees 39 minutes 49 seconds (turned from West to South) for a distance of 494.49 feet to a point, which point is the Southeast corner of this parcel; thence Westerly at an angle of 91 degrees 21 minutes 08 seconds (turn form North to West) for a distance of 487.21 feet to a point, which point is the Southwest corner of this parcel; thence Northerly parallel to said West line of said Section 9 for a distance of 494.59 feet to the point of beginning.

AND ALSO

Exhibit "A" (continued)

Together with a non-exclusive right-of-way and easement with right ingress and egress over the following described parcel:

A strip of land 40 feet in width extending through the South Quarter (S1/4)of the Southwest Quarter (SW1/4) of the Northwest Quarter (NW1/4) of Section 9, Township 45 South, Range 43 East, Palm Beach County, Florida; said 40 foot strip of land lying 20 feet each side of, parallel and contiguous to the following specifically described line:

From the West Quarter corner of the said Section 9, Northerly along the West line of the said Section 9, (also being the center line of High Ridge Road). A distance of 82.09 feet to the point of beginning; thence turning an angle of 91 degrees 13 minutes 19 seconds from South to East and running Easterly, a distance of 1357.70 feet to the end of the specifically described line.

APPENDIX F

FIRE MANAGEMENT PLAN

FOR HIGH RIDGE SCRUB NATURAL AREA

APPENDIX F

FIRE MANAGEMENT PLAN FOR HIGH RIDGE SCRUB NATURAL AREA

This plan contains generalized procedures that apply to all burns conducted on High Ridge Scrub Natural Area (natural area) (also see Section 4.4.1 of the natural area management plan). Prescribed burn units (burn units) are typically equivalent to the site's management units (see Figure 4 of the natural area management plan). A prescribed burn plan shall be prepared for each burn unit during the burn planning process.

1. GOALS

The primary goal of the prescribed burn program is to reintroduce fire to the scrub and scrubby flatwoods natural communities at a frequency and intensity that will maintain these communities in various stages of maturity within the natural area. Ideally, the prescribed fire will be allowed to burn in a "patchy" fashion to mimic natural fire patterns. The resulting patchwork of burned and unburned areas within a burn unit will produce a mosaic of vegetation, thereby maximizing diversity within and among communities. This will provide habitat for species which typically use, or may even be restricted to, communities in a particular state of maturity. Additional goals related to the reintroduction of fire include: 1) improving habitat for plant and animal species, including listed species that depend upon fire-maintained communities; 2) helping to control invasive/non-native vegetation; and 3) reducing fuel loads to prevent catastrophic wildfires. Unit-specific goals will be established as part of each burn prescription including a desired percent consumption of ground cover and understory, and acceptable percent crown scorch and consumption.

2. GENERAL PROCEDURES

The Incident Command System is used on all prescribed burns. This system uses a pre-established chain-of-command to ensure that all communications and activities related to the prescribed burn are conducted in an organized manner. Since the Incident Command System is used by Palm Beach County Fire-Rescue and the Florida Department of Agriculture and Consumer Services' Florida Forest Service (FFS), staff from these agencies can easily assist during a prescribed burn if additional personnel are needed.

2.1 Personnel

The Palm Beach County Department of Environmental Resources Management (ERM) will provide the personnel necessary to conduct prescribed burns. Additional personnel may be requested from Palm Beach County Fire-Rescue, Palm Beach County Parks and Recreation Department, FFS, the Florida Park Service, the Florida Fish and Wildlife Conservation Commission, and trained volunteers.

Each burn team will be headed by an Incident Commander (IC) who will supervise the prescribed burn. The IC will receive authorization from FFS for any prescribed burn, oversee the burn, and make final decisions and adjustments during the burn. The IC, who may be assisted by staff, will prepare the prescribed burn plan, conduct pre-burn coordination with other agencies and homeowners' groups, make crew assignments and coordinate communications.

2.2 Equipment

ERM will provide the equipment necessary to conduct prescribed burns. All burn crew shall wear Nomex fire-resistant outer clothing, leather lace-up boots with non-slip soles, leather gloves, a plastic firefighter's helmet and eye protection, and shall carry an emergency fire shelter and personal drinking water. All crew members have been issued radios for communication during burns. A first-aid kit shall be kept in each truck.

ERM also will supply 4-wheel-drive pickup trucks (equipped with water tanks, pumps, and hoses), all-terrain vehicles, round-point shovels, fire rakes, fire flaps, and drip torches for crew use during the prescribed fire. Other fire-suppression equipment such as tractor-mounted plow units, pumper trucks, and fire engines may be supplied by assisting agencies.

2.3 Pre-burn Activities:

- Prepare specific burn prescription plan for each burn unit
- Complete pre-burn notifications
- Establish perimeter firebreaks
- Inspect burn unit to identify potentially hazardous areas or species protection needs
- Assemble and inspect necessary equipment
- Make burn crew assignments
- Prepare maps and materials for pre-burn briefing
- Notify local agencies, officials, adjacent residents and businesses
- Arrange for law enforcement and backup assistance, if necessary
- Monitor weather forecasts as the proposed burn day approaches

2.4 Burn Day Activities:

- Obtain burn authorization from FFS
- Mobilize burn crew and equipment
- Notify adjacent residents and others who have requested prior notification of the burn
- Post burn notices on site and on adjacent highways and other roads, as needed
- Obtain weather forecast for burn unit and other information necessary to determine that burn parameters will comply with prescription
- Coordinate with Palm Beach County Sheriff's Office to have deputies notify visitors to the natural area of the need to leave the site because of the pending burn
- Conduct pre-burn safety and ignition plan briefing for burn team

- Monitor weather forecasts and record on-site weather data
- Conduct test fire; conduct main burn if test fire is successful
- Mop-up and extinguish hot spots

2.5 Post-burn Activities:

- Monitor burn for rekindling of fire
- Remove burn notice signs
- Conduct post-burn review and briefing
- Evaluate burn for success in meeting environmental objectives; conduct post-burn monitoring at regular intervals
- Evaluate burn plan and burn crew for areas of improvement

3. FIRE MANAGEMENT PRESCRIPTION PREPARATION

A burn prescription will be developed for each burn unit prior to conducting a prescribed burn within that unit. The burn prescription is a carefully prepared legal document that provides strategies for reintroducing fire to the natural area in the safest manner possible. Preparation of the fire prescription involves the consideration of several factors, including, but not limited to:

- Size, location and boundaries of the burn unit
- Topography and soils of the burn unit
- Habitat type, density and crown height
- Fuel load
- Proximity of smoke-sensitive areas and any precautions taken to avoid impacts to adjacent communities, businesses and public infrastructure
- Weather-related conditions, including Dispersion Index, Drought Index, temperature, wind speed and relative humidity
- Fire behavior, including fire methods, desired behavior and outcome
- Post burn evaluations
- Fine fuel moisture
- Staffing and equipment availability
- Time needed to complete the burn
- Specific goals and objectives