Hickey Creek Mitigation Park &

Hickey Creek Greenbriar Connector Preserve

Land Management Plan

2016 – 2026

Hickey Creek Mitigation Park
Land Management Plan - Third Edition
17980 Palm Beach Blvd.
Alva, FL. 33920
&
Hickey Creek
Greenbriar Connector Preserve
Land Management Plan - Second Edition

Lee County Department of Parks and Recreation

Lee County Department of Parks and Recreation's Conservation 20/20 Lands Program

Florida Fish and Wildlife Conservation Commission

Florida Communities Trust

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Carolyn Babb (Florida Scrub-jay);
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Prepared by the Conservation Lands Section

of the Lee County Department of Parks and Recreation

in Cooperation with the Florida Fish and Wildlife Conservation Commission

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Lyonia lucida
shiny fetterbush

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List of Acronyms

BoCC	Lee County Board of County Commissioners
C20/20	Lee County Conservation 20/20 Lands Program
CISMA	Cooperative Invasive Management Area
FCT	Florida Communities Trust
FDACS	Florida Department of Agriculture and Consumer Services
FDEP	Florida Department of Environmental Protection
FFS	Florida Forest Service (formerly Division of Forestry)
FLEPPC	Florida Exotic Pest Plant Council
FNAI	Florida Natural Areas Inventory
FS	Florida Statutes
FWC	Florida Fish and Wildlife Conservation Commission (formerly Florida Game and Fish Commission)
GFC	Florida Game and Fish Commission (known today as the Florida Fish and Wildlife Conservation Commission)
HCGCP	**Hickey Creek Greenbriar Connector Preserve**
HCMP	**Hickey Creek Mitigation Park**
IRC	Institute for Regional Conservation
LAMSID	Lehigh Acres Municipal Services Improvement District (formerly East County Water Control District)
LCDCD	Lee County Department of Community Development
LCDNR	Lee County Division of Natural Resources
LCPR	Lee County Department of Parks and Recreation
LSOM	Land Stewardship Operations Manual
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
SFWMD	South Florida Water Management District
TIITF	State Board of Trustees of the Internal Improvement Trust Fund
USACOE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
WSWQI	watershed water quality index

Vision Statement

The vision of the Lee County Department of Parks and Recreation and the Florida Fish and Wildlife Conservation Commission is to maintain the over-arching goal of natural and cultural resource protection at Hickey Creek Mitigation Park while offering and promoting appropriate, state-approved, resource-based, recreational activities. Safeguarding and enhancing the environmental integrity and biological diversity of the site will be the guiding principle for the stewardship and operation of this park. Exotic vegetation and feral hogs will be controlled; restoration will occur on altered areas and efforts will be made to create productive, functioning natural systems. Hickey Creek will be protected and maintained as a viable, natural flow way. Public use will be managed to minimize impacts to wildlife and native plant communities. Visitors will be encouraged to learn and understand the importance of preserving natural areas. Public use programs, including environmental education and interpretation, will emphasize the biological, historic, and archaeological resources of the Hickey Creek region. When the appropriate funding is available, ecological restoration work (prescribed fire, exotic control, hydrologic improvements) will be undertaken at Hickey Creek Greenbriar Connector Preserve.

I. EXECUTIVE SUMMARY

This document serves as the required update of the Hickey Creek Mitigation Park and Hickey Creek Greenbriar Connector Preserve Land Stewardship Plan dated 2003. The purpose of this document is to provide all the information needed to appropriately restore and maintain the natural resources of Hickey Creek Mitigation Park and Hickey Creek Greenbriar Connector Preserve while taking staffing and budgetary resources (and limitations) into consideration. The land management plans for these conservation areas have been combined into one document because of their proximity to each other. Due to funding sources, and budgetary constraints, they are managed as separate preserves. Both of these conservation areas are located in northeastern Lee County and, when combined with other conservation areas managed by Lee County and other agencies, form a wildlife corridor that is over 2,500 acres in size.

This plan is also intended for Board of Trustees leases and subleases of conservation properties that are 160 acres or less (7.13 acres of Hickey Creek Greenbriar Connector Preserve). The plan is intended to address the requirements of Chapter 253.034, 259.032 and rule 18-2.021 for these State-owned properties.

Hickey Creek Mitigation Park (also called Hickey's Creek Mitigation Park) consists a variety of plant communities including mesic flatwoods, scrubby flatwoods, upland hardwood forests, scrub, basin swamps, and blackwater streams. Lee County acquired 10 acres on Hickey Creek in 1945. In 1994, funds from Lee County's Environmentally Sensitive Lands Program and a grant from the Florida Communities Trust were used to purchase just under 770 additional acres to establish an off-site mitigation park for gopher tortoises *(Gopherus polyphemus)*. Lee County then conveyed, by grant of a Perpetual Conservation Easement, these 770 acres to the Florida Fish and Wildlife Conservation Commission. Lee County (via the Department of Parks and Recreation) and the Florida Fish and Wildlife Conservation Commission manage the property in accordance with a Memorandum of Agreement. Starting in 1998, Lee County, through its Conservation 20/20 Lands Program, purchased an additional 82 acres. The Florida Department of Transportation quitclaimed 2 acres to Lee County in 2004. Today, the Hickey Creek Mitigation Park is an 863.5-acre day-use facility offering 5 miles of primitive hiking trails, a fishing pier, a canoe/ kayak landing, an amphitheater, and two picnic areas. The Tourist Development Council of Lee County assisted in the funding of waterfront facilities. Hickey Creek is part of the Great Calusa Blueway Paddling Trail and is a "Florida Designated Paddling Trail" through the Office of Greenways and Trails.

Hickey Creek Greenbriar Connector Preserve consists of 95.81 acres comprised of mesic flatwoods, wet flatwoods, mesic hammock, prairie hydric hammock, slough marsh, strand swamp, and dome swamp. This Preserve was established to create and maintain a wildlife corridor between Hickey Creek Mitigation Park and the 406-acre Greenbriar Swamp. The Greenbriar Swamp is owned and managed by the Lehigh Acres Municipal Services Improvement District (formerly known as East County Water Control District) and it provides water quality enhancements and ground water recharge for a significant part of the Hickey Creek Basin. In 1997, funds from Lee County's Environmentally Sensitive Lands Program were used to purchase 59.89 acres. The State of Florida's Board of Trustees of the Internal Improvement Trust Fund purchased

15 parcels totaling 7.13 acres in this area between the years of 1999 and 2001. The State of Florida, through lease number 4764, transferred the management of these lands from the Florida Department of Environmental Protection to Lee County. The 50-year lease agreement (expiring May 4, 2050) directs Lee County to manage the leased premises only for the conservation and protection of natural and historical resources and resource based public outdoor recreation which is compatible with the conservation and protection of these public lands, as set forth in subsection 259.032(11) FS. In 2005, 2007, and 2008, the Conservation 20/20 Lands Program purchased an additional 28.79 acres. The acquisition of the parcels making up Hickey Creek Greenbriar Connector Preserve began after this section of Lehigh Acres was platted. As a result, the parcels are discontinuous. Economies of scale prevent the efficient management of this site. Therefore, there is currently no dedicated funding in the budget of the Lee County Department of Parks and Recreation to manage this Preserve. The lack of financial and personnel resources greatly limits the potential for nature-based recreation and infrastructure to be supported at within Hickey Creek Greenbriar Connector Preserve. Large scale recreational facilities or multi-use trail systems are not necessary as there are Preserves and Parks in close proximity that provide opportunities for hiking, mountain biking, camping, fishing and equestrian use; these Preserves and Parks have Board-approved stewardship (management) plans in place and the infrastructure to support these offerings.

II. Introduction

Staff in the Conservation Lands Section of the Lee County Department of Parks and Recreation (LCPR) prepared this document in cooperation with the Florida Fish and Wildlife Conservation Commission (FWC). Once approved by the Lee County Board of County Commissioners (BoCC), this document will serve as a management guideline for Hickey Creek Mitigation Park (HCMP) and Hickey Creek Greenbriar Connector Preserve (HCGCP) for the next ten years (2016 – 2026).

Dennis O. Hickey, an Irish immigrant and the namesake of Hickey Creek, homesteaded the area after 1865. Dowling & Camp logged the pine flatwoods of the Hickey Creek and Lehigh Acres areas from 1932 to 1935 and 1940 to 1944 (Walker et al. 1996). Logging operations ceased in the 1940s. Land development increased dramatically in the following years.

HCMP was established in 1994 through the cooperative efforts of the BoCC, FWC, and the Florida Communities Trust (FCT). With the aid of a FCT grant, the BoCC added just under 770 acres to a 10-acre, County-owned parcel in Alva, FL. Lee County then conveyed these 770 acres to FWC in perpetuity in the form of a Perpetual Conservation Easement (Appendix A). A Memorandum of Agreement executed on May 12, 1994 between Lee County and FWC (Appendix B) details the terms relative to the establishment of a Mitigation Park. In addition, a “Grant Award Agreement” (Appendix C) and a “Conceptual Approval Agreement” were entered into with the FCT (Appendix D). FCT also requires that the HCMP Management Plan comply with “Management Plan Requirements”. Lee County and the FWC are currently in compliance with these agreements. Starting in 1998, Lee County, through its Conservation 20/20 Lands

Program (also part of the Department of Parks and Recreation, hereafter C20/20), purchased an additional 82 acres. The Florida Department of Transportation gave Lee County 2 acres via a quitclaim deed in 2004.

The FWC created off-site mitigation programs as an alternative to on-site protection that usually resulted in small, isolated preserves that lacked control and management capability. When developers eliminated habitat for listed species, they paid fees that were used to buy and manage high quality habitat elsewhere. The program consolidated mitigation within a geographical region by buying larger, more manageable tracts. Thus, these programs were able to compensate for impacts of land development on upland listed wildlife populations in a more efficient manner than traditional forms of mitigation. The Mitigation Park Program was intended to serve as a support function for FWC's Statewide Incidental Take permitting process. The Incidental Take permit option was used by land development projects to mitigate gopher tortoise impacts incurred by development. The monies collected from this permit option was then used to establish mitigation parks.

The FWC identified HCMP as a proposed regional mitigation park for the gopher tortoise. This site was selected from nine surveyed sites in the region under selection criteria, which included rare and unique habitat concerns, project location, project size, and project price per acre. HCMP offers additional habitat protection for the gopher tortoise and the Florida Scrub-jay (*Aphelocoma coerulescens*) both of which are in decline in the region.

The reported acreage in past literature (e.g., Land Management Plans, brochures, Annual FCT reports) associated with HCMP noted that the Park was 1,115 acres in size. As of this Land Management Plan, this is being adjusted to 863.5 acres. The adjusted acreage reflects, in large part, the removal of all parcels within the HCGCP and the Alva Scrub Preserve as these Preserves are managed separately. Of course, these Preserves are still part of the larger landscape of Conservation Areas but are not counted towards acreage for HCMP. This change in acreage does not reflect a change to the portion of HCMP associated with FCT funds nor with those lands governed by agreements with FWC. The Acquisition History section of this document provides a detailed description of the parcels comprising HCMP and HCGCP.

Today, the 863.5 acres of HCMP are comprised of eleven plant communities and sixteen different soil types. The Lee County Water Management Plan (JEI, 1992) indicates that there may be a significant lowering of the water table on at least portions of the Park. This is apparent from the obvious successional changes occurring in the forested wetland adjacent to the southern boundary of the park.

Twenty-six listed plant species and thirteen listed animal species have been recorded within HCMP. LCPR and FWC staff coordinate to retain this conservation area at a maintenance level for exotics (less than 5% coverage) and an active prescribed burn program is in progress. FWC staff monitors gopher tortoise population trends and is undertaking a Wildlife Conservation, Prioritization, and Recovery exercise to assess the progress and success of management activities. The goals for HCMP are to continue coordinating management activities.

LCPR staff is in charge of managing the public access portion of HCMP. Natural resource-based recreational activities must be approved by FWC and FCT. HCMP is a day-use facility offering 5 miles of primitive hiking trails, a fishing pier, a canoe/ kayak landing, an amphitheater, and two picnic areas. The Tourist Development Council of Lee County assisted in the funding of waterfront facilities. Hickey Creek is part of the the Great Calusa Blueway Paddling Trail and is a "Florida Designated Paddling Trail" through the Office of Greenways and Trails.

Lehigh Acres is a Census-Designated Place (a statistical counterpart of and incorporated place, such as a city, town or village) in Lee County, Florida and was developed in the mid-1950s. Roads were built and land was platted for primarily residential development. The Lehigh Acres Municipal Services Improvement District (LAMSID, formerly known as the East County Water Control District) was formed for the purpose of preserving and protecting water resources by drainage, irrigation, reclamation, conservation, mitigation and water management in the eastern portion of Lee County (including Lehigh Acres) and the extreme western portion of Hendy County, Florida. LAMSID maintains 1,298 preserve acres including the 406-acre Greenbriar Swamp. The HCGCP consists of 95.81 acres (59.89 acres purchased by Lee County's general fund, 28.79 acres purchased by C20/20 funds, and 7.13 acres purchased by the State of Florida). This conservation area is located south of HCMP and C20/20's Alva Scrub Preserve and was acquired to create and maintain a wildlife corridor between HCMP, the Greenbriar Swamp, and Alva Scrub Preserve. Over 30 parcels of land consisting of wetland edges, irregular shapes and platted residential lots make up the County-managed portion of HCGCP. Just over seven acres (7.13 acres) were purchased by TIITF and provided to Lee County to manage under lease number 4764 (transferred from the Florida Department of Environmental Protection to Lee County). The lease ends on May 4, 2050. Appendix E is the management plan intended for the 7.13 acres of Stae-owned land managed by Lee County. The information contained within this appendix is required by the Board of Trustees for leases and subleases of conservation properties that are 160 acres or less. It is intended to address the requirements of Chapter 253.034, 259.032 and rule 18-2.021.

By 1997, nearly 90% of Lehigh Acres' lots remained vacant. Many of these lots are in the Greenbriar area and some of these lots are in-holdings within the HCGCP. The roads within HCGCP are deteriorating. Economies of scale prevent the efficient management of this site. There is currently no dedicated funding in the budget of the LCPR to manage this Preserve. Large scale recreational facilities or multi-use trail systems are not necessary as there are Preserves and Parks in close proximity to that provide opportunities for hiking, mountain biking, camping, fishing and equestrian use; these Preserves and Parks have Board-approved stewardship (management) plans in place and the infrastructure to support these offerings.

III. Location and Site Description

HCMP is located at 17980 Palm Beach Boulevard in Alva, Florida in notheastern Lee County (Figure 1). It lies within Sections 25, 30, and 31, Township 43 South, and Ranges 26 and 27 East. Palm Beach Boulevard and some privately owned parcels

border HCMP on the north. Bateman Road runs in a north/south direction along a majority of the eastern border of HCMP; the road then turns to an east-west direction at the southern portion of the park and terminates at a private lot just north of Alva Scrub Preserve. Alva Scrub Preserve, managed by LCPR's C20/20 Program, borders a small part of the eastern portion of HCMP. Parcels owned and managed by the Lehigh Acres Municipal Services Improvement District (LAMSID – formerly East County Water Control District) are contiguous with the Park's southern border. Directly south of this narrow (~150') holding are portions of HCGCP and single-family lots. HCMP consists of approximately 863.5 acres comprised of eleven plant communities and sixteen different soil types.

HCGCP is located in the northern section of Lehigh Acres, Florida called Greenbriar. This part of Lehigh Acres is platted with single-family home lots and a majority of them remain (in 2015) undeveloped in the vicinity of HCGCP. This Preserve is just south of HCMP and LCPR's C20/20 Alva Scrub Preserve (Figure 1). Thirty-one parcels [individual STRAP (Section, Township, Range, Area, Parcel) numbers] make up HCGCP; the Preserve encompasses 95.81 acres and is located in Sections 5 and 6, Township 44 South, and Range 27 East. The Preserve is comprised of mesic flatwoods, wet flatwoods, mesic hammock, prairie hydric hammock, slough marsh, strand swamp, and dome swamp.

Figures 2 and 3 show aerial views of HCMP and HCGCP respectively.

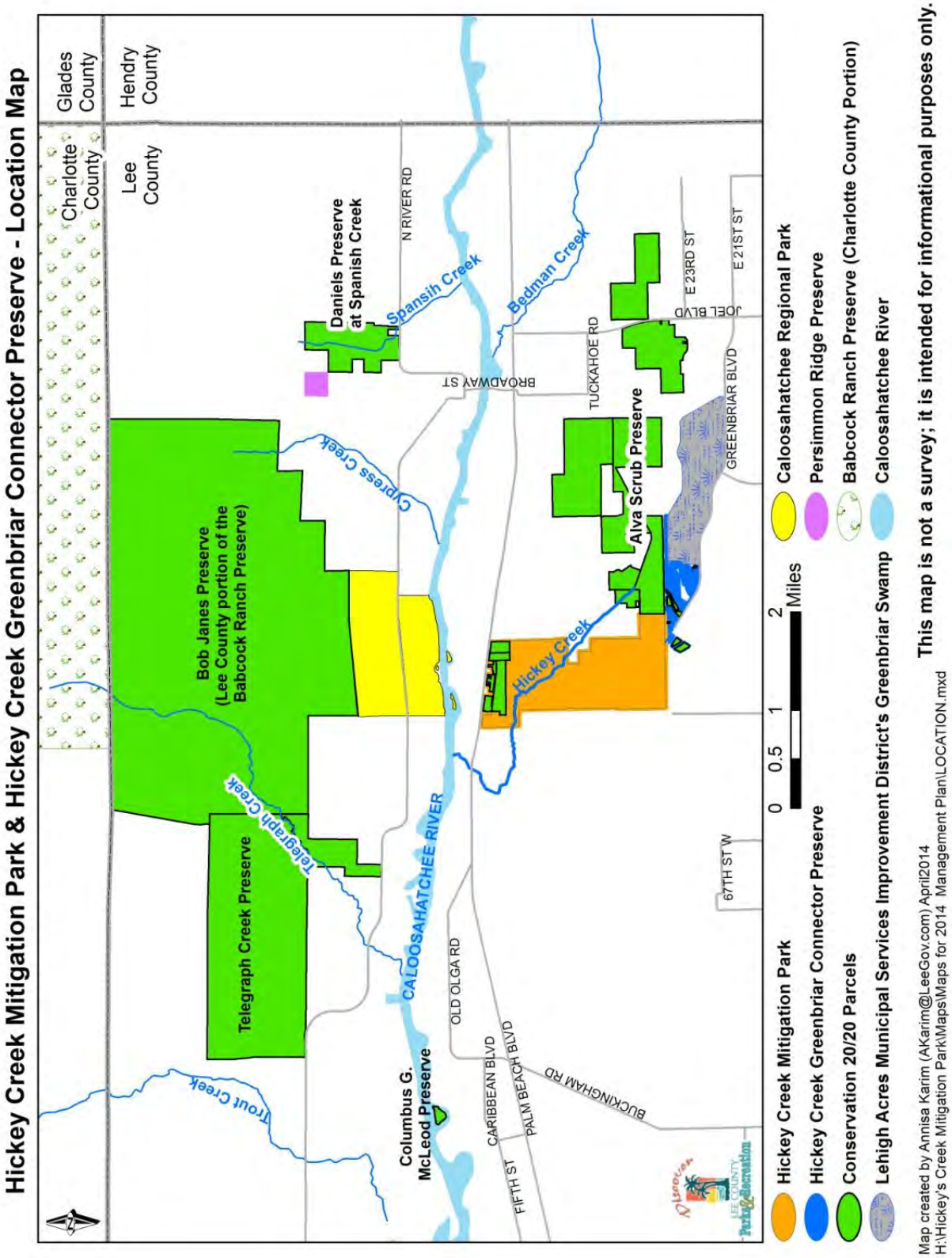


Figure 1: Location of HCMP and HCGCP in northeastern Lee County, FL.

Table 1: STRAP Numbers associated with parcels making up HCMP and HCGCP

Location	Owner	STRAP	C20/20 Parcel(s)[a]	Size (ac)
HCMP	Lee County	25-43-26-00-00010.0010	N/A	29.20
HCMP	Lee County	30-43-27-00-00001.0220	N/A	2.00
HCMP	Lee County	30-43-27-00-00001.0200	4, 101, 326	76.76
HCMP	Lee County	30-43-27-02-00006.0000	101	6.03
HCMP	Lee County	30-43-27-00-00001.0020	N/A	283.37
HCMP	Lee County	31-43-27-00-00001.0020	N/A	466.71
HCGCP	Lee County	05-44-27-00-00000.0020	N/A	5.65
HCGCP	Lee County	05-44-27-00-00000.0060	N/A	16.71
HCGCP	Lee County	05-44-27-00-00000.0050	N/A	33.39
HCGCP[b]	Lee County[b]	05-44-27-00-00000.0080	243, 285, N/A	20.90
HCGCP	Lee County	05-44-27-00-00000.0100	331	0.46
HCGCP	Lee County	06-44-27-01-00222.0070	N/A	0.27
HCGCP	Lee County	06-44-27-01-00222.0080	250	0.28
HCGCP	Lee County	06-44-27-01-00223.0020	N/A	0.25
HCGCP	Lee County	06-44-27-01-00223.0030	N/A	0.24
HCGCP	Lee County	06-44-27-01-00223.0050	N/A	0.24
HCGCP	Lee County	06-44-27-01-00223.0060	N/A	0.28
HCGCP	Lee County	06-44-27-01-00223.0080	N/A	0.35
HCGCP	Lee County	06-44-27-13-00000.0660	328	4.65
HCGCP	Lee County	06-44-27-13-00000.0670	328	2.50
HCGCP	Lee County	06-44-27-13-00000.0680	N/A	1.20
HCGCP	Lee County	06-44-27-13-00000.0690	N/A	1.31
HCGCP	State of FL	06-44-27-01-00222.0130	N/A	0.28
HCGCP	State of FL	06-44-27-01-00223.0040	N/A	0.25
HCGCP	State of FL	06-44-27-01-00223.0100	N/A	0.27
HCGCP	State of FL	05-44-27-00-00000.0040	N/A	0.30
HCGCP	State of FL	05-44-27-00-00000.0090	N/A	2.50
HCGCP	State of FL	06-44-27-01-00222.0020	N/A	0.42
HCGCP	State of FL	06-44-27-01-00222.0030	N/A	0.38
HCGCP	State of FL	06-44-27-01-00222.0040	N/A	0.38
HCGCP	State of FL	06-44-27-01-00222.0050	N/A	0.45
HCGCP	State of FL	06-44-27-01-00222.0060	N/A	0.32
HCGCP	State of FL	06-44-27-01-00222.0090	N/A	0.28
HCGCP	State of FL	06-44-27-01-00222.0100	N/A	0.28
HCGCP	State of FL	06-44-27-01-00222.0120	N/A	0.28
HCGCP	State of FL	06-44-27-01-00223.0070	N/A	0.42
HCGCP	State of FL	06-44-27-01-00223.0090	N/A	0.32

[a] *C20/20 parcel numbers reflect the order in which properties are nominated to the C20/20 land acquisition program. N/A denotes that a parcel was not acquired by the C20/20 program but by an alternate source of funds.*

[b] *when parcels and STRAP numbers were consolidated, STRAP 05-44-27-00-00000.0080 combined three parcels, 2 of which were purchased by the C20/20 program and the third purchased by monies in the County's General Fund.*

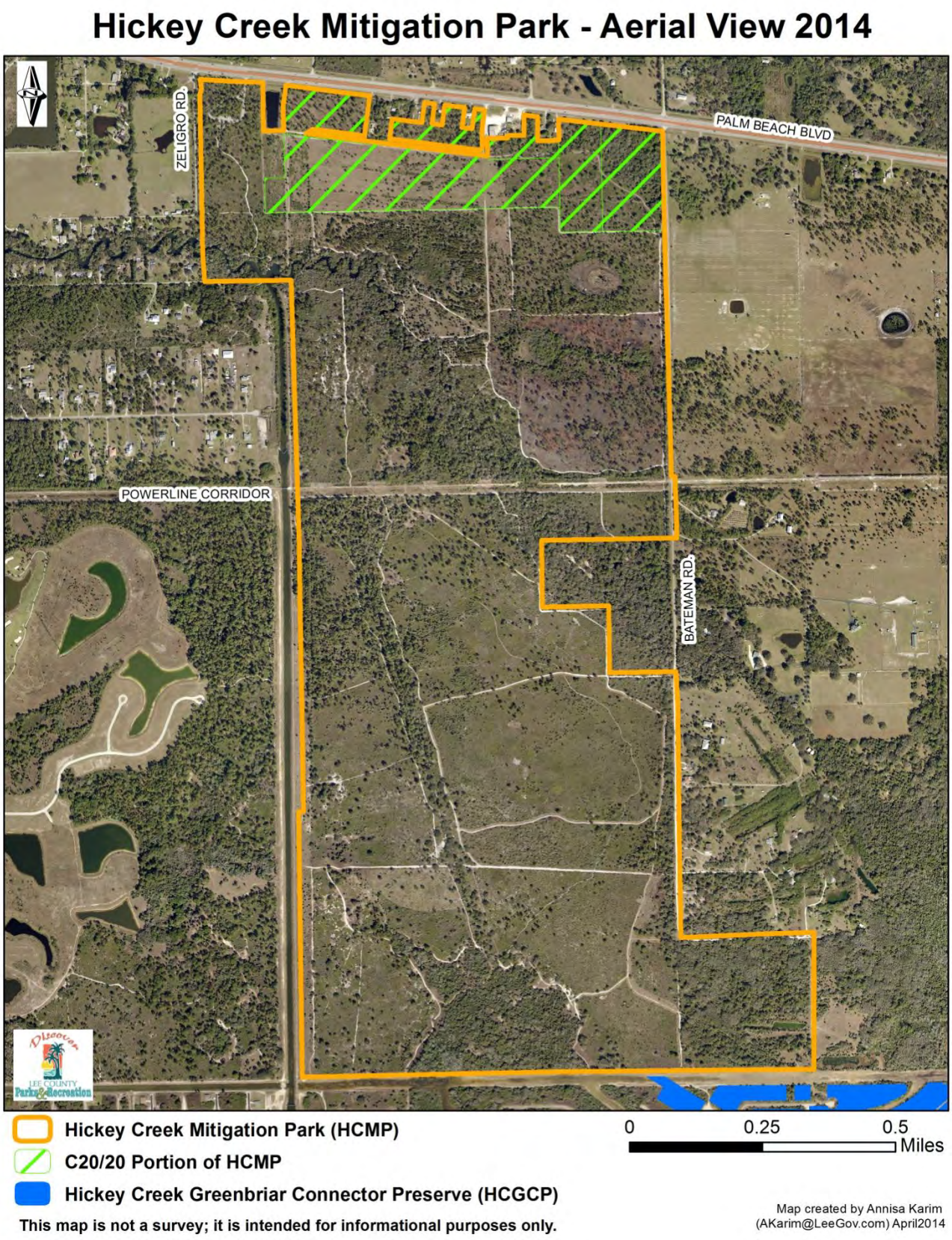
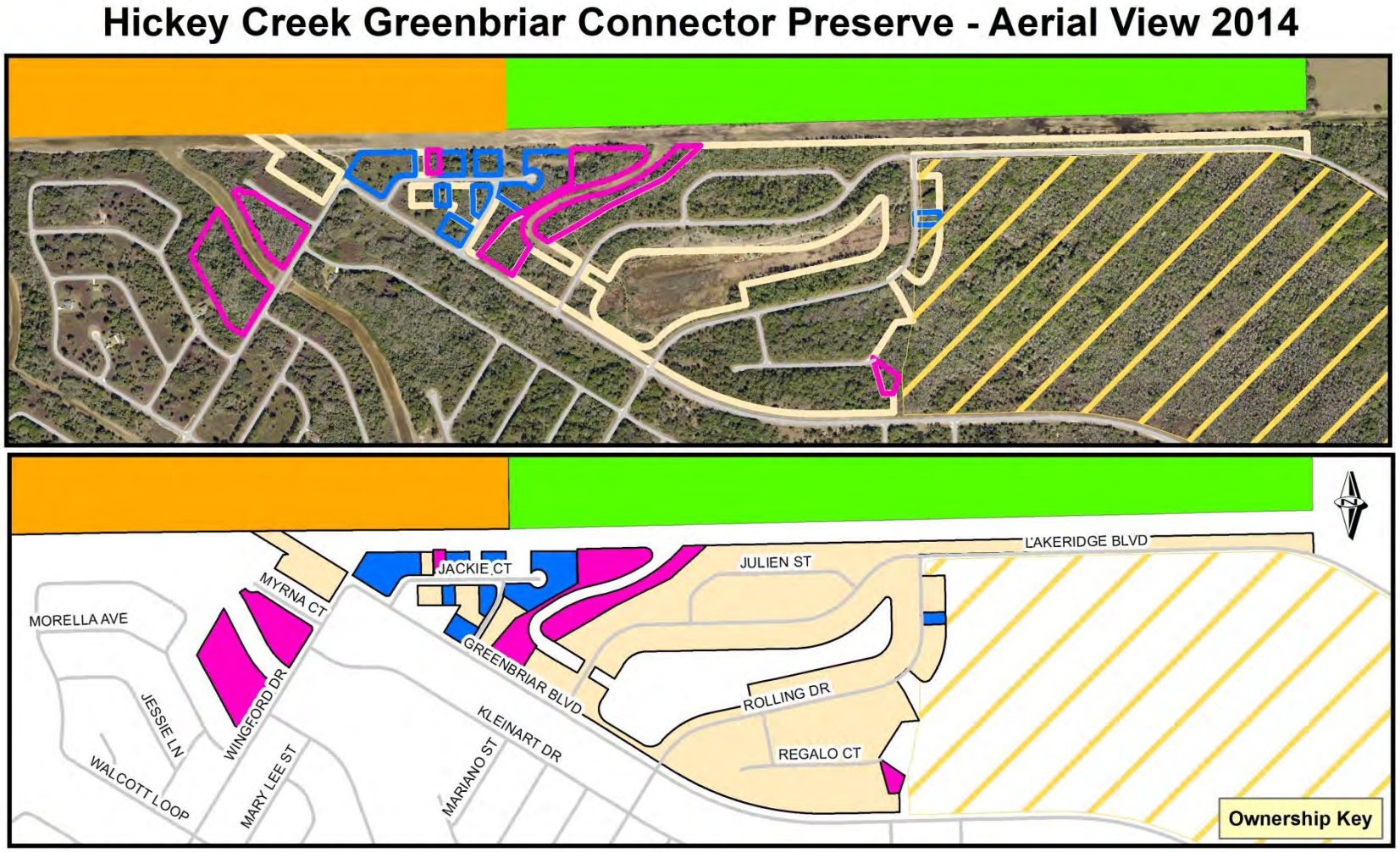


Figure 2: Aerial Map of HCMP.

Figure 3: Aerial Map of HCGCP



IV. Natural Resources Description

A. Physical Resources

i. Climate

General information on the climate of southwest Florida may be found in the Land Stewardship Operations Manual's (LSOM) Land Stewardship Plan Development and Supplemental Information section.

ii. Geology

Specific information on geologic features such as physiographic regions, formations and maps may be found in the LSOM's Land Stewardship Plan Development and Supplemental Information section.

iii. Topography

The topographical features of an area identify the "shape" of the land as determined by major natural or man-made components. The topography of both HCMP and HCGCP may be described as low relief. Elevations within HCMP range from a low of approximately two feet along the creek to a high of twenty feet on the tram road bed. The tram road bed, which runs for approximately one mile through the site, has elevations three to five feet higher than the natural topography (Figure 4). Elevations within HCGCP range from twelve feet to eighteen feet (Figure 5). A specified history of the land alteration is presented in the Land Use History section of this plan.

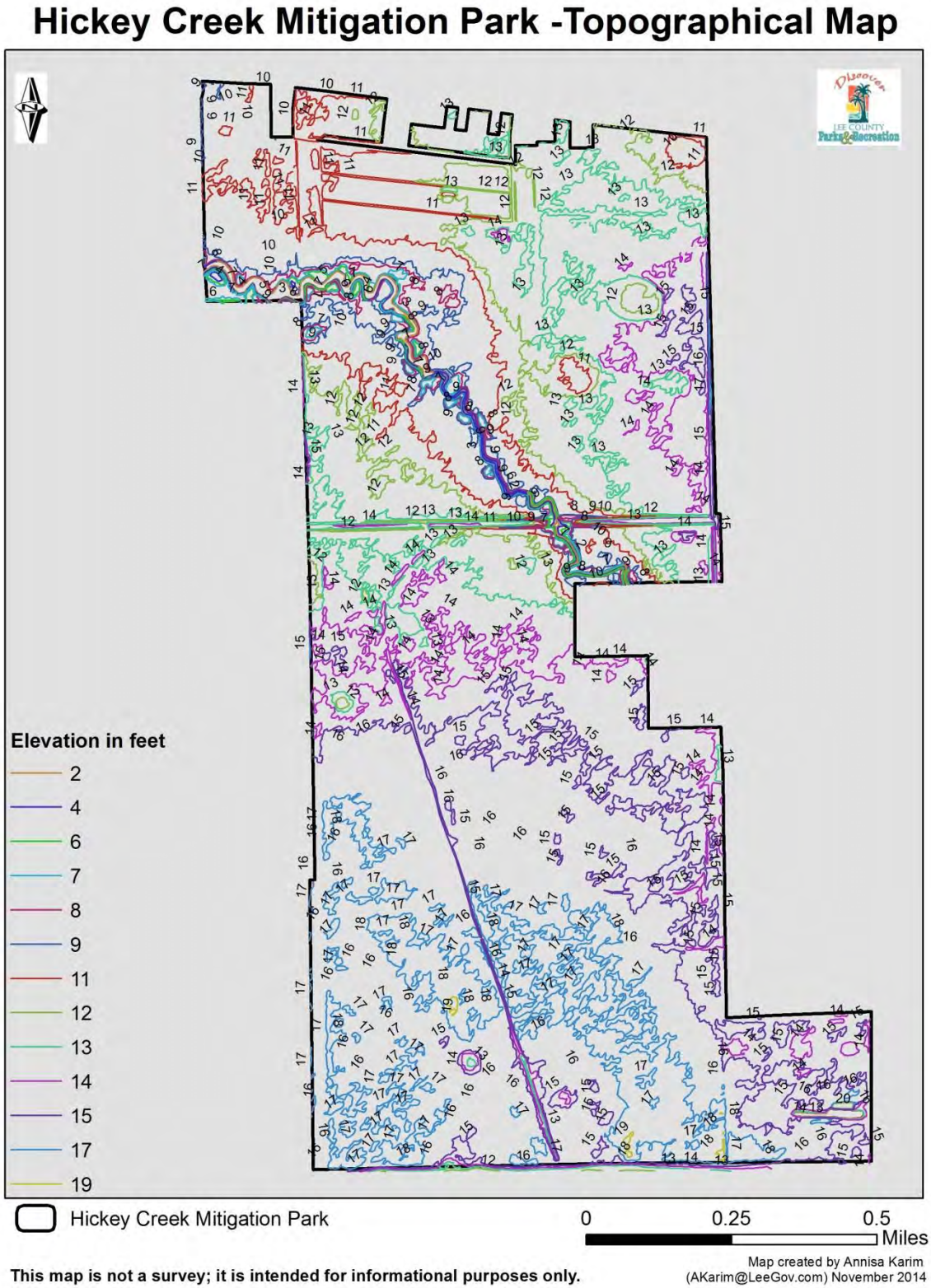


Figure 4: Topographical Map for HCMP.

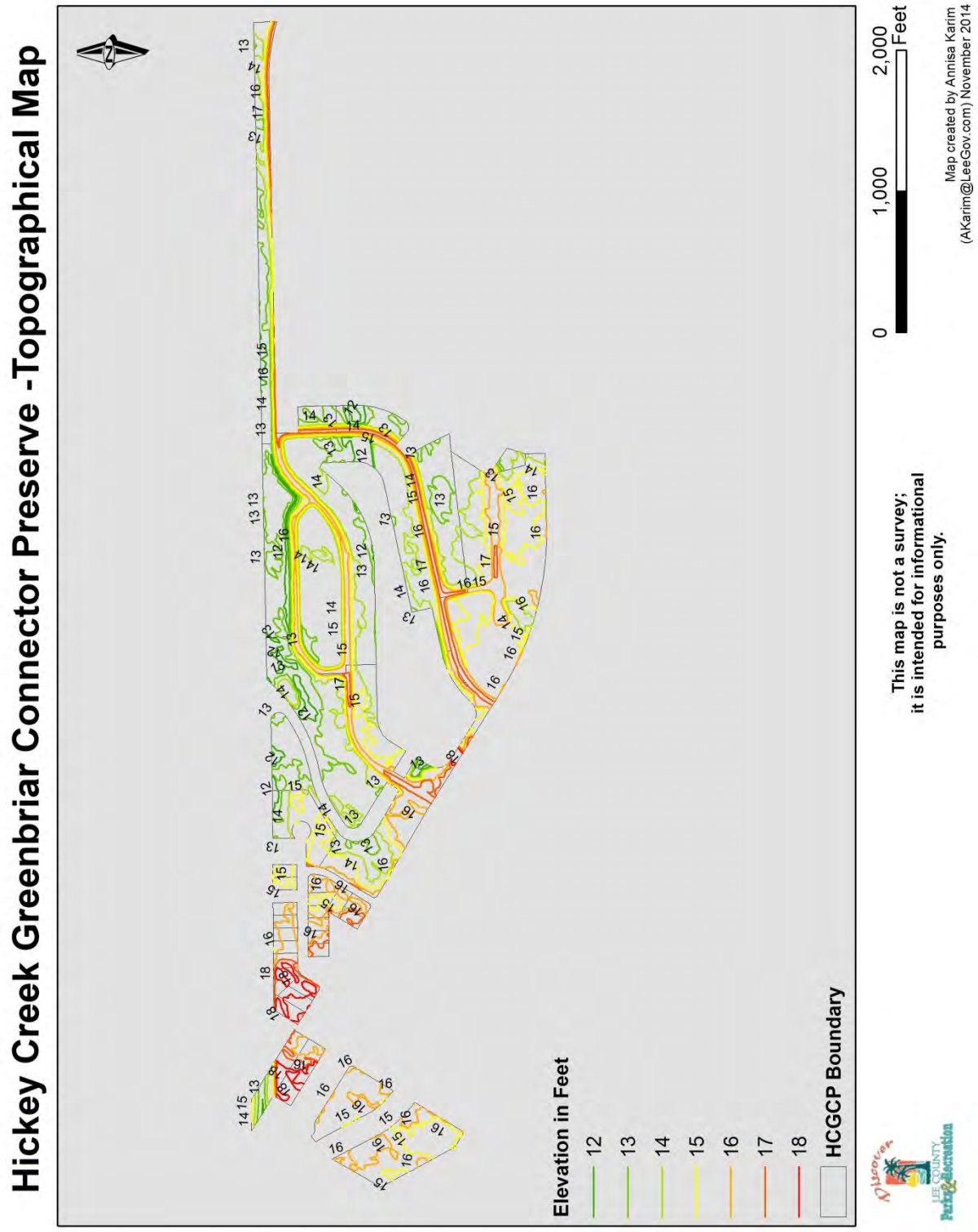


Figure 5: Topographical Map for HCGCP.

iv. Soils

Soils and their properties determine which plant communities they can support. The objective of soil mapping is to separate the landscape into landforms or landform segments that have similar use and management requirements (not to delineate pure map unit components). Because of slight errors associated with the mapping of soils and interpretations within the ArcGIS program, the acreages and percentages provided here are close approximations and communicate valuable information for stewardship and operations personnel.

The U. S. Department of Agriculture (via the Natural Resources Conservation Service) and the South Florida Water Management District (SFWMD) report sixteen different soil types for HCMP (Table 2, Figure 6). Table 2 provides the approximate acreages and percentages of HCMP that each of these soils cover, whether each soil is considered hydric or not, and each soil's general drainage class. Soils data indicate that nine of the sixteen soils found within HCMP are non-hydric and make-up approximately 88% of the site. Non-hydric soils are those that, in un-drained conditions, are not saturated or ponded; they do not develop anaerobic conditions that favor the growth of wetland plants.

Six different soil types are reported for HCGCP (Table 3, Figure 7). Table 3 provides the approximate acreages and percentages of HCGCP that each of these soils cover, whether each soil is considered hydric or not, and each soil's general drainage class. Soils data indicate that three of the six soil types mapped within HCGCP are hydric and make-up approximately 86% of the site. Hydric soils are those those soils that are sufficiently wet in the upper part to develop anaerobic conditions during the growing season. These soil types are common for wetland communities.

In addition to the types of soil found in an area, environmental variables such as climate, topography, and hydrologic factors influence the types of plant communities found there. Further information on soils is located in the LSOM's Land Stewardship Plan Development and Supplemental Information section.

Table 2: Coverage, Hydric Designation and Drainage Class of Soils within HCMP.

SOIL TYPE	HYDRIC?	DRAINAGE CLASS	Acres*	% of HCMP*
IMMOKALEE SAND	NO	POORLY DRAINED	226.15	26.16
OLDSMAR SAND	NO	POORLY DRAINED	211.10	24.42
WABASSO SAND, LIMESTONE SUBSTRATUM	NO	POORLY DRAINED	153.00	17.70
BOCA FINE SAND	NO	POORLY DRAINED	86.87	10.05
BOCA FINE SAND, SLOUGH	YES	POORLY DRAINED	52.77	6.11
WABASSO SAND	NO	POORLY DRAINED	48.04	5.56
HALLANDALE FINE SAND	YES	POORLY DRAINED	31.69	3.67
MYAKKA FINE SAND	NO	POORLY DRAINED	13.00	1.50
DAYTONA SAND	NO	MODERATELY WELL DRAINED	11.00	1.27
MYAKKA FINE SAND, DEPRESSIONAL	YES	VERY POORLY DRAINED	6.37	0.74
MATLACHA GRAVELLY FINE SAND, LIMESTONE SUBSTRATUM	NO	SOMEWHAT POORLY DRAINED	6.13	0.71
PINEDA FINE SAND	YES	POORLY DRAINED	5.67	0.66
COPELAND SANDY LOAM, DEPRESSIONAL	YES	VERY POORLY DRAINED	4.26	0.49
PINEDA FINE SAND, DEPRESSIONAL	YES	VERY POORLY DRAINED	3.35	0.39
BRADENTON FINE SAND	YES	POORLY DRAINED	2.62	0.30
COCOA FINE SAND	NO	MODERATELY WELL DRAINED	2.31	0.27
* Due to rounding values, total acreages (and therefore percentages) may not equal the true acreage of HCMP. These numbers are approximations.				

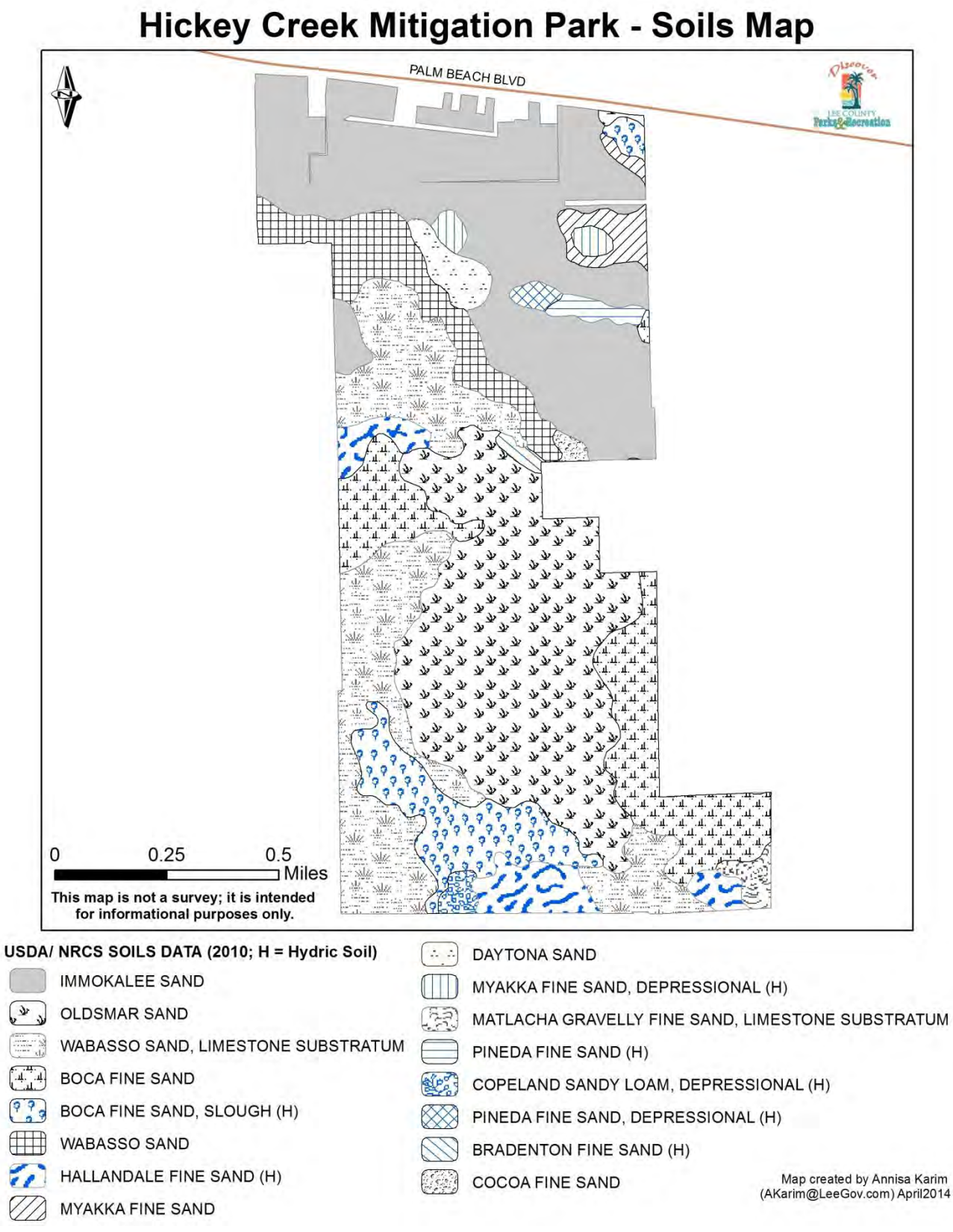


Figure 6: Soils Map for HCMP

Table 3: Coverage, Hydric Designation and Drainage Class of Soils within HCGCP.

SOIL TYPE	HYDRIC?	DRAINAGE CLASS	Acres*	% of HCGCP*
HALLANDALE FINE SAND	YES	POORLY DRAINED	47.79	49.57
COPELAND SANDY LOAM, DEPRESSIONAL	YES	VERY POORLY DRAINED	32.60	33.81
WABASSO SAND, LIMESTONE SUBSTRATUM	NO	POORLY DRAINED	11.09	11.50
BOCA FINE SAND, SLOUGH	YES	POORLY DRAINED	2.54	2.64
BOCA FINE SAND	NO	POORLY DRAINED	1.33	1.38
MATLACHA GRAVELLY FINE SAND, LIMESTONE SUBSTRATUM	NO	SOMEWHAT POORLY DRAINED	1.06	1.10
* Due to rounding values, total acreages (and therefore percentages) may not equal the true acreage of HCGCP. These numbers are approximations.				

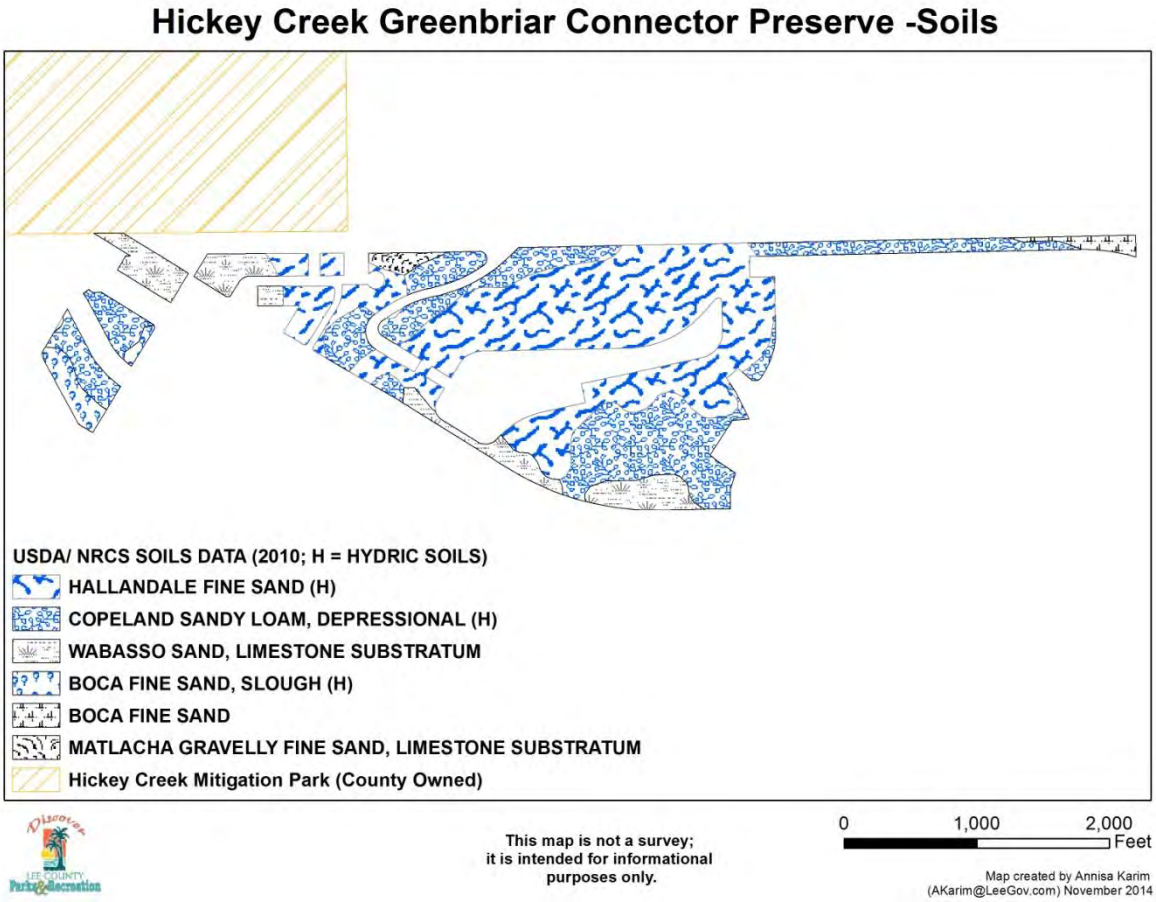


Figure 7: Soils Map for HCGCP

v. Watershed and Hydrologic Components

A watershed is a region draining into a specific body of water. Topography, geology, soils, biological communities and anthropogenic alterations to a landscape influence the rate and way in which water flows and/ or drains through a landscape. The SFWMD delineates watersheds within its boundaries. This agency further delineates basins within each of these watersheds. The Caloosahatchee River Watershed contains six (6) drainage basins. HCMP and HCGCP lie within the West Caloosahatchee Basin of the Caloosahatchee River Watershed. The Lee County Division of Natural Resources (LCDNR) divides Lee County into 48 different watersheds. These watersheds are based on a more refined scale compared to SFWMD's designations because LCDNR's area of monitoring and restoration is much smaller. According to LCDNR data, HCMP and HCGCP lie within the Hickey Creek Watershed that covers 29.3 square miles (Figure 8).

In 1974, the United States Fish and Wildlife Service (USFWS) directed its office of Biological Services to conduct an inventory of the nation's wetlands. This National Wetlands Inventory (NWI) became operational in 1977. Wetlands were identified on the photography by vegetation, visible hydrology and geography, and subsequently classified in general accordance with the Classification of Wetlands and Deep Water Habitats of the United States (Cowardin et al. 1979). Federal agencies, state agencies, local agencies, academic institutions and private industry use this information for management, research, policy development, education and planning activities. Palustrine wetlands are often called swamps, marshes, potholes, bogs, or fens. These types of wetlands also include the small, shallow, permanent or intermittent water bodies often called ponds. These systems are all non-tidal wetlands dominated by trees, shrubs, persistent emergent aquatic plants, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5%.

The NWI identifies three types of palustrine wetlands (Freshwater Forested/Shrub Wetland, Freshwater Emergent Wetland, and Freshwater Pond) and Riverine wetlands within HCMP (Figure 9). Two types of palustrine wetlands are identified within HCGCP (Freshwater Forested/Shrub Wetlands and Freshwater Emergent Wetlands). Not surprisingly, these wetlands comprise a majority of HCGCP (Figure 9).

Hydrology is the study of the distribution, movement, and quality of water of a given area. Underlying soils across a landscape, groundwater table variations, the rate of evapotranspiration, and the amount of precipitation determine the distribution of water across an area. The vegetated wetlands within HCMP and HCGCP are discussed in the "Natural Plant Communities" section of this document. However, it is important to note that geographically isolated wetlands are not necessarily hydrologically disconnected. Wetland-groundwater interactions can influence regional hydrology. The saturation level of buffering uplands and inundated, isolated wetlands influence water level responses and can cause isolated wetlands to act as both groundwater sinks and sources. Some of these wetlands are saturated during the summer rainy season and after periods of heavy rainfall in other seasons. This coupled with poorly drained soils underlying upland soils can cause vast differences in water distribution throughout the year.

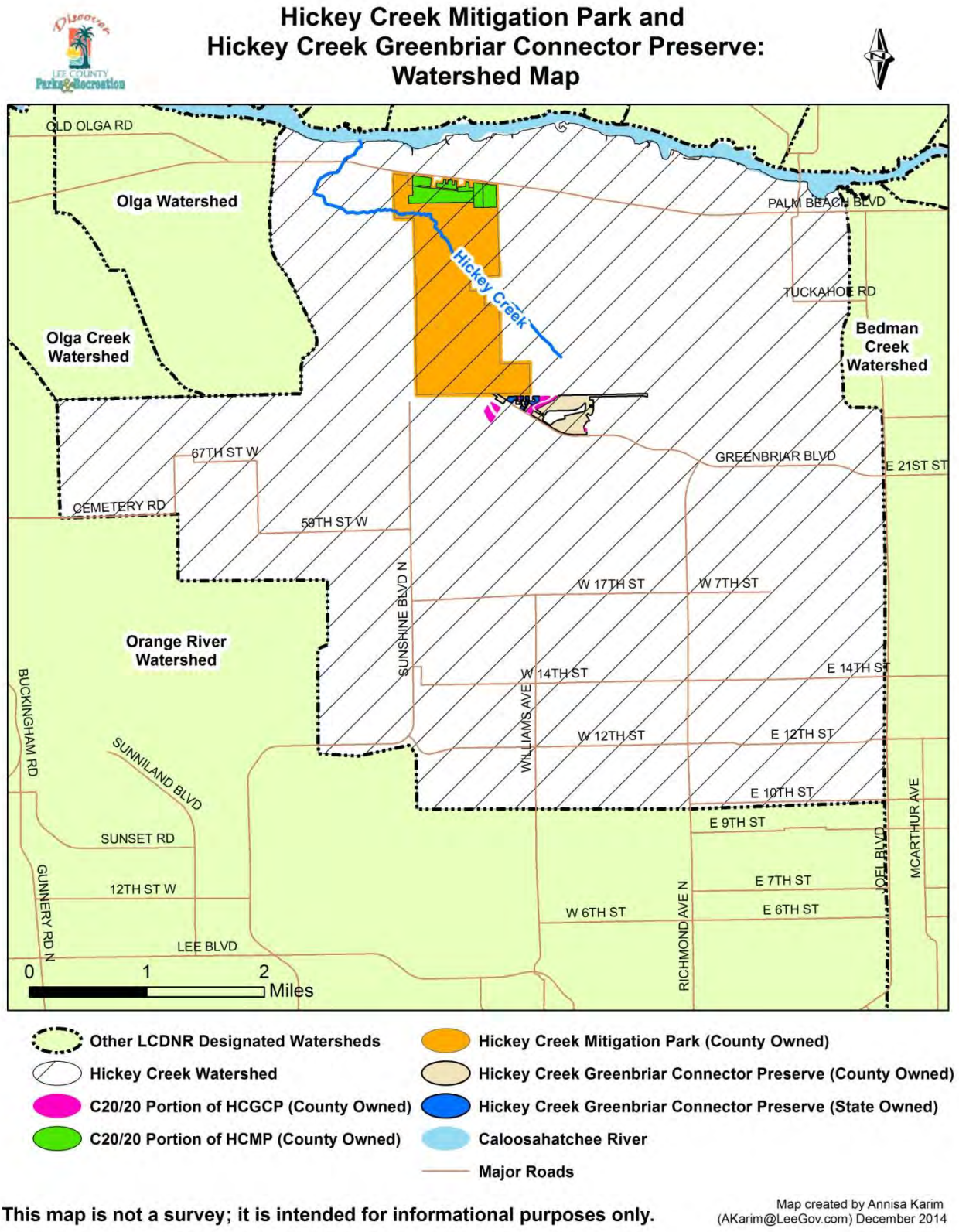


Figure 8: Watershed Map.

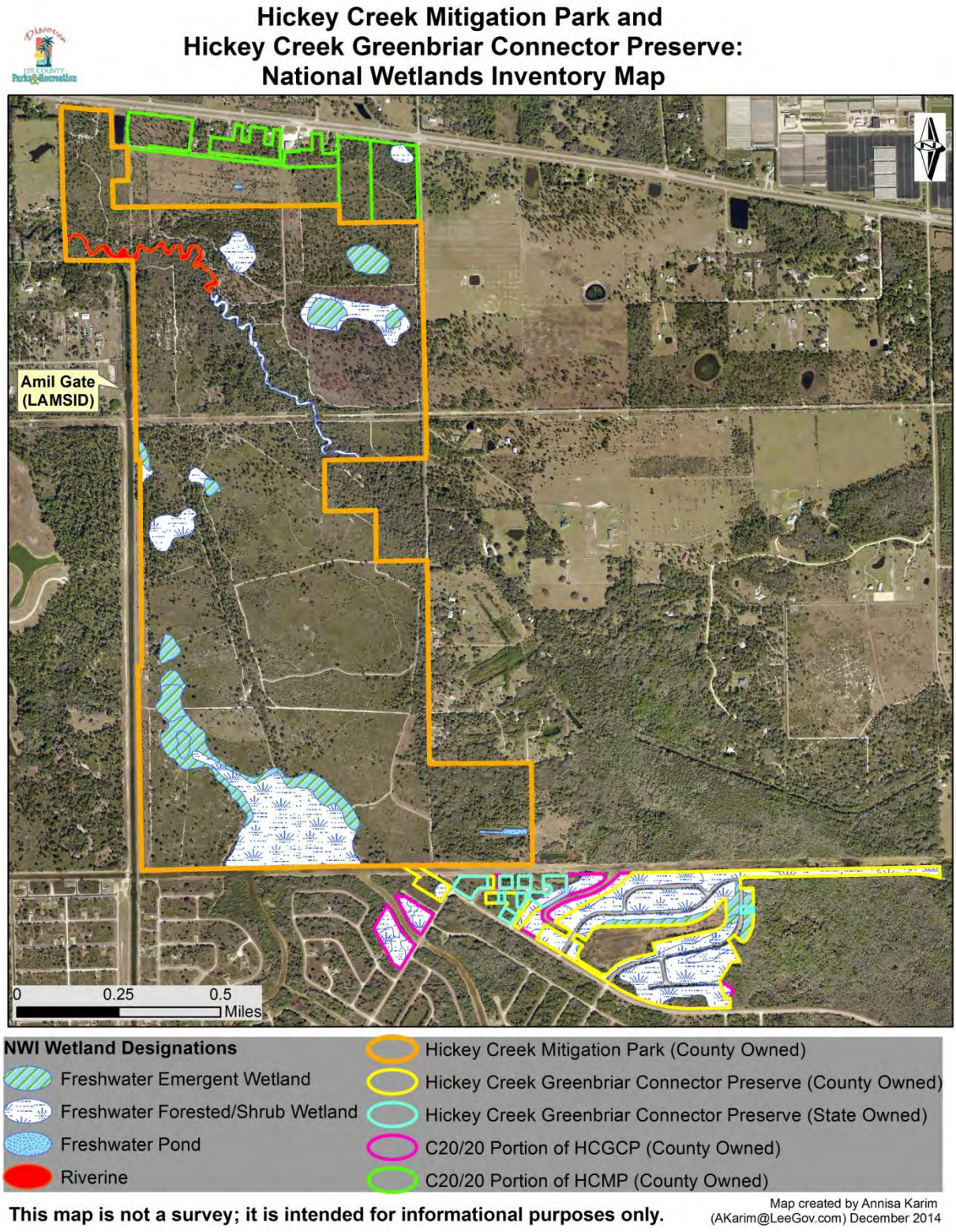


Figure 9: National Wetlands Inventory Map.

Hickey Creek, a tributary of the Caloosahatchee River, runs in a southeast to northwest direction across HCMP. The water elevation of Hickey Creek is contingent upon several artificial water management structures. One is the Franklin Lock, which is the last lock in the Caloosahatchee River before it enters San Carlos Bay. It is located approximately 3 miles downstream and to the west of HCMP and is operated by the U.S. Army Corps of Engineers. The other structure is a counterbalance weir (Amil Gate – shown in Figure 9) operated LAMSID and located in Hickey Creek Canal north of the powerline corridor along the west park boundary. This weir was designed to provide continuous flow to Hickey Creek.

Hickey Creek is a natural conveyance, from its intersection with the Caloosahatchee River through and beyond the park boundaries. There are no water control structures along the length of Hickey Creek from its confluence with the Caloosahatchee River to its upper channelized end. The Hickey Creek canal is within the LAMSID management area.

The Lee County Environmental Laboratory, a part of the Lee County Division of Natural Resources, uses six water quality indicators (chlorophyll, dissolved oxygen, total nitrogen, total phosphorus, total suspended solids, and enterococcus bacteria) to calculate a watershed water quality index (WSWQI). The average value of each parameter is calculated for the watershed site every year. In order to calculate the WSWQI, a unitless value is assigned to each indicator concentration. A higher number indicates better water quality. This provides an efficient and standard method for the lab to make comparisons over all of the watershed sites. Figure 10 shows the overall condition of Hickey Creek from 2007 – 2014.

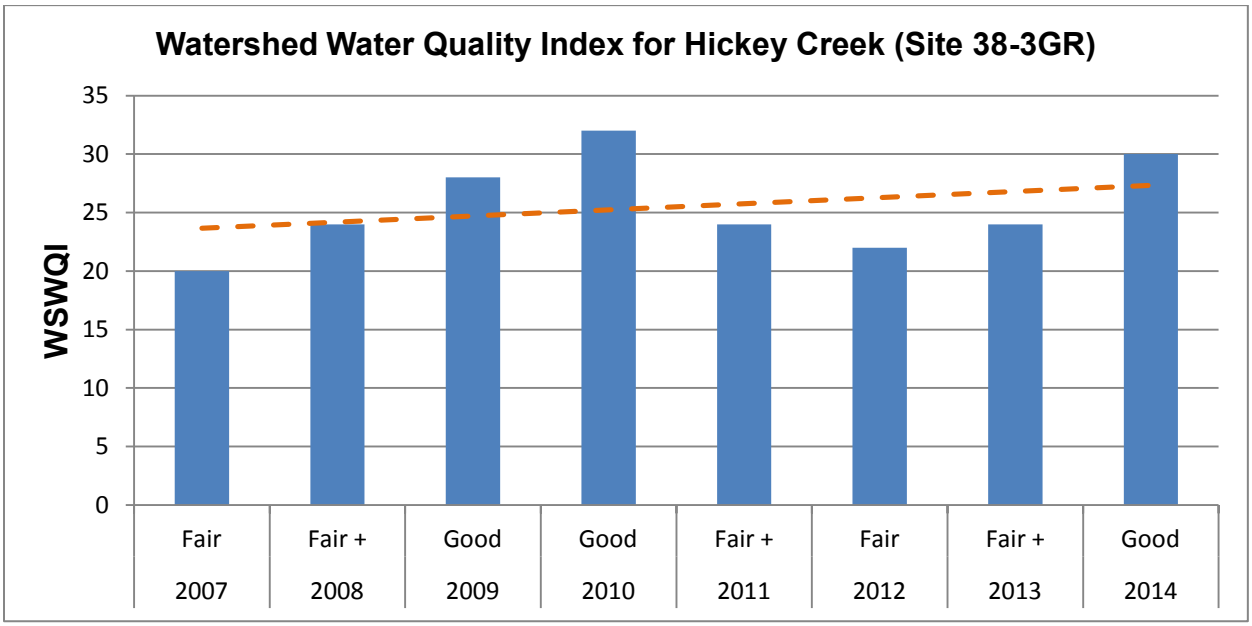


Figure 10: Watershed Water Quality Index Data from 2007 - 2014.

The HCMP Land Stewardship Plan from 2003 stated, “Evidence that at least portions of HCMP have been impacted by drainage is indicated by changes in plant species composition of the wetland areas near and adjacent to the southern boundary. As the hydroperiod was reduced, these formerly forested cypress systems are being replaced by transitional and upland species less tolerant of the historic hydroperiod characteristic of a cypress system.” Staff continues to see this transition occurring with the Cypress dome being quickly invaded by various oaks (commonly found in shorter hydroperiods and dry areas), hog plum (*Ximenia americana*), and cabbage palms (*Sabal palmetto*). While these trees and shrubs are native species, they are not typically found in healthy cypress systems.

General information on hydrologic components and watershed is located in the LSOM’s Land Stewardship Plan Development and Supplemental Information section.

B. Biological Resources

i. Ecosystem Function

Ecosystem services such as the protection of water resources, flood control, maintenance of nutrient cycles, preservation of biological diversity, carbon sequestration, and the availability of recreational lands are imperative for the well-being of the citizens of Lee County and may be achieved through the preservation and appropriate stewardship of natural areas.

Lee County’s preserves and some of its parks contain a diversity of plant communities that provide habitat for numerous plant and animal species. The majority of these preserves and parks are not islands of habitat; rather, they are pieces of a larger conservation effort striving to create or maintain healthy and viable ecosystems. Ecosystem function information is located in the LSOM’s Land Stewardship Plan Development and Supplemental Information section.

ii. Natural Plant Communities

The term “plant community” refers to the suite of floristic (plant) species that form the natural (i.e., native) vegetation of any place. In addition to anthropogenic influences, the combination of factors such as geologic, topographic and hydrologic assemblages, underlying soils and climate determine the types of plants found in an area. These plants, in turn, determine the animal species that may be found there.

Various agencies and entities classify land use and land cover in different ways. Their alternative classification approaches and systems address their own particular needs. When compiling data from multiple entities, there arises a need to be able to appropriately and consistently compare the vegetation classifications. This method is called “crosswalking” and is dependent on understanding the hierarchical components

of classifications being compared. Staff used the Cooperative Land Cover Map (version 2) to map the plant communities within HCMP and HCGCP. The data were then crosswalked to match FNAI community types based on the Guide to the Natural Communities of Florida (2010) prepared by FNAI. Where the data indicated more of a land use (e.g., low intensity urban) rather than a land cover, staff relied on the classification of surrounding plant communities and firsthand knowledge of the parcels. Two communities (Improved Pasture and Artificial Lakes and Ponds) could not be crosswalked due to their current state.

Descriptions of the plant communities and characteristic animals found within each community, as well as management suggestions may be found in the LSOM. A complete list of plant species identified for HCMP and HCGCP may be found in Appendix F.

HCMP is comprised of eleven plant communities; HCGCP is comprised of seven plant communities. Table 4 lists these plant communities in order of decreasing abundance over both of the preserves and Figures 11 and 12 show their geographic distribution within each conservation area.

Table 4: Coverage of FNAI Designated Plant Communities within HCMP and HCGCP.

2010 FNAI Plant Community Designation	HCMP		HCGCP	
	Acres*	% of HCMP*	Acres*	% of HCGCP*
Mesic Flatwoods	534.83	62.11	10.05	10.48
Scrubby Flatwoods	115.57	13.42	---	---
Upland Hardwood Forest	78.60	9.13	---	---
Wet Flatwoods	---	---	45.64	47.61
Mesic Hammock	38.31	4.45	1.77	1.85
Improved Pasture^	28.16	3.27	---	---
Prairie Hydric Hammock	---	---	25.36	26.46
Depression Marsh	18.51	2.15	---	---
Scrub	18.10	2.10	---	---
Basin Swamp	16.92	1.97	---	---
Slough Marsh	---	---	7.49	7.81
Blackwater Stream	6.26	0.73	---	---
Strand Swamp	---	---	5.28	5.51
Dome Swamp	4.09	0.48	0.28	0.29
Artificial Lakes and Ponds^	0.76	0.09	---	---

*Due to rounding values, total acreages may not equal the true acreage of the communities found within HCMP and HCGCP. These numbers are approximations only. The parking lot accounts for approximately 0.98 acres of HCMP.
^ These plant communities could not be crosswalked to match 2010 FNAI designations.

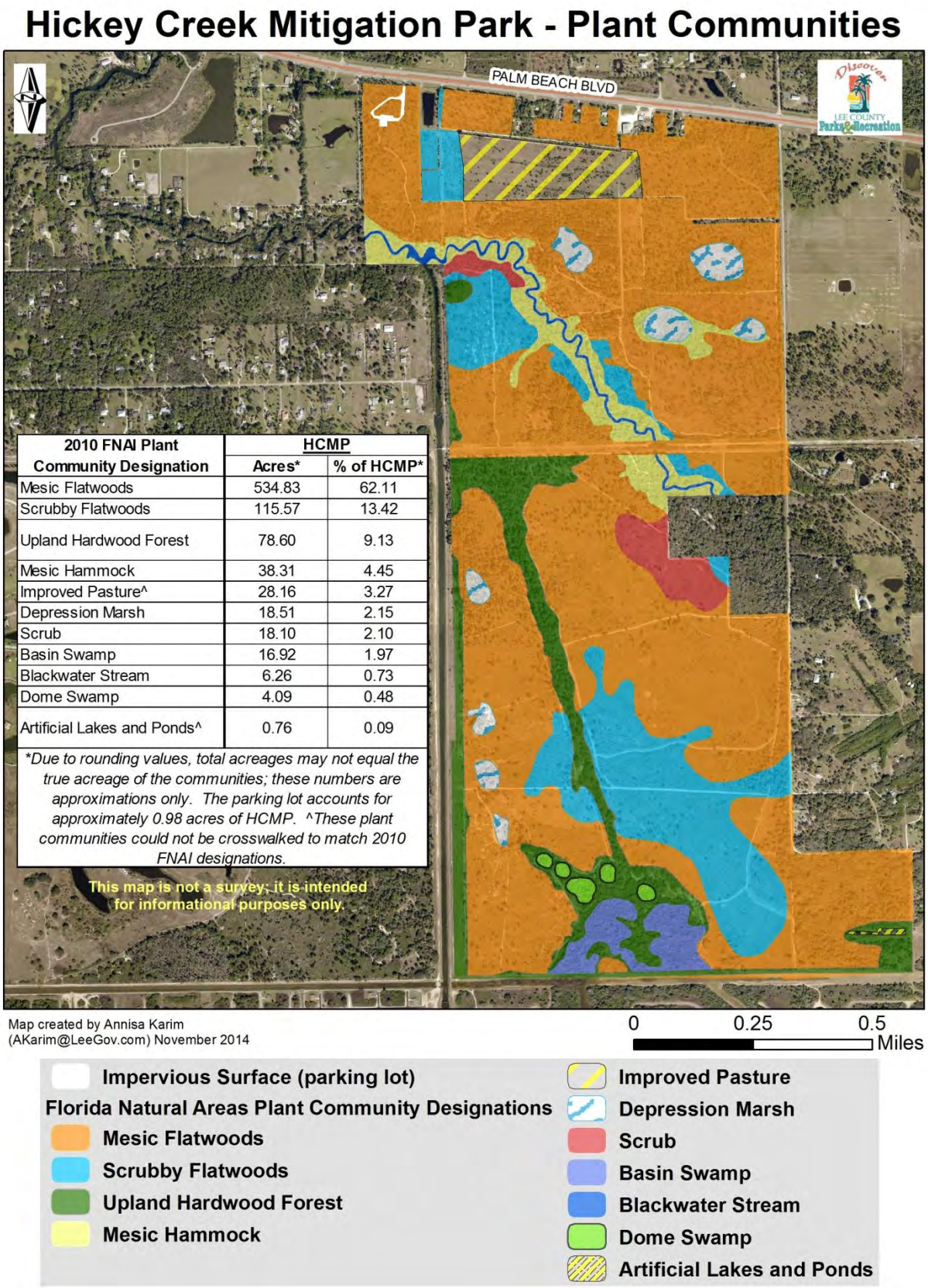


Figure 11: HCMP Plant Community Map Based on FNAI Designations (FNAI, 2010).

Hickey Creek Greenbriar Connector Preserve: Plant Communities

Map created by Annisa Karim (AKarim@LeeGov.com)
November 2014; Aerial Image 2014

0 1,000 2,000 Feet

FNAI Plant Community Designations

- Wet Flatwoods
- Prairie Hydric Hammock
- Mesic Flatwoods
- Slough Marsh
- Strand Swamp
- Mesic Hammock
- Dome Swamp

Roads (Impervious Surfaces)

This map is not a survey; it is intended for informational purposes only.

2010 FNAI Plant Community Designation	HCGCP	
	Acres*	% of HCGCP*
Wet Flatwoods	45.64	47.61
Prairie Hydric Hammock	25.36	26.46
Mesic Flatwoods	10.05	10.48
Slough Marsh	7.49	7.81
Strand Swamp	5.28	5.51
Mesic Hammock	1.77	1.85
Dome Swamp	0.28	0.29

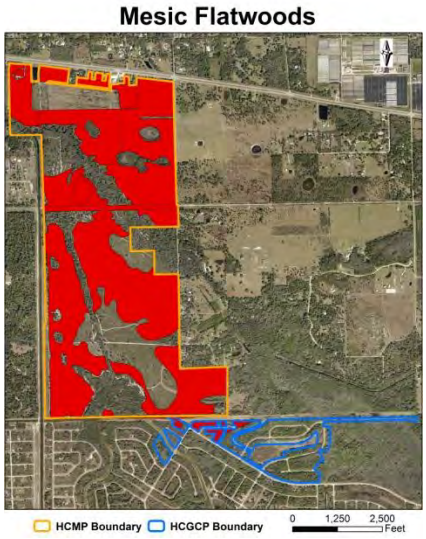
**Due to rounding values, total acreages may not equal the true acreage of the communities; these numbers are approximations only.*

Figure 12: HCGCP Plant Community Map Based on FNAI Designations (FNAI, 2010).

Mesic Flatwoods

(534.83-acres and 62.11% of HCMP;

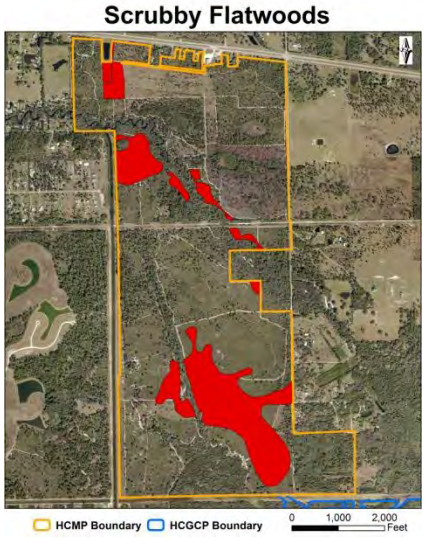
10.05-acres and 10.48% of HCGCP)



Mesic Flatwoods are the dominant plant community (62.11%) within HCMP but only cover approximately 10.48% of HCGCP. As would be expected, non-hydric soils underlie the majority of mesic flatwoods within HCMP. However, within HCMP, hydric soils underlie the majority of the mapped mesic flatwood area. Standing water is common for brief periods during the rainy season. Exotics present include Brazilian pepper (*Schinus terebinthifolia*), rosary pea (*Abrus precatorius*), natalgrass (*Melinis repens, synonym Rhynchelytrum repens*) and Guineagrass (*Panicum maximum*). Within the plant community is included the electrical transmission line that bisects HCMP in an east - west orientation. The Florida Power and Light Co. (FPL) manage the line and their management guidelines input controls to minimize the growth of potentially large trees. The powerline right-of-way is periodically mowed by FPL but flora on the edges of the cleared areas resemble the groundcover in mesic flatwoods and for that reason, this area is included within this plant community description.

Scrubby Flatwoods

(115.57-acres and 13.42% of HCMP; does not occur within HCGCP)

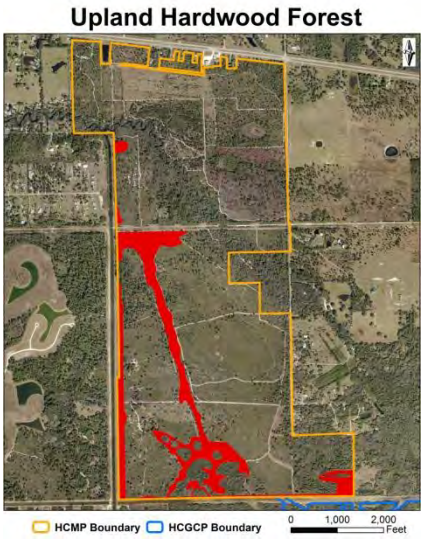


The majority of scrubby flatwoods within HCMP is found south of the powerline easement. Visitors may see representative scrubby flatwoods systems on the western part of the Hickey Creek Trail and the southeastern portion of the Palmetto Pines Trail.

Scrubby flatwoods and scrub communities are difficult to keep within a consistent fire regime due to the low humidly required to properly burn these areas. Low humidity days often coincide with fire bans in this part of Florida. One of the ways FWC staff has adapted to the challenge of burning scrubby flatwoods is my first mowing the fuels prior to burning. This transfers the vegetative biomass from the “air” to the ground. When this vegetation dries, it is likely to burn more readily under relatively higher humidity conditions thereby allowing the site to stay within a fire regime. While this is “mow first” method is not always employed, it is a tool used by land managers to accomplished desired goals under certain conditions.

Upland Hardwood Forest

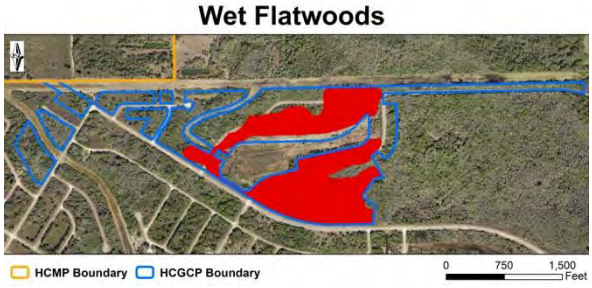
(78.60-acres and 9.13% of HCMP; does not occur within HCGCP)



The majority of the upland hardwood forest plant communities within HCMP is found south of the powerline easement. The powerline easement (corridor) that crosses HCMP in an east/ west direction was the location of a portion of the Seaboard Air Line Railway used to take raw lumber to the mills before the 1940s. The current location of the western portion of the Palmetto Pines hiking trail was the spur of the railroad built to gather logs off of the main railway. The construction of the "spur" required elevating the land to build a railway line. This resulted in an altered plant community designated, today, as upland hardwood forest. This is seen on the map as the "line" running from the western portion of the powerline in a southeastern direction. Similar to naturally occurring mixed hardwoods, this plant community is a well-developed, closed-canopy forest dominated by deciduous hardwood trees in areas sheltered from fire. It has a diverse assemblage of deciduous and evergreen tree species in the canopy and midstory, shade-tolerant shrubs, and a sparse groundcover.

Wet Flatwoods

(not mapped within HCMP; 45.64-acres and 47.61% of HCGCP)

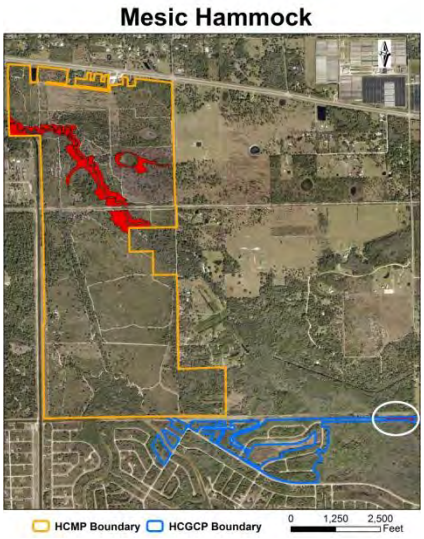


Wet flatwoods are the most abundant plant community mapped within HCGCP. This community surrounds the deeper marsh managed by the LAMSID. Exotics, particularly Brazilian pepper, are a management challenge in this portion of HCGCP.

Mesic Hammock

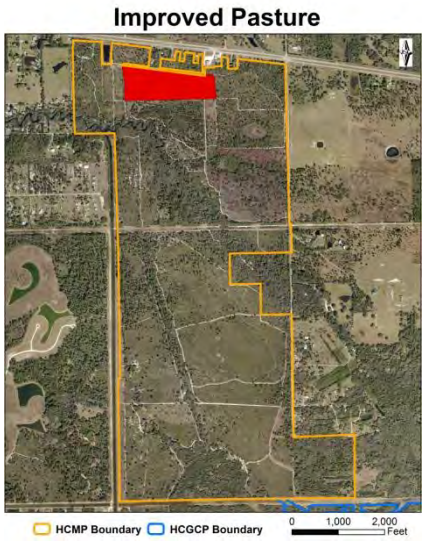
(38.31-acres and 4.45% of HCMP; 1.77-acres and 1.85% of HCGCP)

While mesic hammocks account for less than 5% of HCMP, they are an important community. They provide essential buffer areas to Hickey Creek. Like the mixed hardwood forests, they are considered upland hardwood forests. Pyrogenic vegetation such as cabbage palms and saw palmetto are contained within this plant community. A large portion of the eastern arm of the Hickey Creek hiking trail and both named bridges provide visitors with good opportunities to see this plant community. The two unnamed bridges on the North Marsh hiking trail traverse mesic hammock communities.



Within HCGCP, the mesic hammock community is only present in the extreme eastern portion of the preserve (see white circle on map to the right). This provides a buffer to LAMSID's Greenbriar Swamp to the south.

Improved Pasture



(28.16-acres and 3.27% of HCMP; does not occur within HCGCP)

Improved pastures are not considered native or natural plant communities. Therefore, this plant community could not be crosswalked to match an FNAI Community. These altered landscapes have been cleared of their natural vegetation and are dominated by planted, non-native and domesticated forage species. Generally, they also undergo common agricultural practices such as mowing, grazing, burning and fertilizing (Agro-Ecology Grazing Issues Working Group, 2009). While these are not optimal communities, they do provide benefits to some species of wildlife, particularly when wetlands and other native communities are present. More than 400 species of birds have been documented in Florida, many of which utilize habitats found on ranchland (such as improved pastures) during part or all of the year (Main et al. 2000).

Approximately 28.16-acres of HCMP are designated as improved pasture. This part of HCMP reresents one of the first acquisitions by the County's C20/20 program. This land was purchased to protect the rest of the park from the effects of potential development. As exotics are treated, native species are slowly coming back.

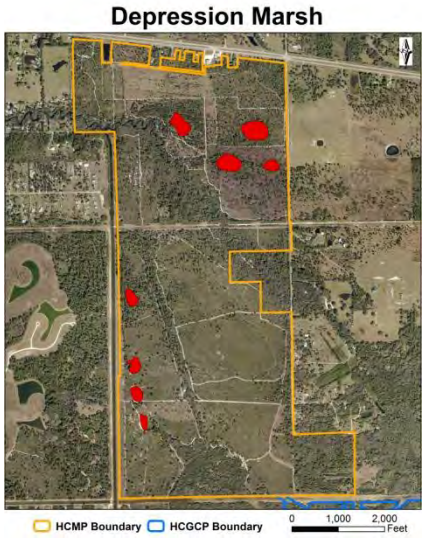
Prairie Hydric Hammock

(does not occur within HCMP; 25.36-acres and 24.46% of HCGCP)

Prairie hydric hammocks may also be thought of as mixed wetland hardwoods or mesic hammocks. The majority of the prairie hydric hammock community within HCGCP is underlain with hydric soils that are poorly drained or very poorly drained. As a result, the vegetation must be able to withstand some degree of ponding or inundation. Brazilian pepper tends to be a problem on the edges of this community.

Depression Marsh

(18.51-acres and 2.15% of HCMP; does not occur within HCGCP)

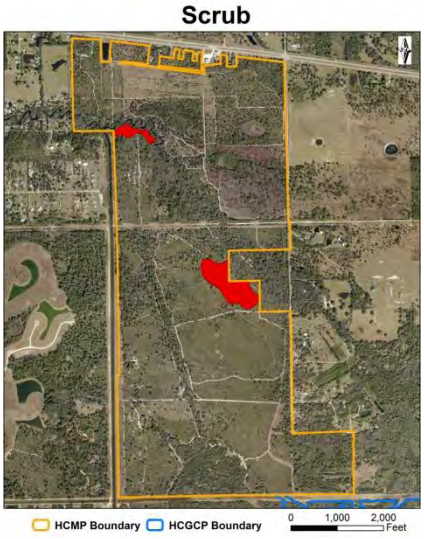


The depression marshes found within HCMP are small, isolated wetlands. They are seasonally inundated with water and are surrounded by fire-maintained communities. The depression marsh located at the overlook of the North Marsh hiking trail provides visitors with the best view of this community. The once largely herbaceous vegetation is being invaded by native, woody species such as willow (*Salix caroliniana*) and wax myrtle (*Myrica cerifera*). The marsh just north of Hickey Creek and those south of the powerline are inundated with water for a shorter period than those along the North Marsh Hiking Trail. The marsh just north of Hickey Creek contains Brazilian pepper, Guineagrass, cogongrass (*Imperata cylindrica*), Caesarweed (*Urena lobata*), and bishopwood (*Bischofia javanica*). Staff is actively treating these exotics. In November 2012, an indigo snake (*Drymarchon corais couperi)* was seen just at the edge of the depression marsh at the North Marsh tail overlook. This sighting was reported to FNAI.

Scrub

(18.10-acres and 2.10% of HCMP;

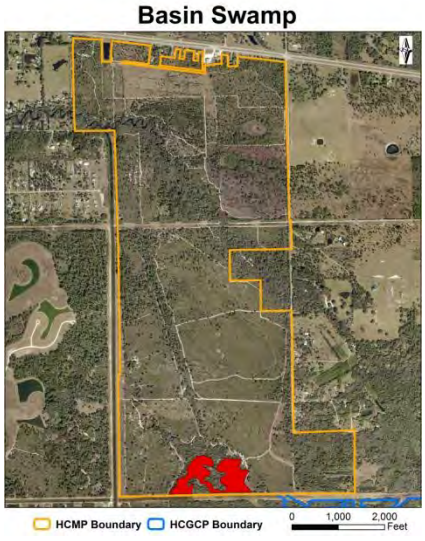
does not occur within HCGCP)



While making up only 14.53% of HCMP, the scrub and scrubby flatwood communities within HCMP are important factors in the life histories of Florida scrub-jays and gopher tortoises in the park. Poorly drained, but very deep sandy soils underlie the scrub community. As would be expected, these soils are made up of marine sediments. Three species of "scrub oaks" (*Quercus myrtiflolia, Q. geminata, Q. chapmanii*), may be found in these communities. Invasion by exotic vegetation in this community is minimal; the most challenging species are rosary pea and cogongrass.

Basin Swamp

(16.92-acres and 1.97% of HCMP; does not occur within HCGCP)



The basin swamp community is located at the extreme southern portion of HCMP. This community is typically saturated during the summer rainy season and after periods of heavy rainfall. The HCMP Land Stewardship Plan from 2003 stated, "Evidence that at least portions of HCMP have been impacted by drainage is indicated by changes in plant species composition of the wetland areas near and adjacent to the southern boundary. As the hydroperiod was reduced, these formerly forested cypress systems are being replaced by transitional and upland species less tolerant of the historic hydroperiod characteristic of a cypress system." Staff continues to see this transition occurring with the Cypress dome being quickly invaded by various oaks (commonly found in shorter hydroperiods and dry areas), hog plum, and cabbage palms. While these trees and shrubs are native species, they are not typically found in healthy cypress systems. For instance, hog plum is a facultative upland plant (Lichvar et al. 2014) yet it is forming dense thickets within this basin swamp. Additionally, Brazilian pepper is invading this area.

Slough Marsh

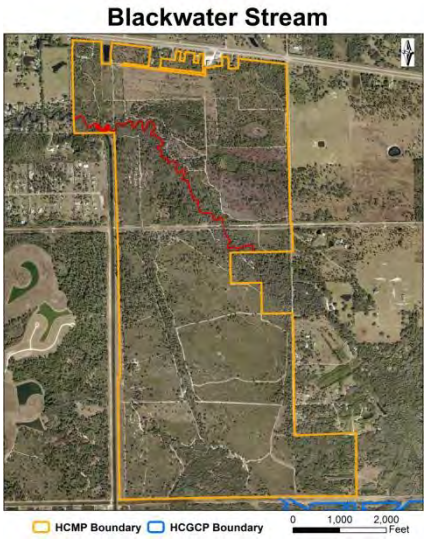
(does not occur within HCMP; 7.49-acres and 7.81% of HCGCP)

Hallendale fine sand, a hydric, poorly drained soil underlies the Slough Marsh (freshwater marshes) community within HCGCP. These freshwater marshes are saturated during the summer rainy season and after periods of heavy rainfall in other seasons. Wading birds congregate in these marshes during dry down periods. Similar to the mixed wetland hardwood community, Brazilian pepper tends to be a problem on the edges of these marshes.

Blackwater Stream

(6.26-acres and 0.73% of HCMP;

does not occur within HCGCP)



The blackwater stream (Hickey Creek) within HCMP flows from the southeast to the northwest out of the park, through residential areas, and into the Caloosahatchee River. The NWI database classifies approximately 0.67 miles of the northern portion of the creek (within HCMP) as riverine and the remaining 0.76 miles within HCMP as a freshwater/ forested shrub wetland. It is not uncommon to have a riverine system adjacent to a palustrine wetland in the same channel. During periods of heavy rainfall, water does overcome the banks of the creek but because the water is mostly slow moving, erosion is not an issue.

Strand Swamp

(does not occur within HCMP; 5.28-acres and 5.51% of HCGCP)

Dome Swamp

(4.09-acres and 0.48% of HCMP; 0.28-acres and 0.29% of HCGCP)

Strand Swamp and Dome Swamp

The strand swamp in HCGCP and the dome swamps in HCMP and HCGCP are grouped here together because of their small sizes and similarities (i.e., both are freshwater, forested wetlands). Strand swamps are generally elongated, trough-like systems whereas dome swamps are isolated, depressions (similar to depression marshes but forested). Both of these communities are dominated by cypress trees (*Taxodium* spp.). Typically, the understory of these swamps is limited due to their long hydroperiods. However, biomass of woody understory vegetation within the dome swamps in HCMP continues to increase due to the dry down of the area. During times of heavy rainfall, water flows south into the water conveyance area managed by LAMSID. Similar to the adjacent basin swamp area, staff continues to see this community being quickly invaded by various oaks (commonly found in shorter hydroperiods and dry areas) and cabbage palms. Additionally, Brazilian pepper is invading this area.

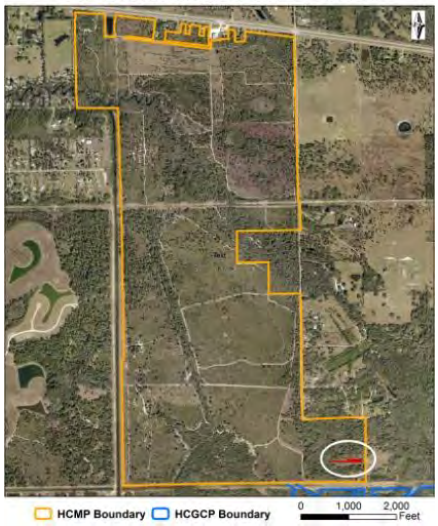
Artificial Lakes and Ponds

(0.76-acres and 0.09% of HCMP; does not occur within HCGCP)

Artificial ponds are also described as watershed impoundments, water retention ponds, cattle ponds or borrow pits.

The borrw pit is characterized as such because of the depth of water and condition of the substrate after mining activities took place. This pit, near the south end of the park, was a part of a rock mining operation during the late 1950s to the late 1960s (see circled area on map tot the right).

Artificial Lakes and Ponds



iii. Fauna

The animal species detected within HCMP and HCGCP are, in part, a result of the Preserves' location in a rural portion of the county, and the various plant communities found within their boundaries.

The acquisition of lands to form HCMP started in 1994 and was focused, specifically, towards off-site mitigation for gopher tortoises. Co-managed by LCPR and FWC, HCMP is a part of FWC's Mitigation Park Program. In general, the plant communities found within HCMP and HCGCP provide habitat for migratory and resident birds including wading birds, mammals, freshwater fish, and reptiles. Appendix G has the complete list of vertebrates recorded to date within HCMP and HCGCP.

Additional general information about fauna on all preserves can be found in the LSOM's Land Stewardship Plan Development and Supplemental Information section.

iv. Designated Species

Although all native plant and animal species found within HCMP and HCGCP have some protection due to the preservation of this property, certain species need additional attention. For stewardship purposes, all plants and animals listed by the USFWS, FWC and the Florida Department of Agriculture and Consumer Services (FDACS) will be given special consideration.

Typically, designated (i.e., those listed as endemic, rare, threatened, endangered, special concern, imperiled, critically imperiled) species will benefit from proper stewardship of the biological communities within which they occur. However, some species may require additional measures to ensure their protection. Practices likely to benefit the native flora and fauna within HCMP and HCGCP include exotic plant control, feral and exotic animal control, protecting and restoring water resources, prescribed fire applied in appropriate intervals, wildlife monitoring, roller-chopping (where appropriate) and trash removal. The enforcement of preserve rules including: no littering, no motorized vehicles and no collection of ANY natural or cultural resources (e.g., plants, animals, shells, artifacts, etc.) will also benefit the native plants and animals.

The FWC's Wildlife and Habitat Management Section takes a proactive, science-based approach to species management on lands in the Wildlife Management Area system (HCMP is within this system). They have created a Species Management Strategy (Appendix H) as a product of the Wildlife Conservation Prioritization and Recovery Program. This approach uses information from statewide models, in conjunction with input from species experts and people knowledgeable about the area, to create site-specific assessments of a number of focal species. FWC staff combines these assessments with management considerations to develop a wildlife management strategy for the area. The FWC intends for this strategy to: 1) provide land managers with information on actions that should be taken provided the necessary resources are available, 2) promote the presence and ensure the persistence of focal wildlife species on the area, and 3) provide measurable species objectives that can be used to evaluate the success of wildlife management on the area. The Species Management Strategy

presents the results of a science-based process for evaluating focal species needs using an ecosystem management approach on the Hickey Creek Wildlife & Environmental Area (aka HCMP). Natural community management designed for a set of focal species benefits a host of species reliant upon the same natural communities. Monitoring select species verifies whether natural community management is having the desired effect on wildlife. To maximize the potential wildlife conservation benefit, FWC staff considered the role of Hickey Creek Wildlife & Environmental Area in regional and statewide conservation initiatives throughout the process.

Listed Plant Species: The Florida State Statute titled "Preservation of native flora of Florida" (Statute 581.185) provides the following definitions:

> Endangered plants means 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 or threatened pursuant to the federal Endangered Species Act of 1973, as amended, Pub. L. No. 93-205 (87 Stat. 884).
>
> Threatened plants means 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 plants means species native to the state which are subject to being removed in significant numbers from native habitats in the state and sold or transported for sale.

There are 16 plant species within HCMP and HCGCP that are listed by Endangered Plant Advisory Council (Weaver and Anderson 2010): 5 as endangered, 11 as threatened. Additionally, 3 species are commercially exploited and 8 species are endemic to the state – 1 of which is endangered. (Table 5). A list of all plant species documented within HCMP and HCGCP may be found in Appendix F.

Table 5: Listed Plant Species Documented within HCMP and HCGCP

Scientific Name	Common Name	Status*
Habenaria distans	Hammock False Reinorchid	ES
Lythrum flagellare	Florida loosestrife	ES & endemic
Ophioglossum palmatum	Hand fern	ES
Tillandsia fasciculata	Cardinal airplant	ES
Tillandsia utriculata	Giant wild pine	ES
Bletia purpurea	Pinepink	TS
Coelorachis tuberculosa	Florida jointtailgrass	TS
Lilium catesbaei	Catesby's lily	TS
Myrcianthes fragrans	Twin berry; Simpson's stopper	TS
Opuntia stricta	Erect pricklypear	TS
Pteroglossaspis ecristata	Giant orchid	TS
Sacoila lanceolata var. lanceolata	Leafless beaked orchid	TS
Spiranthes longilabris	Longlip Ladiestresses	TS
Tectaria heracleifolia	Broad halberd fern	TS
Tillandsia variabilis	Leatherleaf airplant	TS
Zephyranthes simpsonii	Redmargin zepherlily	TS
Encyclia tampensis	Florida butterfly orchid	CE
Osmunda cinnamomea	Cinnamon fern	CE
Osmunda regalis	Royal fern	CE
Campanula floridana	Florida bellflower	END
Croton glandulosus var. floridanus	Vente conmigo	END
Euphorbia polyphylla	Lesser Florida spurge	END
Nasturtium floridanum	Florida watercress	END
Pectis linearifolia	Florida cinchweed	END
Polygonella polygama var. brachystachya	October flower	END
Tephrosia rugelii	Rugel's hoarypea	END
Status: ES = Endangered - State; TS = Threatened-State; CE = Commercially Exploited		

The USFWS and FWC maintain records of listed species on the federal and state level respectively. The designation “threatened” (likely to become endangered within the foreseeable future throughout all or a significant portion of its range) are utilized by both agencies. FWC includes a third designation, “species of special concern”, to denote a species which has not yet been listed as a threatened species but should be given special attention due to unusually vital or essential ecological niche filled by these species, past population numbers or general vulnerability.

Of the vertebrates observed at HCMP and HCGCP, the USFWS recognizes one as federally endangered and four as federally threatened. As of September 2015, FWC recognized eight listed species at HCMP and HCGCP (Table 6). A list of all vertebrate species documented within HCMP and HCGCP may be found in Appendix G

Table 6: Listed Vertebrate Species Documented Within HCMP and HCGCP (FWC 2015).

Scientific Name	Common Name	Protection Status (2015)*
Puma concolor coryi	Florida panther	FE
Drymarchon corais couperi	Eastern indigo snake	FT
Aphelocoma coerulescens	Florida Scrub-Jay	FT
Alligator mississippiensis	American alligator	FT(S/A)
Mycteria americana	Wood stork	FT
Gopherus polyphemus	Gopher tortoise	ST
Aramus guarauna	Limpkin	SSC
Egretta caerulea	Little blue heron	SSC
Egretta thula	Snowy Egret	SSC
Egretta tricolor	Tricolored heron	SSC
Eudocimus albus	White ibis	SSC
Blarina brevicauda shermani	Sherman's short-tailed shrew	SSC
Protection Status (based on FWC list September 2015): FE = Federally-designated Endangered; FT = Federally-designated Threatened; FT(S/A) = Federally-designated Threatened species due to similarity of appearance; ST = State-designated Threatened; SSC = State Species of Special Concern		

The natural plant communities within HCMP and HCGCP provide protection for upland and wetland species. HCMP was established as a gopher tortoise mitigation area by the FWC. Gopher tortoises are currently listed by the FWC as a threatened species. In southwest Florida, habitat destruction, degradation, and fragmentation are the primary reasons for the decline of this species. In addition to the shelter they provide, gopher tortoises are dependent upon the burrows they excavate for protection against fire, predators and climate extremes. These burrows have also been documented as important habitat for over 300 invertebrate and 60 vertebrate species (Diemer et al. 1989). Several of these species are considered “commensal” species, or species that depend intimately upon tortoise burrows in some parts of the tortoises range.

For stewardship purposes, all plants listed by FDACS and all animals listed by the USFWS and FWC will be given special consideration. Additional natural history on these species and stewardship measures to protect them may be found in the LSOM’s Land Stewardship Plan Development and Supplemental Information section.

v. Biological Diversity

Biological diversity (also called biodiversity) is "the variety of life and all the processes that keep life functioning" (Keystone Center 1991). Biodiversity includes 1] the variety of different species (plants, animals, microbes, etc.), 2] the genes they contain, and 3] the structural diversity in ecosystems. The wealth of biodiversity supports ecological processes that are essential to maintain ecosystems. Healthy and functioning ecosystems provide optimal habitat for the plants and animals that depend on them and provide ecosystem services such as the protection of water resources, appropriate flood control, the proper maintenance of nutrient cycles and carbon sequestration.

Many different types of mammals, birds, reptiles, and insects visit or reside in HCMP and HCGCP. They all rely on the diversity of the plants and the freshwater systems that these conservation areas offer. Land stewardship activities such as exotic plant and animal control and prescribed fire applied at appropriate intervals will help to maintain this diversity.

If appropriate funding becomes available, exotic plant control will be undertaken within HCGCP.

General information on biological diversity and measures used to help promote biological diversity is located in the LSOM.

C. Cultural Resources

Cultural Resources are evidence of past human activity. These may include pioneer homes, buildings or old roads; structures with unique architecture; prehistoric village sites; historic or prehistoric artifacts or objects; human burial sites; prehistoric canals; mounds; etc. These nonrenewable resources often yield unique information about past societies and environments, and provide answers for modern day social and conservation problems.

In January of 1996, Gulf Archaeology Research Institute conducted an archaeological survey of the original 770-acres designated as HCMP (Walker et al. 1996); the Gulf Archaeology Research Institute was under subcontract with Self & Rost, Inc. Engineers of Fort Myers. Documentary research, oral history, and subsurface shovel testing on the property were performed during the survey.

i. Archaeological Features

During the survey conducted in 1996, 227 shovel tests were completed and 12 new archaeological sites were identified, documented, and evaluated. Additionally, one site (Longleaf Logging Camp II) was better defined and its Florida Site File Form (8LL780) was updated. Five of these 12 new sites were determined to be prehistoric. They were specifically categorized as American Indian archaeological sites. None of the prehistoric sites were deemed eligible for the National Register of Historic Places.

All of the newly discovered sites were registered with the Florida Department of State's Division of Historical Resources; Table 7 lists the Florida Site File numbers for all of the known Archaeological sites on HCMP.

Table 7: Archaeological Sites on HCMP (GARI 1996)

Florida Site File Numbers	
Prehistroic Sites	Historic Sites
8LL1889	8LL1896
8LL1890	8LL1900
8LL1891	8LL1899
8LL1892	8LL1898
8LL1893	8LL1894
	8LL1895
	8LL1897
	8LL780 - updated

Artifact collections included primarily a few pottery sherds, one bone pin, and one bone point; no other faunal remains or other dateable organic materials were found. HCMP includes the archaeological remains of a logging rail system, two logging camps, and associated refuse dumps, all dating to the 1930s and 1940s (Walker et al. 1996, Walker 2000).

General information on archaeological features in Lee County is located in the LSOM's Land Stewardship Plan Development and Supplemental Information section.

ii. Land Use History

Lee County's recorded history is tied to the accessibility of the land by settlers. Settlement of inland areas by Europeans was delayed until the 19th century due to difficulty of access. The Caloosahatchee River provided limited navigability prior to its initial dredging in the 1880s. The Disston Land Purchase of 1881 marked the beginning of the large-scale development of Lee County. Hamilton Disston purchased 4 million acres from the State of Florida. These lands stretched from Tarpon Springs to Fort Myers to Lake Tohopekaliga. Mr. Disston was allowed to the drain inland portions of this land in exchange for the drained land. In August 1883, the Caloosahatchee River was connected to Lake Okeechobee. By 1885, Ft. Myers was the 2nd largest town on Florida's Gulf Coast.

Dennis O. Hickey, an Irish immigrant, and the namesake of Hickey Creek, homesteaded in the area after 1865; his livelihood consisted of cattle ranching and timbering. Dennis Hickey died in 1897.

The Great Freeze of 1894/1895 (towards the end of Dennis Hickey life) prompted citrus growers in north and central Florida to move south. The population of Lee County continued to grow in the early 1900s due to improvements in the transportation industry.

The introduction of railroads contributed to a boom in the commercial fishing industry and the establishment of a timber industry in southwest Florida.

Dowling & Camp logged the pine flatwoods of the Hickey Creek and Lehigh Acres areas from 1932 to 1935 and 1940 to 1944 (Walker et al. 1996). The intervening years were spent logging an area in neighboring Hendry County also on the south side of the, Caloosahatchee River. Approximately 100,000 board-feet (800 – 1000 trees) of longleaf pine (*Pinus palustris*) and south Florida slash pine (*P. elliottii var. densa*) were logged each day.

HCMP and HCGCP were some of the last lands to be timbered in the area. The powerline easement (corridor) that crosses HCMP in an east - west direction was the location of a portion of the Seaboard Air Line Railway used to take raw lumber to the mills before the 1940s. A sawmill camp was located south of the creek and the powerline. Boxcars were placed on the HCMP property for rail crews and loggers to live in. Additionally, a commissary (store) was set up in HCMP where the rail crews and loggers could buy food, medicine, and household supplies. An abandoned logging tram, which was the elevated roadbed for the logging railroad, transects the site in a northwest to southeast orientation. A few rotted ties remain on the tram, which is vegetated with live oak and palmetto.

Dowling & Camp's Hickey Creek Railroad formerly occupied the site of the powerline right-of-way. Railroad bridge pilings can be seen where the creek crosses the right-of-way.

Logging operations ceased in the 1940s. The decimation of the longleaf pine forests combined with and partially attributed to the destructive feeding behavior of feral hogs (*Sus scrofa*), an exotic species, and the competitiveness of other fast-growing pines and oaks prevented the longleaf pine forests from regenerating (Walker et al. 1996, Walker 2000). Cattlemen, farmers, and citrus growers bought and converted properties within and around HCMP into cattle pastures, irrigated vegetable fields, and irrigated citrus groves. The Lewis Family converted the commissary into a ranch house; they raised cattle on the property and farmed vegetables.

Comparing historical aerials of HCMP and HCGCP to the most current aerials available may provide some insight as to the scale of landscape alteration by logging and agriculture. Unfortunately, there are no aerials available before the logging began in 1932 but oral histories of the area allude to a "high pine" overstory and an open understory (Walker et al. 1996, Walker 2000).

The 1944 aerial (Figure 13) shows the southwest corner of HCMP and parts of HCGCP denuded of vegetation. In fact, most of the areas except those that buffered the creek and other moving freshwater bodies were clear-cut. The areas left likely contained riparian species and not the pine and cypress species sought by the loggers. Note the degradation of the cypress areas at the extreme southern end of HCMP.

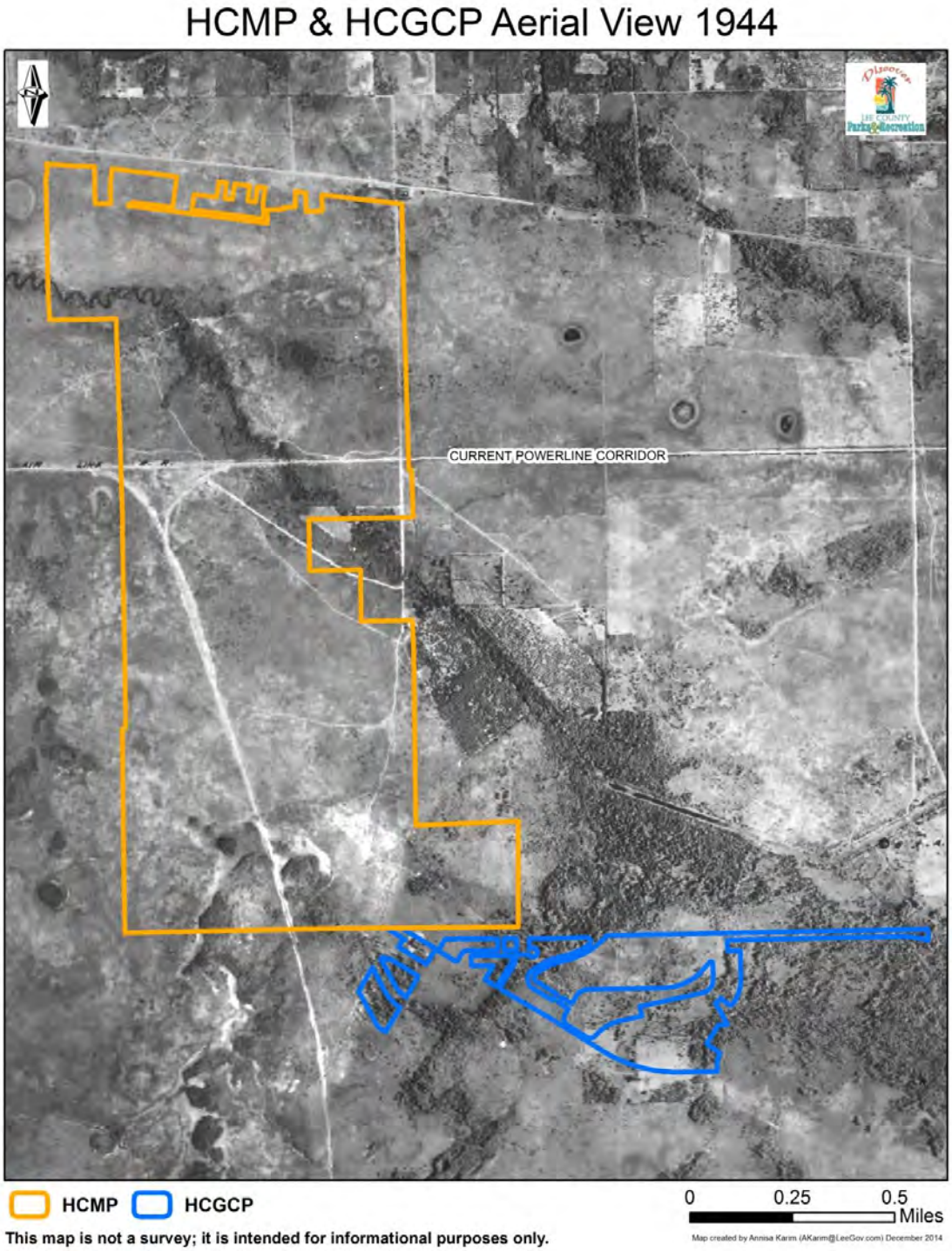


Figure 13: 1944 Aerial View of HCMP and HCGCP

The 1953 aerial (Figure 14) shows that the railroad tracks are still a major component of the landscape (Recall that logging operations ceased in the 1940s). By 1953, more agriculture has moved into the area. Definitive rows can be seen by 1953. There are more trails in HCMP. The vegetation in HCGCP looks as though it is coming back.

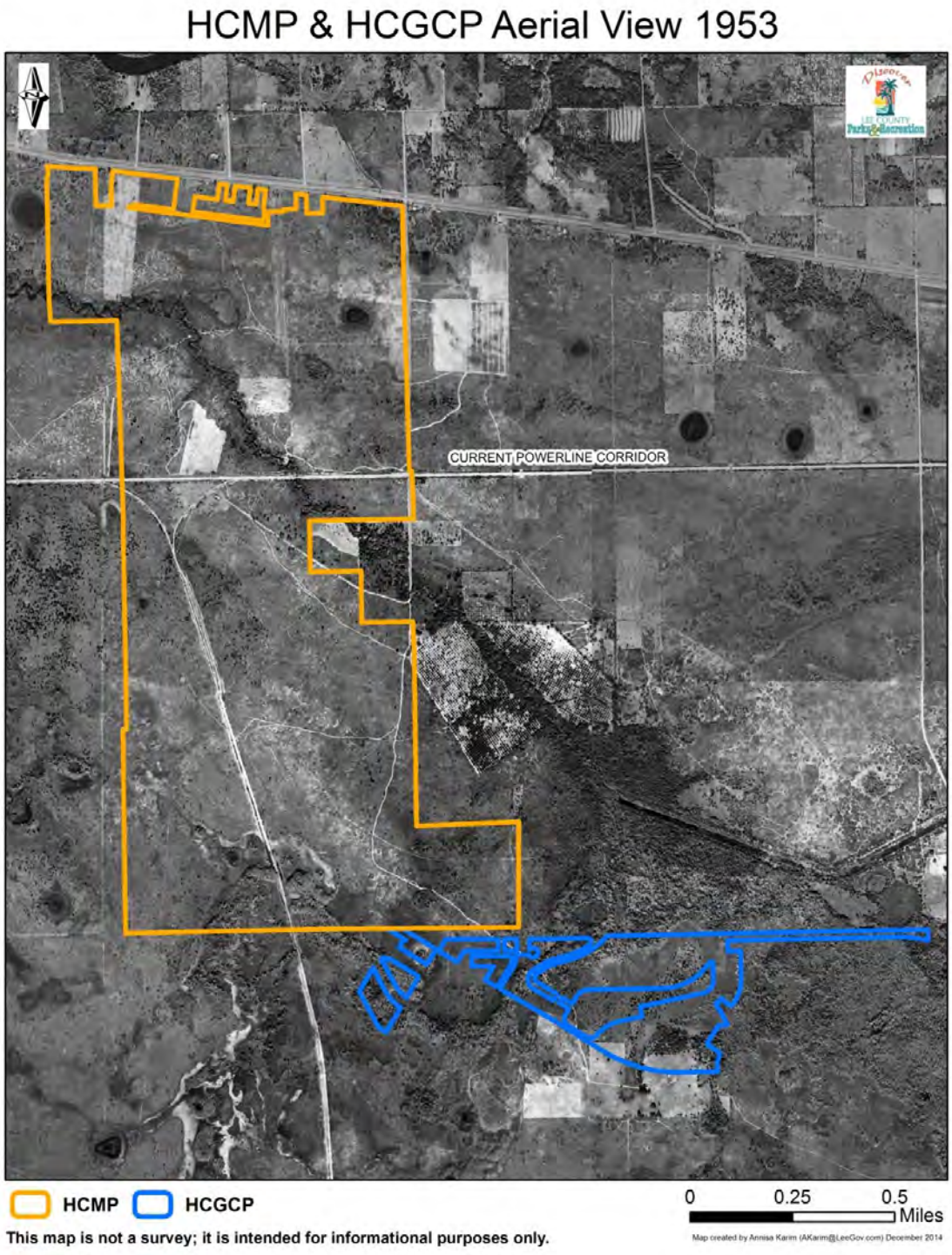


Figure 14: 1953 Aerial View of HCMP and HCGCP

The 1986 aerial (Figure 15) shows that agriculture is becoming more widespread in this part of Lee County. The LAMSID, by 1986, has constructed the north - south water conveyance structure just outside of the western border of HCMP. The borrow pits in the southeast corner of HCMP and Alva Scrub Preserve had been excavated. Permanent roads are being built in the northern section of Lehigh Acres.

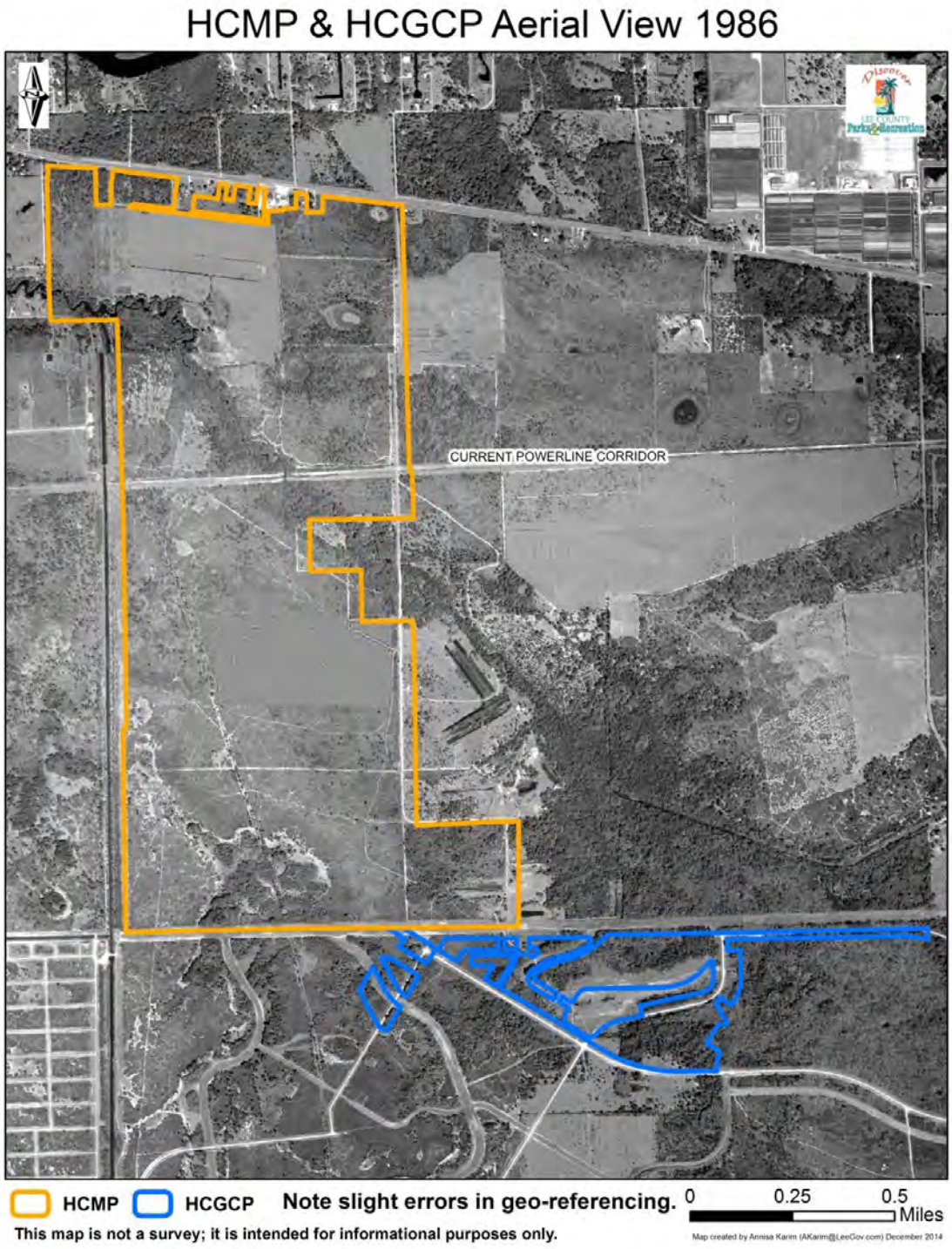


Figure 15: 1986 Aerial View of HCMP and HCGCP

By 1998, most of HCMP had been purchased by Lee County. The 1998 aerial (Figure 16) shows all of the current roads existing in the Greenbriar section of Lehigh Acres had been constructed. The basin swamp on the southern border of HCMP south into Lehigh had been fragmented. In February 1998, FWC planted pine trees in the abandoned pastures and citrus groves just north of the creek. Rows of planted trees are evident in the aerial.

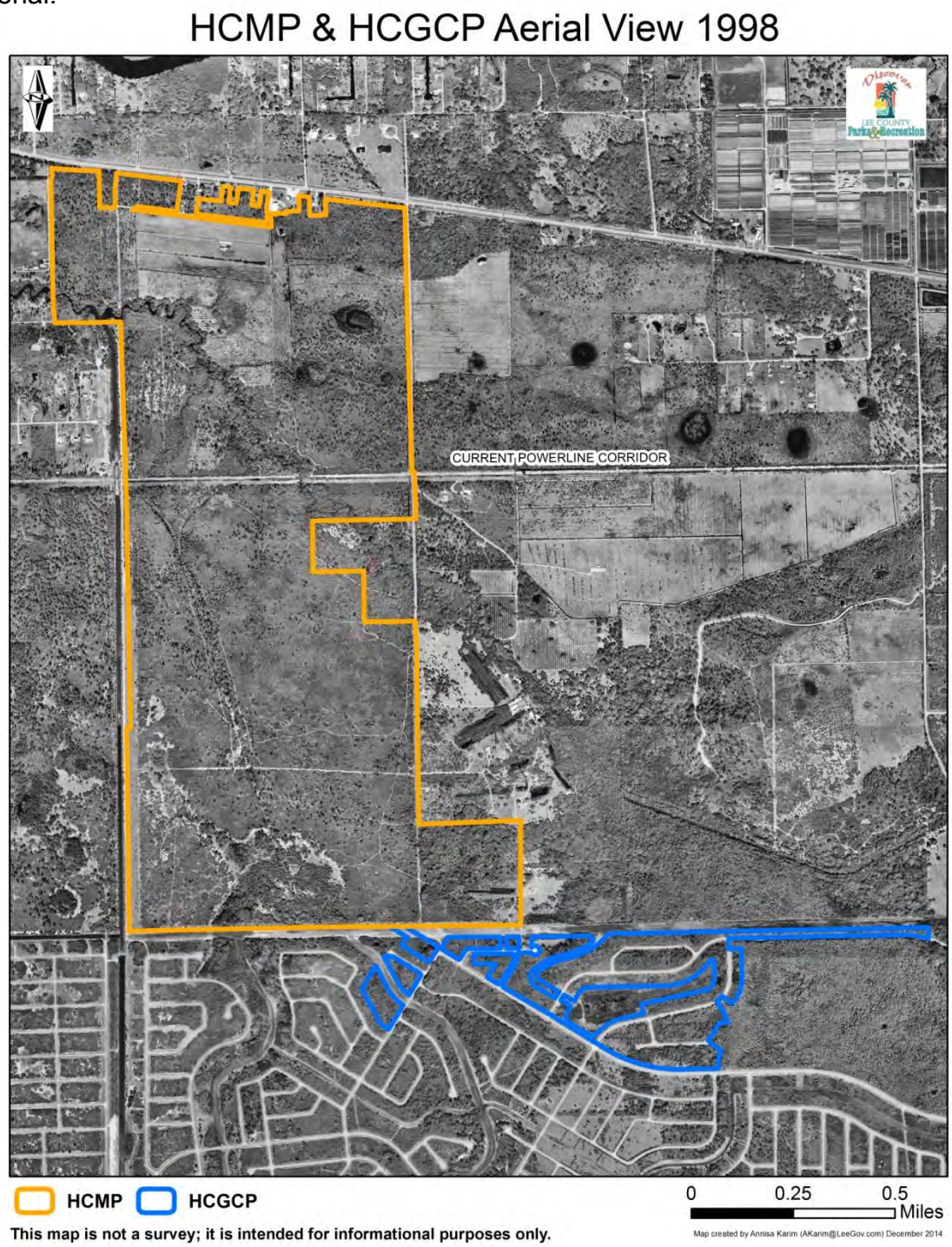


Figure 16: 1998 Aerial View of HCMP and HCGCP

iii. Public Interest

A public meeting to discuss this land management plan was held at the Alva Community Center on June 13, 2016 at 7:00 pm. This meeting was held in conjunction with the Alva, Inc. monthly membership meeting to maximize public input. Appendix I contains all of the documentation associated with the public meeting.

V. Factors Influencing Management

A. Natural Trends and Disturbances

Natural trends and disturbances can include hurricanes, flooding, wildfires, occasional freezes, and the pattern of wet and dry seasons. Implementation of the Management Action Plan will take all of these factors and their influence on projects within HCMP and HCGCP into consideration. General information on natural trends and disturbances influencing native communities and stewardship is located in the LSOM's Land Stewardship Plan Development and Supplemental Information section.

B. Internal Influences

Several anthropogenic activities have impacted HCMP and HCGCP. The design and construction of the HCMP public use facilities were intended to minimize impacts on natural habitats and protected species. Negative human influences from public use are monitored and efforts are made to minimize their effects. Past land uses include logging, grazing, citrus production, and minor agriculture impacts. Remnants of these uses are still evident, however, natural succession, along with the control of exotic vegetation and prescribed burning, has allowed these areas to resemble natural systems. Figure 17 provides a visual representation of the internal and external influences.

There are approximately 18.2 miles of firelines/ service roads within HCMP. These access routes are designed to allow staff access throughout the Park and, of course, provide fire breaks during prescribed fires. While these access roads are essential for the management of HCMP, they channelize water (to some degree depending on the underlying soils and topography) during the rainy season.

The berms (artificial ridges or embankments) along portions of the border also serve to channelize (concentrate) water. These berms are composed of vegetated soils and were created when Bateman Road and the LAMSID water conveyance systems were constructed. While artificial structures, these berms seem to be preferred areas for gopher tortoises to build burrows. There are no plans to remove them.

Old farm ditches run through the improved pasture within HCMP. These ditches no longer serve as good water conveyance structures because they are largely vegetated. Plants such as wax myrtle, Caesarweed, and Brazilian pepper tend to do well in these ditches. Staff concentrates on these ditches when exotic control activities are conducted in this area. Staff will investigate the cost of doing so on the C20/20 portion of HCMP as funds for that project may be available.

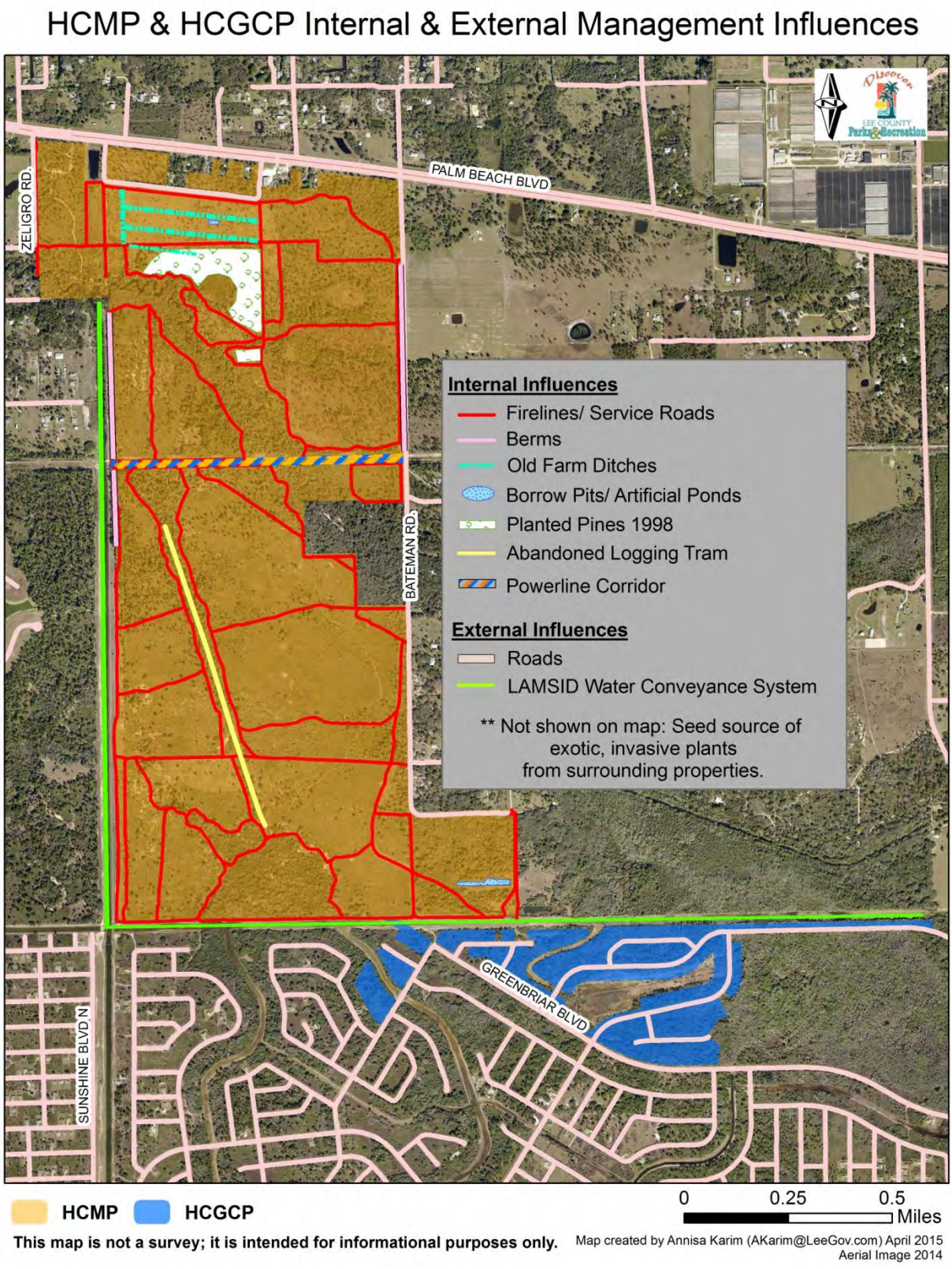


Figure 17: HCMP and HCGCP Internal and External Management Influences.

Between 1958 and 1966, mineral rights were sold to a man who excavated marl pits on the southeastern boundary of HCMP and the southwestern boundary of the adjacent conservation area (Alva Scrub Preserve). Also known as borrow pits or artificial ponds, these pits are filled with fresh water and provide a water source for those animals able to access the water. Cogongrass tends to do well around these pits and as a result, staff concentrates on these areas when cogongrass control activities are conducted. The marl pit within HCMP is a useful source of water when staff conducts prescribed fires.

In February 1998, slash pine and longleaf pine were planted on the 50 acres of abandoned pasture and citrus grove within HCMP. Approximately 350 seedlings per acre were planted with a target density (survival rate) of 50 – 150 stems per acre. Non-native grasses quickly outcompeted some of the pines resulting in a low survival rate of the pines. An herbicide pine release project was undertaken in March 1999 to kill back some of the exotic graminoids competing with the young pines. In 2001, the survival rate of the pines was estimated to be 5% and the surviving trees were, at that time, 3' – 4' in height. Today, fourteen years later, a heavy density of pines occurs on approximately 18 acres of the site. This area (Management Unit 2) was burned in April 2003, however, this densely vegetated coniferous area still has a thick duff layer. This is a high priority area for a prescribed fire. Fire will thin out the pine canopy over time.

The abandoned logging tram (old railroad spur) runs in a northwest to southeast direction for approximately 0.76 miles south of the powerline corridor. This was the old railroad spur of the Seaboard Air Line Railway that used to take raw lumber to the mills before the 1940s. Currently, this ridge is vegetated with a closed-canopy forest dominated by deciduous hardwood trees. It has a diverse assemblage of deciduous and evergreen tree species in the canopy and midstory, shade-tolerant shrubs, and a sparse groundcover. Kane et al. (2008) tell us that, "oaks common to southeastern United States ecosystems have litter properties, similar to pines, which vary in their ability to sustain fire." Fire-inhibiting species including southern live oak (*Quercus virginiana*) and laurel oak (*Q. laurifolia*) – both of which occur on this abandoned logging tram - create a fire shadow and disconnects the fire corridor between the lands to the east and west of this tram. The hardwoods along the ridge shade out herbaceous species needed to carry fire (Martin and Kirkman 2009). Inspection of the 1944 aerial (Figure 13) shows an already constructed logging tram running south out of the Park. There is no way to tell what the vegetative make-up of the area was before the tram was installed but there is no indication (by either the surrounding plant communities or the underlying soils) that a closed-canopy forest dominated by deciduous hardwood trees existed before the railroad spur was installed. This abandoned logging tram now serves as the western portion of the Palmetto Pines hiking trail. Prescribed burns within HCMP have been planned to create a mosaic pattern of plant community succession. The presence of this ridge does not hinder that goal. Furthermore, removal of the abandoned logging tram would be cost prohibitive.

The powerline corridor runs east west through HCMP for a distance of approximately 0.70 miles and encompasses 7.5 acres. The creek cuts through this corridor; it is not

possible to traverse the entire length of the corridor from east to west. This utility easement was granted to FPL on December 21, 1953.

Trespass issues and poaching continues to be a sporadic issue. Park staff conducts routine boundary checks and repair fences and gates as needed.

C. External Influences

As with all conservation areas, the condition and management of lands on the outside of the boundary influences species composition and management needs within the conservation area. The HCMP Land Stewardship Plan from 2003 stated, "Evidence that at least portions of HCMP have been impacted by drainage is indicated by changes in plant species composition of the wetland areas near and adjacent to the southern boundary. As the hydroperiod was reduced, these formerly forested cypress systems are being replaced by transitional and upland species less tolerant of the historic hydroperiod characteristic of a cypress system." Staff continues to see this transition occurring with the cypress dome being quickly invaded by vegetation normally found in areas with a shorter hydroperiod.

Screen shot of YouTube video posted showing ORV use in Greenbriar. Video uploaded May 2011.

Until May 2014, off-road vehicle (ORV) enthusiasts used the LAMSID water conveyance system along the southern boundary of HCMP and the northern boundary of HCGCP. ORV use of this conveyance area is not permitted. In addition to the noise pollution, discarded trash, and contamination by petroleum products associated with ORV use, soil and vegetation degradation and surface water channelization has been observed.

The roads running throughout the HCGCP allowed access for ORV use as well as access to this remote area where the dumping of horticultural waste, construction debris, and the remnants of grow-houses occurs. In May 2014, LCDNR's Pollution Prevention Program, in coordination with the County's Traffic and Operations division, installed boulders and gates to deter vehicular access to HCGCP with the objective of eliminating or reducing the frequency of these illegal activities.

One of the gates installed to deter access by motorized vehicles into HCGCP.

D. Legal Obligations and Constraints

i. Permitting

Land stewardship activities within HCMP and HCGCP may involve obtaining permits from regulatory agencies. Any proposed hydrologic improvements to the site may require obtaining permits from the Florida Department of Environmental Protection (FDEP), the U.S. Army Corps of Engineers (USACOE) and SFWMD. Hydrological and/or habitat restoration projects requiring heavy equipment or tree removal will require notification to the Lee County Department of Community Development (LCDCD). Burn authorization from the Florida Forest Service (FFS) is required for all prescribed burns conducted on the Preserve.

ii. Other Legal Constraints and Considerations

HCMP was established in 1994 through the cooperative efforts of the BoCC, FWC, and FCT. With the aid of a FCT grant, the BoCC added just under 770 acres to a 10-acre, County-owned parcel in Alva, FL. Lee County then conveyed these 770 acres to FWC in perpetuity in the form of a Perpetual Conservation Easement (Appendix A). A Memorandum of Agreement executed on May 12, 1994 between Lee County and FWC (Appendix B) details the terms relative to the establishment of a Mitigation Park. In addition, a "Grant Award Agreement" (Appendix C) and a "Conceptual Approval Agreement" were entered into with the FCT (Appendix D). FCT also requires that the HCMP Management Plan comply with "Management Plan Requirements". Lee County and the FWC are currently in compliance with these agreements.

A Right-Of-Way Consent Agreement between Florida Power & Light Company and Lee County (Appendix I) provides for the routing of the Palmetto Pines Trail access the powerline. This agreement specifies requirements applicable to the right-of-way management and restricts uses which may jeopardize power transmission.

The LAMSID which is a special Chapter 298 taxing district setup to provide management and maintenance of the surface water within the Lehigh Acres development and an adjacent area, consists of over 70,000 acres containing 311 miles of canals plus water control structures within the Lehigh Acres western Hendry County. This entity also manages several preserves including Greenbriar Swamp and Harn's Marsh. Since 1995, Lee County has been assessed by the LAMSID for water conveyance and control structures planned for the site while it was part of the Lehigh Corporation Development Plan. Despite repeated efforts by Lee County Parks and Recreation staff, County Attorney's office, and consultants, the assessment issue to date has not been resolved. To date, over $500,000 has been paid to the LAMSID for water control structures and the operation and maintenance of those structures. For the past 21 years, Lee County has paid LAMSID an average of $76,165.13 per year in taxes (Table 8) for which no benefits has been received. For years, Lee County has tried to resolve this assessment. As of this writing, these efforts have met with limited success.

Table 8: History of LAMSID Tax Assessment

Tax Year	Fiscal Year Paid	Amount		Tax Year	Fiscal Year Paid	Amount
1994	FY 95	$90,549.04		2005	FY 06	$57,317.36
1995	FY 96	$88,692.07		2006	FY 07	$57,829.09
1996	FY 97	$88,516.89		2007	FY 08	$68,090.96
1997	FY 98	$93,709.39		2008	FY 09	$74,566.18
1998	FY 99	$72,836.74		2009	FY 10	$86,136.14
1999	FY 00	$85,423.90		2010	FY 11	$93,529.23
2000	FY 01	$79,423.44		2011	FY 12	$86,116.57
2001	FY 02	$76,017.37		2012	FY 13	$86,773.94
2002	FY 03	$69,823.30		2013	FY 14	$61,356.69
2003	FY 04	$68,230.63		2014	FY 15	$61,451.89
2004	FY 05	$53,076.85		21-year TOTAL		$1,599,467.67

Gideon Lane runs in an east - west direction between C20/20 parcels 4 and 101. Formally, it is within Unit 2 of the plats of Pine Creek Acres, recorded in plat book 10, page 74. While this “dirt” road is outside of the acreage managed for conservation, it is still within the Park. Lee County staff is looking into the feasibility of vacating a portion of Gideon Lane. Private land owners along Gideon Lane (north side of road) have expressed concerns over the maintenance of the road as well as potential security issues associated with rural, “out-of-the-way” properties. In addition to addressing security concerns (by potentially placing a barrier on the eastern portion of the road), the vacation would reduce road maintenance costs. In 1999, the County accepted all unvacated roads, boulevards, and/or lanes and parks set forth in the plat of Unit 2, Pine Creek Acres, which includes Gideon Lane. The County accepted the roads without the obligation to construct and maintain those roads. While the County does own conservation lands along this road, staff does not use it for land management purposes. County staff would like to officially vacate the eastern portion of the road adjacent to County property. The street vacation will allow the installation of a gate, which would reduce traffic on the road. Appendix J contains a letter to a neighbor agreeing that the County will fix the road one last time and provides documentation showing that the BoCC did not assume the construction or maintenance responsibility of Gideon Lane.

iii. Relationship to Other Plans

The Lee Plan is designed to depict Lee County as it will appear in the year 2030. Given the projected increase in population (to 979,000 permanent residents with an additional 18% seasonal residents) and the probable rate of technological change between the present date and 2030, it is impossible to describe the future face of the county with any degree of certainty or precision. However, the following list of themes will be of great importance as Lee County approaches the planning horizon:

The growth patterns of the county will continue to be dictated by a Future Land Use map that will not change dramatically during the time frame of this plan. With the exception of Cape Coral and Lehigh Acres, the county's urban areas will be essentially built out by 2030 (pending, in some cases, redevelopment). The county will attempt to maintain the clear distinction between urban and rural areas that characterizes this plan. Its success will depend on two things: the continuing viability of agricultural uses and the amount of publicly-owned land in outlying areas.

The county will protect its natural resource base in order to maintain a high quality of life for its residents and visitors. This will be accomplished through an aggressive public land acquisition program and by maintaining and enforcing cost-effective land use and environmental regulations that supplement, where necessary, federal, state, and regional regulatory programs.

The county's traditional economic base will be diversified in order to increase the percentage of high-paying jobs, reduce tax burdens on residents, and enhance the stability of the community. Traditional industries, such as agriculture, commercial fishing, tourism, and construction, will continue to play a significant role in the county's economy, but will become less important in relation to new business opportunities afforded by the expanded international airport and the new university.

Cultural, educational and recreational opportunities will expand dramatically as the result of the county's increased urbanization.

Increased urbanization will require a commensurate investment in the county's physical and social infrastructure. Public facilities will be maintained at adequate levels of service, partly by the construction of new facilities and partly by the use of new methods to conserve the capacity of existing facilities. Social problems, including, but not limited to, crime and illegal drug use, will be addressed primarily by early intervention and programs designed to eliminate their root causes.

The Lee Plan's land use accommodation is based on an aggregation of allocations for 22 Planning Communities. These communities have been designed to capture the unique character of each of these areas of the county. Within each community, smaller neighborhood communities may exist; however, due to their geographic size, a planning community could not be created based on its boundaries.

The entire Lee Plan can be found on the internet at: http://www.leegov.com/dcd/Documents/Planning/LeePlan/Leeplan.pdf

The sections of the Lee Plan which may pertain to Preserves areas have been identified in the LSOM.

E. Management Constraints

Management responsibility for the HCMP is divided between FWC and Lee County. FWC controls natural resource management activities while Lee County assumes

management control for exotic vegetation removal, boundary fencing, and public use activities. Both agencies coordinate and cooperate with all aspects of management and administration.

FWC has established HCMP as a Wildlife and Environmental Area pursuant to Rule 39-17.002 in the Florida Administrative Code and assumed primary management responsibility for the site. Specific regulations to control public use of the site have been provided by FWC pursuant to Rule 39-17.005 in the Florida Administrative Code.

FWC holds a perpetual conservation easement over 770 acres of the property purchased in 1994 (see Acquisition section of this document). Additionally, FPL holds a utility easement (powerline corridor) over approximately 7.5 acres of the site. This utility easement was granted to FPL on December 21, 1953 by Robert Frank and Faye Lewis of Alva, FL.

The goal at HCMP will be the protection and enhancement of habitat important to state and federally listed wildlife populations. Since the site's acquisition, a prescribed burn regime and exotic plant control program have been successful on the portions of the Park acquired via Lee County's general fund and the accompanying FCT grant. Exotic animal control is also a priority. Lee County currently contracts the trapping of feral hogs and is developing a hunting program to control this destructive exotic. Exotic control on the 82 acres purchased via LCPR's C20/20 program has been established and is resulting in good control of the target species. LCPR staff will coordinate with FWC and the Florida Forest Service (FFS) on initiating a burn program on these parcels. The proximity of some of the C20/20 parcels to Palm Beach Blvd and adjacent properties present a challenge when it comes to prescribed fire.

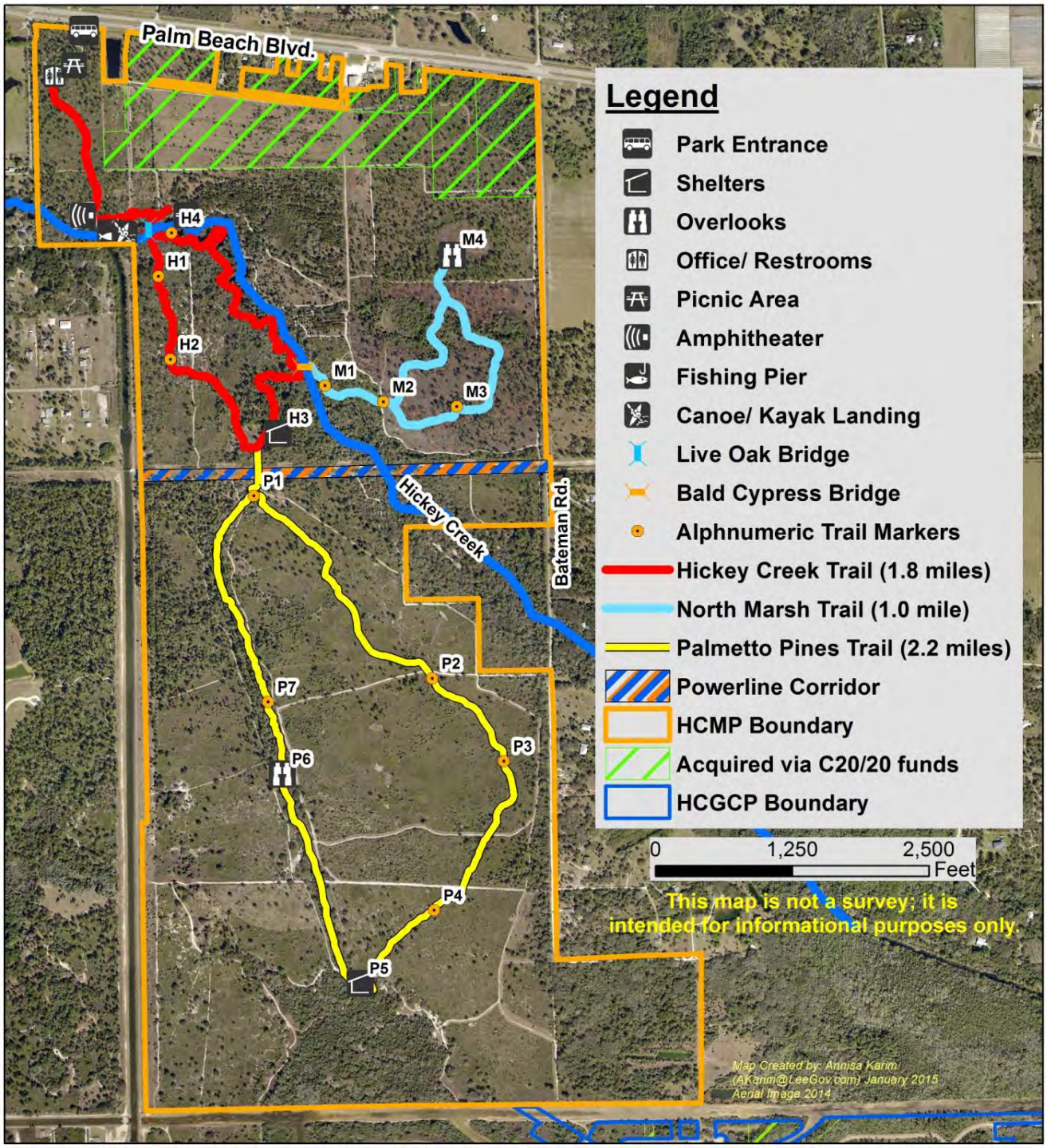
Coordinating with adjacent landowners and surrounding agricultural businesses will be an important part in management of the Preserve; neighbors will be considered and informed of any prescribed fires and/or large management practices that may be considered disruptive.

The core constraints on management of HCGCP are funding and staffing. Obtaining funds through grants and other financial sources will need to be explored and obtained when appropriate. Due to the private in-holdings and site security issues, economies of scale prevent the efficient land management of this Preserve. Coordinating with LAMSID will be an important part in management of the Preserve; neighbors will be considered and informed of any prescribed fires and/or large management practices that may be considered disruptive.

F. Public Access and Resource-Based Recreation

The ground breaking ceremony for the HCMP public use facilities was conducted on August 26, 2001 and the ribbon cutting ceremony was held on April 20, 2002 with construction of all park facilities occurring between these dates. Figure 18 shows a trail map of HCMP as well as the locations of other amenities within the Park such as the

Hickey Creek Mitigation Park Trail Map



All primitive, hiking trails are color-coded with posts that coordinate with the trail map. Alphanumeric markers that appear on the trail map correspond to markers on the trail system. The PRIMITIVE, hiking trails run perpendicular to service roads and fire lanes. Patrons are encouraged to stay on the marked trails at all times. During the rainy season, trails may be under water – especially the North Marsh Trail. The following are prohibited: alcohol, pets, bicycles, camping and the collection of ANY natural or cultural resources. Fishing is allowed from the fishing pier with the proper license. Lee County Ordinance 06-26 as amended is strictly enforced.

Figure 18: HCMP Trail Map.

amphitheater, fishing pier, canoe/ kayak landing, picnic areas, shelter, and overlooks. HCMP offers three, looped hiking trails totaling five miles. Accessibility for disabled patrons is available from the parking area to the amphitheater and forward to the fishing pier/ creek overlook. All primitive, hiking trails are color-coded with posts that coordinate with the trail map. Alphanumeric markers that appear on the trail map correspond to markers on the trail system. The primitive hiking trails run perpendicular to service roads and fire lanes. Patrons are encouraged to stay on the marked trails at all times. During the rainy season, trails may be under water – especially the North Marsh Trail. Lee County is developing a hunting program to aid in the control of exotic invasive feral hogs; this will also provide another recreational opportunity to the public. FWC staff will be consulted through this process. The following are prohibited: alcohol, pets, bicycles, camping and the collection of any natural or cultural resources. This includes (but is not limited to) any plants, animals, shells or artifacts. Fishing is allowed from the fishing pier with the proper license. A kayak/ canoe landing is available for patrons paddling Hickey Creek. While launching paddle craft from this location is allowed, it is not easy because paddle craft must be portaged approximately one half mile from the parking lot to the landing area.

HCMP is a designated Great Florida Birding and Wildlife Trail site. Hickey Creek (the waterbody) is part of the the Great Calusa Blueway Paddling Trail and is a “Florida Designated Paddling Trail” through the Office of Greenways and Trails.

Geocaching is an outdoor recreational activity growing quickly in popularity. This is an endeavor in which participants use a Global Positioning System (GPS) receiver or mobile device and other navigational techniques to hide and seek containers, called "geocaches" or "caches", anywhere in the world. A typical cache is a small waterproof container containing a logbook (with a pen or pencil). The geocacher enters the date they found it and signs it with their established code name. After signing the log, the cache must be placed back exactly where the person found it. Larger containers such as plastic storage containers can also contain items for trading, such as toys or trinkets, usually of more sentimental worth than financial. Geocaching shares many aspects with benchmarking, trigpointing, orienteering, treasure-hunting, letterboxing, and waymarking. Geocaching websites classify individual caches two difficulty levels: one for how easily a cache may be found and for the difficulty of the terrain that must be traversed to find the chache.

While geocaching is not an activity specifically offered by LCPR, the Department has a geocaching policy whereby any visitor desiring to place a Geocache / Letterbox in a Lee County Park or Preserve is required to complete a Geocaching/ Letterbox Placement Permit. This policy details who has the authority to approve or deny permits, what happens to non-permitted caches, the consequences of violating the permit, the size and content of cache containers, and the placement of these containers. If a non-permitted cache is discovered, staff will remove the cache, and if possible, attempt to notify the owner. In the event that the Park staff are unable to contact the cache owner within 30 days, the cache will be treated as abandoned property. Geocaching activities are facilitated through the LCPR’s Ranger Unit. All visitors of the Parks and Preserves within Lee County must abide by the posted rules of the facility including using

approved access points and geocaching during the approved hours of operation. Lee County Ordinance 06-26 as amended is strictly enforced.

The Caloosa Saddle Club, in cooperation with LCPR staff, received a grant from the Office of Greenways and Trails (Florida Department of Environmental Protection) in February of 2001 to fund a multiuse trail within the Greenbriar area of Lehigh Acres, Greenbriar Swamp Preserve, HCGCP, and C20/20 parcel #57 (part of Alva Scrub Preserve). Since the routing had the potential of impacting the headwaters of Hickey Creek, concerns were raised by neighbors and some user groups. After multiple meetings, the consensus was that the multiuse trail should not be located within #57 and the money was returned. Private property owners and LAMSID expressed concern with trails running next to or through their properties.

Due to staff and budgetary constraints, there are no designated public access areas within HCGCP. Illegal ORV use and dumping issues have led to blocking this area off to vehicular access. Access by foot is permitted but there are no marked trails maintained for the public. There are Preserves and Parks in close proximity that provide opportunities for hiking, mountain biking, camping, fishing and equestrian use; these Preserves and Parks have Board-approved stewardship (management) plans in place and the infrastructure to support these offerings.

G. Acquisition

Hickey Creek Mitigation Park: Lee County has a long history of acquiring lands for conservation purposes. The acquisition of all of the parcels that make up HCMP (Table 9; Figure 19) started in September 1945. Hickey Creek ran through the original 10-acre parcel. It is unclear why the parcel was acquired by Lee County. At the time, there was no terrestrial passage to this parcel. Forty-seven years later, Lee County staff coordinated with FWC (known then as the Florida Game and Fish Commission – GFC) and FCT to recommend the establishment of a regional mitigation park within the Southwest Florida Regional Planning Council boundary. On November 20, 1992, GFC approved the recommendation to start acquiring lands for this purpose. On December 16, 1992, the BoCC approved $1,687,000 in the Capital Improvement Fund (to be withdrawn from Lee County's Environmentally Sensitive Lands Program) for the acquisition of HCMP. In 1993, FCT approved a matching grant in the amount of $1,113,000 through the Preservation 2000 program. In June 1994, Lee County was able to purchase just under 770 acres to add to the original 10-acre parcel.

In 1996, a majority of voters in Lee County voted to increase property taxes by up to 0.5 mils to fund the purchase and protection of environmentally critical lands. This willing-seller land acquisition program became known as the Lee County Conservation 20/20 Lands Program. The inception of this funding program meant that Lee County could continue acquiring lands for conservation. In 1998, 2000, and 2007, the BoCC used funds from the C20/20 program to purchase an additional 82 acres to buffer HCMP from Palm Beach Blvd. In 2004, the Florida Department of Transportation determined that it no longer needed a 2-acre section of land for highway purposes and this land was given to Lee County (via a quitclaim deed) and added to HCMP.

Table 9: HCMP Acquisition History

Year of Acquisition	Description	Size (Acres)	Cost
1945	Original Parcel	10.00	?
1994	FCT Funds - Parcel containing Park Entrance	19.20	$2,480,000
1994	FCT Funds - North of FWC Mitigation Area	283.37	
1994	Lee County Funds - FWC Mitigation Area	466.71	
1998	Lee County Funds - C20/20 Parcel #4	39.50	$157,000
2000	Lee County Funds - C20/20 Parcel #101	32.11	$171,343
2004	"DOT" Parcel	2.00	$0
2007	Lee County Funds - C20/20 Parcel #326	10.61	$1,207,500
Totals		863.50	$4,015,843

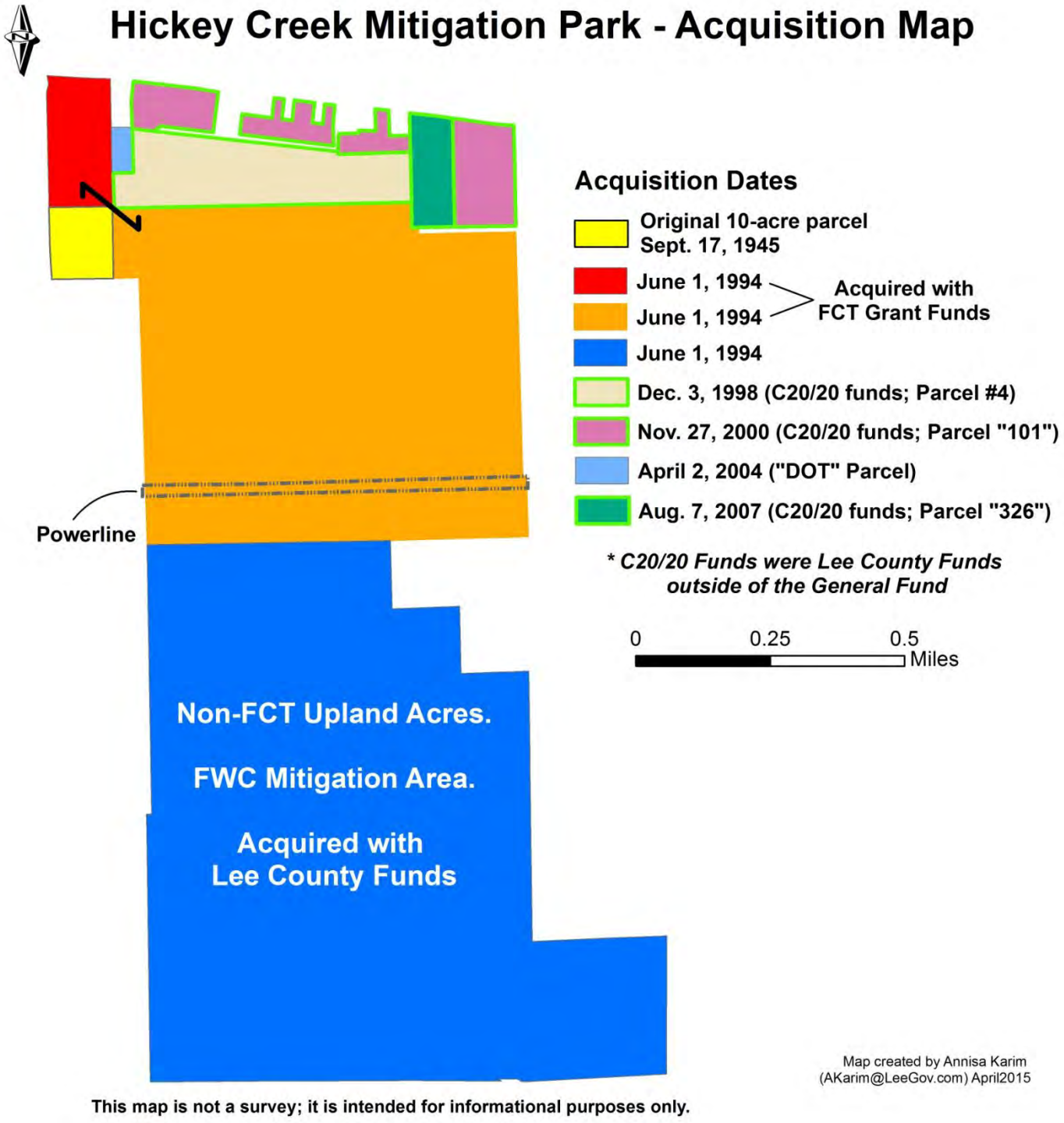
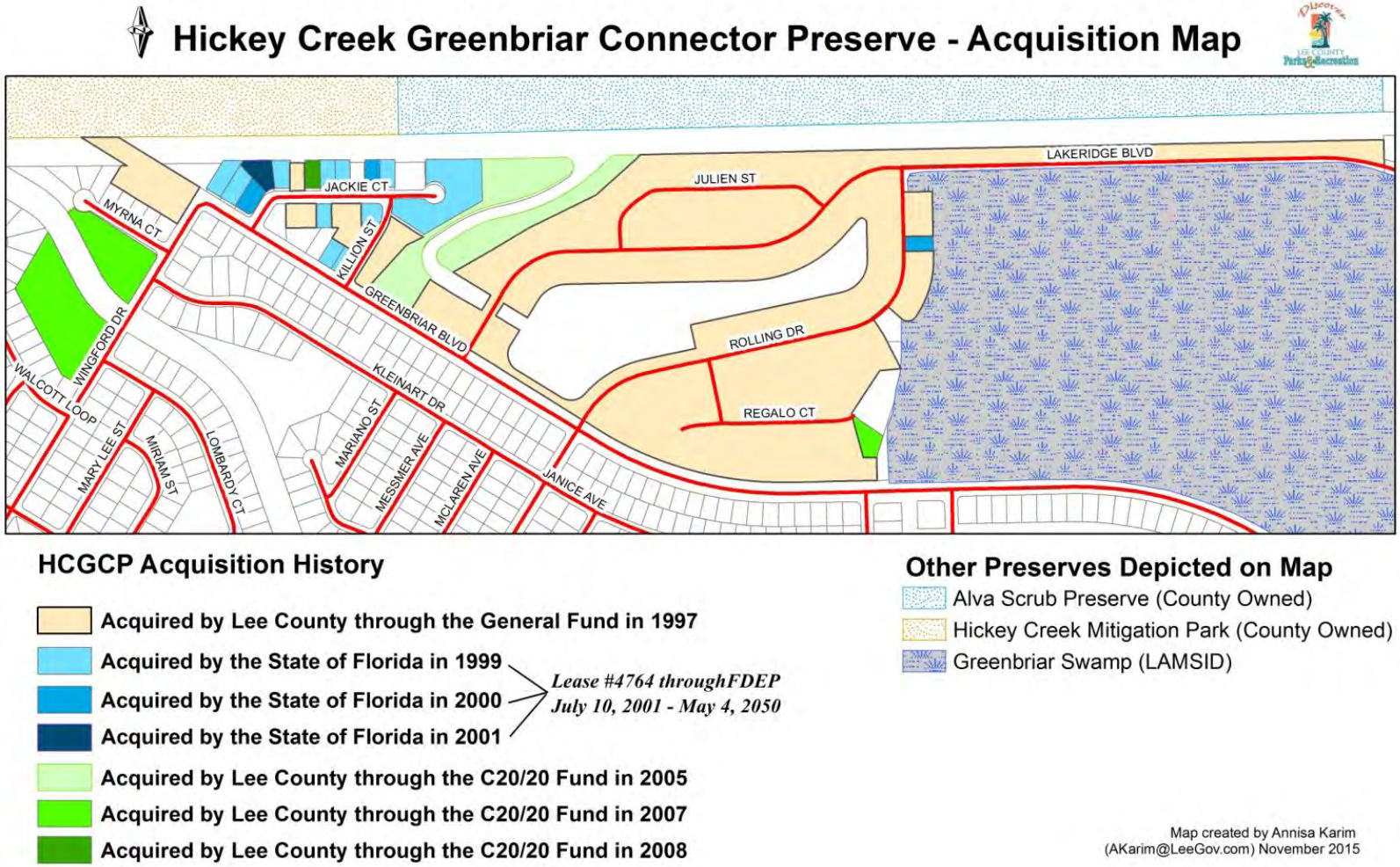


Figure 19: HCMP Acquisition Map

Hickey Creek Greenbriar Connector Preserve: The LAMSID owns and manages several preserves within their boundary. The 406-acre Greenbriar Swamp is the centerpiece of a project that involves modifications within the Swamp and to the connecting canal/swale system to increase surface water connectivity and storage within the swamp, thereby reducing freshwater discharge to the Caloosahatchee River via Hickey Creek. The overall goal is to increase water quality and habitat connectivity. The BoCC acquired 59.89 acres in this area in 1997 (Figure 20). Preservation 2000 Acquisition Funds through the Florida Department of Environmental Protection (FDEP) Greenways Program were used to purchase additional 7.13 acres. These properties are under lease number 4764 (through FDEP) to Lee County. The lease expires on May 4, 2050. The BoCC, via the C20/20 program, acquired an additional 28.79 acres from 2005 – 2008. The LCPR-managed 95.81 acres combined with the 406 acres managed by LAMSID offers 501.81 acres of conservation.

Figure 20: HCGCP Acquisition Map



VI. Management Action Plan

A. Management Unit Descriptions

HCMP has been divided into 29 management units (MU) to better organize and achieve stewardship goals (Table 10). Acreages were calculated within ArcMap ArcView 10.2.1. Due to rounding values up or down, these numbers are close approximations. These management (stewardship) units were created based on existing trails, roads, ditches, berms, stewardship needs and plant communities. Units 1a – 1e were acquired after the original management units were demarcated. For consistency's sake, the original management units were not re-numbered. The funding to acquire these units was provided via Lee County's C20/20 program. As such, funds required to manage these units also come from the C20/20 program. Figure 21 shows the layout of all of the MUs within HCMP while Figure 22 shows a close-up of MUs 1a – 1e. Figure 23 shows all 29 units superimposed on the plant communities found within HCMP (refer to "Natural Plant Community" section for descriptions of these land cover types).

HCGCP will be treated as one management unit totaling 95.81 acres.

Table 10: HCMP Management Units

Unit Name	Size (acres)	Unit Name	Size (acres)	Unit Name	Size (acres)
1	34.4	6	23.7	14	15.4
1a	31.1	7	29.2	15	27.6
1b	7.3	8	27.7	16	20.0
1c	6.3	8a	26.0	17	43.8
1d	16.2	9	62.1	18	18.5
1e	21.2	10	10.6	19	28.4
2	41.9	11	9.3	20	31.3
3	36.7	12	20.1	21	36.7
4	43.7	13	70.7	22	39.3
5	62.4	13a	3.7		

Management activities on all of these units will focus on the control of invasive, exotic plants and animals, prescribed fires where appropriate and restoration (planting of native flora) when needed. The protection of listed plants and animals and the habitats in which they live will be the guiding principle of these activities.

Exotic vegetation control is on-going on all units. At this time, HCMP is considered to be at a maintenance level (less than 5% exotic plant cover). A cogongrass treatment was contracted in November 2014 (as part of a grant from the FWC's Upland Invasive Plant Management Section) to treat within 50 feet of every service road (fireline) and hiking trail within HCMP.

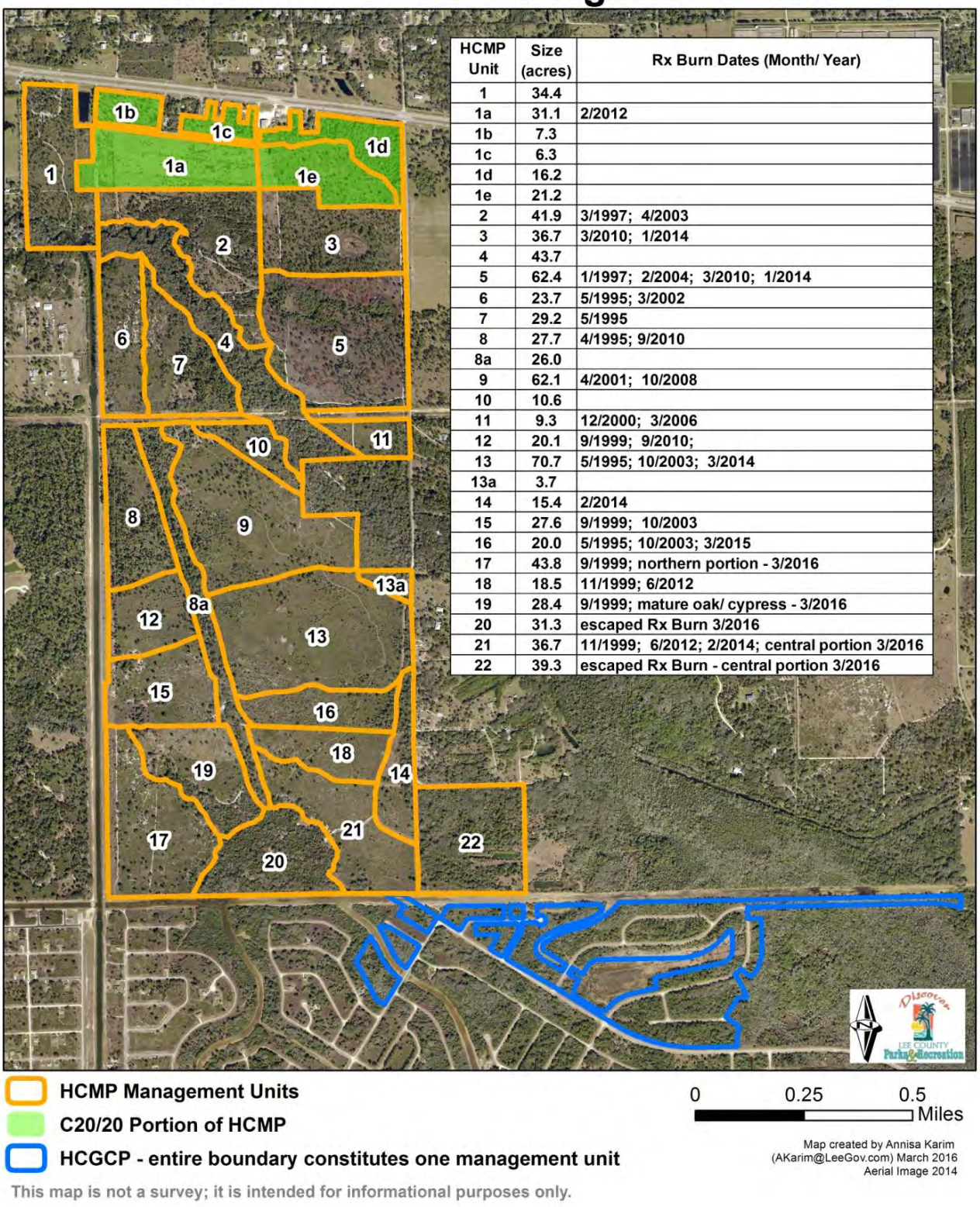


Figure 21: HCMP and HCGCP Management Units

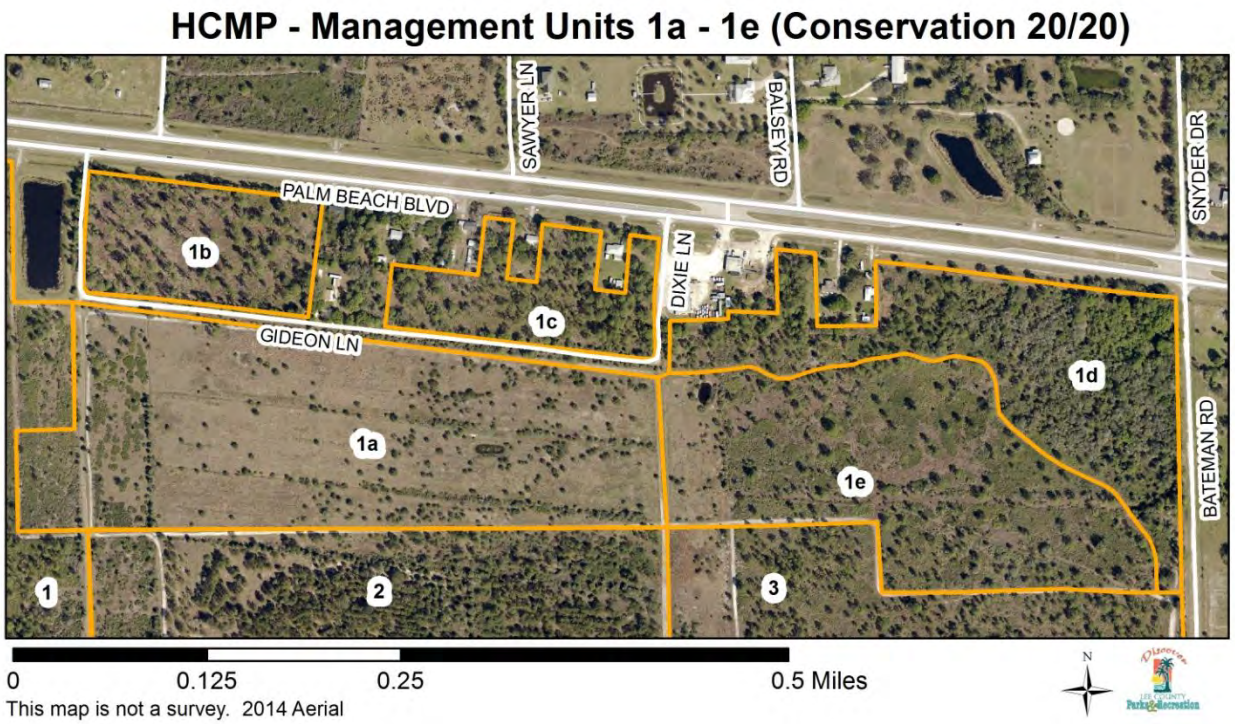


Figure 22: HCMP Management Units 1a – 1e (Conservation 20/20 Funded Acquisitions)

The following paragraphs describe each MU within HCMP and HCGCP.

MU 1 (34.4 acres): The Park entrance, parking lot, one of two picnic areas, restrooms, office, water system structure, maintenance building, main trailhead, entire ADA trail (a portion of the Hickey Creek Trail), amphitheater, fishing pier/ creek overlook, and canoe / kayak landing are contained within MU 1. This unit also encompasses the "DOT" parcel acquired in 2004. The DOT parcel was not part of the originally delineated MU 1. However, because this parcel is so small, it was logical to simply absorb it into the MU 1 boundary. The FNAI plant communities found within this unit include mesic flatwoods, scrubby flatwoods, mesic hammock, and blackwater stream (Hickey Creek).

In 2008, the County contracted a pine tree thinning (fuel reduction) project between the parking lot and Palm Beach Blvd.

MU 1a (31.1 acres): No public access trails or amenities are located within MU 1a. This unit is bordered on all sides by firelines and on the north by Gideon Lane. The eastern 80% of the unit contains improved pasture and the remainder of the unit is scrubby flatwoods. All of the improved pasture and the eastern 4.7 acres of scrubby flatwoods was burned in February 2012. Exotic vegetation control was contracted out in October 2014.

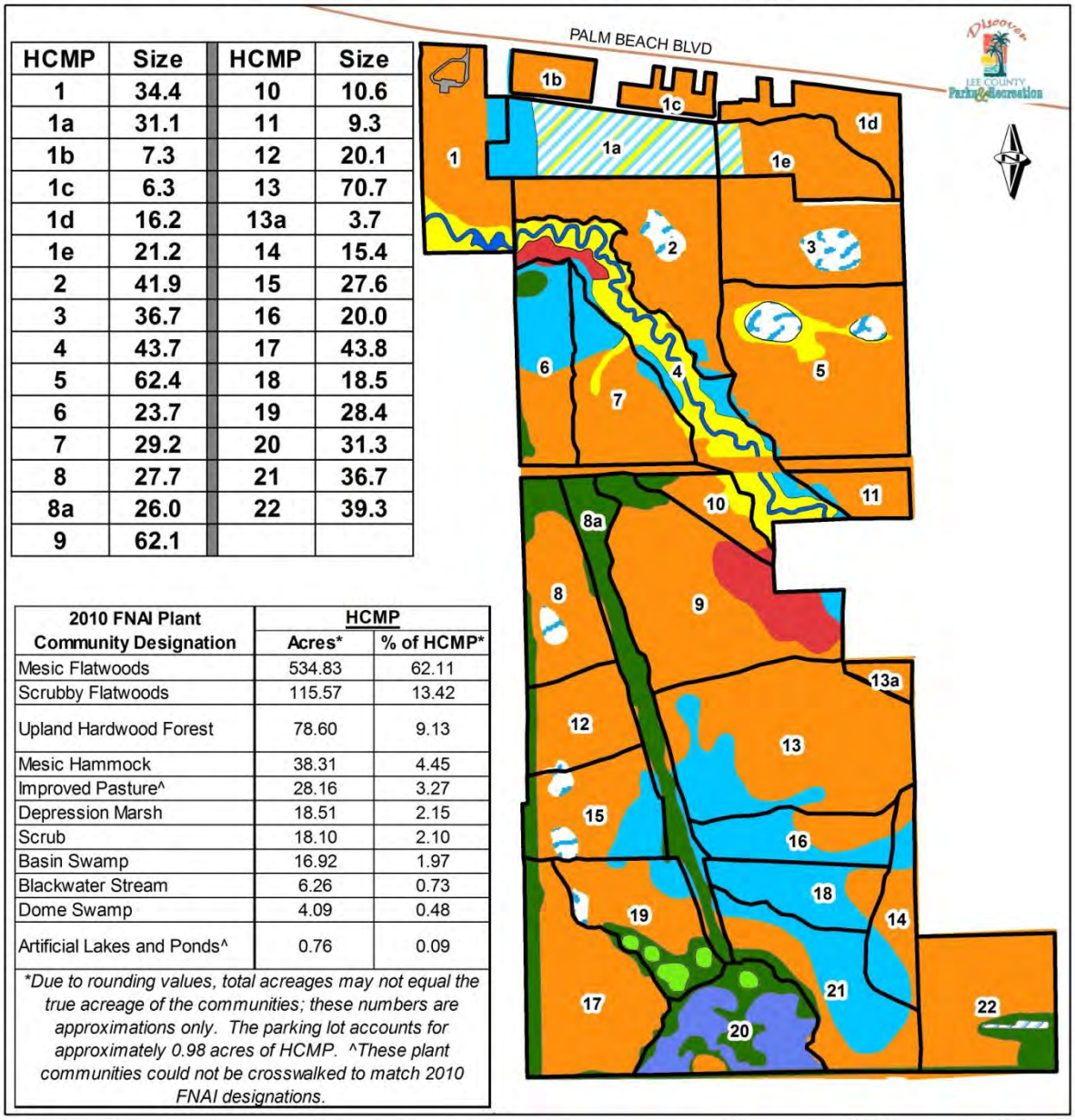
Lee County staff is looking into the feasibility of vacating a portion of Gideon Lane. See the "Other Legal Constraints and Considerations" section of this document.

HCMP - Plant Communities & Management Units

HCMP	Size	HCMP	Size
1	34.4	10	10.6
1a	31.1	11	9.3
1b	7.3	12	20.1
1c	6.3	13	70.7
1d	16.2	13a	3.7
1e	21.2	14	15.4
2	41.9	15	27.6
3	36.7	16	20.0
4	43.7	17	43.8
5	62.4	18	18.5
6	23.7	19	28.4
7	29.2	20	31.3
8	27.7	21	36.7
8a	26.0	22	39.3
9	62.1		

2010 FNAI Plant Community Designation	HCMP	
	Acres*	% of HCMP*
Mesic Flatwoods	534.83	62.11
Scrubby Flatwoods	115.57	13.42
Upland Hardwood Forest	78.60	9.13
Mesic Hammock	38.31	4.45
Improved Pasture^	28.16	3.27
Depression Marsh	18.51	2.15
Scrub	18.10	2.10
Basin Swamp	16.92	1.97
Blackwater Stream	6.26	0.73
Dome Swamp	4.09	0.48
Artificial Lakes and Ponds^	0.76	0.09

Due to rounding values, total acreages may not equal the true acreage of the communities; these numbers are approximations only. The parking lot accounts for approximately 0.98 acres of HCMP. ^These plant communities could not be crosswalked to match 2010 FNAI designations.



Map created by Annisa Karim
(AKarim@LeeGov.com) March 2016
H:\Hickey's Creek Mitigation Park\Maps\
Maps for 2014 Management Plan\HCMP-FNAI-MgmtUnits

This map is not a survey; it is intended for informational purposes only.

0 0.25 0.5 Miles

HCMP Mgmt Units
Impervious Surface (parking lot)

Florida Natural Areas Plant Community Designations
Mesic Flatwoods
Scrubby Flatwoods
Upland Hardwood Forest
Mesic Hammock
Improved Pasture
Depression Marsh
Scrub
Basin Swamp
Blackwater Stream
Dome Swamp
Artificial Lakes and Ponds

Figure 23: HCMP Plant Communities and Management Units

MU 1b (7.3 acres): No public access trails or amenities are located within MU 1b. This unit is bordered on the north by Palm Beach Boulevard, the west and south by Gideon Lane, and on the east by private property. There is no fencing around the unit but the County maintains a mowed path on the eastern border. The entire unit is comprised of mesic flatwoods. Exotic vegetation control was contracted out in October 2014. Prescribed burning of this portion of the Park will be difficult due to its proximity to Palm Beach Blvd. LCPR staff will coordinate with LCPR's Burn Crew, FWC and FFS on initiating a burn program on this MU.

Lee County staff is looking into the feasibility of vacating a portion of Gideon Lane. See the "Other Legal Constraints and Considerations" section of this document.

MU 1c (6.3 acres): No public access trails or amenities are located within MU 1c. The northern boundary of this jigsaw-shaped unit is bordered alternately by private property and Palm Beach Blvd. The unit is bordered on the west by private property, the south by Gideon Lane and on the east by Dixie Lane. Commercial properties (an auto garage and a convenience store) are located east of Dixie Lane. Just like MU 1b, there is no fencing around the unit. The entire unit is comprised of mesic flatwoods. Exotic vegetation control was contracted out in June 2011 and October 2014. Prescribed burning of this portion of the Park will be difficult due to its proximity to Palm Beach Blvd. LCPR staff will coordinate with LCPR's Burn Crew, FWC and FFS on initiating a burn program on this MU.

Lee County staff is looking into the feasibility of vacating a portion of Gideon Lane. See the "Other Legal Constraints and Considerations" section of this document.

MU 1d (16.2 acres): No public access trails or amenities are located within MU 1d. The northern boundary of this jigsaw-shaped unit is bordered alternately by private property and Palm Beach Blvd. The unit is bordered on the west by Dixie Lane and on the east by Bateman Road. The sinuous southern border follows a fireline and touches MU 1e and 3. The entire unit is comprised of mesic flatwoods but the north east corner is transitioning into a hardwood area. There is no fire history for this unit. Exotic vegetation control was contracted out in June 2011 and October 2014. Prescribed burning of this portion of the Park will be difficult due to its proximity to Palm Beach Blvd. LCPR staff will coordinate with LCPR's Burn Crew, FWC and FFS on initiating a burn program on this MU.

MU 1e (21.2 acres): No public access trails or amenities are located within MU 1e. The northern / eastern boundary of this unit is the same sinuous southern boundary of MU 1d. MU 1e is bordered on the west by unit 1a and to the south by MU 3. Approximately 85% of this unit is comprised of mesic flatwoods and the western 15% is improved pasture. Exotic vegetation control was contracted out in October 2014. Prescribed burning of this portion of the Park will be difficult due to its proximity to Palm Beach Blvd

and private parcels. LCPR staff will coordinate with LCPR's Burn Crew, FWC and FFS on initiating a burn program on this MU.

MU 2 (41.9 acres): At the time of acquisition, this unit was comprised of abandoned pasture and citrus grove. No public access trails or amenities are located within MU 2. This unit is bordered on the north by MU 1a, on the east by MU 3 and MU 5, and on the west by MU 1. The southern boundary of the unit loosely follows the transition of mesic hammock, in MU 4, to mesic flatwoods within the unit. A majority (90%) of MU 2 is comprised of mesic flatwoods. A small depression marsh exists in the center. Exotic control in this area has been difficult due to the limited staff assigned to this Park; of particular concern is bishopwood but progress is being made.

A prescribed fire was conducted within this unit in January 1997. Then, in February 1998, slash pine and longleaf pine were planted on the 50 acres of abandoned pasture and citrus grove within MU 2. Approximately 350 seedlings per acre were planted with a target density (survival rate) of 50 – 150 stems per acre. Non-native grasses quickly outcompeted some of the pines resulting in a low survival rate of the pines. An herbicide pine release project was undertaken in March 1999 to kill back some of the exotic graminoids competing with the young pines. In 2001, the survival rate of the pines was estimated to be 5% and the surviving trees were, at that time, 3' – 4' in height. Today, fourteen years later, a heavy density of pines occurs on approximately 18 acres of the site. This area was burned again in April 2003, however, this densely vegetated coniferous area still has a thick duff layer. This is a high priority area for a prescribed fire and County staff are coordinating with FWC personnel to apply fire here.

MU 3 (36.7 acres): A small portion of the North Marsh Trail and the Marsh Overlook are located within MU 3. This unit is bordered on the north by MU 1e, on the east by Bateman Road, on the south by MU 5 and on the west by MU 2. A majority (88%) of MU 2 is comprised of mesic flatwoods. The small depression marsh in the center is composed mainly of herbaceous vegetation but coastal willow and wax myrtle are invading the marsh. A cogongrass treatment within the entire unit was contracted in November 2014 (as part of a grant from the FWC's Upland Invasive Plant Management Section).

In November 2012, an indigo snake was seen just at the edge of the depression marsh at the North Marsh tail overlook. This sighting was reported to FNAI. Prescribed fires were conducted within this unit in March 2010 and January 2014.

MU 4 (43.7 acres): A large portion of the Hickey Creek Trail, the entrance to the North Marsh hiking trail, both named foot bridges over the creek, and one of two picnic areas are located within MU 4. Units 1, 2, 5, 6, 7, 10, and 11 border this serpentine-shaped unit; this is the only MU that traverses the powerline corridor. This unit contains a majority of the blackwater stream (Hickey Creek) on site and is dominated by mesic hammock. This unit also contains small portions of overgrown scrub and scrubby

flatwoods. The tiny proportions of pyric plant communities contained within this unit will not be burned. Mechanical reduction will be conducted if needed.

MU 5 (62.4 acres): A majority of the North Marsh Trail and two unnamed bridges are contained within MU 5. This unit is bordered on the north by MU 3, on the east by a berm and then Bateman Road, on the south by the powerline corridor, and on the west by MU 2 and MU 4. A majority (84%) of MU 5 is comprised of mesic flatwoods. A mesic hammock and two small depression marshes are also situated within this unit. The two unnamed bridges are located within the wettest portion of the mesic hammock. Just as with the depression marsh in MU 3, the two marshes within MU 5 are being invaded by woody species. This is likely due to the years of drainage the site has seen. A cogongrass treatment within the entire unit was contracted in November 2014 (as part of a grant from the FWC's Upland Invasive Plant Management Section).

Prescribed fires were conducted within this unit in January 1997, February 2004, March 2010, and January 2014.

MU 6 (23.7 acres): A portion of the Hickey Creek hiking trail is contained within MU 6. This unit is bordered on the north by MU 4, on the east by MU 7, on the south by the powerline corridor, and to the west by a fence and then the water conveyance structure called Hickey Creek canal managed by the LAMSID. Roughly, 47% of the unit is scrubby flatwoods and 47% is mesic flatwoods. Approximately 6% of this unit is upland hardwood forest. The western 3 acres (a long rectangle running from north to south and about 40 feet wide) is a berm where gopher tortoises tend to create their burrows.

Prescribed fires were conducted within this unit in May 1995 and March 2002.

MU 7 (29.2 acres): A portion of the Hickey Creek hiking trail, a trail shelter, and the entrance to the Palmetto Pines hiking trail are contained within MU 7. This triangle-shaped unit is bordered on the east by MU 4, on the south by the powerline corridor, and on the west by MU 6. Roughly, 20% of the unit is scrubby flatwoods and 74% is mesic flatwoods. Approximately 6% of the site is mapped as mesic hammock.

A prescribed fire was conducted within this unit in May 1995.

MU 8 (27.7 acres): No public access trails or amenities are located within MU 8. This unit is bordered on the east by MU 8a, on the south by MU 12, on the west by a fence and then the water conveyance structure called Hickey Creek canal managed by the LAMSID, and on the north by the powerline corridor. Seventy-five percent of this unit is mapped as mesic hammock. A 1.7-acre depression marsh is mapped in this unit; it is highly degraded and restoration to a healthy marsh is unrealistic given the continued drainage of the site over the years. Upland hardwoods are found on the edges of this unit.

Prescribed fires were conducted within this unit in April 1995 and March 2002.

MU 8a (26.0 acres): The area encompassed by MU 8a was not assigned an MU number in previous editions of the HCMP LMP because this portion of the park contains very few pyric communities and has never been burned. Previous units assigned within the Park were "burn units". However, to provide a comprehensive assessment of the Park within this document, staff felt it was warranted to "create" this MU. For consistency's sake, the original management units were not re-numbered.

The elongated shape of MU 8a lends itself to be bordered by 11 MUs and the powerline easement (Figure 22; in a clockwise direction starting in the north: MU 9, 13, 16, 18, 21, 20, 19, 15, 12, 8, and the powerline corridor to the north).

Historically, the powerline easement (corridor) that crosses HCMP in an east - west direction was the location of a portion of the Seaboard Air Line Railway. The western portion of the Palmetto Pines hiking trail and an overlook are located on what was the spur of the railroad built to gather logs off of the main railway. The construction of the "spur" required elevating the land to build a railway line. This resulted in an altered plant community designated, today, as upland hardwood forest. Similar to naturally occurring mixed hardwoods, this plant community is a well-developed, closed-canopy forest dominated by deciduous hardwood trees in areas sheltered from fire.

Elevating a portion of the substrate required excavating other portions. As a result, the eastern and western portions of the spur are gullies. The challenging portions of this unit occur within the "gullies" where feral hogs tend to disturb the soils disproportionately to other areas of the Park. This disturbance lends to the need to be tenacious in the control of exotic vegetation - especially Caesarweed and cogongrass.

A lighting strike occurred on the northern end of this unit (just north of the "Y") in June 2015. When FFS responded, they cut dozer lines around the fire to suppress it. FWC and LCPR staff are considering keeping some of these dozer line open for easier access from the western part of this unit to the eastern part. The rest of the lines will be rehabilitated and monitored for exotics. An escaped prescribed burn conducted by a contractor also resulted in plow lines disrupting the sourthern-most portion of the unit. The lines will be rehabilitated and monitored for exotics.

MU 9 (62.1 acres): A portion of the Palmetto Pines hiking trail is located within unit 9. MU 9 is bordered on the north by the powerline corridor, the east by MU 10 and private property, the south by MU 13 and the west by MU 8a. Seventy-seven percent of the unit is composed of mesic flatwoods, 21% is composed of scrub and 2 % is composed of scrubby flatwoods. The private property to the east of this unit has a conservation easement over it but it is overgrown scrub, scrubby flatwoods and mesic flatwoods.

Prescribed fires were conducted within this unit in April 2001 and October 2008.

MU 10 (10.6 acres): No public access trails or amenities are located within this unit. A majority of the unit is comprised of mesic flatwoods. Some hardwoods associated with mesic hammocks and upland hardwood forests are also found within this unit. As a result of the mixture of communities within this unit, MU 10 contains an abundance of

epiphytes – perhaps more than would be anticipated by looking at an aerial of the property. MU 10 is bordered on the north by the powerline easement, to the east by MU 4 and private property, and to the west by MU 9.

Due to the proximity of the private property and size and configuration of this unit, the application of prescribed fire has been a challenge. This unit has no burn history.

MU 11 (9.3 acres): No public access trails or amenities are located within this unit. MU11 is comprised of mesic flatwoods. This unit is bordered on the north by the powerline corridor, the east by Bateman road, the south by private property, and the west by MU 4. There is a berm between the eastern-most fireline and the property boundary fence.

Prescribed fires were conducted within this unit in December 2000 and March 2006.

MU 12 (20.1 acres): No public access trails or amenities are located within this unit. This unit is bordered on the east by MU 8a, on the south by MU 15, on the west by a fence and then the water conveyance structure called Hickey Creek canal managed by the LAMSID, and on the north by MU 8. A majority of this unit is mapped as mesic hammock. A 0.5-acre depression marsh is mapped in this unit; it is highly degraded and restoration to a healthy marsh is unrealistic given the continued drainage of the site over the years. Upland hardwoods are found on the western edge of this unit. MU 8 to the north has a similar plant community composition to this unit but this unit has very little tree canopy compared to MU 8.

Prescribed fires were conducted within this unit in September 1999 and September 2010.

MU 13 (70.7 acres): MU 13 is the largest of all of the MUs within HCMP. A portion of the Palmetto Pines hiking trail is located within this unit. MU 13 is bordered to the north by MU 9, to the east by MU 13a and Bateman Road, to the south by MUs 14 and 16, and to the west by MU 8a. Approximately 81% of the unit is mesic flatwoods and 19% scrubby flatwoods. The endemic Florida cinchweed (*Pectis linearifolia*) was discovered on the eastern fireline.

Prescribed fires were conducted within this unit in May 1995, October 2003, and March 2014.

MU 13a (3.7 acres): This small, triangle-shaped unit is borderd on the north by private property, the east by Bateman Road, and the west by unit 13. There are no public access trails or amenities located within this unit. Due to the small size and location of is unit, no fire have been conducted here to date. The entire unit is comprised of mesic flatwoods and gopher tortoises burrow within the berm on the eastern border of this unit.

MU 14 (15.4 acres): There are no public access trails or amenities located within this unit. This unit is bordered on the north by MU 13, on the east by Bateman Road, and on the south by MU 21, and on the west by MUs 16, 18, and 21. About 58% of this unit is mesic flatwoods and 42% is scrubby flatwoods. While the entire unit is composed of pyric plant communities, burning this unit has not been a top priority because of the size of the unit and the benefit of the vegetative buffer it provides on the border of HCMP. However, a prescribed fire was conducted in this unit in February 2014.

MU 15 (27.6 acres): No public access trails or amenities are located within this unit. This unit is bordered on the east by MU 8a, on the south by MUs 17 and 19, on the west by a fence and then the water conveyance structure called Hickey Creek canal managed by the LAMSID, and on the north by MU 12. A majority of this unit is mapped as mesic hammock. The depression marshes mapped in this unit are highly degraded and restoration to a healthy marsh is unrealistic given the continued drainage of the site over the years and the small size of the marshes. Upland hardwoods are found on the western edge of this unit. Like MU 12 to the north, MU 15 has very little tree canopy compared to MU 8.

Prescribed fires were conducted within this unit in September 1999 and October 2003.

MU 16 (20.0 acres): A portion of the Palmetto Pines hiking trail is located within this unit. MU 16 is bordered to the north by MU 13, to the east by MU 14, to the south by MU 18, and to the west by MU 8a. Approximately 34% of the unit is mesic flatwoods and 66% scrubby flatwoods.

Prescribed fires were conducted within this unit in May 1995, October 2003, and March 2015.

MU 17 (43.8 acres): No public access trails or amenities are located within this unit. This unit is located on the southwest corner of the Park and is bordered to the north by MU 15, to the east MU 19, the south by a fence and MU 20, and to the west by a fence and then the water conveyance structure called Hickey Creek canal managed by the LAMSID. A majority of this unit is mapped as mesic hammock. A highly degraded depression marsh exists on-site but restoration to a healthy marsh is unrealistic given the continued drainage of the site over the years and the small size of this marsh. Upland hardwoods are found on the western edge of this unit. Like MU 15 to the north, MU 17 has very little tree canopy compared to MU 8. The substrate is extremely rocky.

A prescribed fire was conducted within this unit in September 1999. MU 17 and 19 were slated to be burned in March 2016. The prescribed burn escaped and burned a total of 82 acres within HCMP and 2 acres within Alva Scrub Preserve to the east; as a result, only a portion of MU 17 was burned (Figure 24).

MU 18 (18.5 acres): A portion of the Palmetto Pines hiking trail is located within this unit. MU 18 is bordered to the north by MU 16, to the east by MU 14, to the south by MU 21, and to the west by MU 8a. Approximately 17% of the unit is mesic flatwoods and 83% scrubby flatwoods.

Prescribed fires were conducted within this unit in November 1999 and June 2012.

MU 19 (28.4 acres): No public access trails or amenities are located within this unit. This unit is bordered on the north by MU 15, the west by MU 17, the south by MU 20, and the east by MU 8a. Approximately 71% of the site is mesic flatwoods, 17% is upland hardwood hammock, and 12% of the unit is mapped as dome swamps. Like most of the Park, the water table in this area has been dropping contributing to the dry-down of the soils and the plant communities are responding to this change in hydroperiod. Staff continues to see the dome swamps and portions of the upland hardwood communities being quickly invaded by various oaks (commonly found in shorter hydroperiods and dry areas) and cabbage palms.

A prescribed fire was conducted within this unit in September 1999. MU 17 and 19 were slated to be burned in March 2016. The prescribed burn escaped and burned a total of 82 acres within HCMP and 2 acres within Alva Scrub Preserve to the east; as a result, only a portion of MU 19 was burned (Figure 24).

MU 20 (31.3 acres): No public access trails or amenities are located within this unit. This dome-shaped unit is bordered on the south by LAMSID's swale system and around the "dome" by MUs 19, 8a, and 21. This unit contains the only basin swamp community found within HCMP. The earliest aerials available to staff (Figure 13) show that the spur of the Seaboard Air Line Railway ran through this MU. The basin swamp, dome swamp, and upland hardwood forest were highly altered by this tram. Since then, the continued drainage of the site has negatively altered the plant communities found within this unit. Staff continues to see this transition occurring with the basin swamp and being quickly invaded by various oaks (commonly found in shorter hydroperiods and dry areas), hog plum, and cabbage palms. While these trees and shrubs are native species, they are not typically found in healthy cypress systems. For instance, hog plum is a facultative upland plant (Lichvar et al. 2014) yet it is forming dense thickets within this basin swamp. Additionally, Brazilian pepper is invading this area.

Rotten base of a cypress tree in management unit 20. Note presence of cabbage palm fronds.

While no prescribed fires were scheduled for this unit, a majority of it burned during an escaped fire in March

2016 underscoring the dry conditions of this hydrologically altered “basin swamp” (Figure 24).

MU 21 (36.7 acres): A portion of the Palmetto Pines hiking trail is located within this unit as is the southern-most shelter. This unit is bordered on the north by MU 18, the east by MUs 14 and 22, the south by LAMSID’s swale system, and the west by MU 20 and 8a. Just over half of the unit is comprised of scrubby flatwoods. There are upland hardwood trees on the western border and the remainder of the unit is mesic flatwoods.

Prescribed fires were conducted within this unit in November 1999, June 2012, and February 2014. An escaped fire in March 2016 burned through the middle of this unit (Figure 24).

MU 22 (39.3 acres): No public access trails or amenities are located within this unit. MU 22 is located in the southeast corner of HCMP. MU 22 is bordered on the north by Bateman Road and private property, on the east by the Alva Scrub Preserve, on the south by LAMSID’s swale system, and the west by MUs 14 and 21. This unit contains a 0.75-acre borrow pit that contains water year-round. The edges of this pit are cogongrass “hotspots” and staff is diligent in its treatment. The lack of fire within this unit is resulting in its transition to a hardwood system.

While no prescribed fires were scheduled for this unit, an escaped fire in March 2016 burned through the middle of this unit (Figure 24).

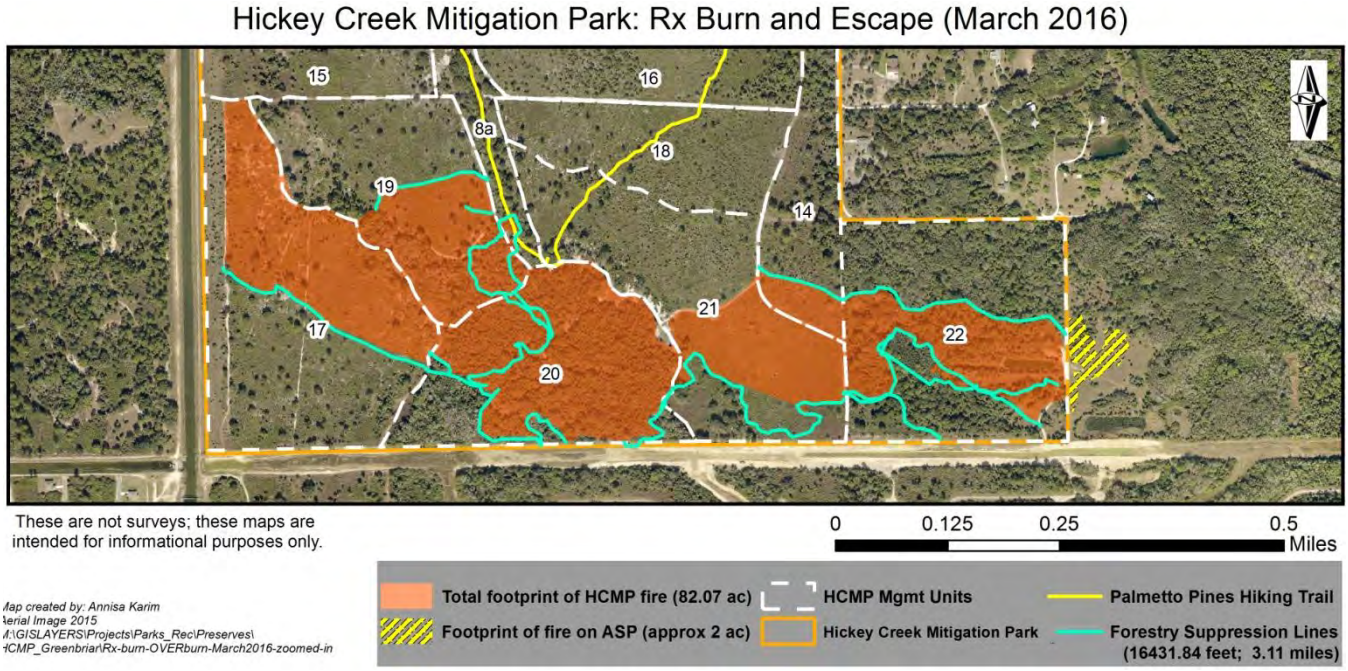


Figure 24: Escaped Rx Burn at HCMP March 2016

HCGCP (95.81 acres): No public access trails or amenities are located within this unit. The roads running throughout the HCGCP made ORV use possible and they provided (unintentional) access to this remote area where the dumping of horticultural waste, construction debris, and the remnants of grow-houses occurs. In May 2014, LCDNR's Pollution Prevention Program in coordination with the County's Traffic and Operations division installed boulders and gates (Figure 25) to deter vehicular access to HCGCP with the objective of eliminating or reducing the frequency of these illegal activities. HCGCP is bordered on the north by a water conveyance system managed by LAMSID. HCGCP is surrounded by undeveloped, platted private property and contains several in holdings. The eastern portion of the Preserve is bordered by the Greenbriar Swamp managed by LAMSID. Figure 12 shows the seven plant communities that make up the Preserve and Figure 7 shows the underlying soils. Interior portions of the Preserve and lightly or moderately infested with Brazilian pepper but the edges (along the roadways) are heavily infested. Due to the private in-holdings and site security issues, economies of scale prevent the efficient land management of this Preserve. Public use is not encouraged at this time. There is currently no dedicated funding in the budget of the LCPR to manage this Preserve. The lack of financial and personnel resources greatly limits the potential for nature-based recreation and infrastructure to be supported at within HCGCP. Large scale recreational facilities or multi-use trail systems are not necessary as there are Preserves and Parks in close proximity that provide opportunities for hiking, mountain biking, camping, fishing and equestrian use; these Preserves and Parks have Board-approved stewardship (management) plans in place and the infrastructure to support these offerings.

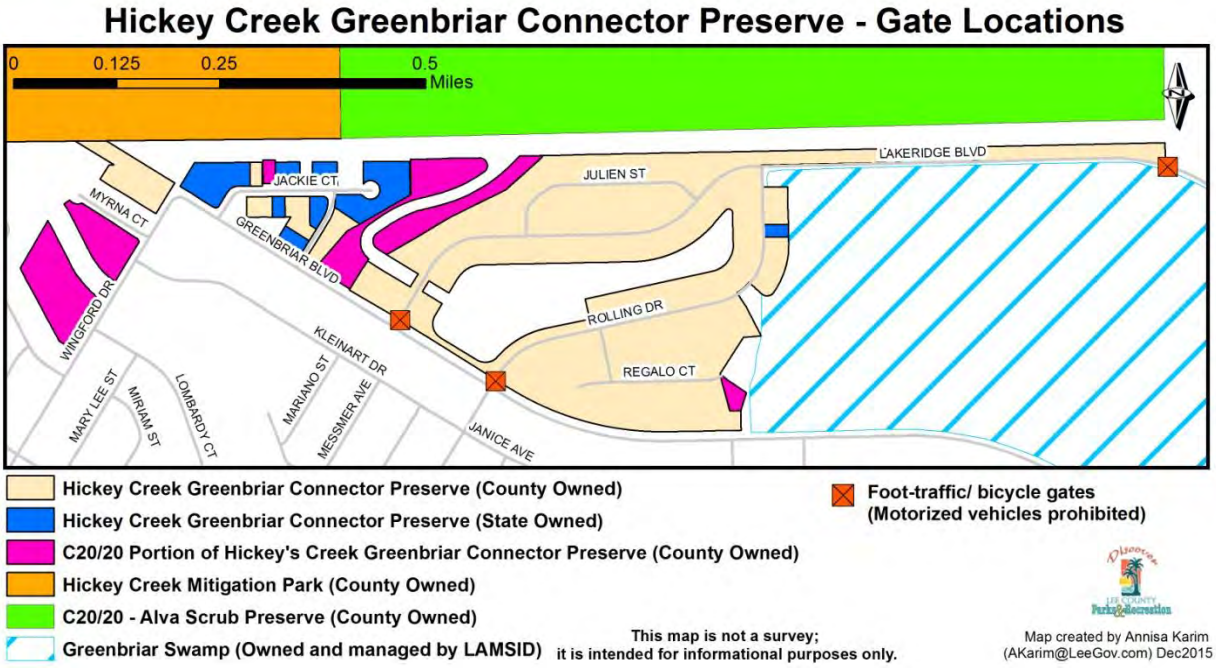


Figure 25: HCGCP Gate Locations

B. Goals and Strategies

The primary management objectives for HCMP are natural community improvements, removal and continued treatment of invasive exotic plants, the removal of exotic animals, and prescribed burning. Per the MOA with FWC , LCPR is responsible for public access, exotic (plant and animal) control and site security. While HCMP is at a maintenance level for exotics (less than 5% exotic cover), staff will remain diligent in the continued treatment of exotics. Prescribed burning of the portion of HCMP acquired with LCPR's C20/20 funds will be difficult due to their proximity to Palm Beach Blvd. and private homes and businesses. LCPR staff will coordinate with the LCPR Burn Crew, FWC and FFS on initiating a burn program on these 82 acres.

The following will be the focus of the coordination between FWC and LCPR staff on the management on HCMP.

Natural Resource Management

- Listed species monitoring
- Exotic plant control and maintenance
- Exotic animal control
- Prescribed fire management
- Monitor and protect listed species
- Brush/fuel reduction

Overall Protection

- Maintain firebreaks
- Maintain Boundary signs
- Change Zoning designation to Environmentally Critical

The core constraints on management of HCGCP are funding and staffing. Obtaining funds through grants and other financial sources will need to be explored and obtained when appropriate. Due to the private in-holdings and site security issues, economies of scale prevent the efficient land management of this Preserve. Coordinating with LAMSID will be an important part in management of the Preserve; neighbors will be considered and informed of any prescribed fires and/or large management practices that may be considered disruptive.

VII. Projected Timetable for Implementation

Table 11: Projected Timetable for Implementation

Management Activity**	January (2016-2026)	April (2016-2026)	July (2016-2026)	October (2016-2026)
Exotic Plant Control	x	x	x	x
Prescribed fire	x	x	x	x
Mowing and/or trail trimming		x		x

**The management activities above will occur quarterly as indicated from 2016-2026 based on staffing and funding resources. Stewardship activities are projected to remain consistent every year for the next ten years.

VIII. Financial Considerations

There is no dedicated funding in the LCPR budget to manage HCMP or HCGCP. The MOA with FWC will be adhered to. Funding sources will be researched and applications for appropriate grants will be made. Examples include the FWC Bureau of Invasive Plant Management for exotic plant control projects, and sources that provide assistance for plant community maintenance.

LCPR staff is involved in the local (Southwest Florida) Cooperative Invasive Management Area (CISMA) and may be able to acquire assistance from the CISMA. The goal of the SWFL CISMA is “to reduce the impact of or eliminate invasive, non-native plants and non-native animals by combining programs and resources to address invasive species on a landscape level to achieve common goals and objectives.”

Projected costs for resource management and protection of HCMP and HCGCP are presented in Appendix K.

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X. APPENDICES

APPENDIX A: Deed of Conservation Easement Between Lee County and Florida Game and Fresh Water Fish Commission

Office of County Lands
Post Office Box 398
Fort Myers, Florida 33902-0398

DEED OF CONSERVATION EASEMENT

THIS DEED OF CONSERVATION EASEMENT is given this 14 day of July, 1994, by Lee County a political subdivision of the State of Florida, whose mailing address is P.O. Box 398, Fort Myers, Florida 33902-0398 ("Grantor"), to the Florida Game and Fresh Water Fish Commission (GFC), an agency of the State of Florida, with its principal office at 620 S. Meridian Street, Tallahassee, Florida 32399-1600, an agency of the State of Florida, ("Grantee").

W I T N E S S E T H:

WHEREAS, the above named parties submitted an application to the Florida Communities Trust program for acquisition of certain lands situated in Lee County, hereinafter referred to as the "Property", more specifically described in Exhibit "A" attached hereto and incorporated herein by this reference; and

WHEREAS, the FCT Governing Board pursuant to Sections 259.101 and 380.502, Florida Statutes, and Rule 9K-4, Florida Administrative Code awarded Conceptual Approval to the Project partnership application on 9-29-93; and

WHEREAS, as part and condition of the FCT Project Approval, all parties have approved the Hickey Creek Mitigation Park Management Plan and the Memorandum of Understanding, and together with the Conceptual Approval Agreement and Grant Award Agreement are collectively referred to as "Governing Documents", attached hereto, the terms of which are hereby incorporated herein by reference; and

WHEREAS, on May 5, 1994, the Board of the Florida Communities Trust approved the Hickey Creek Mitigation Park Management Plan which provides for the conveyance of a conservation easement to GFC for lands it uses as mitigation for impacts to listed wildlife populations; and

WHEREAS, the Grantor owns the Property described in Exhibit "A"; and

NOW THEREFORE, Grantor hereby grants, creates, and establishes a perpetual conservation easement upon the Property described in Exhibit "A", which shall run with the land and be binding upon the Grantor, its successors and assigns, and remain in full force and effect forever.

C7b
4-20-94

1. The scope, nature, and character of this conservation easement is to ensure that the area described in Exhibit "A" shall be used and managed as a GFC Mitigation Park. Except as otherwise provided for herein, or in the Governing Documents, the Property will be retained forever in its natural condition pursuant to Section 704.06, Florida Statutes. To carry out this purpose the following rights are conveyed to Grantee by this easement:

(a) To enter upon the Property to control and regulate use, to perform habitat management activities and to enforce the rights herein granted by Grantor, its heirs, successors or assigns;

(b) To enjoin any activity on or use of the Property that is inconsistent with the purpose of this conservation easement and to enforce the restoration of such areas or features of the Property that may be damaged by any inconsistent activity or use; and

(c) To preserve and protect and, consistent with the Governing Documents, enhance the natural and ecological features of the Property including, without limitation, topography, soil, hydrology, vegetation and wildlife.

2. Except for specific activities authorized by the Governing Documents, or as may be amended by mutual agreement in writing by Grantee and Grantor, and as more specifically referenced herein, including, without limitation, creation, restoration, enhancement and preservation of wetlands and upland habitat areas, this Deed of Conservation Easement prohibits the following activities in, on or under the Property:

(a) Construction or placing of buildings, roads, billboards, surface water management facilities, utilities, or other structures on or above the ground not specified in the Governing Documents;

(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;

(c) Removal or destruction of trees, shrubs, or other vegetation, except for the removal of nuisance or exotic plant species or other vegetation where necessary for management and restoration;

(d) Excavation, dredging, or removal of loam, peat, gravel, soil, rock, or other material substance in such manner as to affect the surface;

(e) Surface use, except for purposes that permit the land or water area to remain predominantly in its natural condition;

(f) Activities detrimental to water conservation, erosion control, soil conservation, or fish and wildlife habitat preservation;

(g) Acts or uses detrimental to such retention of land or water areas;

(h) Acts or uses detrimental to the preservation of the structural integrity or physical appearance of sites or properties of historical, architectural, archaeological, or cultural significance;

(i) Acts or uses inconsistent with the purpose of this conservation easement as set forth in Section 704.061, Florida Statutes, as it may be amended from time to time, and any successor law, rule or statute.

3. Grantor intends that enforcement of the terms and provisions of the conservation easement and the Governing Documents shall be at the discretion of Grantee and that any forbearance on behalf of Grantee to exercise their rights hereunder in the event of any breach hereof by Grantor, their successors, personal representatives or assigns shall not be deemed or construed to be a waiver of Grantees' rights hereunder in the event of a subsequent breach.

4. Notwithstanding the prohibitions specified in Subparagraphs a. through i. of Paragraph 2 above, Grantor expressly reserves the right to construct, operate and maintain recreational facilities and necessary ancillary facilities on the property in a manner consistent with the Governing Documents.

5. Grantee agrees it will hold this conservation easement exclusively for conservation purposes and that they will not assign their rights and obligations under this conservation easement except to another organization qualified to hold such interests under the applicable state and federal laws and committed to holding this conservation easement exclusively for conservation purposes. Grantee may also amend this conservation easement to remove from the easement areas where the Grantees management responsibility has been terminated pursuant to Section 3(H) of the Memorandum of Agreement.

6. If any provision of this conservation easement or the application thereof to any person or circumstance is found to be invalid, the remainder of the provisions of this conservation easement, and the applications of such provision to persons or circumstances other than those as to which it is found to be invalid, shall not be affected thereby.

7. All notices, consents, approvals 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-in-interest, at the addresses above set forth or such new addresses as either party may in writing deliver to the other.

TO HAVE AND TO HOLD unto Grantee, their respective successors and assigns forever. The covenants, terms, conditions, restrictions and purposes imposed with this easement shall not only be binding upon Grantor but also its agents, personal representatives, heirs, assigns and all other successors to it in interest, and shall continue as a servitude running in perpetuity with the Property.

IN WITNESS WHEREOF Grantor has set their hand on the day and year first above written.

ATTEST: Charlie Green, Ex - Officio Clerk
Board of County Commissioners

By: Ruth Traynier
Deputy Clerk

BOARD OF COUNTY COMMISSIONERS, LEE COUNTY, FLORIDA

By: Ray Judah
Chairman

APPROVED AS TO FORM

Jack N Peterson
OFFICE OF COUNTY ATTORNEY

GRANTEES ACCEPTANCE

The Florida Game and Fresh Water Fish Commission hereby approves the foregoing Conservation Easement and agrees to all the terms and provisions.

Signed, sealed and Delivered
in our presence and witnesses:

Jimmie C. Bevis
WITNESS

Jimmie C. Bevis
(Print Name of Witness)

Dale F. Cook
WITNESS

GALE F. COOK
(Print Name of Witness)

FLORIDA GAME AND FRESH WATER
FISH COMMISSION

By: Allan L. Egbert

Allan L. Egbert
Executive Director
(Print Name and Title)

Address: 620 South Meridian Street
Tallahassee, Florida 32399-1600

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY
Commission Attorney

STATE OF FLORIDA
COUNTY OF Leon

The foregoing instrument was acknowledged before me this 17 day of May, 1994 by Allan L. Egbert the Executive Director of the Florida game and Fresh Water Fish Commission, a Department of the State of Florida, on behalf of the department. He/she is personally known to me. _____

(Affix Notary Seal)

ROSEMARY MARA
MY COMMISSION # CC 153102 EXPIRES
October 20, 1995
BONDED THRU TROY FAIN INSURANCE, INC.

Rosemary Mara
(Signature of Notary Public)

_____
(Print Name of Notary Public)
NOTARY PUBLIC
Serial/Commission No. _____
My Commission expires: _____

hcconeas
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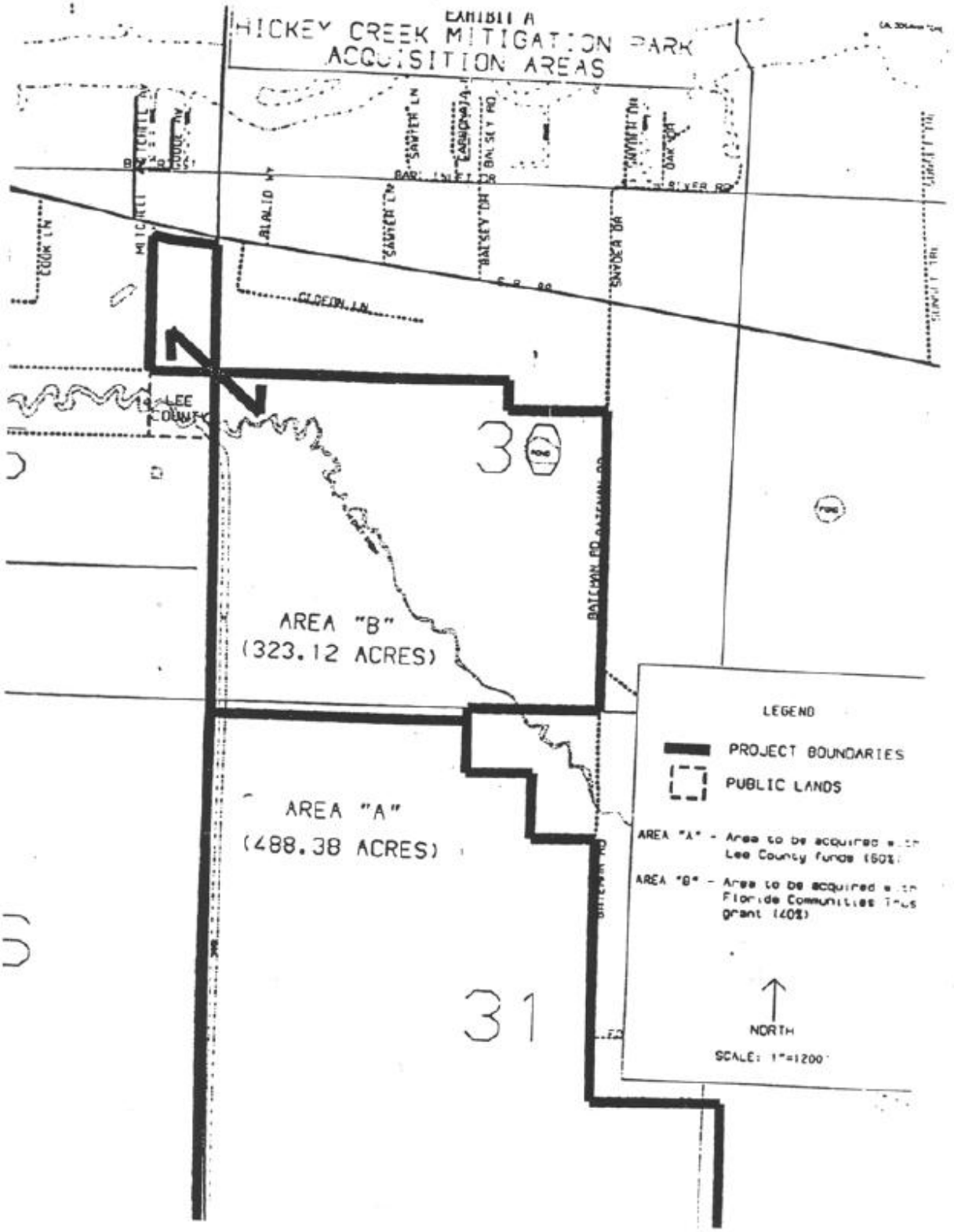
EXHIBIT A
HICKEY CREEK MITIGATION PARK
ACQUISITION AREAS
AREA "B"
(323.12 ACRES)
AREA "A"
(488.38 ACRES)
31
LEGEND
PROJECT BOUNDARIES
PUBLIC LANDS
AREA "A" - Area to be acquired with Lee County funds (60%)
AREA "B" - Area to be acquired with Florida Communities Trust grant (40%)
NORTH
SCALE: 1"=1200'

EXHIBIT A

LEGAL DESCRIPTION

PARCEL A

COMMENCING AT THE SOUTHWEST CORNER OF SECTION 30, TOWNSHIP 43 SOUTH, RANGE 27 EAST, LEE COUNTY, FLORIDA; THENCE NORTH 89°-32'-13" EAST, ALONG THE SOUTH SECTION LINE OF SAID SECTION 30, A DISTANCE OF 200.01 FEET TO THE EASTERLY RIGHT-OF-WAY LINE OF A 200 FOOT DRAINAGE CANAL, AND THE POINT OF BEGINNING OF A TRACT OF LAND HEREIN DESCRIBED: THENCE NORTH 00°-53'-00" WEST, ALONG SAID DRAINAGE CANAL, A DISTANCE OF 2,656.32 FEET; THENCE NORTH 89°-50'-34" WEST A DISTANCE OF 200.00 FEET TO THE WEST QUARTER SECTION CORNER; THENCE NORTH 00°-56'-00" WEST, ALONG THE WEST SECTION LINE OF SAID SECTION 30, A DISTANCE OF 557.13 FEET; THENCE NORTH 89°-35'-20" EAST, A DISTANCE OF 2,924.63 FEET; THENCE SOUTH 00°-24'-40" EAST, A DISTANCE OF 254.78 FEET; THENCE NORTH 89°-35'-20" EAST, A DISTANCE OF 1,056.52 FEET, TO THE CENTERLINE OF BATEMAN ROAD; THENCE SOUTH 00°-24'-40" EAST, ALONG THE CENTERLINE OF BATEMAN ROAD, A DISTANCE OF 3,089.79 FEET, TO THE INTERSECTION OF THE SOUTH SECTION LINE OF SAID SECTION 30; THENCE SOUTH 89°-58'-04" WEST, ALONG THE SOUTH SECTION LINE, A DISTANCE OF 1,309.66 FEET, TO THE SOUTH QUARTER CORNER; THENCE SOUTH 89°-32'-13" WEST, ALONG THE SOUTH SECTION LINE, A DISTANCE OF 2,443.03 FEET, TO THE EASTERLY RIGHT-OF-WAY LINE OF AFORESAID DRAINAGE CANAL, AND THE POINT OF BEGINNING.

03/03/94 10:58am
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EXHIBIT A (continued)

PARCEL A (continued)

COMMENCING AT THE SOUTHWEST CORNER OF SECTION 31, TOWNSHIP 43 SOUTH, RANGE 27 EAST, LEE COUNTY, FLORIDA; THENCE NORTH 88°-58'-59" EAST, ALONG THE SOUTH SECTION LINE OF SAID SECTION 31, A DISTANCE OF 200.01 FEET, TO THE EASTERLY RIGHT-OF-WAY LINE OF A 200 FOOT DRAINAGE CANAL, AND THE POINT OF BEGINNING OF A TRACT OF LAND HEREIN DESCRIBED; THENCE NORTH 00°-20'-17" WEST, ALONG SAID DRAINAGE CANAL, A DISTANCE OF 2,646.17 FEET; THENCE NORTH 89°-39'-43" EAST, A DISTANCE OF 50.00 FEET; THENCE NORTH 00°-20'-17" WEST, A DISTANCE OF 2,646.18 FEET, TO THE INTERSECTION OF THE NORTH SECTION LINE OF SAID SECTION 31; THENCE NORTH 89°-32'-13" EAST, ALONG THE NORTH SECTION LINE, A DISTANCE OF 2,393.03 FEET, TO THE NORTH QUARTER CORNER OF SAID SECTION 31; THENCE SOUTH 00°-22'-10" EAST, A DISTANCE OF660.16 FEET; THENCE NORTH 89°-23'-05" EAST, A DISTANCE OF 659.63 FEET; THENCE SOUTH 00°-23'-29" EAST, A DISTANCE OF 660.12 FEET; THENCE NORTH 89°-22'-55" EAST, A DISTANCE OF 659.88 FEET, TO THE CENTERLINE OF BATEMAN ROAD; THENCE SOUTH 00°-24'-47" EAST, ALONG THE CENTERLINE OF BATEMAN ROAD, A DISTANCE OF 2,637.21 FEET; THENCE NORTH 89°-30'-31" EAST, A DISTANCE OF 1,321.76 FEET, TO THE

EXHIBIT A (continued)

PARCEL A (continued)

INTERSECTION WITH THE EAST SECTION LINE OF SAID SECTION 31; THENCE SOUTH 00°-27'-24" EAST, ALONG THE EAST SECTION LINE A DISTANCE OF 1,320.06 FEET, TO THE SOUTHEAST SECTION CORNER; THENCE SOUTH 89°-38'-25" WEST, ALONG THE SOUTH SECTION LINE, A DISTANCE OF 2,645.54 FEET, TO THE SOUTH QUARTER CORNER; THENCE SOUTH 88°-58'-59" WEST, A DISTANCE OF 2,446.09 FEET, TO THE EASTERLY RIGHT-OF-WAY LINE OF AFORESAID DRAINAGE CANAL, AND THE POINT OF BEGINNING.

AND

PARCEL B

THE EAST ONE HALF (E1/2) OF THE NORTHEAST QUARTER (NE1/4) OF THE NORTHEAST QUARTER (NE1/4), LYING SOUTH OF STATE ROAD 80, AND THE NORTHEAST QUARTER (NE1/4) OF THE SOUTHEAST QUARTER (SE1/4) OF THE NORTHEAST QUARTER (NE1/4) OF SECTION 25, TOWNSHIP 43 SOUTH, RANGE 26 EAST, LEE COUNTY, FLORIDA.

03/03/94 3:47pm
ACQACQPT.CH

APPENDIX B: Memorandum of Agreement Between Florida Game and Fresh Water Fish Commission Lee County

LEE CO. CONTRACT NO. C940435

MEMORANDUM OF AGREEMENT

MITIGATION PARK PROGRAM

This Memorandum of Agreement between the Florida Game and Fresh Water Fish Commission (GFC), and Lee County, dated May 12, 1994, is intended as a framework for the acquisition and implementation of a Mitigation Park program.

This Memorandum of Agreement is entered into with reference to the following facts:

Whereas, GFC has an interest in the establishment of a Mitigation Park program to accommodate upland wildlife mitigation efforts within the Southwest Florida Regional Planning Council (SWFRPC) boundary, and

Whereas, GFC is authorized under Section 372.074 (Florida Statutes), as amended by CS/HB 161, to assist other agencies and local governments in acquiring or managing lands important to the conservation of fish and wildlife, and

Whereas, Lee County has a concurrent interest in acquiring and protecting lands that could be used for mitigation of environmental damage caused by existing and proposed development, and

Whereas, a site, which is located in Lee County and which is referred to as Hickey Creek Mitigation Park (hereinafter referred to as "HCMP") is the preferred site for the establishment of a mitigation park facility. HCMP is described in Exhibit "A" and graphically depicted in Figure "A" herein attached and made a part of this agreement, and

C7b
4-20-94

Whereas, the HCMP site contains environmentally sensitive lands including rare and unique uplands, wetlands, and important habitat for several listed species, and

Whereas, the interest of both parties are best served by obtaining funding from the Florida Communities Trust (hereinafter referred to as the "FCT") for the acquisition of the Project site, and

Whereas, on November 20, 1992, GFC approved a staff recommendation to proceed with the establishment of a regional mitigation park for the SWFRPC region at HCMP in Lee County, and

Whereas, on December 16, 1992, the Lee County Board of County Commissioners approved $1,687,000 in the Capital Improvement Fund for the acquisition of HCMP (see Area "A" on Exhibit A) and approved the submittal of an application to the FCT P-2000 Program for a matching grant to acquire additional land within HCMP (see Area "B" on Exhibit A), and

NOW, THEREFORE, in consideration of the foregoing, and of the terms and conditions stated below, Lee and GFC agree to be legally bound as follows:

1. FISCAL RESPONSIBILITIES. All monies that are collected by GFC for wildlife mitigation satisfied by using HCMP shall comply with the following subsections.

(A) Each party agrees to establish the fees charged for participation in HCMP as follows:

i. Total Project Acquisition Cost shall mean the total purchase price of HCMP including costs of any property appraisals, boundary surveys, environmental audits, title insurance, closing costs and other direct and incidental costs

required for purchase of HCMP, minus the $1,113,000 matching grant from Florida Communities Trust.

ii. The Upland Acquisition Cost shall equal the Total Project Acquisition Cost divided by the total number of non-FCT upland acres in Area "A". Area "A" is hereafter referred to as the "Mitigation Area" and is depicted in Exhibit A.

iii. The Management Fee shall be a sum equal to fifteen percent (15%) of the Upland Acquisition Cost. GFC reserves the right to modify this fee according to management needs.

iv. The Service Charge shall equal seven percent (7%) of the sum of the Upland Acquisition Cost and Management Fee and shall be assessed in accordance with Section 215.20, Florida Statutes.

v. The cost of an upland mitigation credit shall be the sum of the Upland Acquisition Cost, Management Fee, and Service Charge.

(B) In accordance with Section 372.074, F.S., GFC agrees to assist Lee County with acquisition of the Project. GFC will pay Lee County for its share of the Project acquisition cost by forwarding to Lee County the land acquisition portion of all mitigation fees it receives from the sale of the upland mitigation credits identified in Section 2(A). In exchange for these payments, GFC will acquire a Conservation Easement over HCMP.

(C) Subject to legislative appropriation approval and laws governing state trust funds, GFC shall make a payment of $395,000 from the land acquisition principal account of the GFC Southwest Florida account to Lee County within six months of acquisition of HCMP. The number of upland mitigation credits encumbered by this

payment shall equal the payment amount divided by the upland acquisition cost. Additional payments equaling the amount on deposit within the land acquisition principal account of the GFC Southwest Florida account shall be made by GFC to Lee County each successive year on or before September 30. Any interest that accrues within the land acquisition principal account shall be added to the management fund principal account and used by GFC to supplement management activities within HCMP.

(D) GFC reserves the right not to direct gopher tortoise mitigation that results from transportation projects sponsored by the Florida Department of Transportation, to HCMP. GFC agrees that all other funds received by that agency for gopher tortoise mitigation within the boundaries of the Southwest Florida Regional Planning Council shall be administered solely in accordance with Section 1 of this agreement.

(E) Only the non-FCT portion of HCMP located in Section 31, Township 43 South, Range 27 East, shall be made available for sale as mitigation credits.

2. MITIGATION ADMINISTRATION.

(A) HCMP shall contain 435 (estimate pending verification) non-FCT upland mitigation credits. One upland mitigation credit shall equal one acre of habitat suitable for gopher tortoise mitigation. GFC shall administer the sale of upland wildlife mitigation credits. Under no circumstance shall the number of mitigation credits sold exceed the number of credits established above for the Project. Records regarding the sale and status of mitigation credits within the mitigation area shall be maintained by GFC.

(B) With each annual payment from the land acquisition principal account to Lee County, GFC will include a map depicting the portion of the mitigation area encumbered by the sale of upland

mitigation credits during that payment period.

(C) Upland mitigation within HCMP shall be deemed complete when all upland mitigation credits are sold and, when the total amount of mitigation funds received by Lee County, after adjusting for the management fee and service charge pursuant to Section 1(A)(iii) and (iv) above, equals the total project acquisition cost as defined in Section 1(A)i above.

(D) Pursuant to Section 1(B) above, a Deed of Conservation Easement to last in perpetuity over HCMP, presented as Exhibit "B", shall be granted by Lee County to GFC. Said easement shall be conveyed to GFC prior to any payment from GFC to Lee County, shall be consistent with Section 704.06, Florida Statutes, and shall protect the ability of GFC to access, manage and control use within HCMP.

3. MANAGEMENT RESPONSIBILITIES

(A) GFC will assume full responsibility for resource management of all lands within HCMP. All uses, improvements, structures, and management practices within HCMP must be approved by GFC. Public access and passive, resource-based recreation within the mitigation area will be controlled by GFC in order to minimize disturbance and other adverse impacts to habitat quality or wildlife populations. The principal management goal for the mitigation area will be the protection and enhancement of listed wildlife populations, even to the exclusion of other uses and activities.

(B) Lee County shall assume full responsibility for the funding, development, and management of public access and passive, resource-based recreational activities of HCMP. Lee County shall secure funding and assume management responsibility for fencing and exotic plant removal within HCMP.

(C) GFC will establish HCMP as a Wildlife and Environmental Area pursuant to Rule 39-17.002, F.A.C. GFC will post HCMP with signage stating the designation of the project along with applicable regulations. Contingent upon formal approval by the Florida Game and Fresh Water Fish Commission, the following rules will be adopted for HCMP pursuant to Rule 39-17.005 F.A.C.:

1. Hunting or possession of firearms is prohibited;
2. Fires are prohibited;
3. Disturbance or removal of any plants or trees is prohibited;
4. Possession of dogs or trapping devices is prohibited;
5. Access shall be at designated entrance areas, and is restricted to foot traffic only.
6. No motorized vehicles, bicycles, or horseback riding is allowed.
7. Camping is prohibited.

(D) Within 18 months of Project acquisition, GFC may adopt a strategic management plan for HCMP. This plan will be consistent with the Conceptual Management Plan (Exhibit "C") dated April 20, 1994. The strategic management plan shall identify actions necessary to implement listed species management activities and will include plans for habitat restoration and monitoring.

(E) Management fees collected pursuant to subsection 1(A)(iii) of this agreement will be administered by GFC. GFC agrees to deposit all management fees into a management fund principal account, and to fund management activities, pursuant to Section 7 of this agreement, with the interest that accrues on behalf of the management fund principal account.

(F) In the event GFC determines that it can no longer perform its management function over HCMP, due to limited funding or some other constraining circumstance, it shall delegate management responsibility for the mitigation area to another agency or

private conservation foundation, after review and approval by FCT. Lee County may at its discretion elect to either manage the FCT portion of the project, or delegate this responsibility to another agency or private conservation foundation, consistent with the FCT Conceptual Approval Agreement 92-015-P2A.

(G) The assignment of management responsibility to GFC shall not preclude Lee County from funding recreational or habitat related improvements within the mitigation area provided said activities are approved by GFC, do not conflict with specific regulations promulgated by GFC pursuant to 39-17.005, F.A.C., are consistent with the Conceptual Management Plan and GFC's Strategic Management Plan, and do not unreasonably interfere with the protection of wildlife and vegetation.

(H) GFC may terminate its management responsibility for specific areas outside the Mitigation Area where natural resources may be adversely affected by clearing, mining, excavating, or any other activity or use not identified in the Conceptual Management Plan dated April 20, 1994. Upon mutual agreement between GFC and Lee County, the Conservation Easement referenced in 2(D) above may be amended to remove areas from the easement where GFC management responsibility has been terminated.

4. REPORTS. In the event Lee County receives an FCT matching grant for the acquisition of HCMP, Lee County agrees to prepare the annual report required by FCT. GFC agrees to prepare and submit to Lee County an annual report of GFC management activities two months prior to the FCT annual report deadline. The GFC annual report shall detail GFC management activities and shall report on the status of mitigation credits sold within the previous twelve-month period. In the event that Lee County acquires the site without a FCT grant, GFC shall submit the annual report to Lee County for the twelve-month period which coincides with the Lee County fiscal year.

5. TERMINATION OF AGREEMENT. This agreement shall terminate upon either (1) the inability of Lee County to acquire HCMP for use as a Mitigation Park, (2) the inability of GFC to obtain spending approval from the Florida Legislature to effect the transfer of funds from the Southwest Florida Gopher Tortoise account of the Fish and Wildlife Habitat Trust Fund to Lee County, or (3) failure of Lee County to execute or comply with Addendum #1 to the Option Agreement for Sale and Purchase, shown as Exhibit "D", with respect to the termination or deannexation of drainage rights held by East County Water Control District. Sections 1,2, and 4 of this agreement shall terminate upon completion of HCMP pursuant to Section 2(C) of this agreement. The management of lands encumbered under Section 2 shall continue to be the responsibility of GFC in accordance with Section 3 of this agreement.

6. SEVERABILITY. If any provisions of this agreement or the application thereof to any person or circumstance is held by a court of competent jurisdiction to be partially or wholly invalid or unenforceable for any reason whatsoever, any such invalidity, illegality, or unenforceability shall not affect other provisions or applications of this agreement which can be given effect without the invalid provision or application and to this end the provisions of this agreement are declared severable.

7. COMMITMENT OF FUNDS. GFC's performance and obligation to pay under this agreement is contingent upon an annual appropriation by the Legislature, and conformance with State laws regarding use of trust funds.

11. PUBLIC RECORDS. GFC reserves the right to unilaterally cancel this agreement for refusal by Lee County to allow public access to all documents, papers, letters, or other material subject to the provisions of Chapter 119 (F.S.) and made or received by Lee County in conjunction with this contract.

12. EFFECTIVE DATE. This agreement shall take effect on the later of the dates stated below.

This Memorandum of Agreement is made and entered on the date executed by the last signatory hereto:

By: _____
Lee County

By: _____
Florida Game and Fresh Water Fish Commission

_____
Approved as to Legal Sufficiency on behalf of Florida Game and Fresh Water Fish Commission

_____
Approved as to Legal Sufficiency for Lee County

APPROVED AS FISCALLY AND SUBSTANTIVELY SOUND
DIV. FISCAL SERV.
GFWFC

APPENDIX C: Grant Award Agreement Between the Florida Communities Trust and Lee County

C940436

EXHIBIT "B"

This instrument prepared by:
Ann J. Wild
Florida Communities Trust
Department of Community Affairs
2740 Centerview Drive
Tallahassee, FL 32399-2100

COPY

CONTRACT # [illegible] FLORIDA COMMUNITIES TRUST
P2A AWARD# 92-015-P2A

GRANT AWARD AGREEMENT

THIS AGREEMENT is entered into this 29 day of June, 1994, by and between the FLORIDA COMMUNITIES TRUST ("FCT"), a nonregulatory agency within the State of Florida Department of Community Affairs, and LEE 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 259.101(3)(c), Florida Statutes, 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)(e), 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 Proceeds.

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 Lee County, Florida, as Exhibit "B" of 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 Revenue 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 2740 Centerview Drive Tallahassee, FL 32399-2100 ATTN: Executive Director
FCT Recipient:	Lee County, a political subdivision of the State of Florida Post Office Box 398 Ft. Myers, FL 33902 ATTN: Board of County Commissioners

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.

FCT shall investigate any violation of terms and conditions to determine if both FCT Recipients have knowledge of or are a party to the violation. If it is determined that one of the FCT Recipients has no knowledge of, has notified FCT of, or is not a party to the violation, the FCT Recipient not in violation shall not be required to convey fee simple title to its interest in the Project Site to the Board of Trustees of the Internal Improvement Trust Fund.

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 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 nature trails, observation areas, interpretive displays, and canoe trails on the Project Site. The facilities shall be developed in a manner that allows the public reasonable access for observation

and appreciation of the natural resources on the Project Site without causing harm to those resources.

2. The FCT Recipient shall provide educational programs at the Project Site. The programs shall include guided walks, special programs such as night walks and seasonal celebrations, and programs for school groups.

3. The timing and extent of a vegetative survey of vegetative communities and plant species on the Project Site shall be as specified in the management plan. The FCT Recipient shall detail how the survey shall be used during development of the site to insure the protection, restoration, and preservation of the natural resources on the Project Site.

4. The palmetto prairie, pine flatwood, scrub oak, freshwater marsh, and cypress swamp communities that occur on the Project Site shall be preserved and appropriately managed to ensure the long-term viability of these vegetative communities.

5. The Project Site shall be managed in a manner that will optimize habitat conditions for the listed wildlife species that utilize or could potentially utilize the Project Site, particularly gopher tortoises and scrub jays. The FCT Recipient shall coordinate with the Game and Fresh Water Fish Commission on the management of the Project Site for the protection of listed species and listed species habitat. The FCT Recipient shall conduct periodic surveys of listed species using the Project Site.

6. The water quality of Hickey Creek shall be protected and the natural hydrology of the Project Site shall be preserved and restored to a more natural function and shall include the restoration of areas impacted by roads and drainage ditches. The FCT Recipient shall coordinate with the South Florida Water Management District on the restoration of the hydrology and management of the Project Site. The Recipient shall also coordinate with the East County Water Control District to minimize any potential negative impacts to the site of the proposed drainage project.

7. A vegetation analysis of the Project Site shall be performed to determine which areas of the Project Site need a prescribed burning regime implemented to maintain natural fire-dependent vegetative communities. The FCT Recipient shall coordinate with Division of Forestry and Game and Fresh Water Fish Commission on the development of a prescribed burn plan for the Project Site.

8. Invasive exotic vegetation that occurs on the Project Site shall be eradicated and shall be replaced with native species.

9. The FCT Recipient shall develop and implement a feral animal removal program for the Project Site.

10. The FCT Recipient shall restore approximately 57 acres of upland to scrub and pine flatwood communities in terms of biological composition and ecological function.

11. The FCT Recipient shall coordinate security, access, and resource management issues with the with power line easement or right-of-way holder. The FCT Recipient in cooperation with the easement or right-of-way holder shall pursue the restoration of a more natural vegetative community within the utility corridor.

12. The FCT Recipient shall coordinate with the Caloosahatchee State Park on the management of the Project Site.

13. The FCT Recipient shall perform an archaeological survey of any area within the Project Site proposed for development prior to the commencement of proposed development activities in that area. All planned activities involving known archaeological sites or identified site areas shall be closely coordinated with the Department of State, Division of Historic Resources in order to prevent the disturbance of significant sites. The FCT Recipient shall develop and implement a protection plan in conjunction with the Division of Historic Resources for the protection of the known historic site located on the project site.

14. The Project Site shall be incorporated into the county greenway system.

15. On14 That portion of the Project Site located in Section 31, Township 43 South, Range 27 East, Lee County, Florida, shall ~~not~~ be subject to collection of environmental mitigation fees under the terms of the Memorandum of Agreement, Mitigation Park Program, between Lee County and the Florida Game and Fresh Water Fish Commission.

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

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

Witness:

Lee County, a political subdivision of the State of Florida,
BY ITS BOARD OF COUNTY COMMISSIONERS

Witness Name:

BY: _____
Its: Chairman

Witness Name:

Date: 6/23/94

COPY

Attest: _____, Deputy Clerk
Clerk

Accepted as to Legal Form and Sufficiency:

_____

Date: 6-23-94

FLORIDA COMMUNITIES TRUST

Witness Name:

_____
Linda Loomis Shelley, Chair

Witness Name:
HOWARD DOUGLAS

Date: June 29, 1994

Accepted as to Legal Form and Sufficiency:

_____
Ann J. Wild, Trust Counsel
6/29/94

GAA/015/P1A
FIN/05-04-94

STATE OF FLORIDA
COUNTY OF LEON

Jack Stengel for

29 The foregoing instrument was acknowledged before me this day of June, 1994, by LINDA LOOMIS SHELLEY, as Chair of the Florida Communities Trust. She is personally known to me.

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

ANN J. WILD
MY COMMISSION # CC 224214 EXPIRES
August 30, 1998
BONDED THRU TROY FAIN INSURANCE, INC.

STATE OF FLORIDA
COUNTY OF LEE

The foregoing instrument was acknowledged before me this 23 day of June, 1994, by Kay Jarvis, as Chairman. He\She is personally known to me.

Robert G Clemens
Notary Public
Print Name:
Commission No.
My Commission Expires:

OFFICIAL NOTARY SEAL
ROBERT G CLEMENS
NOTARY PUBLIC STATE OF FLORIDA
COMMISSION NO. CC3[illegible]659
MY COMMISSION EXP. MAR. 14,1998

94 JUN 30 PM 4:30

CHARLIE [illegible]

GAA/015/P1A
FIN/05-04-94

APPENDIX D: Conceptual Approval Agreement Between the Florida Communities Trust and Lee County

CONTRACT # P930515
94-CT-36-92-2A-A1-015

FLORI[DA] COMMUNITIES TRUST
P2A AWARD # 92-015-P2A

ADDENDUM I TO CONCEPTUAL APPROVAL AGREEMENT

THIS ADDENDUM I to the Conceptual Approval Agreement is entered into by and between the FLORIDA COMMUNITIES TRUST ("FCT"), a nonregulatory agency within the State of Florida Department of Community Affairs, and LEE COUNTY ("FCT Recipient"), this 26th day of April, 1994.

WHEREAS, the parties hereto entered into a Conceptual Approval Agreement which sets forth the conditions of conceptual approval that must be satisfied by FCT Recipient prior to the receipt of the FCT Preservation 2000 Series 1992A award and the restrictions that are imposed on the Project Site subsequent to its acquisition with the FCT Preservation 2000 Series 1992A award;

I. WHEREAS, the initial term of the Conceptual Approval Agreement expires April 8, 1994;

WHEREAS, the FCT Recipient in accordance with GENERAL CONDITIONS paragraph 2 of the Conceptual Approval Agreement and in compliance with Rule 9K-4.010(2)(h), F.A.C. (1992), has timely submitted to FCT a written request for extension of the April 8, 1994, deadline;

WHEREAS, the parties hereto desire to extend the term of the Conceptual Approval Agreement as provided by Rule 9K-4.010(2)(k), F.A.C. (1992); and

II. WHEREAS, Section IV. of the Conceptual Approval Agreement requires that title to the Project Site be first transferred to the Board of Trustees of the Internal Improvement Trust Fund prior to conveyance to the FCT Recipient;

WHEREAS, Section 259.101(3), Florida Statutes was amended, effective October 1, 1993, to delete the requirement that title to lands purchased pursuant to that statute shall be vested in the Board of Trustees of the Internal Improvement Trust Fund;

WHEREAS, Sections 380.510(3) and (4), Florida Statutes enumerate certain requirements for a grant agreement;

WHEREAS, the parties hereto desire to amend the Conceptual Approval Agreement to comply with these statutory requirements; and

WHEREAS, GENERAL CONDITIONS paragraph 10 of the Conceptual Approval Agreement states that the agreement may be amended at any time prior to FCT giving final project plan approval to the FCT Recipient. Any agreement must be set forth in a written instrument and agreed to by both the FCT Recipient and FCT;

NOW THEREFORE, the FCT and FCT RECIPIENT mutually agree as follows:

1. Notwithstanding the language of Section I. GENERAL CONDITIONS, paragraph 2. and paragraph 10., the parties hereby

agree to revive i· ıc pro tunc as though i d not lapsed in accordance with paragraph 2.

2. In every respect, this amendment is to be construed and applied as though the parties had both signed it before April 8, 1994.

3. The Conceptual Approval Agreement by and between FCT and FCT Recipient is hereby extended until October 7, 1994.

4. Section IV. is hereby replaced, revised and superseded by the following:

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

FCT RECIPIENT AGREES AS FOLLOWS:

1. FCT shall approve the terms under which the interest in land is acquired.

2. Title to the Project Site shall be titled in the FCT Recipient.

3. Any 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 in the Board of Trustees of the Internal Improvement Trust Fund upon failure to use the Project Site conveyed thereby for such purposes.

4. A Grant Award Agreement containing 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, containing clauses providing for the conveyance of title to the Project Site in the Board of Trustees of the Internal Improvement Trust Fund upon failure to use the Project Site for such purposes and describing the real property subject to the Agreement shall be executed by the FCT and FCT Recipient at the time of the conveyance of the Project Site and shall be recorded in the county in which the Project Site is located.

5. If any essential term or condition of the grant is violated, and the FCT Recipient does not correct the violation within 30 days of written notice of violation, title to all interest in the Project Site shall be conveyed to the Board of Trustees of the Internal Improvement Trust Fund. The deed transferring title to the Project Site to the FCT Recipient shall set forth the executory interest of the Board of Trustees of the Internal Improvement Trust Fund.

6. The inter if any, acquired by the Recipient in the Project Site will not serve as security for any debt of the FCT Recipient.

7. 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.

The date of execution of this addendum shall be the date that the last party signs this addendum.

THIS ADDENDUM I to the CONCEPTUAL APPROVAL AGREEMENT and the CONCEPTUAL APPROVAL AGREEMENT and its Exhibit "A" embody the entire Agreement between the parties.

IN WITNESS WHEREOF, the parties hereto have duly executed this ADDENDUM I TO CONCEPTUAL APPROVAL AGREEMENT.

LEE COUNTY

BY: Donald D. Stilwell
Name: Donald D. Stilwell
Its: County Administrator
Date: 4-7-94

FLORIDA COMMUNITIES TRUST

Linda Loomis Shelley, Chair
Date: April 26, 1994

Accepted as to Form and Legality:

Date: 4/7/94

Accepted as to Form and Legality:

Date: 4-21-94

APPENDIX E: Approval Letter for Conservation Management Plan for the State-owned land in HCGCP and Conservation Management Plan.

Florida Department of Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Jonathan P. Steverson
Secretary

April 6, 2016

Ms. Annisa Karim
Lee County Department of Parks and Recreation
7791 Penzance Blvd.
Ft. Myers, Florida 33966

RE: Hickey Creek Greenbriar Connector Preserve- Lease No. 4764

Dear Ms. Karim:

The Division of State Lands, Office of Environmental Services has received and reviewed the above mentioned Land Use Plan Amendment and find that it complies with the applicable statutes and rules. The plan amendment does not change the due date for an updated land use plan which will be due by April 6, 2026.

Acceptance of this Land Use plan does not waive the authority or jurisdiction of any governmental entity that may have an interest in this project. Implementation of any activities proposed by this plan may require a permit or other authorization from federal and state agencies having regulatory jurisdiction over those particular activities.

Sincerely,

Paula L. Allen
Division of State Lands
Office of Environmental Services

PA/cb

Conservation Management Plan

This management plan form is intended for Board of Trustees leases and subleases of conservation properties that are 160 acres or less. It is intended to address the requirements of Chapter 253.034, 259.032 and rule 18-2.021. Attachments to, or expansion of this form are welcome, if the space provided below is not sufficient. Please answer all of the items below and number all attachments and reference them in the appropriate location below. You are under no obligation to use this form. Any plan format is acceptable, provided it includes all of the appropriate items from the above mentioned statutes and rule. This form is available in electronic format upon request. For additional information pertaining to management plans, please visit the Division of State Lands Stewardship page on the web at http://www.dep.state.fl.us/lands/stewardship.htm

A. General Information

1. **Common Name of the Property:** Hickey Creek Greenbriar Connector Preserve

2. Lease Number: 4764

3. **Acres:** 7.13

4. **Managing Agency:** Lee County Board of County Commissioners via the Lee County Department of Parks and Recreation

5. Provide an executive summary/description of this property that includes a brief description of the resources, uses and proposed uses, outstanding features etc.

Hickey Creek Greenbriar Connector Preserve (HCGCP) consists of 95.81 acres comprised of mesic flatwoods, wet flatwoods, mesic hammock, prairie hydric hammock, slough marsh, strand swamp, and dome swamp. This Preserve was established to create and maintain a wildlife corridor between Hickey Creek Mitigation Park and the 406-acre Greenbriar Swamp. The Greenbriar Swamp is owned and managed by the Lehigh Acres Municipal Services Improvement District (formerly known as East County Water Control District) and it provides water quality enhancements and ground water recharge for a significant part of the Hickey Creek Basin. In 1997, funds from Lee County's Environmentally Sensitive Lands Program were used to purchase 59.89 acres. The State of Florida's Board of Trustees of the Internal Improvement Trust Fund purchased 15 parcels totaling 7.13 acres in this area between the years of 1999 and 2001. State of Florida through lease number 4764 transferred these lands from the Florida Department of Environmental Protection to Lee County. The lease expires on May 4, 2050. In 2005, 2007, and 2008, the Conservation 20/20 Lands Program purchased an additional 28.79 acres. The acquisition of the parcels making up Hickey Creek Greenbriar Connector Preserve began after this section of Lehigh Acres was platted. As a result, the parcels are fragmented and discontinuous. There is currently no dedicated funding in the budget of the Lee County Department of Parks and Recreation to manage this Preserve. The lack of financial and personnel resources

greatly limits the potential for nature-based recreation and infrastructure to be supported at within Hickey Creek Greenbriar Connector Preserve. Large scale recreational facilities or multi-use trail systems are not necessary as there are Preserves and Parks in close proximity that provide opportunities for hiking, mountain biking, camping, fishing and equestrian use; these Preserves and Parks have Board-approved stewardship (management) plans in place and the infrastructure to support these offerings.

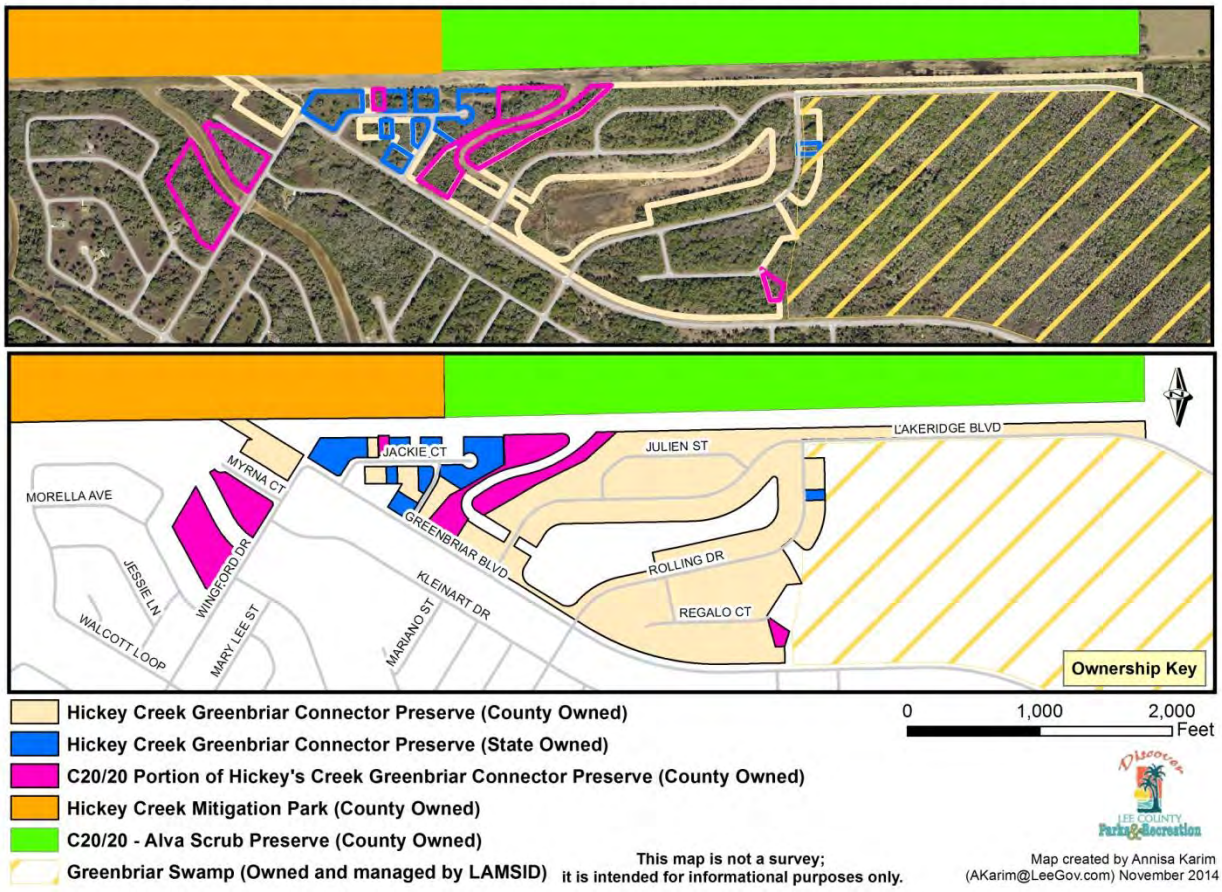
6. Attach a map showing the location and boundaries of the property including:

a) The location and type of structures or improvements currently on the property.

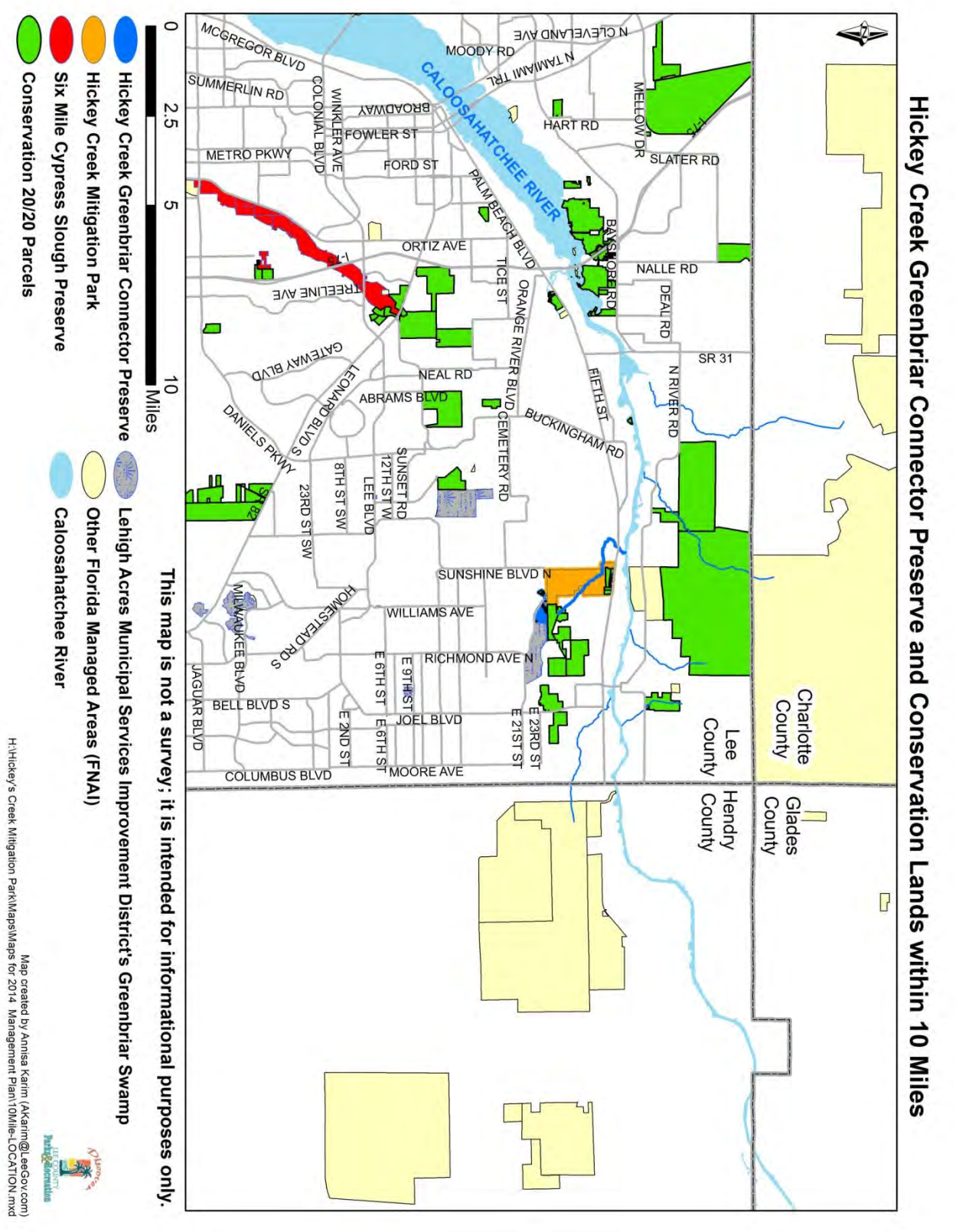
b) The location and type of proposed improvements.

No structures on are located on the property and there are no proposed improvements for the next ten years. State-owned property outlined in blue.

Hickey Creek Greenbriar Connector Preserve - Aerial View 2014



7. Attach a map showing the proximity of this managed area to other conservation areas within 10 miles.



8. Please attach a legal description of the property.

Lot 2, Block 222, Unit 34, GREENBRIAR A SUBDIVISION OF LEHIGH ACRES, according to the plat recorded in Plat Book 27, Page 54, of the Public Records of Lee County, Florida.

Lot 3, Block 221, Unit 33, GREENBRIAR A SUBDIVISION OF LEHIGH ACRES, according to the plat recorded in Plat Book 27, Page 53, of the Public Records of Lee County, Florida.

Lot 3, Block 222, Unit 34, GREENBRIAR A SUBDIVISION OF LEHIGH ACRES, according to the plat recorded in Plat Book 27, Page 54, of the Public Records of Lee County, Florida.

Lot 4, Block 223, Unit 34, GREENBRIAR A SUBDIVISION OF LEHIGH ACRES, according to the plat recorded in Plat Book 27, Page 54, of the Public Records of Lee County, Florida.

Lot 4, Block 222, Unit 34, GREENBRIAR A SUBDIVISION OF LEHIGH ACRES, according to the plat recorded in Plat Book 27, Page 54, of the Public Records of Lee County, Florida.

Lots 4 and 5, Block 221, Unit 33, GREENBRIAR A SUBDIVISION OF LEHIGH ACRES, according to the plat recorded in Plat Book 27, Page 53, of the Public Records of Lee County, Florida.

Lot 5, Block 163, Unit 26, GREENBRIAR A SUBDIVISION OF LEHIGH ACRES, according to the plat recorded in Plat Book 27, Page 42, of the Public Records of Lee County, Florida.

Lot 6, Block 221, Unit 33, GREENBRIAR A SUBDIVISION OF LEHIGH ACRES, according to the plat recorded in Plat Book 27, Page 53, of the Public Records of Lee County, Florida.

Lot 6, Block 222, Unit 34, GREENBRIAR A SUBDIVISION OF LEHIGH ACRES, according to the plat recorded in Plat Book 27, Page 54, of the Public Records of Lee County, Florida.

Lot 7, Block 221, Unit 33, GREENBRIAR A SUBDIVISION OF LEHIGH ACRES, according to the plat recorded in Plat Book 27, Page 53, of the Public Records of Lee County, Florida.

Lot 7, Block 223, Unit 34, GREENBRIAR A SUBDIVISION OF LEHIGH ACRES, according to the plat recorded in Plat Book 27, Page 54, of the Public Records of Lee County, Florida.

Lot 9, Block 222, Unit 34, GREENBRIAR, Sections 5 and 6, Township 44 South, Range 27 East, Lehigh Acres, Florida, according to the map or plat thereof on file in the office of the Clerk of the Circuit Court, recorded in Plat Book 27, Page 54, Public Records, Lee County, Florida

Lot 9, Block 223, Unit 34, GREENBRIAR A SUBDIVISION OF LEHIGH ACRES, according to the plat recorded in Plat Book 27, Page 54, of the Public Records of Lee County, Florida.

Lot 10, Block 222, Unit 34, GREENBRIAR A SUBDIVISION OF LEHIGH ACRES, according to the plat recorded in Plat Book 27, Page 54, of the Public Records of Lee County, Florida.

Lot 10, Block 223, Unit 34, GREENBRIAR A SUBDIVISION OF LEHIGH ACRES, according to the plat recorded in Plat Book 27, Page 54, of the Public Records of Lee County, Florida.

Lot 12, Block 222, Unit 34, GREENBRIAR A SUBDIVISION OF LEHIGH ACRES, according to the plat recorded in Plat Book 27, Page 54, of the Public Records of Lee County, Florida.

Lot 13, Block 222, Unit 34, GREENBRIAR, Sections 5 and 6, Township 44 South, Range 27 East, Lehigh Acres, Florida, according to the map or plat thereof on file in the office of the Clerk of the Circuit Court, recorded in Plat Book 27, Page 54, Public Records, Lee County, Florida.

9. Provide a physical description of the land including a quantitative data description of the land which includes an inventory of forest and other natural resource, exotic and invasive plants, hydrologic features, infrastructure including recreational facilities, and other significant land, cultural or historical features.

No public access trails or amenities are located within this unit. The roads running throughout the HCGCP made ORV use possible and they provided (unintentional) access to this remote area where the dumping of horticultural waste, construction debris, and the remnants of grow-houses occurs. In May 2014, Lee County's Division of Natural Resources Pollution Prevention Program in coordination with the County's Traffic and Operations division installed boulders and gates to deter vehicular access to HCGCP with the objective of eliminating or reducing the frequency of these illegal activities.

HCGCP is bordered on the north by a water conveyance system managed by the Lehigh Acres Municipal Services Improvement District (LAMSID). HCGCP is surrounded by undeveloped, platted private property and contains several in holdings. The eastern portion of the Preserve is bordered by the Greenbriar Swamp managed by LAMSID.

While seven plant communities that make up the entire Preserve, three of these communities (mesic flatwoods, prairie hydric hammock, and slough marsh) make up the state-owned portions of HCGCP. The mesic flatwoods community is pyric but because management in this area is difficult at this time, prescribed fires are not planned. The interior of the Preserve is lightly to moderately infested with Brazilian pepper but the edges (along the roadways) are heavily infested. No known cultural or historic resources exist on-site.

Due to the private in-holdings and site security issues, economies of scale prevent the efficient land management of this Preserve. Public use is not encouraged at this time. There is currently no dedicated funding in the budget of the LCPR to manage this Preserve. The lack of financial and personnel resources greatly limits the potential for nature-based recreation and infrastructure to be supported at within HCGCP. Large scale recreational facilities or multi-use trail systems are not necessary as there are Preserves and Parks in close proximity that provide opportunities for hiking, mountain biking, camping, fishing and equestrian use; these Preserves and Parks have Board-approved stewardship (management) plans in place and the infrastructure to support these offerings.

Hickey Creek Greenbriar Connector Preserve: Plant Communities

Map created by Annisa Karim (AKarim@LeeGov.com)
November 2014; Aerial Image 2014

0 1,000 2,000 Feet

FNAI Plant Community Designations

- Wet Flatwoods
- Prairie Hydric Hammock
- Mesic Flatwoods
- Slough Marsh
- Strand Swamp
- Mesic Hammock
- Dome Swamp

- Roads (Impervious Surfaces)
- HCGCP - State Lands

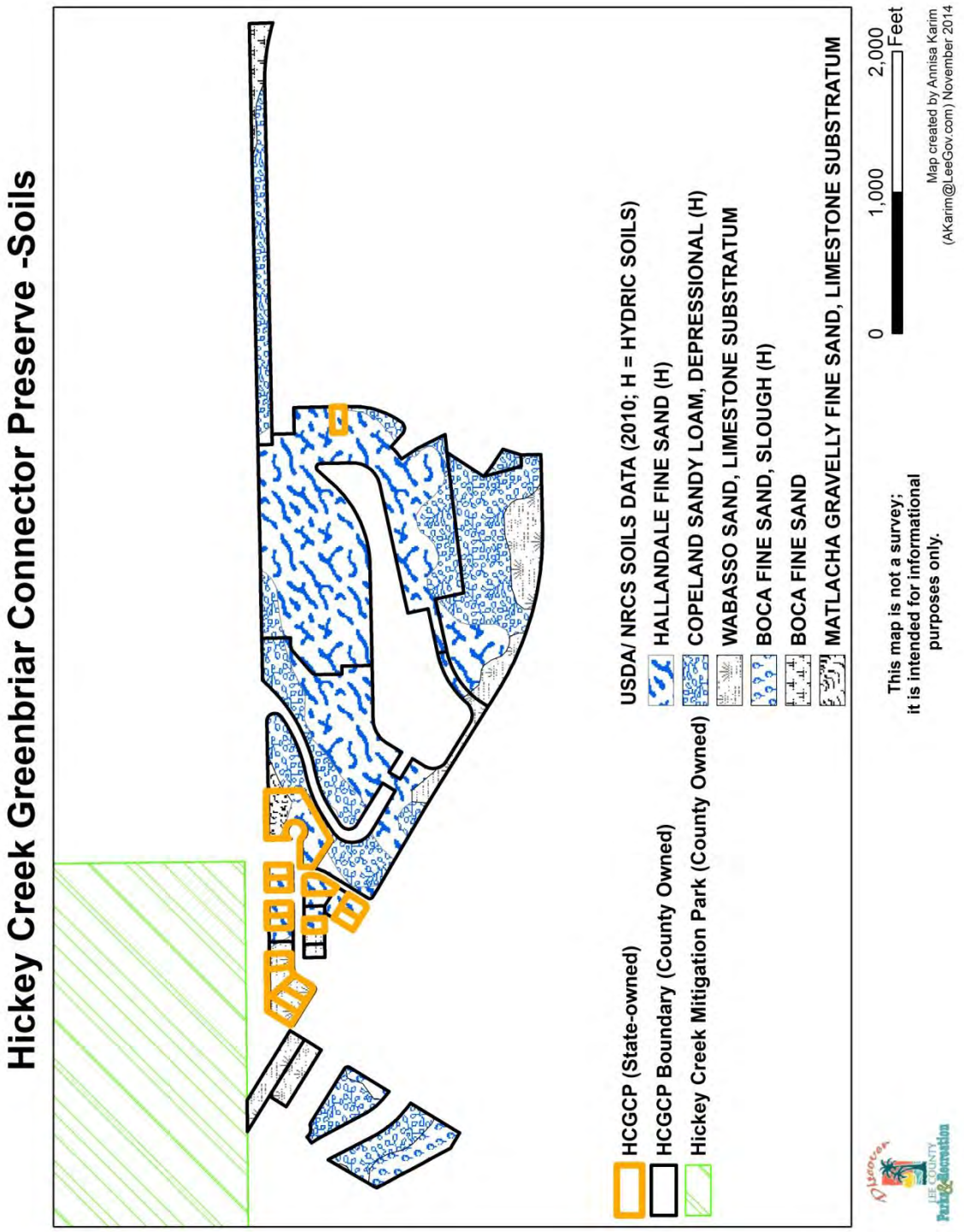
This map is not a survey; it is intended for informational purposes only.

2010 FNAI Plant Community Designation	HCGCP	
	Acres*	% of HCGCP*
Wet Flatwoods	45.64	47.61
Prairie Hydric Hammock	25.36	26.46
Mesic Flatwoods	10.05	10.48
Slough Marsh	7.49	7.81
Strand Swamp	5.28	5.51
Mesic Hammock	1.77	1.85
Dome Swamp	0.28	0.29

**Due to rounding values, total acreages may not equal the true acreage of the communities; these numbers are approximations only.*

10. A brief description of soil types, attaching USDA maps when available.

Six soils underlie the entire Preserve but only four of these soils (Wabasso Sand with Limestone Substratum, Matlacha Gravelly Fine Sand with Limestone Substratum, Hallandale Fine Sand, and Copeland Sandy Loam – Depressional) underlie the State-owned portion.



11. Is the property adjacent to an aquatic preserve or designated area of critical state concern? NO

12. Was the property acquired by a conservation land acquisition program? If YES, please identify.

There is no indication that these lands were acquired by a conservation lands program.

13. Do any agency-specific statute requirements or legislative/executive directives constrain the use of the property? (These restrictions can frequently be found in the lease).

Yes, the 50-year lease agreement with the BoCC directs the BoCC (via LCPR) to "manage the leased premises only for the conservation and protection of natural and historical resources and resource based public outdoor recreation which is compatible with the conservation and protection of these public lands, as set forth in subsection 259.032(11) FS".

14. Are there any reservations or encumbrances on the property? No

B. Natural and Cultural Resources

15. Are there any archeological or historical sites on this property? No

A) How do you plan to locate, protect and preserve these resources?

Currently there are no plans for work with heavy machinery. If the use of Heavy machinery becomes an option, the biologist for the preserve will walk the area to look for potential historic sites. There are no funds to do a comprehensive survey of the area.

B) Please describe the actions the agency plans to take to locate and identify unknown Resources such as surveys of unknown archeological or historical sites.

There are no funds to do a comprehensive survey of the area.

16. Are there any buildings on the property that are fifty or more years old? No

17. Please identify natural resources on the property that are listed in the Florida Natural Areas Inventory. The 7.13 acres of State-owned lands are located within FNAI's Biodiversity Matrices 41685 and 42057. These are the documented elements for those matrices.

Matrix Unit ID: 41685

5 **Documented** Elements Found

Scientific and Common Names
Aphelocoma coerulescens Florida Scrub-Jay
Drymarchon couperi Eastern Indigo Snake
Gopherus polyphemus Gopher Tortoise
Puma concolor coryi Florida Panther
Rostrhamus sociabilis Snail Kite

Matrix Unit ID: 42057

3 **Documented** Elements Found

Scientific and Common Names
Drymarchon couperi Eastern Indigo Snake
Puma concolor coryi Florida Panther
Tillandsia flexuosa Banded Wild-pine

18. **Are any imperiled natural communities, unique natural features, or any State and federally listed endangered or threatened plant or animal species, on site?** Yes

The listed plants and animals recorded for Hickey Creek Mitigation Park and the Hickey Creek Greenbriar Connector Preserve are located within the state-owned portions of HCGCP as well.

Scientific Name	Common Name	Status
Lythrum flagellare	Florida loosestrife	E
Ophioglossum palmatum	hand fern	E
Tillandsia fasciculata	cardinal airplant	E
Tillandsia utriculata	giant wild pine	E
Bletia purpurea	pinepink	T
Lilium catesbaei	Catesby's lily	T
Opuntia stricta	erect pricklypear	T
Pteroglossaspis ecristata	giant orchid	T
Sacoila lanceolata var. lanceolata	leafless beaked orchid	T
Tectaria heracleifolia	broad halberd fern	T
Tillandsia variabilis	leatherleaf airplant	T
Zephyranthes simpsonii	redmargin zepherlily	T
Encyclia tampensis	Florida butterfly orchid	CE
Osmunda cinnamomea	cinnamon fern	CE
Osmunda regalis	royal fern	CE

E = Endangered; T = Threatened; CE = Commercially Exploited

Scientific Name	Common Name	Protection Status (2015)*
Puma concolor coryi	Florida panther	FE
Drymarchon corais couperi	Eastern indigo snake	FT
Aphelocoma coerulescens	Florida Scrub-Jay	FT
Alligator mississippiensis	American alligator	FT(S/A)
Mycteria americana	Wood stork	FT
Gopherus polyphemus	Gopher tortoise	ST
Aramus guarauna	Limpkin	SSC
Egretta caerulea	Little blue heron	SSC
Egretta thula	Snowy Egret	SSC
Egretta tricolor	Tricolored heron	SSC
Eudocimus albus	White ibis	SSC
Blarina brevicauda shermani	Sherman's short-tailed shrew	SSC

Protection Status (based on FWC list September 2015): FE = Federally-designated Endangered; FT = Federally-designated Threatened; FT(S/A) = Federally-designated Threatened species due to similarity of appearance; ST = State-designated Threatened; SSC = State Species of Special Concern

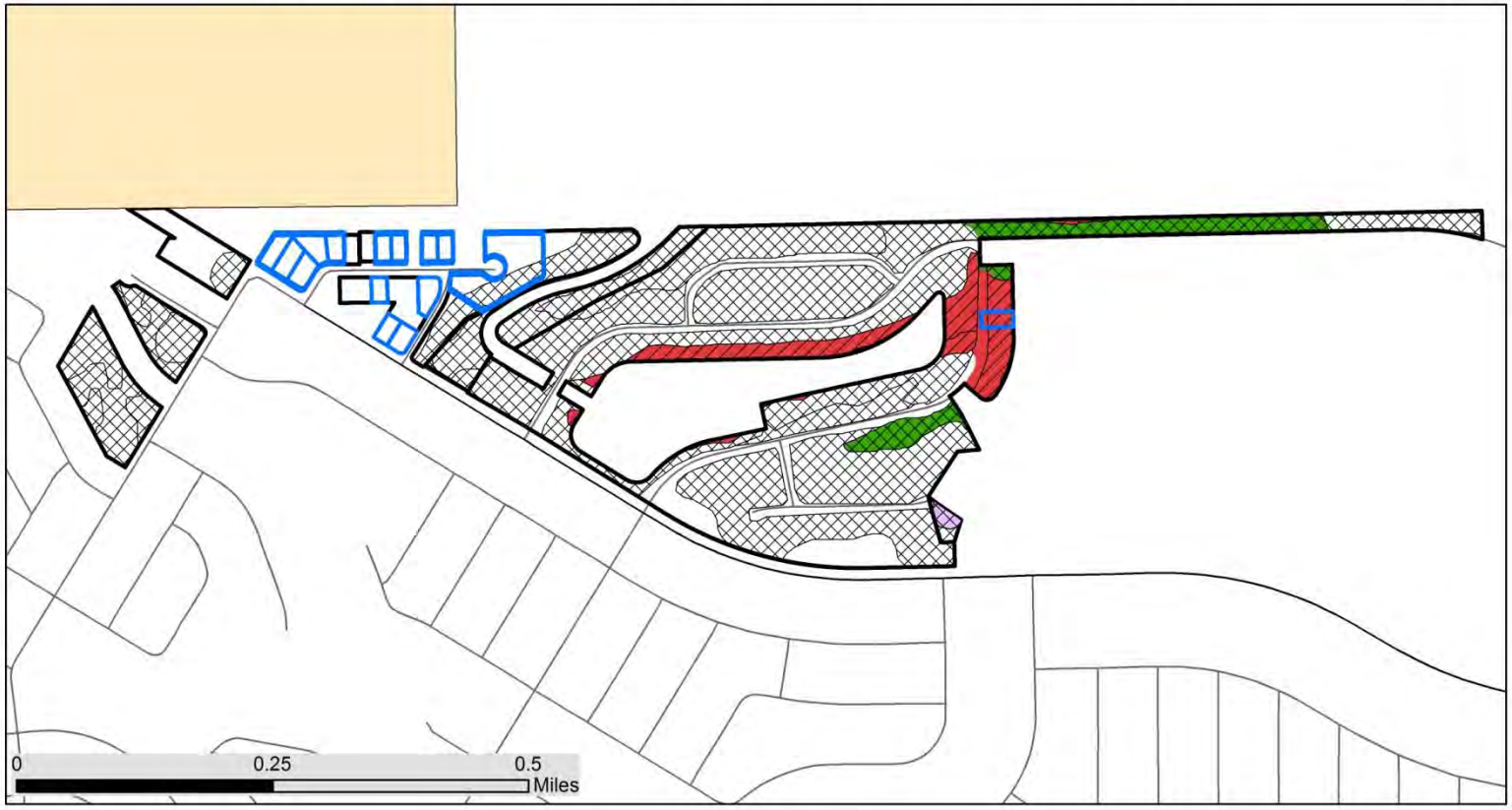
If YES, please provide a specific description of how you plan to identify, locate, protect and preserve these species.

Currently there are no funds for land management activities. As funds become available, exotic removal activities will be conducted in such a way as to protect listed species.

19. **Please identify the water resources including swamps, marshes or other wetlands, on the property including the water quality classification for each water body and if the water body has been designated "Outstanding Florida Waters".**

The National Wetlands Inventory identifies freshwater emergent wetlands and freshwater forested shrub wetlands on State-owned property. Additionally, a slough marsh is mapped on the property – see map on next page.

Hickey Creek Greenbriar Connector Preserve:
Wetlands and Defined by FNAI and the National Wetlands Inventory



Hickey Creek Mitigation Park (County Owned)
Hickey Creek Greenbriar Connector Preserve (County Owned)
Hickey Creek Greenbriar Connector Preserve (State Owned)

NWI Wetland Designations
Freshwater Emergent Wetland
Freshwater Forested/Shrub Wetland

FNAI Plant Community
Slough Marsh
Strand Swamp
Dome Swamp

This map is not a survey; it is intended for informational purposes only.

Map created by Annisa Karim
(AKarim@LeeGov.com) March 2016

20. Are any known mineral resources, such as oil, gas and phosphates, or any unique natural features, such as coral reefs, beaches, dunes, natural springs, caverns, large sinkholes, virgin timber stands, scenic vistas, and natural rivers and streams, and outstanding native landscapes containing relatively unaltered flora, fauna, and geological features on site? No

21. Are there fish or wildlife resources (both game and non-game) on the property?

There are flora and fauna associated with these lands. wild hogs (*Sus scrofa)* have been seen from time to time. Wading birds and passerines use property as well.

C. Use of the Property

22. Please provide a statement of the purpose for which the lands were acquired, the projected use or uses as defined in Chapter 253.034, Florida Statutes, and the statutory authority you have for such uses.

The 50-year lease agreement with the BoCC directs the BoCC (via LCPR) to "manage the leased premises only for the conservation and protection of natural and historical resources and resource based public outdoor recreation which is compatible with the conservation and protection of these public lands, as set forth in subsection 259.032(11) FS".

23. Please state the desired outcome for this property, and key management activities necessary to achieve the desired outcome, including public access.

The desired outcome of this property is to remove all FLEPPC listed exotic, invasive species of plants and return the parcels to healthy, functioning systems. Prescribed fire may ot be possible due to the checkered patteren of ownership. Public access would include allowing bycicles along the roadways. These goals will not be acheidved in the next ten years due to lack of management funding.

24. Please state the single or multiple uses currently made of the property and if the property is single use, please provide an analysis of its potential for multiple-use.

No single or multiple uses currently made of the property. Please refer to table on the next page.

Analysis of multiple use for HCGCP

Approved Specific Uses	Rejected Specific Uses
Ecosystem maintenance	Canoeing/ Kayaking
Ecotourism	Horseback Riding
Environmental Education	Primitive Camping
Fishing	Cattle Grazing/ Livestock Grazing
Hiking	Timber Harvest
Preservation of Historic and Cultural Sites	Agriculture
Protection of listed species	Collection of Cultural or Historic Artifacts
Soil and water conservation	Collection of Plants or Animals (Dead or Alive)
Wildlife Observation/ Nature Study	Hunting
Bicycling (along roads)	Motorized Off Road Vehicle (ORV) Use

25. Were multiple uses considered but not adopted?

Yes. Please refer to the table above. Due to the small size of the property and the the checkered patteren of ownership many uses are precluded – specifically livestock grazing, timber harvest, agriculture, hunting, and ORV use. The Collection of natural, cultural and historic resources is prohibited by Lee County Ordinance 06-26 as amended.

26. Please provide an analysis of the potential use of private land managers to facilitate the restoration or management of these lands.

Private land managers such as exotic removal companies many be used to facilitate the restoration or management of these lands if funds were available to employ their services. The lack of personel to manage these lands would be greatly overcome with funds to hire such companies.

27. Please provide an analysis of the potential of the property to generate revenues to enhance the management of the property.

Due to the checkered patteren of ownership and the small number of acres involved in this lease, the potential for this property to generate revenue is null.

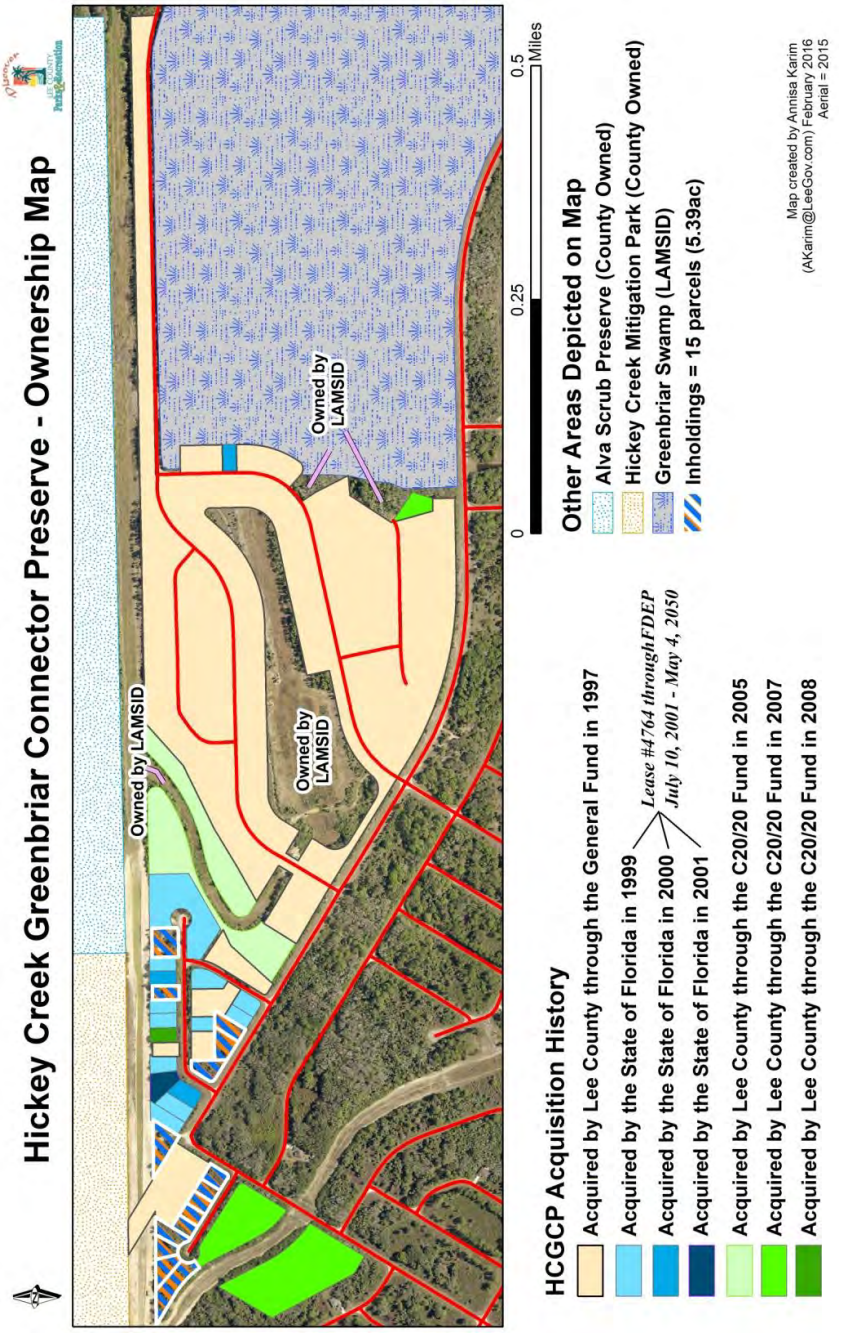
28. Describe the projected, current and recent past uses of the property, and any unauthorized uses, if known.

These 7.13 acres are located in Lehigh Acres. Lehigh Acres is a Census-Designated Place in Lee County, Florida and was developed in the mid-1950s. Roads were built and land was platted for primarily residential development. The State-owned lots are mixed with County-owned lots – all of which are undeveloped, platted lots that contain degraded native plant communities. Past

unauthorized uses include dumping and ORV use. Walk-though gates that thwart motorized vehicles have been installed to prevent these activities.

29. **Do the planned uses impact renewable and non-renewable resources on the property?** No

30. **Should any parcels of land within or adjacent to the property be purchased because they are essential to management of the property?** Yes, 15 privately owned parcels totaling apprioximately 5.39 acres would make resource management activities and protection from unapproved uses much easier.



31. Are there any portions of this property no longer needed for your use? No

32. Please describe what public uses and public access that would be consistent with the purpose for which this property was acquired.

Fishing, Hiking, Wildlife Observation/ Nature Study, and Bicycling (along roads)

D. Management Activities

33. If more than one agency manages this property, describe the management responsibilities of each agency and how such responsibilities will be coordinated. N/A

34. Please discuss management needs and problems on the property including conservation of soil and water resources and control and prevention of soil erosion and water and soil contamination.

There is currently no dedicated funding in the budget of the Lee County Department of Parks and Recreation to manage this Preserve. The lack of financial and personnel resources greatly limits the potential for nature-based recreation and infrastructure to be supported at within Hickey Creek Greenbriar Connector Preserve. Large scale recreational facilities or multi-use trail systems are not necessary as there are Preserves and Parks in close proximity that provide opportunities for hiking, mountain biking, camping, fishing and equestrian use; these Preserves and Parks have Board-approved stewardship (management) plans in place and the infrastructure to support these offerings.

Dumping of horticultural waste and construction debris in this sparsly populated, yet platted section of Lehigh Acres was a problem. ORV use also became a problem but most of this activity took place off of the State-owned 7.13 acres. In May 2014, Lee County's Division of Natural Resouces' Pollution Prevention Program, in coordination with the County's Traffic and Operations division, installed boulders and gates to deter vehicular access to HCGCP with the objective of eliminating or reducing the frequency of these illegal activities. These illegal activities could have potentially contaminated the soil and water but soil erosion was not highly likely.

35. Identify adjacent land uses that will conflict with the planned use of this property, if any.

Currently, the properties to the north of HCGCP are owned and managed by Lee County for conservation. The platted parcels surrounding the HCGCP may be developed. While the development of these parcels may not directly conflict with the planned use of ths property, there is a chance that new seed sources for invasive plants will be introduced and any likelyhood of conducting prescribed fires would be hindered.

36. Please describe measures used to prevent/control invasive, non-native plants.

Currently, biannual site-visits are conducted by Lee County staff and if climbing fern (*Lygodium* spp.) is detected, it is treated immediately. Otherwise, there is no contriol of non-native plants at this time. Economies of scale prevent the efficient land management of this Preserve.

37. Was there any public or local government involvement / participation in the development of this plan?

Yes, these 7.13 acres are managed by a local government (Lee County) and this plan was disscussed during a public meeting that took place on June 13, 2016. Furthermore, the Lee County Board of County Commissioners approved this plan during a public meeting where the public was permitted to speak on this item if they elected to do so.

38. If an arthropod control plan has been established for this property, please include it as an attachment. If one does not exist, provide a statement as to what arrangement exists between the local mosquito control district and the managing agency.

While an a specific arthropod control plan has not been established for this property, the Lee County Mosquito Control District performs the task of arthropod control within HCGCP. They target nuisance and disease vectoring mosquitoes. No specific arragement exists between Lee County and the Lee CountyMosquito Control district but as this area of Lehigh Acres is populated (although sparsley), Mosquito control does spray.

39. Management Goals: The core constraints on management of HCGCP are funding and staffing. Obtaining funds through grants and other financial sources will need to be explored and obtained when appropriate. Due to the private in-holdings and site security issues, economies of scale prevent the efficient land management of this Preserve. See table on next page.

Core Objectives	Measure (N/A)	Time Frame (N/A) 2yrs = Short Term 10 yrs = Long Term	Expenses and Manpower Budget (N/A)
1) Habitat restoration and Improvement (Description): A majority of the state-owned lands contain mesic flatwoods. The core constraints on management of HCGCP are funding and staffing. Obtaining funds through grants and other financial sources will need to be explored and obtained when appropriate. Due to the private in-holdings and site security issues, economies of scale prevent the efficient land management of this Preserve. Coordinating with LAMSID will be an important part in management of the Preserve; neighbors will be considered and informed of any prescribed fires and/or large management practices that may be considered disruptive. If funds become available, exotic treatments would have to be conducted and then either prescribed burns or mechanical treatments. Due to the small size of this Preserve, silvicultural practicies (including timber harvest) would be cost prohibitive.			
2) Public access and recreational opportunities: Large scale recreational facilities or multi-use trail systems are not necessary as there are Preserves and Parks in close proximity that provide opportunities for hiking, mountain biking, camping, fishing and equestrian use; these Preserves and Parks have Board-approved stewardship (management) plans in place and the infrastructure to support these offerings.			
3) Hydrological Preservation and restoration (Description): N/A			
4) Sustainable forest management (Description): N/A			
5) Exotic and invasive species maintenance and control (Description): The core constraints on management of HCGCP are funding and staffing. Obtaining funds through grants and other financial sources will need to be explored and obtained when appropriate. Due to the private in-holdings and site security issues, economies of scale prevent the efficient land management of this Preserve. Currently, biologists visit the Preserve twice a year. If Lygodium is discovered, it is treated immediately. Other exotic treatment is not possible at this time.			
6) Capital facilities and infrastructure (Description): N/A			
7) Cultural and historical resources (Description): There are no known cultural or historic resources.			
8) Imperiled species habitat maintenance, enhancement, restoration, or population restoration (Description): The core constraints on management of HCGCP are funding and staffing. Obtaining funds through grants and other financial sources will need to be explored and obtained when appropriate.			

This plan (Appendix for 7.13 acres of State-owned lands in HCGCP – Lease 4764) conforms to the State Lands Management Plan

(http://www.dep.state.fl.us/lands/oes/slmp.pdf **)**

Name:	Annisa Karim
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Appendix F: Floristic Species Documented Within HCMP and HCGCP

Scientific names in accord with Wunderlin and Hansen 2008 (see key at the end of list)

Scientific Name	Common Name	Native Status	EPPC	FDACS	IRC
Family: Azollaceae (mosquito fern)					
Azolla caroliniana	Carolina mosquito fern	native			R
Family: Blechnaceae (mid-sorus fern)					
Blechnum serrulatum	swamp fern	native			
Woodwardia virginica	Virginia chain fern	native			R
Family: Dennstaedtiaceae (cuplet fern)					
Pteridium aquilinum	tailed bracken fern	native			R
Family: Dryopteridaceae					
Tectaria heracleifolia	broad halberd fern	native		T	I
Family: Nephrolepidaceae (sword fern)					
Nephrolepis cordifolia	tuberous sword fern	exotic	I		
Nephrolepis exaltata	sword fern	native			
Family: Ophioglossaceae (adder's-tongue)					
Botrychium biternatum	southern grape-fern	native			PE
Ophioglossum palmatum	hand fern	native			I
Family: Osmundaceae					
Osmunda cinnamomea	cinnamon fern	native		CE	R
Osmunda regalis	royal fern	native		CE	R
Family: Polypodiaceae (polypody)					
Campyloneurum phyllitidis	long strap fern	native			R
Phlebodium aureum	golden polypody	native			
Pleopeltis polypodioides	resurrection fern	native			
Family: Psilotaceae (whisk-fern)					
Psilotum nudum	whisk-fern	native			
Family: Pteridaceae (brake fern)					
Acrostichum danaeifolium	giant leather fern	native			
Pteris vittata	Chinese ladder brake	exotic			
Family: Salviniaceae (floating fern)					
Salvinia minima	water spangles	exotic			
Family: Schizaeaceae (curly-grass)					
Anemia adiantifolia	maidenhair pineland fern	native			
Lygodium japonicum	Japenese climbing fern	exotic	I		
Lygodium microphyllum	old world climbing fern	exotic	I		

APPENDIX F: Floristic Species Documented Within HCMP and HCGCP (continued)
Scientific names in accord with Wunderlin and Hansen 2008 (see key at the end of list)

Scientific Name	Common Name	Native Status	EPPC	FDACS	IRC
Family: Thelypteridaceae (marsh fern)					
Macrothelypteris torresiana	Mariana maiden fern	exotic			
Thelypteris hispidula	hairy maiden fern	native			CI
Thelypteris dentata	downy maiden fern	exotic			
Thelypteris interrupta	hottentot fern	native			R
Thelypteris kunthii	southern shield fern	native			
Thelypteris palustris	marsh fern	native			R
Family: Vittariaceae (shoestring fern)					
Vittaria lineata	shoestring fern	native			
Family: Cupressaceae (cedar)					
Juniperus virginiana	red cedar	native			
Taxodium distichum	bald cypress	native			
Family: Pinaceae (pine)					
Pinus elliottii var. densa	south Florida slash pine	native			
Family: Agavaceae (agave)					
Yucca filamentosa sensu lato	Adam's needle	native			I
Family: Alismataceae (water plantain)					
Sagittaria graminea	grassy arrowhead	native			R
Sagittaria lancifolia	bulltongue arrowhead	native			
Family: Amaryllidaceae (amaryllis)					
Crinum americanum	string lily; swamp lily	native			
Zephyranthes simpsonii	redmargin zepherlily	native		T	I
Family: Araceae (arum)					
Colocasia esculenta	wild taro	exotic	I		
Lemna aequinoctialis	lesser duckweed	native			I
Lemna valdiviana	valdivia duckweed	native			I
Family: Arecaceae (palm)					
Sabal palmetto	cabbage palm	native			
Serenoa repens	saw palmetto	native			
Family: Bromeliaceae (pineapple)					
Tillandsia fasciculate	cardinal airplant	native		E	PE
Tillandsia recurvata	ballmoss	native			
Tillandsia setacea	southern needleleaf	native			
Tillandsia usneoides	spanish moss	native			
Tillandsia utriculata	giant wild pine	native		E	
Tillandsia variabilis	leatherleaf airplant	native		T	R

APPENDIX F: Floristic Species Documented Within HCMP and HCGCP (continued)
Scientific names in accord with Wunderlin and Hansen 2008 (see key at the end of list)

	Scientific Name	Common Name	Native Status	EPPC	FDACS	IRC
Family: Commelinaceae (spiderwort)						
	Callisia ornata	Florida scrub roseling	native			I
	Commelina diffusa	common dayflower	native			
	Commelina erecta	whitemouth dayflower	native			
	Murdannia spirata	Asiatic dewflower	exotic			
Family: Cyperaceae (sedge)						
	Bulbostylis barbata	watergrass	exotic			
	Bulbostylis ciliatifolia var. coarctata	capillary hairsedge	native			
	Bulbostylis stenophylla	sandyfield hairsedge	native			I
	Carex lupuliformis	false hop sedge	native			I
	Carex gigantea	giant sedge	native			CI
	Carex vexans	Florida hammock sedge	native			I
	Cladium jamaicense	Jamaica swamp sawgrass	native			
	Cyperus compressus	poorland flatsedge	native			
	Cyperus croceus	Baldwin's flatsedge	native			
	Cyperus filiculmis	wiry flatsedge	native			I
	Cyperus flavescens	yellow flatsedge	native			R
	Cyperus haspan	haspan flatsedge	native			
	Cyperus lanceolatus	epiphytic flatsedge	exotic			
	Cyperus ligularis	swamp flatsedge	native			
	Cyperus odoratus	fragrant flatsedge	native			
	Cyperus polystachyos	manyspike flatsedge	native			
	Cyperus pumilus	low flatsedge	exotic			
	Cyperus retrorsus	pinebarren flatsedge	native			R
	Cyperus surinamensis	tropical flatsedge	native			
	Dichromena colorata	starrush whitetop	native			
	Eleocharis baldwinii	Baldwin's spikerush	native			R
	Eleocharis cellulosa	gulf coast spikerush	native			
	Eleocharis flavescens	yellow spikerush	native			I
	Eleocharis interstincta	knotted spikerush	native			
	Fimbristylis autumnalis	slender fimbry	native			R
	Fimbristylis caroliniana	Carolina fimbry	native			I
	Fimbristylis cymosa	hurricanegrass	native			
	Fimbristylis dichotoma	forked fimbry	native			R
	Fimbristylis puberula	hairy fimbry	native			I

APPENDIX F: Floristic Species Documented Within HCMP and HCGCP (continued)
Scientific names in accord with Wunderlin and Hansen 2008 (see key at the end of list)

Scientific Name	Common Name	Native Status	EPPC	FDACS	IRC
Family: Cyperaceae (sedge) - continued					
Fimbristylis schoenoides	ditch fimbry	exotic			
Fuirena breviseta	saltmarsh umbrellasedge	native			R
Fuirena pumila	dwarf umbrellasedge	native			I
Fuirena scirpoidea	southern umbrellasedge	native			R
Kyllinga brevifolia	shortleaf spikesedge	exotic			
Kyllinga squamulata	asian spikesedge	exotic			
Lipocarpha aristulata	awned halfchaff sedge	exotic			
Lipocarpha maculata	American halfchaff sedge	native			CI
Lipocarpha micrantha	smallflower halfchaff sedge	native			I
Psilocarya nitens	shortbeak beaksedge	native			
Rhynchospora baldwinii	Baldwin's beaksedge	native			CI
Rhynchospora divergens	spreading beaksedge	native			
Rhynchospora fascicularis	fascicled beaksedge	native			R
Rhynchospora fernaldii	Fernald’s beaksedge	native			CI
Rhynchospora filifolia	threadleaf beaksedge	native			I
Rhynchospora globularis	globe beaksedge	native			I
Rhynchospora intermedia	pinebarren beaksedge	native			I
Rhynchospora inundata	narrowfruit horned beaksedge	native			R
Rhynchospora microcarpa sensu lato	southern beaksedge	native			R
Rhynchospora miliacea	millet beaksedge	native			R
Rhynchospora odorata	fragrant beaksedge	native			R
Rhynchospora plumosa	plumed beaksedge	native			R
Rhynchospora tracyi	Tracy's beaksedge	native			R
Scirpus tabernaemontani	softstem bulrush	native			R
Scleria baldwinii	Baldwin's nutrush	depends on sp.			I
Scleria ciliata var. ciliata	fringed nutrush	native			R

APPENDIX F: Floristic Species Documented Within HCMP and HCGCP (continued)

Scientific Name	Common Name	Native Status	EPPC	FDACS	IRC
Family: Cyperaceae (sedge) - continued					
Scleria ciliata var. curtissii	fringed nutrush	native			R
Scleria distans	riverswamp nutrush	native			
Scleria reticularis	netted nutrush	native			R
Scleria triglomerata	tall nutgrass	native			R
Scleria verticillata	low nutrush	native			R
Family: Dioscoreaceae (yam)					
Dioscorea bulbifera	air-potato	exotic	I		
Family: Eriocaulaceae (pipewort)					
Eriocaulon compressum	flattened pipewort	native			R
Eriocaulon decangulare	tenangle pipewort	native			R
Eriocaulon ravenelii	Ravenel's pipewort	native			I
Lachnocaulon anceps	whitehead bogbutton	native			R
Lachnocaulon beyrichianum	southern bogbutton	native			I
Syngonanthus flavidulus	yellow hatpins	native			R
Family: Haemodoraceae (bloodwort)					
Lachnanthes caroliana	Carolina redroot	native			
Family: Hypoxidaceae (yellow stargrass)					
Hypoxis curtissii	common yellow stargrass	native			I
Hypoxis juncea	fringed yellow stargrass	native			R
Family: Iridaceae (iris)					
Iris hexagona	dixie iris	native			I
Iris virginica	Virginia iris	native			
Family: Juncaceae (rush)					
Juncus effusus	soft rush	native			
Juncus marginatus	shore rush	native			R
Juncus megacephalus	bighead rush	native			R
Juncus scirpoides	needlepod rush	native			I
Family: Liliaceae (lily)					
Lilium catesbaei	Catesby's lily	native		T	I
Family: Orchidaceae (orchid)					
Bletia purpurea	pinepink	native		T	R
Encyclia tampensis	Florida butterfly orchid	native		CE	
Eulophia alta	wild coco	native			
Habenaria floribunda	toothpetal false reinorchid	native			

APPENDIX F: Floristic Species Documented Within HCMP and HCGCP (continued)

	Scientific Name	Common Name	Native Status	EPPC	FDACS	IRC
Family: Orchidaceae (orchid) - continued						
	Habenaria quinqueseta	longhorn false reinorchid	native			R
	Oeceoclades maculata	monk orchid	exotic			
	Pteroglossaspis ecristata	giant orchid	native		T	I
	Sacoila lanceolata var. lanceolata	leafless beaked orchid	native		T	I
Family: Poaceae (grass)						
	Andropogon brachystachyus	shortspike bluestem	native			I
	Andropogon glomeratus var. pumilus	common bushy bluestem	native			
	Andropogon ternarius var. ternarius	splitbeard bluestem	native			
	Andropogon virginicus var. glaucus	chalky bluestem	native			R
	Aristida palustris	longleaf threeawn	native			I
	Aristida patula	tall threeawn	native			R
	Aristida purpurascens	arrowfeather threeawn	native			
	Aristida spiciformis	bottlebrush threeawn	native			R
	Aristida stricta	wiregrass	native			
	Axonopus fissifolius	common carpetgrass	native			R
	Axonopus furcatus	big carpetgrass	native			
	Bothriochloa ischaemum	king ranch bluestem	exotic			
	Bothriochloa pertusa	pitted beardgrass	exotic			
	Cenchrus spinifex	coastal sandbur	native			
	Chrysopogon pauciflorus	Florida false beardgrass	native			I
	Coelorachis rugosa	wrinkled jointtailgrass	native			R
	Coelorachis tuberculosa	Florida jointtailgrass	native			CI
	Cynodon dactylon	bermudagrass	exotic			
	Dactyloctenium aegyptium	durban crowfootgrass	exotic			
	Dichanthelium aciculare subsp. angustifolium	needleleaf witchgrass	native			
	Dichanthelium aciculare subsp. Fusiforme	needleleaf witchgrass	native			

APPENDIX F: Floristic Species Documented Within HCMP and HCGCP (continued)
Scientific names in accord with Wunderlin and Hansen 2008 (see key at the end of list)

Scientific Name	Common Name	Native Status	EPPC	FDACS	IRC
Family: Poaceae (grass) - continued					
Dichanthelium commutatum	variable witchgrass	native			R
Dichanthelium ensifolium var. unciphyllum	cypress witchgrass	native			R
Dichanthelium ensifolium	cypress witchgrass	native			I
Dichanthelium erectifolium	erectleaf witchgrass	native			R
Dichanthelium laxiflorum	openflower witchgrass	native			I
Dichanthelium portoricense subsp. patulum	hemlock witchgrass	native			
Dichanthelium sphaerocarpon	roundseed witchgrass	native			
Dichanthelium strigosum	roughhair witchgrass	native			
Digitaria ciliaris	southern crabgrass	native			
Digitaria filiformis var. villosa	slender crabgrass	native			
Digitaria longiflora	Indian crabgrass	exotic			
Echinochloa sp	cockspur	native			
Echinochloa walteri	coast cockspur	native			
Elionurus tripsacoides	pan-american balsamscale	native			I
Eragrostis amabilis	feather lovegrass	exotic			
Eragrostis atrovirens	thalia lovegrass	exotic			
Eragrostis ciliaris	gophertail lovegrass	exotic			
Eragrostis elliottii	Elliott's lovegrass	native			
Eragrostis hypnoides	teal lovegrass	native			CI
Eragrostis spectabilis	purple lovegrass	native			I
Eragrostis virginica	coastal lovegrass	native			I
Eremochloa ophiuroides	centipedegrass	exotic			
Eustachys glauca	saltmarsh fingergrass	native			
Eustachys neglecta	fourspike fingergrass	native			
Eustachys petraea	pinewoods fingergrass	native			
Hemarthria altissima	limpograss	exotic	II		
Hymenachne amplexicaulis	trompetilla	exotic			
Imperata cylindrica	cogongrass	exotic	I		

APPENDIX F: Floristic Species Documented Within HCMP and HCGCP (continued)

Scientific Name	Common Name	Native Status	EPPC	FDACS	IRC
Family: Poaceae (grass) - continued					
Leersia hexandra	southern cutgrass	native			R
Muhlenbergia capillaris	hairawn muhly	native			
Oplismenus hirtellus	woodsgrass	native			
Panicum anceps	beaked panicum	native			I
Panicum dichotomiflorum var. bartowense	fall panicgrass	native			
Panicum hemitomon	maidencane	native			
Panicum hians	gaping panicum	native			R
Panicum maximum	Guinea grass	exotic	II		
Panicum repens	torpedograss	exotic	I		
Panicum rigidulum	redtop panicum	native			
Panicum rigidulum subsp. pubescens	redtop panicum	native			
Panicum tenerum	bluejoint panicum	native			R
Panicum virgatum	switchgrass	native			
Paspalum caespitosum	blue crowngrass	native			
Paspalum conjugatum	hilograss	native			
Paspalum distichum	knotgrass	native			R
Paspalum floridanum	Florida paspalum	native			I
Paspalum monostachyum	gulfdune paspalum	native			R
Paspalum notatum var. notatum	bahiagrass	exotic			
Paspalum notatum var. saurae	bahiagrass	exotic			
Paspalum plicatulum	brownseed paspalum	native			
Paspalum praecox	early paspalum	native			I
Paspalum setaceum var. ciliatifolium	thin paspalum	native			
Paspalum setaceum var. longipedunculatum	thin paspalum	native			
Paspalum setaceum var. stramineum	thin paspalum	native			
Paspalum setaceum var. villosissimum	thin paspalum	native			
Paspalum urvillei	vaseygrass	exotic			
Rhynchelytrum repens	rose natalgrass	exotic	I		

APPENDIX F: Floristic Species Documented Within HCMP and HCGCP (continued)
Scientific names in accord with Wunderlin and Hansen 2008 (see key at the end of list)

Scientific Name	Common Name	Native Status	EPPC	FDACS	IRC
Family: Poaceae (grass) - continued					
Saccharum giganteum	sugarcane plumegrass	native			
Sacciolepis indica	Indian cupscale	exotic			
Sacciolepis striata	American cupscale	native			R
Schizachyrium sanguineum var. hirtiflorum	crimson bluestem	native			
Shizachyrium sanguineum var. sanguineum	crimson bluestem	native			
Schizachyrium scoparium	little bluestem	native			I
Setaria parviflora	knotroot foxtail	native			
Sorghastrum secundum	lopsided Indiangrass	native			
Spartina sp	cordgrass	native			
Sporobolus indicus	smutgrass	exotic			
Sporobolus jacquemontii	west Indian dropseed	exotic			
Stenotaphrum secundatum	st. augustinegrass	native			
Triplasis purpurea	purple sandgrass	native			R
Tripsacum dactyloides	fakahatchee grass	native			R
Family: Pontederiaceae (pickerelweed)					
Pontederia cordata	pickerelweed	native			
Family: Smilacaceae (smilax)					
Smilax auriculata	earleaf greenbrier	native			
Smilax bona-nox	saw greenbrier	native			R
Smilax laurifolia	laurel greenbrier	native			
Smilax tamnoides	bristly greenbrier	native			I
Family: Typhaceae (cattail)					
Typha domingensis	southern cattail	native			
Family: Xyridaceae (yelloweyed grass)					
Xyris ambigua	coastalplain yelloweyed grass	native			R
Xyris caroliniana	Carolina yelloweyed grass	native			R
Xyris jupicai	Richard's yelloweyed grass	native			

APPENDIX F: Floristic Species Documented Within HCMP and HCGCP (continued)

Scientific names in accord with Wunderlin and Hansen 2008 (see key at the end of list)

Scientific Name	Common Name	Native Status	EPPC	FDACS	IRC
Family: Acanthaceae (acanthus)					
Blechum pyramidatum	brown's blechum	exotic	II		
Elytraria caroliniensis var. angustifolia	Carolina scalystem				I
Justicia angusta	pineland waterwillow	native			R
Ruellia caroliniensis	Carolina wild petunia	native			I
Stenandrium dulce	sweet shaggytuft	native			R
Family: Amaranthaceae (amaranthaceae)					
Alternanthera philoxeroides	alligatorweed	exotic			
Amaranthus australis	southern amaranth	native			R
Amaranthus spinosus	spiny amaranth	exotic			
Froelichia floridana	cottonweed	native			R
Gomphrena serrata	arrasa con todo	exotic			
Iresine diffusa	Juba's bush	native			
Family: Anacardiaceae (cashew)					
Rhus copallinum	winged sumac	native			
Schinus terebinthifolius	Brazilian pepper	exotic	I		
Toxicodendron radicans	eastern poison ivy	native			
Family: Annonaceae (custard-apple)					
Asimina reticulata	netted pawpaw	native			
Family: Apiaceae (carrot)					
Cicuta maculata	spotted water hemlock	native			I
Eryngium aromaticum	fragrant eryngo	native			R
Eryngium baldwinii	Baldwin's eryngo	native			R
Eryngium yuccifolium	button rattlesnakemaster	native			
Oxypolis filiformis	water cowbane	native			
Ptilimnium capillaceum	mock bishopweed	native			
Family: Aquifoliaceae (holly)					
Ilex cassine	dahoon	native			
Ilex glabra	gallberry	native			
Family: Araliaceae (ginseng)					
Centella asiatica	spadeleaf	native			
Hydrocotyle umbellata	marshpennywort	native			R

APPENDIX F: Floristic Species Documented Within HCMP and HCGCP (continued)
Scientific names in accord with Wunderlin and Hansen 2008 (see key at the end of list)

Scientific Name	Common Name	Native Status	EPPC	FDACS	IRC
Family: Apocynaceae (dogbane)					
Asclepias curassavica	scarlet milkweed	exotic			
Asclepias feayi	Florida milkweed	native			PE
Asclepias tuberosa	butterflyweed	native			R
Cynanchum scoparium	leafless swallowwort	native			R
Sarcostemma clausum	white twinvine	native			
Family: Asteraceae (aster)					
Acmella oppositifolia	oppositeleaf spotflower	native			I
Ambrosia artemisiifolia	common ragweed	native			
Baccharis glomeruliflora	silverling	native			
Baccharis halimifolia	groundsel tree	native			
Bidens alba	beggarticks	native			
Bidens laevis	smooth beggarticks	native			I
Bigelowia nudata	pineland rayless goldenrod	native			R
Boltonia diffusa	smallhead doll's daisy	native			I
Carphephorus corymbosus	Florida paintbrush	native			R
Carphephorus odoratissimus	vanillaleaf	native			
Chaptalia tomentosa	pineland daisy	native			R
Chrysopsis mariana	Maryland goldenaster	native			CI
Cirsium horridulum	purple thistle	native			
Cirsium nuttallii	Nuttall's thistle	native			I
Conoclinium coelestinum	blue mistflower	native			
Conyza canadensis	Canadian horseweed	native			
Coreopsis floridana	Florida tickseed	native			I
Coreopsis leavenworthii	leavenworth's tickseed	native			
Cyanthillium cinereum	little ironweed	exotic			
Eclipta prostrata	false daisy	native			
Elephantopus elatus	tall elephant's foot	native			R
Emilia fosbergii	Florida tasselflower	exotic			
Emilia sonchifolia	lilac tassleflower	exotic			
Erechtites hieraciifolius	fireweed	native			
Erigeron quercifolius	oakleaf fleabane	native			

APPENDIX F: Floristic Species Documented Within HCMP and HCGCP (continued)
Scientific names in accord with Wunderlin and Hansen 2008 (see key at the end of list)

Scientific Name	Common Name	Native Status	EPPC	FDACS	IRC
Family: Asteraceae (aster) - continued					
Erigeron vernus	early whitetop fleabane	native			R
Eupatorium capillifolium	dogfennel	native			
Eupatorium compositifolium	yankeeweed	native			CI
Eupatorium leptophyllum	falsefennel	native			R
Eupatorium mohrii	Mohr's thoroughwort	native			R
Eupatorium serotinum	lateflowering thoroughwort	native			R
Euthamia minor	slender flattop goldenrod	native			
Flaveria linearis	narrowleaf yellowtops	native			
Gamochaeta falcata	narrowleaf purple everlasting	native			
Gamochaeta pensylvanica	Pennsylvania everlasting	exotic			
Gamochaeta purpurea	spoonleaf purple everlasting	native			
Gnaphalium obtusifolium	sweet everlasting	native			R
Helenium amarum	spanish daisy	native			I
Helenium pinnatifidum	southeastern sneezeweed	native			R
Helianthus angustifolius	narrowleaf sunflower	native			I
Heterotheca subaxillaris	camphorweed	native			
Hieracium megacephalon	coastalplain hawkweed	native			
Iva microcephala	Piedmont marshelder	native			
Lactuca graminifolia	grassleaf lettuce	native			R
Liatris garberi	Garber's gayfeather	native			I
Liatris tenuifolia	shortleaf gayfeather	native			R
Lygodesmia aphylla	rose-rush	native			R
Melanthera nivea	snow squarestem	native			
Mikania cordifolia	Florida Keys hempvine	native			R
Mikania scandens	climbing hempvine	native			
Pectis glaucescens	sanddune cinchweed	native			
Pectis linearifolia	Florida cinchweed	native			I
Pectis prostrata	spreading cinchweed	native			
Pluchea foetida	stinking camphorweed	native			R
Pluchea odorata	sweetscent	native			

APPENDIX F: Floristic Species Documented Within HCMP and HCGCP (continued)

Scientific Name	Common Name	Native Status	EPPC	FDACS	IRC
Family: Asteraceae (aster) - continued					
Pityopsis graminifolia	narrowleaf silkgrass	native			
Pluchea rosea	rosy camphorweed	native			
Pseudognaphalium obtusifolium	sweet everlasting	native			
Pseudelephantopus spicatus	dogstongue	exotic			
Pterocaulon pycnostachyum	blackroot	native			
Rudbeckia hirta	blackeyed Susan	native			R
Sericocarpus tortifolius	whitetop aster	native			
Solidago canadensis	Canada goldenrod	native			
Solidago fistulosa	pinebarren goldenrod	native			R
Solidago leavenworthii	Leavenworth's goldenrod	native			
Solidago odora	anisescented goldenrod	native			
Solidago stricta	wand goldenrod	native			
Sonchus oleraceus	common sowthistle	exotic			
Symphyotrichum adnatum	scaleleaf aster	native			
Symphyotrichum carolinianum	climbing aster	native			R
Symphyotrichum dumosum	rice button aster	native			
Symphyotrichum simmondsii	simmond's aster	native			
Symphyotrichum subulatum	annual saltmarsh aster	native			
Tridax procumbens	coatbuttons	exotic			
Verbesina virginica	white crownbeard	native			
Vernonia blodgettii	Florida ironweed	native			R
Wedelia triloba	creeping oxeye	exotic	II		
Youngia japonica	oriental false hawksbeard	exotic			
Family: Bignoniaceae (trumpet creeper)					
Campsis radicans	trumpet creeper	native			CI
Family: Boraginaceae (borage)					
Heliotropium polyphyllum	pineland heliotrope	native			
Family: Brassicaceae (mustard)					
Nasturtium floridanum	Florida watercress	native			
Rorippa teres	southern marsh yellowcress	native			I

APPENDIX F: Floristic Species Documented Within HCMP and HCGCP (continued)

Scientific names in accord with Wunderlin and Hansen 2008 (see key at the end of list)

Scientific Name	Common Name	Native Status	EPPC	FDACS	IRC
Family: Buddlejaceae (butterflybush)					
Polypremum procumbens	rustweed	native			
Family: Cactaceae (cactus)					
Opuntia humifusa	pricklypear	native			
Opuntia stricta	erect pricklypear	native		T	R
Selenicereus pteranthus	princess-of-the-night	exotic			
Family: Campanulaceae (bellflower)					
Campanula floridana	Florida bellflower	native			I
Family: Caprifoliaceae (honeysuckle)					
Viburnum obovatum	walter's viburnum	native			I
Family: Caricaceae (papaya)					
Carica papaya	papaya	exotic			
Family: Caryophyllaceae (pink)					
Drymaria cordata	drymary	native			
Paronychia americana	American nailwort	native			I
Stipulicida setacea var. lacerata	pineland scalypink	native			I
Family: Clusiaceae (mangosteen)					
Hypericum crux-andreae	st. peter's-wort	native			CI
Hypericum hypericoides	st. andrew's-cross	native			
Hypericum myrtifolium	myrtleleaf st. john's-wort	native			CI
Hypericum reductum	atlantic st. john's-wort	native			R
Hypericum tetrapetalum	fourpetal st. john's-wort	native			
Family: Convolvulaceae (morningglory)					
Cuscuta pentagona	fiveangled dodder	native			R
Dichondra carolinensis	Carolina ponysfoot	native			
Ipomoea sagittata	saltmarsh morningglory	native			
Family: Cucurbitaceae (gourd)					
Melothria pendula	creeping cucumber	native			
Momordica charantia	balsampear	exotic			
Family: Droseraceae (sundew)					
Drosera capillaris	pink sundew	native			R

APPENDIX F: Floristic Species Documented Within HCMP and HCGCP (continued)
Scientific names in accord with Wunderlin and Hansen 2008 (see key at the end of list)

Scientific Name	Common Name	Native Status	EPPC	FDACS	IRC
Family: Ericaceae (heath)					
Bejaria racemosa	tarflower	native			R
Gaylussacia dumosa	dwarf huckleberry	native			R
Lyonia fruticosa	coastalplain staggerbush	native			
Lyonia lucida	fetterbush	native			
Vaccinium arboreum	sparkleberry; farkleberry	native			CI
Vaccinium darrowii	darrow's blueberry	native			I
Vaccinium myrsinites	shiny blueberry	native			
Family: ***Euphorbiaceae (spurge)***					
Acalypha gracilens	slender threeseed mercury	native			I
Bischofia javanica	javanese bishopwood	exotic	I		
Chamaesyce blodgettii	limestone sandmat	native			
Chamaesyce hirta	pillpod sandmat	native			
Chamaesyce hyssopifolia	hyssopleaf sandmat	native			
Chamaesyce maculata	spotted sandmat	native			R
Cnidoscolus stimulosus	tread-softly	native			
Croton glandulosus var. glandulosus	vente conmigo	native			
Croton michauxii	rushfoil	native			CI
Euphorbia polyphylla	lesser Florida spurge	native			
Euphorbia graminea	grassleaf spurge	exotic			
Phyllanthus caroliniensis subsp. caroliniensis	Carolina leafflower	native			
Phyllanthus tenellus	mascarene island leafflower	exotic			
Phyllanthus urinaria	chamber bitter	exotic			
Stillingia aquatica	corkwood	native			R
Stillingia sylvatica	queens delight	native			R
Tragia urens	wavyleaf noseburn	native			R
Family: Fabaceae (pea)					
Abrus precatorius	rosary pea	exotic	I		
Aeschynomeme americana	shyleaf	native			
Amopha fruticosa	bastard false indigobush	native			
Amphicarpum muhlenbergianum	blue maidencane	native			
Apios americana	groundnut	native			

APPENDIX F: Floristic Species Documented Within HCMP and HCGCP (continued)

Scientific names in accord with Wunderlin and Hansen 2008 (see key at the end of list)

Scientific Name	Common Name	Native Status	EPPC	FDACS	IRC
Family: Fabaceae (pea) - continued					
Centrosema virginianum	spurred butterfly pea	native			
Chamaecrista nictitans var. aspera	sensitive pea	native			
Chamaecrista nictitans var. nictitans	sensitive pea	native			
Crotalaria lanceolata	lanceleaf rattlebox	exotic			
Crotalaria pallinda	smooth rattlebox	exotic			
Crotalaria rotundifolia	rabbitbells	native			
Crotalaria spectabilis	showy rattlebox	exotic			
Dalea carnea	whitetassles	native			
Desmodium floridanum	Florida ticktrefoil	native			
Desmodium incanum	zarzabacoa comun	exotic			
Desmodium paniculatum	panicled ticktrefoil	native			
Desmodium triflorum	threeflower ticktrefoil	exotic			
Erythrina herbacea	coralbean	native			
Galactia elliottii	Elliott's milkpea	native			
Galactia regularis	eastern milkpea	native			
Galactia volubilis	downy milkpea	native			
Indigofera caroliniana	Carolina indigo	native			
Indigofera hirsuta	hairy indigo	exotic			
Rhynchosia minima	least snoutbean	native			
Tephrosia rugelii	Rugel's hoarypea	native			
Vicia acutifolia	fourleaf vetch	native			
Vigna luteola	hairypod cowpea	native			
Family: Fagaceae (beech)					
Quercus chapmanii	Chapman's oak	native			
Quercus elliottii	running oak	native			R
Quercus laurifolia	laurel oak	native			
Quercus minima	dwarf live oak	native			R
Quercus myrtifolia	myrtle oak	native			
Quercus virginiana	Virginia live oak	native			
Family: Gentianaceae					
Nymphoides aquatica	big floatingheart	native			
Sabatia brevifolia	shortleaf rosegentian	native			
Sabatia calycina	coastal rosegentian	native			
Sabatia grandiflora	largeflower rosegentian	native			

APPENDIX F: Floristic Species Documented Within HCMP and HCGCP (continued)

Scientific names in accord with Wunderlin and Hansen 2008 (see key at the end of list)

Scientific Name	Common Name	Native Status	EPPC	FDACS	IRC
Family: Haloragaceae (watermilfoil)					
Proserpinaca palustris	marsh mermaidweed	native			R
Proserpinaca pectinata	combleaf mermaidweed	native			R
Family: Lamiaceae (mint)					
Callicarpa americana	American beautyberry	native			
Hyptis alata	musky mint	native			
Piloblephis rigida	wild pennyroyal	native			R
Family: Lauraceae (laurel)					
Cassytha filiformis	love vine; devil's gut	native			
Persea palustris	swamp bay	native			
Family: Lythraceae (loosestrife)					
Ammannia latifolia	pink redstem	native			R
Cuphea carthagenensis	colombian waxweed	exotic			
Lythrum alatum	winged loosestrife	native			R
Lythrum flagellare	Florida loosestrife	native		E	I
Family: Malvaceae (mallow)					
Hibiscus grandiflorus	swamp hibiscus	native			R
Kosteletzkya virginica	Virginia saltmarsh mallow	native			
Sida acuta	common wireweed	native			
Sida cordifolia	llima	exotic			
Sida rhombifolia	Cuban jute; Indian hemp	native			
Urena lobata	Caesarweed	native	II		
Family: Melastomataceae (melastome)					
Rhexia cubensis	west indian meadowbeauty	native			I
Rhexia mariana	pale meadowbeauty	native			R
Family: Moraceae (mulberry)					
Ficus aurea	strangler fig	native			
Morus rubra	red mulberry				R
Family: Myricaceae (bayberry)					
Myrica cerifera	wax myrtle	native			
Family: Myrsinaceae (myrsine)					
Ardisia escallonioides	marlberry	native			
Rapanea punctata	colicwood	native			

APPENDIX F: Floristic Species Documented Within HCMP and HCGCP (continued)

Scientific Name	Common Name	Native Status	EPPC	FDACS	IRC
Family: Myrtaceae (myrtle)					
Callistemon viminale	bottlebrush	exotic			
Eucalyptus torelliana	Torell's eucalyptus; cadaga	exotic			
Eugenia uniflora	Surinam cherry	exotic	I		
Melaleuca quinquenervia	punktree	exotic	I		
Psidium guajava	guava	exotic	I		
Syzygium cumini	java plum	exotic	I		
Family: Nymphaeaceae (waterlily)					
Nuphar advena	spadderdock; yellow pond lily	native			
Family: Olacaceae (olax)					
Ximenia americana	hog plum	native			
Family: Oleaceae (olive)					
Fraxinus caroliniana	pop ash	native			R
Family: Onagraceae (eveningprimrose)					
Ludwigia erecta	yerba de jicotea	native			I
Ludwigia octovalvis	mexican primrosewillow	native			
Ludwigia repens	creeping primrosewillow	native			
Family: Orobanchaceae (broomrape)					
Agalinis linifolia	flaxleaf false foxglove	native			R
Buchnera americana	American bluehearts	native			
Family: Oxalidaceae					
Oxalis corniculata	common yellow woodsorrel	native			
Family: Phytolaccaceae (pokeweed)					
Phytolacca americana	American pokeweed	native			
Family: Polygalaceae (milkwort)					
Polygala lutea	orange milkwort	native			I
Polygala nana	candyroot	native			R
Family: Polygonaceae (buckwheat)					
Polygonella polygama var. *brachystachya*	October flower	native			I
Polygonum glabrum	denseflower knotweed	native			R
Polygonum hydropiperoides	swamp smartweed	native			R
Polygonum punctatum	dotted smartweed	native			
Family: Rosaceae (rose)					
Rubus cuneifolius	sand blackberry	native			I
Rubus trivialis	southern dewberry	native			R

Scientific Name	Common Name	Native Status	EPPC	FDACS	IRC
Family: Rubiaceae (madder)					
Cephalanthus occidentails	common buttonbush	native			
Diodia virginiana	Virginia buttonweed	native			R
Psychotria nervosa	wild coffee	native			
Psychotria sulzneri	shortleaf wild coffee	native			
Spermacoce assurgens	woodland false buttonweed	native			
Family: Salicaceae (willow)					
Salix caroliniana	Carolina willow	native			
Family: Sapindaceae (soapberry)					
Acer rubrum	red maple	native			
Koelreuteria elegans	flamegold	exotic	II		
Family: Saururaceae (lizard's tail)					
Saururus cernuus	lizard's tail	native			R
Family: Turneraceae (turnera)					
Piriqueta cistoides	pitted stripeseed	native			
Family: Ulmaceae (elm)					
Ulmus americana	American elm	native			CI
Family: Urticaceae (nettle)					
Boehmeria cylindrica	false nettle	native			
Parietaria floridana	Florida pellitory	native			
Pilea microphylla	artillery plant	native			
Family: Verbenaceae (vervain)					
Lantana camara	shrubverbena	exotic	I		
Phyla nodiflora	capeweed	native			
Verbena scabra	harsh vervain	native			R
Family: Veronicaceae (speedwell)					
Bacopa monnieri	herb-of-grace	native			
Gratiola hispida	rough hedgehyssop	native			I
Gratiola ramosa	branched hedgehyssop	native			R
Gratiola pilosa	shaggy hedgehyssop	native			CI
Linaria canadensis	Canadian toadflax	native			R
Lindernia crustacea	Malaysian false pimpernel	exotic			
Lindernia grandiflora	savannah false pimpernel	native			I
Mecardonia acuminata subsp. peninsularis	axilflower	native			
Micranthemum glomeratum	manatee mudflower	native			I
Penstemon multiflorus	manyflower beardtongue	native			I
Scoparia dulcis	sweetbroom	native			

APPENDIX F: Floristic Species Documented Within HCMP and HCGCP (continued)

Scientific names in accord with Wunderlin and Hansen 2008 (see key at the end of list)

Scientific Name		Common Name	Native Status	EPPC	FDACS	IRC
Family: Violaceae (violet)						
	Viola lanceolata	bog white violet	native			I
	Viola sororia	common blue violet	native			I
Family: Vitaceae (grape)						
	Ampelopsis arborea	peppervine	native			
	Parthenocissus quinquefolia	Virginia creeper	native			
	Vitis cinerea	Florida grape	native			
	Vitis rotundifolia	muscadine	native			
	Vitis shuttleworthii	calloose grape	native			R

Key

Florida EPPC Status (2015)

I = species that are invading and disrupting native plant communities
II = species that have shown a potential to disrupt native plant communities

FDACS (Florida Depatment of Agriculture and Consumer Services) 2003 Designations

E = Endangered
T = Threatened
CE = Commercially Exploited

IRC (Institute for Regional Conservation) Designations

CI = Critically Imperiled
I = Imperiled
R = Rare
S = Secure
PE = Possibly Extirpated
AS = Apparently Secure

APPENDIX G: Vertebrate Species Documented Within HCMP and HCGCP

See key at the end of list

Amphibians				
Order	**Family**	**Scientific Name**	**Common Name**	**Status**
Anura	Bufonidae	*Bufo quercicus*	Oak toad	
		Anaxyrus terrestris	Southern toad	
	Eleutherodactylidae	*Eleutherodactylus planirostris*	Greenhouse frog	exotic
	Hylidae	*Hyla cinerea*	Green treefrog	
		Hyla squirella	Squirrel treefrog	
		Hyla gratiosa	Barking treefrog	
		Osteopilus septentrionalis	Cuban treefrog	exotic
	Microhylidae	*Gastrophryne carolinensis*	Eastern narrowmouth toad	
	Ranidae	*Rana grylio*	Pig frog	
		Rana sphenocephala	Southern leopard frog	
Reptiles				
Crocodilia	Alligatoridae	*Alligator mississippiensis*	American alligator	FT(S/A)
Squamata	Colubridae	*Elaphe guttata guttata*	Corn snake/Red rat snake	
		Masticophis flagellum flagellum	Eastern coachwhip snake	
		Thamnophis sirtalis sirtalis	Eastern garter snake	
		Drymarchon corais couperi	Eastern indigo snake	FT
		Thamnophis sauritus sauritus	Eastern ribbon snake	
		Opheodrys aestivus aestivus	Rough green snake	
		Coluber constrictor priapus	Southern black racer	
		Diadophis punctatus punctatus	Southern ring neck snake	
		Elaphe obsoleta quadrivittata	Yellow rat snake	
		Nerodia fasciata	Florida banded water snake	
	Dactyloidae	*Anolis carolinensis*	Green anole	
	Polychrotidae	*Anolis sagrei*	Brown anole	exotic
	Scincidae	*Plestiodon fasciatus*	Five-lined skink	

APPENDIX G: Vertebrate Species Documented Within HCMP and HCGCP (continued)
See key at the end of list

Reptiles (contined)				
Order	**Family**	**Scientific Name**	**Common Name**	**Status**
Squamata (continued)	Scincidae	*Scincella lateralis*	Ground skink	
	Teiidae	*Cnemidophorus sexlineatus*	Six-lined racerunner	
	Viperidae	*Crotalus adamanteus*	Eastern diamondback rattlesnake	
	Elapidae	*Micrurus fulvius fulvius*	Eastern coral snake	
Testudines	Emydidae	*Deirochelys reticularia*	Chicken turtle	
		Terrapene carolina bauri	Florida box turtle	
		Pseudemys nelsoni	Florida red-bellied turtle	
		Pseudemys peninsularis	Peninsula cooter	
	Testudinidae	*Gopherus polyphemus*	Gopher tortoise	ST
Birds				
Order	**Family**	**Scientific Name**	**Common Name**	**Status**
Accipitriformes	Accipitridae	*Accipiter cooperii*	Cooper's hawk	
Accipitriformes	Accipitridae	*Circus cyaneus*	Northern harrier	
Accipitriformes	Accipitridae	*Buteo lineatus*	Red-shouldered hawk	
Accipitriformes	Accipitridae	*Buteo jamaicensis*	Red-tailed hawk	
Accipitriformes	Accipitridae	*Accipiter striatus*	Sharp-shinned Hawk	
Accipitriformes	Accipitridae	*Rostrhamus sociabilis*	Snail kite	
Accipitriformes	Accipitridae	*Elanoides forficatus*	Swallow-tailed kite	
Accipitriformes	Cathartidae	*Cathartes aura*	Turkey vulture	
Accipitriformes	Pandionidae	*Pandion haliaetus*	Osprey	
Anseriformes	Anatidae	*Anas fulvigula*	Mottled Duck	
Anseriformes	Anatidae	*Cairina moschata*	Muscovy Duck (Domestic type)	exotic
Anseriformes	Anatidae	*Aix sponsa*	Wood Duck	
Apodiformes	Trochilidae	*Archilochus colubris*	Ruby-throated Hummingbird	
Charadriiformes	Charadriidae	*Charadrius vociferus*	Killdeer	

APPENDIX G: Vertebrate Species Documented Within HCMP and HCGCP (continued)
See key at the end of list

Birds				
Order	**Family**	**Scientific Name**	**Common Name**	**Status**
Charadriiformes (continued)	Laridae	*Larus delawarensis*	Ring-billed Gull	
	Scolopacidae	*Tringa melanoleuca*	Greater Yellowlegs	
		Calidris minutilla	Least Sandpiper	
		Tringa flavipes	Lesser Yellowlegs	
		Calidris melanotos	Pectoral Sandpiper	
		Tringa solitaria	Solitary Sandpiper	
		Gallinago delicata	Wilson's Snipe	
Ciconiiformes	Ciconiidae	*Mycteria americana*	Wood stork	FT
Columbiformes	Columbidae	*Streptopelia decaocto*	Eurasian Collared-Dove	exotic
		Zenaida macroura	Mourning dove	
		Columba livia	Rock Pigeon	exotic
		Zenaida asiatica	White-winged Dove	
Falconiformes	Falconidae	*Caracara cheriway*	Crested caracara	
		Falco columbarius	Merlin	
Galliformes	Odontophoridae	*Colinus virginianus*	Northern Bobwhite	
		Colinus virginianus	Northern Bobwhite	
	Phasianidae	*Meleagris gallopavo*	Wild turkey	
Gruiformes	Aramidae	*Aramus guarauna*	Limpkin	SSC
	Ardeidae	*Egretta caerulea*	Little blue heron	SSC
	Gruidae	*Grus canadensis*	Sandhill crane	
Passeriformes	Cardinalidae	*Passerina cyanea*	Indigo Bunting	
		Cardinalis cardinalis	Northern cardinal	
		Passerina ciris	Painted bunting	
		Pheucticus ludovicianus	Rose-breasted Grosbeak	
	Corvidae	*Corvus brachyrhynchos*	American crow	

APPENDIX G: Vertebrate Species Documented Within HCMP and HCGCP (continued)
See key at the end of list

Birds (Continued)				
Order	**Family**	**Scientific Name**	**Common Name**	**Status**
Passeriformes (continued)	Corvidae (continued)	*Cyanocitta cristata*	Blue jay	
		Corvus ossifragus	Fish Crow	
		Aphelocoma coerulescens	Florida Scrub-Jay	FT
	Emberizidae	*Pipilo erythrophthalmus*	Eastern towhee	
		Passerculus sandwichensis	Savannah Sparrow	
	Hirundinidae	*Stelgidopteryx serripennis*	Northern Rough-winged Swallow	
		Progne subis	Purple Martin	
		Iridoprocne bicolor	Tree swallow	
	Icteridae	*Sturnella magna*	Eastern meadowlark	
		Agelaius phoeniceus	Red-winged blackbird	
	Laniidae	*Lanius ludovicianus*	Loggerhead shrike	
	Mimidae	*Dumetella carolinensis*	Gray catbird	
		Mimus polyglottos	Northern mockingbird	
	Parulidae	*Geothlypis trichas*	Common yellowthroat	
		Setophaga americana	Northern Parula	
		Setophaga palmarum	Palm warbler	
		Setophaga pinus	Pine warbler	
		Setophaga discolor	Prairie Warbler	
		Setophaga petechia	Yellow Warbler	
		haga coronata	Yellow-rumped warbler	
		Setophaga dominica	Yellow-throated Warbler	
	Regulidae	*Regulus calendula*	Ruby-crowned Kinglet	
	Sturnidae	*Sturnus vulgaris*	European Starling	exotic
	Troglodytidae	*Troglodytes aedon*	House Wren	
	Turdidae	*Sialia sialis*	Eastern Bluebird	

APPENDIX G: Vertebrate Species Documented Within HCMP and HCGCP (continued)
See key at the end of list

Birds (Continued)				
Order	**Family**	**Scientific Name**	**Common Name**	**Status**
Passeriformes (continued)	Tyrannidae	*Tyrannus tyrannus*	Eastern Kingbird	
		Sayornis phoebe	Eastern Phoebe	
		Myiarchus crinitus	Great Crested Flycatcher	
	Vireonidae	*Vireo olivaceus*	Red-eyed Vireo	
		Vireo griseus	White-eyed vireo	
Pelecaniformes	Ardeidae	*Ardea herodias*	Great blue heron	
		Ardea alba	Great egret	
		Butorides virescens	Green Heron	
		Egretta thula	Snowy Egret	SSC
		Egretta tricolor	Tricolored heron	SSC
		Nyctanassa violacea	Yellow-crowned Night-Heron	
	Threskiornithidae	*Plegadis falcinellus*	Glossy Ibis	
		Eudocimus albus	White ibis	SSC
Piciformes	Picidae	*Picoides pubescens*	Downy woodpecker	
		Colaptes auratus	Northern flicker	
		Dryocopus pileatus	Pileated woodpecker	
		Melanerpes carolinus	Red-bellied woodpecker	
		Melanerpes erythrocephalus	Red-headed Woodpecker	
		Sphyrapicus varius	Yellow-bellied Sapsucker	
Strigiformes	Strigidae	*Megascops asio*	Eastern Screech-Owl	
		Bubo virginianus	Great horned owl	
Suliformes	Phalacrocoracidae	*Phalacrocorax auritus*	Double-crested Cormorant	

APPENDIX G: Vertebrate Species Documented Within HCMP and HCGCP (continued)
See key at the end of list

Mammals				
Order	**Family**	**Scientific Name**	**Common Name**	**Status**
Artiodactyla	Suidae	*Sus scrofa*	Wild hog	exotic
Carnivora	Canidae	*Urocyon cinereoargenteus*	Gray fox	
	Felidae	*Lynx rufus*	Bobcat	
		Puma concolor coryi	Florida panther	FE
	Procyonidae	*Procyon lotor*	Raccoon	
	Ursidae	*Ursus amercanus floridanus*	Florida black bear	
Cingulata	Dasypodidae	*Dasypus novemcinctus*	Nine-banded armadillo	
Didelphimorphia	Didelphidae	*Didelphis virginiana*	Virginia opossum	
Lagomorpha	Leporidae	*Sylvilagus floridanus*	Eastern cottontail	
		Sylvilagus palustrus	Marsh rabbit	
Rodentia	Cricetidae	*Peromyscus gossypinus*	Cotton mouse	
		Oryzymys palustris	marsh rice rat	
	Muridae	*Sigmodon hispidus*	Hispid cotton rat	
	Sciuridae	*Sciurus carolinensis*	Eastern gray squirrel	
Soricomorpha	Soricidae	*Scalopus aquaticus*	Eastern mole	
		Blarina brevicauda shermani	Sherman's short-tailed shrew	SSC
Chordata	Lepisosteidae	*Lepisosteus platyrhincus*	Florida gar	
Cypriniformes	Cyprinidae	*Ctenopharyngodon idella*	Grass Carp	
Cyprinodontiformes	Poeciliidae	*Gambusia affinis*	Mosquitofish	
Perciformes	Centrarchidae	*Micropterus salmoides*	Largemouth Bass	
Siluriformes	Loricariidae	*Pterygoplichthys* sp.	Suckermouth Armored Catfish	exotic

Protection Status (based on FWC list September 2015): FE = Federally-designated Endangered; FT = Federally-designated Threatened; FT(S/A) = Federally-designated Threatened species due to similarity of appearance; ST = State-designated Threatened; SSC = State Species of Special Concern; exotic = not indigenous to the State of Florida

Platt Branch and Hickey Creek Wildlife & Environmental Areas

Species Management Strategy

June 2016

Florida Fish and Wildlife Conservation Commission
Division of Habitat and Species Conservation
Wildlife and Habitat Management Section

A product of the Wildlife Conservation Prioritization and Recovery Program

Executive Summary

The Florida Fish and Wildlife Conservation Commission's (FWC) Wildlife and Habitat Management Section (WHM) takes a proactive, science-based approach to species management on lands in the Wildlife Management Area (WMA/WEA) system. This approach uses information from statewide models, in conjunction with input from species experts and people knowledgeable about the area, to create site-specific assessments of a number of focal species. Staff combines these assessments with management considerations to develop a wildlife management strategy for the area. The FWC intends for this Strategy to: 1) provide land managers with information on actions that should be taken provided the necessary resources are available, 2) promote the presence and ensure the persistence of focal wildlife species on the area, and 3) provide measurable species objectives that can be used to evaluate the success of wildlife management on the area.

This document presents the results of a science-based process for evaluating focal species needs using an ecosystem management approach on the Platt Branch Wildlife & Environmental Area (PBWEA) and the Hickey Creek Wildlife & Environmental Area (HCWEA). Natural community management designed for a set of focal species benefits a host of species reliant upon the same natural communities. Monitoring select species verifies whether natural community management is having the desired effect on wildlife. To maximize the potential wildlife conservation benefit, staff considers the role of these WEAs in regional and statewide conservation initiatives throughout the process.

Section 1 informs the reader about the process used to generate this document.

Section 2 describes the historic and ongoing management actions on the properties.

Section 3 provides a list of the focal and listed species on the area, and an assessment of each species' level of opportunity and need. This includes species-specific objectives for the gopher frog, Florida pine snake, gopher tortoise, Florida scrub-jay, red-cockaded woodpecker, southeastern American kestrel, and Florida mouse.

Section 4 describes specific land management actions recommended for focal species. This includes Strategic Management Areas (SMA) and Objective-Based Vegetation Management (OBVM) considerations. Workshop participants identified a need for a Florida scrub-jay SMA. This section also discusses management necessary to ensure continued persistence of focal species.

Section 5 describes species-specific management and monitoring actions prescribed for the area, and identifies any research that would be necessary to guide future management efforts. Species management at PBWEA includes installation and maintenance of kestrel nest boxes, and red-cockaded woodpecker management. Monitoring is recommended for the herpetological species, gopher frog, gopher tortoise, Bachman's sparrow, brown-headed nuthatch, Florida scrub-jay, red-cockaded woodpecker, southeastern American kestrel, Florida mouse. We also recommend Florida bonneted bat, and rare plant surveys, based on resource availability. Documentation of opportunistic observations of other focal and listed species is also recommended.

Section 6 identifies coordination that will assist in conserving these focal species. We identify coordination with 6 other units in FWC and inter-agency coordination with 8 other entities.

Section 7 describes efforts that should occur "beyond the area's boundaries" to ensure conservation of the species on the area.

Continuation of resources at current levels would be required to provide for most of the land management recommended in this document. Some of the monitoring recommendations may require additional resources, while FWC can accomplish others with continuation of existing resources.

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Acronym List

ABS	Archbold Biological Station
APAFR	Avon Park Air Force Range
ARCI	Avian Research and Conservation Institute
ASP	Alva Scrub Preserve
BBA	Breeding Bird Atlas
BMU	Bear Management Unit
BRP	Babcock Ranch Preserve
BWWMA	Babcock-Webb Wildlife Management Area
CCA	Candidate Conservation Agreement (Gopher Tortoise)
CPS	Conservation Planning Services (office)
DFC(s)	Desired Future Condition(s)
FCWMA	Fisheating Creek Wildlife Management Area
FDOT	Florida Department of Transportation
FFS	Florida Forest Service (formerly Division of Forestry)
FNAI	Florida Natural Areas Inventory
FS	Florida Statutes
FWC	Florida Fish and Wildlife Conservation Commission
FWLI	Florida Wildlife Legacy Initiative
FWRI	Fish and Wildlife Research Institute
HCWEA	Hickey Creek Wildlife and Environmental Area
ISM	Imperiled Species Management (section)
IPM	Invasive Plant Management
KMU	Kestrel Management Unit
LBCE	Lykes Brothers Conservation Easement
LTDS	Line Transect Distance Sampling
LWRWEA	Lake Wales Ridge Wildlife and Environmental Area
MU(s)	Management Unit(s)
NC	Natural Community
OBVM	Objective Based Vegetation Management
PBG(s)	Potential Breeding Group(s)
PBWEA	Platt Branch Wildlife and Environmental Area
PLCP	Public Lands Conservation Planning (project)
PVA	Population Viability Analysis
SaMP	Survey and Monitoring Protocol (database)
SAP	Species Action Plan
SCP	Species Conservation Planning (section)
SGCN	Species of Greatest Conservation Need
SHCA	Strategic Habitat Conservation Area
SMA	Strategic Management Area
SSC	Species of Special Concern
USFWS	United States Fish and Wildlife Service
WCPR	Wildlife Conservation Prioritization and Recovery (program)
WEA	Wildlife & Environmental Area
WHCNinFL	Wildlife Habitat Conservation Needs in Florida (document)
WHM	Wildlife and Habitat Management (section)
WMA	Wildlife Management Area

Statewide Species Prioritization Parameters

This table provides the values for the 6 prioritization parameters for the focal species. Parameters that are "triggered" (exceed the threshold) are in **bold**. Typically, the more parameters a species triggers, the higher the statewide prioritization.

Species Common Name	Millsap et al[1]		State Wildlife Action Plan[2]		Population Viability Analysis (PVA) on managed lands	
	Biological Score[3]	Supplemental Score[4]	Population Status[5]	Population Trends[6]	Probability of a 50% decline[7]	Populations persisting (to 80 or 100 years)[8]
Gopher Frog	24.6	12	medium	**declining**	0	**9% (to 80)**
Bluetail Mole Skink	**32.3**	**17**	medium	**declining**	0	**72% (to 80)**
Florida Pine Snake	23.7	**15**	medium	**declining**	0	**31% (to 80)**
Gopher Tortoise	**27.3**	**17**	medium	**declining**	0	**55% (to 100)**
Sand Skink	**35.6**	**20**	medium	**declining**	**12%**	**45% (to 100)**
Bachman's Sparrow	16	12	medium	**declining**	0	**49% (to 80)**
Brown-Headed Nuthatch	17	13	medium	**declining**	0	**25% (to 80)**
Burrowing Owl	15.3	**15**	medium	**unknown**	**>90%**	**6% (to 100)**
Cooper's Hawk	15	12	not a SGCN[9]	not a SGCN[9]	**96%**	100% (to 100)
Crested Caracara	**37.7**	**17**	**low**	**unknown**	**0**	100% (to 100)
Florida Mottled Duck	17.3	**18**	medium	**declining**	**1%**	100% (to 100)
Florida Sandhill Crane	**27**	**16**	medium	**declining**	0	**33 % (to 80)**
Florida Scrub-Jay	**36.6**	**19**	**low**	**declining**	**30%**	**2% (to 80)**
Limpkin	24.3	14	medium	**unknown**	0	100% (to 100)
Northern Bobwhite	11	14	**low**	**declining**	0	100% (to 100)
Red-Cockaded Woodpecker	**27.6**	14	**low**	**declining**	0	**45% (to 100)**
Short-Tailed Hawk	**30.6**	**15**	**low**	**unknown**	**61%**	**50% (to 100)**
Snail Kite	**50.0**	**17**	**low**	**declining**	0	100% (to 100)
Southeastern American Kestrel	**28**	14	**low**	**declining**	0	**67% (to 100)**

Species Common Name	Millsap et al[1]		State Wildlife Action Plan[2]		Population Viability Analysis (PVA) on managed lands	
	Biological Score[3]	Supplemental Score[4]	Population Status[5]	Population Trends[6]	Probability of a 50% decline[7]	Populations persisting (to 80 or 100 years)[8]
Southern Bald Eagle	21.3	10	medium	increasing	0	100% (to 100)
Swallow-Tailed Kite	25.7	13	**low**	**unknown**	**20%**	**50% (to 100)**
Wading Birds	23.7	13	variable	variable	0	100% (to 100)
Big Cypress Fox Squirrel	22.0	**15**	**unknown**	**unknown**	**100%**	**20% (to 100)**
Florida Black Bear	**32.7**	13	medium	stable	**5%**	100% to (100)
Florida Mouse	22	**19**	medium	**declining**	**75% (in 83 years)**	**17% (to 65)**
Florida Panther	**40.3**	**15**	**low**	**unknown**	0	100% (to 100)
Sherman's Fox Squirrel	24	**17**	**low**	**declining**	0	**28% (to 80)**

[1] scores derived from Millsap et al (1990), "Setting priorities for the conservation of fish and wildlife species in Florida", as updated by staff of the FWC. We used the most recent updates to score.

[2] Florida's State Wildlife Action Plan

[3] Species trigger this parameter if the score is ≥ 25.9

[4] Species trigger this parameter if the score is ≥ 15

[5] Species trigger this parameter if the score is low or unknown

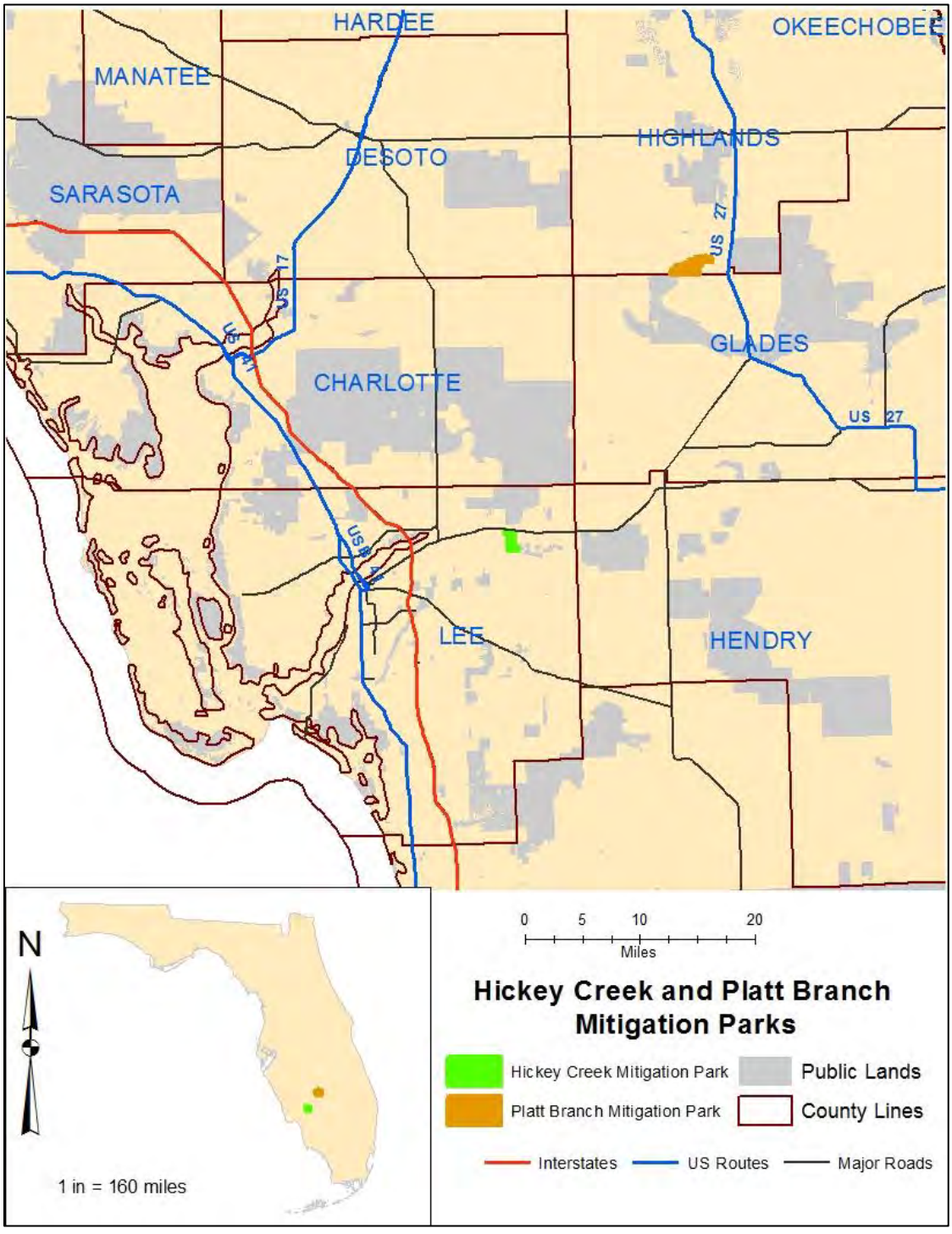
[6] Species trigger this parameter if the score is declining or unknown

[7] Species trigger this parameter if the score is > 0

[8] Species trigger this parameter if the score is ≤ 75%

[9] SGCN = Species of Greatest Conservation Need

Locator Map


HARDEE
OKEECHOBEE
MANATEE
HIGHLANDS
DESOTO
SARASOTA
US 27
US 17
US 41
GLADES
CHARLOTTE
US 27
US 41
LEE
HENDRY
N
1 in = 160 miles
0 5 10 20
Miles
Hickey Creek and Platt Branch Mitigation Parks
Hickey Creek Mitigation Park
Platt Branch Mitigation Park
Public Lands
County Lines
Interstates
US Routes
Major Roads

Section 1: Introduction

The FWC manages the lands in the Wildlife Management Area (WMA) system using a proactive approach, which includes an understanding of natural communities of plants and animals. As applied by FWC, natural community management starts by classifying lands into distinct natural communities that we then manage in a way to maintain or enhance the communities' unique structure and function. Land management that has a positive influence on natural community conditions benefits the wildlife living in these habitats.

Another important aspect of FWC's management approach is ensuring that it is science-informed and meets the needs of Florida's wildlife. The agency's Wildlife Conservation Prioritization and Recovery Program (WCPR) created this Species Management Strategy for these Wildlife & Environmental Areas (WEAs) to inform and guide management on the areas, and to verify that area management is meeting the needs of wildlife. The FWC intends for this Strategy to: 1) provide land managers with information on management actions that should be taken provided the necessary resources are available; 2) promote the presence and facilitate the persistence of wildlife species on the area; and 3) provide measurable objectives that can be used to evaluate the success of wildlife management on the area.

When developing a Strategy, WCPR staff uses multiple tools to analyze and evaluate an area's opportunities to manage for wildlife. The focal species concept is an approach to identify the needs of wildlife collectively by strategically focusing on a subset of wildlife species. The subset of species FWC selected as focal species includes umbrella species, keystone species, habitat-specialist species, and indicator species. Objective Based Vegetation Management (OBVM) is a method used to assess if vegetation management within natural communities is achieving the desired conditions. Also, a Strategic Management Area (SMA) is a specially designated piece of land where additional management actions are required to address a particular need.

In addition to tools discussed above, WCPR staff uses specific definitions in a Strategy. *Goals* are broad statements of a condition or accomplishment to be achieved. Goals may be unattainable, but provide direction and inspiration. *Objectives* are a measurable, time-specific statement of results responding to pre-established goals. *Imperiled species* refers to any plant or animal federally listed under the Endangered Species Act or state-listed by the FWC or the Florida Department of Agriculture and Consumer Services.

Creating this Strategy involved a number of steps. First, WCPR staff assessed the results of species-specific habitat models and statewide potential habitat maps for focal species to determine which focal species had potential habitat on these WEAs. WCPR staff then used knowledge from FWC staff, species-expert opinions, and area-specific natural community maps to modify the statewide models and create area-specific potential habitat maps for each focal species. Next, WCPR staff conducted a workshop at which area managers, species experts, and section leaders discussed and evaluated the WEAs' potential role in the conservation of focal species. For each species, workshop participants determined the status of the species on the

areas; evaluated the opportunities for management on the areas; specified appropriate monitoring and research actions; and identified beneficial coordination and 'beyond the boundary' considerations. Using the information from the workshop, staff drafted the Strategy document and sent it to species experts and other professionals for review. Following the review, the Strategy was finalized and staff initiated implementation of actions in the Strategy.

FWC staff considered the goals and objectives in the Management Plans (formerly known as Conceptual Management Plan) for these WEAs when discussing and assessing the species; therefore, this Strategy supports the goals of each Management Plan. Management plans are on a 10-year revision cycle. During the next revision of the Management Plans, staff will incorporate the objectives in this Strategy into the Management Plans, and append this Strategy to the revised Management Plans.

While this Strategy focuses on PBWEA and HCWEA, it considers the role of each area within the larger state or regional context. Similarly, while the Strategy has species-specific objectives and actions, it does not endorse single-species management. Natural community management is the core of FWC's ecological management approach, and by paying special attention to the needs of focal and imperiled species, we verify that management actions are having the desired effect. By implementing the actions in the Strategy, the FWC believes that management will keep common species common, aid in the recovery of imperiled species, and benefit the largest suite of native wildlife.

Section 2: Historic, Current, and Planned Management

Platt Branch Wildlife & Environmental Area (PBWEA; 1,972 acres) and Hickey Creek Wildlife & Environmental Area (HCWEA; 1,117 acres) are located in Highlands and Lee counties, respectively, and are both designated as FWC Gopher Tortoise Mitigation Parks. The FWC implemented the Mitigation Park Program in 1988 to provide regulatory programs as an alternative to on-site wildlife mitigation under Chapter 372.074, Florida Statutes (FS), which establishes the Fish and Wildlife Habitat Program. The purpose of this program is to acquire and manage lands important to the conservation of fish and wildlife, or to assist other agencies or local governments in acquiring or managing important conservation lands. Under this authority, the FWC or its designee is responsible for managing these lands for the primary purpose of maintaining and enhancing their habitat value for fish and wildlife, as well as for compatible public recreation.

FWC maintains an office and shop facility at PBWEA, along with a farm tractor and implements to conduct minor land management actions. One FWC biologist is assigned to these properties stationed at PBWEA in Venus, and will often use contractual services to assist with management on PBWEA and HCWEA.

2.1: Platt Branch Wildlife & Environmental Area

PBWEA is located on the southern Highlands County line, approximately 16 miles south of the town of Lake Placid. The Florida Department of Transportation (FDOT) acquired the lands comprising PBWEA in 1995, and PBWEA was established through an inter-agency Memorandum of Understanding between FDOT, FWC, and the U. S. Fish and Wildlife Service (USFWS). The purpose of acquisition was to provide FDOT with the opportunity to mitigate anticipated impacts to state and federally listed species by providing funding for the acquisition and management of the site. FWC assumed title and management responsibility, as well as security, habitat enhancement, monitoring, and land management activities. In accordance with the Memorandum of Understanding, FWC manages the area with a primary emphasis on gopher tortoises (*Gopherus polyphemus*), Florida scrub-jays (*Aphelocoma coerulescens*), and red-cockaded woodpeckers (*Picoides borealis*).

PBWEA is contiguous with the Fisheating Creek WMA (FCWMA; 18,382 acres) and the Lykes Brothers Conservation Easement (LBCE; 42,000 acres) on the Lykes Bros. Inc. Ranch in Glades County. Due to these connections, habitat management and efforts to protect listed species on PBWEA contribute to the conservation in the surrounding landscape.

Historic land uses on PBWEA include cattle grazing, hunting, farming, timbering, and turpentine extraction. Several improved pastures occur on the site, comprising approximately 250 acres of bahiagrass (*Paspalum notatum*). The remaining acreage is composed primarily of well-preserved pine flatwoods, floodplain forests, oak hammocks, baygalls, oak scrub, and depressional marshes. Hydric flatwoods contain south Florida slash pines (*Pinus elliottii*) with an understory of cutthroat grass (*Panicum abscissum*). Mesic and xeric flatwoods contain longleaf pine (*Pinus palustris)* overstory, wiregrass (*Aristida stricta*) dominated groundcover, and have oaks in the midstory in xeric areas.

The species composition and structure of many of the native plant communities at PBWEA indicate the use of occasional fire prior to acquisition. Portions of the area such as the oak scrubs, hammocks, and areas near camps or cow-pens appear to have been purposely excluded from burning. FWC has implemented a fire management program on the site to restore some areas through the reintroduction of fire, and to maintain and enhance others through the continued use of fire. Staff have conducted prescribed burns throughout most of the fire-dependent habitats, with an emphasis on growing season fire, and many areas have been burned multiple times.

Area staff have supplemented prescribed burns with mechanical vegetation treatment to further restore and enhance habitat, particularly for listed species. In an effort to reduce woody shrubs and palmetto (*Serenoa repens*), staff have mowed >500 acres and roller-chopped >200 acres of pine flatwoods and pastures. Several oak communities at PBWEA have a greatly reduced understory due to mechanical clearing and fire exclusion prior to acquisition. Staff have used chainsaws and heavy equipment, such as a hydro-ax, to remove over-mature scrub oaks. All of these actions were coupled with subsequent burning to promote the restoration of the flatwoods and oak scrub communities. Timber harvest occurred on 85 acres in 2006 to improve

habitat conditions for listed species and to promote cutthroat grass. This timber operation was followed with multiple burns to further enhance the recovery of the understory.

Pastures that were planted prior to acquisition have been allowed to transition through natural successional changes. These areas support high densities of gopher tortoises currently, and significant restoration is not recommended, so as to not disrupt the intact populations. Mechanical treatments such as mowing and/or roller chopping have reduced the dominance of invasive native plants such as wax myrtles, while longer burn rotations have allowed other native plants to establish. An emphasis on growing season burning has promoted native plant seeding and proliferation. Natural colonization of native trees and shrubs have shifted the structure of these pastures where they currently provide valuable wildlife habitat, even for listed species.

PBWEA has had few exotic plant issues, and FWC conducts most control efforts in-house. Exotic plants on PBWEA include cogongrass (*Imperata cylindrica*), tropical soda apple (*Solanum viarum*), Brazilian pepper (*Schinus terebinthifolius*), air potato (*Dioscorea bulbifera*), and old world climbing fern *(Lygodium microphyllum*). In 2014 and 2015, a contractor treated old world climbing fern that had become prolific within the forested wetlands, and treatment will continue in 2016. FWC staff and contractors conducted limited feral hog (*Sus scrofa)* trapping from 1997 to 2011 to control hog populations.

There is no need for hydrological restoration at PBWEA. The site has minimal ditching and 2 man-made "cattle ponds", which are small and likely beneficial to wildlife, while not contributing to hydrological alteration.

Florida Natural Areas Inventory (FNAI) completed natural community (NC) mapping at PBWEA as part of OBVM (Table 1). Through the OBVM workshop process, staff delineated Management Units (MUs) and defined the desired future conditions (DFCs) for actively-managed NCs.

Table 1. Mapped acreage of current and historic plant communities on PBWEA, including management status and the number of focal species that use the community.

Community Type	Estimated Current Acreage	Estimated Historic Acreage	# of Focal Species That Use the NC
Artificial Pond	2	-	3
Baygall	12	9	4
Depression Marsh	77	69	7
Developed	1	-	-
Floodplain Marsh	-	4	2
Floodplain Swamp	40	27	8
Mesic Flatwoods[1]	632	770	15
Mesic Hammock	36	-	6
Pasture - improved	180	-	13
Pasture - semi-improved	145	-	13

Scrub[1]	93	140	10
Scrubby Flatwoods[1]	107	233	14
Wet Flatwoods[1]	648	735	10
TOTAL ACRES	1,973	1,987	

[1] Communities that are actively managed and will be monitored via the OBVM process. Other communities are managed, but will not be monitored via OBVM.

[2] The total acres identified as current acreage differs from the total acres identified as historic due to slight digitizing error and discrepancies between boundary and natural community shapefiles.

Area staff have conducted regular monitoring of listed wildlife species and habitat at PBWEA since its acquisition. FWC surveys Florida scrub-jays annually to determine group size and composition on PBWEA, which currently has 6 scrub-jay family groups. All red-cockaded woodpeckers at PBWEA have been banded and intensely monitored since 2002, and the area currently supports 5 potential breeding groups (PBGs). FWC cooperates with the adjacent Lykes Bros. Inc. Ranch to monitor red-cockaded woodpeckers on their lands.

Area staff have monitored gopher tortoises every 3 to 4 years, with the most recent survey estimating 2.1 tortoises/acre within suitable habitat. FWC has scheduled enhanced tortoise monitoring in 2016, utilizing burrow cameras and the Line Transect Distance Sampling (LTDS) method. Upper Respiratory Tract Disease has been confirmed within the PBWEA population; however, no clinical signs or problems have been noted. Area staff have conducted surveys for gopher tortoise commensal species, and have confirmed the presence of Florida mice (*Podomys floridanus*), eastern indigo snakes (*Drymarchon couperi*), and gopher frogs (*Lithobates capito*). Florida panthers (*Puma concolor coryi)* and Florida black bears (*Ursus americanus floridanus*) are monitored using wildlife trail cameras that have been in place since 2005. Several different panthers have been documented on PBWEA through the years, with one male frequenting the site since 2011.

Public recreation at PBWEA offers high quality wildlife viewing and natural area enjoyment, and is limited to foot traffic only. A hiking trail with interpretive signs and 2 overlooks winds through the representative habitats of the site. PBWEA is part of the Great Florida Birding Trail.

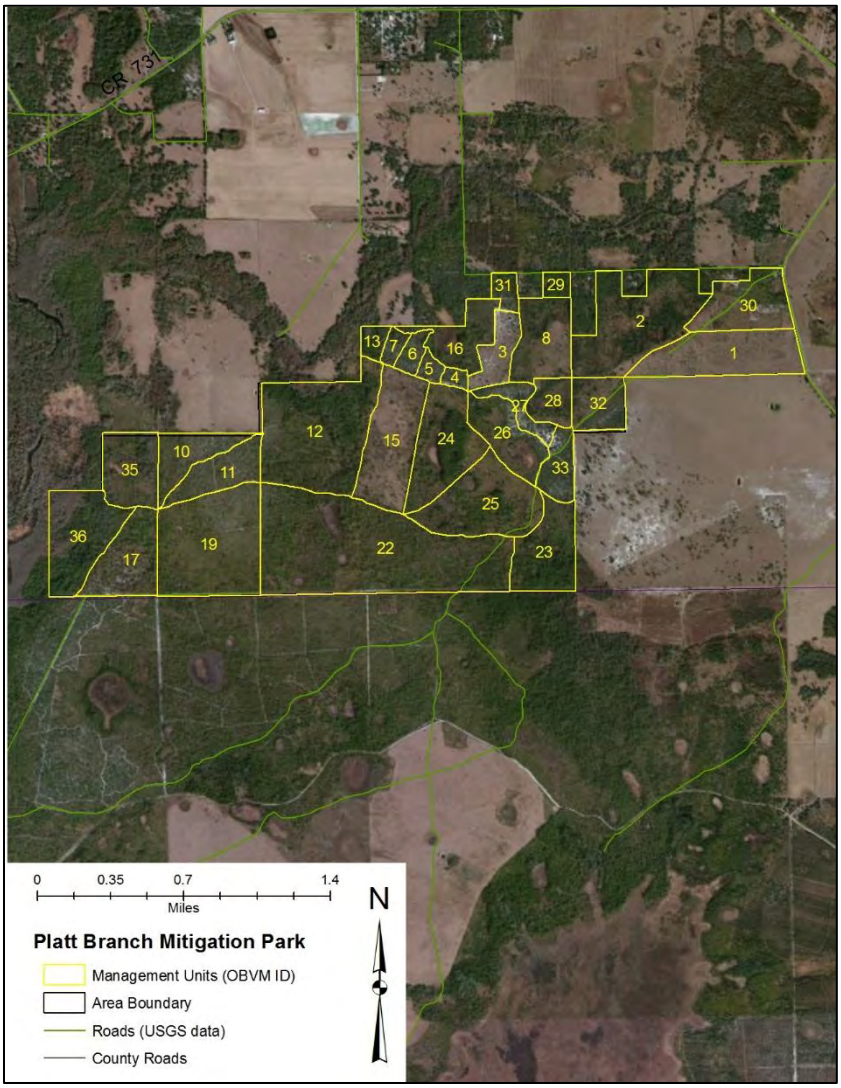


Figure 1. Management Units on Platt Branch Wildlife & Environmental Area.

2.2: Hickey Creek Wildlife & Environmental Area

HCWEA is located on the northeastern Lee County line, adjacent to State Road 80, and 3 miles west of the town of Alva. Lee County owned the original 10 acres of HCWEA, to which 770 acres were added in 1994 using funds from the Lee County Environmentally Sensitive Lands Program, the Gopher Tortoise Mitigation Program, the Florida Communities Trust, and Preservation 2000. Lee County holds the title to HCWEA and refers to the area as Hickey Creek Mitigation Park. FWC has responsibility for the perpetual monitoring of listed species and their habitats along with habitat management as a conservation easement. Lee County was tasked with public use development, fence and boundary maintenance, and exotic species control. FWC and Lee County have added additional acreage to the site through the County's land acquisition program, bringing the total size to 786 acres.

As stated in purchasing agreements and the terms of the conservation easement, the primary emphasis for management of HCWEA emphasizes habitat needs of gopher tortoises and Florida scrub-jays. HCWEA is contiguous with the several conservation areas management by Lee County and other entities including the Alva Scrub Preserve (ASP) and the Greenbriar connector. Through these connections, habitat management and listed species protections efforts on HCWEA contribute to the larger landscape.

Historic land uses on HCWEA included cattle grazing and timbering. Ranchers converted small areas to bahiagrass pasture for cattle. A 30-acre citrus grove was chemically treated and removed in 1996. The remaining acreage is composed primarily of intact pine flatwoods, oak scrub, cypress strand, forested riparian hardwoods along the creek, palm hammock, and depression marshes. The flatwoods contain South Florida slash pine and vary from mesic to xeric scrubby flatwoods with oaks in the midstory.

Much of the site was historically excluded from fire, as evidenced in the plant community structure and species composition when it was acquired. FWC has implemented a fire management program on the site to restore and enhance areas through the reintroduction of fire. Staff have conducted prescribed burns throughout most of the fire-dependent habitats and have placed an emphasis on growing season fire. Many areas have received multiple prescribed burns since acquisition.

Mechanical treatment has supplemented the burn program to further restore and enhance habitat, particularly for listed species. FWC has mowed or roller-chopped >280 acres of pine flatwoods and scrubby flatwoods to reduce woody shrubs and palmetto coverage. Mature scrub-oaks have been reduced using shredders and chainsaws. All of these actions were coupled with subsequent burning to promote habitat restoration. In 2000, contractors harvested timber on 8 acres to improve habitat conditions and reduce fuels.

Formerly cleared areas such as pastures have been allowed to transition through natural successional changes since acquisition. FWC planted longleaf and slash pines in the former citrus grove in 1998 to begin restoring habitat conditions and to reduce the growth of exotic plants in the understory.

Lee County, FWC, and contractors have been used to control exotic plants on HCWEA. Minor control efforts have been directed at cogongrass, tropical soda apple, Brazilian pepper, melaleuca (*Melaleuca quinquenervia)*, and old world climbing fern. In 2014 and 2015, a contractor treated expanding occurrences of cogongrass in the pine flatwoods. Control of feral hog populations through trapping has been conducted at HCWEA since 1997. FWC originally contracted this operation, but Lee County has managed the removal of feral hogs since 2000.

Neither Lee County nor FWC has conducted hydrological restoration at HCWEA, though the area is highly altered due to a canal along the western boundary and a drainage swale along the southern boundary. FNAI completed plant community mapping at HCWEA as part of OBVM monitoring discussions in November 2015 (Table 2). Through the OBVM workshop process, staff delineated MUs and defined the DFCs for actively managed natural communities.

Table 2. Mapped acreage of current and historic plant communities on HCWEA, including management status and the number of focal species that use the community.

Community Type	Estimated Current Acreage	Estimated Historic Acreage	# of Focal Species That Use the NC
Abandoned Field/Pasture	53	-	11
Artificial Pond	1	-	3
Basin Swamp	-	19	8
Blackwater Stream	6	6	1
Clearing/Regeneration	83	-	10
Depression Marsh	19	20	5
Developed	1	-	-
Dome Swamp	22	4	5
Mesic Flatwoods[1]	405	562	12
Mesic Hammock	39	26	5
Scrub	4	4	3
Scrubby Flatwoods[1]	116	125	7
Utility Corridor	12	-	8
Wet Flatwoods	25	21	6
TOTAL ACRES	786	786	

[1] Communities that are actively managed and will be monitored via the OBVM process. Other communities are managed, but will not be monitored via OBVM.

Area staff have regularly monitored listed wildlife species and habitat on HCWEA. Florida scrub-jays are monitored annually to determine population status. Gopher tortoises are monitored every 3 to 4 years with the most recent survey estimating 0.76 tortoises per acre within suitable habitat. The population trend has been stable over the last few monitoring repetitions. The presence of Upper Respiratory Tract Disease has been confirmed within the HCWEA population, however no clinical signs or problems have been noted.

Public access at HCWEA is controlled by Lee County. A 5-mile hiking trail, several bridges, overlooks, interpretive kiosks, a fishing pier, and a canoe and kayak landing area are the highlights of the public use amenities. HCWEA is part of the Great Florida Birding Trail.

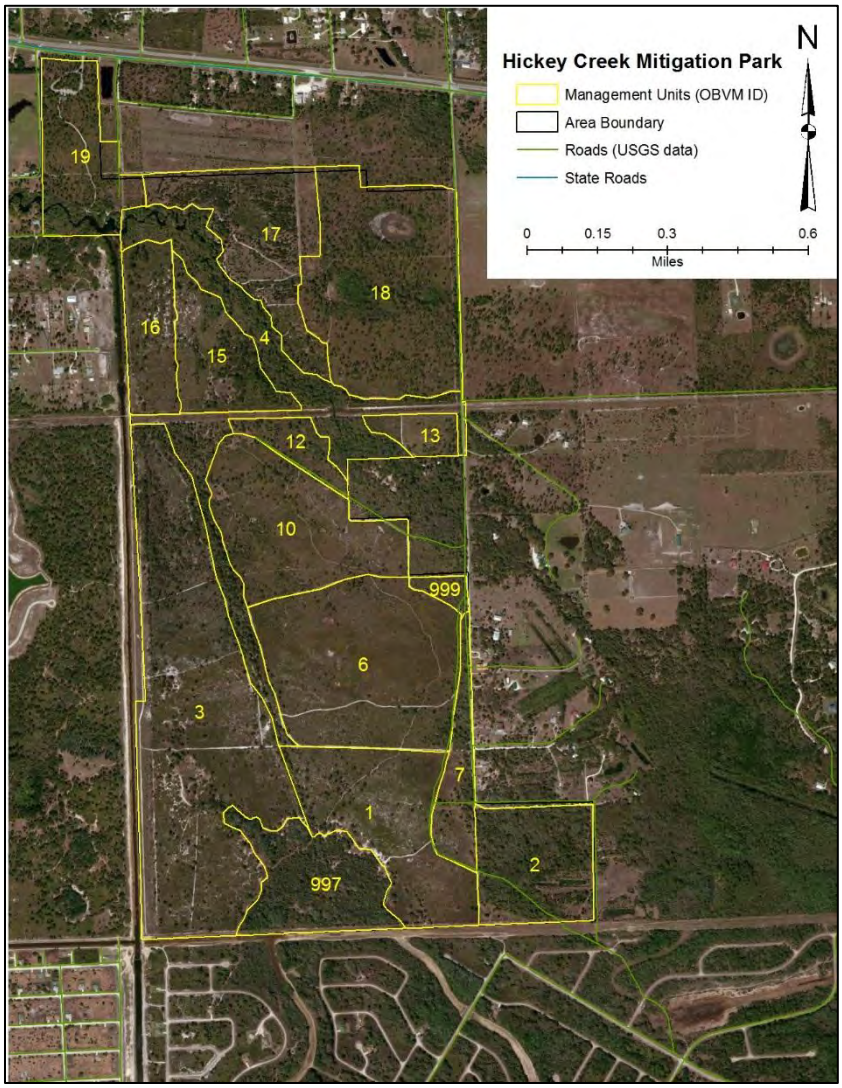


Figure 2. Management Units on Hickey Creek Wildlife and Environmental Area

Section 3: Focal Species

The FWC's management approach focuses on maintaining and restoring the ecological form and function of natural communities. However, in some instances, it is important to consider the needs of specific wildlife species and to monitor the influences of natural community management on these species. To achieve a science-informed approach to species management, the FWC uses the focal species concept embraced by the Wildlife Habitat Conservation Needs in Florida (WHCNinFL) project. This concept allows area staff to identify the needs of wildlife collectively by strategically focusing on a subset of wildlife species. The subset of species selected includes umbrella species, keystone species, habitat specialist species, and indicator species.

The Public Lands Conservation Planning (PLCP) project, an expansion of the WHCNinFL project, added a few species and provided potential habitat modeling on public

lands. For the PLCP, the FWC selected 60 focal species (including 1 group of species, the wading birds) for which statewide potential habitat maps were generated using each species' potential habitat model.

The FWC's 2003 landcover data served as the base layer for all potential habitat models, and staff selected additional layers considering the particular natural history of each species (e.g., species' range, known occurrence records); as such, each model is species-specific. Once statewide potential habitat maps were completed, a Population Viability Analysis (PVA) was conducted for each focal species.

The statewide landcover-based habitat models identified 23 of the 60 focal species to have potential habitat on PBWEA (Section 3.1). These models identified 16 of the 60 focal species to have potential habitat on HCWEA (Section 3.1). For all focal species modeled to have potential habitat on these WEAs, staff created area-specific potential habitat maps by using the same statewide models but replacing the landcover data with area-specific natural community data. The resulting area-specific potential habitat maps were then refined based on the input of local managers and species experts.

The Platt Branch WEA and Hickey Creek WEA WCPR Workshop, held June 24-25, 2015, brought decision makers together to assess species' opportunities and needs, identify measurable objectives, outline necessary coordination efforts, and determine required actions such as monitoring and species management. To facilitate informed discussion of the species, WCPR staff compiled a workbook that contained information on the focal species. Participants at the workshop discussed the "level of opportunity and need" for each species. This included considering the number of statewide prioritizations the species triggered (Statewide Species Prioritization Table), the species' listing status, and the long-term security of the species (i.e., examining PVA results). Other factors considered were the species' use of actively managed communities (Table 1 and Table 2), species' response to management, and any local overriding factors (e.g., status of species in the region, local declines or extirpations). A brief summary of the opportunity and need assessments for each focal species is available in Section 3.2.

3.1: Platt Branch and Hickey Creek WEAs Focal Species List

Workshop participants assessed 27 species for their level of opportunity or need on these WEAs. In the following species list, we use a [1] to denote species for which a measurable objective is identified, a [2] for species for which some level of monitoring is recommended, a [3] for species for which a SMA is recommended, and a [4] for species for which species management is recommended. Occasionally, statewide models indicate a species has potential habitat on the area, but the local assessment indicates there is little opportunity to manage for these species. These limited opportunity species are denoted with an *. Except for those species identified with a superscript number, workshop participants and expert reviewers determined that ongoing management would meet the needs of the focal species. For species with no numerical superscripts, participants and reviewers agreed there is no need for measureable objectives, monitoring, SMAs, or species-specific management.

Gopher frog (*Lithobates capito*)[1, 2]

Bluetail mole skink (*Eumeces egregius)*[*]
Florida pine snake (*Pituophis melanoleucus mugitus*)[1, 2]
Gopher tortoise (*Gopherus polyphemus*)[1,2]
Sand skink (*Neoseps reynoldsi*)[*]

Bachman's sparrow (*Peucaea aestivalis*)[2]
Brown-headed nuthatch (*Sitta pusilla*)[2]
Burrowing owl (*Athene cunicularia floridana*)[*]
Cooper's hawk (*Accipiter cooperii*)
Crested caracara (*Caracara cheriway*)
Florida mottled duck (*Anas fulvigula*)
Florida sandhill crane (*Grus canadenses pratensis*)
Florida scrub-jay (*Aphelocoma coerulescens*)[1,2,3]
Limpkin (*Aramus guarauna*)[*]
Northern bobwhite (*Colinus virginianus*)
Red-cockaded woodpecker (*Picoides borealis*)[1,2,4]
Short-tailed hawk (*Buteo brachyurus*)
Snail kite (*Rostrhamus sociabilis*)[*]
Southeastern American kestrel (*Falco sparverius paulus*) [1,2,4]
Southern bald eagle (*Haliaeetus leucocephalus*)
Swallow-tailed kite (*Elanoides forficatus*)
Wading birds (Multiple species)

Big Cypress fox squirrel (*Sciurus niger avicennia*)
Florida black bear (*Ursus americanus floridanus*)
Florida mouse (*Podomys floridanus*)[1,2]
Florida panther (*Puma concolor coryi*)
Sherman's fox squirrel (*Sciurus niger shermani*)

3.2: Focal Species Opportunity/Needs Assessment

This section provides an assessment of the opportunities for management as well as the needs of each of the focal species. The assessment considers a number of attributes, including the status of a species, the number of prioritization parameters it triggers, the species' response to management, and the amount and spatial arrangement of species' potential habitat available on the area. Because all federally-listed wildlife are FWC-listed, we will provide only the federal listing status for federally listed species. When a species is not federally-listed but is FWC-listed, we will provide the FWC listing status. The FWC has management plans for FWC-listed

species in the form of Species Action Plans (SAPs). Staff have reviewed these plans and incorporated the recommended conservation actions into the Strategy.

Unless otherwise noted, all reported acres of potential habitat are the result of using the area-specific natural community data in the species' potential habitat model. These estimates include all the area mapped in a natural community identified as potential habitat, including patches that may not be contiguous with other suitable habitat. During the workshop, participants considered the spatial arrangement and habitat patch size when assessing the potential role these WEAs play in the conservation of each species. For species that require larger habitat patches, we considered the continuity and condition of habitat on lands adjacent to the WEAs.

3.2.1: Gopher Frog

The PLCP did not identify potential habitat for gopher frogs on either WEA, but the gopher frog was added for PBWEA because surveys conducted on the area from 2003-2006 documented gopher frogs in OBVM MUs 16, 3, 8, 28, 27, and 33 (Figure 1). In 2012 and 2013, staff with FWC's Fish and Wildlife Research Institute (FWRI) dip-netted 3 ponds on PBWEA in OBVM MUs 22 and 25 (Figure 1). All had several fish species, which experts have suggested makes them unsuitable for gopher frogs. Other ponds on the area were not surveyed at this time because they were dry. A pond near the office was dipnetted in 2013 after the area manager reported hearing gopher frog calls, but the vegetation in the pond was too thick for effective sampling. Gopher frogs have not been documented on FCWMA, but were found on the LBCE in 1984 and 2000. Regionally, gopher frogs occur on the Lake Placid Scrub and McJunkin tracts of the FWC's Lake Wales Ridge Wildlife and Environmental Area (LWRWEA) and on Archbold Biological Station (ABS), all within 15 miles of PBWEA

In Florida, gopher frog habitat is a subset of gopher tortoise habitat that contains fishless ephemeral wetlands in which gopher frogs breed. After breeding, gopher frogs move back into surrounding upland habitat ≤1 mile of the breeding pond. This species prefers native, fire-maintained xeric habitats with intact groundcover, but can persist in areas with some habitat alteration. Gopher frogs typically occupy gopher tortoise burrows, but they will occasionally use rodent and crayfish burrows, stump holes, and hollow logs. Additionally, a genetics study published in 2014 identified 3 distinct lineages of the gopher frog in the southeastern United States. The authors of the study recommend that the USFWS consider each lineage separately when determining the need for federal listing. Gopher frogs on PBWEA likely belong to the Southern Peninsular lineage, which extends south of Ocala to the end of its range. The authors of the study recommend USFWS consider each lineage separately when determining federal listing, due to evidence of population declines across the range.

The gopher frog triggers 2 of 6 statewide prioritization parameters (Priorities Table). Gopher frogs in Florida are an FWC-listed Species of Special Concern (SSC), although the current SAP recommends removing gopher frogs from this list. Conservation actions identified in the SAP include increasing the amount of gopher frog habitat maintained with fire, and

increasing the restoration of gopher frog habitat. By retaining fishless, ephemeral wetlands and maintaining xeric uplands in a condition that supports gopher tortoises, management actions on PBWEA are supportive of the SAP.

Models indicate 1,593 acres of potential habitat within current natural communities on PBWEA. If management can restore all natural communities, 1,945 acres would be available for gopher frogs on the area. Uplands on PBWEA are mostly in good condition for use by gopher frogs. The model did not include pastures as current potential habitat, but the periphery of most of the pastures on PBWEA could provide habitat for gopher frogs. There are several potential breeding ponds on PBWEA that vary in suitability for gopher frogs. Two of the potential breeding ponds have been partially dug-out to provide water for cattle. These ponds are ephemeral, except for the dug-out areas, and probably are not suitable because of the presence of fish. Other potential breeding ponds may also periodically contain fish, and almost all of the potential breeding ponds have some degree of damage from feral hogs.

Despite the upcoming removal of the gopher frog from the SSC list, little is known about the species' home range size or how much habitat is required to sustain a population. The SAP for this species recommends monitoring actions to fill in gaps about the gopher frog's life history, and determine the taxonomic status of the gopher frog in Florida. It is possible PBWEA could support an independent, viable gopher frog population and ongoing land management actions on PBWEA are compatible with the needs of gopher frogs. Management actions that maintain or enhance habitat for this species include the continued use of prescribed fire in scrub, sandhill, mesic flatwoods, and isolated wetlands. Section 4.3.1 provides additional land management recommendations to benefit gopher frogs.

To determine the status of gopher frogs in wetland communities on PBWEA, we recommend conducting a baseline call survey using a Standardized Gopher Frog Call Survey Protocol (Section 5.2.1), continued coordination with FWRI when opportunities for dip-netting or other survey methods arise (Section 6.1.2), and recording opportunistic observations of gopher frogs or calls (Section 5.2.9). Finally, the LTDS method for gopher tortoise monitoring includes scoping burrows with underground cameras, and has detected gopher frogs during surveys on other areas. Any commensals observed during gopher tortoise burrow-scoping surveys should be recorded and submitted to the opportunistic observations database (Section 5.2.3).

The area goal is to provide suitable habitat for gopher frogs on PBWEA. Staff will achieve this goal by continuing to apply prescribed fire and maintaining suitable habitat conditions for gopher frogs. Due to its habitat composition and location within the region, PBWEA has a role in supporting gopher frogs as management continues to support populations for gopher tortoises. The measurable objective is to:

1. Conduct a baseline gopher frog call count survey on PBWEA by 2026.

3.2.2: Florida Pine Snake

The Florida pine snake is occasionally observed on PBWEA, and is not modeled as a focal species on HCWEA. Florida pine snakes have not been documented on FCWMA, but

were observed on the LBCE in 2000 and 2013. Regionally, Florida pine snakes occur on the Lake Wales Ridge, and on private lands near PBWEA. Florida pine snakes use a number of plant communities but they typically occupy pine-dominated areas with sandy soils and a well-developed grassy understory, such as upland pine and sandhill communities. Pine snakes actively seek out and burrow into pocket gopher mounds to capture pocket gophers, which are a major source of food for this species. However, the presence or absence of pocket gophers does not directly correlate to pine snake presence or absence.

The Florida pine snake triggers 3 of 6 statewide prioritization parameters (Priorities Table) and is an FWC-listed SSC, although the current SAP recommends listing the Florida pine snake as a state-Threatened species. Conservation actions listed in the SAP include an objective to maintain and increase the amount of Florida pine snake habitat on public and private lands. Ongoing management activities on PBWEA will maintain several hundred acres of Florida pine snake habitat and are supportive of the SAP.

Models indicate 1,481 acres of potential habitat within current natural communities on PBWEA and 1,141 acres if management can restore all natural communities. The decrease in potential habitat with restoration is a result of how the model considers habitat in OBVM MU 15, which is currently a semi-improved pasture but historically contained portions of wet flatwoods, a natural community that is not used by pine snakes. According to the literature, pine snakes require approximately 2,500 acres of suitable habitat to support a viable population. Pine snakes have large home ranges and are vulnerable to habitat fragmentation and increased road mortality. Pine snake habitat on PBWEA is in good condition. There is not enough habitat on PBWEA to support an independent population, but the presence of other conservation lands in the vicinity may provide a moderate opportunity to contribute to the regional pine snake population.

Ongoing land management actions are compatible with the needs of Florida pine snakes. Management actions that maintain or enhance habitat for this species include prescribed fire and mechanical treatments that aid in restoring natural community structure and function. Maintaining open pinelands with frequent fire and healthy gopher tortoise populations will also be supportive of the pine snake's occurrence. Stumps and other coarse woody debris should be retained during land management activities to provide pine snake refuge (Section 4.3.2).

The SAP for this species recommends actions to fill data gaps about the Florida pine snake's life history and initiate studies to determine its status statewide. Due to the secretive nature of this species, designing studies to evaluate the status of pine snake populations will be a challenge. Since PBWEA has not received a survey to document the occurrence of reptiles and amphibians on the area, we recommend conducting herpetological surveys to help construct a species list. We recommend using drift fence surveys with upland snake traps in order to detect a variety of focal and listed species that could potentially occur on-site, including the Florida pine snake (Section 5.2.2). Opportunistic documentation of pine snakes is also recommended (Section 5.2.9).

The area goal is to support the regional population of Florida pine snakes. By continuing to apply prescribed fire and maintaining suitable habitat conditions, PBWEA will fulfill its role

for this species. However, the ongoing status of the pine snake on PBWEA will be influenced by landscape conditions and the availability of suitable habitat in the surrounding region. The measurable objective is to:

1. Conduct a herpetological drift fence survey by 2026.

3.2.3: Gopher Tortoise

The FWC purchased these WEAs to secure habitat for the gopher tortoise and other upland species as mitigation for habitat loss to land development activities. As such, this species is a high priority for management on these areas. Gopher tortoises are common on both areas, and in the surrounding landscapes. Staff have surveyed gopher on both PBWEA and HCWEA multiple times since acquisition using the FWC mitigation park protocol. Population estimates on PBWEA have remained relatively stable since acquisition; ranging from 2.02 tortoises/acre to 2.1 tortoises/acre as recently as 2008. The most recent gopher tortoise survey on HCWEA in 2014 found a density of 0.76 tortoises/acre. Vegetation density in a portion of the survey affected surveyor's ability to see burrows. A follow-up survey in those areas resulted in an adjusted overall density of 0.97 tortoises/acre.

The gopher tortoise is a management-responsive species that can serve as an indicator of properly managed upland grass and pine communities. Gopher tortoises prefer xeric upland communities maintained with fire to promote the groundcover on which it feeds. Ecologists often consider the gopher tortoise a keystone species because many other species use their burrows, including focal species such as the Florida mouse and gopher frog.

Gopher tortoises are a state-Threatened species, and trigger 4 of 6 prioritization parameters (Priorities Table), making them a high priority statewide. Recently, the USFWS was petitioned to list the gopher tortoise as a Threatened species in the eastern-most portion of its range (comprising Alabama, Georgia, South Carolina, and Florida). As the state wildlife agency of Florida, FWC is a signee of the gopher tortoise Candidate Conservation Agreement (CCA) that identifies actions included in the federal listing process. In 2007, the FWC approved the first Gopher Tortoise Management Plan, which emphasized actions to enhance gopher tortoise habitat on conservation lands. The FWC updated the Gopher Tortoise Management Plan in September 2012, with continued emphasis on habitat restoration on public lands.

Models indicate 1,195 acres of potential habitat within natural communities on PBWEA, with no significant changes in acres with restoration. According to species experts and current literature, 250 acres of contiguous suitable habitat is the minimum acreage requirement to sustain a population of gopher tortoises. Gopher tortoise habitat assessments have also been conducted periodically on both areas. Habitat for gopher tortoises on PBWEA is in excellent condition and likely supports a viable population.

Models indicate 56 acres of potential gopher tortoise habitat within natural communities on HCWEA, and 572 acres if management can restore all natural communities. The amount of habitat currently available is under-estimated by the model, due to the model removing high-quality tortoise areas because of hydrologic restrictions on the habitat model. HCWEA has

significant and permanent hydrologic alteration due to a large canal on the western boundary. The area is drier than the models' estimates, thereby providing more habitat for gopher tortoises. This canal, as well as highways to the west, north, and south, also limit the movement of gopher tortoises onto the area from those directions. Habitat for gopher tortoises on HCWEA is in good condition and likely supports a viable population.

As gopher tortoise mitigation parks, both WEAs were acquired with the purpose of protecting and enhancing upland wildlife species, with an emphasis on gopher tortoise populations. FWC is responsible for promoting habitat suitability for gopher tortoises in an effort to increase and maintain tortoise densities on these areas. Habitat improvements and maintenance for gopher tortoises will benefit a number of other wildlife species, including the Florida mouse and gopher frog. Management actions that maintain or enhance habitat for this species include the frequent use of prescribed fire, which is used to manage much of the potential gopher tortoise habitat on these WEAs. Mechanical and chemical treatments have been used to facilitate the application of prescribed fire.

Ongoing and future land management actions on PBWEA and HCWEA are compatible with the needs of gopher tortoises, though staff will emphasize scrubbier conditions on flatwoods south of the creek on HCWEA in their management decisions. Continued prescribed fire and mechanical treatment to reduce palmetto densities as needed will increase suitability for gopher tortoises. On HCWEA, cabbage palms (*Sabal palmetto*) have formed clumps or strands within flatwoods that could reduce herbaceous cover for gopher tortoises if left untreated. To prevent future cabbage palm issues, we recommend chemical or mechanical treatment to reduce cabbage palms that are encroaching on drier areas. Mowing of burn unit perimeters prior to prescribed fire is recommended to promote herbaceous vegetation. Additional land management considerations for gopher tortoises can be found in Section 4.3.3.

As part of the CCA, FWC has adopted use of LTDS monitoring protocol for population monitoring of the gopher tortoise throughout its range. The LTDS method estimates gopher tortoise population size and density, which allows managers the ability to track changes in the population through multiple repetitions. Pilot surveys were conducted on PBWEA in 2014, and a full survey is scheduled for 2016. Pilot surveys were conducted on HCWEA in 2015, and the area is scheduled to receive a full survey in 2016. We recommend repeating surveys to track gopher tortoise population estimates over time using LTDS, if it is the appropriate protocol to use at the time of surveys (Section 5.2.3). Because FWC has monitored gopher tortoises on these areas over a long period of time using the FWC mitigation park protocol, we recommend surveys conducted using this protocol during the same year as LTDS surveys during the lifetime of this Strategy, with the purpose of comparing results to the LTDS surveys (Section 5.2.3).

The goal is to maintain viable gopher tortoise populations on these areas. The frequent application of prescribed fire will help maintain upland habitat in a suitable condition, and allow PBWEA and HCWEA to fulfill their role in the conservation of this species. Actions on both PBWEA and HCWEA will maintain habitat in a condition that benefits the tortoise population on either area, fulfilling their purpose of acquisition as gopher tortoise mitigation parks. The measurable objectives are:

1) Conduct a gopher tortoise survey every 5 years to track the populations on HCWEA and PBWEA.
2) Mechanically reduce cabbage palms in HCWEA MUs 3, 6, 10, and 15 by 2020.

3.2.4: Bachman's Sparrow

Bachman's sparrows are occasionally observed on PBWEA, and breeding has been documented in Highlands County in the Breeding Bird Atlas (BBA). Bachman's sparrows occur on the Lake Placid Scrub tract of the LWRWEA, approximately 12 miles north, and there are ebird.org occurrences near PBWEA as recent as 2013, and as far back as 1983. Surveys detected Bachman's sparrows on FCWMA in 2015, and they also occur on the LBCE. Bachman's sparrows have not been documented on HCWEA, but there is a 2015 ebird.org occurrence on the ASP, approximately 4 miles east of HCWEA.

Bachman's sparrows prefer areas with a sparse to moderate cover of short shrubs and a moderate to dense cover of herbaceous vegetation. This condition is generally found in mature pine forests with a low basal area, but also can occur in early-successional old-field habitat or similar altered areas. The Bachman's sparrow is responsive to management and frequent fire is critical to sustaining this species. Area use by Bachman's sparrows declines rapidly around 18 months post-fire and sites are typically abandoned if fire is excluded for >3 years. In many areas, the optimal fire return interval necessary to achieve desired vegetative characteristics for Bachman's sparrow habitat is 2-3 years.

The Bachman's sparrow triggers 2 of 6 statewide prioritization parameters (Priorities Table) and is currently experiencing range-wide population declines. Models indicate 957 acres of potential habitat within current natural communities on PBWEA and 769 acres if management can restore all natural communities. The difference in potential habitat is due to the conversion of improved and semi-improved pasture to scrub and scrubby flatwoods, should restoration occur. Literature suggests a minimum of 520 acres of contiguous habitat is required to maintain a viable population of Bachman's sparrows. This condition is met on PBWEA, and much of the potential habitat is in good condition for use by Bachman's sparrows, indicating a high opportunity to support the species on this WEA.

Models indicate 553 acres of potential habitat within current natural communities on HCWEA, with no significant change with restoration. Potential habitat on HCWEA is in moderate condition to support Bachman's sparrows. The area is not burned as frequently as may be preferred by Bachman's sparrows, but the purpose of a slightly extended fire return interval is to maintain scrubby conditions preferred by Florida scrub-jays. HCWEA is on the threshold of being able to support a viable Bachman's sparrow population based on habitat availability, though due to the condition of the habitat, the area may not be able to independently support a viable population. However, when combined with available habitat on ASP, HCWEA can help support the regional Bachman's sparrow population.

Ongoing efforts to maintain natural community structure and function on PBWEA will maintain or increase suitability for Bachman's sparrows within potential habitat. HCWEA will

also be maintained to benefit Bachman's sparrows in suitable habitat; however, managers will emphasize actions to benefit scrub-jays in select flatwoods areas. Management actions that benefit this species include frequent application of prescribed fire. Additional land management considerations are found in Section 4.3.4.

Bachman's sparrow monitoring is not currently conducted on these WEAs, aside from documenting opportunistic observations (Section 5.2.9). We recommend conducting a baseline survey on PBWEA using the WCPR-standardized Bachman's Sparrow and Brown-Headed Nuthatch Protocol, to determine a baseline population status and monitor the population over time (Section 5.2.4). Monitoring on HCWEA should include continued documentation of opportunistic observations (Section 5.2.9) and coordination with Lee County volunteers to determine the species' presence (Section 6.4).

The goal is to support a viable Bachman's sparrow population on PBWEA, and to provide habitat for Bachman's sparrows on HCWEA to help support the regional population. Due to the composition of potential habitat, PBWEA will likely play a larger role in the long-term support of Bachman's sparrows; however, ongoing actions on HCWEA will continue to encourage their presence in the region. By continuing to apply prescribed fire and maintaining suitable habitat conditions, these WEAs will fulfill their role for this species.

3.2.5: Brown-Headed Nuthatch

Brown-headed nuthatches are occasionally observed on PBWEA, and there are several 2013 ebird.org records on or near the WEA, with documented sightings as far back as 1981. Brown-headed nuthatches have not been documented on the nearby FCWMA and the species does not have confirmed breeding in Highlands or Glades counties. Brown-headed nuthatches have not been documented on HCWEA. There are a few ebird.org records in the landscape around HCWEA, and the nearest established population is likely at Babcock-Webb WMA (BWWMA), approximately 20 miles northwest of HCWEA.

The brown-headed nuthatch depends on open stands of mature pine interspersed with snags in which nesting cavities are excavated. Brown-headed nuthatches prefer longleaf pine and slash pine (forests older than 35 years, with basal areas between 35–50 ft^2/ac (8-11 m^2/ha). They require old, short snags with soft wood and flaking bark when excavating their own cavities, frequently using decaying oaks with a diameter at breast height of <10 inches.

The brown-headed nuthatch triggers 2 of 6 statewide prioritization parameters (Priorities Table) and is currently experiencing range-wide declines due to habitat loss and degradation. Models indicate 1,086 acres of potential habitat within current natural communities on PBWEA and 1,267 acres if management can restore all natural communities. The difference in modeled potential habitat is due to the restoration of improved and semi-improved pasture to mesic flatwoods. Literature suggests 1,000 acres of habitat is necessary to support a viable population; PBWEA meets this requirement where nuthatch habitat overlaps with managed red-cockaded woodpecker habitat. PBWEA is near the southeastern extent of the brown-headed nuthatch

range, and even though there is a large amount of potential habitat on the WEA, range limitations likely impact species' use of the area more than amount or condition of habitat.

Models indicate 546 acres of potential habitat within current natural communities on HCWEA and 694 acres if management can restore all natural communities. The difference in modeled potential habitat is due to the restoration of abandoned field/pasture to mesic flatwoods. Habitat on HCWEA isn't optimal for brown-headed nuthatches, primarily due to lack of mature pine stands, and overall the opportunity to support this species on HCWEA is low.

Ongoing efforts to restore and maintain natural community structure and function will improve habitat suitability for the brown-headed nuthatch within all potential habitat on PBWEA. HCWEA will also be maintained to benefit nuthatches in suitable habitat; however, managers will emphasize actions to benefit scrub-jays in select flatwoods areas. This species has a limited dispersal capability and may not occupy habitat that is otherwise suitable or becoming increasingly suitable with management. Management actions that maintain or enhance habitat for this species include prescribed fire, silvicultural thinning and management favoring mature timber, and mechanical actions that aid in restoring natural community structure. A shorter fire return interval and the protection of snags during land management activities will further improve habitat suitability (Section 4.3.5). Monitoring for Bachman's sparrows will also detect brown-headed nuthatches (Section 5.2.4).

The area goal is to provide suitable habitat for brown-headed nuthatches that will allow individuals using these WEAs to function as part of a regional population. However, nuthatch use of PBWEA may be limited by the area's location near the edge of the geographic range of the species. The ability for nuthatches to use HCWEA is likely limited by the lack of mature pine stands and the relatively small amount of potential habitat. By continuing to apply prescribed fire and maintaining suitable habitat conditions, these areas will fulfill their role for this species, however limited by habitat conditions.

3.2.6: Cooper's Hawk

Cooper's hawks are occasionally observed on PBWEA and are commonly observed on FCWMA in the winter. Regionally, Cooper's hawks are fairly common on the Lake Wales Ridge and ebird.org contains numerous records of spring and summer Cooper's hawk sightings near the town of Venus. The BBA has confirmed Cooper's hawk breeding in Highlands County; however, staff have not recorded nests on either PBWEA, FCWMA, or the LBCE. Cooper's hawks are occasionally observed on HCWEA. There are few records for Lee County, and no confirmed breeding in the BBA.

Cooper's hawks are commonly associated with woodlands and nest in a variety of habitats, including swamps, floodplain and bottomland forests, sand pine scrub, and baygalls. Nests usually are placed near the crown of a tree close to an edge in dense stands of oaks. Cooper's hawks primarily feed on other birds, so nests are located in proximity to suitable hunting areas.

The Cooper's hawk triggers 1 of 6 statewide prioritization parameters (Priorities Table). Models indicate 1,033 acres of potential Cooper's hawk habitat within current natural communities on PBWEA and 423 acres if management can restore all natural communities. The decrease in the amount of potential habitat with restoration is related to habitat patch sizes and the lack of a mosaic of preferred habitat types in historic natural communities. Models indicate 592 acres of potential Cooper's hawk habitat within current natural communities on HCWEA, with no significant changes with restoration.

From a regional perspective, PBWEA is within a mosaic of conservation areas and private lands that could support a regional population of Cooper's hawks. HCWEA is located near the southern extent of the species' breeding range in Florida and can support occasional use by Cooper's hawks. Cooper's hawks are not considered management dependent and the management opportunity and priority of the Cooper's hawk on these areas is low. Management actions that maintain or enhance habitat for this species include prescribed fire and mechanical actions that aid in restoring natural community structure.

During the nesting season (April-July), the Cooper's hawk is secretive and sensitive to disturbance near the nest site. Incidental observations of nesting or breeding behavior will be noted (Section 5.2.9). If nests are documented, managers should protect the nesting area from disturbance during management activities (Section 4.3.7).

The goal is to provide habitat for the Cooper's hawk that will allow individuals using these WEAs to function as part of the regional population. Due to the amount of suitable habitat available on either area, PBWEA and HCWEA will likely continue to support occasional use by this species. Maintaining suitable upland habitat on PBWEA and HCWEA will allow the areas to fulfill their role in the conservation of this species.

3.2.7: Crested Caracara

The crested caracara is commonly observed on PBWEA primarily in the pastures and edges of MUs that are relatively open. The species is common in the surrounding landscape, including the FCWMA where staff conduct annual breeding territory surveys on the Cowbone Marsh to document reproduction. Area staff suspect that caracara nesting occurs on a private ranch approximately 0.5 miles north of the PBWEA field office, and PBWEA is within the 3000-acre area that comprises the home range for the pair. Staff occasionally observe caracaras on HCWEA and in the surrounding landscape.

The crested caracara is federally-Threatened, and triggers 4 of 6 statewide prioritization parameters (Priorities Table), making it a high statewide priority. Historically associated with dry prairie systems in central Florida, the majority of the crested caracara population in Florida now occurs on private ranchlands, further contributing to threats of habitat loss and degradation.

Models indicate 992 acres of potential habitat within current natural communities on PBWEA, and 769 acres if management can restore all natural communities. Models indicate 579 acres of potential habitat within current natural communities on HCWEA and 574 acres if management can restore all natural communities. Mesic flatwoods comprise most of the

modeled potential habitat on these WEAs, but is not typically a primary habitat used by caracaras. As a result, the models overestimate the actual amount of potential habitat on both areas. On PBWEA, caracaras appear to only use flatwoods that are immediately adjacent to pastures, and it is likely the presence of the pastures that attracts the species to this area. Both areas contain habitat in a condition that is suitable for foraging by caracaras, but lack significant nesting habitat. Caracaras have relatively large home range sizes (average of 3,000 acres) and neither WEA has enough potential habitat to support a single nesting pair. Caracaras predominantly nest in cabbage palms, which are not prevalent on PBWEA. HCWEA has several areas of dense cabbage palms, but caracara use of these areas is not likely given the surrounding habitat types. Given the lack of nesting habitat on both areas, and the relatively small amount of potential foraging habitat, both PBWEA and HCWEA have a low opportunity to support the regional population.

Management actions that maintain or enhance habitat for crested caracaras include prescribed fire and mechanical actions that aid in restoring natural community structure. Caracaras are likely to forage in newly mowed or burned areas and prefer low groundcover in foraging areas. Monitoring should be opportunistic (Section 5.2.9); however, if managers observe nesting, they should protect the nest during land management activities (Section 4.3.8).

The goal is to provide suitable habitat for crested caracaras that will allow individuals using these WEAs to function as part of a regional population. However, the protection of caracara habitat on private lands is likely the key to the persistence of this species in Florida. While the potential presence of this species on these WEAs is dependent on conditions outside the control of local staff, interaction with private landowners on adjacent lands should include encouragement to manage appropriately for species such as the caracara (Section 7).

3.2.8: Florida Mottled Duck

Florida mottled ducks are not a focal species on HCWEA, although they are frequently seen near HCWEA, primarily in man-made canals. Florida mottled ducks are occasionally observed on PBWEA, and are common nearby on FCWMA. Statewide, mottled ducks have been documented nesting in dry marshes, pine flatwoods, citrus groves, and urban areas. Mottled ducks avoid habitats that include wet prairies, shrub and forested wetlands, open water, and flooded areas. This species prefers shallow water <10 inches deep and wetlands with emergent vegetation. Potential foraging habitat can be enhanced through management activities that promote a mosaic of open water and cover within shallow emergent wetlands.

The mottled duck is not listed at either the state or federal level. This species triggers 2 of the 6 statewide prioritization parameters (Priorities Table), making it a medium priority statewide. Habitat models indicate 79 acres of potential habitat on PBWEA, with no significant change with restoration. All of the potential habitat on PBWEA is depression marsh, and the model indicates no suitable nesting habitat on the area. Depression marshes on PBWEA are in good condition for use by Florida mottled ducks. Because mottled ducks respond to conditions at the regional level, this species is a low priority on PBWEA.

Models indicate 19 acres of potential habitat on HCWEA, with no significant change if management can restore all natural communities. Potential habitat on HCWEA includes depression marshes, but due to altered hydrology, these marshes are frequently dry. The frequent observation of mottled ducks on HCWEA is due to the presence of canals around the area, and not due to habitat availability and suitability. Therefore, there is a limited opportunity to support this species with management actions on HCWEA.

Ongoing efforts to restore and maintain natural community structure should meet the needs of this species on PBWEA. Managers can enhance potential foraging habitat through management activities that provide a mosaic of open water and cover within shallow emergent wetlands. Patchy burns can promote nesting habitat by leaving patches of dense vegetation, though nesting is unlikely to occur on PBWEA. Mottled ducks nest from February-March and land management activities should avoid known nests until the young have hatched. Staff should document observations of nests or newly hatched ducklings (Section 5.2.9). Because FWC monitors this species at the regional level, surveys specific to PBWEA are not recommended.

The goal is to provide habitat for Florida mottled ducks that will allow individuals using PBWEA to function as part of a regional population. An area goal for HCWEA is not appropriate as the Florida mottled duck is a limited opportunity species (Section 3.2.23) on that area. Though PBWEA has a minimal role in supporting mottled ducks and the continued presence of this species on the PBWEA is largely dependent on regional conditions, ongoing land management will improve foraging habitat for this species.

3.2.9: Florida Sandhill Crane

Although there are documented occurrences of them on the area, including a nest more than 12 years ago, Florida sandhill cranes are not a focal species on HCWEA because the habitat conditions will not support continued use. There is a small amount of habitat on HCWEA that could be used by cranes, but not enough to warrant inclusion as a focal species. Florida sandhill cranes are commonly on PBWEA as well as FCWMA, where breeding has been documented. Sandhill cranes use a mosaic of habitat types including emergent wetlands and open uplands such as pasture, prairie, and pinelands. For nesting, sandhill cranes use a combination of shallow wetlands and open upland habitats with a majority of the vegetative cover $\leq$20 inches in height. Standing water is an important component of nesting habitat for Florida sandhill cranes. Nests consist of herbaceous plant material mounded in shallow water or marshy areas.

The Florida sandhill crane is listed as a state-Threatened species, and the current SAP recommends maintaining its status as a state-Threatened species. The main objectives of the SAP are to maintain or increase the amount of suitable habitat and the Florida sandhill crane population within 10 years of plan implementation. Due to the presence of potential habitat and sandhill cranes on PBWEA, the area has a role in supporting the conservation actions of the SAP. The Florida sandhill crane triggers 4 of 6 statewide prioritization parameters (Priorities Table), making it a moderate to high statewide priority.

Models indicate 1,050 acres of potential habitat within current natural communities, and 803 acres if management can restore all natural communities. Sandhill crane home range size varies seasonally and regionally; approximately 300-600 acres per adult pair. PBWEA has enough potential habitat to support nesting sandhill cranes, and depression marshes on PBWEA are in a condition that is suitable for nesting. Cranes forage in the pastures on PBWEA, which are transitioning naturally to native conditions.

While this species is not entirely management-dependent, ongoing efforts to maintain current natural community structure and function will enhance foraging habitat on PBWEA. Management actions that will benefit sandhill cranes include prescribed fire, mechanical treatments to maintain upland habitat in the open condition cranes prefer, and mowing of grassy areas. Pastures are not purposefully maintained as open habitat on PBWEA, and some pasture areas that currently support Florida scrub-jays and have potential to support red-cockaded woodpeckers will be managed toward conditions that are more suitable for those species. However, pastures that have mesic or wet soils will likely remain suitable for species that prefer open habitat, such as the sandhill crane.

Nesting habitat will be protected during land management activities. Some parameters of nesting habitat, such as hydroperiod, are outside the control of land managers. Due to the large home range and wide distribution of this species, we do not recommend individual monitoring efforts for sandhill cranes at this time. However, area staff should document nesting birds and the presence of flightless young (Section 5.2.9), and protect nests during land management activities (Section 4.3.9).

The goal is to provide suitable habitat for Florida sandhill cranes that will allow individuals using PBWEA to function as part of a regional population. Due to the amount of available habitat in the surrounding landscapes, PBWEA will likely continue to support occasional use by Florida sandhill cranes. By continuing to apply prescribed fire and maintaining suitable habitat conditions, PBWEA will fulfill its role for this species.

3.2.10: Florida Scrub-Jay

PBWEA supports a small population of Florida scrub-jays. Scrub-jays were last documented on FCWMA in 2012, and 22 groups were found on the LBCE in 2010. Habitat patches on the easement are <2 miles from PBWEA, which is a reasonable dispersal distance for scrub-jays. Scrub-jays are found at a few locations to the north of PBWEA, including a large population at ABS, and family groups on the Gould Road, Lake Placid Scrub, and McJunkin tracts of the LWRWEA. There may be other scrub-jays on private lands scattered throughout the area to the north of PBWEA as well. Currently, PBWEA supports 6 scrub-jay family groups. Scrub-jays have been monitored on PBWEA since acquisition, at which time there were 8 family groups. The population has fluctuated slightly over time, but has remained steady at 6 family groups since 2005.

HCWEA currently supports 2 scrub-jay family groups. ASP has 1 group, and a pair was recently documented in the Telegraph Creek property (Lee County), approximately 3.5 miles

northeast of HCWEA. Scrub-jays also persist in residential areas east of HCWEA, though the long-term outlook for these birds is dim. Regionally, habitat loss and fragmentation have severely influenced Florida scrub-jays in the surrounding landscape. Habitat on HCWEA and nearby ASP is the only contiguous scrub-jay habitat remaining in the vicinity.

Florida scrub-jays are federally-Threatened, and trigger all of the statewide prioritization parameters (Priorities Table), making it a high statewide priority. The scrub-jay is a high regional priority species both for southwest Florida and the greater Lake Wales Ridge. The USFWS is currently revising the Florida Scrub-Jay Recovery Plan. The new draft version of the plan will divide the statewide scrub-jay population into genetic units, and will describe priorities for management and monitoring within each genetic unit.

PBWEA is part of the Lake Wales Ridge genetic unit. This is the second largest genetic unit of Florida scrub-jays and has high conservation value. Much of the habitat within this genetic unit occurs on public managed lands. PBWEA occurs near the southern limit of the Lake Wales Ridge genetic unit, providing connectivity between smaller patches of scattered scrub to the south and the larger, more continuous scrub that occurs to the north. The continued conservation management of these lands is critical to maintain this region as a stronghold for Florida scrub-jays. HCWEA is part of the Lee and North Collier genetic unit, which includes ASP and the Telegraph Creek property. The long-term outlook for this unit is dim, primarily due to habitat loss, fragmentation, and very small population size.

The Florida scrub-jay is found in both coastal and ancient scrub-type habitats in peninsular Florida. Scrub-jays rely heavily on fire to maintain optimal foraging and breeding conditions in scrub natural communities. Optimal habitat for Florida scrub-jays is oak-dominated scrub and scrubby flatwoods with the shrub layer averaging between 4 and 5.5 feet tall. Habitat becomes less suitable when the average shrub height exceeds 6 feet or when all vegetation in a territory is <4 feet tall. Optimal habitat contains <1 pine/acre, though scrub-jays can tolerate 1 to 2 pine trees/acre. Maintaining the latter density may help in some scrubby flatwoods that lack sandy openings, as limb-cast can create local hotspots during prescribed fires. High pine densities and encroaching forest edges will decrease habitat suitability for scrub-jays by providing cover and perches for predators.

Small patches of taller scrub (6-9 feet) cumulatively comprising no more than 1 acre per territory provide habitat heterogeneity. Open ground in the form of open sand or sparse herbaceous vegetation should cover 10–50 % of the territory. In optimal habitat, an average of 25 acres is needed to support 1 family group. Literature indicates isolated populations of <10 family groups are highly vulnerable to local extinction; areas that support 10-20 families are marginally secure; areas that support 20-40 families may be adequately protected; and areas supporting >40 families have lower vulnerability to extinction. In all cases, movement between populations increases the chance of regional persistence.

Models indicate 200 acres of potential habitat within current natural communities on PBWEA and 372 acres if management can restore all natural communities. Approximately 100 acres of pasture are currently being used by Florida scrub-jays, and staff intends to continue managing these areas in a way that promotes scrub-jay use. This acreage was not included in the

model for current habitat. While PBWEA's management goals do not include the restoration of all pasture communities to historic conditions, select pastures can be managed to support focal species such as the scrub-jay. Managing this habitat for scrub-like conditions will contribute to the long-term persistence of scrub-jays on the area.

PBWEA is currently supporting scrub-jays across much of the current potential habitat, and this habitat is in condition that supports continued use. Given the amount of habitat on PBWEA, and considering factors such as current population size, territory size, and suitability, PBWEA has the realistic potential to support >10 scrub-jay family groups. Populations of 10 or more family groups can provide moderate population stability on the area, and PBWEA has the ability to support the regional persistence of the Florida scrub-jay. Improvements to habitat like pasture in OBVM MUs 1, 3, and 15 would allow PBWEA to move toward reaching this goal.

Ongoing land management on PBWEA, including prescribed fire and mechanical treatments, will continue to maintain suitability for scrub-jays. Actions to increase suitability of portions of pasture habitat for scrub-jays are recommended, including planting scrub oaks in open areas and cutting large oaks to promote re-sprouting of young, small oaks. The northern half of OBVM MU 15 currently supports scrub-jay use, and FWC plans to conduct treatments to optimize this habitat for use by scrub-jays, including continued application of prescribed fire and top-cutting oaks to encourage re-sprouting of multiple stems. OBVM MUs 1 and 3 are also used by scrub-jays, and we will continue to encourage use in this pasture habitat by applying prescribed fire and appropriate mechanical treatment to promote scrub-jay habitat.

Models indicate 119 acres of potential habitat within current natural communities on HCWEA, with no significant change with restoration. Of this, 111 acres are currently managed for scrub-jays. The remaining is located in fire shadows along Hickey Creek and is not suitable for scrub-jays. In addition to the modeled potential habitat, approximately 208 acres of mesic flatwoods are managed toward conditions that are more suitable for scrub-jays. Some mesic flatwoods soils on HCWEA are drier than typical because of hydrological alterations in the surrounding landscape. FWC promotes scrubbier habitat conditions in these areas to provide additional scrub-jay habitat. Most of the scrub-jay habitat on HCWEA is in good condition as a result of past mechanical treatments and the use of prescribed fire. Given the amount habitat on HCWEA, and considering factors such as current population size, territory size, and suitability, HCWEA has the realistic potential to support 4-7 scrub-jay family groups. In combination with habitat on the ASP, these areas can support around 10 scrub-jay family groups, though ASP is not currently in optimal conditions for scrub-jays.

Ongoing land management on HCWEA, including prescribed fire and mechanical treatments, will continue to maintain suitability for scrub-jays. We propose an SMA on HCWEA to memorialize the management of scrub, scrubby flatwoods, and select mesic flatwoods towards conditions that are optimal for scrub-jays (Section 4.1.1).

Managers have used translocation to augment existing scrub-jay populations, or create new populations. We do not recommended translocations for PBWEA because the area has a relatively stable scrub-jay population, and is within a landscape of conservation lands that contain scrub-jays. Translocation of birds into the HCWEA/ASP area may be a viable option to

increase the number of scrub-jays in this area, thereby increasing population stability. FWC's Scrub and Sandhill Bird Coordinator (Section 6.1.1), the USFWS (Section 6.6), and local FWC and Lee County staff (Section 6.4) will coordinate to determine if translocation is a necessary action to improve the scrub-jay population within the genetic unit.

Area staff conduct annual scrub-jay monitoring on PBWEA, consisting of counting birds and looking for juveniles during the spring and summer months. FWC and Lee County staff historically monitored scrub-jays on HCWEA. Jay Watch, a citizen science program managed by Audubon of Florida, began monitoring in 2015. Annual scrub-jay monitoring should continue on both areas to track the number of family groups in all managed habitat (Section 5.2.5). Long-term persistence of scrub-jays on these WEAs is dependent on habitat conditions on adjacent public and private properties. We recommend continued involvement in regional scrub working groups, and communication and coordination with adjacent land managers to promote positive scrub-jay management actions and increase awareness of the needs of this species regionally for these areas (Section 6.9).

The goal for HCWEA is to provide suitable scrub-jay habitat that allows individuals using these areas to contribute to the regional scrub-jay population. The goal for PBWEA is to reach and maintain a scrub-jay population of 10 or more family groups. Ongoing actions to maintain functional scrub communities and apply prescribed fire will benefit scrub-jays on these areas. The measurable objectives are to:

1. Continue annual monitoring of Florida scrub-jays on HCWEA and PBWEA.
2. By 2017, determine and implement the appropriate management actions to optimize scrub-jay potential in pastures in OBVM MUs 1, 3, and 15 on PBWEA.

3.2.11: Northern Bobwhite

Northern bobwhite are common on PBWEA. Regionally, northern bobwhite are common on FCWEA and are likely common in the landscape around PBWEA. Northern bobwhite are also common on HCWEA, and occur on ASP as well as other Lee County properties in the vicinity. The landscape to the east and south of HCWEA is residential, and while northern bobwhite may occur in that area, habitat quality is poor and not likely to support birds long-term.

Northern bobwhite are associated with open canopy forests and grassland communities dominated by warm-season grasses, legumes, and patchy bare ground. Bobwhite require an interspersion of multiple habitat conditions to meet their dietary and cover needs. Areas with abundant native grasses and herbaceous vegetation are used for raising broods and foraging. Shrubs or other thickets are useful as roosting habitat or escape cover. A 2-3 year fire return interval is typically necessary to maintain the patchy herbaceous or saw palmetto ground cover this species prefers.

The northern bobwhite triggers 2 of 6 statewide prioritization parameters (Priorities Table). However, ongoing declines in this species' population are cause for concern and this species is a focus of a number of ongoing conservation initiatives, making it a high statewide

priority. Models indicate 1,804 acres of potential habitat within current natural communities on PBWEA and 697 acres on HCWEA, with little change due to restoration. Literature suggests this species needs 2,000–4,000 acres to support a viable population; PBWEA does not have enough habitat to independently support a population of northern bobwhite though habitat on the area is in good condition. However, PBWEA has a role in supporting the regional population, along with FCWMA, the LBCE, and private ranches in the vicinity. HCWEA, in combination with the ASP and other Lee County properties, contain at least 2,000 acres and support the regional population. Habitat on HCWEA is in a condition that can support northern bobwhite use. Management actions that maintain or enhance habitat for northern bobwhite include prescribed fire and mechanical actions that aid in restoring natural community structure (Section 4.3.11).

The area goal is to maintain suitable habitat for northern bobwhite on these areas to continue to support the regional population. Ongoing natural community management that puts an emphasis on frequent, mosaic burns will meet the habitat needs of this species. However, factors affecting the regional population will influence the long-term persistence of northern bobwhite on these areas.

3.2.12: Red-Cockaded Woodpecker

The red-cockaded woodpecker is not a focal species on HCWEA, but is common on PBWEA, with documented reproduction. Mitigation for this species was a purpose for the acquisition of PBWEA, making the red-cockaded woodpecker a high priority for management. Red-cockaded woodpeckers have been actively managed and monitored on PBWEA since 1997.

PBWEA is part of the South/Central Florida Recovery Unit, described in the USFWS Red-Cockaded Woodpecker Recovery Plan. The population within this recovery unit is important in maintaining the regional diversity of red-cockaded woodpeckers and PBWEA is designated as an important support area within this recovery unit. The FWC Red-Cockaded Woodpecker Management Plan places PBWEA in the Southern Peninsula Management Unit, as part of the Fisheating Creek metapopulation. The FWC plan does not designate a goal for PBWEA, but calls for the Fisheating Creek metapopulation to have 10 potential breeding groups (PBG) and 13 active clusters (AC) by the year 2020. Currently, the metapopulation contains 6 PBGs (5 on PBWEA and 1 adjacent to the WEA) and 7 ACs. PBWEA also has 1 solitary group and 3 recruitment clusters, with plans to add one more recruitment cluster in the future. The nearest red-cockaded woodpecker population to PBWEA is located on Babcock Ranch Preserve (BRP), approximately 11 miles southwest of PBWEA. The landscape between PBWEA and BRP consists primarily of ranchlands interspersed with a few native areas, and is not conducive to dispersal. Red-cockaded woodpeckers also occur on the Avon Park Air Force Range (APAFR), approximately 45 miles northeast of PBWEA.

The red-cockaded woodpecker requires open, mature pine woodlands that have a diversity of grass, forbs, and shrubs. This species is management responsive and can be an indicator of properly managed pine stands. It is often considered an umbrella species as many other species benefit from management designed for this species. Red-cockaded woodpeckers

nest in cavities in mature live pines and will use artificial cavity inserts. Optimal foraging and nesting habitat for the species includes a reduced hardwood component and limited hardwood mid-story height.

Red-cockaded woodpeckers are federally-Endangered and trigger 4 of 6 statewide prioritization parameters (Priorities Table). This species is a moderate to high priority statewide, and is a high local priority. Models indicate 1,387 acres of potential habitat within current natural communities on PBWEA and 1,737 acres if management can restore all natural communities. Of the modeled potential habitat on PBWEA, approximately 1,151 acres are actively managed to support red-cockaded woodpeckers. Approximately 950 acres of potential habitat (scrubby and mesic flatwoods) are available on the LBCE, but this habitat is not currently in optimal condition to support red-cockaded woodpeckers.

On PBWEA, OBVM MUs 15 and 8 are currently pastures that could be planted with pines to increase their suitability for use by red-cockaded woodpeckers, and would contribute approximately 99 acres of habitat once planted and maintained. Approximately 184 acres of potential red-cockaded woodpecker habitat are also located northeast of the scrub on PBWEA. This acreage is not currently suitable for red-cockaded woodpecker use, though at least one individual has been observed foraging in this area. However, this 184 acres is not a focus of current management because of the distance to occupied habitat on the area, but long-term plans include increasing the suitability of this acreage to support red-cockaded woodpeckers on PBWEA. Overall, habitat suitability will increase over time as pine trees get larger across the area. PBWEA is at the southern extent of the range for longleaf pine, so trees are unlikely to grow as large or as dense as in other areas to the north, but will continue to provide habitat for red-cockaded woodpeckers.

Ongoing and planned management activities are compatible with the needs of red-cockaded woodpeckers, including prescribed fire and mechanical vegetation treatment. We recommend planting pines in OBVM MUs 15 and 8 to increase the suitability of those MUs and provide additional habitat. Managing habitat to sustain a red-cockaded woodpecker population takes planning and strategic implementation of management activities (Section 4.3.12). To ensure FWC continues to optimize conditions to support red-cockaded woodpeckers on PBWEA, we recommend developing a guidance document to memorialize management intent for red-cockaded woodpeckers on the area (Section 5.1.1).

Species management includes translocation and the use of artificial cavities (i.e. inserts, drilled cavity starts, complete drilled cavities) to create recruitment clusters and to enhance existing clusters that do not have enough suitable cavities (Section 5.1.1). PBWEA participates in the Southern Range Translocation Cooperative and has been a recipient site for red-cockaded woodpecker translocations. PBWEA has had 3 translocations since 2012, which benefited the PBWEA red-cockaded woodpecker population by stopping the downward population trend and increasing the number of family groups. Monitoring includes cluster and cavity status checks, nest checks and chick banding, fledge checks, and monitoring of banded birds (Section 5.2.6). Area staff and species experts should include planned species management and monitoring activities in the area-specific red-cockaded woodpecker guidance document (Section 5.1.1).

The LBCE and Lykes Bros. Inc. Ranch contain red-cockaded woodpecker habitat that, combined with PBWEA, contributes to the long-term stability of the species both on PBWEA and within the larger metapopulation. FWC should continue to coordinate with Lykes Bros. Inc. for land management, species management, and monitoring where possible to ensure these areas fulfill their potential role in supporting red-cockaded woodpeckers (Section 6.9).

The area goal is to provide suitable habitat on PBWEA to support a stable or growing population of red-cockaded woodpeckers in support of the Fisheating Creek metapopulation. Due to the combined number of red-cockaded woodpecker clusters on PBWEA and LBCE, management for this species will continue to be a conservation role for FWC area staff and neighboring partners. By continuing to apply prescribed fire, maintaining suitable habitat conditions, and continuing appropriate species management, PBWEA will fulfill its role for this species. The measurable objectives are to:

1. Plant longleaf pines in OBVM MUs 15 and 8 by 2018.
2. Develop a red-cockaded woodpecker management guidance document for PBWEA by 2021.
3. Continue species management and monitoring activities on PBWEA, as described in the guidance document.

3.2.13: Short-Tailed Hawk

Short-tailed hawks are occasionally observed on PBWEA and FCWMA, and a nest was documented on FCWMA in 2008. Reports from ebird.org document several recent short-tailed hawk sightings near PBWEA, and the species occurs along the Lake Wales Ridge. The PLCP did not identify potential habitat for short-tailed hawks on HCWEA, but the species was added because of the above documentation. The Avian Research and Conservation Institute (ARCI), a research organization that conducts statewide research on swallow-tailed kite and short-tailed hawk populations monitored a nest near HCWEA since 2005.

The short-tailed hawk is an elusive species that breeds in dense or open woodland stands in wetlands, cypress swamps and bayheads. Vegetation surrounding nest trees is often very dense, making it difficult to locate and assess nests from the ground. This species exhibits high nest-site fidelity, emphasizing the need to locate and preserve nest sites. Foraging habitat includes prairies and open areas adjacent to nesting areas. Transitional zones and ecotones may be important components of foraging habitat for this species.

The short-tailed hawk triggers all 6 statewide prioritization parameters (Priorities Table), making it a high statewide priority. Models indicate 1,058 acres of potential habitat within current natural communities on PBWEA, and 755 acres if management could restore all natural communities. Models indicate 217 acres of potential habitat within current natural communities on HCWEA, and 73 acres if management can restore all natural communities. The difference in current potential habitat and historic conditions on both areas relates to historic natural communities and habitat patch sizes preferred by the species. Models for both areas indicate a lack of significant nesting habitat, primarily due to the size of individual habitat patches.

Short-tailed hawks are not typically considered management-dependent and the opportunity to affect this species at the management-unit level is low. However, ongoing efforts to restore and maintain natural community structure and function will benefit this species by improving the suitability of foraging habitat. Management actions that maintain or enhance foraging habitat for this species include prescribed fire and mechanical actions that aid in restoring natural community structure. Protection of potential nest trees or nesting areas would provide future nesting habitat for this species, and any future timber management activities should take this species under consideration. See Section 4.3.13 for additional land management considerations. Monitoring for this species should be opportunistic and include documenting color phase (Section 5.2.9). This information should be shared with ARCI (Section 6.3).

The goal is to provide suitable habitat for the short-tailed hawk that will allow individuals using these WEAs to function as part of a regional population. By maintaining natural communities in open condition for foraging and protecting mature nest-trees during management activities, area staff will meet the needs for this species on these areas.

3.2.14: Southeastern American Kestrel

Southeastern American kestrels are occasionally observed on PBWEA and the area is within a matrix of private and conservation lands that support kestrels. Four nest boxes were installed on PBWEA in 2008, but nesting has not been documented to date in any of these boxes. Southeastern American kestrels have not been documented on HCWEA, and are occasionally documented in the surrounding landscape.

Southeastern American kestrels utilize upland habitats including sandhills, longleaf savannas, pastures, sand pine scrub, and prairies. As a secondary-cavity nester, southeastern American kestrels are dependent on the availability of previously-excavated cavities in large snags. This species will use artificial cavities in areas of suitable habitat. Kestrels require adequate perch sites within foraging areas, and low ground cover (<1 ft) with an open canopy (<20% cover) are ideal for this species.

Southeastern American kestrels are state-Threatened and trigger 4 of 6 statewide prioritization parameters (Priorities Table). The SAP for the southeastern American kestrel identifies 10 Kestrel Management Units (KMU) in the state with the purpose of identifying and accomplishing species conservation actions. PBWEA is within KMU 6 (Lake Wales Ridge) and HCWEA is within KMU 7 (Southwest). The SAP further describes primary KMUs as those with the greatest habitat potential, and PBWEA is considered to be within a primary KMU.

Models indicate 1,138 acres of potential habitat within natural communities on PBWEA, and 688 acres on HCWEA, with no significant change with restoration. Average kestrel breeding territory size is 125 acres, though more area may be necessary if the habitat quality is marginal. PBWEA contains enough potential habitat to support breeding kestrels, and habitat is suitable for use by kestrels. HCWEA contains enough habitat to support breeding kestrels, though it is located near the southern extent of the range of the species. Furthermore, longer fire return intervals to optimize habitat for Florida scrub-jays does not promote the open, grassy

groundcover conditions preferred by kestrels. Given the low opportunity for managing kestrels on HCWEA, this management should not have a significant impact on the kestrel population.

Mesic flatwoods is the dominant natural community indicated for kestrels by potential habitat models for both WEAs. Mesic flatwoods is not typically a primary habitat type used by southeastern American kestrels, unless it is within a matrix of sandhill. The amount of pastures on and surrounding PBWEA likely provide more potential habitat than the native communities on the area.

Management that aids in restoring natural community structure, including control of invasive exotic plants and managing for mature, open stands of longleaf pine maintained with prescribed fire, will maintain or enhance habitat for this species. For additional land management considerations, including the protection and creation of snags, see Section 4.3.14. Species management actions on PBWEA should include the maintenance of existing kestrel nest boxes (Section 5.1.2). If the current nest boxes become occupied by kestrels, additional boxes may be appropriate. Nest boxes are not recommended for HCWEA due to the low likelihood that they would become occupied. If kestrels are observed with more frequency on HCWEA during the breeding season, it may be appropriate to install kestrel nest boxes in the future.

Nest boxes on PBWEA should be monitored according to the standardized Southeastern American Kestrel Nest Box Monitoring Protocol developed by FWRI as part of a statewide kestrel nest box monitoring program (Section 5.2.7). Volunteers with FWC's Ridge Ranger program began monitoring these boxes in 2015 (Section 6.1.6). Prior to that, the area biologist conducted the monitoring. If installed, new nest boxes should be monitored using the same protocol. Staff shares the results of this monitoring with FWRI (Section 6.1.2) and uses the results to assess the need for additional boxes (Section 5.1.2).

The goal is to provide suitable habitat for southeastern American kestrels that will allow individuals using these WEAs to continue to function as part of a regional population. Staff will achieve the goal by installing and maintaining nest boxes and applying appropriate habitat management. The measurable objectives are to:

1. Maintain at least 3 functional nest boxes within suitable habitat on PBWEA.
2. For the next 10 years (or duration of this Strategy), evaluate both WEAs for suitability and install boxes if/where appropriate.
3. Annually assess habitat conditions around nest boxes, and adjust land management accordingly to ensure continued suitability to support kestrels using nest boxes.

3.2.15: Southern Bald Eagle

Bald eagles are commonly observed on PBWEA, as well as on FCWMA where they nest on the southeast corner. According to FWC's Eagle Nest Locator, there is one known eagle nest within 5 miles of PBWEA that was last known active in 2010 (last surveyed in 2013). Bald eagles are occasionally observed on HCWEA, with 3 known nests within 5 miles according to the Eagle Nest Locator. The closest is located near Telegraph Creek Preserve and was last known active in 2009 (last surveyed in 2012). The nest near Ft. Myers Shores was active in

2015, and the nest in Lehigh Acres was last known active and last surveyed in 2012. The FWC approved a Bald Eagle Management Plan in 2008 to ensure the continued recovery of this species. This plan designated 16 Core Nesting Areas (CNAs), which are defined as areas containing high densities of bald eagle nesting territories. These areas are not within a CNA.

The bald eagle does not trigger any of the statewide prioritization parameters (Priorities Table), but is protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Models indicate 1,723 acres of potential habitat within current natural communities on PBWEA and 585 acres on HCWEA, with no significant changes with restoration of all natural communities. Foraging opportunities on these areas may be limited due to lack of wetlands or water bodies, and nesting may be unlikely due to distance to normal food sources.

Bald eagles are not considered management-dependent and the opportunity to influence them on these WEAs is low. However, ongoing efforts to maintain natural community structure and function will benefit this species. Management actions that maintain or enhance habitat for this species include managing for mature stands of trees, applying prescribed fire, and applying mechanical actions that aid in restoring natural community structure, provided that nest protection guidelines are followed.

Because eagles naturally occur in relatively low densities, the species is more appropriately monitored at a statewide or regional basis. Any activities around nest sites will be conducted according to guidance in the Bald Eagle Management Plan (Section 4.3.15). New nesting sites will be documented and reported (Section 5.2.9 and Section 6.1.1). Area staff will communicate any documented nest locations on these areas to the FWC bald eagle coordinator and consult with them on additional land management considerations.

The area goal is to provide suitable habitat for the southern bald eagle that will allow individuals using these WEAs to function as part of the regional population. By maintaining natural communities in open condition for foraging and protecting mature nest-trees during management activities, these areas will meet the needs of this species.

3.2.16: Swallow-Tailed Kite

Swallow-tailed kites are commonly observed on PBWEA and rarely observed on HCWEA, and ebird.org reports multiple observations in the landscape surrounding both areas. Nesting is not known to occur on PBWEA, but adjacent FCWMA is a priority area for this species. Swallow-tailed kites nested on FCWMA and the LBCE in 2013 and 2014, and FCWMA is a critical pre-migration staging area. ARCI has monitored kites in the Fisheating Creek area since 1988.

Swallow-tailed kites are habitat generalists and utilize a variety of natural communities. Open areas are used for foraging, and trees that are dominant or taller than surrounding trees are preferred as nest trees. Shrub height and density tends to be higher around nest sites than areas that do not support kite nesting. This species exhibits high nest site fidelity, therefore maintaining the suitability of areas surrounding active nest trees is important. Given the generalist nature of this species and its high mobility, it is not considered management

dependent. However, swallow-tailed kites will benefit from active management to restore natural communities, provided nest sites are not disturbed.

Swallow-tailed kites trigger 4 of 6 statewide prioritization parameters (Priorities Table), making them a moderate statewide priority. Models indicate 1,103 acres of potential kite habitat within current natural communities on PBWEA, and 691 acres on HCWEA, with no significant changes with restoration of all natural communities on either area. Kites prefer nesting in areas with densely vegetated understory beneath tall pines. These WEAs contain some areas that could be used for nesting, and provide suitable foraging habitat. However, given the wide-ranging nature of this species and the relatively small amount of habitat available, there is a low opportunity for species management on these areas.

Planned efforts to maintain natural community structure through prescribed fire and mechanical vegetation treatments will benefit kites by providing open areas for foraging. In addition, protection of wetlands and managing for open stands of mature native pines may provide nesting sites for swallow-tailed kites. If nests are located, management considerations around these sites should be used (Section 4.3.16) and the nest will be reported to ARCI (Section 6.3 and Section 5.2.9).

The goal is to provide suitable habitat for the swallow-tailed kite that will allow kites using these WEAs to function as part of the regional population. By maintaining natural communities in open condition for foraging and protecting mature nest-trees during management activities, area staff will meet the needs for this species on these areas.

3.2.17: Wading Birds

Five of the 8 focal species of wading birds [great egret (*Ardea alba*), snowy egret (*Egretta thula*), little blue heron (*E. caerulea*), tricolored heron (*E. tricolor*), and white ibis (*Eudocimus albus)*] appear to be fairly common on and around PBWEA. The wood stork (*Mycteria americana)* and the reddish egret (*Egretta rufescens*) have been documented less frequently, and the roseate spoonbill (*Platalea ajaja*) has not been documented on the area. PBWEA is not within the core foraging area for any wood stork colonies (based on 2010 data). Wading birds are frequently observed in and around FCWMA, but there are no known active colonies on the area. The nearest active wading bird colony to PBWEA is not known. Roseate spoonbills have not been documented on HCWEA, but the other wading bird species are occasionally observed. Wading birds are also fairly common in the landscape surrounding HCWEA, but the location of the nearest wading bird breeding colony is not known. Regionally, HCWEA falls within the foraging area for one wood stork colony (based on 2010 data).

Statewide, this group of species is a moderate priority (Priorities Table). Several species are FWC-listed SSC, and the wood stork is federally-Threatened. The Millsap biological scores for the reddish egret, little blue heron, and wood stork are high. The snowy egret, little blue heron, and roseate spoonbill have Species of Greatest Conservation Need (SCGN) declining population trends, while the tricolored heron and white ibis have unknown trends. The wading

bird SAP has several objectives relating to improving population status for several species, and an objective to improve the quality and amount of wading bird habitat

Models indicate 778 acres of potential habitat within current natural communities on PBWEA, and 73 acres on HCWEA, with no significant changes with restoration. Both areas provide some foraging habitat for wading birds, but roosting habitat is not common on either area. Wading birds may travel great distances between foraging and roosting habitat, and the opportunity to affect the regional populations of these species on these areas is low. While not dependent on actively-managed natural communities, wading birds benefit from the application of prescribed fire in wetland habitats. Where possible, fire should be allowed to burn across marshes and wetlands to decrease shrub encroachment. It is unlikely that wading birds would establish a breeding colony on these WEAs; however, if breeding colonies are found, managers will provide appropriate protection during land management activities (Section 4.3.17) and document those colonies (Section 5.2.9).

The goal is to provide suitable habitat for wading birds that will allow individuals using PBWEA and HCWEA to function as part of the regional population. Due to emphasis for managing gopher tortoises and xeric upland communities, wading bird management will not be a high priority for either area. However, the frequent application of prescribed fire that includes wetlands can maintain suitable habitat conditions for wading birds on PBWEA and HCWEA.

3.2.18: Big Cypress Fox Squirrel

The Big Cypress fox squirrel ranges south of the Caloosahatchee River and is occasionally observed on HCWEA. PBWEA is outside the range of this fox squirrel subspecies. The Big Cypress fox squirrel uses South Florida slash pine forests, pond-cypress (*Taxodium ascendens*) and bald cypress (*Taxodium distichum*) swamp forests, oak hammocks, tropical hardwood forest, coastal broadleaf evergreen hammocks, and mangrove swamps. It also uses developed areas such as golf courses, city parks, residential areas, and agricultural lands. Optimal habitat conditions for the Big Cypress fox squirrel include an open understory with little or no shrub layer.

The Big Cypress fox squirrel is state-Threatened and triggers 5 of 6 statewide prioritization parameters (Priorities Table). The current SAP for the Big Cypress fox squirrel focuses on improving the conservation status of the subspecies to ensure it is secure within its historical range. The SAP has 3 objectives for Big Cypress fox squirrels; one determining the level of genetic variation among fox squirrel subspecies in Florida, one establishing the extent of occurrence and area of occupancy for this subspecies, and one maintaining, or increasing the extent of occurrence and area of occupancy. The SAP designates Core Conservation Areas to clearly identify sites essential for effective conservation of the subspecies. The nearest Core Conservation Area to HCWEA is several miles to the southwest on the Six Mile Slough Area, and it is listed as the lowest priority in the SAP.

Models indicate 639 acres of potential habitat within current natural communities on HCWEA, with no significant changes with restoration. Potential habitat on HCWEA is mostly

suitable for use by fox squirrels. Given the amount and condition of potential fox squirrel habitat, HCWEA has a low opportunity to contribute to regional population. Management actions that maintain or enhance habitat for fox squirrels include prescribed fire and mechanical actions that aid in restoring natural community structure. Timber management that results in open, mature pine forests with an oak component will also benefit fox squirrels on HCWEA. Because this species naturally occurs at low densities and can be difficult to detect, no specific monitoring aside from opportunistic observation is recommended (Section 5.2.9).

The area goal is to provide suitable habitat for Big Cypress fox squirrels that allows individuals on HCWEA to function as part of a regional population. By continuing to apply prescribed fire and maintaining suitable habitat conditions, HCWEA will fulfill its role in supporting the regional Big Cypress fox squirrel population.

3.2.19: Florida Black Bear

Florida black bears are occasionally documented on HCWEA and PBWEA. FWC's Black Bear Management Plan divides the state into geographic areas referred to as Bear Management Units (BMUs). Within these BMUs, the Plan further describes primary and secondary bear subpopulation ranges. Primary range represents areas occupied by resident bears with documented reproduction. Secondary range is also occupied by resident bears, but reproduction is inconsistent. PBWEA is within the South Central BMU, and while the eastern half of the area is within the primary range of the Glades/Highlands bear subpopulation, the western half is within the secondary range. HCWEA is at the northern extent of secondary range for the Big Cypress bear subpopulation, in the South BMU. Priorities for this sub-population include establishing connectivity to the Glades/Highlands subpopulation.

The Glades/Highlands bear subpopulation is the most fragmented bear subpopulation in Florida and priorities for this subpopulation include increasing suitable habitat for bears on agricultural and private lands and creating or increasing habitat connectivity within the subpopulation. Multiple studies have been conducted on the Glades/Highlands bear subpopulation and have found that a few large private ranches in southern Highland County support denning females, as does the Clements tract of the LWRWEA. Males appear to move between the areas where females have established territories.

The Florida black bear is a wide-ranging species capable of significant dispersal, typically by males. Because females tend to establish a home range near where they were born, this species is slow to colonize new breeding territory and tends to grow out from existing populations. Home range sizes vary according to resource availability and the level of habitat fragmentation on the landscape. A mosaic of flatwoods, swamps, scrub oak ridges, bayheads, and hammocks provides adequate den sites, diverse food sources, and cover for traveling bears.

This species triggers 2 of 6 statewide prioritization parameters (Priorities Table). FWC approved a Black Bear Management Plan in 2012, and removed the species from the state-Threatened list. The management plan is intended to guide continued recovery of this species. Models indicate 1,892 acres of potential habitat within current natural communities on PBWEA,

with no significant changes with restoration. There may be some denning habitat on PBWEA, but the area's primary function is in providing habitat to support bear movement within the surrounding landscape.

Models indicate 758 acres of potential habitat within current natural communities on HCWEA, with no changes with restoration. Habitat on HCWEA is suitable for occasional use by bears, and the area provides a small amount of habitat to improve connectivity to the Glades/Highlands subpopulation. Due to the relatively small size of the area and amount of habitat, we anticipate that bears are unlikely to establish regular use patterns on the area.

Land management activities that promote a mosaic of vegetation structure across the landscape will provide forage and cover for bears. Ongoing land management activities will continue to provide forage and cover for bears moving through the landscape. See Section 4.3.18 for more information on land management. Area staff should record any observations of bears or bear sign on these WEAs, as monitoring for bears on these areas will be opportunistic (Section 5.2.9).

The goal is to provide bear habitat on PBWEA in support of the regional bear subpopulation. Due to the relatively small size of the area and amount of habitat on HCWEA, as well as the area's location, it is appropriate to not have an area-specific goal for black bears. However, the amount of available black bear habitat on HCWEA indicates that the area may have a role in supporting dispersing bears. By documenting any bear activity, avoiding direct disturbance to denning areas, and conducting management to provide a diversity of forage types, area staff will fulfill the conservation needs for black bears on these WEAs.

3.2.20: Florida Mouse

The Florida mouse is not a focal species on HCWEA, but is common on PBWEA. Florida mice were documented on PBWEA during a gopher tortoise commensal survey in 2004 and 2005. Florida mice occur on several conservation areas along the Lake Wales Ridge, including the Gould Road, Lake Placid Scrub, and McJunkin tracts of the LWRWEA.

The Florida mouse lives in sandhill and scrub habitats and relies almost exclusively on gopher tortoise burrows for refuge. Gopher tortoises are common on PBWEA (Section 3.2.3), so refuge does not appear to be a limiting factor for this species. Acorns are an important food source for this species, and mice will benefit from natural communities that retain oaks and other mast species. Having a diverse ground cover that provides an assortment of food throughout the year is equally important to the persistence of Florida mice, and ongoing natural community management will help establish this community diversity.

The Florida mouse triggers 4 of 6 statewide prioritization parameters (Priorities Table), and is listed by FWC as a SSC. The current SAP recommends removing the Florida mouse from this list, but contains an objective to implement surveys for determining its presence on conservation lands. Models indicate 200 acres of potential habitat within current natural communities on PBWEA and 372 acres if management can restore all natural communities. Literature suggests this species needs 75–200 acres to support a viable population of Florida

mice on a given area. Potential habitat on PBWEA is not contiguous, but the amount and condition of potential habitat indicates that PBWEA has enough potential habitat and a high opportunity to support a population.

Ongoing efforts to restore and maintain natural community structure and function will improve the suitability of habitat for this species. Management actions that maintain or enhance habitat for this species include prescribed fire and non-ground disturbing mechanical actions that aid in restoring natural community structure. The Florida mouse will benefit from a mosaic of vegetative conditions in MUs that contain suitable habitat characteristics. This is achieved by applying a variety of land management techniques, such as promoting patchy burns during prescribed fire activities and by practicing the 'sloppy chop' method during mechanical treatments to leave small areas of cover for Florida mice.

There are no ongoing small mammal monitoring efforts on PBWEA. Population monitoring using the standardized Florida Mouse Occupancy Survey Protocol is recommended to determine if the species is still present on the area and to identify areas where management considerations for the Florida mouse would be most beneficial (Section 5.2.8). If researchers from University of Florida continue their genetics study of Florida mouse sub-populations, experts can reach out to area staff can about obtaining genetic material on PBWEA.

The goal is to support a viable Florida mouse population on PBWEA. This species will continue to benefit from management actions that promote healthy gopher tortoise populations on PBWEA. By continuing to apply prescribed fire and maintaining suitable habitat conditions, PBWEA will fulfill its role for this species. The measurable objective is to:

1. Conduct a baseline Florida mouse survey on PBWEA by 2026.

3.2.21: Florida Panther

Florida panthers are occasionally documented on PBWEA, and are rare on HCWEA. Regional panther experts have use wildlife cameras to monitor panthers on PBWEA since 2005. Several different panthers have been documented, with one individual male frequently photographed since 2011. PBWEA is not contained within any primary, secondary, or dispersal zones for Florida panthers, and HCWEA is within the secondary zone as defined by the USFWS Panther Recovery Plan.

Male radio-collared panthers have been documented on FCWMA, and that area appears to be a potential high-use area for dispersing males that move into south-central Florida. Panther are occasionally observed along the Lake Wales Ridge, and regionally there is a large amount of potential habitat for them, though it is interspersed with urban and residential development.

Florida panthers use a variety of habitats that generally consist of forested uplands and wetlands, interspersed with open habitats such as marshes, wet and dry prairies, old fields, pastures, and agricultural land. Several studies found a proportionally higher use of forested habitat types by Florida panthers, although non-forested habitats are important for hunting prey species and serve as travel corridors between resting sites. This species triggers 4 of the 6

statewide prioritization parameters (Priorities Table), and the Florida panther is federally-Endangered, making it a high statewide priority.

Models indicate 771 acres of potential panther habitat within current natural communities on PBWEA, and 932 acres if management can restore all natural communities. PBWEA does not contain enough habitat to support a single panther home range. Although PBWEA is located within a landscape of forested private and conservation land that supports dispersing male panthers, the area has a low opportunity to contribute to the conservation of the species.

Models indicate 404 acres of potential panther habitat within current natural communities on HCWEA, and 582 acres if management can restore all natural communities. HCWEA also does not contain enough habitat to support a panther home range, though it's location within the secondary zone and proximity to other forested areas indicates a low opportunity to provide a small amount of habitat for dispersing panthers. The majority of potential habitat patches in which the breeding range can expand are located immediately north of the Caloosahatchee River from HCWEA. However, HCWEA does contribute to the USFWS Panther Recovery Plan goal (page 115, Action 1.2.5.2) to help "Conserve lands buffering the Caloosahatchee River."

Land management for this species should focus on creating a mosaic of habitats that include patches of dense vegetation for resting and denning, interspersed with open areas for stalking prey. Vertical vegetation structure in forested areas is critical to this species and management actions should enhance and or retain pockets of dense midstory and overstory vegetation. Land management on these areas is primarily intended to improve suitability for management-dependent species such as the red-cockaded woodpecker, gopher tortoise, and Florida scrub-jay. This management regime promotes a relatively open landscape, but patches of denser cover remain and can provide suitable habitat for panthers.

Since females have not been documented north of the Caloosahatchee River, PBWEA has a low potential for supporting panther denning. The relatively small size of HCWEA makes denning unlikely as well. If the Florida panther population continues to expand, both areas may have a role in connecting the panther population in south Florida with areas north of the Lake Wales Ridge, which are suitable for territory establishment and fall within habitat linkages identified by Florida Greenways. These greenways connect large tracts of preserved lands throughout Florida, and will be instrumental to any further panther population expansion. Furthermore, the Lake Wales Ridge could play a significant role for this species if predicted sea-level changes occur, and the south Florida panther population responds by moving north. Management on these areas including ongoing efforts to restore and maintain natural community structure and function are compatible with the needs of this species.

As FWC's panther management team closely monitors populations throughout the state, no additional systematic monitoring is necessary. Opportunistic documentation of panthers or panther sign is recommended (Section 5.2.9), as is the continuation of trail camera use to document panthers. The goal is to provide suitable habitat that contributes to the support of the Florida panther population. Due to HCWEA's location in proximity of the current Florida panther population, and PBWEA's location adjacent to Fisheating Creek, both areas will have a role in supporting occasional panther use in the future.

3.2.22: Sherman's Fox Squirrel

The Sherman's fox squirrel subspecies is occasionally observed on PBWEA, with documented reproduction. Regionally, this subspecies is relatively common on the Lake Wales Ridge. Suitable habitat for Sherman's fox squirrel includes longleaf pine sandhills or flatwoods with a mixture of mature pines and oaks and a sparse to moderate shrub layer. Sherman's fox squirrels appear to prefer mature longleaf pine stands that contain an open understory with an oak component. Fox squirrels often use large oaks for nest sites and for refugia. In addition, acorns provide a major part of their diet. Mature longleaf pines that produce seed-bearing cones are an important energy-rich food source, particularly during the summer. Frequent fire maintains a mosaic of habitat conditions across the landscape to ensure a year-round supply of food that varies seasonally.

The Sherman's fox squirrel is an FWC-listed SSC and triggers 4 of 6 statewide prioritization parameters (Priorities Table). The current SAP for the Sherman's fox squirrel focuses on determining the conservation status of the subspecies and has an objective to increase survival and productivity on private and public conservation lands. Objectives in this SAP include determining the extent of the species range and genetic units. Should species experts develop a range-wide monitoring protocol for documenting fox squirrels, and PBWEA is identified as important within the context of statewide SAP objectives, area staff should coordinate with species experts to conduct surveys on the area.

Models indicate 1,099 acres of potential habitat within current natural communities on PBWEA, with no significant changes with restoration. The fox squirrel is a wide-ranging species and the literature suggests 2,000-9,000 acres of suitable habitat are required to support a population. Potential habitat on PBWEA is mostly suitable for use by fox squirrels. Because breeding has been documented, and considering the amount and condition of potential habitat for fox squirrels, there is a moderate opportunity for PBWEA to support the regional population.

Management actions that maintain or enhance habitat for fox squirrels include prescribed fire, and mechanical actions that aid in restoring natural community structure. Fox squirrels on PBWEA will also benefit from timber management that results in open, mature pine forests with an oak component. Because this species naturally occurs at low densities and can be difficult to detect, we only recommend monitoring via opportunistic observations (Section 5.2.9).

The area goal is to provide suitable habitat for Sherman's fox squirrels that allows individuals on PBWEA to function as part of a regional population. The amount of habitat on PBWEA should result in the continued use by squirrels from the surrounding landscape. By continuing to apply prescribed fire and maintaining suitable habitat conditions, PBWEA will fulfill its role for this species.

3.2.23: Limited Opportunity Species

Five focal species, the bluetail mole skink, sand skink, burrowing owl, limpkin, and snail kite, were modeled to have potential habitat on one or both areas using statewide habitat data, but lack reasonable opportunity for management. Opportunistic observations of these species should be documented (Section 5.2.9). As limited opportunity species, there is no need for SMAs, specific monitoring, goals, or measurable objectives.

Bluetail Mole Skink and Sand Skink - The bluetail mole skink and sand skink are not focal species on HCWEA and neither species has been documented on PBWEA. Prior to acquisition, PBWEA was surveyed for sand skinks by ABS but the species was not detected. Surveys were conducted in 2003-05, but neither skink species was detected. The FDOT also conducted minimal surveys at one time, consisting of a few cover boards and track searches, but didn't not find either species. The nearest known location for both species is on the Gould Road tract of the LWRWEA, approximately 7 miles northeast of PBWEA. The landscape between Gould Road and PBWEA is highly fragmented by agriculture and roadways, limiting the opportunity for dispersal of either species.

Both species are endemic to the Lake Wales Ridge. Sand skinks are found at many locations along the Lake Wales Ridge, but bluetail mole skinks are considered much rarer than sand skinks. Both species are fossorial, and sand skinks are found in rosemary scrub, as well as sand pine scrub, oak scrub, scrubby flatwoods, and turkey oak barrens. Sand skinks can also be found in disturbed areas, such as citrus groves that occur on or near soils that formerly supported typical sand skink habitat. Sand skink occurrence is not necessarily dependent on habitat quality; populations can persist in disturbed areas as long as soil conditions are adequate. Low understory vegetation and a higher percent of bare, loose sand are important components of sand skink habitat, but conditions within the soil are more important than vegetative conditions above the soil. Habitat preferences of bluetail mole skinks are not as well-understood as sand skinks.

The sand skink and bluetail mole skink trigger 5 of 6 and 4 of 6 statewide prioritization parameters (Priorities Table), respectively. Both species are listed as federally-Threatened by the USFWS. As federally protected species, the USFWS has delineated a consultation area for both species. PBWEA lies just inside this consultation area in southern Highlands County.

Models indicate 169 acres of potential habitat for both species within current natural communities on PBWEA and 305 acres if management can restore all natural communities. Even though there is potential habitat modeled to occur for these species on PBWEA, the area is at the southern extent of the range for both species and is located just off of the Lake Wales Ridge, decreasing the likelihood of occurrence on PBWEA. Neither species is capable of dispersing through the landscape between Gould Road and PBWEA, and may not be located any closer to PBWEA. Therefore, PBWEA has a limited opportunity to support either species.

Monitoring should be opportunistic and include documenting sand or bluetail mole skink tracks (Section 5.2.9). If sand or bluetail mole skink tracks are found on PBWEA, this assessment will be revisited.

Burrowing Owl - Burrowing owls are not a focal species on HCWEA, though there is a 2013 ebird.org occurrence nearby. Habitat on HCWEA is not suitable for burrowing owls, and it was determined there is no need to designate the burrowing owl as a focal species. Burrowing owls have not been documented on PBWEA but have been seen on the ranch adjacent to the eastern boundary of PBWEA over the past decade. Burrowing owls have been documented on both FCWMA and LBCE. Occasional observations from ABS and private lands have been reported, approximately 15 miles north of PBWEA.

Burrowing owls require open, treeless areas with low groundcover and sandy soils for excavating burrows. This species historically preferred dry prairie habitat, however, most modern populations are found in altered habitats, including improved pasture, berms, or canal banks. Burrowing owls use underground burrows extensively, particularly during the spring for nesting and in the winter for protection from predators. Optimal habitat for this species includes soils that remain dry during times of peak burrow use. Much of current burrowing owl habitat occurs in private and urban areas that are prone to future development. Therefore, any populations on public land are important to the long-term persistence of this species.

The burrowing owl is listed as a SSC in Florida, although the current SAP recommends listing this species as state-Threatened. One objective in the SAP is to protect and manage burrowing owl habitat to ensure long-term population viability. By maintaining PBWEA as state-managed conservation lands that are protected from future development, the area may have a role in supporting occasional use by burrowing owls that occur in the regional landscape. The burrowing owl triggers 4 of the 6 statewide prioritization parameters (Priorities Table), and is considered a moderate to high state-wide priority.

Potential habitat models indicate zero potential habitat for burrowing owls on PBWEA. It's possible that burrowing owls might occasionally use pastures on PBWEA, particularly on the eastern boundary where they occur just off-site. However, pastures on PBWEA are naturally transitioning to more native conditions, and are marginal for burrowing owls since they are not treeless. While the area could support occasional use by burrowing owls, it may be unlikely to support the species in other ways. Due to the lack of potential habitat and the decision to manage habitat for other species, workshop participants determined that the burrowing owl is a limited opportunity species on PBWEA.

Opportunistic monitoring is recommended for this species (Section 5.2.9), and if observed during the nesting season (February-June), managers should attempt to locate and protect any existing burrows (Section 4.3.6).

Limpkin - Limpkin are not a focal species on HCWEA and are occasionally observed on PBWEA, as well as FCWMA. Limpkin are usually found where Platt Branch enters the WEA. Limpkins are highly mobile and influenced by regional conditions, such as water levels and the

availability freshwater mollusks, however, they typically remain in an area as long as habitat is suitable. Limpkins typically inhabit freshwater marshes, swamps, springs, and spring runs.

Limpkins are listed by FWC as SSC, although the SAP recommends removing this species from the list pending the approval of the Imperiled Species Management Plan. The limpkin triggers 1 of 6 statewide prioritization parameters (Priorities Table). The SAP identified conservation actions for a statewide monitoring program for limpkin and restoring or managing as much habitat for limpkin as possible. Models indicate only 15 acres of potential habitat within current natural communities on PBWEA, and 8 acres if management can restore all natural communities. Given the small amount of potential habitat on PBWEA, the area does has a limited opportunity to support limpkin, and to play a role in supporting the SAP.

Snail Kite - Snail kites are not modeled as a focal species on HCWEA, but have been documented in a canal on the western side of the area. Snail kites are rare on PBWEA. The current range of the snail kite is restricted to watersheds of the Everglades, Lake Okeechobee, Kissimmee River, Loxahatchee Slough, and Upper St. Johns River. Snail kites usually nest over open water, in areas with good foraging habitat nearby since most foraging occurs in marshes immediately surrounding the nest. This species prefers large, contiguous patches of wetland habitat, interspersed with vegetation and open water, such as shallow lakes. Snail kites nest on Lake Okeechobee approximately 30 miles from PBWEA.

The snail kite is federally-Endangered, and triggers 4 of the 6 statewide prioritization parameters (Priorities Table), making it a high statewide priority. Potential habitat models indicate no potential habitat on PBWEA, and there is also no potential habitat on HCWEA. Although the species is considered a high statewide priority, the opportunity for local managers to influence the species is limited. Regional conditions such as hydrology and water quality play major roles in snail kite populations, which are unlikely to be impacted by management at the area level. Given the lack of potential habitat on these areas, they lack a reasonable opportunity to manage for snail kites, making it a limited opportunity species.

3.3: Other Listed and Locally Important Species

While natural community management focused on a set of focal species provides benefits to a host of species reliant upon these natural communities, species that are imperiled sometimes require specific attention. Further, subsection 253.034(5) of the Florida Statutes (FS) requires all land management plans to include an analysis of the property to determine if significant natural resources, including listed species, occur on the property. If significant natural resources occur, the plan shall contain management strategies to protect the resources. The Florida Forever Act (s. 259.105, FS) adds that all State lands that have imperiled species habitat shall include restoration, enhancement, management, and repopulation of such habitats as a consideration in the management plan. In this subsection, we discuss listed or locally important species that are not PLCP focal species.

It is possible other imperiled species occur on these areas, and if encountered, staff will document these encounters. Florida's imperiled species are adapted to natural communities and should continue to benefit from FWC's ongoing or planned ecological management that aims to restore natural community structure and function. Under FWC's ecological management, these species have a higher probability of persistence than in the absence of this management.

3.3.1: Other Focal or Imperiled Wildlife

In addition to the listed species discussed in Section 3.2, the American alligator (*Alligator mississippiensis*), eastern indigo snake (*Drymarchon couperi*), Florida bonneted bat (*Eumops floridanus*), and Sherman's short-tailed shrew (*Blarina shermani*) are the only other listed species that could potentially occur on either area.

American Alligator - The alligator is federally-listed due to similarity of appearance with the American crocodile (*Crocodylus acutus*), which is a federally-Threatened species. Ongoing management to maintain healthy wetland habitats should ensure the continued existence of the alligator on these areas.

Eastern Indigo Snake – The eastern indigo snake is a federally-Threatened species and has been documented on and around PBWEA and HCWEA. Commonly associated with scrub, sandhill, and scrubby flatwoods; indigo snakes also use mesic flatwoods, dry prairie, hardwood hammocks, marsh edges, and agricultural fields. Gopher tortoise burrows are important refuge sites for indigo snakes and provide protection from cold and desiccation. Eastern indigo snakes have large home ranges and are vulnerable to habitat fragmentation. Habitat fragmentation can cause the loss of travel corridors between areas of suitable habitat within a home range, and can increase mortality of indigo snakes in areas with more roads.

Management actions that maintain or enhance habitat for this species include prescribed fire and mechanical treatments that aid in restoring natural community structure and function. Indigo snakes use stumps and other coarse woody debris for refuge, and managers should retain some of these for snakes during land management activities (Section 4.3.2). If contractors are used to accomplish land management objectives, they should be educated in what to do if they encounter an eastern indigo snake. Currently, only opportunistic monitoring is recommended (Section 5.2.9), however, indigo snakes can be documented during future gopher tortoise burrow-scoping (Section 5.2.3) or using upland herpetological arrays with snake traps (Section 5.2.2). The regular application of prescribed fire and management favoring mature native pine stands should help ensure the long-term persistence of this species, and planned management appears compatible with the needs of the indigo snake.

Florida Bonneted Bat – The Florida bonneted bat is included in this section because it has the potential to occur on one or both areas. HCWEA is within the range of the species, and Florida bonneted bats have been documented at several locations in Lee and Charlotte counties.

Florida bonneted bats occur on the APAFR to the north of PBWEA, though they have not been documented on or near PBWEA. However, PBWEA lies between 2 areas where the species has been detected, and the role of PBWEA and the greater Fisheating Creek and Lake Wales Ridge areas is poorly understood for this species.

The Florida bonneted bat is federally-Endangered, and the USFWS includes both areas within draft Consultation Area for the species. PBWEA is also within a draft Critical Habitat Connectivity Area for bonneted bats. The Florida bonneted bat SAP goal is to improve the conservation status of the Florida bonneted bat so the species is secure within its historical range. The SAP includes an objective to initiate research to fill data gaps and use existing information and results of research to promote Florida bonneted bat conservation.

Little is known about habitat preferences and thus habitat management recommendations have not been developed for Florida bonneted bats. The species has only been previously confirmed roosting in bat houses on BWWMA in Charlotte County, and at a private residence in Fort Myers (~20 miles west of HCWEA). However, a natural roost was discovered in 2013 in an old red-cockaded woodpecker cavity at the APAFR, and at least 3 other roosts have recently been discovered in south Florida.

Species management recommendations for bats on these areas include the installation of bat houses. Bat houses provide roosting habitat for several species, most commonly the Brazilian free-tailed bat (*Tadarida brasiliensis*), but the Florida bonneted bat may occupy bat houses on these areas as well. Bat houses should be monitored using the standardized Bat House Occupancy Survey protocol. If bats do occupy houses, FWC should coordinate with the FWC Mammal Conservation Coordinator to confirm the species using the box (Section 6.1.1).

Acoustic surveys to document bat species using these areas have not been conducted, but FWC should coordinate with any efforts to initiate research or monitoring for Florida bonneted bats in the vicinity of either area. This will contribute to knowledge about bat species that occur on the areas, and is supportive of SAP objectives. If resources become available, acoustic surveys are recommended to further explore the possible presence of Florida bonneted bats on these areas. Further action may be necessary if bonneted bats are documented on these areas, or if they occupy bat houses.

Sherman's Short-Tailed Shrew – The Sherman's short-tailed shrew is a rare shrew restricted to a small area in southwest Florida. The species is known only from a few specimens and hasn't been detected in almost 60 years, indicating it is either very rare or has been extirpated. HCWEA is close to the location where the species was originally detected in Lee County. FWC staff on HCWEA conducted a survey in 2005 to search for this species, but none were captured. In 2011-12, FWC conducted a survey on 14 public conservation lands, including HCWEA, but didn't detect the species. Currently, FWRI is conducting surveys in south Florida to search for the species, but is not including HCWEA at this time. It's possible the survey method (pitfall traps) is not ideal for detecting shrews, and it may be revised in the future.

The Sherman's short-tailed shrew SAP emphasizes the need to confirm the existence of this species within its suspected range and also the taxonomic status of the species. Ongoing

management actions on HCWEA are likely beneficial to this species as they maintain natural community structure and function. Previous FWC surveys on HCWEA are supportive of the actions described in the SAP. Area staff will coordinate with survey efforts initiated as a result of the SAP, but no additional surveys are planned at this time.

3.3.2: Rare Plants

While there has been no recent formal rare plant inventory on PBWEA and HCWEA, there are at least 18 imperiled plant species known to occur on these areas. Edison's ascyrum (*Hypericum edisonianum*) and spreading airplant (*Tillandsia utriculata*) are state-Endangered, and occur on both areas. The northern needleleaf (*Tillandsia balbisiana*), nodding pinweed (*Lechea cernua*), giant orchid (*Pteroglossaspis ecristata*), and wild coco (*Eulophia alta)* are state-Threatened species found on both areas. Species found on PBWEA include cutthroat grass (*Panicum abscissum*), scrub blue-stem (*Schizachyrium niveum*), and common wild-pine (*Tillandsia fasciculata*) – which are state-Endangered – and garberia (*Garberia heterophylla*), Catesby's lily (*Lilium catesbaei*), and Florida beargrass (*Nolina atopocarpa*) – which are state-Threatened.

Species found on HCWEA include rein orchid (*Habenaria distans*), Florida prairie clover (*Dalea carthagenensis floridana*), and hand fern (*Ophioglossum palmatum*) – which are state-Endangered – and thelypteris (*Thelypteris kunthii*), long-lip ladies tresses (*Spiranthes longilabris*), wild pine (*Tillandsia setacea*), and Simpson's stopper (*Eugenia simpsoni*) – which are state-Threatened. The protections afforded plants by existing on conservation lands, in conjunction with exotic plant removal and prescribed fire, will continue to maintain habitat for these and other rare plants. As such, these species should persist on these areas. While planned management is compatible with the needs of most imperiled plant species, we recommend contracting for a rare plant inventory if additional funding becomes available.

Spreading Airplant – Also known as giant wild-pine, this airplant grows in dry and mesic hammocks, as well as cypress swamps and sunny openings among pinelands. Threats to spreading airplant include illegal collection, bromeliad weevil, and habitat loss. This species flowers from spring to fall, and release seeds the following year in late spring.

Cutthroat Grass – Cutthroat grass is found in several natural communities including flatwoods, prairie, and depression marsh edges. These communities are usually associated with areas that have groundwater seepage. Cutthroat grass benefits from frequent growing season fire, with a 2-4 year fire return interval, to maintain an open, grass-dominated character.

Edison's Ascyrum – Edison's ascyrum occurs in depressions in scrub, cutthroat seeps, flatwoods ponds, lake margins, and wet prairies. Threats to the species include habitat loss to wetland drainage, fire suppression, pasture improvement, and grazing. We recommend

management that allows prescribed fire to burn into wetlands, maintains natural hydrology in flatwoods, and excludes off-road vehicles and cattle.

Giant Orchid – Giant orchids occurs in sandhill, scrub, pine flatwoods, and pine rocklands. It benefits from prescribed fire to create sunny openings and to reduce competition from woody species. Soil disturbing activities should be avoided in areas where this species occurs.

Hand Fern – Hand fern is found in 'boots' or old leaf bases of cabbage palms in maritime and wet hammocks. Management recommendations include protecting swamps and hammocks from drainage, fire, and development.

Long-lip Ladies Tresses – This orchid is found in open, semi-wet prairies, grasslands, and pinelands. This species will benefit from protections afforded to habitat on conservation lands.

Northern Needleleaf – The northern needleleaf grows in scrub, flatwoods, cypress swamps, hammocks, and other swampy areas. Threats to this species include the bromeliad weevil and habitat loss, and breeding occurs mostly in late spring. This species will benefit from protections afforded to it by occurring on scrub in conservation lands.

Nodding Pinweed – Nodding pinweed is primarily found in bare sandy gaps in rosemary scrub, and is threatened by the loss of scrub habitat and fire suppression. Management recommendations including applying prescribed fire with a recommended interval of 15-60 years in rosemary scrub, and being careful not to burn too frequently where the species occurs. If bare, sandy gaps are not maintained through fire, mechanical disturbance can be useful to create and maintain these gaps as needed.

Florida Prairie Clover – The Florida prairie clover is a species that only occurs in Florida, with a second variety occurring in Maryland. It occurs mostly in flatwoods and hammocks. This species should benefit from prescribed fire, and protections afforded to it by occurring on conservation lands.

Rein Orchid – The rein orchid is found in strand swamps and wet hammocks. Threats include poaching, exotic pest plant invasions, and feral hog damage. This species will benefit from protections afforded to habitat occurring on conservation lands.

Garberia – Garberia grows in sand ridges in full sunlight, and is considered a shrub. This species will benefit from management actions in scrub habitat that promotes sandy openings.

Catesby's Lily – Catesby's lily is a variety of pine lily, and is found in low pockets of wet flatwoods and prairies where moisture collects. This plant responds quickly following burns, and benefits from the frequent application of prescribed fires. This species will also benefit from reduced soil disturbance in wetter areas.

Florida Beargrass – Beargrass grows in sandy and mesic soil, including scrubby flatwoods and edges along pond areas. This species can grow among palmetto, scrub oak, and longleaf and slash pines. This species is fire-tolerant and likely fire-dependent, so it will benefit from actions and protections afforded to it by occurring on conservation lands.

Simpson's Stopper – This species is the native, imperiled variety of Simpson's stopper, which is a common native landscaping plant in Florida that occurs in hammocks. It will benefit from protections afforded to habitat occurring on conservation lands.

Thelypteris – This fern species is found in hydric and mesic hammocks, shallow swamps and swamp edges, as well as floodplains. This species will benefit from protections afforded to habitat occurring on conservation lands.

Wild Coco – Wild coco is an orchid found in moist, open areas and the edges of forests. This species will benefit from protections afforded to habitat occurring on conservation lands.

Wild Pine – Also known as southern needleleaf, this bromeliad is found in hammocks and swamps. It will benefit from protections afforded to habitat occurring on conservation lands.

Scrub Bluestem – The scrub bluestem grows in white sand patches among rosemary scrub, sand pine scrub, and oak scrub. Management for bluestem includes maintaining sanding openings in scrub environment, through the periodic use of prescribed fire. This species will also benefit from acquisition and protection of scrubby habitats.

Section 4: Land Management Actions and Considerations

Models identified potential habitat for 27 focal species on the areas (Section 3.1); however, not all of these species have the same level of management opportunity or need (Section 3.2). The FWC's natural community-based management, which emphasizes frequent growing season prescribed fire, will promote the habitat conditions necessary for most of these species, without the need for further strategic management actions. Staff may designate Strategic Management Areas (SMAs) when actions over and above ongoing natural community management are required in a specific location (Section 4.1). In addition, to ensure natural community management addresses the needs of these focal species, we evaluate the OBVM DFCs for natural communities (Section 4.2). Section 4.3 provides recommendations for species that need specific protective measures or land management considerations to ensure their continued use of the property.

4.1: Strategic Management Areas (SMAs)

The intent on these areas is to apply management actions that maintain intact natural communities in good condition and restore degraded or altered natural communities to a condition that will better suit focal and listed species. However, SMAs focus management actions on MUs with the highest possibility of success, or MUs most critical for the conservation of a species on the WEAs. Staff designates SMAs to achieve at least one of the following:

- Identify the area in which to apply specific land or species management that creates the highest probability for persistence and conservation of a species or suite of species. These specific actions should aid in restoring, enhancing, or maintaining the habitat or population.
- Identify an area in which to focus specific land or species management actions for the best chance of success, when there is more restoration and enhancement than can be accomplished in short order on the WEAs. This might be the first or next step in a sequential series of management actions that will increase the likelihood of occupation and or persistence of a specific species.
- Identify an area that is so critical to the persistence of a species on the WEAs that it warrants special designation to ensure protection against negative alteration.
- Identify areas that are critical for research or monitoring.
- Recommend MU-specific natural community DFCs that differ from the DFCs in the natural community area-wide, when this is necessary to benefit a specific species.

The WCPR workshop gave participants the opportunity to evaluate if there was the need for SMAs to meet the needs of focal species. Workshop participants agreed that planned and ongoing management actions across these areas will meet the needs of the majority of focal species. However, workshop participants determined the need for an SMA for Florida scrub-jays on HCWEA.

4.1.1: Florida Scrub-Jay

The purpose of this SMA is to identify habitat on HCWEA that should be managed to support Florida scrub-jays. Scrub and scrubby flatwoods are natural communities that are used by scrub-jays, but mesic flatwoods is not typically a scrub-jay natural community. On HCWEA, due to hydrological alterations in the surrounding landscape, some of the mesic flatwoods are drier, and naturally becoming scrubbier in nature. With management that includes a longer fire return interval than typical in mesic flatwoods, these areas have become suitable for use by Florida scrub-jays, and serve to augment the amount of scrub-jay habitat on HCWEA.

SMA Goal: Maintain all potential scrub-jay habitat on HCWEA.

Description of the SMA: This SMA contains 208 acres of mesic flatwoods, 4 acres of scrub, and 107 acres of scrubby flatwoods within OBVM MUs 1, 3, 4, 6, 7, 10, 12, 15, and 16.

Strategy: Ongoing land management activities will continue to maintain and enhance scrub-jay habitat within this SMA. The mesic flatwoods contained within the SMA will continue to be managed towards scrubbier conditions using a longer fire return interval, as long as HCWEA continues to have a role in supporting scrub-jays. Managers will follow the land management recommendations listed for scrub-jays in Section 4.3.10.

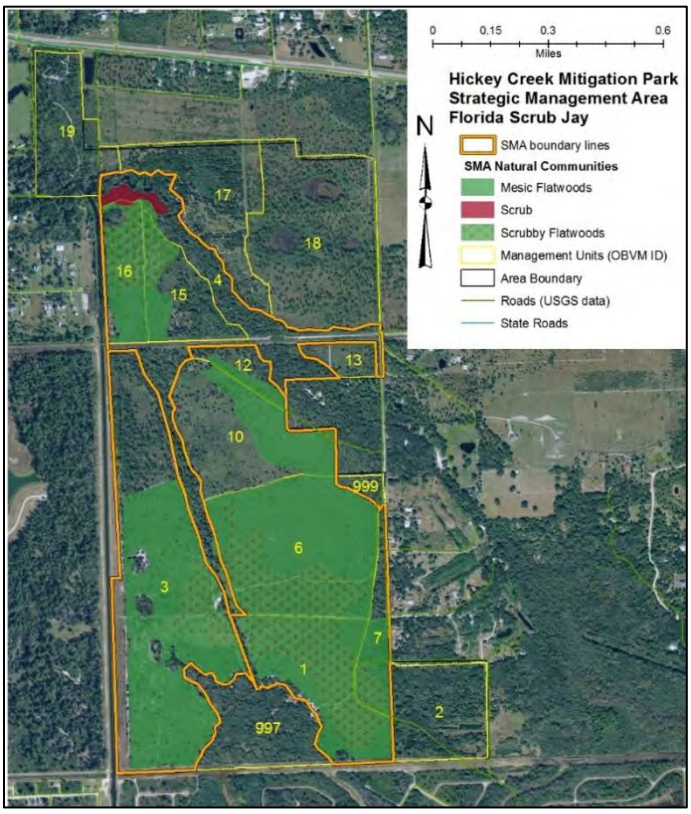


Figure 3. Florida Scrub-Jay Strategic Management Area (SMA) on HCWEA

4.2: Objective-Based Vegetation Management (OBVM) Considerations

OBVM is an approach to land management that emphasizes maintaining and restoring natural plant communities towards pre-determined desired conditions. The OBVM DFCs (Tables 3) target a range in values for various habitat attributes within actively managed communities. However, if a focal species requires a more restricted range in habitat attributes than is reflected in the area-wide DFCs, or depends on an attribute that is not currently monitored on these areas, we may recommend adjusting the DFC range or adding the attribute. The workshop gave participants the opportunity to evaluate if the current DFCs meet the needs of focal species and if not, to suggest modifications. The following are common reasons to modify DFCs:

- To obtain maximum habitat suitability for a species that requires a more restricted range of DFC values than the current DFC values.
- To benefit a particular species in specific MUs; typically when we have designated a SMA that requires a change in natural community DFCs only within the SMA and not in the natural community area-wide.
- To add an attribute that was not previously monitored.

Although the HCWEA OBVM meeting occurred in November 2015, the data collection protocols for OBVM have changed since the PBWEA OBVM workshop, due to program review. The initial OBVM workshops occurred prior to identification of references sites, which are areas FNAI identified as representing the highest quality examples of natural communities in the State. Reference site attribute assessments have resulted in changes to the range of OBVM attribute values. At the WCPR workshop, workshop participants reviewed the reference site values and determined that they are appropriate for these WEAs.

Table 3a. FNAI Reference Site DFCs for specific vegetative attributes on PBWEA.

Platt Branch WEA OBVM Attributes	Mesic flatwoods (peninsular Florida)	Wet flatwoods (herbaceous)	Scrubby flatwoods	Scrub
Basal Area of Pine (sq ft per acre)	10-50	10-50	10-60	≤ 20
Non-Pine Stem Density (7 m radius)	0	0	< 1	< 0.5
Subcanopy (2 - 4" DBH)	0	0	0	0
Shrub Stem Density > 3 ft	≤ 1	≤ 1	< 4	1-5
Maximum Shrub DBH (in)	< 0.5	< 0.5	< 0.5	< 1
Average Maximum Shrub Height (ft)	< 2	< 3	< 3	< 5
Shrub Cover (%)	≤ 30	≤ 10	10-40	20-40
Serenoa Petiole Density > 3 ft	0	0	0	0
Average Maximum Serenoa Height (ft)	< 3	< 3	< 3	< 3
Serenoa Cover (%)	10-30	≤ 10	5-20	≤ 10
Herb Cover (%)	≥ 15	≥ 40	1-10	≤ 10

Table 3b. FNAI Reference Site DFCs for specific vegetative attributes on HCWEA.

Hickey Creek WEA OBVM Attributes	Mesic flatwoods (peninsular Florida)	Scrub	Scrubby flatwoods
Basal Area of Pine (sq ft per acre)	10-50	≤ 20	10-60
Non-Pine Stem Density (7 m radius)	0	< 0.5	< 1
Subcanopy (2 - 4" DBH)	0	0	0
Shrub Stem Density > 3 ft	≤ 1	1-5	< 4
Maximum Shrub DBH (in)	< 0.5	< 1	< 0.5
Average Maximum Shrub Height (ft)	< 2	< 5	< 3
Shrub Cover (%)	≤ 30	20-40	10-40
Serenoa Petiole Density > 3 ft	0	0	0
Average Maximum Serenoa Height (ft)	< 3	< 3	< 3
Serenoa Cover (%)	10-30	≤ 10	5-20
Herb Cover (%)	≥ 15	≤ 10	1-10

Changes to OBVM DFCs are not recommended at this time. However, because PBWEA and HCWEA are gopher tortoise mitigation parks, management should provide optimal foraging opportunities for gopher tortoises in appropriate natural communities. Staff should strive to achieve the highest DFC values within the given range for herbaceous cover in scrub and scrubby flatwoods. Because Hickey Creek also provides habitat for a remnant local scrub jay population, staff and experts decided at the November 2015 OBVM meeting that the mesic flatwoods south of the creek should be managed and monitored as scrub, using scrub DFCs, as long as there are scrub-jays present that require habitat. Should this small and isolated jay population die out, managers would shift to managing the mesic flatwoods as mesic flatwoods.

A pine basal area of 20-60 ft^2/acre in scrubby flatwoods could reduce suitability for Florida scrub-jays on both areas, and given the history of management on both areas, the pine basal area is likely lower than the current DFCs list. Changing the basal area DFC would not have a significant impact on management or monitoring, and is not recommended at this time. However, the role of both areas in supporting scrub-jays, which benefit from a low pine basal area in scrubby flatwoods, should be considered when evaluating the results of OBVM monitoring on both areas, and action should not be taken to increase the pine basal area if it falls below the DFC parameter.

4.3: Further Land Management Considerations

Most generalist or wide-ranging species will benefit from management that restores the structure and function of natural communities they use. However, specific management recommendations and precautions are necessary to ensure continued suitability of the area for some species. The following recommendations should help ensure PBWEA and HCWEA continue to fulfill their role in the conservation of these species.

4.3.1: Gopher Frog

Gopher frogs frequently move between wetland breeding ponds and adjacent uplands. Area staff should not place new firebreaks or roads along wetland ecotones because they can alter or destroy the herbaceous component of pond margins preferred by this species. Wet-lining can be an alternative to mineral firebreaks around wetlands if necessary; however, it is preferable to allow fire to burn through the wetland. Area staff should use prescribed fire as the primary tool to remove shrubs and other thick vegetation from pond margins. Mechanical and chemical treatments should be used sparingly to reduce effects on pond-breeding amphibians. Area staff should minimize soil disturbance within 500 yards of potential breeding ponds during land management actions.

Growing season (April–September) burns are more beneficial to gopher frogs than dormant season (October–March) burns. Growing season burns are more effective at reducing shrub cover and litter in the wetland basin, stimulating the growth of herbaceous emergent vegetation, enhancing the wetland/upland ecotone, and stimulating the reproduction of wiregrass in the surrounding uplands. Burns should occur during the early growing season when the wetland is likely dry, although fire frequency is more important and a dormant season fire is preferred over not burning.

4.3.2: Florida Pine Snake and Eastern Indigo Snake

Large upland snakes such as the Florida pine snake and eastern indigo snake are relatively wide-ranging and elusive. Ongoing land management actions such as prescribed fire and mechanical treatments will enhance the suitability of pine snake habitat. However, these actions have the potential to cause direct mortality to upland snake species if area staff do not take appropriate steps. When using heavy equipment during land management activities, it is important to avoid direct mortality, if possible. Staff should leave coarse woody debris and residual stumps intact whenever possible to provide cover for upland snake species. While it is acceptable to pile and burn excess logging slash if necessary, staff should ensure some debris remains in the stand to provide cover for this species and check piles for the presence of pine snakes prior to burning. Lighting piles on only one side provides an opportunity for escape. Area staff can also create brush piles to provide cover for this species if escape cover is lacking.

4.3.3: Gopher Tortoise

Gopher tortoises are generally less active and spend more time in burrows during the winter months. Therefore, area staff should conduct mechanical treatments in gopher tortoise habitat in winter when this species is dormant. To minimize negative impacts to gopher tortoises, mechanical equipment operators should use caution when working in areas where tortoises or burrows occur. Staff should avoid mechanical treatments during months when hatchlings are most abundant (September-October) when practical, as it is difficult for equipment

operators to see hatchling tortoises. However, area managers should also consider how timing of the treatment will affect management results, as growing season treatments are frequently more successful in creating the diverse groundcover required by the gopher tortoise. Regardless of timing, area staff should make an effort to minimize impacts to known burrows, whether active, inactive, or abandoned.

4.3.4: Bachman's Sparrow

Prescribed fire improves habitat quality for Bachman's sparrows and is the primary land management tool recommended to promote habitat for this species. Suitable habitat can be created and maintained through frequent (≤3 year rotation) use of prescribed fire in sandhills and flatwoods. The occurrence of fire is critical to sustaining this species, and Bachman's sparrow occupancy declines rapidly around 18 months post-fire. The species may abandon habitat if fire is excluded for more than 3 years. Males use small shrubs as singing perches, therefore area staff should apply the 'sloppy chop' technique when using mechanical treatments to reduce understory. Staff should also always follow mechanical treatment with a prescribed burn.

4.3.5: Brown-Headed Nuthatch

Brown-headed nuthatches are dependent on the presence of snags for suitable nesting habitat. As such, retain snags during land management activities to ensure their availability. Old, short snags with flaking bark and soft wood, and decaying oaks with a diameter at breast height of <10 inches are important nesting sites for this species, though they will also use larger snags. During land management actions, area staff should take care to retain these particular types of snags.

For brown-headed nuthatches, the loss of nests early in the season frequently results in re-nesting attempts. Since most re-nesting occurs during periods of increased snake activity, this can result in greater predation on nesting females, their eggs, and young. If brown-headed nuthatches are documented in a specific area, staff should make the effort to avoid burning that area between February and March. However, if this is the only time in which suitable conditions occur for a burn, it is better to burn than avoid burning.

4.3.6: Burrowing Owl

Burrowing owls are known to occur in the area around PBWEA. If they are located on the area, burrows should be documented and protected from disturbance. If active burrows are identified, activity within 33 feet should be avoided from February through early July. Heavy equipment should not be used around burrows to avoid collapsing them.

4.3.7: Cooper's Hawk

During the nesting season (April-July), Cooper's hawks are secretive and intolerant of human disturbance near the nest site. Males show a strong fidelity to traditional territories. For this reason, protect known nests from disturbance during land management activities by maintaining a 50-foot buffer around the nest during the nesting season. When practical, area staff should avoid heavy alteration of the habitat surrounding the nest. Whenever signs of Cooper's hawk nesting (e.g., carrying nesting material, aggressive dive bombing) are encountered, document the location and make an effort to protect the nest site.

4.3.8: Crested Caracara

Crested caracaras have high fidelity to their home ranges and nest sites. Staff will protect known nesting trees and maintain home ranges in suitable condition if individuals are known to occupy a particular MU. Management actions like cattle grazing, mowing, shredding, and prescribed burning will improve habitat conditions by creating areas with low ground and shrub cover. Oak control may be necessary for maintaining natural community structure in pasture and prairie habitat. Herbicide treatment of unwanted oaks is the best option for reducing impacts to caracaras. Oak removal should be conducted as needed.

Following the guidance in Morrison 2001, staff will limit management actions during the breeding season if a nest is located. Crested caracaras are most likely to flush from the nest, which can be detrimental to eggs or young, if disturbance occurs within 1,000 feet of the nest during the first 2-3 weeks of nesting. Area staff will maintain this distance (1,000 feet) as a buffer around known nests. Morrison (2001) suggests historic management can continue (if the birds are used to it) during nesting season, as long as the first 2-3 weeks of nesting are avoided. A significant increase in human activity within the home range or territory can cause caracaras to abandon the area, even outside of the nesting season. Complete management guidelines can be found in:

Morrison, J.L. 2001. Recommended Management Practices and Survey Protocols for Audubon's Crested Caracara (*Caracara cheriway audubonii*) in Florida. Florida Fish and Wildlife Conservation Commission, Technical Report No. 18. Tallahassee, Fl. 19 pp.

4.3.9: Florida Sandhill Crane

Prescribed fire improves the quality of upland habitat for this species, and maintains wetlands in suitable condition by reducing invasion of shrubby and woody species. Cattle grazing can also maintain open conditions preferred by this species. Increased shrub cover around wetlands impedes crane movement while increasing the potential of predation by bobcats (*Lynx rufus*). Mechanical treatments can be useful in reducing brush on wetland edges when the

effect of fire is limited. In known nesting areas, management actions should occur outside of the nesting season (December - June) and after the young have fledged. A 400-foot buffer around nest sites will minimize the likelihood of disturbance. Managers should consider the seasonality of wetland management activities to avoid flooding of nests or reducing foraging habitat. For further management recommendations see:

Stys, B. 1997. Ecology of the Florida sandhill crane. Florida Game and Fresh Water Fish Commission, Nongame Wildlife Program Technical Report No. 15. Tallahassee, FL. 20 pp.

4.3.10: Florida Scrub-Jay

Area staff should manage scrub and scrubby flatwoods using methods described in the FWC's Scrub Management Guidelines to maintain a mosaic of habitat conditions in smaller areas. To maximize jay habitat, the mesic flatwoods community south of Hickey Creek will also be managed to structurally function as scrub. Vegetation within these habitats mature and become thick and unsuitable for scrub-jays if left un-managed. Habitat becomes less suitable when the average shrub height exceeds 6 feet or when all vegetation in a territory is <4 feet tall. Optimal habitat contains <1 pine/acre, though scrub-jays can tolerate 1-2 pine trees/acre.

Prescribed fire that is patchy (leaving some unburned patches) benefits scrub-jays. Small patches of taller scrub (6-9 feet) cumulatively comprising no more than 1 acre per territory provide habitat heterogeneity and nesting habitat. Open ground in the form of open sand or sparse herbaceous vegetation should cover 10–50 % of the territory. Where open sand is limited, chemical treatments, mechanical treatments, or pile-burns can help create open patches of sand. Area managers should use the 'sloppy chop' technique when applying mechanical treatments to create a diversity of cover heights.

4.3.11: Northern Bobwhite

The primary land management tool used to benefit northern bobwhite is the frequent use of prescribed fire. Area staff should ignite fires using a variety of firing techniques and environmental conditions with the goal of promoting mosaic burns. Mosaic burns result in a patchwork of burned and unburned areas that meet different life history requirements for northern bobwhite. Growing season fires are generally preferred as they trigger flowering and viable seed production in many native species. Recent evidence suggests that the frequency of fire in flatwoods communities may be just as important as the seasonality of burn. Therefore, in the absence of growing season burns, it is better to burn the unit during the following dormant season rather than waiting until the following summer.

4.3.12: Red-Cockaded Woodpecker

Current land management actions that include mowing or mechanical removal of vegetation, removal of exotic vegetation, and prescribed fire on a 2-3 year return interval in actively managed natural communities will maintain and enhance habitat conditions for this species. During land management activities, protect active and inactive cavity trees as well as large, old pines that are potential cavity trees (≥10 inches density-at-breast-height and flat tops).

As PBWMA has active red-cockaded woodpecker clusters on the property and participates in federally regulated translocation, managers will follow management guidelines found at FWC Red-Cockaded Woodpecker Management Plan and USFWS Red-Cockaded Woodpecker Recovery Plan.

4.3.13: Short-Tailed Hawk

Short-tailed hawks exhibit high nest site fidelity, and nest areas are used for multiple years, even if not active every year. Nests of this species are difficult to locate and monitor. If nest sites are located, area staff should protect active nests from disturbance by maintaining a 330-foot buffer around the nest during the nesting season. Area staff can protect the integrity of the entire nest site by avoiding heavy alteration of the nesting location. Retaining the largest, oldest trees on the landscape during land management activities can also protect potential future nest trees. Area staff should report new nests to ARCI (Section 6.3).

4.3.14: Southeastern American Kestrel

Southeastern American kestrels are dependent on the occurrence of open upland habitats that contain a number of snags for nest sites and perches. While ongoing management will encourage the open foraging condition this species requires, staff should make an effort to retain large snags during land management activities. When safe and practical, protecting snags and promoting the creation of new snags in areas currently lacking will benefit southeastern American kestrels. If nesting is documented, staff should minimize the amount of mechanical activity within 500-feet of the nest during the nesting season and protect the snag during prescribed fires.

4.3.15: Southern Bald Eagle

State and federal law requires protection of bald eagles, which includes avoiding disturbance of nesting eagles. Managers will follow the management guidelines in the state management plan when planning activities within 660-feet of known eagle nests during the breeding season (October 1 – May 15). Area staff should document the location of any newly-identified nests. If the location is in an actively-managed community, staff should contact the FWC bald eagle coordinator to coordinate the timing of land management activities with the nesting season (Section 6.1.1).

As this species is surveyed on a statewide basis, the bald eagle nest locator will be checked annually to determine if any new nests are detected in proximity of the area. Area staff should continue to manage stands in which eagle nests occur, but avoid negative impacts to the eagles per the guidance of the management plan. During management activities, retain large, mature pines as potential future nesting sites.

4.3.16: Swallow-Tailed Kite

Swallow-tailed kites exhibit high nest site fidelity and will frequently return to the same location to nest over multiple years. Area staff should protect known nest sites from disturbance and alteration, and retain all of the tallest pines in the area of nest sites. Maintaining a 330-foot protective buffer around active nests during nesting season should minimize the chance of disturbance. When possible, kite nesting areas should be managed to have a higher shrub height and density than surrounding areas as this may reduce the likelihood of nest predation. If kite activity is observed during nesting season, particularly if kites are observed carrying nesting material, mobbing, or congregating in groups of 3 or more, document this information and try to locate the nest. While kites have not been documented nesting on these areas, it is important to preserve future potential nest trees. This can be done by retaining the largest, oldest trees on the landscape during land management activities. For information on how to locate nests, see:

Meyer, K. D., and M. W. Collopy. 1995. Status, distribution, and habitat requirements of the American swallow-tailed kite (*Elanoides forficatus*) in Florida. Project Report, Florida Game and Fresh Water Fish Commission, Tallahassee.

4.3.17: Wading Birds

It is possible that ongoing actions (e.g., prescribed fire, timber harvest) could have negative impacts on wading birds if the needs of the species are not considered during the planning of these actions. During the nesting season, provide a 330-foot buffer around nesting colonies to ensure adequate protection from disturbance. Additionally, plan any mechanical or chemical control of vegetation at a time that avoids disturbance to the colony, and use methods that do not damage the plants where nests are constructed.

4.3.18: Florida Black Bear

Bears require large areas of dense vegetation for escape and denning cover. They also require a mosaic of dense cover and edge habitat, in both uplands and wetlands, which provides seasonally abundant forage. Efforts to restore flatwoods to a more open landscape with reduced tree density, lower shrub height, and reduced shrub cover may reduce denning and escape cover for bears. However, these same efforts may increase forage availability of some berries and

tubers. Land management activities that provide a mosaic habitat structure, particularly with multi-aged palmetto patches, will provide escape cover and foraging habitat for bears.

During mechanical treatment along the transitional zone between hardwood swamps and uplands, retain patches of dense vegetation to provide foraging or denning cover. Area staff should attempt to preserve connectivity between floodplain forest, dome swamps, and depressional wetlands to allow appropriate cover for bears to move across the area.

Section 5: Species Management Opportunities

Land management that considers the needs of a suite of focal species provides direct benefits to many associated species. However, land management actions alone are insufficient to maintain or recover some species. These species need species-specific management (Section 5.1). Additionally, monitoring (Section 5.2) is required to verify management is having the desired influence on wildlife. Section 5.3 identifies research necessary to guide future management.

5.1: Species Management

Species management as used here refers to actions other than land management, monitoring, or research, taken for a specific species. Species-specific management actions can include actions such as translocation, restocking, or installing artificial cavities. These actions may be needed for species that are currently present but occur at low densities, have low reproduction potential, or have other limitations that inhibit recovery. Additionally, species that are not present on a site, have limited dispersal capabilities, or are unlikely to occupy a site without reintroduction may require species-specific management. Section 2 and Section 4 provide information on land management actions, such as prescribed fire or mechanical treatments.

5.1.1: Red-Cockaded Woodpeckers

Species management for red-cockaded woodpeckers on PBWEA includes providing artificial cavities and translocating first-year birds. Area staff have conducted numerous conservation actions to ensure woodpecker habitat persists on PBWEA. Species management activities will follow guidelines in the USFWS Recovery Plan, FWC Red-Cockaded Woodpecker Management Plan and the PBWEA red-cockaded woodpecker guidance document that will be developed as part of implementation of this Strategy (Section 3.2.12).

5.1.2: Southeastern American Kestrel Nest Boxes

Staff have maintained and monitored southeastern American kestrel nest boxes on PBWEA since 2008. The purpose of this species management action is to promote nesting opportunities for this species on PBWEA. Staff will maintain and monitor boxes according to the standardized Southeastern American Kestrel Nest Box Monitoring Protocol. The data collected is shared with FWRI as part of a statewide effort to erect and monitor southeastern American kestrel nest boxes (Section 6.1.2). As monitoring identifies the need, staff will erect, maintain, and monitor new nest boxes in appropriate kestrel habitat.

5.2: Species Monitoring

Monitoring is critical to evaluating the effect of the management on wildlife. While we are unable to monitor all of the focal species on these areas, the recommended monitoring will assess species in all actively managed communities. Data collected will be reported to the regional conservation biologist for inclusion in the appropriate database. The FWC will make monitoring data available to cooperating agencies and organizations (Section 6).

This section lists the monitoring recommended for these areas as well as the purpose for each monitoring effort. The FWC is in the process of standardizing monitoring protocols for a number of these species and developing the Survey and Monitoring Protocol database (SaMP), a central database for storage of monitoring data. Area staff will work with the regional Conservation Biologist to implement standardized protocols, standardize ongoing monitoring that does not have a standardized protocol, and ensure data is entered in SaMP.

5.2.1: Gopher Frog Call Count Surveys

The purpose of gopher frog call count surveys will be to determine the occupancy (i.e. presence) of gopher frogs in wetland communities on PBWEA. Occupancy is determined by listening for gopher frog calls at potential breeding ponds during appropriate weather conditions, particularly after heavy rains. FWC will use the standardized Gopher Frog Call Survey Protocol to conduct a baseline gopher frog call count during the life of this Strategy. The protocol recommends repeating surveys every 3-5 years, weather permitting. We recommend survey repetitions at this interval on PBWEA if gopher frogs are detected during the baseline effort.

5.2.2: Herpetological Survey

The purpose of conducting a herpetological survey will be to inventory herpetological species occurring on PBWEA. Drift-fence surveys are recommended to provide baseline information about herpetological species using PBWEA, including pine snakes. Surveys should include the use of large upland snake traps to ensure adequate detection of large snakes.

5.2.3: Gopher Tortoise Monitoring

The purpose of gopher tortoise monitoring will be to track the distribution and relative abundance of the species to determine the effect of management on the population trend. Previous surveys followed the established gopher tortoise mitigation park protocol. However, the FWC is part of a gopher tortoise CCA and the members of this Agreement have adopted the LTDS monitoring protocol for the gopher tortoise throughout its range. LTDS will allow for estimating the gopher tortoise population size with confidence intervals, which will allow managers to track changes in the population rather than just changes in the number of burrows.

Currently, FWC is undergoing an effort to prioritize public lands in Florida for LTDS monitoring. PBWEA received pilot surveys in 2014, and will receive a full survey within a year of the pilot. Surveyors will report data to the gopher tortoise management plan coordinator (Section 6.1.1) and entered into SaMP. Because FWC has monitored gopher tortoises on these areas over a long period of time using the FWC mitigation park protocol, we recommend surveys using this protocol be conducted during the same year as LTDS surveys during this Strategy, with the purpose of comparing results to the LTDS surveys.

5.2.4: Bachman's Sparrow and Brown-Headed Nuthatch Surveys

Bachman's sparrows have been identified as 'indicator' species; species whose continued presence is an indicator of well-managed upland pine communities. The purpose of monitoring Bachman's sparrows and brown-headed nuthatches on PBWEA is to establish a baseline and track abundance and distribution of the species across the area over time to ensure management is having the desired effect. Surveys for Bachman's sparrow and brown-headed nuthatches will use the standardized Bachman's Sparrow and Brown-Headed Nuthatch Protocol, and be entered into SaMP following data collection. If area staff do not have the opportunity to conduct repeated point counts on PBWEA, we recommend annually documenting these species with opportunistic observations during management and monitoring activities in potential habitat.

5.2.5: Florida Scrub-Jay Monitoring

The purpose of monitoring scrub-jays on these areas is to track the number of family groups through time. Knowing the location of scrub-jay family groups and how scrub-jays are responding to management helps inform management decisions. Area staff also banded jays in the past on PBWEA and HCWEA to track family groups, and they may band again in the near future. Scrub-jays are monitored on PBWEA by FWC, and on HCWEA by FWC, Lee County, and the Jay Watch Program (a citizen-science based monitoring effort), following a standardized monitoring protocol (Section 6.7). Staff will continue to conduct scrub-jay monitoring on these area, evaluate the results of monitoring, and plan appropriate land management for scrub-jays.

5.2.6: Red-Cockaded Woodpecker Monitoring

Red-cockaded woodpecker monitoring on PBWEA includes cluster and cavity status checks, nest checks, chick banding, fledge checks, and monitoring banded birds. The purpose of monitoring is to document the number of potential breeding groups, active clusters, group size, active trees and cavities, new cavity trees and clusters, nest success, and fledgling success. Staff will continue to monitor annually in accordance with guidelines in the USFWS Red-Cockaded Woodpecker Recovery Plan, FWC Red-Cockaded Woodpecker Management Plan, and the PBWEA red-cockaded woodpecker guidance document that will be developed as part of implementation of this Strategy (Section 3.2.12).

5.2.7: Southeastern American Kestrel Nest Box Monitoring

The purpose of monitoring kestrel nest boxes is to determine the extent of nesting by southeastern American kestrels on PBWEA, and to track nesting attempts over time. Monitoring will be conducted using the standardized Southeastern American Kestrel Nest Box Monitoring Protocol. Area staff and Southwest Region volunteers, with assistance from the regional conservation biologist, conduct monitoring activities. Surveyors will enter data into SaMP and shared with FWRI (Section 6.1.2).

5.2.8: Florida Mouse Surveys

Florida mouse population monitoring on PBWEA will be conducted during this Strategy. The purpose of these surveys is to determine if the species is still present on the area, and to identify areas where management considerations for the Florida mouse would be most beneficial. Surveys will follow the Florida Mouse Occupancy Survey Protocol and be entered into SaMP following data collection.

5.2.9: Opportunistic Monitoring

The purpose of opportunistic monitoring is to document the presence of specific species. Opportunistic monitoring is the process of recording important information as it is encountered using the Opportunistic Observations for Wildlife protocol. Documentation of opportunistic sightings including information on species, date of the observation, observer, approximate lat/long or appropriate MU, number of individuals, behavior, and habitat type should be entered into SaMP. Monitoring data will be made available to cooperating agencies and organizations such as FNAI (Section 6.5). Record observations or sign of the following focal species:

- Gopher frog
- Eastern indigo snake
- Florida pine snake

- Bachman's sparrow
- Brown-headed nuthatch
- Burrowing owl
- Cooper's hawk
- Crested caracara
- Florida mottled duck (nests or flightless young)
- Florida sandhill crane (nests and adults with flightless young)
- Short-tailed hawk
- Southeastern American kestrel (May – July)
- Southern bald eagle (record and report new nests to baldeagle@myfwc.com)
- Swallow-tailed kite (aggregations of 3 or more birds on regular basis in one area during spring and any nesting activity)
- Big Cypress fox squirrel
- Florida black bear
- Sherman's fox squirrel
- Any listed species that does not have a monitoring protocol in this section.

5.3: Species Research Needs

Species management recommendations in other sections of this document are based on the most current information available. Cases may arise where little or no information is available to guide management, and research is needed. Further, many of these focal species do not have standard monitoring protocols and research is needed to determine the most efficient means of monitoring them. For many of the focal species, research is needed to provide managers with information about aspects of natural history, such as minimum habitat patch size, preferred habitat parameters, and response to habitat management activities. Through the WCPR process, neither workshop participants nor species experts identified any species research needs specific to PBWEA and HCWEA.

Section 6: Intra/Inter Agency Coordination

The WCPR process identified many recommendations regarding possible management actions for focal species. WHM staff can handle most proposed management actions; however, coordination with other sections in FWC or with other agencies sometimes is necessary or more efficient. This section describes coordination that is necessary outside of the WHM section, identifies the entity to coordinate with, and provides position contacts for these entities. We attempt to provide the name, position, and contact information for the people holding the position when the Strategy was drafted. As positions experience turnover, when in doubt,

contact the current Section Leader or supervisor to determine the appropriate person now holding the position.

6.1: Florida Fish and Wildlife Conservation Commission

6.1.1: Species Conservation Planning Section (SCP)

Monitoring animal populations on a WMA/WEA gives managers a way to gauge wildlife response to management. If this information is not shared with others, valuable data that can be used to assess statewide conservation efforts is often lost. Managers will share monitoring data with the appropriate taxa coordinator and with program coordinators for species that are part of conservation initiatives or other management programs. The regional SCP biologist is a good source of information on the regional status of non-game species. Additionally, FWC staff is authorized to handle federally-listed species as long as actions are consistent with the requirements of the agency's Endangered Species Act Section 6 Cooperative Agreement. To meet these requirements, staff will provide reporting as outlined in the Agreement to the agency's Endangered Species Coordinator. Please note some contacts will also be covered under Section 6.1.2; FWRI, and Section 6.1.4; Florida's Wildlife Legacy Initiative (FWLI).

Contacts:
Brad Gruver, Species Conservation Planning Section Leader: (850) 617-9502
Craig Faulhaber, Avian Conservation Coordinator: (352) 732-1225
Terry Doonan, Mammalian Conservation Coordinator: (386) 754-1662
Brooke Talley, Herpetofauna Conservation Coordinator: (850) 921-1143
Deborah Burr, Gopher Tortoise Management Plan Coordinator: (850) 921-1019
Michelle van Deventer, Bald Eagle Management Plan Coordinator: (941) 894-6675
Jonny Baker, Scrub and Sandhill Bird Coordinator: (352) 266-6698
Nancy Douglass, Regional Biologist: (863) 648-3827 ext. 3827
Amy Clifton, Assistant Regional Biologist: (863) 648-3817

6.1.2: Fish and Wildlife Research Institute (FWRI)

Area staff will cooperate with FWRI staff conducting monitoring and research for bald eagles by reporting new eagle nests to baldeagle@myfwc.com. Area staff will cooperate with Anna Farmer and Kevin Enge on issues regarding herpetofauna and report documentation of these species to FWRI. Area staff will cooperate with Karl Miller on issues regarding southeastern American kestrels. The FWRI research administrator oversees the FWC's migratory bird scientific collection permit. Report handling of migratory birds, as covered by the permit, to the research administrator in January annually.

Contacts:
Robin Boughton, Section Leader: (352) 334-4218
Jeff Gore, Research Administrator (mammals): (850) 767-3624
Andrew Cox, Research Administrator (birds): (352) 334-4241
Anna Farmer, Research Administrator: (352)334-4216
Ron Bielefeld, Associate Research Scientist (Florida mottled duck): (561) 722-1574
Janell Brush, Associate Research Scientist (bald eagle nest monitoring): (352) 334-4202
Karl Miller, Associate Research Scientist (kestrels, scrub-jays): (352) 334-4215
Kevin Enge, Associate Research Scientist (herps): (352) 334-4209

6.1.3: Office of Conservation Planning Services (CPS)

CPS works with private landowners and may be able to assist in making contacts or providing incentives for management activities on neighboring private lands. CPS also provides environmental commenting to ensure regional projects do not negatively influence the area. Maintaining communication regarding current and future projects will be critical.

Contacts:
Scott Sanders, CPS Office Director: (850) 617-9548 ext 9548
Luis Gonzalez, Regional Coordinator: (863) 648-3826 ext 3826

6.1.4: Florida's Wildlife Legacy Initiative (FWLI)

FWLI was developed to generate and coordinate cooperative conservation projects that address high priority issues identified in Florida's State Wildlife Action Plan. FWLI can assist in identifying potential partners and collaborative efforts for monitoring and management of focal species. FWLI is a potential source of project funding via Florida's State Wildlife Grants program. Regular communication with FWLI will be valuable.

Contacts:
Brian Branciforte, Program Administrator: (850) 617-9476
Kevin Kemp, Wildlife Legacy Biologist: (863) 648-3200

6.1.5: Invasive Plant Management Section (IPM)

IPM provides technical and financial assistance for the control of upland and aquatic invasive exotic plants. IPM may serve as a resource in identifying appropriate solutions to, and funding for, exotic plant issues.

Contacts:
Bill Caton, Section Leader: (850) 617-9428

Linda King, Subsection Leader: (850) 617-9428
Donald Eggeman, Biological Administrator: (850) 617-9500
Danielle Kirkland, Biological Administrator: (863) 534-7074
Michael Sowinski, Biological Scientist: (863) 534-7074

6.1.6: Ridge Rangers Volunteer Program

The Ridge Rangers volunteer program is actively involved in conservation programs on the Lake Wales Ridge. FWC manages this program, based at the LWRWEA. The program operates regularly scheduled workdays, as well as a variety of independent activities. The Ridge Rangers can assist with many different types of projects, and could also be a resource for assistance with wildlife monitoring.

Contact:
Bill Parken, Volunteer Coordinator: (863) 699-3937

6.2: Florida Forest Service (FFS)

The FFS provides authorizations for prescribed burning and assists in controlling escaped fires. FFS can provide assistance with timber management including administration of contracts for thinning operations. Staff should continue to coordinate prescribed fire and timber management activities with FFS.

Contacts:
Joe Debree, Forest Area Supervisor, Okeechobee District (PBWEA): (863) 655-6407
Mike Weston, Senior Forester, Caloosahatchee District (HCWEA): (239) 6900-3500
Butch Mallett, Timber Management - Senior Forester: (850) 228-7809

6.3: Avian Research and Conservation Institute (ARCI)

ARCI surveys and maintains a database for on the swallow-tailed kite and short-tailed hawk populations. Location information on the swallow-tailed kite and short-tailed hawk, particularly nests or nesting behavior, should be shared with ARCI.

Contacts:
Dr. Ken Meyer, Avian Researcher: (352) 335-4151; meyer@arcinst.org
Gina Kent, Research Ecologist and Coordinator: (352) 514-5607; ginakent@arcinst.org

6.4: Lee County Department of Parks and Recreation

FWC cooperatively manages HCWEA with Lee County to provide high quality habitat for populations of the gopher tortoise and other listed species on the area.

Contacts:
Annisa Karim, Senior Supervisor – Conservation Lands: (239) 229-7247; AKarim@LeeGov.com
Heather Gienapp, Supervisor: (239) 229-0240; HGienapp@LeeGov.com

6.5: Florida Natural Areas Inventory (FNAI)

FNAI collects, interprets, and disseminates ecological information critical to the conservation of Florida's biological diversity. The FNAI's database and expertise facilitate environmentally sound planning and natural resource management to protect the plants, animals, and communities that represent Florida's natural heritage. The FNAI maintains a database of rare and listed species that is often used for planning purposes. As such, staff should share information about species occurrences on these areas with FNAI to ensure this information is included in their database. FWC also has a contract with FNAI for plant and animal surveys if the need exists and resources are available.

Contacts:
Dan Hipes, Chief Scientist: (850) 224-8207
Kim Gulledge, Senior Ecologist: (850) 224-8207

6.6: United States Fish and Wildlife Service (USFWS)

The USFWS has listed the Florida scrub-jay as Threatened and the red-cockaded woodpecker as Endangered. Other federally-listed species, such as the wood stork and eastern indigo snakes, are modeled to have potential habitat on these areas. FWC should continue to partner with the USFWS on projects relating to any federally-listed species, including Florida scrub-jay and red-cockaded woodpecker monitoring and management.

Contacts:
Todd Mecklenburg, Fish and Wildlife Biologist (scrub-jay): (727) 820-3705
Will McDearman, RCW Recovery Coordinator: will_mcdearman@fws.gov

6.7: Audubon of Florida

Audubon of Florida manages the Jay Watch citizen science Florida scrub-jay monitoring program, which conducts annual surveys on HCWEA. The FWC helps coordinate and train

volunteers for this program and will be involved with the set-up of sampling locations. Area staff should remain in contact with Audubon to receive the results of these surveys and analyses.

Contact:
Marianne Korosy, Jay Watch and Important Bird Area Coordinator: (727) 742-1683

6.8: Regional Scrub Working Groups

PBWEA and HCWEA are geographically associated with the Lake Wales Ridge Ecosystem Working Group and South West Florida Scrub Working Group, respectively. These working groups are collaborative efforts between federal, state and county agencies, water management districts, universities, and other non-profit organizations. FWC should continue to partner with these working groups to facilitate regional scrub conservation.

Contacts:
Lake Wales Ridge Ecosystem Working Group
South West Florida Scrub Working Group

6.9: Lykes Bros. Inc. Ranch

The LBCE shares a small portion of its northern boundary with PBWEA, and the rest of the easement and other property owned by Lykes Bros. Inc. are in the immediate vicinity. Species such as the Florida scrub-jay and red-cockaded woodpecker occur on Lykes Bros. Inc. property, which plays a role in supporting regional populations of those species, and others. FWC will continue to coordinate with Lykes Bros. Inc. to provide assistance and facilitate management as needed.

Contacts:
Linda McCarthy, Representative: (863)-763-3041; linda.mccarthy@lykesranch.com

Section 7: Beyond the Boundaries Considerations

With appropriate management, there is enough potential habitat on PBWEA and HCWEA to support the gopher tortoise, the species for which these areas were purchased. Both areas have enough potential habitat to support the Florida scrub-jay, and PBWEA has enough potential habitat to support the red-cockaded woodpecker. These areas have enough potential habitat to support independent, viable populations of other focal species. PBWEA, because of its location within a landscape of other conservation lands, has more potential for long-term persistence of many focal species. HCWEA is more isolated, but can still support many focal

species. With appropriate management, these areas will continue to fulfill a conservation role in the surrounding landscape.

Through proper management of scrub, scrubby flatwoods, and mesic flatwoods, PBWEA can help support a number of fire dependent species, such as the gopher frog, gopher tortoise, Florida scrub-jay, Bachman's sparrow, northern bobwhite, Sherman's fox squirrel, southeastern American kestrel, and Florida mouse. Similarly, HCWEA can help support species such as the gopher tortoise, Florida scrub-jay, and northern bobwhite through proper management of mesic flatwoods, scrub, and scrubby flatwoods. Many of the wide-ranging focal species (e.g. wading birds, Cooper's hawk, southern bald eagle, swallow-tailed kite, short-tailed hawk, Florida black bear, and Florida panther) are occasionally observed on these areas, but these areas will contribute to the long-term persistence of these species in the surrounding landscape because of the proximity of PBWEA and HCWEA to nearby conservation lands.

The current management boundaries identified for these areas do not include all important habitat for focal species, including lands identified as Strategic Habitat Conservation Areas (SHCAs) for swallow-tailed kite and Cooper's hawk. The FWC originally identified SHCAs in the Closing the Gaps in Florida's Wildlife Habitat Conservation System report. The goal of SHCAs is to identify the minimum amount of land needed in Florida to ensure long-term survival of key components to Florida's biological diversity. The SHCAs identify important habitat conservation needs remaining on private lands. A recent FWC update to the Closing the Gaps entitled "Wildlife Habitat Conservation Needs in Florida" identified new SHCAs. The swallow-tailed kite, short-tailed hawk, Cooper's hawk, Florida scrub-jay, burrowing owl, Florida black bear, and sand skink are species for which an SHCA was identified within 3 miles of HCWEA. The swallow-tailed kite, short-tailed hawk, Cooper's hawk, Florida scrub-jay, Florida mouse, Florida black bear, sand skink, and snail kite are species for which an SHCA was identified within 3 miles of PBWEA. Although it is unlikely Florida will acquire all property identified in SHCAs, property acquisition and encouraging land use and management that is compatible with the needs of focal species should be a priority in these areas.

Models have projected that, by the year 2060, significant human population growth will occur in the area surrounding these WEAs. While the current conditions on these WEAs and neighboring conservation lands provides an opportunity to further the conservation of many focal and imperiled species, changes in management or land use beyond the boundaries could have a significant effect. Any changes that further impede the ability to use prescribed fire would be detrimental to fire-dependent species such as gopher tortoise and Florida scrub-jay. This includes smoke management concerns associated with increased development of residential and commercial areas, as well as roads and infrastructure. Any changes that alter hydrologic resources would be detrimental to gopher frogs and wading birds. Species that require large home ranges, or are dependent on dispersal for maintaining a population, are affected by adjacent land management or development. Any one of these factors could limit the ability of PBWEA and HCWEA to fulfill their conservation role for focal wildlife species.

All focal species on these WEAs are dependent on the availability of suitable habitat on adjacent private and public lands. The largest public lands in the vicinity of PBWEA are

FCWMA and LWRWEA, and the Lykes Bros. Inc. properties are the nearest adjacent large private areas. The largest public area near HCWEA is Lee County's ASP. Because these WEAs are not large, the actions of adjacent landowners will determine if focal species will persist on these WEAs – such as the Florida scrub-jay and red-cockaded woodpecker. Staff should coordinate with CPS to ensure private landowners are informed about incentive programs that encourage conservation-based management, and that they receive the proper technical assistance to affect this management. CPS should ensure environmental commenting includes recommendations for compatible uses of lands adjacent to PBWEA and HCWEA.

Document Map

Species	Species Assessment	Land Management Actions	Species Management Actions	Species Monitoring	Research	Coordination
Gopher Frog	Section 3.2.1	Section 4.3.1		Section 5.2.1		Section 6.1.2
Florida Pine Snake	Section 3.2.2	Section 4.3.2		Section 5.2.2, 5.2.9		Section 6.1.2
Gopher Tortoise	Section 3.2.3	Section 4.3.3		Section 5.2.3		Section 6.1.1
Bachman's Sparrow	Section 3.2.4	Section 4.3.4		Section 5.2.4, 5.2.9		
Brown-Headed Nuthatch	Section 3.2.5	Section 4.3.5		Section 5.2.4, 5.2.9		
Cooper's Hawk	Section 3.2.6	Section 4.3.7		Section 5.2.9		
Crested Caracara	Section 3.2.7	Section 4.3.8		Section 5.2.9		
Florida Mottled Duck	Section 3.2.8			Section 5.2.9		
Florida Sandhill Crane	Section 3.2.9	Section 4.3.9		Section 5.2.9		
Florida Scrub-Jay	Section 3.2.10	Section 4.1.1, 4.3.10		Section 5.2.5		Section 6.1.1, 6.4, 6.6, 6.7, 6.8, 6.9
Northern Bobwhite	Section 3.2.11	Section 4.3.11				
Red-Cockaded Woodpecker	Section 3.2.12	Section 4.3.12	Section 5.1.1	Section 5.2.6		Section 6.1.1, 6.6, 6.9
Short-Tailed Hawk	Section 3.2.13	Section 4.3.13				Section 6.3
Southeastern American Kestrel	Section 3.2.14	Section 4.3.14	Section 5.1.2	Section 5.2.7		Section 6.1.2, 6.1.6
Southern Bald Eagle	Section 3.2.15	Section 4.3.15		Section 5.2.9		Section 6.1.1
Swallow-Tailed Kite	Section 3.2.16	Section 4.3.16		Section 5.2.9		Section 6.3
Wading Birds	Section 3.2.17	Section 4.3.17		Section 5.2.9		
Big Cypress Fox Squirrel	Section 3.2.18			Section 5.2.9		Section 6.1.1
Florida Black Bear	Section 3.2.19	Section 4.3.18		Section 5.2.9		
Florida Mouse	Section 3.2.20			Section 5.2.8		
Florida Panther	Section 3.2.21			Section 5.2.9		
Sherman's Fox Squirrel	Section 3.2.22			Section 5.2.9		Section 6.1.1
Limited Opportunity Spp.	Section 3.2.23	Section 4.3.6		Section 5.2.9		

APPENDIX I: Documents Relating to Public Hearings / Meetings

THE NEWS-PRESS
Published every morning
Daily and Sunday
Fort Myers, Florida
Affidavit of Publication

STATE OF FLORIDA
COUNTY OF LEE

Before the undersigned authority, personally appeared **Shari Terrell** who on oath says that he/she is the **Legal Assistant** of the News-Press, a daily newspaper, published at Fort Myers, in Lee County, Florida; that the attached copy of advertisement, being a

DISPLAY
in the matter of:
Public Mtg Alva Comm Ctr

in the court was published in said newspaper in the issues of

May 25, 2016

Affiant further says that the said News-Press is a paper of general circulation daily in Lee, Charlotte, Collier, Glades and Hendry Counties and published at Fort Myers, in said Lee County, Florida and that said newspaper has heretofore been continuously published in said Lee County; Florida, each day, and has been entered as a second class mail matter at the post office in Fort Myers in said Lee County, Florida, for a period of one year next preceding the first publication of the attached copy of the advertisement; and affiant further says that he/she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Shari Terrell

Sworn to and subscribed before me this 25th day of May, 2016.

by **Shari Terrell**
personally known to me or who has produced

_____ as identification, and who did or did not take an oath.

Notary Public Milagros A. Isberto

Print Name: **Milagros A. Isberto**
My commission Expires: **July 11, 2016**

MILAGROS A. ISBERTO
Notary Public - State of Florida
My Comm. Expires Jul 11, 2016
Commission # EE 215800
Bonded Through National Notary Assn.

Lee County
Southwest Florida

Public Meeting Notice:

Hickey Creek Mitigation Park (HCMP) and Hickey Creek Greenbriar Connector Preserve (HCGCP) are located on the southside of the Caloosahatchee River in Alva, Florida. HCMP is owned by Lee County and co-managed with the Florida Fish and Wildlife Conservation Commission. HCGCP is composed of parcels owned by Lee County and the State of Florida. Lee County manages all of these parcels. HCMP has been developed in a manner to ensure the conservation and protection of the natural and historical resources while providing resource-based, public, outdoor recreational opportunities that are compatible with the conservation and protection of these public lands. The 10-year updated management plan for these properties has been drafted and the public is invited to attend a presentation about these conservation areas and provide comment. The public meeting for this plan will be held in conjunction with the June 2016 Alva, Inc. meeting to maximize public input. This meeting is free and open to all members of the public.

The Lee County Dept. of Parks & Recreation and the Florida Fish and Wildlife Conservation Commission invite the public to review the Land Management Plan & attend this public meeting:
Monday, June 13, 2016; 7:00 PM
at the Alva Community Center
21471 North River Road. Alva, FL 33920

The Land Management Plan will be available for review from May 17, 2016 - June 11, 2016 at the Riverdale Branch Library (2421 Buckingham Rd., Fort Myers, FL 33905). Written comments will be accepted prior to the commencement of and during the course of the scheduled meeting. Comments may also be sent to: Annisa Karim (AKarim@LeeGov.com; Six Mile Cypress Slough Preserve, 7791 Penzance Blvd., Ft. Myers, FL. 33966) before June 13, 2016. For more information, call Annisa Karim at 239-229-7247

P.O. WESTEN D0515I6-82

Copy of letter mailed to neighbors informing them of the scheduled public meeting.

Lee County
Southwest Florida
BOARD OF COUNTY COMMISSIONERS

June 1, 2016

Dear Neighbor's name appeared here

Due to your proximity to Hickey Creek Mitigation Park (HCMP) and Hickey Creek Greenbriar Connector Preserve (HCGCP), this letter is a courtesy to inform you of an upcoming public meeting.

These conservation areas are located on the south side of the Caloosahatchee River in Alva, Florida. HCMP is owned by Lee County and co-managed with the Florida Fish and Wildlife Conservation Commission. HCGCP is composed of parcels owned by Lee County and the State of Florida. Lee County manages all of these parcels. HCMP has been developed in a manner to ensure the conservation and protection of the natural and historical resources while providing resource-based, public, outdoor recreational opportunities that are compatible with the conservation and protection of these public lands. The 10-year updated management plan for these properties has been drafted and the public is invited to attend a presentation about these conservation areas and provide comment. **The public meeting for this plan will be held in conjunction with the June 2016 Alva, Inc. meeting to maximize public input. This meeting is free and open to all members of the public.**

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Written comments will be accepted prior to the commencement of and during the course of the scheduled meeting. Comments may also be sent to: Annisa Karim (AKarim@LeeGov.com; Six Mile Cypress Slough Preserve, 7791 Penzance Blvd., Ft. Myers, FL. 33966) before June 13, 2016.

Annisa Karim
Senior Supervisor - Conservation Lands
Lee County Department of Parks & Recreation
Phone: (239) 229-7247
e-mail: AKarim@LeeGov.com

Notice of Public Meeting posted on-site at Hcikey Creek Mitigation Park.

Notice of Public Meeting

Hickey Creek Mitigation Park (HCMP) and Hickey Creek Greenbriar Connector Preserve (HCGCP) are located on the southside of the Caloosahatchee River in Alva, Florida. HCMP is owned by Lee County and co-managed with the Florida Fish and Wildlife Conservation Commission. HCGCP is composed of parcels owned by Lee County and the State of Florida. Lee County manages all of these parcels. HCMP has been developed in a manner to ensure the conservation and protection of the natural and historical resources while providing resource-based, public, outdoor recreational opportunities that are compatible with the conservation and protection of these public lands. The 10-year updated management plan for these properties has been drafted and the public is invited to attend a presentation about these conservation areas and provide comment. **The public meeting for this plan will be held in conjunction with the June 2016 Alva, Inc. meeting to maximize public input. This meeting is free and open to all members of the public.**

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For more information, call Annisa Karim at 239-229-7247

The meeting was advertised in the local newspaper (The News-Press) on May 25, 2016. A flier was placed in the information kiosk at Hickey Creek Mitigation Park and a letter was mailed to the property owners within close proximity to both (HCMP and HCGCP) conservation areas informing them of the public meeting and how to access the draft plan. A printed copy of the management plan and blank comment cards were available to the public from May 17, 2016 – June 11, 2016.

Nine members of the public attended the public meeting on June 13, 2016. This meeting was held in conjunction with the Alva, Inc. monthly membership meeting to maximize public input. These meetings are free and open to the public so any member of the public wishing to attend the meeting would have been able to.

Annisa Karim and Heather Gienapp, employees of the BoCC – Parks and Recreation Department, and Steve Shattler, an employee of FWC, also attended the meeting. Ms. Karim and Mr. Shattler did a presentation on the history of the conservation areas, the public access opportunities, and the land management approach. Members of the public asked about the prescribed fire program conducted by FWC and about the opportunities to experience the park for people with differing ambulatory abilities.

Ruby Daniels, President of Alva Inc., thanked Lee County staff and Steve Shattler for the informative presentation.

One comment card was received (see below).

Public Meeting - Review of the ten-year update to the Hickey Creek Mitigation Park and Hickey Creek Greenbrair Connector Preserve Land Management Plan

Alva Community Park: June 13, 2016

Comment Card: Please Print Legibly

Name	Zip Code	Email	Phone #
SHAN WHITCOMB		on-file	

Comment: Generally pleased with 10 yr plan
Concerns over burnings
Why East County Water Mgt District has such taxing power
Concerned about drainage at SE corner at Lawsten old RR bed

Hickey Creek Mitigation Park & Hickey Creek Greenbriar Connector Preserve
Public Meeting: Alva Community Center, June 13, 2016; 7PM
Meeting held in conjunction with the Alva, Inc. Monthly Meeting
ALL COMMENTS BECOME PART OF THE PUBLIC RECORD

Sign-in sheet: Please Print Legibly

Name	Zip Code	Email	Phone #	Affiliation (Public, Advisory Board, Staff, etc.)
Susan Whitcomb		on file		land owner
Ivy Thornberry				
Ruby Daniels				
Heather Gienapp		hgienapp@leegov.com	239-533-7556	LCPR Staff
Jan Kucket	33928	on file		CCM
Daryl Ebeling	"			"
Brenda Scott	33920			
Steve Shattler	33852		863 441 5071	FWC Staff
Joe Stefanski	33920	on file		
Don Quade	33920			Alva Inc
Dan Furday				
Annisa Karim	33920	AKARIM@Leegov.com	239-229-7247	LCPR staff

APPENDIX J: Right-of-Way Consent Agreement

Right-of-Way Consent Agreement

LEE COUNTY
PARKS AND RECREATION

BOARD OF COUNTY COMMISSIONERS

Writer's Direct Dial Number: _____

Ann E. Manning
District One

Douglas R. St. Cerny
District Two

Ray Judah
District Three

Andrew W. Coy
District Four

John E. Albion
District Five

Donald D. Stilwell
County Manager

James G. Yaeger
County Attorney

Diana M. Parker
County Hearing Examiner

July 24, 2000

Mr. Mark Byers, Senior ROW Representative
Florida Power & Light Co.
P.O. Box 1119
Sarasota, Florida 34230-1119

Dear Mr.Byers:

Please find attached the two signed originals of the Right-Of-Way Consent Agreement to allow a hiking trail to cross the ROW at Hickey Creek Mitigation Park. If you have any question, please give me a call at (941) 338-3291.
Thank you very much for your cooperation in this matter.

Sincerely

Jerry Cutlip, Manager/ Biologist

3410 Palm Beach Boulevard, Fort Myers, Florida 33916 (941)338-3300
Lee On Line Access (LOLA) Internet Address http://lola.co.lee.fl.us
AN EQUAL OPPORTUNITY AFFIRMATIVE ACTION EMPLOYER

RIGHT-OF-WAY CONSENT AGREEMENT

FLORIDA POWER & LIGHT COMPANY, a Florida corporation, whose mailing address is P.O. Box 14000, Juno Beach, Florida 33408-0420, Attn: Corporate Real Estate Department, hereinafter referred to as "Company", hereby consents to the **Board of Lee County Commissioners,** whose mailing address is **3410 Palm Beach Blvd., Fort Myers, FL 33916,** hereinafter referred to as "Licensee", using an area within Company's right-of-way granted by that certain agreement recorded in Deed Book 230, at Page 106, and in Deed Book 233, at Page 26, Public Records of Lee County, Florida. The said area within Company's right-of-way, is hereinafter referred to as the "Lands". The use of the Lands by Licensee, shall be solely for the **purpose of construction, maintenance and use of a walking trail within the Hickey Creek Mitigation Park,** as shown on the plans and specifications submitted by Licensee, attached hereto as Exhibit "B".

In consideration for Company's consent and for the other mutual covenants set forth below, and for Ten Dollars and No Cents ($10.00) and other good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, the parties hereto agree as follows:

1. Licensee agrees to obtain all necessary rights from the owners of the Lands in the event Licensee does not own said Lands; to obtain any and all applicable federal, state, and local permits required in connection with Licensee's use of the Lands; and at all times, to comply with all requirements of all federal, state, and local laws, ordinances, rules and regulations applicable or pertaining to the use of the Lands by Licensee pursuant to this Agreement.

2. Licensee understands and agrees that the use of the Lands pursuant to this Agreement is subordinate to the rights and interest of Company in and to the Lands and agrees to notify its employees, agents, and contractors accordingly. Company specifically reserves the right to maintain its facilities located on the Lands; to make improvements; add additional facilities; maintain, construct or alter roads; maintain any facilities, devices, or improvements on the Lands which aid in or are necessary to Company's business or operations; and the right to enter upon the Lands at all times for such purposes. Licensee understands that in the exercise of such rights and interest, Company from time-to-time may require Licensee, to relocate, alter, or remove its facilities and equipment, including parking spaces and areas, and other improvements made by Licensee pursuant to this Agreement which interfere with or prevent Company, in its opinion, from properly and safely constructing, improving, and maintaining its facilities. Licensee agrees to relocate, alter, or remove said facilities, equipment, parking spaces and areas, and other improvements within thirty (30) days of receiving notice from Company to do so. Such relocation, alteration, or removal will be made at the sole cost and expense of Licensee and at no cost and expense to Company; provided however, should Licensee, for any reason, fail to make such relocation, alteration, or removal, Company retains the right to enter upon the Lands and make said relocation, alteration, or removal of Licensee's facilities, equipment, parking spaces and areas, and other improvements and Licensee hereby agrees to reimburse Company for all of its costs and expense incurred in connection therewith upon demand.

Form 3740 Rev. 10/9/95
C7a
7-18-00

3. Licensee agrees that it will not use the Lands in any manner which, in the opinion of Company, may tend to interfere with Company's use of the Lands or may tend to cause a hazardous condition to exist. Licensee agrees that no hazardous substance, as the term is defined in Section 101 (14) of the Comprehensive Environmental Response Compensation and Liability Act ("CERCLA") (42 USC Section 9601 [14]), petroleum products, liquids or flammables shall be placed on, under, transported across, or stored on the Lands, which restricts, impairs, interferes with, or hinders the use of the Lands by Company or the exercise by Company of any of its rights thereto. Licensee agrees further that in the event it should create a hazardous condition, then upon notification by Company, Licensee shall, within seventy-two (72) hours, at its sole cost and expense, correct such condition or situation; provided however that the Company retains the right to enter upon the Lands and correct any such condition or situation at any time and, by its execution hereof, Licensee hereby agrees to indemnify and hold harmless Company from all loss, damage or injury resulting from Licensee's failure to comply with the provisions of this Agreement.

4. Licensee hereby agrees and covenants to prohibit its agents, employees, and contractors from using any tools, equipment, or machinery on the Lands capable of extending greater than fourteen (14) feet above existing grade and further agrees that no dynamite or other explosives shall be used within the Lands and that no alteration of the existing terrain, including the use of the Lands by Licensee as provided herein, shall be made which will result in preventing Company access to its facilities located within said Lands. Unless otherwise provided herein, Licensee agrees to maintain a forty (40) foot wide setback, twenty (20) feet on each side, from Company's facilities.

5. Trees, shrubs, and other foliage planted or to be planted upon the Lands by Licensee are not to exceed a height of fourteen (14) feet above existing grade.

6. Outdoor lighting installed or to be installed upon the Lands by Licensee are not to exceed a height of fourteen (14) feet above existing grade and all poles or standards supporting light fixtures are to be of a non-metallic material.

7. Sprinkler systems installed or to be installed by Licensee upon the Lands are to be constructed of a non-metallic material and sprinkler heads are to be set so the spray height does not exceed fourteen (14) feet above existing grade and does not make contact with any Company's facilities. Aboveground systems shall not be installed within or across Company patrol or finger roads and underground systems crossing said patrol and finger roads are to be buried at a minimum depth of one (1) foot below existing road grade.

8. Licensee agrees to warn its employees, agents, contractors and invitees of the fact that the electrical facilities and appurtenances installed or to be installed by Company within the Lands are of high voltage electricity and agrees to use all safety and precautionary measures when working under or near Company's facilities.

9. Licensee agrees, at all times, to maintain and keep the Lands clean and free of debris. Except as provided herein, Licensee further understands and agrees that certain uses of the Lands are specifically prohibited; such uses include but are not limited to recreational purposes,

hunting and camping, and Licensee agrees to notify its employees, agents, contractors, and invitees accordingly.

10. The use of the Lands by Licensee shall be at the sole risk and expense of Licensee, and Company is specifically relieved of any responsibility for damage or loss to Licensee or other persons resulting from Company's use of the Lands for its purposes.

11. Notwithstanding any provision contained herein, Licensee agrees to reimburse Company for all cost and expense for any damage to Company's facilities resulting from Licensee's use of the Lands and agrees that if, in the opinion of Company, it becomes necessary as a result of Licensee's use of the Lands for Company to relocate, rearrange or change any of its facilities, to promptly reimburse Company for all cost and expense involved with such relocation, rearrangement or change.

12. Each party hereto agrees that it shall be responsible for its own negligent acts or omissions. Nothing contained in the Section shall be construed to be a waiver or any protections under sovereign immunity, Section 768.28, Florida Statutes, or any other similar provision of law. Nothing contained herein shall be construed to be a consent by either party to be sued by third parties in any matter arising out of this Agreement.

13. The Board of Lee County Commissioners is self insured for all liability claims and related expenses pursuant to the provisions of Florida Statute 768.28.

14. This Agreement will become effective upon execution by Company and Licensee and will remain in full force and effect until completion of Licensee's use of the Lands pursuant to this Agreement, unless earlier terminated upon ninety (90) days written notice by Company to Licensee, or at the option of Company, immediately upon Licensee failing to comply with or to abide by any or all of the provisions contained herein.

15. The use granted herein as shown on Exhibit "B" shall be under construction by Licensee within one (1) year of the effective date of this Agreement and the construction shall be diligently pursued to completion. Licensee shall give Company ten (10) days prior written notice of its commencement of construction. "Under construction" is the continuous physical activity of placing the foundation or continuation of construction above the foundation of any structure or improvement permitted hereunder. Under construction does not include application for or obtaining a building permit, a site plan approval or zoning approval from the appropriate local government agency having jurisdiction over the activity, purchasing construction materials, placing such construction materials on the site, clearing or grading the site (if permitted) in anticipation of construction, site surveying, landscaping work or reactivating construction after substantially all construction activity has remained stopped for a period of two (2) months or more. Licensee acknowledges that failure to have the use under construction within the one (1) year time period will result in immediate termination of this Agreement in accordance with Paragraph 14 herein for failing to comply with the provisions contained herein unless Licensor grants a written extension for a mutually agreed upon time. Any request for an extension of time shall be submitted in writing by Licensee no later than thirty (30) days prior to the expiration of the one (1) year period for the project to be under construction.

16. The term "Licensee" shall be construed as embracing such number and gender as the character of the party or parties require(s) and the obligations contained herein shall be absolute and primary and shall be complete and binding as to each, including its successors and assigns, upon this Agreement being executed by Licensee and subject to no conditions precedent or otherwise.

17. Should any provision of this Agreement be determined by a court of competent jurisdiction to be illegal or in conflict with any applicable law, the validity of the remaining provisions shall not be impaired. In the event of any litigation arising out of enforcement of this Consent Agreement, the prevailing party in such litigation shall be entitled to recovery of all costs, including reasonable attorneys' fees.

18. Licensee may assign its rights and obligations under this Agreement to a solvent party upon prior written consent of the company, which consent shall not be unreasonably withheld.

The parties have executed this Agreement this 18th day of July, 2000.

Witnesses:

Signature:
Print Name: MARK L. BYELS

Signature:
Print Name: KELLY LOPEZ

FLORIDA POWER & LIGHT COMPANY

By:
Its: West Area Real Estate Manager
Print Name: C. W. Mathys

Witnesses:

Signature:
Print Name: Michele G. Leismer

Signature:
Print Name: WILMA C. POPE

LICENSEE:
Board of Lee County Commissioners

By:
Its: Chairman
Print Name: John E. Albion

APPROVED AS TO FORM
OFFICE OF COUNTY ATTORNEY

Form 3740 Rev. 10/9/95

APPENDIX K: Final County-funded Fill and Grade of Gideon Lane / First Notice of Road Vacation

LEE COUNTY
SOUTHWEST FLORIDA
BOARD OF COUNTY COMMISSIONERS

February 20, 2014

[redacted]
Alva, FL 33920

Re. Gideon Lane

Dear [redacted]

Thank you for your correspondence and patience while I have been working on a solution to the potholes on Gideon Lane (River Road). As discussed, this letter will define the solutions that we can offer. Some are temporary since the road is a county owned, but not maintained road. The more permanent solution will help keep the road in good shape as long as possible and decrease future maintenance costs.

As a short term solution, the County will fill and regrade the western portion of Gideon Lane from Palm Beach Boulevard to your driveway one final time. This is being offered since you were incorrectly promised many things in the past by former employees. Please understand that this is a onetime maintenance event to correct past errors and will not continue into the future, in keeping with standard Board of County Commissioners road policies. I have attached the resolution showing that the road maintenance has not been accepted by the County.

The longer term solution will involve a street vacation of the majority of Gideon Lane. A perpetual easement from Palm Beach Boulevard along the western portion of Gideon Lane will be granted to you in order to maintain access your property. The street vacation will allow the County to install gates at strategic locations to keep the general public from using the road, thus keeping the road in better shape.

Staff will continue to utilize both existing gates (shown as turquoise diamonds on the attached map) but will be asked to use the eastern gate preferentially. Once the street vacation is complete, gates will be placed on the eastern portion of Gideon Lane to prevent vehicles from traveling the unmaintained portion of the road.

P.O. Box 398, Fort Myers, Florida 33902-0398 (239) 533-2111
lee-county.com

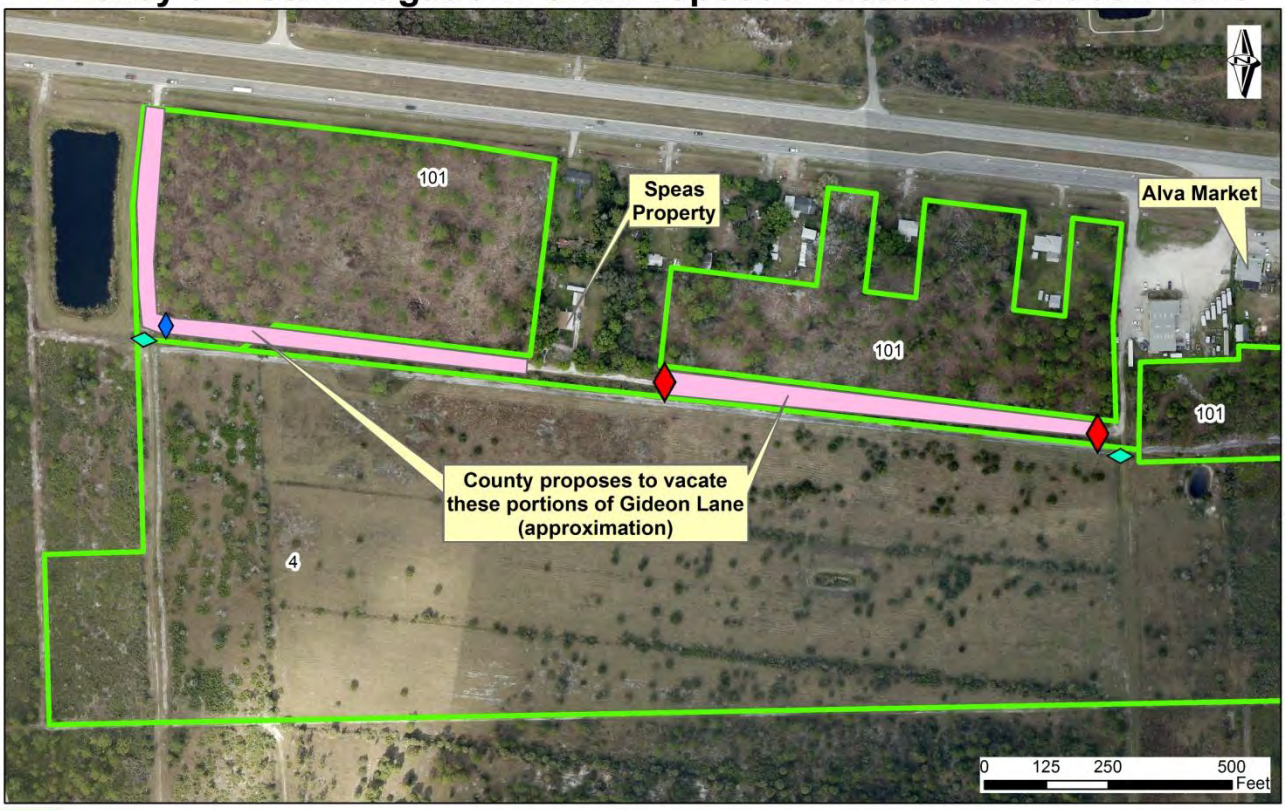
Staff in County Lands has begun to work on the street vacation. I will keep you apprised of the progress.

Please contact me if you have any questions.

Cathy Olson
Conservation Lands Manager
239 533-7455

cc: Dave Harner, Director Parks and Recreation
Dana Kasler, Deputy Director Parks and Recreation
Annisa Karim, Conservation Lands Senior Supervisor
Teresa Mann, Senior Property Acquisition Agent

Hickey's Creek Mitigation Park: Proposed Vacation of Gideon Lane



Conservation 20/20 Parcels
Hickey's Creek Mitigation Park Boundary
Road Centerline
Gates for staff access only
Gate for neighbor access and LIMITED staff access
Proposed gates for LIMITED staff access

Map created by Annisa Karim (AKarim@LeeGov.com)
Aerial Image: 2013

February 2014

RESOLUTION NO. 99-01-22

19.50R

4560825

RESOLUTION OF ACCEPTANCE OF DEDICATION BY THE BOARD OF COUNTY COMMISSIONERS OF LEE COUNTY, FLORIDA

OR3072 PG1414

WHEREAS, the Board of County Commissioners approved the plats of Pine Creek Acres, Units 1 and 2, on April 4, 1956 and February 6, 1957, respectively; and

WHEREAS, the plats included an offer to dedicate all roads, boulevards, and/or lanes and parks shown on the face of the plat to the perpetual use of the public; and

WHEREAS, on June 21, 1961, the Board granted a petition to vacate a portion of the plats of Units 1 and 2, including the park, all of River Road, and a portion of Pine Boulevard (County Commission Book 19, Pages 22-I and 22-N); and

RECORDED BY TRUDY SHERWOOD, D.C.

WHEREAS, the County desires the right to use the remaining roads in Unit 2 of Pine Creek Acres as access to a recently acquired parcel of the Conservation 2020 Acquisition Program; and

WHEREAS, the County desires to formally accept the dedication of the unvacated roads, boulevards, and/or lanes and parks set forth in the plats of Pine Creek Acres, Unit 2, recorded in Plat Book 10, Page 74; and

WHEREAS, the Board desires to accept the dedication without assuming the obligation to construct and maintain those roads to County specifications.

NOW, THEREFORE, BE IT RESOLVED by the Board of County Commissioners of Lee County, Florida, that:

1. The Board formally accepts the dedication of all unvacated roads, boulevards, and/or lanes and parks set forth in the plat of Unit 2, Pine Creek Acres, recorded in Plat Book 10, Page 74, thereby designating such roads as County roads.

2. The Board does not assume the construction or maintenance responsibility for those roads by acceptance of the dedication.

3. By this action, the Board intends the County to obtain access from State Route 80 to Parcel #4 of the Conservation 2020 Land Acquisition Program.

The foregoing resolution was adopted by the Lee County Board of Commissioners by a motion by Commissioner Manning, and seconded by Commissioner Coy and, upon being put to a vote, the result was as follows:

John E. Manning	Aye
Douglas R. St. Cerny	Aye
Ray Judah	Aye
Andrew W. Coy	Aye
John E. Albion	Aye

DULY PASSED AND ADOPTED this 19th day of January, 1999.

ATTEST:
CHARLIE GREEN, CLERK

BY: Michele B Kissner
Deputy Clerk

BOARD OF COUNTY COMMISSIONERS
OF LEE COUNTY, FLORIDA

BY: Ray Judah
Chairman

Approved as to form by:

County Attorney's Office

OR3072 PG1445

APPENDIX L: Projected Costs for Resource Management

HCMP - Projected Costs for Resource Management*				
Activity	**Possible Funding Source(s)**	**C 20/20 Parcels**	**Possible Funding Source(s)**	**Non 20/20 Parcels**
Exotic Plant Control	C20/20 Funds; Grants; General Fund; in-house	$656 per year for woody flora; $820 for herbaceous flora	Grants; in-house	$6400 (per year)
Prescribed Burning	C20/20 Funds; in-house	$2500 a year	no cost to the County - funded by FWC	
Parcel 4 Pasture Restoration	C20/20 Funds; in-house	$18,000 ($600/ acre)	Parcel 4 is a 20/20 parcel – see columns to the left	
Exotic Animal Control (Feral Hogs)	$3675 per year - average of 105 hogs per year (paid through the General Fund because the traps are generally set on non 20/20 property; 20/20 lands comprise less than 10% of Park)			
* Lee County's MOA with FWC divides stewardship responsibilities. FWC is responsible for prescribed burns, mechanical work, surveys, etc. LCPR is responsible for public access; exotic control (plant and animal) site security, facility maintenance, and environmental education.				

HCGCP - Projected Costs for Resource Management*				
Activity	**Possible Funding Source(s)**	**C 20/20 Parcels**	**Possible Funding Source(s)**	**Non 20/20 Parcels**
Initial Exotic Removal	C20/20 Funds; Grants; General Fund	$13,400 (one-time cost)	Grants; General Fund	$72,830 (one-time cost)
Exotic Plant Control - Maintenance	C20/20 Funds; Grants; General Fund	$2978 per year	Grants; General Fund	$16,185 per year
* No management activities are advised until we can acquire inholdings. Economies of scale prohibit management of small, scattered areas.				